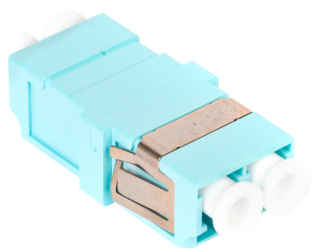


760113142 | MFA-LC02-AQ/LP-50-BULK-PACK-NONSHUTTER



LazrSPEED® LC Duplex Low Profile Adapter, Aqua, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	LazrSPEED®
Product Series	MFA

General Specifications

Body Style	Duplex
Color	Aqua
Interface	LC/UPC
Interface Feature	Reduced footprint
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Phosphorous bronze
----------------------------------	--------------------

Optical Specifications

Fiber Mode	Multimode
-------------------	-----------

Packaging and Weights

Packaging quantity	50
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Regulatory Compliance/Certifications

760113142 | MFA-LC02-AQ/LP-50-BULK-PACK- NONSHUTTER

Agency

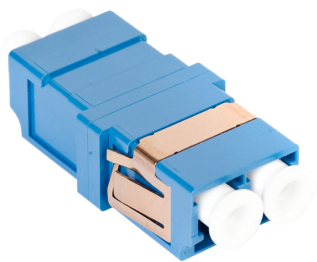
CHINA-ROHS
ISO 9001:2015
REACH-SVHC
ROHS



Classification

Below maximum concentration value
Designed, manufactured and/or distributed under this quality management system
Compliant as per SVHC revision on www.commscope.com/ProductCompliance
Compliant

760113159 | SFA-LC02-BL/LP-50-BULK-PACK-NONSHUTTER



TeraSPEED® LC Duplex Low Profile Adapter, Blue, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	TeraSPEED®
Product Series	SFA

General Specifications

Body Style	Duplex
Color	Blue
Interface	LC/UPC
Interface Feature	Reduced footprint
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Zirconia
---------------------------	----------

Optical Specifications

Fiber Mode	Singlemode
------------	------------

Packaging and Weights

Packaging quantity	50
--------------------	----

Regulatory Compliance/Certifications

760113159 | SFA-LC02-BL/LP-50-BULK-PACK- NONSHUTTER

Agency

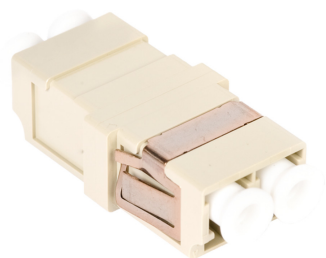
CHINA-ROHS
ISO 9001:2015
REACH-SVHC
ROHS



Classification

Below maximum concentration value
Designed, manufactured and/or distributed under this quality management system
Compliant as per SVHC revision on www.commscope.com/ProductCompliance
Compliant

760113167 | MFA-LC02-BG/LP-50-BULK-PACK-NONSHUTTER



OptiSPEED® LC Duplex Low Profile Adapter, Beige, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	OptiSPEED®
Product Series	MFA

General Specifications

Body Style	Duplex
Color	Beige
Interface	LC/UPC
Interface Feature	Reduced footprint
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Phosphorous bronze
----------------------------------	--------------------

Optical Specifications

Fiber Mode	Multimode
-------------------	-----------

Packaging and Weights

Packaging quantity	50
---------------------------	----

Regulatory Compliance/Certifications

760113167 | MFA-LC02-BG/LP-50-BULK-PACK- NONSHUTTER

Agency

CHINA-ROHS
ISO 9001:2015
REACH-SVHC
ROHS



Classification

Below maximum concentration value
Designed, manufactured and/or distributed under this quality management system
Compliant as per SVHC revision on www.commscope.com/ProductCompliance
Compliant

CERTIFICATE

Certificate Number: 151045.000

TLID: TL1786

With Eight Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:

1100 CommScope Place SE

Hickory, NC 28602

United States

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7 (Based on and including ISO 9001:2015)

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Product Categories	Products
3.2.5 Fiber to the User	ASWXXXX, OLT (GPON)
3.2.6 Video Transmission Equipment	EQAM Products (APEX, SFP), Switched Digital Video and Resource Mgmt, Network Encryption (NE), ALOHA Interactive (ARPD, ADM, SDM), Cablevista Edge Decoder, Conditional Access Products
6.2.5 Passive Optical Network Termination Units	ONT-1xxxx, ONT1xxx
3.1.1.1.1 Metallic Conductor Cable	All Products
3.1.1.1.2 Metallic Connectors	All Products
3.1.1.2.1 Fiber Optic Cable	All Products
3.1.1.2.2 Optical Connector	All Products
3.1.1.3.2 Passive Optical Transmission Subsystems	All Products
3.1.1.3.4 Fixed Antenna Systems	All Products
3.1.2.1 Enclosures	All Products
3.1.2.3 Conduits	All Products
3.2.1.1 Manual Cross Connect Systems	All Products
8.1.4 Electromechanical Components	All Products
8.3 Cable Assemblies	All Products

Certification Structure: Multi-site

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000

ADDENDUM Page One of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7

(Based on and including ISO 9001:2015)

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services, (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	

Site Address	Certification	Product Category	Site Activities
CommScope, Inc 1100 CommScope Place SE Hickory, NC 28602 United States	TL9000HSV	3.1.1.1.1, 3.1.1.1.2, 3.1.1.2.1, 3.1.1.2.2, 3.1.1.3.2, 3.1.1.3.4, 3.1.2.1, 3.1.2.3, 3.2.1.1, 3.2.5, 3.2.6, 6.2.5, 8.1.4, 8.3	HQ (Virtual)
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	TL9000HSV	3.2.5, 3.2.6, 6.2.5, 3.1.1.3.4	HW & SW DE, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	TL9000SV	3.2.6	SW DE, SER
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	TL9000H	3.1.1.1.2, 3.2.5, 3.2.6, 6.2.5, 8.3	HW DE, SAL, SC

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Two of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
ARRIS STB de Mexico, SA de C.V. Via de la Innovacion # 402; CP 66628 Parque de Investigacion e Innovacion Tecnologica Apodaca Nuevo León; Mexico	TL9000HSV	3.2.5, 3.2.6, 6.2.5	HW & SW DE, REP
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	TL9000HV	3.1.1.3.4, 3.2.6, 3.2.5	MFG SC, REP
CommScope Technologies LLC 2601 Telecom Parkway Richardson, TX 75082 United States	TL9000H	3.1.1.3.4, 3.1.2.1	HW DE, SER
CommScope Telecommunications (China) Co. Ltd. No. 68 Su Hong XI Lu Suzhou Industrial Park, Suzhou Jiangsu 215021 Peoples Republic of China	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC,
CommScope Connectivity (Suzhou) Co. Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.1.1.2, 3.2.1.1, 8.3	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Three of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
Andrew Wireless Systems GmbH Industriering 10 Buchdorf Bavaria 86675 GERMANY	TL9000HV	3.1.1.3.4	HW DE, REP, MFG
CommScope India Private Ltd Plot No. N-2, Verna Industrial Estate Phase IV, Verna - Salcette, GOA 403 722 INDIA	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC
CommScope Italy srl Via Mengolina 20, Faenza Ravenna 48018 Italy	TL9000H	3.1.1.3.4	HW DE
Andrew Telecommunications de Reynosa, S. De R.L. de C. V. Ave. Industrial Reynosa Lote 2 al 5, Col Parque Industrial Reynosa, Reynosa Tamaulipas 88780 Mexico	TL9000H	3.1.1.3.4, 3.1.1.1.2, 3.1.2.1, 8.3	MFG
CommScope Corporation Mexico, S.A. de C.V. CCS Ave. Antonio J. Bermudez #550 Parque Ind. A. J. Bermudez Ciudad Juarez CHIH 32470 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	HW DE, MFG
CommScope Corporation Mexico, S.A. de C.V. Santiago Troncoso No. 331, Cd. Juarez CHIH 32599 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG
ADC de Delicias S. De R.L. de C.V Boulevard Fernando Baeza #1301 Fraccionamiento San Marcos Ciudad Delicias Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Four of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
CommScope Technologies UK Ltd Lomond House, Grantsmuir John Smith Business Park Kirkcaldy, Fife KY2 6NA Scotland	TL9000H	8.1.4	HW DE, SAL
CommScope Inc of North Carolina 1130 Classic Rd Apex, NC 27539 United States	TL9000H	3.1.1.2.2	HW DE, SAL
CommScope Technologies LLC 11312 S. Pipeline Road Euless, TX 76040 United States	TL9000H	8.1.4	HW DE, MFG, SAL
CommScope Connectivity LLC 501 Shenandoah Drive Shakopee MN 55379 United States	TL9000HSV	3.1.2.3 3.1.1.2.2, 3.1.1.3.2, 3.2.1.1, 8.3	HW DE, SAL, SER, SC,
CommScope Inc of North Carolina 6519 CommScope Road, Catawba, NC 28609-0199 United States	TL9000H	3.1.1.1.1, 3.1.1.1.2	HW DE, MFG, SAL
CommScope Inc of North Carolina 3642 US Hwy. 70 East Claremont NC 28610 United States	TL9000H	3.1.1.1.1, 3.1.1.2.1	HW DE, MFG, SAL

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Five of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Connectivity (Suzhou) Co. Ltd.

77 Qiming Road, Suzhou Industrial Park

Suzhou, Jiangsu 215121

Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

Manufacture metallic connectors, fiber optical jumpers and connectors, passive optical transmission sub - systems, enclosures, cable assemblies, fiber connection enclosures and communication cabinets

Product Categories	
3.1.1.1.2	Metallic Connectors
3.1.1.2.2	Optical Connector
3.1.1.3.2	Passive Optical Subsystems
3.2.1.1	Manual Cross Connect Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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证书附录

证书编号: 151045.000

TLID: TL1786

附录第 6 页, 共 8 页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普通联通信 (苏州) 有限公司

苏州工业园区启明路 77 号

江苏苏州 215121

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7
(基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器, 光纤跳线及连接器, 无源光传输子系统, 附件, 电缆组件, 光缆接头盒, 通讯机柜的生产

产品类别	
3.1.1.1.2	金属连接器
3.1.1.2.2	光学连接器
3.1.1.3.2	无源光学子系统
3.2.1.1	手动交叉连接系统
8.3	电缆组件

认证结构: 多场所

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Seven of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Telecommunications (China) Co. Ltd.

No. 68 Su Hong Xi Lu Suzhou Industrial Park,
Suzhou Jiangsu 215021
Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

制造金属连接器、光纤跳线和连接器、无源光传输子系统、外壳、电缆组件、光纤连接外壳和通信机柜 3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3

Product Categories	
3.1.1.1.1	Metallic Conductor Cable
3.1.1.1.2	Metallic Connectors
3.1.1.3.4	Fixed Antenna Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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证书附录

证书编号: 151045.000

TLID: TL1786

附录第 8 页, 共 8 页质量管理体系和实施:

CommScope, Inc.

其场所:

康普电信（中国）有限公司

苏州工业园区苏虹西路 68 号,

江苏苏州 215021

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7 (基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器 · 光纤跳线及连接器 · 无源光传输子系统 · 附件 · 电缆组件 · 光缆接头盒 · 通讯机柜的生产

产品类别	
3.1.1.1.1	金属导体电缆
3.1.1.1.2	金属连接器
3.1.1.3.4	固定天线系统
8.3	电缆组件

认证结构：多站点

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

An electronic certificate can be authenticated [online](https://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - ISO 45001:2018

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

OHS 650243

and operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 for the following scope:

The occupational health & safety management system to control the hazards associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **OHS 650243**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Certificate No: **OHS 650243**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Certificate No: **OHS 650243**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Original Registration Date: 2016-04-04

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CommScope Network Infrastructure System

25 Year Extended Product and Application Warranty
("System Warranty")

Terms and Conditions

Extended Product Warranty. CommScope warrants, for a period of twenty-five (25) years from the Certification Date (the “Warranty Period”), that Products in the Registered System shall be free from defects in materials or workmanship subject, to the terms and conditions below and the terms, conditions and limitations of CommScope’s Limited Product Warranty in effect at the date of sale (available at <http://www.commscope.com/Resources/Warranties/>).

Application Warranty. During the Warranty Period, the Registered System will meet or exceed the specifications set forth in the System Specification and support Applications as documented therein.

System Warranty Requirements. The System Warranty applies only to Products that are: (i) installed by an Authorized Partner, at the location listed on the System Warranty Certificate; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification; (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification; (iv) not subject to conditions that exceed the individual Product Specification(s); (v) used at the original site of installation; (vi) tested pursuant to industry standards and applicable CommScope testing requirements and satisfactorily pass such tests; and (vii) not otherwise expressly excluded or invalidated under the System Warranty Terms and Conditions. To qualify for a System Warranty, all documents, including the prescribed System test results, must be submitted to CommScope for review within sixty (60) days of installation, and registration for the System Warranty must be applied for with CommScope within ninety (90) days from the date the installation is complete. CommScope, in its sole judgment, shall determine if the System Warranty Requirements have been met. CommScope’s approval of a System Warranty shall be evidenced by a numbered registration System Warranty Certificate issued by CommScope. In the event a System Warranty Certificate is issued and CommScope subsequently discovers that any of the System Warranty requirements were not met, then the System Warranty shall be void.

Beneficiary and Warranty Transfer. CommScope will only honor System Warranty claims made by the person or entity to which the System Warranty Certificate is issued. The System Warranty may, upon prior written approval from CommScope, be transferred to a successor in interest to the site where the Registered System was originally installed.

Modifications. Moves, repairs, alterations, additions, or changes to the Registered System (“Change(s)”) are only covered by the System Warranty if: (i) performed by an Authorized Partner; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification, and (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification. Day-to-day administration and maintenance of the Registered System by the End-Customer will not void the System Warranty if performed in compliance with applicable CommScope system design and installation guidelines using CommScope approved products. All test results shall be sent for approval to CommScope along with a detailed description of the Change(s) and bill of materials within thirty (30) days of installation. If the Change(s) are approved, CommScope shall update the System Warranty registration to indicate the Change(s). Failure to comply with the foregoing relating to Change(s) shall void the System Warranty.

Exclusions from Warranty and Limitations on Liability. The “Exclusions from Warranty” and “Limitations on Liability” in the Limited Product Warranty shall apply to the System Warranty. The occurrence of an Exclusion from Warranty in the Limited Product Warranty shall void the System Warranty. The System Warranty shall also be void if any Product in the Registered System has been (i) removed from the original site of installation, (ii) altered, repaired or disassembled by a non-Authorized Partner, or (iii) exposed to, or has outside materials applied to it, including but not limited to paint, water, chemicals, solutions, cleaning supplies and lubricants (“Contamination”). End-Customer must notify an Authorized Partner or CommScope within 24 hours of any Contamination.

Outside Plant Cable is excluded from and will void the System Warranty when installed above ground and exposed to the outside environment, including but not limited to, an aerial installation. Outside Plant Cable installed underground, either by direct burial or in conduit, is not excluded from the System Warranty.

Failure of the End-Customer to submit any System Warranty claim to the authorized CommScope office as designated by CommScope within thirty (30) days following expiration of the System Warranty shall be an admission by the End-Customer and conclusive proof that the Registered System and Product(s) are in every respect as warranted and shall release CommScope and the Authorized Partner from any and all claims for damage or loss sustained by the End-Customer.

Any violation or non-compliance with the System Warranty Terms and Conditions will void the System Warranty.

Remedies. If during the Warranty Period, the End-Customer experiences problems with a Registered System or a Product in a Registered System ("Problem") and suspects there is a potential warranty claim hereunder, the End-Customer must first reasonably investigate potential causes of the suspected Problem that are not CommScope related and reasonably determine that none of these potential causes were responsible for the Problem. Once the End-Customer reasonably believes that all non-CommScope causes for the Problem are ruled out, but in no event more than thirty (30) days after the End-Customer knew or should have known of the Problem, the End-Customer must contact the Authorized Partner that installed the Registered System to report the Problem. If the Authorized Partner is unable to resolve the Problem, then the Authorized Partner will contact CommScope and make a claim under the System Warranty for further investigation and resolution.

If CommScope determines that a Problem is due to a breach of the System Warranty, CommScope will repair or replace Product as CommScope deems necessary to correct the Problem, including the provision of reasonable labor and removal and reinstallation of such Product at CommScope's discretion. CommScope shall only be responsible for costs that have received the prior written authorization of CommScope. If CommScope chooses to repair Product, CommScope may use new or reconditioned replacement parts. If CommScope chooses to replace Product, CommScope may replace with new or reconditioned products of the same or similar design. Any repair or replacement will be warranted for either (a) 90 days or (b) the remainder of the original Warranty Period, whichever is longer. If the Problem is found by CommScope or an Authorized Partner not to be related to a Product or any warranty exclusions, then End-Customer will be responsible for any costs incurred related to the Problem claim.

Choice of Law. The System Warranty shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply. The End-Customer acknowledges that as a condition to receiving the System Warranty, End-Customer unconditionally submits to the jurisdiction of the North Carolina state and federal courts. If any portion of the System Warranty is not enforceable due to local legal requirements, then such specific language shall be modified to meet local legal requirements consistent with CommScope's intent.

Definitions

The following definitions shall apply to the System Warranty:

CommScope shall mean CommScope Technologies LLC.

Application shall mean a standardized set of network technologies, protocols, and hardware for enabling communication over the prescribed System as documented by CommScope.

Authorized Partner shall mean a party that is certified by CommScope as a CommScope installation partner and that is in good standing with CommScope at the time of installation.

Authorized Reseller shall mean a party that is authorized in writing by CommScope to sell Products and that is in good standing with CommScope at the time of sale.

Certification Date shall mean the earlier of the registration date on the face of the System Warranty Certificate or the Original Installation Completion Date.

End-Customer shall mean the end-user who has the Products installed at its premises by an Authorized Partner.

Original Installation Completion Date shall mean the date that the Authorized Partner completed the installation and testing of the Registered System at the End-Customer's site being submitted for System Warranty eligibility.

Outside Plant Cable shall mean all cabling located between demarcation points in buildings, switching and data centers and the demarcation point in another such facility.

Passive shall mean signal-carrying components that exhibit no gain or contribute no energy.

Product(s) shall mean Passive products manufactured by CommScope that are contained in the bill of materials, for an end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, which were filed with the registration for the System Warranty and which were purchased from an Authorized Reseller.

Product Specification shall mean CommScope's published specification(s), in effect at the time of sale, which defines the optical and/or electrical capabilities of the individual Products.

Registered System shall mean the System designated on the System Warranty Certificate.

System refers to the end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, comprised entirely of Products approved by CommScope for the respective System and that meet all of the conditions in the "System Warranty Requirements" Section of these System Warranty Terms and Conditions.

System Specification shall mean CommScope's published specification(s) in effect at the time of sale, which describes the optical and/or electrical capabilities of the System as a whole.

System Warranty shall mean the Extended Product and Application Warranty.

System Warranty Certificate shall mean the certificate issued by CommScope evidencing CommScope's approval and issuance of a System Warranty and identifying the covered System.

Precedence. In the event of any conflict between the terms of the System Warranty and CommScope's Limited Product Warranty and/or a System Specification, the terms of the System Warranty shall control.



commscope.com

Visit our website or contact your local CommScope representative for more information.

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BR-1110431-EN (06/18)

1. **Definitions.** For purposes of this Warranty, (i) “Buyer” shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller’s quotation, order acknowledgement or confirmation), (ii) “Seller” shall mean the CommScope entity identified on such entity’s quotation, order acknowledgement, confirmation or supply agreement, (iii) “Product” shall mean a product manufactured by Seller pursuant to the applicable supply agreement, quotation, order acknowledgement or confirmation, and (iv) “Warranty Period” shall mean one year from date of original shipment from Seller’s facility unless a different time period is set forth in **Exhibit A**.
2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer.
3. **Inspection.** If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller’s inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim’s validity. Buyer shall prepay all transportation charges for such return.
4. **Remedies.** Seller’s sole and exclusive obligation and Buyer’s exclusive remedy under this Warranty is Seller’s repair or replacement of the defective Product or a credit for the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period.
5. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer’s waiver of such claim.
6. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.
7. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:
 - (a) improper installation or misapplication of parts;
 - (b) chain or system failures induced by other products or components;
 - (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
 - (d) any consumables provided with the Product and any other materials, components or products manufactured by a third party;
 - (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
 - (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
 - (g) any adjustment, modification, alteration, removal or repair of any part of the Product not expressly authorized by Seller in writing;
 - (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
 - (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller’s only obligation shall be to ensure that Product complies with Seller’s published material specifications);
 - (j) use of the Product for purposes other than that for which it was designed; or
 - (k) mishandling during shipment of the Product.

This Warranty is for Products installed and used in accordance with Seller’s design, installation and operating parameters. Buyer’s failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

8. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OR PERFORMANCE. No person is authorized to give any additional warranties on Seller’s behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER’S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED THE PURCHASE PRICE OF SUCH PRODUCTS. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED REVENUES OR PROFITS. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

9. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED PRODUCT WARRANTY

Exhibit A

Seller warrants that the Products identified below will be free from defects in material and workmanship arising under proper and normal use for the following Warranty Period:

QR® Coaxial Cable	Ten (10) years from the date of original shipment.
ValuSite® Products	Three (3) years from the date of original shipment.
I-Line Accessory Products	Three (3) years from the date of original shipment.
Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products	Five (5) years from the date of original shipment, except for the following: (i) two (2) years for surge arrestors; and (ii) one (1) year for all other accessories.
Standard CNT® Cable, Connector, Accessory and Cable Assembly† Products	Five (5) years from the date of original shipment; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Broadband RF Connectivity Products	Five (5) years from the date of original shipment.
Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)	One (1) year from the date of original shipment
FDH Products	One (1) year from the date of original shipment
Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable Assemblies	One (1) year from the date of original shipment
OSP “Box” Products	One (1) year from the date of original shipment
Mini-RDTs and RDTs	One (1) year from the date of original shipment
FOSC™, FIST™ and Tenio™	One (1) year from the date of original shipment
OSP Copper Connect and Closure Products	One (1) year from the date of original shipment
Standard HELIAX® Cable, Connector, Accessory and Cable Assembly‡ Products	Ten (10) years from the date of original shipment; except for the following: (i) three (3) years for ValuFlex® cable assemblies; (ii) three (3) years for weatherproofing kits; (iii) one (1) year for cable preparation tools (excluding blades); (iv) one year for single click-on hanger kits; and (v) two (2) years for surge arrestors.
HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes	One (1) year from the date of original shipment.
Steel Products and Rapid Deployment Monopoles	Three (3) years from the date of original shipment.
Standard ION-B®, ION-E®, ION-M®, ION-U®, MR, p-POI®, i-POI®, e-POI™, and Node Repeater Products	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment.
Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years from the date of original shipment.
ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas	Two (2) years from the date of original shipment.
InterReach Fusion®	One (1) year from the date of original shipment.
InterReach Unison®	One (1) year from the date of original shipment.
FlexWave® Spectrum	One (1) year from the date of original shipment.
FlexWave® Prism	One (1) year from the date of original shipment.
FlexWave® Active Integration Panel (AIP)	One (1) year from the date of original shipment.
A.I.M.O.S. Software Products	One (1) year from the date of original shipment.

* RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller’s connectors in accordance with the installation instructions.

† CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller’s connectors by Seller or its certified distributor.

‡ HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller’s connectors by Seller or its certified distributor.

LIMITED PRODUCT WARRANTY

In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment.
OneCell® and S1000 Small Cell Platforms (excluding software)	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment
Small Cell Device Management System (DMS) Software for OneCell® and S1000 Small Cell Platforms	Ninety (90) days from the date of original shipment
Base Station Antenna Products	Two (2) years from the date of original shipment for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year from the date of original shipment.
Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products	Two (2) years from the date of original shipment.
Standard Filter, Diplexer and Triplexer Products	Two (2) years from the date of original shipment.
DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years from the date of original shipment or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year from original shipment or 1,000 hours of actual run time, whichever occurs first. This Warranty Period does not apply to Factory Reconditioned Dehydrators, which are warranted for only one (1) year from the date of original shipment.
Microwave Antennas	Three (3) years from the date of original shipment.
Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years from the date of original shipment.
SiteRise™ Solutions	One (1) year from the date of original shipment on workmanship for the Solution.
Copper Structured Cabling Products	One (1) year from the date of Installation
Fiber Optic Panels, including Accessories, Mounting Hardware, Modules	One (1) year from the date of shipment
Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables, Accessories	One (1) year from the date of shipment
Indoor Fiber Cable Patch Cords, Cable Assemblies, Fiber Trunks	One (1) year from the date of shipment
Passive Optical Components and Value Added Modules (VAMs)	One (1) year from the date of shipment
Fiber Guide Fiber Management System (FGS)	One (1) year from the date of shipment
Optical Distribution Frames, including Modules, Blocks, Accessories and Hardware	One (1) year from the date of shipment
Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of installation.
Cabinets Cable and Apparatus Products	One (1) year from the date of original shipment.
Electronic Enclosure Products (Cabinets)	Two (2) years from the date of original shipment.
Alifabs™ Cabinets & Ancillary Products	One (1) year from the date of original shipment.
Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor	Two (2) years from the date of original shipment.
Alifabs™ Telecommunications Towers and Accessories	One (1) year from the date of original shipment.
Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Any other Software Products	Ninety (90) days from the date of original shipment.

CERTIFICATE

Certificate Number: 111045.000
Including Seven Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:
1100 CommScope Place SE
Hickory, NC 28602
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001

Business Segments	Exceptions
Connectivity and Cable Solutions (CCS)	None
Networking, Intelligent Cellular & Security Solutions (NICS)	None
Outdoor Wireless Networks (OWN)	None
Access Network Solutions (ANS)	None



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page One of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	DIST = Distribution

Site Address	Site Activities
CommScope Inc 1100 CommScope Place SE Hickory, NC 28602 United States	HQ (Virtual)
ARRIS Technology, Inc. 3871 Lakefield Drive Suwanee, GA 30024 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 101 Tournament Dr. Horsham, PA, 19044 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	SW DE, SER
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	HW & SW DE, SER, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Two of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	HW & SW DE, SAL, SER, SC
ARRIS 15 Sterling Drive Wallingford, CT 06492 United States	HW & SW DE, SER, SC
ARRIS Technology, Inc. 2450/2500 Walsh Avenue Santa Clara, CA 95051 United States	HW & SW DE, SAL, SER
Ruckus Wireless International Inc. 350 West Java Dr. Sunnyvale, CA 94089 United States	HW & SW DE, SER
Ruckus Wireless Network Technology (Shenzhen) Co. Ltd. Units C&D, 5th Floor, No. 2 Finance base, 8 KeFa Road, Shenzhen, China	SW DE, SC, HW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Three of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
Site Address	Site Activities
CommScope Asia (Suzhou) Technologies Co., Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	MFG, SC
Ruckus Wireless International Inc., Taiwan Branch @ Neihsu District, Taipei City, Rui Road 411, 10th floor, Taipei	SW DE
ARRIS Group India Pvt Limited (AGIPL) Salarpuria Supreme, Ground Floor West Wing & First Floor Munnekolalu Village, Varthur Hobli, Outer Ring Road, Bangalore-560037	SW DE
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	MFG, REP, SC
ARRIS Communications Ireland Limited Building 4300, Cork Airport Business Park Kinsale Road Cork County Ireland	HW & SW DE
ARRIS Group India Private Limited "The Senate" No:33/1, Ulsoor Road, Bangalore - 560 042 India	HW & SW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Four of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Group, Inc. 50 Stranmillis Embankment Belfast, BT95FL Northern Ireland	SW DE
CommScope Czech Republic, s.r.o. Turanka 856/98B 627 00 Brno Czech Republic	HW DE,
CommScope CZ, spol. s.r.o. U Morusi 888, 53006 Pardubice Czech Republic Czech Republic	HW DE,
CommScope Connectivity UK Limited Units 1 and 4 Kinmel Park Industrial Estate Bodelwyddan, Denbighshire, LL18 5TZ United Kingdom	HW DE, MFG, SAL
CommScope Design & Integration UK Ltd. Unit 5 & 6 Eden Business Park Eden House Drive Old Malton, Malton, North Yorkshire YO17 6AE United Kingdom	HW DE, MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Five of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
CommScope Design & Integration UK Limited 412 The Quadrant, Birchwood Park Warrington, WA3 6FW United Kingdom	SER
CommScope EMEA Ltd. Corke Abbey Avenue Bray, Co. Dublin Ireland	MFG, SAL
CommScope EMEA Ltd. Diestsesteenweg 692 3010 Kessel-Lo, Belgium	HW DE, MFG, SAL
CommScope Italy Srl Via Archimede, 22/24 Agrate Brianza (MB) 20864 Italy	HW DE, REP, SW DE
Telecom Networks Americas AV. HIPOLITO YRIGROYEN 2999, DEPOSITO 6 EL TALAR, TIGRE Buenos Aires B1618AXD Argentine Republic	SAL, DIST
CommScope Networks India Private Limited Salarpuria Softzone, A Block, 1st Floor Survey No 80/1, 81/1, 81/2, B Wing, Belandur Village, Varthur Hobli, Outer Ring Bangalore – Karnataka 560103 India	SW DE
ADC India Communications Ltd. No 10 C , 2nd Phase Peenya Industrial Area Bangalore – Karnataka 560058 India	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Six of Seven

The Quality Management System and implementation of:

CommScope, Inc.

With site at:

CommScope Asia (Suzhou) Technologies Co.,Ltd.

77 Qiming Road, Suzhou Industrial Park
Suzhou, Jiangsu 215121
Peoples Republic of China

meets the requirements of the standard:

ISO 9001:2015

The validity of this certificate depends on the validity of the main certificate.

Scope:

Production of network cable, fiber cable and communication equipment component (copper patch cords, copper panel, accessories etc.)

Certification Structure: Multi-site

Certificate Expires:	January 04, 2026
Certificate Issued:	January 05, 2023
Certified Since:	January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



证书附录

证书编号: 111045.000

附录第7页,共7页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普科技 (苏州) 有限公司

中国江苏省苏州工业园区启明路77号,邮编215121

符合以下标准要求:

ISO 9001:2015

本证书的有效性取决于主证书的有效性。

范围:

网络线、光缆、通信系统设备材料 (网络跳线、配线装置等) 的生产。

认证结构: 多场所

证书有效期: 2026.01.04

发证日期: 2023.01.05

首次发证日期: 2001.1.10



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

LIMITED WARRANTY



1. **Definitions.** For purposes of this Warranty, (i) "Buyer" shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller's quotation, order acknowledgement or statement of work), (ii) "Seller" shall mean the CommScope entity identified on such entity's quotation, order acknowledgement, statement of work or supply agreement, (iii) "Hardware" means equipment designed and manufactured by or on behalf of Seller, or any third-party manufacturer's equipment offered for sale by Seller to Buyer, (iv) "Product" shall mean a product manufactured by or on behalf of Seller pursuant to the applicable supply agreement, quotation or order acknowledgement, and includes any combination of Hardware and Software, (v) "Services" means site engineering, system integration, product installation, implementation, training, maintenance and technical support services for Products, or other professional services provided by Seller to Buyer. Services exclude managed services and hosted cloud services provided by Seller, (vi) "Software" means Seller-licensed software, either embedded or standalone, including any updates provided, and any other enhancements, modifications, and bug fixes provided thereto, in object code form only (unless otherwise specified), and any full or partial copies thereof. Software does not include software created or owned by third parties, including but not limited to MediaKind Software, Google's Android Software or any third party application software, and (vii) "Warranty Period" means, unless a different time period is set forth in **Exhibit A**, (a) for Hardware, one year from date of original shipment from Seller's facility, (b) for Software-only Products, ninety (90) days from the date such Software is first made available to Buyer, or for Software embedded in a Hardware Product, ninety (90) days from date of original shipment of the Product from Seller's facility, and (c) for Services, thirty (30) days from the date the performance of such Services has been rendered.

2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product and Services will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and Services and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant (i) Products not purchased from Seller or its authorized resellers; (ii) that the operation of the Product will be uninterrupted or error-free; (iii) that the Product will operate in combination with other third-party products selected by Buyer; or (iv) any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer. Seller gives no warranty for, and shall have no liability with respect to, any defects arising from any software (other than the Software), including, but not limited to MediaKind Software, Android Software or any third-party application software, downloaded to or otherwise used in conjunction with the Product. Seller further warrants to Buyer that during the Warranty Period, all Services performed by Seller for Buyer will be provided in a workmanlike manner.

3. **Disclaimers.** EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY OR IN A SEPARATE, APPLICABLE SOFTWARE LICENSE AGREEMENT, ALL SOFTWARE IS LICENSED ON AN "AS IS" BASIS WITHOUT WARRANTY.

4. **Inspection and Return Authorization.** Buyer must promptly notify Seller of any claimed defect in the Product and/or Services. If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller's inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim's validity. Except as otherwise agreed to in writing, Products may not be returned to Seller without prior authorization. Buyer must contact Seller to obtain an authorization number and return the Products to the location designated by Seller. Any Products returned to Seller without proper authorization will be returned to Buyer at Buyer's expense. Risk of loss, damage and insurance responsibilities for the Products shall not pass from Buyer to Seller until delivery of the Products to Seller's designated location. Buyer shall prepay all transportation charges for such return.

5. **Remedies.** Seller's sole and exclusive obligation and Buyer's exclusive remedy under this Warranty is Seller's repair or replacement of the defective Product or re-performance of Services or issuance of a credit for the net book value of the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period. Replacement Products may be new, refurbished or contain refurbished materials.

6. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer's waiver of such claim.

7. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.

8. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:

- (a) improper installation or misapplication of parts;
- (b) chain or system failures induced by other products or components;
- (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
- (d) any consumables provided with the Product, including but not limited to batteries and other accessories, and any other materials, components or products manufactured by a third party;
- (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
- (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
- (g) any adjustment, modification, alteration, removal or repair of any part of the Product, including but not limited to removal or alteration of serial numbers or other identifying marks not expressly authorized by Seller in writing;
- (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
- (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller's only obligation shall be to ensure that Product complies with Seller's published material specifications);
- (j) use of the Product for purposes other than that for which it was designed; or
- (k) mishandling during shipment of the Product.

LIMITED WARRANTY

This Warranty is for Products installed and used in accordance with Seller's design, installation and operating parameters. Buyer's failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

9. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OF PERFORMANCE. No person is authorized to give any additional warranties on Seller's behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER'S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF AND/OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS OR SERVICES WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED (I) FOR PRODUCTS, THE DEPRECIATED VALUE OF THE PURCHASE PRICE OF SUCH PRODUCTS OR (II) FOR SERVICES, THE ACTUAL AMOUNT PAID TO SELLER FOR SERVICES DURING THE 12 MONTH PERIOD IMMEDIATELY PRIOR TO THE EVENT (OR SERIES OF EVENTS) GIVING RISE TO THE LIABILITY. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED DATA, USE, REVENUES OR PROFITS. The Products are not specifically designed, tested, manufactured or intended for operation or use in any inherently dangerous, life endangering or life support applications where any failure of the Products could lead to death, personal injury or significant physical or environmental damage (High Risk Activities). If Buyer uses the Products in High Risk Activities, including but not limited to nuclear facilities or the flight, navigation or communication of aircraft, Buyer agrees that neither Seller nor its third party licensors are liable in whole or in part, for any claims or damages arising from such use, and that Buyer shall indemnify and hold Seller and its third party licensors harmless from any and all claims for loss, cost, damage, expense or liability arising out of or in connection with any use of the Products in High Risk Activities. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

10. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED WARRANTY

Exhibit A

Product Categories	Warranty Period from Original Shipment Date*
Category A Products E6000® Converged Edge Router (CER); E6000n™ Remote PHY Devices (RPDs); E6000r™ Remote PHY Shelves; E6000n™ Remote MACPHY Devices (RMDs); vManager; Remote OLT (R-OLT); associated power supplies and accessories. FLX PON OLT portfolio including vOLT. CherryPicker products, Encoder products including ME-7000, SE-6000; DSR-4xxx, DSR-6xxx and DSR-7xxx series IRD products, and Uplink systems including TME-2020, VDP-1000, BNC, DEM, and SEM; All APEX Universal EQAM including APEX1000 and APEX3000; All Aloha interactive products including OM2000, ARPD, ADM4000 and NC1500 4.0. All SDM products. All VUE and VTM Software Products. All STDC products.	Hardware One (1) Year Software Ninety (90) Days
Category B Products All High and Standard Definition Transport Adapter MS4000™ Media Streamer	Hardware One (1) Year Software Ninety (90) days ** For certain CPE, option for 1% overship in lieu of Hardware warranty is standard
Category C Products Intentionally left blank.	
Category D Products All Third Party OEM Products: power meters; All VUE and VTM hardware platforms; NC1500 4.0 hardware platform; LQA256 Legacy QAM Adapter; Elemental Products including Live, Server, Delta, Conductor and StatMux; DC2180 Cabinet Node, Cooling Systems	Pass Through from OEM: Hardware One (1) Year Software Ninety (90) Days
Category E Products Intentionally left blank	
Category F Products All OM and SG optical node platforms, Flex Max® and Starline® amplifier platforms, RF Taps & Passives, and Optical Passives	Hardware Five (5) Years within the United States and Canada Hardware Three (3) Years outside United States and Canada Software Ninety (90) Days
Category F1 Products All CHP Headend Optical (HEO) Elements	Hardware Three (3) Years Software Ninety (90) Days
Category G1 Products All NC optical node platforms and Optical Passives, including OP/NP/DP/DC models.	Hardware Five (5) Years Software Ninety (90) Days
Category G2 Products All CH3 Headend (HEO) Elements	One (1) year
Category G3 Products All EPON and GPON ONUs, RFoG/HPON R-ONUs, including, CP8 models and associated power supplies and accessories	Hardware Three (3) Years Software Ninety (90) Days

LIMITED WARRANTY

Category H Products All ConvergeMedia™ Distribution Platforms and Management Suite, AdManager™ including SkyVision Ad Management and EMP solutions CVEx™, SVA, all Vertasent products including SVOM, SVM and ERM, AdEdge™ COM and AdEdge APS,VMS, Manifest Delivery Controller (MDC), ARRIS Video Content Manager (AVCM) and Next Generation Insertion (NGI) and Multicast ABR.	Hardware One (1) Year Software Ninety (90) Days
Category I Products ServAssure® Advanced, ServAssure® NXT - Alarm Central, ServAssure® NXT - Analyze, ServAssure Domain Manager and EventAssure™. WorkAssure™® Workforce Management, Mobile TV, SecureMedia and Titanium	Hardware One (1) Year Software Ninety (90) Days
Category J Products Intentionally left blank	
Category K Products Intentionally left blank.	
Category L Products Intentionally left blank	
Category M Products Intentionally left blank.	
Category N Products Intentionally left blank.	
Category O Products All CAS Products including DAC, CASMR (and associated plug-ins), CAST, Advisor, CSS, OLL, CSS-Lite, KLS, DKS, CPMS	DAC, CASMR, CAST, Advisor, CSS Hardware Three (3) Years OLL, CSS-Lite, KLS, DKS, OLES, CPMS Hardware One (1) Year Software Ninety (90) Days
Category P Products Intentionally left blank.	
Category P1 Products Intentionally left blank	
Category Q Products Intentionally left blank	
Category R Products Intentionally left blank	
Category R1 Products Intentionally left blank	
Category S Products Intentionally left blank	
Category S1 Products Intentionally left blank	

LIMITED WARRANTY

<p>Category T Products RUCKUS Wi-Fi</p>	<p>Hardware:</p> <ul style="list-style-type: none"> - Indoor Access Points and Wall Plate Access Points – Limited Lifetime Warranty,** except for access points with an “e” suffix (e.g., R350e), for which the HW warranty period is one (1) year. - Outdoor Access Points – One (1) Year - Controllers – One (1) Year, except ZoneDirector controllers are covered by the Limited Lifetime Warranty** <p>Software Ninety (90) Days</p>
<p>Category T1 Products RUCKUS ICX Switches</p>	<ul style="list-style-type: none"> - ICX Switches (including switch modules, PSUs, and Fans, but excluding removable optics/transceivers and LEDs) – Limited Lifetime Warranty,** except for ICX 7150- C08PT, for which the HW warranty period is 13 months. - LEDs – 12 months - Removable Optics/Transceivers – 60 months (13 months if shipped from Seller prior to June 1, 2021) <p>Software: Limited lifetime access to defect repairs, and software maintenance updates through end of support date of product</p>
<p>Category T2 Products Intentionally left blank</p>	
<p>Category U Products</p> <p>Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)</p> <p>NovuX Products</p> <p>Prodigy</p> <p>Products FDH</p> <p>Products</p> <p>Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable</p> <p>Assemblies OSP “Box” Products</p> <p>Mini-RDTs and RDTs</p> <p>FOSC™, FIST™ and</p> <p>Tenio™</p> <p>OSP Copper Connect and Closure Products</p> <p>HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes</p> <p>Fiber Optic Panels, including Accessories, Mounting Hardware, Modules</p> <p>Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables,</p> <p>Accessories Indoor Fiber Cable, Patch Cords, Cable Assemblies, Fiber Trunks</p> <p>Passive Optical Components and Value Added Modules (VAMs)</p> <p>FiberGuide® : Fiber cable Management System</p> <p>Optical Distribution Frames, including Modules, Blocks, Accessories and</p> <p>Hardware Cabinets Cable and Apparatus Products</p> <p>Alifabs™ Cabinets & Ancillary Products</p> <p>Alifabs™ Telecommunications Towers and Accessories</p> <p>Metro Cell Products, including Enclosures; Integrated Pole; Standard Poles; Accessories; and Wood Pole Brackets</p>	<p>One (1) year</p>

LIMITED WARRANTY

Category V Products ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products Standard Filter & Combiner Products Electronic Enclosure Products (Cabinets) Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor All-In-One FLX (Active Passive Cabines) PowerShift™ & Power Products	Two (2) years
Category W Products ValuSite® Products I-Line Accessory Products Microwave Antennas Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years
Category X Products Broadband RF Connectivity Products Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years
Category Y Products QR® Coaxial Cable	Five (5) years
Category Z Products Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products * RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller's connectors in accordance with the installation instructions.	One (1) year
Category AA Products Standard CNT® Cable, Connector, Accessory and Cable Assembly* Products * CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller's connectors by Seller or its certified distributor	Five (5) years; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Category BB Products Standard HELIAX® Cable, Connector, Accessory and Cable Assembly* Products * HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller's connectors by Seller or its certified distributor.	Ten (10) years; except for the following: (i) three (3) years for weatherproofing kits (including SureGuard boots); (ii) one (1) year for cable preparation tools (excluding blades); (iii) one year for single click-on hanger kits; and (iv) two (2) years for surge arrestors.
Category CC Products Standard ERA/ION-E®, ION-M®, ION-U®, MR, CMR, i-POI®, e-POI™, and Node Repeater Products	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment. Software Ninety (90) Days
Category DD Products In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment

LIMITED WARRANTY

Category EE Products OneCell® Powered Fiber Cable Solution: Hybrid Copper and Fiber Cables, Class 2 Power Supplies, Indoor/Outdoor POE Extenders, Field Terminated Outlets, Consolidation Boxes and Related Passive Components	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment Software Ninety (90) Days
Category FF Products Small Cell Device Management System (DMS) Software DAS Device Management System (AIMOS) Software	Ninety (90) days
Category GG Products Base Station Antenna, Small Cell Antenna & Mosaic™ Products	Two (2) years for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year
Category HH Products DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year or 1,000 hours of actual run time, whichever occurs first.
Category II Products SiteRise™ Solutions	One (1) year on workmanship for the Solution.
Category JJ Products Copper Structured Cabling Products Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of Installation
Category KK Products Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Category LL Products imVision Overlays and Controllers	Three (3) years

** For Category H and Category I Products only, if Seller is engaged by Buyer to provide Services for the implementation of the purchased Products, warranty period for such Products shall commence upon Buyer's acceptance of the Products and Services.*

*** For Category T Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing for as long as the original end user of the Product continues to own and use the Product. For Category T1 Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing (i) for as long as the original end user of the Product continues to own and use the Product or (ii) through the End of Support date, as defined in the RUCKUS End of Life Policy, whichever is earlier.*

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

Arris Indústria Eletrônica do Brasil
Ltda.
CNPJ: 09.154.836/0001-15
Avenida Torquato Tapajós, 9475
Tarumã
Manaus
Amazonas
69041-025
Brasil

Holds Certificate No:


FM 752494

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Manufacture of Television Signal Receivers / Decoders and Modems / Routers.

This certificate is traceable to the certificate number SGQ-2276 originally issued by TÜV Rheinland do Brasil Ltda. in 2009-10-09.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2009-10-09

Latest Revision Date: 2021-09-24

Effective Date: 2021-10-09

Expiry Date: 2024-10-08

Page: 1 of 1



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To be read in conjunction with the scope above or the attached appendix.

BSI Brasil: Rua Gomes de Carvalho, 1306 - 11º andar - Cjs.: 111/112, Vila Olímpia - São Paulo - SP - 04547-005 Telephone: +55 11-21489600

Americas Headquarters: BSI Group America Inc., 12950 Worldgate Drive, Suite 800, Herndon, VA 20170-6007 USA
A Member of the BSI Group of Companies.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

RoHS Certificate of Compliance



Product Name: MFA-LC02-BG/LP-50-BULK-PACK-NONSHUTTER

Product Number: 760113167

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

RoHS Certificate of Compliance



Product Name: MFA-LC02-AQ/LP-50-BULK-PACK-NONSHUTTER

Product Number: 760113142

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

RoHS Certificate of Compliance



Product Name: SFA-LC02-BL/LP-50-BULK-PACK-NONSHUTTER

Product Number: 760113159

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

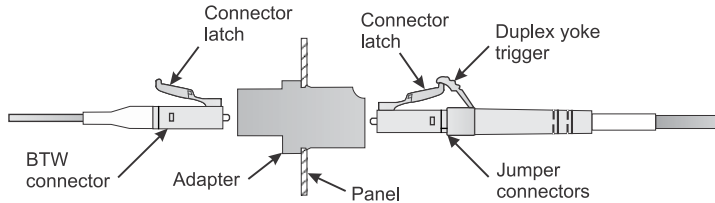
Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

For optimal connectivity performance, invest in a Fiber Optic Inspection and Cleaning Kit for your installation team.

CommScope® Cleaning and Inspection Kit – 760053199 -- Consumable Replacement Kit – 760053207

Install LC Connectors into Adapter

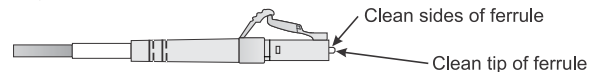
1. Install connectors into the adapter by aligning the latch on the connector with the slot on the adapter and gently push into place. An audible click is heard when the connector snaps into the adapter.
2. If a high-loss condition exists, use the LC cleaning procedures and reinstall the connector as described in Step 1.
3. When doing rearrangements or reinsertions of LC connectors, use the LC cleaning procedures to clean all components and reinstall the connectors as described in Step 1.



Clean LC Connector and Adapter

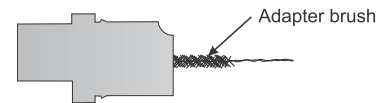
Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face. **Clean connector ferrule** inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.



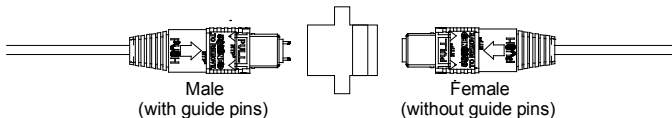
Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Do not try to clean adapter with a standard pipe cleaner. The sleeve inner diameter of LC adapters is too small. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side. Discard cleaning sticks after each use.



Install MPO Connectors into MPO Adapter

1. Before installing, remove the dust cap and refer to the MPO cleaning instructions.
2. Attach an MPO connector end into an MPO adapter by aligning the key on the connector body with the keyway in the adapter. Apply enough pressure till you hear a "click" sound, which signifies that the connector is plugged into the adapter.



3. If a high loss is present, remove the MPO connector, use the MPO cleaning instructions and reinstall the connector.
4. Whenever disconnecting and reconnecting the MPO connector, refer to the MPO cleaning instructions before reinstallation.

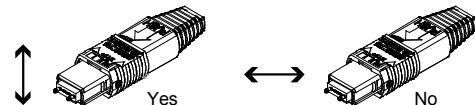
Warning: Do not connect male connector ends to each other. Doing so will damage the connector end face. Do not connect two female ends. If you do connect two female ends together, the test results will present a high insertion loss.



Cleaning the MPO Connector and MPO Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face. **Clean connector ferrule** inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Applying medium pressure, wipe the end face in direction perpendicular to fiber array and all the way around each pin. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule is not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. To prevent scratching the end face, always clean the MPO connectors with a cleaning motion from top to bottom. Never clean the MPO connector by rubbing across it from side to side.



Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently wiping inside surface. Repeat process with a dry cleaning stick.

Caution: Do not try to clean the adapter with cleaning stick if a connector is mounted in one side. Discard cleaning sticks after each use.

- For product information and support, visit us on the web at <http://www.commscope.com/SupportCenter>
- For technical assistance:
 - Within the United States, contact your local account representative or technical support at 1-800-344-0223. Outside the United States, contact your local account representative or Authorized Business Partner.
 - Within the United States, report any missing/damaged parts or any other issues to CommScope Customer Claims at 1-866-539-2795. Outside the United States, contact your local account representative or Authorized Business Partner.

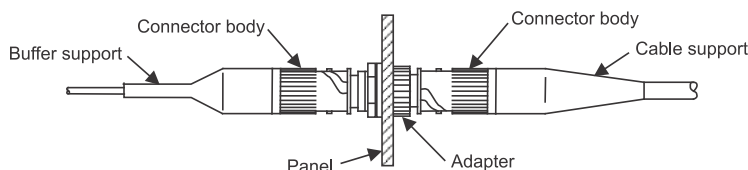
ST[®] and SC Connectors

For optimal connectivity performance, invest in a Fiber Optic Inspection and Cleaning Kit for your installation team.

CommScope[®] Cleaning and Inspection Kit – 760053199
Consumable Replacement Kit – 760053207

Install ST[®] Connectors into Adapter

1. Install the connectors into the adapter by aligning the mark on the rim of the connector body with the slot in the adapter. Complete the connection by pushing the connector into the adapter with a clockwise twist-locking motion.
2. If a high-loss condition exists, use the ST cleaning procedures and reinstall the connectors as described in Step 1.
3. When doing rearrangements or reinsertions of ST connectors, use the ST cleaning procedures to clean all components and reinstall the connectors as described in Step 1.

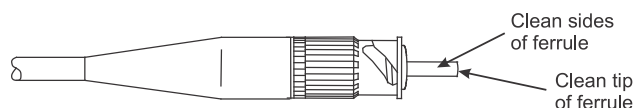


Clean ST Connector and Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face.

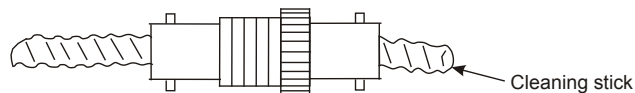
Clean connector ferrule inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.



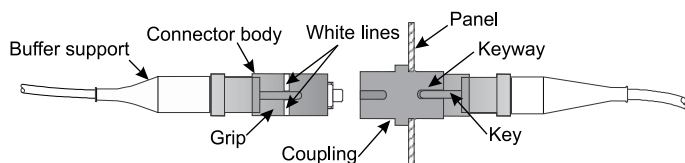
Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Discard cleaning sticks after each use. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side.



Install SC Connectors into Adapter

1. Install each connector into the adapter by aligning the key on the connector body with the keyway on the adapter. The connector is properly installed when the white line in the grip disappears inside the adapter.
2. If a high-loss condition exists, use the SC cleaning procedures and reinstall the connectors as described in Step 1.
3. When doing rearrangements or reinsertions of SC connectors, use the SC cleaning procedures to clean all components and reinstall the connectors as described in Step 1.

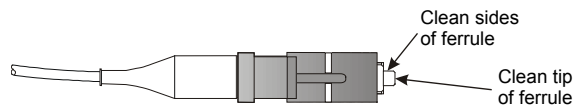


Clean SC Connector and Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face.

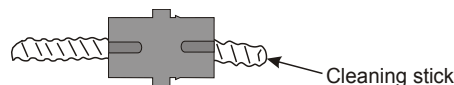
Clean connector ferrule inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.

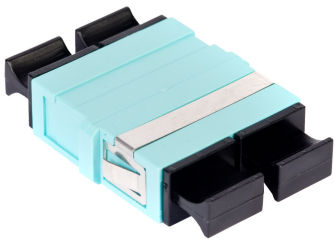


Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Discard cleaning sticks after each use. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side.



760115618 | MFA-SC02-AQ-FLANGELESS-50-BULK-PACK



LazrSPEED® SC Duplex Flangeless Adapter, Aqua, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	LazrSPEED®
Product Series	MFA

General Specifications

Body Style	Duplex
Color	Aqua
Interface	SC/UPC
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Phosphorous bronze
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Optical Specifications

Fiber Mode	Multimode
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Packaging and Weights

Packaging quantity	50
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Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value

760115618 | MFA-SC02-AQ-FLANGELESS-50-BULK-PACK

ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant



760115634 | MFA-SC02-BG-FLANGELESS-50-BULK-PACK



OptiSPEED® SC Duplex Flangeless Adapter, Beige, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	OptiSPEED®
Product Series	MFA

General Specifications

Body Style	Duplex
Color	Beige
Interface	SC/UPC
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Phosphorous bronze
---------------------------	--------------------

Optical Specifications

Fiber Mode	Multimode
------------	-----------

Packaging and Weights

Packaging quantity	50
--------------------	----

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value

760115634 | MFA-SC02-BG-FLANGELESS-50-BULK-PACK

ISO 9001:2015

Designed, manufactured and/or distributed under this quality management system

REACH-SVHC

Compliant as per SVHC revision on www.commscope.com/ProductCompliance

ROHS

Compliant



760115659 | SFA-SC02-BL-FLANGELESS-50-BULK-PACK



TeraSPEED® SC Duplex Flangeless Adapter, Blue, 50 Bulk Pack

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Fiber adapter
Product Brand	TeraSPEED®
Product Series	SFA

General Specifications

Body Style	Duplex
Color	Blue
Interface	SC/UPC
Mounting	No flange
Shuttered	No
Total Ports, quantity	2
Transmission Standards	TIA/EIA-568-B.3 TIA/EIA-604 FOCIS-3

Material Specifications

Alignment Sleeve Material	Zirconia
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Optical Specifications

Fiber Mode	Singlemode
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Packaging and Weights

Packaging quantity	50
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Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

760115659 | SFA-SC02-BL-FLANGELESS-50- BULK-PACK



CERTIFICATE

Certificate Number: 151045.000

TLID: TL1786

With Eight Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:

1100 CommScope Place SE

Hickory, NC 28602

United States

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7 (Based on and including ISO 9001:2015)

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Product Categories	Products
3.2.5 Fiber to the User	ASWXXXX, OLT (GPON)
3.2.6 Video Transmission Equipment	EQAM Products (APEX, SFP), Switched Digital Video and Resource Mgmt, Network Encryption (NE), ALOHA Interactive (ARPD, ADM, SDM), Cablevista Edge Decoder, Conditional Access Products
6.2.5 Passive Optical Network Termination Units	ONT-1xxxx, ONT1xxx
3.1.1.1.1 Metallic Conductor Cable	All Products
3.1.1.1.2 Metallic Connectors	All Products
3.1.1.2.1 Fiber Optic Cable	All Products
3.1.1.2.2 Optical Connector	All Products
3.1.1.3.2 Passive Optical Transmission Subsystems	All Products
3.1.1.3.4 Fixed Antenna Systems	All Products
3.1.2.1 Enclosures	All Products
3.1.2.3 Conduits	All Products
3.2.1.1 Manual Cross Connect Systems	All Products
8.1.4 Electromechanical Components	All Products
8.3 Cable Assemblies	All Products

Certification Structure: Multi-site

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000

ADDENDUM Page One of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7

(Based on and including ISO 9001:2015)

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services, (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	

Site Address	Certification	Product Category	Site Activities
CommScope, Inc 1100 CommScope Place SE Hickory, NC 28602 United States	TL9000HSV	3.1.1.1.1, 3.1.1.1.2, 3.1.1.2.1, 3.1.1.2.2, 3.1.1.3.2, 3.1.1.3.4, 3.1.2.1, 3.1.2.3, 3.2.1.1, 3.2.5, 3.2.6, 6.2.5, 8.1.4, 8.3	HQ (Virtual)
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	TL9000HSV	3.2.5, 3.2.6, 6.2.5, 3.1.1.3.4	HW & SW DE, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	TL9000SV	3.2.6	SW DE, SER
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	TL9000H	3.1.1.1.2, 3.2.5, 3.2.6, 6.2.5, 8.3	HW DE, SAL, SC

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Two of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
ARRIS STB de Mexico, SA de C.V. Via de la Innovacion # 402; CP 66628 Parque de Investigacion e Innovacion Tecnologica Apodaca Nuevo León; Mexico	TL9000HSV	3.2.5, 3.2.6, 6.2.5	HW & SW DE, REP
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	TL9000HV	3.1.1.3.4, 3.2.6, 3.2.5	MFG SC, REP
CommScope Technologies LLC 2601 Telecom Parkway Richardson, TX 75082 United States	TL9000H	3.1.1.3.4, 3.1.2.1	HW DE, SER
CommScope Telecommunications (China) Co. Ltd. No. 68 Su Hong XI Lu Suzhou Industrial Park, Suzhou Jiangsu 215021 Peoples Republic of China	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC,
CommScope Connectivity (Suzhou) Co. Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.1.1.2, 3.2.1.1, 8.3	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Three of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
Andrew Wireless Systems GmbH Industriering 10 Buchdorf Bavaria 86675 GERMANY	TL9000HV	3.1.1.3.4	HW DE, REP, MFG
CommScope India Private Ltd Plot No. N-2, Verna Industrial Estate Phase IV, Verna - Salcette, GOA 403 722 INDIA	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC
CommScope Italy srl Via Mengolina 20, Faenza Ravenna 48018 Italy	TL9000H	3.1.1.3.4	HW DE
Andrew Telecommunications de Reynosa, S. De R.L. de C. V. Ave. Industrial Reynosa Lote 2 al 5, Col Parque Industrial Reynosa, Reynosa Tamaulipas 88780 Mexico	TL9000H	3.1.1.3.4, 3.1.1.1.2, 3.1.2.1, 8.3	MFG
CommScope Corporation Mexico, S.A. de C.V. CCS Ave. Antonio J. Bermudez #550 Parque Ind. A. J. Bermudez Ciudad Juarez CHIH 32470 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	HW DE, MFG
CommScope Corporation Mexico, S.A. de C.V. Santiago Troncoso No. 331, Cd. Juarez CHIH 32599 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG
ADC de Delicias S. De R.L. de C.V Boulevard Fernando Baeza #1301 Fraccionamiento San Marcos Ciudad Delicias Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



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Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Four of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
CommScope Technologies UK Ltd Lomond House, Grantsmuir John Smith Business Park Kirkcaldy, Fife KY2 6NA Scotland	TL9000H	8.1.4	HW DE, SAL
CommScope Inc of North Carolina 1130 Classic Rd Apex, NC 27539 United States	TL9000H	3.1.1.2.2	HW DE, SAL
CommScope Technologies LLC 11312 S. Pipeline Road Euless, TX 76040 United States	TL9000H	8.1.4	HW DE, MFG, SAL
CommScope Connectivity LLC 501 Shenandoah Drive Shakopee MN 55379 United States	TL9000HSV	3.1.2.3 3.1.1.2.2, 3.1.1.3.2, 3.2.1.1, 8.3	HW DE, SAL, SER, SC,
CommScope Inc of North Carolina 6519 CommScope Road, Catawba, NC 28609-0199 United States	TL9000H	3.1.1.1.1, 3.1.1.1.2	HW DE, MFG, SAL
CommScope Inc of North Carolina 3642 US Hwy. 70 East Claremont NC 28610 United States	TL9000H	3.1.1.1.1, 3.1.1.2.1	HW DE, MFG, SAL

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Five of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Connectivity (Suzhou) Co. Ltd.

77 Qiming Road, Suzhou Industrial Park

Suzhou, Jiangsu 215121

Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

Manufacture metallic connectors, fiber optical jumpers and connectors, passive optical transmission sub - systems, enclosures, cable assemblies, fiber connection enclosures and communication cabinets

Product Categories	
3.1.1.1.2	Metallic Connectors
3.1.1.2.2	Optical Connector
3.1.1.3.2	Passive Optical Subsystems
3.2.1.1	Manual Cross Connect Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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证书附录

证书编号: 151045.000

TLID: TL1786

附录第 6 页, 共 8 页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普通联通信 (苏州) 有限公司

苏州工业园区启明路 77 号

江苏苏州 215121

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7
(基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器, 光纤跳线及连接器, 无源光传输子系统, 附件, 电缆组件, 光缆接头盒, 通讯机柜的生产

产品类别	
3.1.1.1.2	金属连接器
3.1.1.2.2	光学连接器
3.1.1.3.2	无源光学子系统
3.2.1.1	手动交叉连接系统
8.3	电缆组件

认证结构: 多场所

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Seven of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Telecommunications (China) Co. Ltd.

No. 68 Su Hong Xi Lu Suzhou Industrial Park,
Suzhou Jiangsu 215021
Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

制造金属连接器、光纤跳线和连接器、无源光传输子系统、外壳、电缆组件、光纤连接外壳和通信机柜 3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3

Product Categories	
3.1.1.1.1	Metallic Conductor Cable
3.1.1.1.2	Metallic Connectors
3.1.1.3.4	Fixed Antenna Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
dekra-certification.us



证书附录

证书编号: 151045.000

TLID: TL1786

附录第 8 页, 共 8 页质量管理体系和实施:

CommScope, Inc.

其场所:

康普电信 (中国) 有限公司

苏州工业园区苏虹西路 68 号,

江苏苏州 215021

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7 (基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器 · 光纤跳线及连接器 · 无源光传输子系统 · 附件 · 电缆组件 · 光缆接头盒 · 通讯机柜的生产

产品类别	
3.1.1.1.1	金属导体电缆
3.1.1.1.2	金属连接器
3.1.1.3.4	固定天线系统
8.3	电缆组件

认证结构: 多站点

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

[dekra-certification.us](https://www.dekra-certification.us)



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Euless Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

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Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - ISO 45001:2018

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

OHS 650243

and operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 for the following scope:

The occupational health & safety management system to control the hazards associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **OHS 650243**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
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CommScope Network Infrastructure System

25 Year Extended Product and Application Warranty
("System Warranty")

Terms and Conditions

Extended Product Warranty. CommScope warrants, for a period of twenty-five (25) years from the Certification Date (the “Warranty Period”), that Products in the Registered System shall be free from defects in materials or workmanship subject, to the terms and conditions below and the terms, conditions and limitations of CommScope’s Limited Product Warranty in effect at the date of sale (available at <http://www.commscope.com/Resources/Warranties/>).

Application Warranty. During the Warranty Period, the Registered System will meet or exceed the specifications set forth in the System Specification and support Applications as documented therein.

System Warranty Requirements. The System Warranty applies only to Products that are: (i) installed by an Authorized Partner, at the location listed on the System Warranty Certificate; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification; (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification; (iv) not subject to conditions that exceed the individual Product Specification(s); (v) used at the original site of installation; (vi) tested pursuant to industry standards and applicable CommScope testing requirements and satisfactorily pass such tests; and (vii) not otherwise expressly excluded or invalidated under the System Warranty Terms and Conditions. To qualify for a System Warranty, all documents, including the prescribed System test results, must be submitted to CommScope for review within sixty (60) days of installation, and registration for the System Warranty must be applied for with CommScope within ninety (90) days from the date the installation is complete. CommScope, in its sole judgment, shall determine if the System Warranty Requirements have been met. CommScope’s approval of a System Warranty shall be evidenced by a numbered registration System Warranty Certificate issued by CommScope. In the event a System Warranty Certificate is issued and CommScope subsequently discovers that any of the System Warranty requirements were not met, then the System Warranty shall be void.

Beneficiary and Warranty Transfer. CommScope will only honor System Warranty claims made by the person or entity to which the System Warranty Certificate is issued. The System Warranty may, upon prior written approval from CommScope, be transferred to a successor in interest to the site where the Registered System was originally installed.

Modifications. Moves, repairs, alterations, additions, or changes to the Registered System (“Change(s)”) are only covered by the System Warranty if: (i) performed by an Authorized Partner; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification, and (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification. Day-to-day administration and maintenance of the Registered System by the End-Customer will not void the System Warranty if performed in compliance with applicable CommScope system design and installation guidelines using CommScope approved products. All test results shall be sent for approval to CommScope along with a detailed description of the Change(s) and bill of materials within thirty (30) days of installation. If the Change(s) are approved, CommScope shall update the System Warranty registration to indicate the Change(s). Failure to comply with the foregoing relating to Change(s) shall void the System Warranty.

Exclusions from Warranty and Limitations on Liability. The “Exclusions from Warranty” and “Limitations on Liability” in the Limited Product Warranty shall apply to the System Warranty. The occurrence of an Exclusion from Warranty in the Limited Product Warranty shall void the System Warranty. The System Warranty shall also be void if any Product in the Registered System has been (i) removed from the original site of installation, (ii) altered, repaired or disassembled by a non-Authorized Partner, or (iii) exposed to, or has outside materials applied to it, including but not limited to paint, water, chemicals, solutions, cleaning supplies and lubricants (“Contamination”). End-Customer must notify an Authorized Partner or CommScope within 24 hours of any Contamination.

Outside Plant Cable is excluded from and will void the System Warranty when installed above ground and exposed to the outside environment, including but not limited to, an aerial installation. Outside Plant Cable installed underground, either by direct burial or in conduit, is not excluded from the System Warranty.

Failure of the End-Customer to submit any System Warranty claim to the authorized CommScope office as designated by CommScope within thirty (30) days following expiration of the System Warranty shall be an admission by the End-Customer and conclusive proof that the Registered System and Product(s) are in every respect as warranted and shall release CommScope and the Authorized Partner from any and all claims for damage or loss sustained by the End-Customer.

Any violation or non-compliance with the System Warranty Terms and Conditions will void the System Warranty.

Remedies. If during the Warranty Period, the End-Customer experiences problems with a Registered System or a Product in a Registered System ("Problem") and suspects there is a potential warranty claim hereunder, the End-Customer must first reasonably investigate potential causes of the suspected Problem that are not CommScope related and reasonably determine that none of these potential causes were responsible for the Problem. Once the End-Customer reasonably believes that all non-CommScope causes for the Problem are ruled out, but in no event more than thirty (30) days after the End-Customer knew or should have known of the Problem, the End-Customer must contact the Authorized Partner that installed the Registered System to report the Problem. If the Authorized Partner is unable to resolve the Problem, then the Authorized Partner will contact CommScope and make a claim under the System Warranty for further investigation and resolution.

If CommScope determines that a Problem is due to a breach of the System Warranty, CommScope will repair or replace Product as CommScope deems necessary to correct the Problem, including the provision of reasonable labor and removal and reinstallation of such Product at CommScope's discretion. CommScope shall only be responsible for costs that have received the prior written authorization of CommScope. If CommScope chooses to repair Product, CommScope may use new or reconditioned replacement parts. If CommScope chooses to replace Product, CommScope may replace with new or reconditioned products of the same or similar design. Any repair or replacement will be warranted for either (a) 90 days or (b) the remainder of the original Warranty Period, whichever is longer. If the Problem is found by CommScope or an Authorized Partner not to be related to a Product or any warranty exclusions, then End-Customer will be responsible for any costs incurred related to the Problem claim.

Choice of Law. The System Warranty shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply. The End-Customer acknowledges that as a condition to receiving the System Warranty, End-Customer unconditionally submits to the jurisdiction of the North Carolina state and federal courts. If any portion of the System Warranty is not enforceable due to local legal requirements, then such specific language shall be modified to meet local legal requirements consistent with CommScope's intent.

Definitions

The following definitions shall apply to the System Warranty:

CommScope shall mean CommScope Technologies LLC.

Application shall mean a standardized set of network technologies, protocols, and hardware for enabling communication over the prescribed System as documented by CommScope.

Authorized Partner shall mean a party that is certified by CommScope as a CommScope installation partner and that is in good standing with CommScope at the time of installation.

Authorized Reseller shall mean a party that is authorized in writing by CommScope to sell Products and that is in good standing with CommScope at the time of sale.

Certification Date shall mean the earlier of the registration date on the face of the System Warranty Certificate or the Original Installation Completion Date.

End-Customer shall mean the end-user who has the Products installed at its premises by an Authorized Partner.

Original Installation Completion Date shall mean the date that the Authorized Partner completed the installation and testing of the Registered System at the End-Customer's site being submitted for System Warranty eligibility.

Outside Plant Cable shall mean all cabling located between demarcation points in buildings, switching and data centers and the demarcation point in another such facility.

Passive shall mean signal-carrying components that exhibit no gain or contribute no energy.

Product(s) shall mean Passive products manufactured by CommScope that are contained in the bill of materials, for an end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, which were filed with the registration for the System Warranty and which were purchased from an Authorized Reseller.

Product Specification shall mean CommScope's published specification(s), in effect at the time of sale, which defines the optical and/or electrical capabilities of the individual Products.

Registered System shall mean the System designated on the System Warranty Certificate.

System refers to the end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, comprised entirely of Products approved by CommScope for the respective System and that meet all of the conditions in the "System Warranty Requirements" Section of these System Warranty Terms and Conditions.

System Specification shall mean CommScope's published specification(s) in effect at the time of sale, which describes the optical and/or electrical capabilities of the System as a whole.

System Warranty shall mean the Extended Product and Application Warranty.

System Warranty Certificate shall mean the certificate issued by CommScope evidencing CommScope's approval and issuance of a System Warranty and identifying the covered System.

Precedence. In the event of any conflict between the terms of the System Warranty and CommScope's Limited Product Warranty and/or a System Specification, the terms of the System Warranty shall control.



commscope.com

Visit our website or contact your local CommScope representative for more information.

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BR-1110431-EN (06/18)

1. **Definitions.** For purposes of this Warranty, (i) “Buyer” shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller’s quotation, order acknowledgement or confirmation), (ii) “Seller” shall mean the CommScope entity identified on such entity’s quotation, order acknowledgement, confirmation or supply agreement, (iii) “Product” shall mean a product manufactured by Seller pursuant to the applicable supply agreement, quotation, order acknowledgement or confirmation, and (iv) “Warranty Period” shall mean one year from date of original shipment from Seller’s facility unless a different time period is set forth in **Exhibit A**.
2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer.
3. **Inspection.** If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller’s inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim’s validity. Buyer shall prepay all transportation charges for such return.
4. **Remedies.** Seller’s sole and exclusive obligation and Buyer’s exclusive remedy under this Warranty is Seller’s repair or replacement of the defective Product or a credit for the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period.
5. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer’s waiver of such claim.
6. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.
7. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:
 - (a) improper installation or misapplication of parts;
 - (b) chain or system failures induced by other products or components;
 - (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
 - (d) any consumables provided with the Product and any other materials, components or products manufactured by a third party;
 - (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
 - (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
 - (g) any adjustment, modification, alteration, removal or repair of any part of the Product not expressly authorized by Seller in writing;
 - (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
 - (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller’s only obligation shall be to ensure that Product complies with Seller’s published material specifications);
 - (j) use of the Product for purposes other than that for which it was designed; or
 - (k) mishandling during shipment of the Product.

This Warranty is for Products installed and used in accordance with Seller’s design, installation and operating parameters. Buyer’s failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

8. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OR PERFORMANCE. No person is authorized to give any additional warranties on Seller’s behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER’S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED THE PURCHASE PRICE OF SUCH PRODUCTS. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED REVENUES OR PROFITS. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

9. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED PRODUCT WARRANTY

Exhibit A

Seller warrants that the Products identified below will be free from defects in material and workmanship arising under proper and normal use for the following Warranty Period:

QR® Coaxial Cable	Ten (10) years from the date of original shipment.
ValuSite® Products	Three (3) years from the date of original shipment.
I-Line Accessory Products	Three (3) years from the date of original shipment.
Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products	Five (5) years from the date of original shipment, except for the following: (i) two (2) years for surge arrestors; and (ii) one (1) year for all other accessories.
Standard CNT® Cable, Connector, Accessory and Cable Assembly† Products	Five (5) years from the date of original shipment; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Broadband RF Connectivity Products	Five (5) years from the date of original shipment.
Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)	One (1) year from the date of original shipment
FDH Products	One (1) year from the date of original shipment
Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable Assemblies	One (1) year from the date of original shipment
OSP “Box” Products	One (1) year from the date of original shipment
Mini-RDTs and RDTs	One (1) year from the date of original shipment
FOSC™, FIST™ and Tenio™	One (1) year from the date of original shipment
OSP Copper Connect and Closure Products	One (1) year from the date of original shipment
Standard HELIAX® Cable, Connector, Accessory and Cable Assembly‡ Products	Ten (10) years from the date of original shipment; except for the following: (i) three (3) years for ValuFlex® cable assemblies; (ii) three (3) years for weatherproofing kits; (iii) one (1) year for cable preparation tools (excluding blades); (iv) one year for single click-on hanger kits; and (v) two (2) years for surge arrestors.
HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes	One (1) year from the date of original shipment.
Steel Products and Rapid Deployment Monopoles	Three (3) years from the date of original shipment.
Standard ION-B®, ION-E®, ION-M®, ION-U®, MR, p-POI®, i-POI®, e-POI™, and Node Repeater Products	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment.
Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years from the date of original shipment.
ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas	Two (2) years from the date of original shipment.
InterReach Fusion®	One (1) year from the date of original shipment.
InterReach Unison®	One (1) year from the date of original shipment.
FlexWave® Spectrum	One (1) year from the date of original shipment.
FlexWave® Prism	One (1) year from the date of original shipment.
FlexWave® Active Integration Panel (AIP)	One (1) year from the date of original shipment.
A.I.M.O.S. Software Products	One (1) year from the date of original shipment.

* RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller’s connectors in accordance with the installation instructions.

† CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller’s connectors by Seller or its certified distributor.

‡ HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller’s connectors by Seller or its certified distributor.

LIMITED PRODUCT WARRANTY

In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment.
OneCell® and S1000 Small Cell Platforms (excluding software)	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment
Small Cell Device Management System (DMS) Software for OneCell® and S1000 Small Cell Platforms	Ninety (90) days from the date of original shipment
Base Station Antenna Products	Two (2) years from the date of original shipment for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year from the date of original shipment.
Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products	Two (2) years from the date of original shipment.
Standard Filter, Diplexer and Triplexer Products	Two (2) years from the date of original shipment.
DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years from the date of original shipment or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year from original shipment or 1,000 hours of actual run time, whichever occurs first. This Warranty Period does not apply to Factory Reconditioned Dehydrators, which are warranted for only one (1) year from the date of original shipment.
Microwave Antennas	Three (3) years from the date of original shipment.
Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years from the date of original shipment.
SiteRise™ Solutions	One (1) year from the date of original shipment on workmanship for the Solution.
Copper Structured Cabling Products	One (1) year from the date of Installation
Fiber Optic Panels, including Accessories, Mounting Hardware, Modules	One (1) year from the date of shipment
Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables, Accessories	One (1) year from the date of shipment
Indoor Fiber Cable Patch Cords, Cable Assemblies, Fiber Trunks	One (1) year from the date of shipment
Passive Optical Components and Value Added Modules (VAMs)	One (1) year from the date of shipment
Fiber Guide Fiber Management System (FGS)	One (1) year from the date of shipment
Optical Distribution Frames, including Modules, Blocks, Accessories and Hardware	One (1) year from the date of shipment
Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of installation.
Cabinets Cable and Apparatus Products	One (1) year from the date of original shipment.
Electronic Enclosure Products (Cabinets)	Two (2) years from the date of original shipment.
Alifabs™ Cabinets & Ancillary Products	One (1) year from the date of original shipment.
Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor	Two (2) years from the date of original shipment.
Alifabs™ Telecommunications Towers and Accessories	One (1) year from the date of original shipment.
Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Any other Software Products	Ninety (90) days from the date of original shipment.

CERTIFICATE

Certificate Number: 111045.000
Including Seven Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:
1100 CommScope Place SE
Hickory, NC 28602
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001

Business Segments	Exceptions
Connectivity and Cable Solutions (CCS)	None
Networking, Intelligent Cellular & Security Solutions (NICS)	None
Outdoor Wireless Networks (OWN)	None
Access Network Solutions (ANS)	None



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page One of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	DIST = Distribution

Site Address	Site Activities
CommScope Inc 1100 CommScope Place SE Hickory, NC 28602 United States	HQ (Virtual)
ARRIS Technology, Inc. 3871 Lakefield Drive Suwanee, GA 30024 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 101 Tournament Dr. Horsham, PA, 19044 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	SW DE, SER
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	HW & SW DE, SER, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Two of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	HW & SW DE, SAL, SER, SC
ARRIS 15 Sterling Drive Wallingford, CT 06492 United States	HW & SW DE, SER, SC
ARRIS Technology, Inc. 2450/2500 Walsh Avenue Santa Clara, CA 95051 United States	HW & SW DE, SAL, SER
Ruckus Wireless International Inc. 350 West Java Dr. Sunnyvale, CA 94089 United States	HW & SW DE, SER
Ruckus Wireless Network Technology (Shenzhen) Co. Ltd. Units C&D, 5th Floor, No. 2 Finance base, 8 KeFa Road, Shenzhen, China	SW DE, SC, HW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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1945 The Exchange SE #300
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Three of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
Site Address	Site Activities
CommScope Asia (Suzhou) Technologies Co., Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	MFG, SC
Ruckus Wireless International Inc., Taiwan Branch @ Neihsu District, Taipei City, Rui Road 411, 10th floor, Taipei	SW DE
ARRIS Group India Pvt Limited (AGIPL) Salarpuria Supreme, Ground Floor West Wing & First Floor Munnekolalu Village, Varthur Hobli, Outer Ring Road, Bangalore-560037	SW DE
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	MFG, REP, SC
ARRIS Communications Ireland Limited Building 4300, Cork Airport Business Park Kinsale Road Cork County Ireland	HW & SW DE
ARRIS Group India Private Limited "The Senate" No:33/1, Ulsoor Road, Bangalore - 560 042 India	HW & SW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Four of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Group, Inc. 50 Stranmillis Embankment Belfast, BT95FL Northern Ireland	SW DE
CommScope Czech Republic, s.r.o. Turanka 856/98B 627 00 Brno Czech Republic	HW DE,
CommScope CZ, spol. s.r.o. U Morusi 888, 53006 Pardubice Czech Republic Czech Republic	HW DE,
CommScope Connectivity UK Limited Units 1 and 4 Kinmel Park Industrial Estate Bodelwyddan, Denbighshire, LL18 5TZ United Kingdom	HW DE, MFG, SAL
CommScope Design & Integration UK Ltd. Unit 5 & 6 Eden Business Park Eden House Drive Old Malton, Malton, North Yorkshire YO17 6AE United Kingdom	HW DE, MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Five of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
CommScope Design & Integration UK Limited 412 The Quadrant, Birchwood Park Warrington, WA3 6FW United Kingdom	SER
CommScope EMEA Ltd. Corke Abbey Avenue Bray, Co. Dublin Ireland	MFG, SAL
CommScope EMEA Ltd. Diestsesteenweg 692 3010 Kessel-Lo, Belgium	HW DE, MFG, SAL
CommScope Italy Srl Via Archimede, 22/24 Agrate Brianza (MB) 20864 Italy	HW DE, REP, SW DE
Telecom Networks Americas AV. HIPOLITO YRIGROYEN 2999, DEPOSITO 6 EL TALAR, TIGRE Buenos Aires B1618AXD Argentine Republic	SAL, DIST
CommScope Networks India Private Limited Salarpuria Softzone, A Block, 1st Floor Survey No 80/1, 81/1, 81/2, B Wing, Belandur Village, Varthur Hobli, Outer Ring Bangalore – Karnataka 560103 India	SW DE
ADC India Communications Ltd. No 10 C , 2nd Phase Peenya Industrial Area Bangalore – Karnataka 560058 India	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Six of Seven

The Quality Management System and implementation of:

CommScope, Inc.

With site at:

CommScope Asia (Suzhou) Technologies Co.,Ltd.

77 Qiming Road, Suzhou Industrial Park
Suzhou, Jiangsu 215121
Peoples Republic of China

meets the requirements of the standard:

ISO 9001:2015

The validity of this certificate depends on the validity of the main certificate.

Scope:

Production of network cable, fiber cable and communication equipment component (copper patch cords, copper panel, accessories etc.)

Certification Structure: Multi-site

Certificate Expires:	January 04, 2026
Certificate Issued:	January 05, 2023
Certified Since:	January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



证书附录

证书编号: 111045.000

附录第7页,共7页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普科技 (苏州) 有限公司

中国江苏省苏州工业园区启明路77号,邮编215121

符合以下标准要求:

ISO 9001:2015

本证书的有效性取决于主证书的有效性。

范围:

网络线、光缆、通信系统设备材料 (网络跳线、配线装置等) 的生产。

认证结构: 多场所

证书有效期: 2026.01.04

发证日期: 2023.01.05

首次发证日期: 2001.1.10



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



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Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that:

Arris Indústria Eletrônica do Brasil
Ltda.
CNPJ: 09.154.836/0001-15
Avenida Torquato Tapajós, 9475
Tarumã
Manaus
Amazonas
69041-025
Brasil

Holds Certificate No:


FM 752494

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Manufacture of Television Signal Receivers / Decoders and Modems / Routers.

This certificate is traceable to the certificate number SGQ-2276 originally issued by TÜV Rheinland do Brasil Ltda. in 2009-10-09.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2009-10-09

Latest Revision Date: 2021-09-24

Effective Date: 2021-10-09

Expiry Date: 2024-10-08

Page: 1 of 1



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To be read in conjunction with the scope above or the attached appendix.

BSI Brasil: Rua Gomes de Carvalho, 1306 - 11º andar - Cjs.: 111/112, Vila Olímpia - São Paulo - SP - 04547-005 Telephone: +55 11-21489600

Americas Headquarters: BSI Group America Inc., 12950 Worldgate Drive, Suite 800, Herndon, VA 20170-6007 USA
A Member of the BSI Group of Companies.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

An electronic certificate can be authenticated [online](https://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

RoHS Certificate of Compliance

COMMScope®

Product Name: MFA-SC02-BG-FLANGELESS-50-BULK-PACK

Product Number: 760115634

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

RoHS Certificate of Compliance

COMMScope®


Product Name: MFA-SC02-AQ-FLANGELESS-50-BULK-PACK

Product Number: 760115618

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

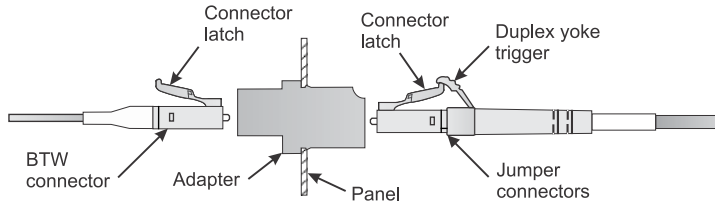
Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

For optimal connectivity performance, invest in a Fiber Optic Inspection and Cleaning Kit for your installation team.

CommScope® Cleaning and Inspection Kit – 760053199 -- Consumable Replacement Kit – 760053207

Install LC Connectors into Adapter

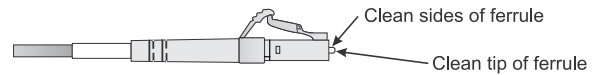
1. Install connectors into the adapter by aligning the latch on the connector with the slot on the adapter and gently push into place. An audible click is heard when the connector snaps into the adapter.
2. If a high-loss condition exists, use the LC cleaning procedures and reinstall the connector as described in Step 1.
3. When doing rearrangements or reinsertions of LC connectors, use the LC cleaning procedures to clean all components and reinstall the connectors as described in Step 1.



Clean LC Connector and Adapter

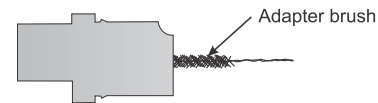
Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face. **Clean connector ferrule** inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.



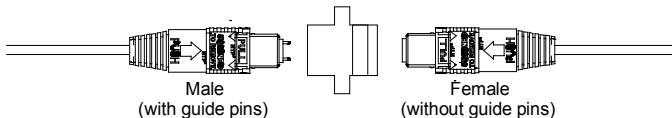
Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Do not try to clean adapter with a standard pipe cleaner. The sleeve inner diameter of LC adapters is too small. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side. Discard cleaning sticks after each use.



Install MPO Connectors into MPO Adapter

1. Before installing, remove the dust cap and refer to the MPO cleaning instructions.
2. Attach an MPO connector end into an MPO adapter by aligning the key on the connector body with the keyway in the adapter. Apply enough pressure till you hear a "click" sound, which signifies that the connector is plugged into the adapter.



3. If a high loss is present, remove the MPO connector, use the MPO cleaning instructions and reinstall the connector.
4. Whenever disconnecting and reconnecting the MPO connector, refer to the MPO cleaning instructions before reinstallation.

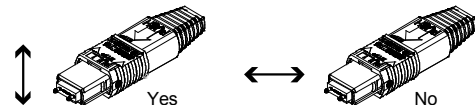
Warning: Do not connect male connector ends to each other. Doing so will damage the connector end face. Do not connect two female ends. If you do connect two female ends together, the test results will present a high insertion loss.



Cleaning the MPO Connector and MPO Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face. **Clean connector ferrule** inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Applying medium pressure, wipe the end face in direction perpendicular to fiber array and all the way around each pin. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule is not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. To prevent scratching the end face, always clean the MPO connectors with a cleaning motion from top to bottom. Never clean the MPO connector by rubbing across it from side to side.



Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently wiping inside surface. Repeat process with a dry cleaning stick.

Caution: Do not try to clean the adapter with cleaning stick if a connector is mounted in one side. Discard cleaning sticks after each use.

- For product information and support, visit us on the web at <http://www.commscope.com/SupportCenter>
- For technical assistance:
 - Within the United States, contact your local account representative or technical support at 1-800-344-0223. Outside the United States, contact your local account representative or Authorized Business Partner.
 - Within the United States, report any missing/damaged parts or any other issues to CommScope Customer Claims at 1-866-539-2795. Outside the United States, contact your local account representative or Authorized Business Partner.

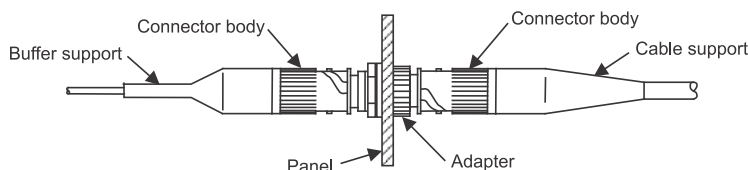
ST[®] and SC Connectors

For optimal connectivity performance, invest in a Fiber Optic Inspection and Cleaning Kit for your installation team.

CommScope[®] Cleaning and Inspection Kit – 760053199
Consumable Replacement Kit – 760053207

Install ST[®] Connectors into Adapter

1. Install the connectors into the adapter by aligning the mark on the rim of the connector body with the slot in the adapter. Complete the connection by pushing the connector into the adapter with a clockwise twist-locking motion.
2. If a high-loss condition exists, use the ST cleaning procedures and reinstall the connectors as described in Step 1.
3. When doing rearrangements or reinsertions of ST connectors, use the ST cleaning procedures to clean all components and reinstall the connectors as described in Step 1.

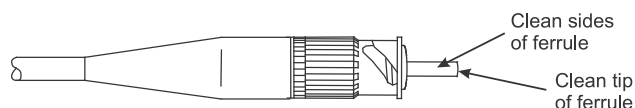


Clean ST Connector and Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face.

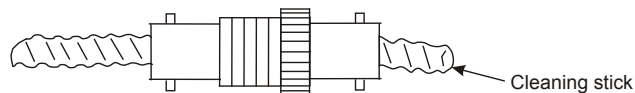
Clean connector ferrule inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.



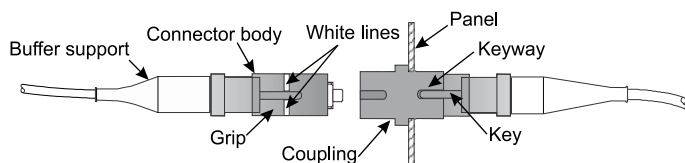
Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Discard cleaning sticks after each use. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side.



Install SC Connectors into Adapter

1. Install each connector into the adapter by aligning the key on the connector body with the keyway on the adapter. The connector is properly installed when the white line in the grip disappears inside the adapter.
2. If a high-loss condition exists, use the SC cleaning procedures and reinstall the connectors as described in Step 1.
3. When doing rearrangements or reinsertions of SC connectors, use the SC cleaning procedures to clean all components and reinstall the connectors as described in Step 1.

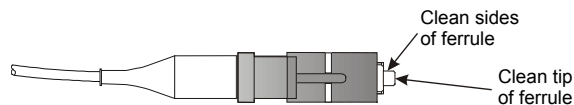


Clean SC Connector and Adapter

Clean exposed connector ferrule by lightly moistening lint-free wipe with fiber optic cleaning solution (or >91% isopropyl alcohol), and by applying medium pressure, first wipe against wet area and then onto dry area to clean potential residue from end face.

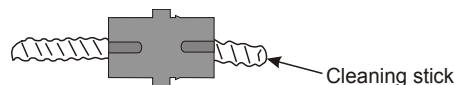
Clean connector ferrule inside adapter by inserting lightly moistened cleaning stick with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter until contact is made with connector on opposite end. Rotate cleaning stick with medium pressure in one circular motion as it is pulled away from the adapter. Repeat process using dry cleaning stick.

Caution: Signal strength will be affected if end and sides of ferrule are not thoroughly cleaned. Discard cleaning sticks after each use. Do not turn cleaning sticks back and forth pressing against connector end face. This may cause scratches if large contamination is present. Always inspect connector end face for contamination after each cleaning.



Clean adapter by inserting adapter cleaning stick (or fiber adapter sleeve brush) moistened with fiber optic cleaning solution (or >91% isopropyl alcohol) inside the adapter and gently pull out with twisting motion. Repeat process with a dry cleaning stick.

Caution: Discard cleaning sticks after each use. Do not try to clean the adapter with cleaning stick if a connector is mounted in one side.





CommScope® imVision® STP Cat 6A Modular Panel, 24 port

Product Classification

Regional Availability	Asia EMEA
Portfolio	CommScope®
Product Type	RJ45 patch panel
Product Brand	imVision®

General Specifications

ANSI/TIA Category	6A
Cable Type	Shielded
Color	Silver
Intelligence Type	iPatch® enabled
Panel Style	Straight
Rack Units	1
Total Ports, quantity	24
Wiring	T568A T568B

Dimensions

Height	44.45 mm 1.75 in
Width	482.6 mm 19 in
Depth	206.5 mm 8.13 in
Compatible Diameter Over Dielectric, maximum	1.168 mm 0.046 in

Electrical Specifications

Current Rating at Temperature	1.5 A @ 20 °C 1.5 A @ 68 °F
Dielectric Withstand Voltage, RMS, conductive surface	1,500 Vac @ 60 Hz
Insulation Resistance, minimum	500 MOhm

Mechanical Specifications

Plug Insertion Life, minimum

750 times

Environmental Specifications

Operating Temperature

-10 °C to +60 °C (+14 °F to +140 °F)

Storage Temperature

-40 °C to +70 °C (-40 °F to +158 °F)

Safety Standard

UL | cUL

Packaging and Weights

Packaging quantity

1

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant/Exempted



CERTIFICATE

Certificate Number: 111045.000
Including Seven Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:
1100 CommScope Place SE
Hickory, NC 28602
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001

Business Segments	Exceptions
Connectivity and Cable Solutions (CCS)	None
Networking, Intelligent Cellular & Security Solutions (NICS)	None
Outdoor Wireless Networks (OWN)	None
Access Network Solutions (ANS)	None



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page One of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	DIST = Distribution

Site Address	Site Activities
CommScope Inc 1100 CommScope Place SE Hickory, NC 28602 United States	HQ (Virtual)
ARRIS Technology, Inc. 3871 Lakefield Drive Suwanee, GA 30024 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 101 Tournament Dr. Horsham, PA, 19044 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	SW DE, SER
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	HW & SW DE, SER, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Two of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	HW & SW DE, SAL, SER, SC
ARRIS 15 Sterling Drive Wallingford, CT 06492 United States	HW & SW DE, SER, SC
ARRIS Technology, Inc. 2450/2500 Walsh Avenue Santa Clara, CA 95051 United States	HW & SW DE, SAL, SER
Ruckus Wireless International Inc. 350 West Java Dr. Sunnyvale, CA 94089 United States	HW & SW DE, SER
Ruckus Wireless Network Technology (Shenzhen) Co. Ltd. Units C&D, 5th Floor, No. 2 Finance base, 8 KeFa Road, Shenzhen, China	SW DE, SC, HW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Three of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
Site Address	Site Activities
CommScope Asia (Suzhou) Technologies Co., Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	MFG, SC
Ruckus Wireless International Inc., Taiwan Branch @ Neihsu District, Taipei City, Rui Road 411, 10th floor, Taipei	SW DE
ARRIS Group India Pvt Limited (AGIPL) Salarpuria Supreme, Ground Floor West Wing & First Floor Munnekolalu Village, Varthur Hobli, Outer Ring Road, Bangalore-560037	SW DE
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	MFG, REP, SC
ARRIS Communications Ireland Limited Building 4300, Cork Airport Business Park Kinsale Road Cork County Ireland	HW & SW DE
ARRIS Group India Private Limited "The Senate" No:33/1, Ulsoor Road, Bangalore - 560 042 India	HW & SW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Four of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Group, Inc. 50 Stranmillis Embankment Belfast, BT95FL Northern Ireland	SW DE
CommScope Czech Republic, s.r.o. Turanka 856/98B 627 00 Brno Czech Republic	HW DE,
CommScope CZ, spol. s.r.o. U Morusi 888, 53006 Pardubice Czech Republic Czech Republic	HW DE,
CommScope Connectivity UK Limited Units 1 and 4 Kinmel Park Industrial Estate Bodelwyddan, Denbighshire, LL18 5TZ United Kingdom	HW DE, MFG, SAL
CommScope Design & Integration UK Ltd. Unit 5 & 6 Eden Business Park Eden House Drive Old Malton, Malton, North Yorkshire YO17 6AE United Kingdom	HW DE, MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Five of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
CommScope Design & Integration UK Limited 412 The Quadrant, Birchwood Park Warrington, WA3 6FW United Kingdom	SER
CommScope EMEA Ltd. Corke Abbey Avenue Bray, Co. Dublin Ireland	MFG, SAL
CommScope EMEA Ltd. Diestsesteenweg 692 3010 Kessel-Lo, Belgium	HW DE, MFG, SAL
CommScope Italy Srl Via Archimede, 22/24 Agrate Brianza (MB) 20864 Italy	HW DE, REP, SW DE
Telecom Networks Americas AV. HIPOLITO YRIGROYEN 2999, DEPOSITO 6 EL TALAR, TIGRE Buenos Aires B1618AXD Argentine Republic	SAL, DIST
CommScope Networks India Private Limited Salarpuria Softzone, A Block, 1st Floor Survey No 80/1, 81/1, 81/2, B Wing, Belandur Village, Varthur Hobli, Outer Ring Bangalore – Karnataka 560103 India	SW DE
ADC India Communications Ltd. No 10 C , 2nd Phase Peenya Industrial Area Bangalore – Karnataka 560058 India	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Six of Seven

The Quality Management System and implementation of:

CommScope, Inc.

With site at:

CommScope Asia (Suzhou) Technologies Co.,Ltd.

77 Qiming Road, Suzhou Industrial Park
Suzhou, Jiangsu 215121
Peoples Republic of China

meets the requirements of the standard:

ISO 9001:2015

The validity of this certificate depends on the validity of the main certificate.

Scope:

Production of network cable, fiber cable and communication equipment component (copper patch cords, copper panel, accessories etc.)

Certification Structure: Multi-site

Certificate Expires:	January 04, 2026
Certificate Issued:	January 05, 2023
Certified Since:	January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



证书附录

证书编号: 111045.000

附录第7页,共7页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普科技 (苏州) 有限公司

中国江苏省苏州工业园区启明路77号,邮编215121

符合以下标准要求:

ISO 9001:2015

本证书的有效性取决于主证书的有效性。

范围:

网络线、光缆、通信系统设备材料 (网络跳线、配线装置等) 的生产。

认证结构: 多场所

证书有效期: 2026.01.04

发证日期: 2023.01.05

首次发证日期: 2001.1.10



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

An electronic certificate can be authenticated [online](http://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

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Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

LIMITED WARRANTY



1. **Definitions.** For purposes of this Warranty, (i) "Buyer" shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller's quotation, order acknowledgement or statement of work), (ii) "Seller" shall mean the CommScope entity identified on such entity's quotation, order acknowledgement, statement of work or supply agreement, (iii) "Hardware" means equipment designed and manufactured by or on behalf of Seller, or any third-party manufacturer's equipment offered for sale by Seller to Buyer, (iv) "Product" shall mean a product manufactured by or on behalf of Seller pursuant to the applicable supply agreement, quotation or order acknowledgement, and includes any combination of Hardware and Software, (v) "Services" means site engineering, system integration, product installation, implementation, training, maintenance and technical support services for Products, or other professional services provided by Seller to Buyer. Services exclude managed services and hosted cloud services provided by Seller, (vi) "Software" means Seller-licensed software, either embedded or standalone, including any updates provided, and any other enhancements, modifications, and bug fixes provided thereto, in object code form only (unless otherwise specified), and any full or partial copies thereof. Software does not include software created or owned by third parties, including but not limited to MediaKind Software, Google's Android Software or any third party application software, and (vii) "Warranty Period" means, unless a different time period is set forth in **Exhibit A**, (a) for Hardware, one year from date of original shipment from Seller's facility, (b) for Software-only Products, ninety (90) days from the date such Software is first made available to Buyer, or for Software embedded in a Hardware Product, ninety (90) days from date of original shipment of the Product from Seller's facility, and (c) for Services, thirty (30) days from the date the performance of such Services has been rendered.

2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product and Services will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and Services and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant (i) Products not purchased from Seller or its authorized resellers; (ii) that the operation of the Product will be uninterrupted or error-free; (iii) that the Product will operate in combination with other third-party products selected by Buyer; or (iv) any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer. Seller gives no warranty for, and shall have no liability with respect to, any defects arising from any software (other than the Software), including, but not limited to MediaKind Software, Android Software or any third-party application software, downloaded to or otherwise used in conjunction with the Product. Seller further warrants to Buyer that during the Warranty Period, all Services performed by Seller for Buyer will be provided in a workmanlike manner.

3. **Disclaimers.** EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY OR IN A SEPARATE, APPLICABLE SOFTWARE LICENSE AGREEMENT, ALL SOFTWARE IS LICENSED ON AN "AS IS" BASIS WITHOUT WARRANTY.

4. **Inspection and Return Authorization.** Buyer must promptly notify Seller of any claimed defect in the Product and/or Services. If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller's inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim's validity. Except as otherwise agreed to in writing, Products may not be returned to Seller without prior authorization. Buyer must contact Seller to obtain an authorization number and return the Products to the location designated by Seller. Any Products returned to Seller without proper authorization will be returned to Buyer at Buyer's expense. Risk of loss, damage and insurance responsibilities for the Products shall not pass from Buyer to Seller until delivery of the Products to Seller's designated location. Buyer shall prepay all transportation charges for such return.

5. **Remedies.** Seller's sole and exclusive obligation and Buyer's exclusive remedy under this Warranty is Seller's repair or replacement of the defective Product or re-performance of Services or issuance of a credit for the net book value of the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period. Replacement Products may be new, refurbished or contain refurbished materials.

6. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer's waiver of such claim.

7. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.

8. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:

- (a) improper installation or misapplication of parts;
- (b) chain or system failures induced by other products or components;
- (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
- (d) any consumables provided with the Product, including but not limited to batteries and other accessories, and any other materials, components or products manufactured by a third party;
- (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
- (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
- (g) any adjustment, modification, alteration, removal or repair of any part of the Product, including but not limited to removal or alteration of serial numbers or other identifying marks not expressly authorized by Seller in writing;
- (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
- (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller's only obligation shall be to ensure that Product complies with Seller's published material specifications);
- (j) use of the Product for purposes other than that for which it was designed; or
- (k) mishandling during shipment of the Product.

LIMITED WARRANTY

This Warranty is for Products installed and used in accordance with Seller's design, installation and operating parameters. Buyer's failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

9. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OR PERFORMANCE. No person is authorized to give any additional warranties on Seller's behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER'S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF AND/OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS OR SERVICES WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED (I) FOR PRODUCTS, THE DEPRECIATED VALUE OF THE PURCHASE PRICE OF SUCH PRODUCTS OR (II) FOR SERVICES, THE ACTUAL AMOUNT PAID TO SELLER FOR SERVICES DURING THE 12 MONTH PERIOD IMMEDIATELY PRIOR TO THE EVENT (OR SERIES OF EVENTS) GIVING RISE TO THE LIABILITY. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED DATA, USE, REVENUES OR PROFITS. The Products are not specifically designed, tested, manufactured or intended for operation or use in any inherently dangerous, life endangering or life support applications where any failure of the Products could lead to death, personal injury or significant physical or environmental damage (High Risk Activities). If Buyer uses the Products in High Risk Activities, including but not limited to nuclear facilities or the flight, navigation or communication of aircraft, Buyer agrees that neither Seller nor its third party licensors are liable in whole or in part, for any claims or damages arising from such use, and that Buyer shall indemnify and hold Seller and its third party licensors harmless from any and all claims for loss, cost, damage, expense or liability arising out of or in connection with any use of the Products in High Risk Activities. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

10. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED WARRANTY

Exhibit A

Product Categories	Warranty Period from Original Shipment Date*
Category A Products E6000® Converged Edge Router (CER); E6000n™ Remote PHY Devices (RPDs); E6000r™ Remote PHY Shelves; E6000n™ Remote MACPHY Devices (RMDs); vManager; Remote OLT (R-OLT); associated power supplies and accessories. FLX PON OLT portfolio including vOLT. CherryPicker products, Encoder products including ME-7000, SE-6000; DSR-4xxx, DSR-6xxx and DSR-7xxx series IRD products, and Uplink systems including TME-2020, VDP-1000, BNC, DEM, and SEM; All APEX Universal EQAM including APEX1000 and APEX3000; All Aloha interactive products including OM2000, ARPD, ADM4000 and NC1500 4.0. All SDM products. All VUE and VTM Software Products. All STDC products.	Hardware One (1) Year Software Ninety (90) Days
Category B Products All High and Standard Definition Transport Adapter MS4000™ Media Streamer	Hardware One (1) Year Software Ninety (90) days ** For certain CPE, option for 1% overship in lieu of Hardware warranty is standard
Category C Products Intentionally left blank.	
Category D Products All Third Party OEM Products: power meters; All VUE and VTM hardware platforms; NC1500 4.0 hardware platform; LQA256 Legacy QAM Adapter; Elemental Products including Live, Server, Delta, Conductor and StatMux; DC2180 Cabinet Node, Cooling Systems	Pass Through from OEM: Hardware One (1) Year Software Ninety (90) Days
Category E Products Intentionally left blank	
Category F Products All OM and SG optical node platforms, Flex Max® and Starline® amplifier platforms, RF Taps & Passives, and Optical Passives	Hardware Five (5) Years within the United States and Canada Hardware Three (3) Years outside United States and Canada Software Ninety (90) Days
Category F1 Products All CHP Headend Optical (HEO) Elements	Hardware Three (3) Years Software Ninety (90) Days
Category G1 Products All NC optical node platforms and Optical Passives, including OP/NP/DP/DC models.	Hardware Five (5) Years Software Ninety (90) Days
Category G2 Products All CH3 Headend (HEO) Elements	One (1) year
Category G3 Products All EPON and GPON ONUs, RFoG/HPON R-ONUs, including, CP8 models and associated power supplies and accessories	Hardware Three (3) Years Software Ninety (90) Days

LIMITED WARRANTY

Category H Products All ConvergeMedia™ Distribution Platforms and Management Suite, AdManager™ including SkyVision Ad Management and EMP solutions CVEx™, SVA, all Vertasent products including SVOM, SVM and ERM, AdEdge™ COM and AdEdge APS,VMS, Manifest Delivery Controller (MDC), ARRIS Video Content Manager (AVCM) and Next Generation Insertion (NGI) and Multicast ABR.	Hardware One (1) Year Software Ninety (90) Days
Category I Products ServAssure® Advanced, ServAssure® NXT - Alarm Central, ServAssure® NXT - Analyze, ServAssure Domain Manager and EventAssure™. WorkAssure™® Workforce Management, Mobile TV, SecureMedia and Titanium	Hardware One (1) Year Software Ninety (90) Days
Category J Products Intentionally left blank	
Category K Products Intentionally left blank.	
Category L Products Intentionally left blank	
Category M Products Intentionally left blank.	
Category N Products Intentionally left blank.	
Category O Products All CAS Products including DAC, CASMR (and associated plug-ins), CAST, Advisor, CSS, OLL, CSS-Lite, KLS, DKS, CPMS	DAC, CASMR, CAST, Advisor, CSS Hardware Three (3) Years OLL, CSS-Lite, KLS, DKS, OLES, CPMS Hardware One (1) Year Software Ninety (90) Days
Category P Products Intentionally left blank.	
Category P1 Products Intentionally left blank	
Category Q Products Intentionally left blank	
Category R Products Intentionally left blank	
Category R1 Products Intentionally left blank	
Category S Products Intentionally left blank	
Category S1 Products Intentionally left blank	

LIMITED WARRANTY

<p>Category T Products RUCKUS Wi-Fi</p>	<p>Hardware:</p> <ul style="list-style-type: none"> - Indoor Access Points and Wall Plate Access Points – Limited Lifetime Warranty,** except for access points with an “e” suffix (e.g., R350e), for which the HW warranty period is one (1) year. - Outdoor Access Points – One (1) Year - Controllers – One (1) Year, except ZoneDirector controllers are covered by the Limited Lifetime Warranty** <p>Software Ninety (90) Days</p>
<p>Category T1 Products RUCKUS ICX Switches</p>	<ul style="list-style-type: none"> - ICX Switches (including switch modules, PSUs, and Fans, but excluding removable optics/transceivers and LEDs) – Limited Lifetime Warranty,** except for ICX 7150- C08PT, for which the HW warranty period is 13 months. - LEDs – 12 months - Removable Optics/Transceivers – 60 months (13 months if shipped from Seller prior to June 1, 2021) <p>Software: Limited lifetime access to defect repairs, and software maintenance updates through end of support date of product</p>
<p>Category T2 Products Intentionally left blank</p>	
<p>Category U Products</p> <p>Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)</p> <p>NovuX Products</p> <p>Prodigy</p> <p>Products FDH</p> <p>Products</p> <p>Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable</p> <p>Assemblies OSP “Box” Products</p> <p>Mini-RDTs and RDTs</p> <p>FOSC™, FIST™ and</p> <p>Tenio™</p> <p>OSP Copper Connect and Closure Products</p> <p>HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes</p> <p>Fiber Optic Panels, including Accessories, Mounting Hardware, Modules</p> <p>Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables,</p> <p>Accessories Indoor Fiber Cable, Patch Cords, Cable Assemblies, Fiber Trunks</p> <p>Passive Optical Components and Value Added Modules (VAMs)</p> <p>FiberGuide® : Fiber cable Management System</p> <p>Optical Distribution Frames, including Modules, Blocks, Accessories and</p> <p>Hardware Cabinets Cable and Apparatus Products</p> <p>Alifabs™ Cabinets & Ancillary Products</p> <p>Alifabs™ Telecommunications Towers and Accessories</p> <p>Metro Cell Products, including Enclosures; Integrated Pole; Standard Poles; Accessories; and Wood Pole Brackets</p>	<p>One (1) year</p>

LIMITED WARRANTY

Category V Products ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products Standard Filter & Combiner Products Electronic Enclosure Products (Cabinets) Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor All-In-One FLX (Active Passive Cabines) PowerShift™ & Power Products	Two (2) years
Category W Products ValuSite® Products I-Line Accessory Products Microwave Antennas Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years
Category X Products Broadband RF Connectivity Products Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years
Category Y Products QR® Coaxial Cable	Five (5) years
Category Z Products Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products * RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller's connectors in accordance with the installation instructions.	One (1) year
Category AA Products Standard CNT® Cable, Connector, Accessory and Cable Assembly* Products * CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller's connectors by Seller or its certified distributor	Five (5) years; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Category BB Products Standard HELIAX® Cable, Connector, Accessory and Cable Assembly* Products * HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller's connectors by Seller or its certified distributor.	Ten (10) years; except for the following: (i) three (3) years for weatherproofing kits (including SureGuard boots); (ii) one (1) year for cable preparation tools (excluding blades); (iii) one year for single click-on hanger kits; and (iv) two (2) years for surge arrestors.
Category CC Products Standard ERA/ION-E®, ION-M®, ION-U®, MR, CMR, i-POI®, e-POI™, and Node Repeater Products	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment. Software Ninety (90) Days
Category DD Products In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment

LIMITED WARRANTY

Category EE Products OneCell® Powered Fiber Cable Solution: Hybrid Copper and Fiber Cables, Class 2 Power Supplies, Indoor/Outdoor POE Extenders, Field Terminated Outlets, Consolidation Boxes and Related Passive Components	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment Software Ninety (90) Days
Category FF Products Small Cell Device Management System (DMS) Software DAS Device Management System (AIMOS) Software	Ninety (90) days
Category GG Products Base Station Antenna, Small Cell Antenna & Mosaic™ Products	Two (2) years for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year
Category HH Products DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year or 1,000 hours of actual run time, whichever occurs first.
Category II Products SiteRise™ Solutions	One (1) year on workmanship for the Solution.
Category JJ Products Copper Structured Cabling Products Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of Installation
Category KK Products Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Category LL Products imVision Overlays and Controllers	Three (3) years

** For Category H and Category I Products only, if Seller is engaged by Buyer to provide Services for the implementation of the purchased Products, warranty period for such Products shall commence upon Buyer's acceptance of the Products and Services.*

*** For Category T Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing for as long as the original end user of the Product continues to own and use the Product. For Category T1 Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing (i) for as long as the original end user of the Product continues to own and use the Product or (ii) through the End of Support date, as defined in the RUCKUS End of Life Policy, whichever is earlier.*

RoHS Certificate of Compliance

COMMScope®

Product Name: CPP-IP-6A-STP-1U-24

Product Number: 760249308

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	



CommScope® imVision® STP Cat 6A Modular Panel, 24 port

Product Classification

Regional Availability	Asia EMEA
Portfolio	CommScope®
Product Type	RJ45 patch panel
Product Brand	imVision®

General Specifications

ANSI/TIA Category	6A
Cable Type	Shielded
Color	Silver
Intelligence Type	iPatch® enabled
Panel Style	Straight
Rack Units	1
Total Ports, quantity	24
Wiring	T568A T568B

Dimensions

Height	44.45 mm 1.75 in
Width	482.6 mm 19 in
Depth	206.5 mm 8.13 in
Compatible Diameter Over Dielectric, maximum	1.168 mm 0.046 in

Electrical Specifications

Current Rating at Temperature	1.5 A @ 20 °C 1.5 A @ 68 °F
Dielectric Withstand Voltage, RMS, conductive surface	1,500 Vac @ 60 Hz
Insulation Resistance, minimum	500 MOhm

Mechanical Specifications

Plug Insertion Life, minimum

750 times

Environmental Specifications

Operating Temperature

-10 °C to +60 °C (+14 °F to +140 °F)

Storage Temperature

-40 °C to +70 °C (-40 °F to +158 °F)

Safety Standard

UL | cUL

Packaging and Weights

Packaging quantity

1

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant/Exempted



CERTIFICATE

Certificate Number: 111045.000
Including Seven Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:
1100 CommScope Place SE
Hickory, NC 28602
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001

Business Segments	Exceptions
Connectivity and Cable Solutions (CCS)	None
Networking, Intelligent Cellular & Security Solutions (NICS)	None
Outdoor Wireless Networks (OWN)	None
Access Network Solutions (ANS)	None



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page One of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	DIST = Distribution

Site Address	Site Activities
CommScope Inc 1100 CommScope Place SE Hickory, NC 28602 United States	HQ (Virtual)
ARRIS Technology, Inc. 3871 Lakefield Drive Suwanee, GA 30024 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 101 Tournament Dr. Horsham, PA, 19044 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	SW DE, SER
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	HW & SW DE, SER, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Two of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	HW & SW DE, SAL, SER, SC
ARRIS 15 Sterling Drive Wallingford, CT 06492 United States	HW & SW DE, SER, SC
ARRIS Technology, Inc. 2450/2500 Walsh Avenue Santa Clara, CA 95051 United States	HW & SW DE, SAL, SER
Ruckus Wireless International Inc. 350 West Java Dr. Sunnyvale, CA 94089 United States	HW & SW DE, SER
Ruckus Wireless Network Technology (Shenzhen) Co. Ltd. Units C&D, 5th Floor, No. 2 Finance base, 8 KeFa Road, Shenzhen, China	SW DE, SC, HW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Three of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
Site Address	Site Activities
CommScope Asia (Suzhou) Technologies Co., Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	MFG, SC
Ruckus Wireless International Inc., Taiwan Branch @ Neihsu District, Taipei City, Rui Road 411, 10th floor, Taipei	SW DE
ARRIS Group India Pvt Limited (AGIPL) Salarpuria Supreme, Ground Floor West Wing & First Floor Munnekolalu Village, Varthur Hobli, Outer Ring Road, Bangalore-560037	SW DE
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	MFG, REP, SC
ARRIS Communications Ireland Limited Building 4300, Cork Airport Business Park Kinsale Road Cork County Ireland	HW & SW DE
ARRIS Group India Private Limited "The Senate" No:33/1, Ulsoor Road, Bangalore - 560 042 India	HW & SW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Four of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Group, Inc. 50 Stranmillis Embankment Belfast, BT95FL Northern Ireland	SW DE
CommScope Czech Republic, s.r.o. Turanka 856/98B 627 00 Brno Czech Republic	HW DE,
CommScope CZ, spol. s.r.o. U Morusi 888, 53006 Pardubice Czech Republic Czech Republic	HW DE,
CommScope Connectivity UK Limited Units 1 and 4 Kinmel Park Industrial Estate Bodelwyddan, Denbighshire, LL18 5TZ United Kingdom	HW DE, MFG, SAL
CommScope Design & Integration UK Ltd. Unit 5 & 6 Eden Business Park Eden House Drive Old Malton, Malton, North Yorkshire YO17 6AE United Kingdom	HW DE, MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Five of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
CommScope Design & Integration UK Limited 412 The Quadrant, Birchwood Park Warrington, WA3 6FW United Kingdom	SER
CommScope EMEA Ltd. Corke Abbey Avenue Bray, Co. Dublin Ireland	MFG, SAL
CommScope EMEA Ltd. Diestsesteenweg 692 3010 Kessel-Lo, Belgium	HW DE, MFG, SAL
CommScope Italy Srl Via Archimede, 22/24 Agrate Brianza (MB) 20864 Italy	HW DE, REP, SW DE
Telecom Networks Americas AV. HIPOLITO YRIGROYEN 2999, DEPOSITO 6 EL TALAR, TIGRE Buenos Aires B1618AXD Argentine Republic	SAL, DIST
CommScope Networks India Private Limited Salarpuria Softzone, A Block, 1st Floor Survey No 80/1, 81/1, 81/2, B Wing, Belandur Village, Varthur Hobli, Outer Ring Bangalore – Karnataka 560103 India	SW DE
ADC India Communications Ltd. No 10 C , 2nd Phase Peenya Industrial Area Bangalore – Karnataka 560058 India	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Six of Seven

The Quality Management System and implementation of:

CommScope, Inc.

With site at:

CommScope Asia (Suzhou) Technologies Co.,Ltd.

77 Qiming Road, Suzhou Industrial Park
Suzhou, Jiangsu 215121
Peoples Republic of China

meets the requirements of the standard:

ISO 9001:2015

The validity of this certificate depends on the validity of the main certificate.

Scope:

Production of network cable, fiber cable and communication equipment component (copper patch cords, copper panel, accessories etc.)

Certification Structure: Multi-site

Certificate Expires:	January 04, 2026
Certificate Issued:	January 05, 2023
Certified Since:	January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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<https://www.dekra.us/en/audits/>



证书附录

证书编号: 111045.000

附录第7页,共7页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普科技 (苏州) 有限公司

中国江苏省苏州工业园区启明路77号,邮编215121

符合以下标准要求:

ISO 9001:2015

本证书的有效性取决于主证书的有效性。

范围:

网络线、光缆、通信系统设备材料 (网络跳线、配线装置等) 的生产。

认证结构: 多场所

证书有效期: 2026.01.04

发证日期: 2023.01.05

首次发证日期: 2001.1.10



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
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(215) 997-4519
<https://www.dekra.us/en/audits/>



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Euless Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 5 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

LIMITED WARRANTY



1. **Definitions.** For purposes of this Warranty, (i) "Buyer" shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller's quotation, order acknowledgement or statement of work), (ii) "Seller" shall mean the CommScope entity identified on such entity's quotation, order acknowledgement, statement of work or supply agreement, (iii) "Hardware" means equipment designed and manufactured by or on behalf of Seller, or any third-party manufacturer's equipment offered for sale by Seller to Buyer, (iv) "Product" shall mean a product manufactured by or on behalf of Seller pursuant to the applicable supply agreement, quotation or order acknowledgement, and includes any combination of Hardware and Software, (v) "Services" means site engineering, system integration, product installation, implementation, training, maintenance and technical support services for Products, or other professional services provided by Seller to Buyer. Services exclude managed services and hosted cloud services provided by Seller, (vi) "Software" means Seller-licensed software, either embedded or standalone, including any updates provided, and any other enhancements, modifications, and bug fixes provided thereto, in object code form only (unless otherwise specified), and any full or partial copies thereof. Software does not include software created or owned by third parties, including but not limited to MediaKind Software, Google's Android Software or any third party application software, and (vii) "Warranty Period" means, unless a different time period is set forth in **Exhibit A**, (a) for Hardware, one year from date of original shipment from Seller's facility, (b) for Software-only Products, ninety (90) days from the date such Software is first made available to Buyer, or for Software embedded in a Hardware Product, ninety (90) days from date of original shipment of the Product from Seller's facility, and (c) for Services, thirty (30) days from the date the performance of such Services has been rendered.

2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product and Services will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and Services and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant (i) Products not purchased from Seller or its authorized resellers; (ii) that the operation of the Product will be uninterrupted or error-free; (iii) that the Product will operate in combination with other third-party products selected by Buyer; or (iv) any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer. Seller gives no warranty for, and shall have no liability with respect to, any defects arising from any software (other than the Software), including, but not limited to MediaKind Software, Android Software or any third-party application software, downloaded to or otherwise used in conjunction with the Product. Seller further warrants to Buyer that during the Warranty Period, all Services performed by Seller for Buyer will be provided in a workmanlike manner.

3. **Disclaimers.** EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY OR IN A SEPARATE, APPLICABLE SOFTWARE LICENSE AGREEMENT, ALL SOFTWARE IS LICENSED ON AN "AS IS" BASIS WITHOUT WARRANTY.

4. **Inspection and Return Authorization.** Buyer must promptly notify Seller of any claimed defect in the Product and/or Services. If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller's inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim's validity. Except as otherwise agreed to in writing, Products may not be returned to Seller without prior authorization. Buyer must contact Seller to obtain an authorization number and return the Products to the location designated by Seller. Any Products returned to Seller without proper authorization will be returned to Buyer at Buyer's expense. Risk of loss, damage and insurance responsibilities for the Products shall not pass from Buyer to Seller until delivery of the Products to Seller's designated location. Buyer shall prepay all transportation charges for such return.

5. **Remedies.** Seller's sole and exclusive obligation and Buyer's exclusive remedy under this Warranty is Seller's repair or replacement of the defective Product or re-performance of Services or issuance of a credit for the net book value of the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period. Replacement Products may be new, refurbished or contain refurbished materials.

6. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer's waiver of such claim.

7. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.

8. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:

- (a) improper installation or misapplication of parts;
- (b) chain or system failures induced by other products or components;
- (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
- (d) any consumables provided with the Product, including but not limited to batteries and other accessories, and any other materials, components or products manufactured by a third party;
- (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
- (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
- (g) any adjustment, modification, alteration, removal or repair of any part of the Product, including but not limited to removal or alteration of serial numbers or other identifying marks not expressly authorized by Seller in writing;
- (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
- (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller's only obligation shall be to ensure that Product complies with Seller's published material specifications);
- (j) use of the Product for purposes other than that for which it was designed; or
- (k) mishandling during shipment of the Product.

LIMITED WARRANTY

This Warranty is for Products installed and used in accordance with Seller's design, installation and operating parameters. Buyer's failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

9. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OF PERFORMANCE. No person is authorized to give any additional warranties on Seller's behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER'S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF AND/OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS OR SERVICES WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED (I) FOR PRODUCTS, THE DEPRECIATED VALUE OF THE PURCHASE PRICE OF SUCH PRODUCTS OR (II) FOR SERVICES, THE ACTUAL AMOUNT PAID TO SELLER FOR SERVICES DURING THE 12 MONTH PERIOD IMMEDIATELY PRIOR TO THE EVENT (OR SERIES OF EVENTS) GIVING RISE TO THE LIABILITY. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED DATA, USE, REVENUES OR PROFITS. The Products are not specifically designed, tested, manufactured or intended for operation or use in any inherently dangerous, life endangering or life support applications where any failure of the Products could lead to death, personal injury or significant physical or environmental damage (High Risk Activities). If Buyer uses the Products in High Risk Activities, including but not limited to nuclear facilities or the flight, navigation or communication of aircraft, Buyer agrees that neither Seller nor its third party licensors are liable in whole or in part, for any claims or damages arising from such use, and that Buyer shall indemnify and hold Seller and its third party licensors harmless from any and all claims for loss, cost, damage, expense or liability arising out of or in connection with any use of the Products in High Risk Activities. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

10. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED WARRANTY

Exhibit A

Product Categories	Warranty Period from Original Shipment Date*
Category A Products E6000® Converged Edge Router (CER); E6000n™ Remote PHY Devices (RPDs); E6000r™ Remote PHY Shelves; E6000n™ Remote MACPHY Devices (RMDs); vManager; Remote OLT (R-OLT); associated power supplies and accessories. FLX PON OLT portfolio including vOLT. CherryPicker products, Encoder products including ME-7000, SE-6000; DSR-4xxx, DSR-6xxx and DSR-7xxx series IRD products, and Uplink systems including TME-2020, VDP-1000, BNC, DEM, and SEM; All APEX Universal EQAM including APEX1000 and APEX3000; All Aloha interactive products including OM2000, ARPD, ADM4000 and NC1500 4.0. All SDM products. All VUE and VTM Software Products. All STDC products.	Hardware One (1) Year Software Ninety (90) Days
Category B Products All High and Standard Definition Transport Adapter MS4000™ Media Streamer	Hardware One (1) Year Software Ninety (90) days ** For certain CPE, option for 1% overship in lieu of Hardware warranty is standard
Category C Products Intentionally left blank.	
Category D Products All Third Party OEM Products: power meters; All VUE and VTM hardware platforms; NC1500 4.0 hardware platform; LQA256 Legacy QAM Adapter; Elemental Products including Live, Server, Delta, Conductor and StatMux; DC2180 Cabinet Node, Cooling Systems	Pass Through from OEM: Hardware One (1) Year Software Ninety (90) Days
Category E Products Intentionally left blank	
Category F Products All OM and SG optical node platforms, Flex Max® and Starline® amplifier platforms, RF Taps & Passives, and Optical Passives	Hardware Five (5) Years within the United States and Canada Hardware Three (3) Years outside United States and Canada Software Ninety (90) Days
Category F1 Products All CHP Headend Optical (HEO) Elements	Hardware Three (3) Years Software Ninety (90) Days
Category G1 Products All NC optical node platforms and Optical Passives, including OP/NP/DP/DC models.	Hardware Five (5) Years Software Ninety (90) Days
Category G2 Products All CH3 Headend (HEO) Elements	One (1) year
Category G3 Products All EPON and GPON ONUs, RFoG/HPON R-ONUs, including, CP8 models and associated power supplies and accessories	Hardware Three (3) Years Software Ninety (90) Days

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Category H Products All ConvergeMedia™ Distribution Platforms and Management Suite, AdManager™ including SkyVision Ad Management and EMP solutions CVEx™, SVA, all Vertasent products including SVOM, SVM and ERM, AdEdge™ COM and AdEdge APS,VMS, Manifest Delivery Controller (MDC), ARRIS Video Content Manager (AVCM) and Next Generation Insertion (NGI) and Multicast ABR.	Hardware One (1) Year Software Ninety (90) Days
Category I Products ServAssure® Advanced, ServAssure® NXT - Alarm Central, ServAssure® NXT - Analyze, ServAssure Domain Manager and EventAssure™. WorkAssure™® Workforce Management, Mobile TV, SecureMedia and Titanium	Hardware One (1) Year Software Ninety (90) Days
Category J Products Intentionally left blank	
Category K Products Intentionally left blank.	
Category L Products Intentionally left blank	
Category M Products Intentionally left blank.	
Category N Products Intentionally left blank.	
Category O Products All CAS Products including DAC, CASMR (and associated plug-ins), CAST, Advisor, CSS, OLL, CSS-Lite, KLS, DKS, CPMS	DAC, CASMR, CAST, Advisor, CSS Hardware Three (3) Years OLL, CSS-Lite, KLS, DKS, OLES, CPMS Hardware One (1) Year Software Ninety (90) Days
Category P Products Intentionally left blank.	
Category P1 Products Intentionally left blank	
Category Q Products Intentionally left blank	
Category R Products Intentionally left blank	
Category R1 Products Intentionally left blank	
Category S Products Intentionally left blank	
Category S1 Products Intentionally left blank	

LIMITED WARRANTY

<p>Category T Products RUCKUS Wi-Fi</p>	<p>Hardware:</p> <ul style="list-style-type: none"> - Indoor Access Points and Wall Plate Access Points – Limited Lifetime Warranty,** except for access points with an “e” suffix (e.g., R350e), for which the HW warranty period is one (1) year. - Outdoor Access Points – One (1) Year - Controllers – One (1) Year, except ZoneDirector controllers are covered by the Limited Lifetime Warranty** <p>Software Ninety (90) Days</p>
<p>Category T1 Products RUCKUS ICX Switches</p>	<ul style="list-style-type: none"> - ICX Switches (including switch modules, PSUs, and Fans, but excluding removable optics/transceivers and LEDs) – Limited Lifetime Warranty,** except for ICX 7150- C08PT, for which the HW warranty period is 13 months. - LEDs – 12 months - Removable Optics/Transceivers – 60 months (13 months if shipped from Seller prior to June 1, 2021) <p>Software: Limited lifetime access to defect repairs, and software maintenance updates through end of support date of product</p>
<p>Category T2 Products Intentionally left blank</p>	
<p>Category U Products</p> <p>Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)</p> <p>NovuX Products</p> <p>Prodigy</p> <p>Products FDH</p> <p>Products</p> <p>Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable</p> <p>Assemblies OSP “Box” Products</p> <p>Mini-RDTs and RDTs</p> <p>FOSC™, FIST™ and</p> <p>Tenio™</p> <p>OSP Copper Connect and Closure Products</p> <p>HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes</p> <p>Fiber Optic Panels, including Accessories, Mounting Hardware, Modules</p> <p>Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables,</p> <p>Accessories Indoor Fiber Cable, Patch Cords, Cable Assemblies, Fiber Trunks</p> <p>Passive Optical Components and Value Added Modules (VAMs)</p> <p>FiberGuide® : Fiber cable Management System</p> <p>Optical Distribution Frames, including Modules, Blocks, Accessories and</p> <p>Hardware Cabinets Cable and Apparatus Products</p> <p>Alifabs™ Cabinets & Ancillary Products</p> <p>Alifabs™ Telecommunications Towers and Accessories</p> <p>Metro Cell Products, including Enclosures; Integrated Pole; Standard Poles; Accessories; and Wood Pole Brackets</p>	<p>One (1) year</p>

LIMITED WARRANTY

Category V Products ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products Standard Filter & Combiner Products Electronic Enclosure Products (Cabinets) Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor All-In-One FLX (Active Passive Cabines) PowerShift™ & Power Products	Two (2) years
Category W Products ValuSite® Products I-Line Accessory Products Microwave Antennas Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years
Category X Products Broadband RF Connectivity Products Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years
Category Y Products QR® Coaxial Cable	Five (5) years
Category Z Products Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products * RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller's connectors in accordance with the installation instructions.	One (1) year
Category AA Products Standard CNT® Cable, Connector, Accessory and Cable Assembly* Products * CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller's connectors by Seller or its certified distributor	Five (5) years; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Category BB Products Standard HELIAX® Cable, Connector, Accessory and Cable Assembly* Products * HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller's connectors by Seller or its certified distributor.	Ten (10) years; except for the following: (i) three (3) years for weatherproofing kits (including SureGuard boots); (ii) one (1) year for cable preparation tools (excluding blades); (iii) one year for single click-on hanger kits; and (iv) two (2) years for surge arrestors.
Category CC Products Standard ERA/ION-E®, ION-M®, ION-U®, MR, CMR, i-POI®, e-POI™, and Node Repeater Products	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment. Software Ninety (90) Days
Category DD Products In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment

LIMITED WARRANTY

Category EE Products OneCell® Powered Fiber Cable Solution: Hybrid Copper and Fiber Cables, Class 2 Power Supplies, Indoor/Outdoor POE Extenders, Field Terminated Outlets, Consolidation Boxes and Related Passive Components	Hardware, the earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment Software Ninety (90) Days
Category FF Products Small Cell Device Management System (DMS) Software DAS Device Management System (AIMOS) Software	Ninety (90) days
Category GG Products Base Station Antenna, Small Cell Antenna & Mosaic™ Products	Two (2) years for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year
Category HH Products DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year or 1,000 hours of actual run time, whichever occurs first.
Category II Products SiteRise™ Solutions	One (1) year on workmanship for the Solution.
Category JJ Products Copper Structured Cabling Products Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of Installation
Category KK Products Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Category LL Products imVision Overlays and Controllers	Three (3) years

** For Category H and Category I Products only, if Seller is engaged by Buyer to provide Services for the implementation of the purchased Products, warranty period for such Products shall commence upon Buyer's acceptance of the Products and Services.*

*** For Category T Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing for as long as the original end user of the Product continues to own and use the Product. For Category T1 Products only, "Limited Lifetime Warranty" means the period beginning on the Product shipment date and continuing (i) for as long as the original end user of the Product continues to own and use the Product or (ii) through the End of Support date, as defined in the RUCKUS End of Life Policy, whichever is earlier.*

RoHS Certificate of Compliance

COMMScope®

Product Name: CPP-IP-6A-STP-1U-24

Product Number: 760249308

Company Name: CommScope
3642 E US Highway 70
Claremont, NC 28610 USA

Contact: ProductCompliance@Commscope.com

Generated on: May 06, 2024

Certified by: 

Vinatha Viswanathan, Director Product Compliance

Disclaimer

This information is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information they provided and our analysis and assessment of the risks. This information is subject to change and if a change occurs which affects compliance, then this Statement will be updated. Compliance to EU ROHS 2011/65 amended by EU RoHS 2015/863 means the part numbers have a maximum concentration of no more than 0.1% by weight in homogenous materials for lead, hexavalent chromium, mercury, PBB, PBDE, and 0.01% for cadmium, or qualify for an exemption to these limits as defined in the Annexes of Directive 2011/65/EU (RoHS2). These parts also have a maximum concentration of no more than 0.1% by weight in homogenous materials for DEHP, BBP, DBP and DIBP (substances that are restricted starting from July 22, 2019). Finished electrical and electronic products will be CE marked as required by Directive 2011/65/EU. Components may not be CE marked.

Compliance Status	Regulation	Revision	RoHS exemptions if any
Compliant	ROHS	EU RoHS - 2011/65/EU	

Modular Plugs, Unshielded and Shielded

1. SCOPE**1.1. Content**

This specification covers performance, tests and quality requirements for Shielded and Unshielded Modular Plugs used to provide a universal connection interface between premise wiring of an office and the user's network of communications equipment (for data and voice networking systems). These assemblies are designed for installation onto various cables. Plugs incorporate IPC terminal for terminating twisted pair communications cable. See customer drawings for cable conductor diameter, insulation diameter and cable diameter compatibility

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence

2.1. CommScope® Documents

- 501-131013: Qualification Test Report (Modular Plugs) Revision A
- 408-8734 Terminating Modules 791804-[] for Use with Modular Plug Dual Terminators
- 408-8738: PRO-CRIMPER* III Hand Crimping Tool Assembly 790163-[]
- 408-9930: PRO-CRIMPER* III Hand Crimping Tool Frame Assembly 354940-[]
- 409-10010 Modular Plug Dual Terminator 1320840-[]

2.2. Industry Documents

- ISO/IEC 11801: Edition 2.2 : Generic Cabling for Customer Premises
- ISO/IEC 60603-7 Edition 3.1: Detail Specification for 8-way, Unshielded, Free and Fixed Connectors
- ISO/IEC 60603-7-1 Edition 3.0: Detail Specification for 8-way, Shielded, Free and Fixed Connectors
- ANSI/TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- IEC 61935-2 Edition 3.0: Specification for the Testing of Balanced and Coaxial Information Technology Cabling – Part 2: Cords as Specified in ISO/IEC 11801 and Related Standards
- IEC 60352-6 Edition 1.0: Insulation Piercing Connections- General Requirements, Test Methods and Practical Guidance
- IEC 60512: Basic Testing Procedures and Measuring Methods for Electromechanical Components for Electronic Equipment (as indicated in Figure 1)
- IEC 60068: Basic Environmental Testing Procedures (as indicated in Figure 1)

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Wire Range

- See specific customer drawings for appropriate cable dimensions compatibility

3.4. Ratings

- Voltage: 150 volts AC maximum
- Current: Signal application only, 0.75 ampere maximum
- Temperature: -10 °C to +60 °C (per ISO/IEC 11801, Section 10.1.4)

Increased temperatures will affect the current carrying capacity of the electrical system. Consult the Environmental Testing section of this specification and the De-rating Curve, per IEC 60603-7, Figure 10 to determine the appropriate application of product.

3.5. Tooling

Connectors shall be terminated using Modular Plug tooling shown in the application specification, customer drawings, and instruction sheets appropriate for each part number.

3.6. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Examination		
Test Description	Requirement	Procedure
Initial examination of product	ISO/IEC 11801, Annex C There shall be no defects that would impair normal operation. Dimensions shall comply with those specified on product drawing.	IEC 60512-1-1 and -2 Visual and dimensional per quality inspection plan with Certificate of Conformance (C of C)
	Verify contact termination heights	IEC 60603-7 unshielded or 60603-7-1 for shielded connectors
	Verify plating thicknesses	Dimensional per quality inspection plan with Certificate of Conformance (C of C) or laboratory verification
Visual examination of product	ISO/IEC 11801, Annex C There shall be no defect that would impair normal operation.	IEC 60512-1-1 Visual inspection.
Length, uncoiled patch cord	Length to be within print tolerance	Measure physical length of patch cord as shown on customer drawing

ELECTRICAL		
Test Description	Requirement	Procedure
Contact resistance, IPC/wire interface	IEC 60352-6, Section 5, Table 2 Initial: IPC/wire: 10 mΩ max. Change from initial after conditioning: IPC/plated wire: 10 mΩ max. IPC/un-plated wire: 15 mΩ max.	IEC 60512-2-1 Derived by measuring the total voltage drop between the plugs IPC contact and terminated wire, then subtracting the average bulk resistance of these components. Test voltage shall not exceed 20 mV d.c. or peak voltage a.c. and test current shall not exceed 100 mA, a.c. or d.c. (See Figure 4)
Input to output DC resistance	IEC 60603-7, Section 6.4.5. TIA-568-C.2, Section 6.8.1. Signal conductors (R _{AD}): 200 mΩ max. IEC 60603-7-1, Section 6.4.5 Shield (R _{AD}): 100 mΩ max.	IEC 60512-2-1. Derived by measuring the total voltage drop of terminated plugs mated to terminated jacks. (See Figure 3)
Input to output DC resistance unbalance	IEC 60603-7, Section 6.4.6. Difference between all signal conductors (R _{AD}): 50 mΩ max.	IEC 60512-2-1. Derived by calculating the maximum difference between input to output DC resistance measurements. (See Figure 3)
Insulation Resistance	IEC 60603-7, Section 6.4.7 500 megaΩ minimum	IEC 60512-3-1, Method A. 100 volts DC, 1 minute hold.
Voltage proof	IEC 60603-7, Section 6.4.2 One minute hold with no breakdown or flashover.	IEC 60512-4-1, Method A. 1000 volts DC or AC peak. Terminated jack with mated plug. One contact to all other contacts connected together. All contacts bundled to shield, 1500 volts DC or AC peak.
Current temperature de-rating	IEC 60603-7, Section 6.4.3 Shall comply with de-rating curve.	IEC 60512-5-2, test 5b Contacts connected in series.
MECHANICAL		
Test Description	Requirement	Procedure
Locking device mechanical operations	60603-7, Visual examination, locking device must function in jack and show no indication of stress cracking. See Note (a)	60603-7 Annex B 1,500 operation cycles. Locking device shall be depressed until it contacts the body of the plug. Speed shall not exceed 20 cycles per minute.
Plug insertion & withdrawal force	IEC 60603-7, Section 6.6.3 Unshielded connectors: 20 N max. IEC 60603-7-1, Section 7.7.2.3 Shielded Connectors: 30 N max.	IEC 60512-13-2. Measure force required to mate/unmate plug & jack with latch depressed at a constant speed with a maximum rate of 50 mm per minute.
Plug retention in jack (effectiveness of connector coupling device)	IEC 60603-7, Section 6.6.2. No discontinuities greater than 10 μs. Shall remain mated and show no evidence of physical damage. See Note (a)	IEC 60512-15-6. Apply an axial load of 50 N to plug mated to jack with latch engaged and hold for 60±5 seconds. Load shall be applied at a maximum rate of 44.5 N per second.
Mechanical operations durability	IEC 60603-7, Section 6.6.1. See Note (a)	IEC 60512-9-1. Mate and unmate plug to jack interface with locking device inoperative for 375 cycles at a maximum rate of 10mm per second.

Bending of the wire/cable	IEC 60352-6, Section 5.2.2.2 No discontinuities greater than 10 μ s. Termination shall not be damaged and conductors shall not be broken. See Note (a)	IEC 60352-6, Section 5.2.2.2 Apply a 22 N axial load to the free end of cable terminated to a plug Bend cable $\alpha = 30$ degrees in both directions from vertical position for 5 cycles each direction (10 cycles total). Monitor contact disturbance per IEC 60512-2-5.
Vibration, Plug/Jack interface	IEC 60603-7, Section 7.7.2.5. No discontinuities greater than 10 μ s. Shall remain mated and show no evidence of physical damage. See Note (a)	IEC 60512-6-4. Subject mated plug & jack to: Frequency: 10 to 500 Hz. Displacement Amplitude: 0.35 mm Acceleration: 5g (50 m/s ²) 10 sweep cycles per axis of 3 mutually perpendicular planes. Sweep rate: 1 octave per minute. Refer to IEC 60603-7, Section 7.3, for arrangement of vibration test. Monitor contact disturbance per IEC 60512-2-5.
Vibration, IPC/wire interface	IEC 60352-6-7, Section 5.2.2.3 No discontinuities greater than 10 μ s. Shall show no evidence of physical damage. See Note (a)	IEC 60512-6-4. Subject terminated plug to: Frequency: 10 to 55 Hz. Displacement Amplitude: 0.35 mm 10 sweep cycles per axis of 3 mutually perpendicular planes. Full Duration: 2.25 hours. Test specimen shall be firmly held on a vibration table. Monitor contact disturbance per IEC 60512-2-5.
Tensile, patch cord	IEC 61935-2, Section 6.2 1 mm maximum outer cable sheath movement relative to plug boot. See Note (a)	Tensile force: 22 N applied along the common axis of the cable & plug. Duration: 1 minute Electrical testing not required during tensile.
Flexural, patch cord	IEC 61935-2, Section 6.3 Shall show no evidence of physical damage. See Note (a)	Test shall be performed using fixture setup similar to that shown in Figure 5 of this spec. Axial force applied on cable: 2 N Total cycles divided between two perpendicular axis: Stranded conductor: 250 (0°+90°-0°-90°) Solid conductor: 50 (0°+90°-0°-90°) Rate of flex: 20 complete cycles per minute. Electrical testing not required during flexure.
Torsional, patch cord	Shall show no evidence of physical damage. See Note (a)	Test shall be performed using fixture setup similar to that shown in Figure 6 of this spec. Twist length: 330 mm Axial force applied to cable: 10 N Total cycles: 100 (0°+180°-180°) Rate of torsion: 20 complete cycles per minute.

ENVIRONMENTAL

Test Description	Requirement	Procedure
Rapid change of temperature, Plug/Jack interface	IEC 60603-7, Section 7.7.2.3. See Note (a)	IEC 60068-2-14, Test Na or Nb Subject mated connectors to 25 cycles between -40°C & 70°C with 30 minute dwells at temperature extremes. 2 hour recovery time.
Rapid change of temperature, IPC/wire interface	IEC 60352-6, Section 5.2.4.1 See Note (a)	IEC 60068-2-14, Test Na or Nb Subject terminated plugs to 5 cycles between -40°C & 70°C with 30 minute dwell at temp. extremes. 2 hour recovery time.

Cyclic damp heat	IEC 60603-7, Section 7.7.2.3. See Note (a)	IEC 60068-2-38. Subject connectors to 21 cycles (21 days) between 25°C & 65°C at 93% RH with 5 sub-cycle shocks at -10°C in the 1 st 9 cycles. Half specimens mated, other half unmated.
Climatic sequence	60352-6 Section 5.2.4.2 See Note (a)	IEC 60068-2-61, Method 1 Subject terminated plugs to dry heat +70°C & cold -40°C for 1 cycle.
Electrical load & temperature	IEC 60603-7, Section 7.7.2.6 See Note (a)	IEC 60068-2-2, Tests Bd & Be Temperature: 70°C, RH: uncontrolled Test Time: 500 hours & 2 hours recovery Test Currents: Signal contacts: 0.8A d.c. per contact Half the specimens energized [test Be], the remaining half not energized [test Bd].
Flowing mixed gas corrosion, Plug/Jack interface	IEC 60603-7, Section 7.7.2.4 See Note (a)	IEC 60512-11-7, Method 1. H ₂ S: 100 ± 20 (10 ⁻⁹ vol/vol), SO ₂ : 500 ± 100 (10 ⁻⁹ vol/vol), Temp.: 25 ± 1°C, RH: 75 ± 3%, Test time: 4 days, Half specimens mated, other half unmated.
Flowing mixed gas corrosion, IPC/wire interface	IEC 60352-6, Section 5.2.4.3 See Note (a)	IEC 60512-11-7, Method 1. H ₂ S: 100 ± 20 (10 ⁻⁹ vol/vol), SO ₂ : 500 ± 100 (10 ⁻⁹ vol/vol), Temp.: 25 ± 1°C, RH: 75 ± 3%, Test time: 10 days
TRANSMISSION (Stranded Conductors Only)		
Patch Cord Component		
Test Description	Requirement	Procedure
Wire Map	Wiring pattern as specified in test request.	IEC 61935-2 Section 5.2, as specified If not otherwise noted, test in the coiled state.
Return Loss, Coiled	TIA-568-C.2, Section 6.2.6	IEC 61935-1, Section 5.6 TIA-568-C.2, Annex C.5.2.3, Test in coiled state
Pair to Pair Near End Crosstalk (NEXT) loss, Coiled	ISO 11801, Section 6.4.4.1, TIA-568-C.2, Section 6.2.8,	IEC 61935-1, Section 5.7 TIA-568-C.2, Annex C.5.2.1, Test in coiled state
Return Loss, Uncoiled	TIA-568-C.2, Section 6.2.6	IEC 61935-1, Section 5.6 TIA-568-C.2, Annex C.5.2.3, Test in uncoiled state.
Pair to Pair Near End Crosstalk (NEXT) loss, Uncoiled	ISO 11801, Section 6.4.4.1, TIA-568-C.2, Section 6.2.8,	IEC 61935-1, Section 5.7 TIA-568-C.2, Annex C.5.2.1, Test in uncoiled state.

Figure 1

NOT

(a) Shall meet visual requirements, show no physical damage, and meet requirements of additional tests specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

3.7. Product Qualification and Requalification Test Sequence

Test or Examination	Test Sequence								
	IPC / Wire Interface			Plug / Jack					Patch Cord
	A1	A2	A3	B1	B2	B3	B4	B5	C1
Initial examination of product	1	1	1	1	1	1	1	1	1
Visual examination of product	5	7	5	12,17	13	8	8	3	13
Length, uncoiled patch cord									5
Contact resistance, IPC/wire interface	2,4	2,6	2,4						
Input to output resistance				2,7,10,14	4,6,8,10	2,6	2,9		
Input to output resistance unbalance									
Insulation resistance				3,9	2,11	3,7	3,6		
Voltage proof				4,11	3,12	4	4,7		
Current carrying capacity								2	
Plug insertion & withdrawal force				5,15					
Plug retention in jack				6,16					
Cable bending	3								
Mechanical operation durability					5,9				
Vibration, plug/jack						5			
Vibration, IPC/wire		3							
Tensile, patch cord									8
Flexural, patch cord									9
Torsional, patch cord									10
Rapid change of temp, plug/jack				8					
Rapid change of temp, IPC/wire		4							
Cyclic damp heat				13					
Climatic Sequence		5							
Electrical load and temperature							5		
Flowing mixed gas corrosion, plug/jack					7				
Flowing mixed gas corrosion, IPC/wire			3						
Wire Map, patch cord coiled									2
Return Loss, patch cord coiled									3
Next loss, patch cord coiled									4
Return Loss, patch cord uncoiled									6, 11
Next loss, patch cord uncoiled									7, 12

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Modular Plugs: Specimens shall be selected at random from current production and prepared in accordance with applicable Instruction Sheets.

Cable: Engineering discretion, customer drawings and product specifications shall be used to choose cables to qualify/requalify new products and design changes. Cables may be chosen with minimum and maximum conductor sizes, insulations sizes and jacket sizes commonly available in the industry.

B. Test Sequence

Product qualification shall be verified by testing specimens per test sequence defined in Figure 2.

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

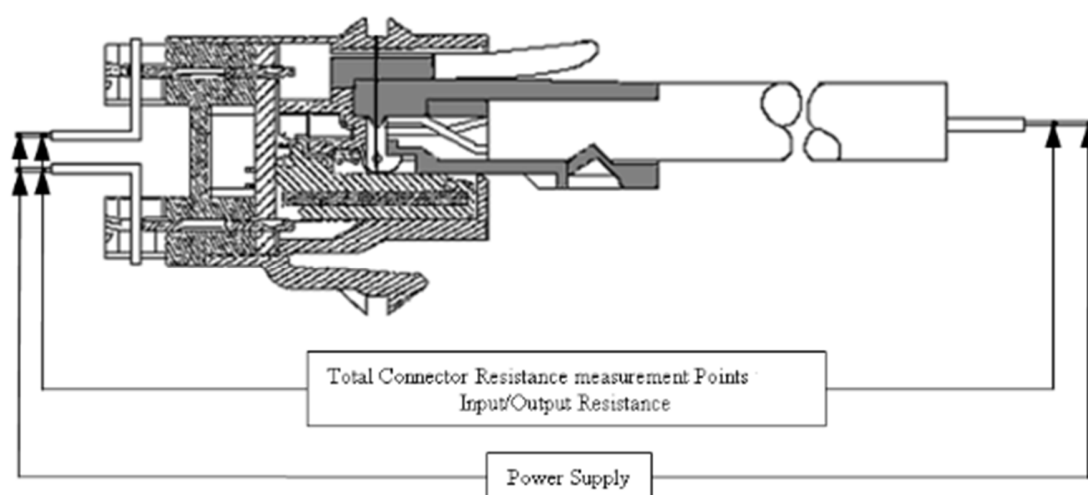
4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

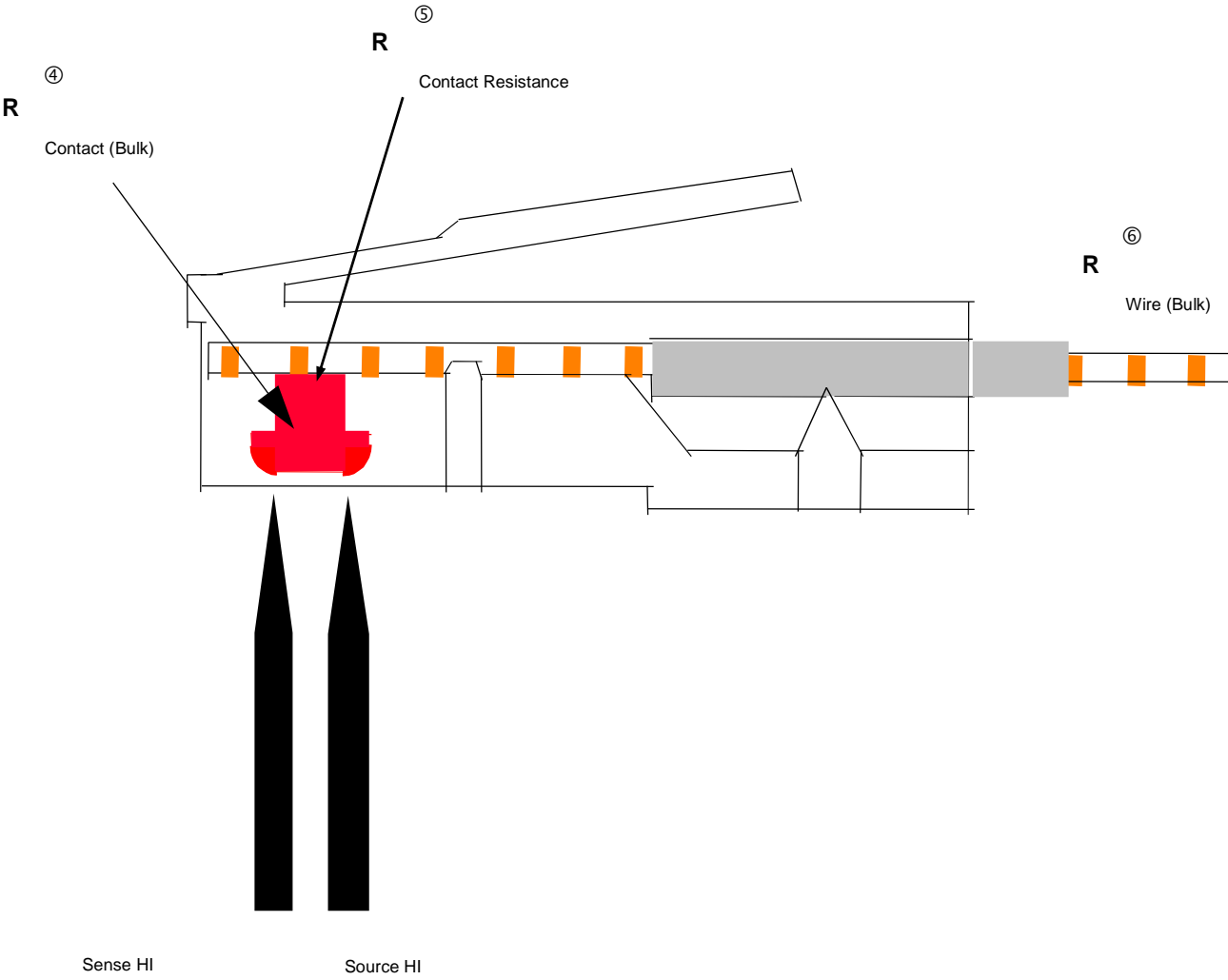
4.4. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the application product drawing and this specification.

5. FIGURES RELATED TO TEST PROCEDURES



Resistance of Connector Assembly
Figure 3



IPC Contact Resistance = $R^{(5)} = R_{\text{Plug (Bulk)}} - R^{(4)} - R^{(6)}$

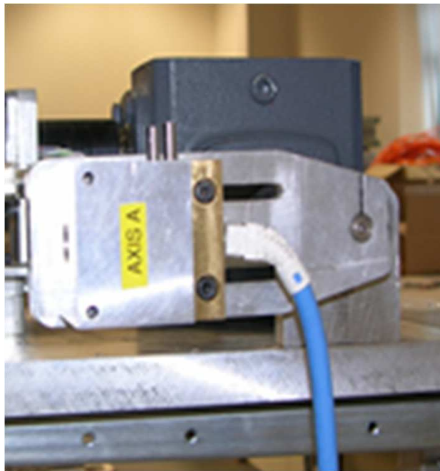
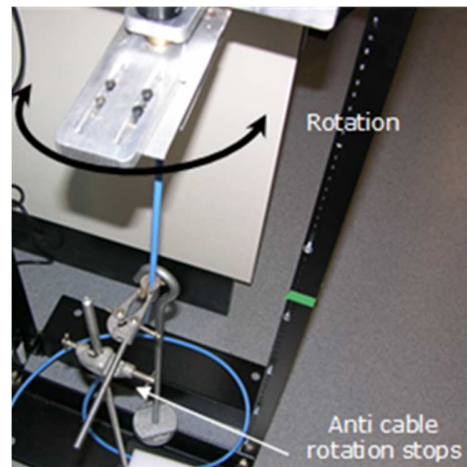
Contact Resistance of RJ Style Plug

Figure 4

Flexural Test
Figure 5

6. REVISION SUMMARY

- Rev. A – Initial release.



Modular Plugs, Unshielded and Shielded

1. INTRODUCTION**1.1. Purpose**

Testing was performed on modular plugs to determine their conformance to the requirements of Product Specification 108-131013 Revision A. Test specimens are representative of the entire modular plug product line.

1.2. Scope

This report covers the electrical, mechanical, environmental and transmission performance of modular plugs. Testing was performed and test reports are on file with the Commscope test lab.

1.3. Conclusion

The modular plugs listed in paragraph 1.5 conformed to the electrical, mechanical, environmental and transmission performance requirements of Product Specification 108-131013 Revision A.

1.4. Product Description

Shielded and Unshielded Modular Plugs used to provide a universal connection interface between premise wiring of an office and the user's network of communications equipment (for data and voice networking systems). These assemblies are designed for installation onto various cables. Plugs incorporate IPC terminal for terminating twisted pair communications cable. See customer drawings for cable conductor diameter, insulation diameter and cable diameter compatibility

1.5. Test Specimens

Test specimens were representative of normal production lots. Specimens used as control specimens are not listed in the table below, but shown on the respective test requests in the final test reports. Specimens identified with the following part numbers were used for each test sequence:

Catalog No.	Part Number	Description
MP-6S-(X)	6-2111989-(X)	8P Cat. 6 Shielded Plug
MP-5EMT-B-(X)	6-2111986-(X)	8P Cat 5e EMT Shielded Plug
MP-5EU-(X)	6-569278-(X)	8P Cat. 5e UTP Plug
MP-88U-R-(X)	6-557315-(X)	8P Cat. 5 UTP Plug
MP-44U-F-(X)	6-641334-(X)	4P UTP Plug
MP-6AU-PLUG-A-(X)	6-2843007-(X)	8P UTP Plug
MP-6AU-PLUG-B-(X)	6-2843008-(X)	8P UTP Plug

NOTE

“(X)” Represents packaging quantity designation.

1.6. Test Conditions:

Unless otherwise stated, tests have been performed at the following ambient conditions:

- Temperature: 70°F ± 5°F
- Relative Humidity: 50% ± 10%

1.7. Test Sequence

Test or Examination	Test Sequence								
	IPC / Wire Interface			Plug / Jack					Patch Cord
	A1	A2	A3	B1	B2	B3	B4	B5	C1
Initial examination of product	1	1	1	1	1	1	1	1	1
Visual examination of product	5	7	5	12,17	13	8	8	3	13
Length, uncoiled patch cord									5
Contact resistance, IPC/wire interface	2,4	2,6	2,4						
Input to output resistance				2,7,10,14	4,6,8,10	2,6	2,9		
Input to output resistance unbalance									
Insulation resistance				3,9	2,11	3,7	3,6		
Voltage proof				4,11	3,12	4	4,7		
Current carrying capacity								2	
Plug insertion & withdrawal force				5,15					
Plug retention in jack				6,16					
Cable bending	3								
Mechanical operation durability					5,9				
Vibration, plug/jack						5			
Vibration, IPC/wire		3							
Tensile, patch cord									8
Flexural, patch cord									9
Torsional, patch cord									10
Rapid change of temp, plug/jack				8					
Rapid change of temp, IPC/wire		4							
Cyclic damp heat				13					
Climatic Sequence		5							
Electrical load and temperature							5		
Flowing mixed gas corrosion, plug/jack					7				
Flowing mixed gas corrosion, IPC/wire			3						
Wire Map, patch cord coiled									2
Return Loss, patch cord coiled									3
Next loss, patch cord coiled									4
Return Loss, patch cord uncoiled									6, 11
Next loss, patch cord uncoiled									7, 12

2. SUMMARY OF TESTING

2.1. Initial Examination of Product – All Test Sequences.

All specimens submitted for testing were representative of normal production lots. A Certificate of Conformance was issued and stored in the lab test files storage location.

2.2. Visual Examination of Product – All Test Sequences

All specimens were visually examined after testing and no evidence of physical damage detrimental to product performance was observed.

2.3. Length, Uncoiled Patch Cords – Test Sequence C1

All patch cord lengths were measured to be within print tolerances.

2.4. Contact Resistance, IPC/Wire Interface – Test Sequences A1, A2, & A3

Final delta resistance measurements taken at 100 mA maximum and 20 mV maximum open circuit voltage were within specified limits.

2.5. Input to Output DC Resistance – Test Sequences B1, B2, B3, & B4

Maximum total mated connector resistance measured values were less than 200 mΩ.

2.6. Input to Output DC Resistance Unbalance – Test Sequences B1, B2, B3, & B4

The differences between maximum and minimum total connector resistance measured values were less than 50 mΩ.

2.7. Insulation Resistance – Test Sequence B1, B2, B3, & B4

All insulation resistance measurements were greater than 500 MΩ minimum.

2.8. Voltage Proof - Test Sequence B1, B2, B3, & B4

All specimens passed testing with no dielectric breakdown or flashover occurring.

2.9. Current Carrying Capacity – Test Sequence B5

The maximum allowed environmental temperature at rated current is 60°C.

2.10. Plug Insertion & Withdrawal Force – Test Sequence B1

All forces were less than 20 N.

2.11. Plug Retention in Jack – Test Sequence B1

All specimens withstood an applied axial load of 50 N with latch engaged for 60 seconds.

2.12. Mechanical Operation Durability – Test Sequence B2

No physical damage occurred to the specimens as a result of mating and un-mating the specimens for 375 cycles with latch inoperative.

2.13. Cable Bending – Test Sequence A1

No physical damage or discontinuity occurred to the specimens as a result of cable bending for the total number of cycles.

2.14. Vibration, IPC/Wire Interface – Test Sequence A2

All specimens passed vibration testing with no evidence of physical damage.

- 2.15. Vibration, Plug/Jack – Test Sequence B3
All specimens passed vibration testing with no evidence of physical damage.
- 2.16. Rapid Change of Temp, IPC/Wire Interface – Test Sequence A2
No evidence of physical damage was visible as a result of exposure to rapid change in temperature.
- 2.17. Rapid Change of Temp, Plug/Jack – Test Sequence B1
No evidence of physical damage was visible as a result of exposure to rapid change in temperature.
- 2.18. Climatic Sequence – Test Sequence A2
No evidence of physical damage was visible as a result of exposure to climatic sequence.
- 2.19. Cyclic Damp Heat – Test Sequence B1
No evidence of physical damage was visible as a result of exposure to cyclic damp heat sequence.
- 2.20. Electrical Load and Temperature – Test Sequence B4
No evidence of physical damage was visible as a result of exposure to stress relaxation.
- 2.21. Flowing Mixed Gas Corrosion, IPC/Wire Interface – Test Sequence A3
No evidence of physical damage was visible as a result of exposure to flowing mixed gas corrosion.
- 2.22. Flowing Mixed Gas Corrosion, Plug/Jack – Test Sequence B2
No evidence of physical damage was visible as a result of exposure to flowing mixed gas corrosion.
- 2.23. Tensile, Patch Cord – Test Sequence C1
No physical damage occurred to the specimens for the applied tensile load.
- 2.24. Flexural, Patch Cord – Test Sequence C1
No physical damage occurred to the specimens for the total number of flexural cycles.
- 2.25. Torsional, Patch Cord – Test Sequence C1
No physical damage occurred to the specimens for the total number of torsional cycles.
- 2.26. Wire Map, Patch Cord – Test Sequence C1
Specimens passed the wire maps.
- 2.27. Return Loss, Patch Cord – Test Sequence C1
Specimens passed RL requirements before and after mechanical testing.
- 2.28. NEXT, Patch Cord – Test Sequence C1
Specimens passed NEXT requirements before and after mechanical testing.

3. TEST METHODS

- 3.1. Initial Examination of Product
A Certificate of Conformance was issued stating that all specimens in this test package have been produced, inspected, and accepted as conforming to product drawing requirements, and made using the same core manufacturing processes and technologies as production parts.
Contact termination heights were measured and recorded to confirm within acceptable tolerance limits.
- 3.2. Visual Examination of Product – All Test Sequences
Visual inspection was performed at the end of each test sequence.

3.3. Length, Uncoiled Patch Cords – Test Sequence C1

Physical length of each patch cord assembly was measured for reference.

3.4. Contact Resistance, IPC/Wire Interface – Test Sequences A1, A2, & A3

Termination resistance measurements were derived by measuring the total voltage drop from an applied 20 mV maximum open circuit voltage at 100 mA maximum across the plugs IPC contact and terminated wire, then subtracting the average bulk resistance of these components.

3.5. Input to Output DC Resistance – Test Sequences B1, B2, B3, & B4

Input to output resistance measurements were made using the four-terminal technique as shown in Figure 1.

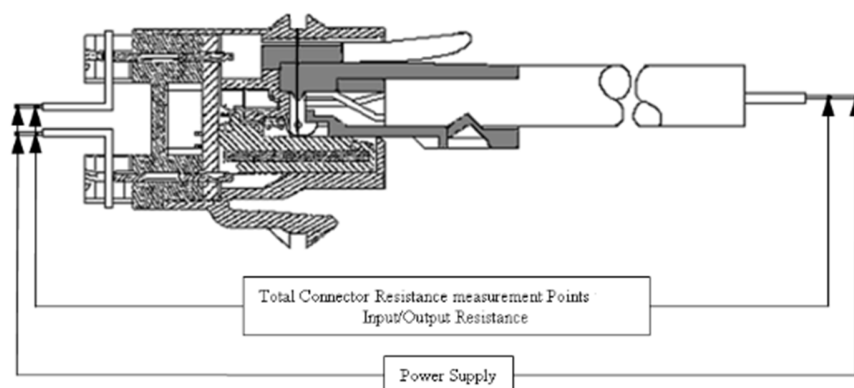


Figure 1

Input to Output DC Resistance Measurement Points

3.6. Input to Output DC Resistance Unbalance – Test Sequences B1, B2, B3, & B4

Input to output resistance unbalance was calculated as the maximum difference between maximum and minimum resistance measurements.

3.7. Insulation Resistance – Test Sequence B1, B2, B3, & B4

Insulation resistance was measured between adjacent contacts of mated specimens. A test voltage of 100 volts DC, 500 MΩ minimum was applied for a 1 minute hold.

3.8. Voltage Proof - Test Sequence B1, B2, B3, & B4

A test potential of 1000 volts DC was applied to a terminated jack with a mated plug, between each contact and all other contacts being connected together, and held for 1 minute.

3.9. Current Carrying Capacity – Test Sequence B5

A series of DC loading currents were applied to the specimen, each application of current being allowed to reach thermal stability. The hottest contact temperature and ambient temperature were recorded at each current. The average temperature rise was calculated and used to generate the basic current current-carrying curve, which was in turn used to generate the de-rating curve. The de-rating curve was compared with the ambient temperature rating.

3.10. Plug Insertion & Withdrawal Force – Test Sequence B1

The force required to mate & unmate individual specimens was measured with latch depressed at a maximum rate of 50 mm per minute per IEC 60512-13-2.

3.11. Plug Retention in Jack – Test Sequence B1

An axial load of 50N was applied for 60 seconds to mated connector assemblies in a direction that would cause the connector latches to disengage.

3.12. Mechanical Operation Durability – Test Sequence B2

Specimens were mated and unmated for 375 cycles with latch inoperative; maximum rate was 10mm/sec.

3.13. Cable Bending – Test Sequence A1

An axial load of 22 N was applied to the free end of a cable terminated to a plug. The plug was then rotated 30 degree in both directions to bend the cable a total of 5 cycles in each direction. Contact disturbance was monitored throughout the test.

3.14. Vibration, IPC/Wire Interface – Test Sequence A2

Specimens were subjected to sinusoidal vibration from 10 to 55 Hz; displacement amplitude: 0.35mm; 10 sweeps per axis of 3 mutually perpendicular axes.

3.15. Vibration, Plug/Jack Interface – Test Sequence B3

Specimens were subjected to sinusoidal vibration from 10 to 500 Hz; displacement amplitude: 0.35mm; acceleration: 5g; 10 sweeps per axis of 3 mutually perpendicular axes.

3.16. Rapid Change of Temp, IPC/Wire Interface – Test Sequence A2

Terminated plugs were subjected to 5 cycles between -40°C & 70°C with 30 minute dwells at temperature extremes. 2 hour recovery time.

3.17. Rapid Change of Temp, Plug/Jack – Test Sequence B1

Specimens were subjected to 25 cycles between -40°C & 70°C with 30 minute dwells at temperature extremes. 2 hour recovery time.

3.18. Climatic Sequence – Test Sequence A2

Terminated plugs were subjected to a dry heat of 70°C & -40°C for 1 cycle.

3.19. Cyclic Damp Heat – Test Sequence B1

Specimens were subjected to 21 cycles between 25 and 65°C with 93% RH with 5 subcycles at -10°C.

3.20. Electrical Load and Temperature – Test Sequence B4

Specimens were subjected to 70°C for 500 hours, 2 hour recovery. Half of the specimens were energized with 0.8 ampere DC, the remaining half not energized.

3.21. Flowing Mixed Gas Corrosion, IPC/Wire Interface – Test Sequence A3

Terminated plugs were exposed for 10 days to a mixed flowing gas per IEC 60512-11-7 Method 1. Exposure is defined as a temperature of 25°C and a relative humidity of 75% with the pollutants of H₂S: 100±20 (10⁻⁹ vol/vol), SO₂: 500±100 (10⁻⁹ vol/vol).

3.22. Flowing Mixed Gas Corrosion, Plug/Jack – Test Sequence B2

Specimens were exposed for 4 days to a mixed flowing gas per IEC 60512-11-7 Method 1. Exposure is defined as a temperature of 25°C and a relative humidity of 75% with the pollutants of H₂S: 100±20 (10⁻⁹ vol/vol), SO₂: 500±100 (10⁻⁹ vol/vol). Half of the specimens were mated (terminated plug/jack) & half unmated.

3.23. Tensile, Patch Cord – Test Sequence C1

An axial load of 22 N was applied to the common axis of the cable and plug with a 1 minute hold.

3.24. Flexural, Patch Cord – Test Sequence C1

An axial load of 2 N was applied to the free end of a cable terminated to a plug. The plug was then rotated 90 degrees in both directions to flex the cable. Flexural cycles were performed between two perpendicular axis with a total of 250 cycles applied for stranded conductor wire and 50 cycles for solid conductor wire.

3.25. Torsional, Patch Cord – Test Sequence C1

An axial load of 10 N was applied to the free end of a cable terminated to a plug. The plug was then rotated 180 degrees in both direction with the cable fixed at a distance of 330 mm from the plug to apply a torsional force. Rate was 20 complete torsion cycles per minute.

3.26. Wire Map, Patch Cord – Test Sequence C1

Patch cord cable assemblies were tested in wire map scanning mode using a calibrated Fluke DTX-1800 cable analyzer together with patch cord test heads.

3.27. NEXT, Return Loss, & Wire Map, Patch Cord – Test Sequence C1

Transmission testing was performed using a calibrated Fluke Networks DTX-1800 cable analyzer together with the appropriate patch cord test heads.

4. REVISION SUMMARY

- Revision A – Initial Release
- Revision B – Remove 2.1 Test Sequence / Report Summary, Add 2 additional Catalog Nos.

CERTIFICATE

Certificate Number: 151045.000

TLID: TL1786

With Eight Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:

1100 CommScope Place SE

Hickory, NC 28602

United States

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7 (Based on and including ISO 9001:2015)

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Product Categories	Products
3.2.5 Fiber to the User	ASWXXXX, OLT (GPON)
3.2.6 Video Transmission Equipment	EQAM Products (APEX, SFP), Switched Digital Video and Resource Mgmt, Network Encryption (NE), ALOHA Interactive (ARPD, ADM, SDM), Cablevista Edge Decoder, Conditional Access Products
6.2.5 Passive Optical Network Termination Units	ONT-1xxxx, ONT1xxx
3.1.1.1.1 Metallic Conductor Cable	All Products
3.1.1.1.2 Metallic Connectors	All Products
3.1.1.2.1 Fiber Optic Cable	All Products
3.1.1.2.2 Optical Connector	All Products
3.1.1.3.2 Passive Optical Transmission Subsystems	All Products
3.1.1.3.4 Fixed Antenna Systems	All Products
3.1.2.1 Enclosures	All Products
3.1.2.3 Conduits	All Products
3.2.1.1 Manual Cross Connect Systems	All Products
8.1.4 Electromechanical Components	All Products
8.3 Cable Assemblies	All Products

Certification Structure: Multi-site

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000

ADDENDUM Page One of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7

(Based on and including ISO 9001:2015)

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services, (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	

Site Address	Certification	Product Category	Site Activities
CommScope, Inc 1100 CommScope Place SE Hickory, NC 28602 United States	TL9000HSV	3.1.1.1.1, 3.1.1.1.2, 3.1.1.2.1, 3.1.1.2.2, 3.1.1.3.2, 3.1.1.3.4, 3.1.2.1, 3.1.2.3, 3.2.1.1, 3.2.5, 3.2.6, 6.2.5, 8.1.4, 8.3	HQ (Virtual)
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	TL9000HSV	3.2.5, 3.2.6, 6.2.5, 3.1.1.3.4	HW & SW DE, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	TL9000SV	3.2.6	SW DE, SER
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	TL9000H	3.1.1.1.2, 3.2.5, 3.2.6, 6.2.5, 8.3	HW DE, SAL, SC

Certificate Expires: January 04, 2026

Certificate Issued: January 05, 2023

Certified Since: August 08, 1994



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Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Two of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
ARRIS STB de Mexico, SA de C.V. Via de la Innovacion # 402; CP 66628 Parque de Investigacion e Innovacion Tecnologica Apodaca Nuevo León; Mexico	TL9000HSV	3.2.5, 3.2.6, 6.2.5	HW & SW DE, REP
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	TL9000HV	3.1.1.3.4, 3.2.6, 3.2.5	MFG SC, REP
CommScope Technologies LLC 2601 Telecom Parkway Richardson, TX 75082 United States	TL9000H	3.1.1.3.4, 3.1.2.1	HW DE, SER
CommScope Telecommunications (China) Co. Ltd. No. 68 Su Hong XI Lu Suzhou Industrial Park, Suzhou Jiangsu 215021 Peoples Republic of China	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC,
CommScope Connectivity (Suzhou) Co. Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.1.1.2, 3.2.1.1, 8.3	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Three of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
Andrew Wireless Systems GmbH Industriering 10 Buchdorf Bavaria 86675 GERMANY	TL9000HV	3.1.1.3.4	HW DE, REP, MFG
CommScope India Private Ltd Plot No. N-2, Verna Industrial Estate Phase IV, Verna - Salcette, GOA 403 722 INDIA	TL9000H	3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3	HW DE, MFG, SC
CommScope Italy srl Via Mengolina 20, Faenza Ravenna 48018 Italy	TL9000H	3.1.1.3.4	HW DE
Andrew Telecommunications de Reynosa, S. De R.L. de C. V. Ave. Industrial Reynosa Lote 2 al 5, Col Parque Industrial Reynosa, Reynosa Tamaulipas 88780 Mexico	TL9000H	3.1.1.3.4, 3.1.1.1.2, 3.1.2.1, 8.3	MFG
CommScope Corporation Mexico, S.A. de C.V. CCS Ave. Antonio J. Bermudez #550 Parque Ind. A. J. Bermudez Ciudad Juarez CHIH 32470 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	HW DE, MFG
CommScope Corporation Mexico, S.A. de C.V. Santiago Troncoso No. 331, Cd. Juarez CHIH 32599 Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG
ADC de Delicias S. De R.L. de C.V Boulevard Fernando Baeza #1301 Fraccionamiento San Marcos Ciudad Delicias Mexico	TL9000H	3.1.1.3.2, 3.1.1.2.2, 3.1.2.3, 3.2.1.1, 8.3	MFG

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
ADDENDUM Page Four of Eight

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

TL 9000 – H, S, V R6.3/R5.7
(Based on and including ISO 9001:2015)

<u>Site Address</u>	<u>Certification</u>	<u>Product Category</u>	<u>Site Activities</u>
CommScope Technologies UK Ltd Lomond House, Grantsmuir John Smith Business Park Kirkcaldy, Fife KY2 6NA Scotland	TL9000H	8.1.4	HW DE, SAL
CommScope Inc of North Carolina 1130 Classic Rd Apex, NC 27539 United States	TL9000H	3.1.1.2.2	HW DE, SAL
CommScope Technologies LLC 11312 S. Pipeline Road Euless, TX 76040 United States	TL9000H	8.1.4	HW DE, MFG, SAL
CommScope Connectivity LLC 501 Shenandoah Drive Shakopee MN 55379 United States	TL9000HSV	3.1.2.3 3.1.1.2.2, 3.1.1.3.2, 3.2.1.1, 8.3	HW DE, SAL, SER, SC,
CommScope Inc of North Carolina 6519 CommScope Road, Catawba, NC 28609-0199 United States	TL9000H	3.1.1.1.1, 3.1.1.1.2	HW DE, MFG, SAL
CommScope Inc of North Carolina 3642 US Hwy. 70 East Claremont NC 28610 United States	TL9000H	3.1.1.1.1, 3.1.1.2.1	HW DE, MFG, SAL

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
dekra-certification.us



CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Five of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Connectivity (Suzhou) Co. Ltd.

77 Qiming Road, Suzhou Industrial Park

Suzhou, Jiangsu 215121

Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

Manufacture metallic connectors, fiber optical jumpers and connectors, passive optical transmission sub - systems, enclosures, cable assemblies, fiber connection enclosures and communication cabinets

Product Categories	
3.1.1.1.2	Metallic Connectors
3.1.1.2.2	Optical Connector
3.1.1.3.2	Passive Optical Subsystems
3.2.1.1	Manual Cross Connect Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
dekra-certification.us



证书附录

证书编号: 151045.000

TLID: TL1786

附录第 6 页, 共 8 页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普通联通信 (苏州) 有限公司

苏州工业园区启明路 77 号

江苏苏州 215121

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7
(基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器, 光纤跳线及连接器, 无源光传输子系统, 附件, 电缆组件, 光缆接头盒, 通讯机柜的生产

产品类别	
3.1.1.1.2	金属连接器
3.1.1.2.2	光学连接器
3.1.1.3.2	无源光学子系统
3.2.1.1	手动交叉连接系统
8.3	电缆组件

认证结构: 多场所

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



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CERTIFICATE ADDENDUM

Certificate Number: 151045.000
TLID: TL1786
ADDENDUM Page Seven of Eight

The Quality Management System and implementation of:

CommScope, Inc.

With site:

CommScope Telecommunications (China) Co. Ltd.

No. 68 Su Hong Xi Lu Suzhou Industrial Park,
Suzhou Jiangsu 215021
Peoples Republic of China

meets the requirements of the standard:

TL 9000 – H R6.3/R5.7 (Based on and including ISO 9001:2015)

The validity of this certificate depends on the validity of the main certificate.

Scope:

制造金属连接器、光纤跳线和连接器、无源光传输子系统、外壳、电缆组件、光纤连接外壳和通信机柜 3.1.1.1.1, 3.1.1.1.2, 3.1.1.3.4, 8.3

Product Categories	
3.1.1.1.1	Metallic Conductor Cable
3.1.1.1.2	Metallic Connectors
3.1.1.3.4	Fixed Antenna Systems
8.3	Cable Assemblies

Certification Structure: Multi-site

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: August 08, 1994



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Managing Director

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证书附录

证书编号: 151045.000

TLID: TL1786

附录第 8 页, 共 8 页质量管理体系和实施:

CommScope, Inc.

其场所:

康普电信 (中国) 有限公司

苏州工业园区苏虹西路 68 号,

江苏苏州 215021

中华人民共和国

符合以下标准要求:

TL 9000 – H R6.3/R5.7 (基于并包括 ISO 9001:2015)

本证书的有效性取决于主证书的有效性。

范围:

金属连接器 · 光纤跳线及连接器 · 无源光传输子系统 · 附件 · 电缆组件 · 光缆接头盒 · 通讯机柜的生产

产品类别	
3.1.1.1.1	金属导体电缆
3.1.1.1.2	金属连接器
3.1.1.3.4	固定天线系统
8.3	电缆组件

认证结构: 多站点

证书有效期: 2026.1.4

发证日期: 2023.1.5

首次发证日期: 2021.1.5



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.

1945 The Exchange SE #300

Atlanta, GA 30339 USA

(215) 997-4519

dekra-certification.us



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

An electronic certificate can be authenticated [online](http://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory. To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM - ISO 45001:2018

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

OHS 650243

and operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 for the following scope:

The occupational health & safety management system to control the hazards associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



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Certificate No: **OHS 650243**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products, including antenna and cable.
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CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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Original Registration Date: 2016-04-04

Latest Revision Date: 2022-04-21

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Location	Registered Activities
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CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
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Original Registration Date: 2016-04-04

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CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-04-04

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.



CommScope Network Infrastructure System

25 Year Extended Product and Application Warranty
("System Warranty")

Terms and Conditions

Extended Product Warranty. CommScope warrants, for a period of twenty-five (25) years from the Certification Date (the “Warranty Period”), that Products in the Registered System shall be free from defects in materials or workmanship subject, to the terms and conditions below and the terms, conditions and limitations of CommScope’s Limited Product Warranty in effect at the date of sale (available at <http://www.commscope.com/Resources/Warranties/>).

Application Warranty. During the Warranty Period, the Registered System will meet or exceed the specifications set forth in the System Specification and support Applications as documented therein.

System Warranty Requirements. The System Warranty applies only to Products that are: (i) installed by an Authorized Partner, at the location listed on the System Warranty Certificate; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification; (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification; (iv) not subject to conditions that exceed the individual Product Specification(s); (v) used at the original site of installation; (vi) tested pursuant to industry standards and applicable CommScope testing requirements and satisfactorily pass such tests; and (vii) not otherwise expressly excluded or invalidated under the System Warranty Terms and Conditions. To qualify for a System Warranty, all documents, including the prescribed System test results, must be submitted to CommScope for review within sixty (60) days of installation, and registration for the System Warranty must be applied for with CommScope within ninety (90) days from the date the installation is complete. CommScope, in its sole judgment, shall determine if the System Warranty Requirements have been met. CommScope’s approval of a System Warranty shall be evidenced by a numbered registration System Warranty Certificate issued by CommScope. In the event a System Warranty Certificate is issued and CommScope subsequently discovers that any of the System Warranty requirements were not met, then the System Warranty shall be void.

Beneficiary and Warranty Transfer. CommScope will only honor System Warranty claims made by the person or entity to which the System Warranty Certificate is issued. The System Warranty may, upon prior written approval from CommScope, be transferred to a successor in interest to the site where the Registered System was originally installed.

Modifications. Moves, repairs, alterations, additions, or changes to the Registered System (“Change(s)”) are only covered by the System Warranty if: (i) performed by an Authorized Partner; (ii) installed in compliance with CommScope’s written design, engineering and installation procedures, and the specifications for the Application and the System Specification, and (iii) designed, installed, and maintained in compliance with the applicable industry standards as set forth in the System Specification. Day-to-day administration and maintenance of the Registered System by the End-Customer will not void the System Warranty if performed in compliance with applicable CommScope system design and installation guidelines using CommScope approved products. All test results shall be sent for approval to CommScope along with a detailed description of the Change(s) and bill of materials within thirty (30) days of installation. If the Change(s) are approved, CommScope shall update the System Warranty registration to indicate the Change(s). Failure to comply with the foregoing relating to Change(s) shall void the System Warranty.

Exclusions from Warranty and Limitations on Liability. The “Exclusions from Warranty” and “Limitations on Liability” in the Limited Product Warranty shall apply to the System Warranty. The occurrence of an Exclusion from Warranty in the Limited Product Warranty shall void the System Warranty. The System Warranty shall also be void if any Product in the Registered System has been (i) removed from the original site of installation, (ii) altered, repaired or disassembled by a non-Authorized Partner, or (iii) exposed to, or has outside materials applied to it, including but not limited to paint, water, chemicals, solutions, cleaning supplies and lubricants (“Contamination”). End-Customer must notify an Authorized Partner or CommScope within 24 hours of any Contamination.

Outside Plant Cable is excluded from and will void the System Warranty when installed above ground and exposed to the outside environment, including but not limited to, an aerial installation. Outside Plant Cable installed underground, either by direct burial or in conduit, is not excluded from the System Warranty.

Failure of the End-Customer to submit any System Warranty claim to the authorized CommScope office as designated by CommScope within thirty (30) days following expiration of the System Warranty shall be an admission by the End-Customer and conclusive proof that the Registered System and Product(s) are in every respect as warranted and shall release CommScope and the Authorized Partner from any and all claims for damage or loss sustained by the End-Customer.

Any violation or non-compliance with the System Warranty Terms and Conditions will void the System Warranty.

Remedies. If during the Warranty Period, the End-Customer experiences problems with a Registered System or a Product in a Registered System ("Problem") and suspects there is a potential warranty claim hereunder, the End-Customer must first reasonably investigate potential causes of the suspected Problem that are not CommScope related and reasonably determine that none of these potential causes were responsible for the Problem. Once the End-Customer reasonably believes that all non-CommScope causes for the Problem are ruled out, but in no event more than thirty (30) days after the End-Customer knew or should have known of the Problem, the End-Customer must contact the Authorized Partner that installed the Registered System to report the Problem. If the Authorized Partner is unable to resolve the Problem, then the Authorized Partner will contact CommScope and make a claim under the System Warranty for further investigation and resolution.

If CommScope determines that a Problem is due to a breach of the System Warranty, CommScope will repair or replace Product as CommScope deems necessary to correct the Problem, including the provision of reasonable labor and removal and reinstallation of such Product at CommScope's discretion. CommScope shall only be responsible for costs that have received the prior written authorization of CommScope. If CommScope chooses to repair Product, CommScope may use new or reconditioned replacement parts. If CommScope chooses to replace Product, CommScope may replace with new or reconditioned products of the same or similar design. Any repair or replacement will be warranted for either (a) 90 days or (b) the remainder of the original Warranty Period, whichever is longer. If the Problem is found by CommScope or an Authorized Partner not to be related to a Product or any warranty exclusions, then End-Customer will be responsible for any costs incurred related to the Problem claim.

Choice of Law. The System Warranty shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply. The End-Customer acknowledges that as a condition to receiving the System Warranty, End-Customer unconditionally submits to the jurisdiction of the North Carolina state and federal courts. If any portion of the System Warranty is not enforceable due to local legal requirements, then such specific language shall be modified to meet local legal requirements consistent with CommScope's intent.

Definitions

The following definitions shall apply to the System Warranty:

CommScope shall mean CommScope Technologies LLC.

Application shall mean a standardized set of network technologies, protocols, and hardware for enabling communication over the prescribed System as documented by CommScope.

Authorized Partner shall mean a party that is certified by CommScope as a CommScope installation partner and that is in good standing with CommScope at the time of installation.

Authorized Reseller shall mean a party that is authorized in writing by CommScope to sell Products and that is in good standing with CommScope at the time of sale.

Certification Date shall mean the earlier of the registration date on the face of the System Warranty Certificate or the Original Installation Completion Date.

End-Customer shall mean the end-user who has the Products installed at its premises by an Authorized Partner.

Original Installation Completion Date shall mean the date that the Authorized Partner completed the installation and testing of the Registered System at the End-Customer's site being submitted for System Warranty eligibility.

Outside Plant Cable shall mean all cabling located between demarcation points in buildings, switching and data centers and the demarcation point in another such facility.

Passive shall mean signal-carrying components that exhibit no gain or contribute no energy.

Product(s) shall mean Passive products manufactured by CommScope that are contained in the bill of materials, for an end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, which were filed with the registration for the System Warranty and which were purchased from an Authorized Reseller.

Product Specification shall mean CommScope's published specification(s), in effect at the time of sale, which defines the optical and/or electrical capabilities of the individual Products.

Registered System shall mean the System designated on the System Warranty Certificate.

System refers to the end-to-end SYSTIMAX®, UNIPRISE®, or NETCONNECT® system, comprised entirely of Products approved by CommScope for the respective System and that meet all of the conditions in the "System Warranty Requirements" Section of these System Warranty Terms and Conditions.

System Specification shall mean CommScope's published specification(s) in effect at the time of sale, which describes the optical and/or electrical capabilities of the System as a whole.

System Warranty shall mean the Extended Product and Application Warranty.

System Warranty Certificate shall mean the certificate issued by CommScope evidencing CommScope's approval and issuance of a System Warranty and identifying the covered System.

Precedence. In the event of any conflict between the terms of the System Warranty and CommScope's Limited Product Warranty and/or a System Specification, the terms of the System Warranty shall control.



commscope.com

Visit our website or contact your local CommScope representative for more information.

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Unless otherwise noted, all trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope, Inc. This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to CommScope products or services. CommScope is committed to the highest standards of business integrity and environmental sustainability with a number of CommScope's facilities across the globe certified in accordance with international standards, including ISO 9001, TL 9000, and ISO 14001. Further information regarding CommScope's commitment can be found at www.commscope.com/About-Us/Corporate-Responsibility-and-Sustainability.

BR-1110431-EN (06/18)

1. **Definitions.** For purposes of this Warranty, (i) “Buyer” shall mean the individual or entity identified on the applicable purchase order or supply agreement (or, if different, on Seller’s quotation, order acknowledgement or confirmation), (ii) “Seller” shall mean the CommScope entity identified on such entity’s quotation, order acknowledgement, confirmation or supply agreement, (iii) “Product” shall mean a product manufactured by Seller pursuant to the applicable supply agreement, quotation, order acknowledgement or confirmation, and (iv) “Warranty Period” shall mean one year from date of original shipment from Seller’s facility unless a different time period is set forth in **Exhibit A**.
2. **Limited Warranty.** Seller warrants that, as of the date of delivery, Seller has good title to the Product, free from any lawful security interest or other lien or encumbrance unknown to Buyer. In addition, during the Warranty Period, the Product will be free from defects in materials or workmanship arising under proper and normal use. This Warranty shall apply only to the Products and shall not apply to any other goods or materials, parts or components of a system or any system as a whole. This Warranty does not cover ordinary wear and tear. Seller does not warrant any products manufactured by third parties; provided that Seller will, to the extent permitted by the manufacturer, assign third-party warranties to Buyer.
3. **Inspection.** If Buyer claims that a Product is defective in materials or workmanship, Seller shall have the right to either examine the Product where it is located or, in its sole discretion, issue shipping instructions for return of the Product. Seller’s inspection in response to a warranty claim shall not constitute acceptance or acknowledgment of the claim’s validity. Buyer shall prepay all transportation charges for such return.
4. **Remedies.** Seller’s sole and exclusive obligation and Buyer’s exclusive remedy under this Warranty is Seller’s repair or replacement of the defective Product or a credit for the purchase price of the defective Product. Seller shall have sole discretion as to which of these remedies Seller will provide. Seller is not liable for any repair or maintenance costs incurred by Buyer, unless Seller authorizes such charges in writing in advance of the commencement of the work. If Seller elects to replace or repair the defective Product, the replaced or repaired Product will be warranted for the remainder of the Warranty Period applicable to the originally shipped Product, but the Warranty shall not be extended beyond the original Warranty Period.
5. **Notice and Waiver.** If Buyer discovers any defect in the Product, Buyer must provide prompt (and in no case later than thirty (30) days after discovery) written notice to Seller of the claimed defect. Such notice shall describe, in reasonable detail, the symptoms of such defect. The notice must be received by Seller during the Warranty Period for such Product. Failure to give timely notice of a claim shall result in Buyer’s waiver of such claim.
6. **Transfer of Ownership.** This Warranty is not transferable unless Buyer is expressly authorized by Seller in writing to resell the Product. In addition, Buyer must notify Seller on or before the fifteenth (15th) day after the date on which it transfers ownership of the warranted Product. Any transfers in violation of this Section shall invalidate this Warranty. Notice of the transfer of ownership must be in writing and shall include the name and address of the new owner.
7. **Exclusions from Warranty.** This Warranty shall not apply to problems attributable to, or as a result of:
 - (a) improper installation or misapplication of parts;
 - (b) chain or system failures induced by other products or components;
 - (c) lack of proper inspection or maintenance or failure to provide a suitable operating environment;
 - (d) any consumables provided with the Product and any other materials, components or products manufactured by a third party;
 - (e) power surges, fire, unusual mechanical, physical or electrical stress, severe weather conditions or acts of nature, including but not limited to, lightning or floods;
 - (f) usage or operation not in accordance with published ratings, specifications or instructions, including but not limited to environmental specifications identified by Seller;
 - (g) any adjustment, modification, alteration, removal or repair of any part of the Product not expressly authorized by Seller in writing;
 - (h) accidental damage, misuse, abuse, neglect or unauthorized access of the Product or of any system of which the warranted Product is a part;
 - (i) any type of aesthetic changes due to oxidation or corrosion occurring on stainless steel or galvanized steel parts installed in unusually corrosive marine and industrial atmospheres (in which case Seller’s only obligation shall be to ensure that Product complies with Seller’s published material specifications);
 - (j) use of the Product for purposes other than that for which it was designed; or
 - (k) mishandling during shipment of the Product.

This Warranty is for Products installed and used in accordance with Seller’s design, installation and operating parameters. Buyer’s failure to ensure conformity with such parameters will void all warranties. Under no circumstance shall Seller have any liability or obligation with respect to expenses, liabilities or losses associated with the installation or removal of any Product or the installation or removal of any components for inspection, testing or redesign occasioned by any defect or by any repair or replacement of a Product.

8. **Limitation on Liability.** THE WARRANTIES SET FORTH IN SECTION 2 HEREOF ARE EXCLUSIVE AND ARE MADE ONLY TO BUYER. SELLER MAKES NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS AND EXCLUDES ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION OR WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OR PERFORMANCE. No person is authorized to give any additional warranties on Seller’s behalf or to assume for Seller any other liability, except in a writing signed by an authorized officer of Seller. SELLER’S TOTAL LIABILITY FOR ANY CLAIM OR DAMAGE ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCTS WILL BE LIMITED TO PROVEN DIRECT DAMAGES, NOT TO EXCEED THE PURCHASE PRICE OF SUCH PRODUCTS. IN NO EVENT WILL SELLER BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY CLAIM FOR LOSS OF ACTUAL OR ANTICIPATED REVENUES OR PROFITS. These limitations on liability will apply regardless of the form of action, whether in contract, tort, strict liability or otherwise, and whether damages were foreseeable and will survive failure of any exclusive remedies provided in Section 4 hereof.

9. **Choice of Law.** The terms and conditions contained herein and the rights of the parties to any transaction to which they relate shall be governed by and construed in accordance with the laws of the State of North Carolina, U.S.A. The United Nations Convention on Contracts for the International Sale of Goods shall not apply.

LIMITED PRODUCT WARRANTY

Exhibit A

Seller warrants that the Products identified below will be free from defects in material and workmanship arising under proper and normal use for the following Warranty Period:

QR® Coaxial Cable	Ten (10) years from the date of original shipment.
ValuSite® Products	Three (3) years from the date of original shipment.
I-Line Accessory Products	Three (3) years from the date of original shipment.
Standard RADIAX® Cable, Connector, Accessory and Cable Assembly* Products	Five (5) years from the date of original shipment, except for the following: (i) two (2) years for surge arrestors; and (ii) one (1) year for all other accessories.
Standard CNT® Cable, Connector, Accessory and Cable Assembly† Products	Five (5) years from the date of original shipment; except that the Warranty Period for Products purchased for resale purposes shall be one (1) year.
Broadband RF Connectivity Products	Five (5) years from the date of original shipment.
Other OSP Cable Products (P3®, Drop Coax, Fiber Cable, Fiber Drop Cable, CIC)	One (1) year from the date of original shipment
FDH Products	One (1) year from the date of original shipment
Multiservice terminals (MST), Open Terminals (OTE) and Hardened Drop Cable Assemblies	One (1) year from the date of original shipment
OSP “Box” Products	One (1) year from the date of original shipment
Mini-RDTs and RDTs	One (1) year from the date of original shipment
FOSC™, FIST™ and Tenio™	One (1) year from the date of original shipment
OSP Copper Connect and Closure Products	One (1) year from the date of original shipment
Standard HELIAX® Cable, Connector, Accessory and Cable Assembly‡ Products	Ten (10) years from the date of original shipment; except for the following: (i) three (3) years for ValuFlex® cable assemblies; (ii) three (3) years for weatherproofing kits; (iii) one (1) year for cable preparation tools (excluding blades); (iv) one year for single click-on hanger kits; and (v) two (2) years for surge arrestors.
HELIAX® FiberFeed® Products, including FiberFeed® hybrid and fiber cables and assemblies, power cables and junction boxes	One (1) year from the date of original shipment.
Steel Products and Rapid Deployment Monopoles	Three (3) years from the date of original shipment.
Standard ION-B®, ION-E®, ION-M®, ION-U®, MR, p-POI®, i-POI®, e-POI™, and Node Repeater Products	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of shipment.
Premium Passive Products, including In-Building Directional Couplers, Hybrid Matrices, Tappers, Power Splitters, Terminations, Attenuators and CMAX Antenna Products	Five (5) years from the date of original shipment.
ValuDAS® Passive Products, including Air Directional Couplers, Hybrid Couplers, High Power Splitters, and Cell-Max™ Antennas	Two (2) years from the date of original shipment.
InterReach Fusion®	One (1) year from the date of original shipment.
InterReach Unison®	One (1) year from the date of original shipment.
FlexWave® Spectrum	One (1) year from the date of original shipment.
FlexWave® Prism	One (1) year from the date of original shipment.
FlexWave® Active Integration Panel (AIP)	One (1) year from the date of original shipment.
A.I.M.O.S. Software Products	One (1) year from the date of original shipment.

* RADIAX® Cable Assembly Product means any RADIAX® coaxial cable that has been fitted with Seller’s connectors in accordance with the installation instructions.

† CNT® Cable Assembly Product means any CNT® coaxial cable that has been fitted with Seller’s connectors by Seller or its certified distributor.

‡ HELIAX® Cable Assembly Product means any HELIAX® coaxial cable or elliptical waveguide that has been fitted with Seller’s connectors by Seller or its certified distributor.

LIMITED PRODUCT WARRANTY

In- Building and Fixed Subscriber Antennas	The earlier of: (i) three (3) years from the date of installation or (ii) thirty-nine (39) months from the date of original shipment.
OneCell® and S1000 Small Cell Platforms (excluding software)	The earlier of: (i) one (1) year from the date of installation; or (ii) fifteen (15) months from the date of original shipment
Small Cell Device Management System (DMS) Software for OneCell® and S1000 Small Cell Platforms	Ninety (90) days from the date of original shipment
Base Station Antenna Products	Two (2) years from the date of original shipment for all base station antennas except base station antennas incorporating N-type connectors, which shall have a warranty of one (1) year from the date of original shipment.
Standard Tower Mounted Amplifier, Bias Tee and Power Distribution Unit Products	Two (2) years from the date of original shipment.
Standard Filter, Diplexer and Triplexer Products	Two (2) years from the date of original shipment.
DryLine® Dehydrator Systems and Line Monitoring Systems	Three (3) years from the date of original shipment or 3,000 hours of actual run time, whichever occurs first; except the Warranty Period for the compressor is only one (1) year from original shipment or 1,000 hours of actual run time, whichever occurs first. This Warranty Period does not apply to Factory Reconditioned Dehydrators, which are warranted for only one (1) year from the date of original shipment.
Microwave Antennas	Three (3) years from the date of original shipment.
Terrestrial Microwave System Products (including Microwave System Flex-Twist, Coupler, Filter and Diplexer Products)	Three (3) years from the date of original shipment.
SiteRise™ Solutions	One (1) year from the date of original shipment on workmanship for the Solution.
Copper Structured Cabling Products	One (1) year from the date of Installation
Fiber Optic Panels, including Accessories, Mounting Hardware, Modules	One (1) year from the date of shipment
Fiber Optic Field Terminated Connectors, Kits, Tools, Consumables, Accessories	One (1) year from the date of shipment
Indoor Fiber Cable Patch Cords, Cable Assemblies, Fiber Trunks	One (1) year from the date of shipment
Passive Optical Components and Value Added Modules (VAMs)	One (1) year from the date of shipment
Fiber Guide Fiber Management System (FGS)	One (1) year from the date of shipment
Optical Distribution Frames, including Modules, Blocks, Accessories and Hardware	One (1) year from the date of shipment
Other Enterprise Products (Coax, Automotive Cables, Enterprise Enclosures and miscellaneous items) (excluding software)	One (1) year from the date of installation.
Cabinets Cable and Apparatus Products	One (1) year from the date of original shipment.
Electronic Enclosure Products (Cabinets)	Two (2) years from the date of original shipment.
Alifabs™ Cabinets & Ancillary Products	One (1) year from the date of original shipment.
Alifabs™ Free Cooling Products and Accessories and Spare Parts, including Monitor	Two (2) years from the date of original shipment.
Alifabs™ Telecommunications Towers and Accessories	One (1) year from the date of original shipment.
Alifabs™ Services (power upgrades, enablements, installation and decommission work, rigging, and fault management)	One (1) year from the date of completion of the work.
Any other Software Products	Ninety (90) days from the date of original shipment.

CERTIFICATE

Certificate Number: 111045.000
Including Seven Page Addendum

The Quality Management System and implementation of:

CommScope, Inc.

With Virtual Central Function at:
1100 CommScope Place SE
Hickory, NC 28602
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

The sales, marketing, design, manufacture, test, repair, support, service, and distribution of telecommunications products, components, and services for the telecommunications, wireless, and broadcast networks industries

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001

Business Segments	Exceptions
Connectivity and Cable Solutions (CCS)	None
Networking, Intelligent Cellular & Security Solutions (NICS)	None
Outdoor Wireless Networks (OWN)	None
Access Network Solutions (ANS)	None



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page One of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Activities Legend:	HQ = Headquarters	MFG = Manufacturing	SER = Services (Professional Services and/or Technical Support)
	HW DE= Hardware Development	REP = Repair	SC = Purchasing, Supplier Management, Manufacturing Support, Repair Support
	SW DE= Software Development	SAL = Sales, Marketing	DIST = Distribution

Site Address	Site Activities
CommScope Inc 1100 CommScope Place SE Hickory, NC 28602 United States	HQ (Virtual)
ARRIS Technology, Inc. 3871 Lakefield Drive Suwanee, GA 30024 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 101 Tournament Dr. Horsham, PA, 19044 United States	HW & SW DE, SAL, SER, SC
ARRIS Technology, Inc. 6450 Sequence Drive San Diego, CA 92121 United States	SW DE, SER
ARRIS Technology, Inc. 900 Chelmsford St. Lowell, MA 01851 United States	HW & SW DE, SER, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Two of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Solutions, Inc. 2400 Ogden Ave., Suite 180 Lisle, IL 60532 United States	HW & SW DE, SAL, SER, SC
ARRIS 15 Sterling Drive Wallingford, CT 06492 United States	HW & SW DE, SER, SC
ARRIS Technology, Inc. 2450/2500 Walsh Avenue Santa Clara, CA 95051 United States	HW & SW DE, SAL, SER
Ruckus Wireless International Inc. 350 West Java Dr. Sunnyvale, CA 94089 United States	HW & SW DE, SER
Ruckus Wireless Network Technology (Shenzhen) Co. Ltd. Units C&D, 5th Floor, No. 2 Finance base, 8 KeFa Road, Shenzhen, China	SW DE, SC, HW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Three of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
Site Address	Site Activities
CommScope Asia (Suzhou) Technologies Co., Ltd. 77 Qiming Road, Suzhou Industrial Park Suzhou, Jiangsu 215121 Peoples Republic of China	MFG, SC
Ruckus Wireless International Inc., Taiwan Branch @ Neihsu District, Taipei City, Rui Road 411, 10th floor, Taipei	SW DE
ARRIS Group India Pvt Limited (AGIPL) Salarpuria Supreme, Ground Floor West Wing & First Floor Munnekolalu Village, Varthur Hobli, Outer Ring Road, Bangalore-560037	SW DE
ARRIS Group de Mexico S.A. de C.V. Av. La Paz 11721 Parque Industrial Pacifico Tijuana, BC 22643 Mexico	MFG, REP, SC
ARRIS Communications Ireland Limited Building 4300, Cork Airport Business Park Kinsale Road Cork County Ireland	HW & SW DE
ARRIS Group India Private Limited "The Senate" No:33/1, Ulsoor Road, Bangalore - 560 042 India	HW & SW DE

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Four of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
ARRIS Group, Inc. 50 Stranmillis Embankment Belfast, BT95FL Northern Ireland	SW DE
CommScope Czech Republic, s.r.o. Turanka 856/98B 627 00 Brno Czech Republic	HW DE,
CommScope CZ, spol. s.r.o. U Morusi 888, 53006 Pardubice Czech Republic Czech Republic	HW DE,
CommScope Connectivity UK Limited Units 1 and 4 Kinmel Park Industrial Estate Bodelwyddan, Denbighshire, LL18 5TZ United Kingdom	HW DE, MFG, SAL
CommScope Design & Integration UK Ltd. Unit 5 & 6 Eden Business Park Eden House Drive Old Malton, Malton, North Yorkshire YO17 6AE United Kingdom	HW DE, MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Five of Seven

The Quality Management System and implementation of:

CommScope, Inc.

meets the requirements of the standard:

ISO 9001:2015

Site Address	Site Activities
CommScope Design & Integration UK Limited 412 The Quadrant, Birchwood Park Warrington, WA3 6FW United Kingdom	SER
CommScope EMEA Ltd. Corke Abbey Avenue Bray, Co. Dublin Ireland	MFG, SAL
CommScope EMEA Ltd. Diestsesteenweg 692 3010 Kessel-Lo, Belgium	HW DE, MFG, SAL
CommScope Italy Srl Via Archimede, 22/24 Agrate Brianza (MB) 20864 Italy	HW DE, REP, SW DE
Telecom Networks Americas AV. HIPOLITO YRIGROYEN 2999, DEPOSITO 6 EL TALAR, TIGRE Buenos Aires B1618AXD Argentine Republic	SAL, DIST
CommScope Networks India Private Limited Salarpuria Softzone, A Block, 1st Floor Survey No 80/1, 81/1, 81/2, B Wing, Belandur Village, Varthur Hobli, Outer Ring Bangalore – Karnataka 560103 India	SW DE
ADC India Communications Ltd. No 10 C , 2nd Phase Peenya Industrial Area Bangalore – Karnataka 560058 India	MFG, SC

Certificate Expires: January 04, 2026
Certificate Issued: January 05, 2023
Certified Since: January 10, 2001



Dr. Cem O. Onus
Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 111045.000
ADDENDUM Page Six of Seven

The Quality Management System and implementation of:

CommScope, Inc.

With site at:

CommScope Asia (Suzhou) Technologies Co.,Ltd.

77 Qiming Road, Suzhou Industrial Park
Suzhou, Jiangsu 215121
Peoples Republic of China

meets the requirements of the standard:

ISO 9001:2015

The validity of this certificate depends on the validity of the main certificate.

Scope:

Production of network cable, fiber cable and communication equipment component (copper patch cords, copper panel, accessories etc.)

Certification Structure: Multi-site

Certificate Expires:	January 04, 2026
Certificate Issued:	January 05, 2023
Certified Since:	January 10, 2001



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
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证书附录

证书编号: 111045.000

附录第7页,共7页

质量管理体系和实施:

CommScope, Inc.

其场所:

康普科技 (苏州) 有限公司

中国江苏省苏州工业园区启明路77号,邮编215121

符合以下标准要求:

ISO 9001:2015

本证书的有效性取决于主证书的有效性。

范围:

网络线、光缆、通信系统设备材料 (网络跳线、配线装置等) 的生产。

认证结构: 多场所

证书有效期: 2026.01.04

发证日期: 2023.01.05

首次发证日期: 2001.1.10



Dr. Cem O. Onus
Managing Director

DEKRA Certification, Inc.
1945 The Exchange SE #300
Atlanta, GA 30339 USA
(215) 997-4519
<https://www.dekra.us/en/audits/>



Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

CommScope, Inc. of North Carolina
1100 CommScope Place SE
Hickory
North Carolina
28603-0339
USA


Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

This certificate remains the property of BSI and shall be returned immediately upon request.

An electronic certificate can be authenticated [online](http://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000

BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

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Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

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Implementation considerations for cabling supporting remote powering

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Background

Remote powering, such as Power over Ethernet (PoE), is a popular method of dc power delivery using communications cabling, with more than 100 million nodes installed around the globe. Power over Ethernet has evolved—from initially sourcing up to 15 watts at the power source equipment (PSE) as specified in IEEE Std. 802.3af-2003, increasing to up to 30 watts in IEEE Std 802.3at-2009, and now increasing further by IEEE 802.3bt standard to source up to 90 watts at the PSE. It is important to note that all PoE powering levels and classifications comply with the SELV (Safety Extra Low Voltage) 60 volts and LPS (Limited Power Source) 100 VA (watts) requirements in IEC 60950-1, making PoE a low-risk, reliable, and cost-effective application for delivering power over the same balanced twisted-pair cabling used for data communications.

Cabling infrastructure standards development organizations such as TIA, ISO/IEC, CENELEC, and NEC have published and/or are developing specifications with design, installation and operational guidelines to facilitate reliable and robust deployment of remote powering networks, including PoE. The documents listed below are the source of many of the guidelines included in these implementation considerations.

The guidelines in the documents to the right include maximum current carrying capacity of category cables typically used in enterprise commercial buildings under various installation conditions and ambient temperatures. This allows the cabling to be designed, installed and operated to optimize thermal and electrical performance in various configurations. The guidelines support delivery of power using all four pairs with up to 1000 mA per pair (500 mA per conductor) for a maximum power of 100 VA (100 watts) at the power source over four-pair cabling, assuming a nominal 50 V power supply at the PSE.

Additionally, to improve the consistency and harmonization of installation practices, the proposed IEC 60364-7-716 (new part of the IEC Electrical installation standard used as a reference document in many international electrical codes) states that—if telecommunication cabling is used for power delivery—it shall be planned and installed in accordance with ISO/IEC 14763-2 or CENELEC EN 50174 series.

Implementation Considerations

- A** TIA TSB 184-A Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling
- B** ISO/IEC TS 29125 INFORMATION TECHNOLOGY—TELECOMMUNICATIONS CABLING REQUIREMENTS FOR REMOTE POWERING OF TERMINAL EQUIPMENT
- C** CENELEC CLC/TR 50174-99-1 Information technology—Cabling installation—Part 99-1: Remote powering
- D** NEC NFPA 70 Code
- E** TIA 569.D-2 Additional pathway and space considerations for supporting remote powering over balanced twisted-pair cabling
- F** ISO/IEC 14763-2 revision including remote power planning and installation is in development

Advantages of remote powering using communications cabling

Remote powering such as PoE facilitates the use of communications cabling for the support of remote power delivery without compromising the data communications functionality, thereby increasing the utility of communications cabling. This dual usage makes power delivery cost-effective while also enabling power delivery to a wider range of devices. These guidelines are intended to support all types of power and classifications being developed by IEEE 802.3bt, IEEE 802.3at and IEEE 802.3af for a variety of use cases, ranging from wireless access points (WAPs) to cameras, lighting, and intelligent building systems (IBS) devices. Other advantages of remote dc powering over communications cabling include:

- Smaller size of cables and connectors compared to ac line power, enabling higher density
- Enhanced communication between PSE and powered device (PD) for calibrated and reliable powering
- Continuous monitoring of the circuit for faults and other operating conditions
- Lower installation costs since low-voltage-cabling installers can install the cabling at the same time as part of communications cabling
- Improved control and operation of devices for better facility management
- Synergies created by power delivery simultaneous with communication, enabling a diverse and intelligent infrastructure (e.g., smart LED lighting)
- UPS backup, enabling robust and reliable operation

CommScope implementation considerations for remote powering

WHAT ARE THE VARIOUS FACTORS TO CONSIDER WHEN IMPLEMENTING REMOTE POWERING?

Factors that affect and influence the efficient operation of remote powering include:

1. Type of cables, cords, and connectors selected
2. Type of pathway infrastructure used to support the cables
3. Cable bundling configurations
4. Cable routing lengths

COMMSCOPE APPROACH TO DESIGN AND INSTALLATION

CommScope's recommendation for a robust and reliable installation to support remote powering is to use a holistic approach covering all aspects, including:

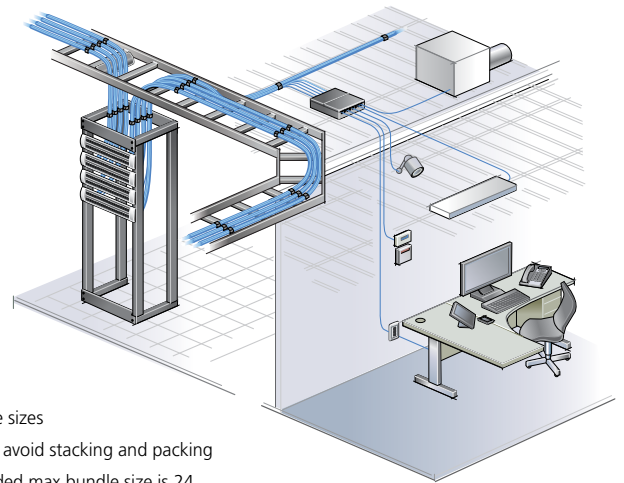
- Cable types and installation practices
- Pathway types and routing distances
- Accurate administration and optimal operations

CommScope implementation considerations for remote powering

TYPICAL DISTRIBUTION TOPOLOGY IN BUILDINGS

Figure 1 shows an illustration for the typical cabling topology used in buildings. For efficient PoE deployments, bundle sizes should be limited—and bundles should not be stacked or packed tightly. As a simple rule of thumb, we recommend that bundle sizes be limited to a maximum of 24 cables per bundle*, allowing gauge sizes from 24 AWG or larger to be within the cable temperature rating of 60°C when installed in worst-case conditions. A worst-case ambient temperature of 45°C is used for both air and conduit, with the conduit being the worst-case installation condition.

NOTE: 24-cable bundles match typical patch panel configurations, and is a practical configuration—for installation considerations—that also provides some extra margin.



NOTES:

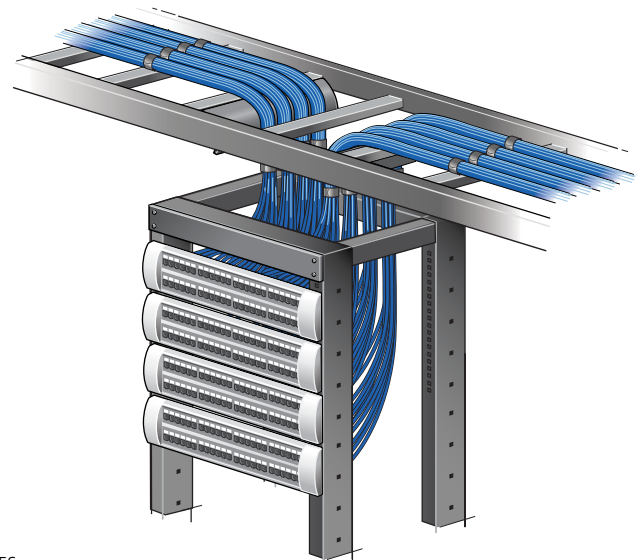
1. Limit bundle sizes
2. Organize to avoid stacking and packing
3. Recommended max bundle size is 24

Figure 1

Illustration of typical cabling topology

CABLE MANAGEMENT IN EQUIPMENT ROOMS AND TELECOMMUNICATIONS ROOMS

Cable bundles are commonly used in telecommunications rooms, equipment rooms and entrance facilities to manage and route cables in an aesthetic manner. Figure 2 illustrates a typical cabling topology used in equipment rooms and telecommunications rooms.



NOTES:

1. Cable bundles open to air flow throughout rack space
2. 24 cable bundles patch panel exiting on both sides of patch panel

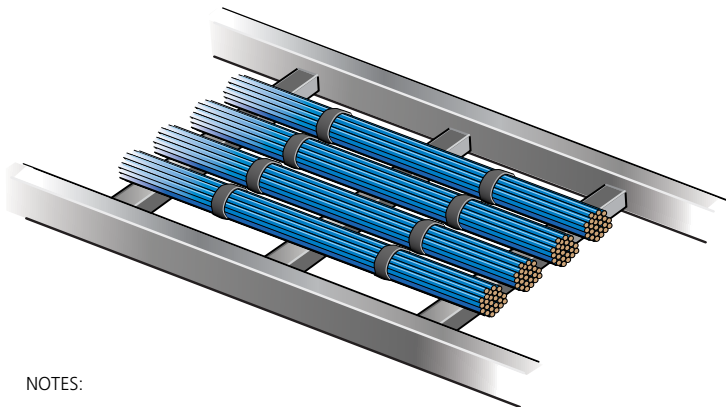
Figure 2

Illustration of 24-cable bundles in equipment and telecommunications rooms

CommScope implementation considerations for remote powering

CABLE MANAGEMENT IN HORIZONTAL DISTRIBUTION

The horizontal cabling design should configure cables to allow maximum ventilation by selecting pathway systems that spread the cables over the full width of a pathway. Figure 3 shows an illustration for typical cabling installation in a tray. Figure 4 shows an example of a typical installation of multiple bundles in ceiling trays.



NOTES:

1. Some amount of space should be maintained between bundles to allow for free air flow
2. Aligned strap positioning can be used to create gap

Figure 3

Illustration of cables in ceiling trays



Figure 4

Example installation of cables in ceiling trays

SERVICE CONCENTRATION POINT TERMINATION

Figure 5 shows an illustration for routing and termination at service concentration points (SCP) near the ceiling. A distributed ceiling grid cabling installation—according to ISO/IEC 11801-6 (in development), EN 50173-6 or TIA-862-B—allows future proofing and flexibility when installing several different remote-powered applications that are connected above the ceiling.

Figure 6 shows close-up detail of cable termination at a service concentration point (SCP).

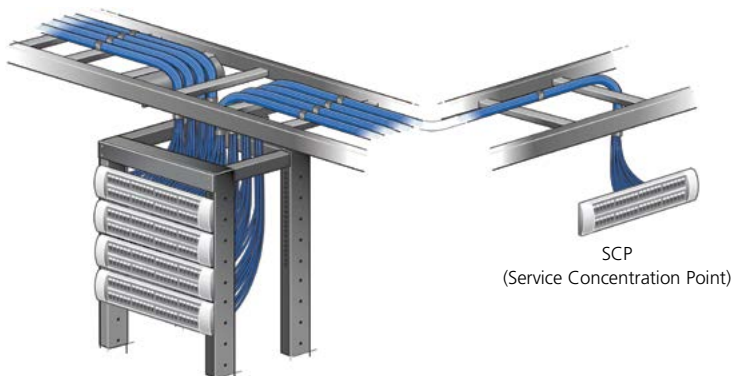


Figure 5

Illustration of routing and termination at an SCP

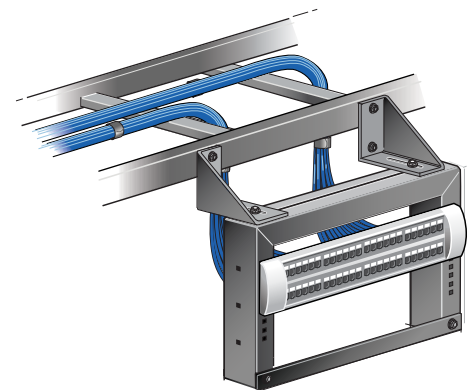


Figure 6

Illustration of mounting and cable termination at a SCP

CommScope implementation considerations for remote powering

PATHWAY SYSTEMS

Pathway systems can affect heat dissipation and impact the temperature rise in a cable bundle. Figure 7 shows two pathways with identical cable bundles and size. Typically, the wire basket has a lower temperature rise than the solid bottom cable tray because of more air circulation.

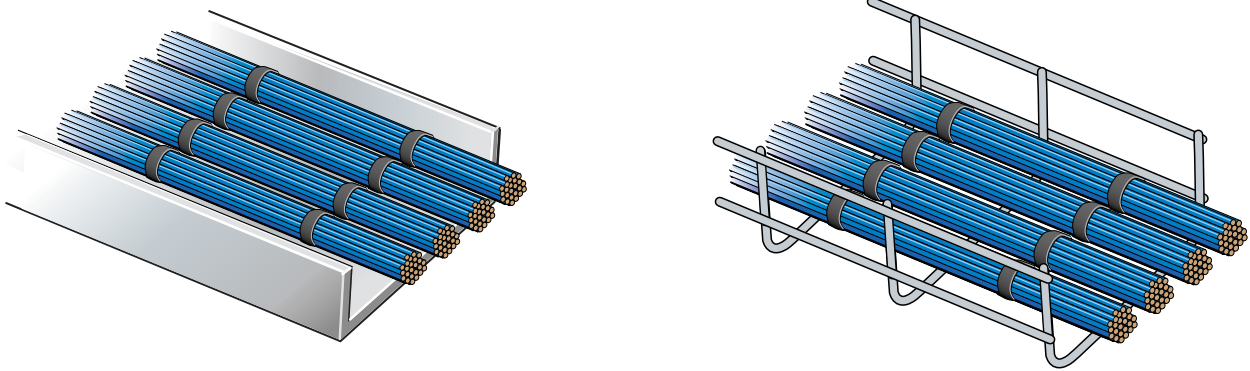


Figure 7

Illustration of cable bundles in solid-bottom and wire mesh cable tray

Figure 8 shows an illustration of cables installed in non-continuous cable supports—allowing air circulation around the cables and also serving to control the number of cables in the bundle.

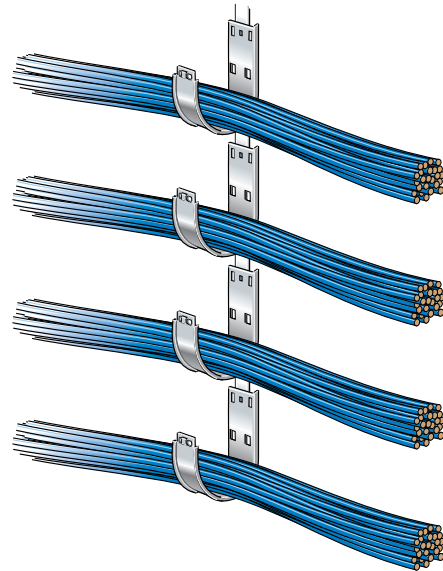


Figure 8

Example of cables in non-continuous support

CommScope implementation considerations for remote powering

INSTALLATION IN CONDUIT

Installation in conduit degrades thermal performance—with a higher temperature rise than open-air installation. Conduit installation should be minimized to only those areas mandated by the local authority having jurisdiction (AHJ), using a maximum fill percentage of 40 percent and maximum bundle sizes of 24 cables per bundle. Figure 9 shows an example of a 2-inch conduit installation with an approximate fill of 24 percent for typical Category 5e cables.

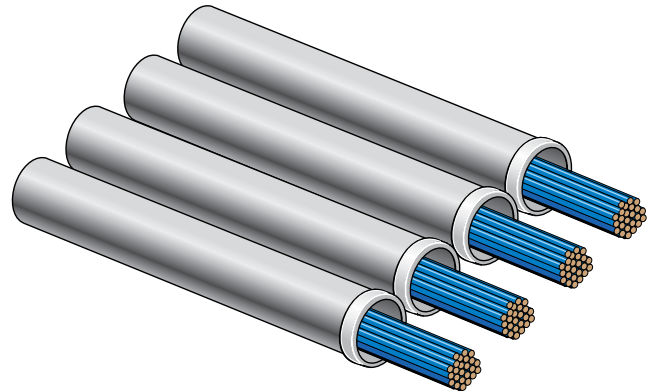
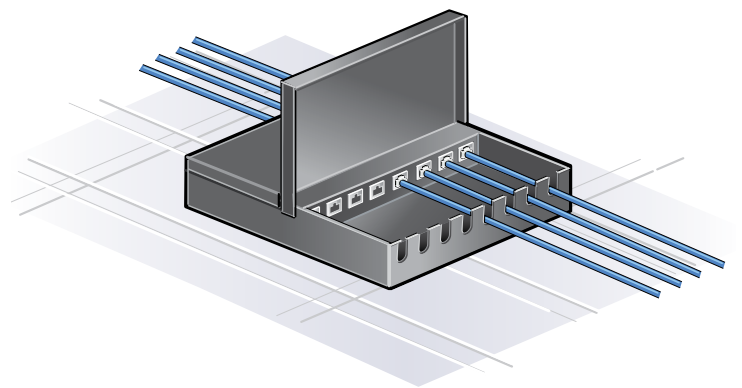


Figure 9
Example of cables in conduits

Remote powering equipment

Equipment for remote power delivery connected to cabling shall comply with IEC 62949 or EN 62368-3. The installer should check the nameplate on the remote powering equipment to determine if there is a maximum current per conductor at each port. If the current is less than 0.3 amps nominal, the port can, without further consideration, be connected to Category 5 or higher communications cabling as specified in TIA, ISO/IEC, and CENELEC standards. If the port has a maximum current above 0.3 amps nominal per conductor, the applicable standards or codes will need to be consulted for the maximum bundle size. If bundle size is limited to 24 cables, there is no need for any further consideration for current up to 0.5 amps per conductor in a four-pair cable with conductors 24 AWG or larger.



NOTES:

1. Check for maximum current on equipment nameplate
2. Current less than 300 mA nominal per conductor is safe for Category 5 and above
3. Standards and codes limit bundle sizes for higher current

Figure 10
Example of cables in equipment

CommScope administration support for remote powering

CommScope imVision® AIM System Manager software includes support for remote powering management features. The software has implemented the requirements of Annex C of TIA-568-C to create bundle identifiers, bundle records, and associated links. imVision System Manager software can list all the cables in a bundle, together with the maximum power on the power source equipment port where these cables are connected. This allows a network administrator to view the cables in a bundle, together with the power sourced by each cable. Alerts are issued when the number of cables in a bundle exceeds a given threshold (such as 24 cables) or the power levels exceed defined thresholds. This capability provides additional insight for ongoing administration operations of cables supporting remote powering.

Checking suitability of higher bundle sizes

The 24-cable bundle size is a recommendation, not a requirement—but should be followed as a general rule of thumb. Sometimes, larger bundle sizes may be needed; a qualified designer/installer can make the necessary evaluation to determine if a bundle size will cause any overheating. Tables in the appropriate TIA, ISO/IEC and CENELEC cabling standards on remote powering implementation provide a mechanism to check if a particular cable category bundle size is acceptable. For a given ambient temperature and installation condition—if the current per pair is greater than the maximum current on the PoE port—the cable bundle size is acceptable.

An example of this is shown with data taken from **Table 1: Current capacity per pair at 45° C ambient temperature for a category of cable versus number of cables in bundle for standard 60° C rated cables**, shown below:

TABLE 1								
NO. OF CABLES	26 AWG		CATEGORY 5e		CATEGORY 6		CATEGORY 6A	
	Air	Conduit	Air	Conduit	Air	Conduit	Air	Conduit
1	2.664	2.091	3.492	2.844	4.099	3.243	4.380	3.541
7	1.545	1.223	1.971	1.628	2.287	1.857	2.460	2.039
19	1.140	0.909	1.424	1.188	1.638	1.356	1.770	1.496
24	1.059	0.846	1.314	1.100	1.509	1.255	1.632	1.386
37	0.919	0.737	1.128	0.949	1.290	1.084	1.399	1.200
48	0.842	0.677	1.026	0.866	1.170	0.989	1.271	1.097
52	0.819	0.660	0.997	0.842	1.135	0.962	1.234	1.067
61	0.775	0.625	0.939	0.795	1.068	0.908	1.162	1.008
64	0.763	0.615	0.922	0.781	1.049	0.893	1.141	0.991
74	0.725	0.586	0.873	0.741	0.991	0.847	1.079	0.941
91	0.673	0.545	0.806	0.686	0.914	0.784	0.996	0.873
97	0.658	0.533	0.787	0.670	0.891	0.766	0.971	0.852
100	0.651	0.528	0.777	0.662	0.880	0.757	0.960	0.843
127	0.596	0.485	0.708	0.605	0.799	0.691	0.872	0.771
169	0.536	0.437	0.631	0.541	0.711	0.619	0.777	0.691

Checking suitability of higher bundle sizes

To determine the maximum current that will not exceed the temperature rating of a 60°C rated cable, a designer/installer can do a table lookup for the particular ambient temperature. For example, for Category 6A, if a 61-cable bundle is installed in 45°C ambient, the maximum current from Table 1 is 1.162 amps in air and 1.008 amps in conduit, which is more than the 0.96 maximum current IEEE 802.3bt equipment will source—so the 61-cable Category 6A bundle can easily support all IEEE 802.3 PoE applications at 45°C ambient. Additionally, it should be pointed out that these current capacities in IEEE 802.3bt are for a worst-case 100-meter 24-AWG cabling with a loop resistance of 25 ohms. CommScope cabling will do much better, and informed installers can certainly increase the bundle sizes for shorter distances and better gauge sizes than 24 AWG (Category 6A is 23 AWG). Check with your CommScope representative for CommScope-specific product information for PoE that will be published in a later document.

NFPA NEC 2017 and LP cables

Some companies are touting LP rating as a requirement to support PoE above 60 watts per four-pair balanced twisted-pair cable. Article 840.160 of the NEC 2017 regulation exempts communications circuits delivering less than 60 watts (nominal 0.3 amps per conductor) to communications equipment. At higher power levels, the specifications require either adherence to a table (limiting the bundle size based on the current to be carried, the copper wire gauge used, and the temperature rating of the cabling) or they require providing the option of using cabling with a new rating, known as “LP” cabling. Table 725.144 as shown below is generic to all Class 2 and 3 cable types.

Table 725.144, Ampacities of Each Conductor (in Amperes) in a 4-Pair Class 2 or Class 3 Data Cables, Based on Copper Conductors at Ambient Temperature of 30°C (86°F) with all Conductors in All Cables Carrying Current, 60°C (140°F), 75°C (140°F) and 90°C (194°F) Rated Cables

NUMBER OF 4-PAIR CABLE IN A BUNDLE																					
AWG	1			2-7			8-19			20-37			38-61			62-91			92-192		
	Temperature rating			Temperature rating			Temperature rating			Temperature rating			Temperature rating			Temperature rating			Temperature rating		
	60° C	75° C	90° C	60° C	75° C	90° C	60° C	75° C	90° C	60° C	75° C	90° C	60° C	75° C	90° C	60° C	75° C	90° C	60° C	75° C	90° C
26	1.0	1.0	1.0	1.0	1.0	1.0	0.7	0.8	1.0	0.5	0.6	0.7	0.4	0.5	0.6	0.4	0.5	0.6	N/A	N/A	N/A
24	2.0	2.0	2.0	1.0	1.4	1.6	0.8	1.0	1.1	0.6	0.7	0.9	0.5	0.6	0.7	0.4	0.5	0.6	0.3	0.4	0.5
23	2.5	2.5	2.5	1.2	1.5	1.7	0.8	1.1	1.2	0.6	0.8	0.9	0.5	0.7	0.8	0.5	0.7	0.8	0.4	0.5	0.6
22	3.0	3.0	3.0	1.4	1.8	2.1	1.0	1.2	1.4	0.7	0.9	1.1	0.6	0.8	0.9	0.6	0.8	0.9	0.5	0.6	0.7
Note 1: For bundle sizes over 192 cable, or for conductor sizes smaller than 26AWG, ampacities shall be permitted to be determined by qualified personnel under engineering supervision. Note 2: Where only half of the conductors in each cable are carrying current, the values in the table shall be permitted to be increased by a factor of 1.4. Informational Note: The conductor sizes in data cables in wide-spread use are typically 22-26 AWG.																					

Article 725.144 specifies two options (shown below) for meeting the requirements for table 725.144:

Option A: Traditional CL3P, CL2P, CL3R, CL2R, CL3, or CL2 cables used to transmit power and data that comply with the requirements in Table 725.144 (e.g., 23-AWG 60°C-rated cable can support up to 0.4 amps per conductor in a 192-cable bundle). Article 840.160 additionally allows the substitution of communication cables (Class CM) for Class 2 and Class 3 (CL) cables.

Option B: Cables, as in Option A, with an “-LP” appended to the listing (e.g., CL2P-LP) that have been tested at UL up to a bundle configuration of 192 cables and have the corresponding ampacity rating marked on the jacket (e.g., CL2P-LP[0.5A], 23 AWG).

As described in these implementation considerations, CommScope uses a holistic approach for PoE that includes not only ampacity control but implementation of the practical guidelines for reducing temperature rise in ISO TR 29125, TIA TSB 184-A, and EN-50174 series. These documents recommend a maximum bundle size of 24 cables—significantly improving the thermal performance of Category cables to negate the need for LP cables.

Remote powering and CommScope Application Warranties

For registered CommScope Network Infrastructure System installations, IEEE 802.3 Power over Ethernet applications are covered per the SYSTIMAX® Applications Assurance Program, and the Uniprise® and NETCONNECT® Application Warranty Programs, based on complying with the applicable standards, guidelines, and codes. Consult your local CommScope representative for details.

Recommendations

To manage remote powering, CommScope recommends a holistic approach that includes not only controlling the maximum current in conductors, but implementation of the practical guidelines for reducing temperature rise in ISO/IEC TR 29125, CENELEC CLC/TR 50174-99-1, CENELEC EN 50174 series and TIA TSB 184-A. These documents recommend the use of Category 6A or Class EA or higher cabling for all new installations—based on its superior performance supporting remotely powered channels—and a maximum bundle size of 24 cables, which will significantly control cable thermal performance. Using these documents together with CommScope installation practices will lead to correct installations for all levels of remote powering, ranging from 15–90 watts delivered by the power source equipment (PSE).

It should also be pointed out that transmission parameters are specified up to 60°C in TIA, CENELEC and ISO cabling standards—and communications equipment has been designed to operate under these conditions. Hence, going above 60°C is nonstandard, not generic, and impractical since it poses considerable risk of applications not working at temperatures between the 60°C and 90°C currently allowed in Table 725.144 of NEC-2017.

It is also worth noting that compliance to safety regulations is facilitated by a similar comprehensive holistic approach taken by national and international cabling standards, including working closely with application committees such as IEEE 802.3. For example, star wiring (limiting one PSE port to power one PD) improves control and compatible power supply since LLDP is used to manage power to all devices connected to a PSE. The cabling committees reference national and international electrical codes to ensure compliance with local codes and regulations. It is this comprehensive coordinated and consistent approach that has led to a perfect record of no reported loss of life or property using communications networks for power delivery. CommScope is committed to maintaining this perfect record in the future for emerging standardized remote power applications by specifying and managing all aspects of the cabling infrastructure to improve thermal performance.

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- ISO/IEC TS 29125 INFORMATION TECHNOLOGY—TELECOMMUNICATIONS CABLING REQUIREMENTS FOR REMOTE POWERING OF TERMINAL EQUIPMENT
- NFPA 70® National Electrical Code® 2017 Edition
- TIA TSB-184-A Guidelines for Supporting Power Delivery over Balanced Twisted-Pair Cabling

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This certificate is traceable to the certificate number SGQ-2276 originally issued by TÜV Rheinland do Brasil Ltda. in 2009-10-09.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

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Americas Headquarters: BSI Group America Inc., 12950 Worldgate Drive, Suite 800, Herndon, VA 20170-6007 USA
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Hickory
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Holds Certificate No:

EMS 648387

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The environmental management system to control the risks associated with the manufacture, distribution, field support and central function of telecommunication products and services.

For and on behalf of BSI:


Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 1 of 5



...making excellence a habit.™

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Telecommunications de Reynosa S. de R.L. de C.V. Av. Industrial Reynosa Lte 2 al 5 Parque Industrial Center Reynosa Tamaulipas 88780 Mexico	Manufacture and distribution of telecommunication products including antenna and cable.
CommScope Asia (Suzhou) Technologies Co., Ltd. EPZ II, 77 Qiming Road Suzhou Industrial Park Suzhou Jiangsu 215121 China	Manufacture and distribution of telecommunication products, including cable.
Andrew Telecommunications India Pvt. Ltd. Plot No. N-2, Phase IV Verna Industrial Estate Verna Salcette Goa 403 722 India	Manufacture and distribution of telecommunication products, including antenna and cable.
CommScope EMEA Ltd. Corke Abbey Avenue Bray County Dublin A98FY03 Ireland	Manufacture and distribution of telecommunication products, including cable and connectors.
CommScope Telecommunications (China) Co., Ltd. 68 West Su Hong Xi Lu Suzhou Industrial Park Suzhou Jiangsu 215021 China	Manufacture and distribution of telecommunication products, including antenna and cables.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 2 of 5

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
Andrew Wireless Systems GmbH Industriering 10 Buchdorf 86675 Germany	Manufacture and distribution of telecommunication products, including amplifiers and antenna systems.
CommScope, Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Corporate headquarters responsible for management system oversight of all locations listed on this certificate.
CommScope Inc. 6519 CommScope Road Catawba North Carolina 28609-0199 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Inc. 3642 US Hwy 70 East Claremont North Carolina 28610-0879 USA	Manufacture and distribution of telecommunication products, including cable.
CommScope Czech Republic s.r.o. Turanka 98B Brno 62700 Czech Republic	Manufacture and distribution of telecommunication products, including connectors and terminations.
CommScope Inc. of North Carolina 1100 CommScope Place SE Hickory North Carolina 28603-0339 USA	Customer care, facility maintenance, and administrative functions.
ADC de Delicias, S. de R.L. de C.V. Blvd. Fernando Baeza No. 1301 Sur Delicias Chihuahua 33000 Mexico	Manufacturing and distribution of telecommunication products.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 3 of 5

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Certificate No: **EMS 648387**

Location	Registered Activities
ADC de Juarez S. de R.L. de C.V. Parque Industrial Antonio J Bermudez Ciudad Juarez Chihuahua 32470 Mexico	Manufacturing and distribution of telecommunication products.
CommScope Connectivity Belgium bvba Diestsesteenweg 692 Kessel-lo 3010 Belgium	Manufacture and distribution of telecommunication products.
CommScope Technologies de Juarez S. de R.L. de C.V. Santiago Troncoso 331 Praderas del Sur, Ciudad Juarez Chihuahua 32575 Mexico	Manufacture of Fiber Optic Splice Closures (FOSC), Fiber Guide Systems (FGS), Hardened Connectivity and Molding-Gel Filling, including: plastic injection molding, plastic extrusion, plastic and metal machining, and assembly operations.
CommScope Connectivity UK Limited Unit 1 Kinmel Park Bodelwyddan Rhyl, Denbighshire LL18 5TZ United Kingdom	Fibre optic cable manufacturing, termination and design of other telecommunication products and services.
CommScope 11312 S. Pipeline Road Eules Texas 76040 USA	Manufacture, distribution, field support and central function of telecommunication products.
ARRIS GROUP DE MEXICO SA DE CV Av. De la Paz, #11721 Parque Industrial Pacifico Tijuana Baja California 22643 Mexico	Manufacture, repair, support, repair service, distribution of products and components for telecommunications that provide integrated solutions for voice, video and data through the processes of SMT, manual and mechanical assembly, soldering (manual, selective, printed, wave) electrical testing and packaging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

Page: 4 of 5

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BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.

A Member of the BSI Group of Companies.

Certificate No: **EMS 648387**

Location	Registered Activities
CommScope Design & Integration UK Ltd Unit 5 & 6, Eden Business Park Edenhouse Drive Old Malton Malton YO17 6AE United Kingdom	Manufacture and distribution of telecommunications products including cabinets.
Arris Indústria Eletrônica do Brasil Ltda. CNPJ: 09.154.836/0001-15 Avenida Torquato Tapajós, 9475 Tarumã Manaus Amazonas 69041-025 Brasil	Manufacturer and distribution of Receivers, Television signal Decoders and Modulator/Router.
CommScope Design and Integration UK Ltd. Lovell House, 412 The Quadrant Birchwood Park Warrington WA3 6FW United Kingdom	Telecommunications project management, site surveys, installations commissioning and rigging.

Original Registration Date: 2016-03-01

Latest Revision Date: 2022-04-21

Effective Date: 2022-03-15

Expiry Date: 2025-03-14

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NPC6AUZDA



NETCONNECT® Cat 6A U/UTP A-wired RJ45 Patch Cord, LSZH

- High-performance patch cords exceeding industry standards supporting NETCONNECT channel specifications
- Standardized transparent, slim-line boots provides consistent patch cord appearance and supports highest density applications
- Colored clips are available to fit the transparent boot, eliminating the need of multiple colors for matching every jacket color
- Colored pull latch tabs are available for easier plug release handling from the modular jack

Product Classification

Regional Availability	EMEA
Portfolio	NETCONNECT®
Product Type	Twisted pair patch cord
Product Series	NPC
Ordering Note	Cords < 1 m are valid elements for use in a channel or as an equipment interconnect but due to their limited length are not guaranteed to meet component compliance requirements that were developed to assess the quality of longer cords Cords > 1 m are authorized for use in channels and are an effective standalone method used to connect active devices

General Specifications

ANSI/TIA Category	6A
Cable Type	U/UTP (unshielded)
Conductor Type	Solid
Interface, Connector A	RJ45 plug
Interface Feature, connector A	Standard
Interface, Connector B	RJ45 plug
Interface Feature, connector B	Standard
Jacket Color	Black Blue Green Orange Red Slate White Yellow
Pairs, quantity	4
Transmission Standards	IEEE 802.3bt Type 4
Wiring	T568A

Dimensions

Cable Assembly Length Range (m)	1 – 30
---------------------------------	--------

NPC6AUZDA

Cable Assembly Length Range (ft)	1 – 100
Cable Assembly Length Range (cm)	15 – 999
Cable Assembly Length Range (in)	6 – 999
Diameter Over Jacket	7.24 mm 0.285 in
Compatible Conductor Gauge, solid	24 AWG

Ordering Tree

NPC-

10

OR

12

0

5

0

11

M

Jacket Color		
10	BK	Black
	BL	Blue
	GN	Green
	GY	Gray
	OR	Orange
	PK	Pink
	RD	Red
	VT	Violet
	WT	White
	YL	Yellow

UOM		
11	F	Foot
	M	Meter
	N	Inch
	C	Centimeter

Length	
12	xxx

Notes

- Cords > 1m are authorized for use in channels and are an effective standalone method used to connect active devices
- Cords < 1m are also valid elements for use in a channel or as an equipment interconnect but due to their limited length are not guaranteed to meet component compliance requirements that were developed to assess the quality of longer cords

Mechanical Specifications

Plug Insertion Life, minimum	750 times
------------------------------	-----------

Environmental Specifications

Operating Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Relative Humidity	Up to 93%, non-condensing
Acid Gas Test Method	IEC 60754-2
Environmental Space	Low Smoke Zero Halogen (LSZH)
Flame Test Method	IEC 60332-3-22
Safety Standard	UL 1863
Smoke Test Method	IEC 61034-2

Packaging and Weights

Packaging quantity	1
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NPC6AUZDA

Regulatory Compliance/Certifications

Agency

RCM



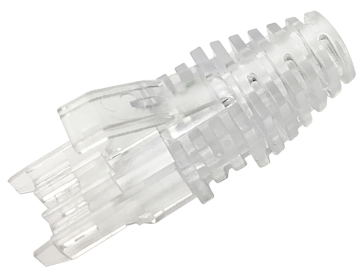
Classification

Compliant to electrical safety & telecommunications requirements

Included Products

- | | | |
|------------------|---|---|
| 2843018-3 | – | Integrated Boot and Pair Manager for MP-6AU, size 71, transparent |
| MP-6AU-Boot-71-1 | | |
| 6-2843008-1 | – | Modular Plug, Category 6A/6, Unshielded, Cond Insulation OD - 0.79mm, 100 |
| MP-6AU-Plug-B-1 | | pcs |

2843018-3 | MP-6AU-Boot-71-1



Integrated Boot and Pair Manager for MP-6AU, size 71, transparent

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Modular plug boot

General Specifications

Boot Feature	Color-clip compatible Pull-tab compatible Slimline Snagless
Color	Clear
Compatible Plug Type	Cat 6 Cat 6A

Dimensions

Compatible Cable Diameter, maximum	7.4 mm 0.291 in
Compatible Cable Diameter, minimum	6.8 mm 0.268 in

Packaging and Weights

Included	Strain relief
Packaging quantity	100
Packaging Type	Bag Box

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant



6-2843008-1 | MP-6AU-Plug-B-1



Modular Plug, Category 6A/6, Unshielded, Cond Insulation OD - 0.79mm, 100 pcs

Product Classification

Regional Availability	Asia Australia/New Zealand EMEA Latin America North America
Portfolio	CommScope®
Product Type	Modular plug

General Specifications

ANSI/TIA Category	6 6A
Cable Type	Round, unshielded
Conductor Type	Solid Stranded
Interface	RJ45
Positions/Loaded Contacts	8/8
Termination Type	IDC

Dimensions

Compatible Insulated Conductor Diameter, maximum	0.89 mm 0.035 in
Compatible Insulated Conductor Diameter, minimum	0.69 mm 0.027 in
Contact Plating Thickness	1.27 µm
Compatible Conductor Gauge, solid	26–23 AWG
Compatible Conductor Gauge, stranded	26–23 AWG

Electrical Specifications

Current Rating, maximum	0.75 A
Insulation Resistance, minimum	500 mOhm
Safety Voltage Rating	150 Vac

Material Specifications

Contact Base Material	Phosphor Bronze
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6-2843008-1 | MP-6AU-Plug-B-1

Contact Plating Material	Gold
Material Type	Glass filled polycarbonate

Mechanical Specifications

Plug Insertion Life, minimum	750 times
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Environmental Specifications

Operating Temperature	-10 °C to +60 °C (+14 °F to +140 °F)
Relative Humidity	Up to 93%, non-condensing
Safety Standard	UL 1863

Packaging and Weights

Packaging quantity	100
Packaging Type	Bag Box Carton

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant



Use of CommScope NETCONNECT cabling for PoE applications

Early versions of the IEEE 802.3 standard covered the powering of remote devices over Type 1 (IEEE 802.3af) and Type 2 (IEEE 802.3at) systems. The IEEE 802.3bt standard covering the use of Type 3 and Type 4 power sourcing equipment (PSE) was published in January of 2019. A Type 4 PSE provides the maximum power to remote devices by supporting 0.86 Amps per pair (0.43 Amps per conductor) across all four pairs of the cabling. The standard recommends that Class D cabling (or better) be used to support Type 4 remote powering. In addition to the IEEE standard, the EN 50174-2: 2018 standard provides guidance on the bundling of cables supporting remote powering and recommends limiting bundle sizes to 24 cables taking care to include air gaps between bundles. These recommendations are consistent with those from CommScope and are in line with those contained in TIA TSB-184A aimed at limiting the temperature rise in bundled cabling¹.

In addition to the structured cabling standards, there are additional requirements imposed on the connector contacts that ensure they do not corrode or suffer degradation due to arcing when unplugged while under load. The applicable test standard for Types 1 and 2 is IEC 60512-99-001 while Types 3 and 4 are covered by the IEC 60512-99-002 standard.

CommScope has performed the full complement of IEC 60512-99-001/002 testing on its products and can assure customers that the NETCONNECT connectivity including the KJ, SL and SLX family of modular jacks, NPP panels, NPC, NCC, MiNo6, and MiNo6A patch cords, fully comply with the requirements set forth in the IEC 60512-99-001 and IEC 60512-99-002 standards.

Further, CommScope has carried out extensive testing confirming that existing and legacy NETCONNECT Class D (Cat 5e) or higher cable fully complies with the recommendations contained in the IEEE 802.3af, IEEE 802.3at, and IEEE 802.3bt standards.

CommScope recommends that customers follow the CommScope installation guidelines when installing their cabling products. These guidelines were developed to ensure that the temperature rise of cable bundles used for PoE applications is limited to 15 °C. This is most easily accomplished by limiting the number of cables in a bundle to 24 for horizontal cable and to 12 for 28 AWG cords.

References

IEEE P802.3bt-2018 Standard for Ethernet Amendment 2: Power over Ethernet over 4 Pairs

EN 50174-2: 2018 Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings

IEC 60512-99-001:2012 Connectors for electronic equipment - Tests and measurements - Part 99-001: Test schedule for engaging and separating connectors under electrical load - Test 99a: Connectors used in twisted pair communication cabling with remote power

IEC 60512-99-002:2019 Connectors for electrical and electronic equipment - Tests and measurements - Part 99-002:

Endurance test schedules - Test 99b: Test schedule for unmating under electrical load

TIA TSB-184-A Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling

Visit our website or contact your local CommScope representative for more information.

For technical assistance or customer service, visit us at:

<http://www.commscope.com/SupportCenter>

The products referenced by this bulletin may be covered by U.S. patents or their foreign equivalents. For patents, see

www.commscope.com/ProductPatent/ProductPatent.aspx

¹ CommScope does not endorse the use of 30 AWG cables for use in PoE applications.

São Paulo, 31 de outubro de 2024.

À
ADMINISTRAÇÃO DOS PORTOS DE PARANAGUÁ E ANTONINA

Ref.: Pregão Eletrônico nº 50/2024

DECLARAÇÃO

A **Axis Communications Ltda.**, situada na Avenida Paulista, 37, 3º andar, no bairro Bela Vista, na cidade de São Paulo, inscrita sob CNPJ 09.214.906/0001-83, na condição de fabricante de câmeras e soluções de vídeo vigilância, declara que:

Os equipamentos listados abaixo foram descontinuados e substituídos por modelos equivalentes ou superiores:

Equipamentos descontinuados:

- P1375-E
- P1377-LE
- P1378-LE

Equipamentos substitutos:

- P1385-E
- P1387-LE
- P1388-LE

Apesar de descontinuados, pode haver disponibilidade em nossos distribuidores para entrega imediata. Mesmo sendo descontinuado, o produto permanece com garantia do fabricante por 5 (cinco) anos.

Para mais informações sobre os modelos substitutos, acesse nosso site.

Atenciosamente,

Márcia Oliveira

Regional Controller – LATAM

Email: marcia.oliveira@axis.com

Axis Communications

Axis Communications Ltda. Av. Paulista, 37, 3. Andar, São Paulo – SP - Brasil. Tel: +55 11 3050-6600, www.axis.com

PROTOCOLO DE ASSINATURA(S)

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O(s) nome(s) indicado(s) para assinatura, bem como seu(s) status em 31/10/2024 é(são) :

☒ Marcia Regina De Oliveira (Signatário) - 075.746.198-08 em
31/10/2024 14:23 UTC-03:00

Tipo: Certificado Digital



AXIS P1377-LE Network Camera

Vigilância em 5 MP totalmente equipada para ambientes ao ar livre

Com design robusto, a AXIS P1377-LE oferece vídeos de excelente qualidade em 5 MP e é capaz de suportar temperaturas extremas que variam de -40 °C a 60 °C (-40 °F a 140 °F). Para garantir proteção adicional, uma proteção climática opcional está disponível. Ela oferece ótimos detalhes em condições de iluminação desafiadoras ou insuficiente e inclui o AXIS OptimizedIR para vigilância na escuridão total. Desenvolvida para ser ostensiva, ela inclui estabilização eletrônica de imagem, detecção de impactos, alarme de violação e indicador de streaming de vídeo. A tecnologia Axis Zipstream oferece suporte a H.264/H.265, proporcionando economias excepcionais de largura de banda e armazenamento. Além disso, com o encaixe CS e suporte lentes i-CS motorizadas, você pode facilmente trocar a lente para atender às suas necessidades.

- > 30 fps em 5 MP ou até 180 fps em HDTV 720p
- > OptimizedIR e Forensic WDR
- > Firmware assinado e inicialização segura
- > Estabilização eletrônica de imagem



AXIS P1377-LE Network Camera

Câmera	
Sensor de imagem	CMOS RGB de 1/2,7 pol. com varredura progressiva
Lente	Correção de IR, lente com encaixe CS, P-iris Varifocal 2,8 – 8 mm, F1.2 Campo de visão horizontal: 90°–38° Campo de visão vertical: 67°–28°
Dia e noite	Filtro de bloqueio de infravermelho removível automaticamente
Iluminação mínima	5 MP a 25/30 fps com Forensic WDR e Lightfinder: Cor: 0,13 lux a 50 IRE F1.2 P/B: 0,03 lux a 50 IRE F1.2 0 lux com iluminação IR ativada
Velocidade do obturador	WDR: 1/33500 s a 1/5 s Sem WDR: 1/50000 s a 1/5 s
Sistema em um chip (SoC)	
Modelo	ARTPEC-7
Memória	1 GB de RAM, 512 MB de flash
Recursos de computação	Unidade de processamento de aprendizado de máquina (MLPU)
Vídeo	
Compactação de vídeo	H.264 (MPEG-4 Parte 10/AVC) perfis Baseline, Main e High H.265 (MPEG-H Parte 2/HEVC) Motion JPEG Taxa de quadros e largura de banda controláveis
Resolução	2592 x 1944 (5 MP) a 160 x 90 2688 x 1512 (4 MP) a 160 x 90 1280 x 720 (HDTV 720p) a 160 x 90
Taxa de quadros	Modo de captura 5 MP: 25/30 fps (50/60 Hz) Modo de captura 4 MP: 25/30 fps (50/60 Hz) Modo de captura HDTV 720p: 180 fps
Streaming de vídeo	Múltiplos streams configuráveis individualmente em H.264, H.265 e Motion JPEG Axis Zipstream technology em H.264 e H.265 Taxa de quadros e largura de banda controláveis VBR/ABR/MBR H.264/H.265 Indicador de streaming de vídeo
Streaming multixibição	Até 8 áreas de exibição recortadas individualmente
Configurações da imagem	Saturação, contraste, brilho, nitidez, Forensic WDR: até 120 dB dependendo da cena, balanço de branco, limiar de chaveamento dia/noite, modo de exposição, zonas de exposição, contraste local, mapeamento de tons, compactação, orientação: auto 0°, 90°, 180°, 270°, incluindo Corridor Format, espelhamento de imagens, sobreposição dinâmica de texto e imagens, máscaras de privacidade, remoção de névoa, estabilização eletrônica de imagem, correção de distorção tipo barril, perfis de cena: forense, vívido, visão geral de tráfego
Pan/Tilt/Zoom	PTZ digital Driver de PTZ carregável (Pelco D pré-instalado)
Áudio	
Streaming de áudio	Bidirecional, full duplex
Codificação de áudio	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM 8/16/32/48 kHz Taxa de bits configurável
Entrada/saída de áudio	Entrada para microfone externo, entrada de linha, entrada digital com ring power, saída de linha, controle de ganho automático
Rede	
Segurança	Proteção por senha, filtragem de endereços IP, criptografia HTTPS ^a , controle de acesso à rede IEEE 802.1X (EAP-TLS) ^a , autenticação digest, log de acesso de usuários, gerenciamento centralizado de certificados, proteção contra atraso de força bruta, firmware assinado, inicialização segura

Protocolos com suporte	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS ^a , HTTP/2, TLS ^a , QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, RTSP, RTP, SFTP, SRTP, TCP, UDP, IGMP, RTCP, ICMP, DHCPv4/v6, ARP, SOCKS, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, endereço Link-Local (ZeroConf)
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Integração de sistemas	
Interface de programação de aplicativo	API aberta para integração de software, incluindo VAPIX® e AXIS Camera Application Platform, especificações disponíveis em axis.com AXIS Video Hosting System (AVHS) com conexão em um clique One-Click Cloud Connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S e ONVIF® Profile T, especificações disponíveis em onvif.org
Controles na tela	Estabilização eletrônica de imagem Alternância dia/noite Remoção de névoa Amplio alcance dinâmico
Acionadores de eventos	Análise, detecção de impactos, abertura da caixa, eventos de armazenamento de borda, entrada externa supervisionada, nível de áudio, cronogramas Assinatura MQTT
Ações de eventos	Upload de arquivos: FTP, SFTP, HTTP, HTTPS, compartilhamento de rede e email Notificação: email, HTTP, HTTPS e TCP Ativação de saída externa Gravação de vídeo em armazenamento de borda, Reprodução de clipes de áudio Buffer de vídeo pré e pós-alarme Predefinições de PTZ, Guard tour, Sobreposição de texto Alternância dia/noite, Ativação do LED de status Publicação MQTT Envio de intercepções SNMP
Streaming de dados	Dados de eventos
Auxílios de instalação integrados	Assistente de foco, contador de pixels, retrofoco remoto, rotação automática, foco e zoom remotos e com lente i-CS opcional.
Análise	
AXIS Object Analytics	Classes de objetos: humanos, veículos Condições de acionamento: cruzamento de linhas, objeto na área Até 10 cenários Metadados exibidos com caixas delimitadoras com código de cores Áreas de inclusão/exclusão poligonais Configuração de perspectivas Evento de ONVIF® Motion Alarm

Aplicativos	Incluídos AXIS Object Analytics AXIS Video Motion Detection, alarme ativo de violação, detecção de áudio Com suporte AXIS Live Privacy Shield, AXIS Perimeter Defender Suporte à AXIS Camera Application Platform para permitir a instalação de aplicativos de outros fabricantes, consulte axis.com/acap
-------------	--

Geral	
Caixa	Gabinete de polímero resistente a impactos IK10 com classificações IP66, IP67 e NEMA 4X, base de alumínio e chave de alarme de invasão. Proteção climática com revestimento antirreflexo preto Cor: Branco NCS S 1002-B
Sustentabilidade	Sem PVC
Alimentação elétrica	12 – 28 VCC, máx. 19,1 W, típico 10,5 W Power over Ethernet (PoE) IEEE 802.3af/802.3at Tipo 2 Classe 4, máx. 20,4 W, típico 11,1 W Com IR desativado: Power over Ethernet (PoE) IEEE 802.3af/802.3at Tipo 1 Classe 3, máx. 12,95 W, típico 6,7 W Redundância de alimentação

Conectores	RJ45 10BASE-T/100BASE-TX/1000BASE-T E/S: bloco de terminais com 6 pinos de 2,5 mm para 2 entradas de alarme supervisionadas e 2 saídas RS485/RS422, 2 pçs, 2 pos, full duplex, bloco de terminais Entrada CC, bloco de terminais Entrada para microfone/áudio de 3,5 mm, saída de áudio de 3,5 mm Conector i-CS (compatível com P-Iris e DC-iris)
Iluminação IR	OptimizedIR com LEDs IR de 850 nm de longa duração e alta eficiência energética Alcance de 50 m (164 ft) ou mais dependendo da cena
Armazenamento	Suporte a cartões microSD/microSDHC/microSDXC Suporte a criptografia de cartões SD (AES-XTS-Plain64 256 bits) Suporte a gravação em armazenamento de rede (NAS) Para obter recomendações de cartões SD e NAS, consulte axis.com
Condições operacionais	-40 °C a 60 °C (-40 °F a 140 °F) Temperatura máxima de acordo com o padrão NEMA TS 2 (2.2.7): 74 °C (165 °F) Umidade relativa de 10 – 100% (com condensação) Carga eólica (estável): 55 m/s (123 mph)
Condições de armazenamento	-40 °C a 65 °C (-40 °F a 149 °F) Umidade relativa de 5 – 95% (sem condensação)
Aprovações	EMC EN 55032 Classe A, EN 50121-4, IEC 62236-4, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Parte 15 Subparte B Classe A, ICES-003 Classe A, VCCI Classe A, RCM AS/NZS CISPR 32 Classe A, KCC KN32 Classe A, KN35 Segurança IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, IEC 62471, IS 13252 Ambiente IEC/EN 60529 IP66/IP67, NEMA 250 Tipo 4X, NEMA TS 2 (2.2.7-2.2.9), IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 62262 IK10 Rede NIST SP500-267

Dimensões	404 x 159 x 168 mm (15,9 x 6,3 x 6,6 pol.)
Peso	2,4 kg (5,3 lb)
Acessórios incluídos	Guia de Instalação, licença do decodificador Windows® para 1 usuário, suporte para parede, kit de conectores Ferramenta IK10 Chave de fenda Torx® T20, ponteira Torx® T30 AXIS P13 Weathershield Kit A AXIS Fixed Box IR Illuminator Kit A pré-montado
Lentes opcionais	Lens Computar i-CS 2.8–8.5 mm Tamron 5 MP Lens P-Iris 8–50 mm F1.6 Theia Varifocal Ultra Wide Lens 1.8–3.0 mm Lens i-CS 9–50 mm F1.5 8 MP
Acessórios opcionais	Suportes Axis, lentes Axis, midspans Axis, microfones Axis AXIS P13 Weathershield Extension A AXIS T8355 Digital Microphone AXIS T99A10 Positioning Unit 24 V AC/DC Para obter informações adicionais sobre acessórios, consulte axis.com
Software de gerenciamento de vídeo	AXIS Companion, AXIS Camera Station e software de gerenciamento de vídeo de parceiros de desenvolvimento de aplicativos da Axis disponíveis em axis.com/vms
Idiomas	Inglês, alemão, francês, espanhol, italiano, russo, chinês simplificado, japonês, coreano, português, chinês tradicional
Garantia	Garantia Axis de 5 anos, consulte axis.com/warranty

a. Este produto inclui software desenvolvido pelo OpenSSL Project para uso no OpenSSL Toolkit (openssl.org/) e software de criptografia desenvolvido por Eric Young (eyay@cryptsoft.com).

Responsabilidade ambiental:

axis.com/environmental-responsibility

AXIS P1387-LE Box Camera

Monitoramento confiável em ambientes externos de 5 MP

Esta câmera robusta entrega excelente qualidade de imagem em 5 MP. Ela é capaz de operar em temperatura que variam de -40 °C a 60 °C (-40 °F a 140 °F). Um aquecedor frontal garante que a lente esteja livre de gelo e neblina. E a tecnologia Lightfinder 2.0, Forensic WDR e OptimizedIR oferecem cores reais e detalhes excepcionais independente das condições de iluminação. E os perfis de cena podem ser otimizados automaticamente para atender a cenários específicos. PoE e alimentação CC redundante garantem uma instalação flexível. Com uma DLPU, você pode executar recursos avançados e análises sofisticadas na borda. Além disso, o Axis Edge Vault protege seu dispositivo e protege informações confidenciais contra acesso não autorizado.

- > Excelente qualidade de imagem em 5 MP
- > -40 °C a 60 °C (-40 °F a 140 °F)
- > Design robusto e resistente a impactos
- > Análise com aprendizado profundo
- > Segurança cibernética integrada com o Axis Edge Vault



AXIS P1387-LE Box Camera

Câmara		Streaming de áudio	Duplex configurável: Unidirecional (simplex) Bidirecional (half duplex, full duplex)
Sensor de imagem	CMOS RGB de 1/2,7 pol. com varredura progressiva Tamanho do pixel 2,0 µm	Entrada de áudio	Entrada para microfone externo não equalizado, alimentação de 5 V para microfone opcional Entrada digital, ring power de 12 V opcional Entrada de linha não equalizada
Lente	Varifocal, 2,8 – 13 mm, F1.4 Campo de visão horizontal: 112°–24° Campo de visão vertical: 80°–18° Correção de IR, lente com encaixe CS, controle P-iris	Saída de áudio	Saída via pareamento de alto-falante
Dia e noite	Filtro de bloqueio de infravermelho removível automaticamente	Codificação de áudio	24bit LPCM, AAC-LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz
Iluminação mínima	5 MP a 25/30 fps com Forensic WDR e Lightfinder 2.0: Cor: 0,1 lux a 50 IRE, F1.4 P/B: 0,02 lux a 50 IRE, F1.4 5 MP a 50/60 fps com Lightfinder 2.0: Cor: 0,2 lux a 50 IRE, F1.4 P/B: 0,04 lux a 50 IRE, F1.4 5 MP a 25/30 fps com Forensic WDR e Lightfinder 2.0: Com lente F0.9 opcional Cor: 0,04 lux a 50 IRE, F0.9 P/B: 0,008 lux a 50 IRE, F0.9 0 lux com iluminação IR ativada	Rede	Protocolos de rede IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS ^b , HTTP/2, TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP [®] , SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Syslog seguro (RFC 3164/5424, UDP/TCP/TLS), endereço Link-Local (configuração zero), IEEE 802.1X (EAP-TLS), IEEE 802.1AR
Velocidade do obturador	1/66500 s a 2 s com 50 Hz 1/66500 s a 2 s com 60 Hz	Integração de sistemas	Interface de programação de aplicativo API aberta para integração de software, incluindo VAPIX [®] , metadados e AXIS Camera Application Platform (ACAP); especificações disponíveis em axis.com/developer-community . A ACAP inclui o Native SDK e o Computer Vision SDK. One-click Cloud Connection ONVIF [®] Profile G, ONVIF [®] Profile M, ONVIF [®] Profile S e ONVIF [®] Profile T, especificações disponíveis em onvif.org
Sistema em um chip (SoC)		Sistemas de gerenciamento de vídeo	Compatível com AXIS Companion, AXIS Camera Station, software de gerenciamento de vídeo de Parceiros de Desenvolvimento de Aplicativos Axis disponíveis em axis.com/vms
Modelo	ARTPEC-8	Controles na tela	Estabilização eletrônica de imagem Alternância dia/noite Remoção de névoa Amplio alcance dinâmico Indicador de streaming de vídeo Foco automático Máscaras de privacidade Clique de mídia Aquecedor
Memória	2048 MB de RAM, 8192 MB de flash	Edge-to-edge	Pareamento de microfone Emparelhamento de alto-falantes
Recursos de computação	Unidade de processamento de aprendizado profundo (DLPU)	Condições de eventos	Áudio: detecção de áudio, reprodução de cliques de áudio Status do dispositivo: acima/abaixo/na temperatura de operação, remoção/bloqueio de endereço IP, endereço IP novo, perda de rede, sistema pronto, proteção contra sobrecorrente ring power, stream ao vivo ativo Status da entrada de áudio digital Armazenamento de borda: gravação em andamento, interrupção no armazenamento, problemas de integridade de armazenamento detectados E/S: entrada digital, saída digital, acionador manual, entrada virtual MQTT: stateless Agendados e recorrentes: cronograma Vídeo: degradação média da taxa de bits, modo dia/noite, violação
Vídeo		Ações de eventos	Cliques de áudio: reproduzir, parar Modo dia/noite E/S: alternar E/S uma vez, alternar E/S enquanto a regra está ativa. MQTT: publicar Notificação: HTTP, HTTPS, TCP e email Sobreposição de texto Gravações: gravar, gravar vídeo enquanto a regra está ativa Interceptações SNMP: enviar, enviar enquanto a regra está ativa LED de status: piscar, piscar enquanto a regra está ativa Upload de imagens ou cliques de vídeo: FTP, SFTP, HTTP, HTTPS, compartilhamento de rede e email Modo WDR
Compactação de vídeo	H.264 (MPEG-4 Parte 10/AVC) perfis Baseline, Main e High H.265 (MPEG-H Part 2/HEVC) perfil Main Motion JPEG		
Resolução	16:9: 2592 x 1458 a 160 x 90 4:3: 2592 x 1944 a 160 x 120		
Taxa de quadros	Com Forensic WDR: Até 25/30 fps (50/60 Hz) em todas as resoluções Sem WDR: Até 50/60 fps (50/60 Hz) em todas as resoluções		
Streaming de vídeo	Até 20 streams de vídeo únicos e configuráveis ^a Tecnologia Axis Zipstream em H.264 e H.265 Taxa de quadros e largura de banda controláveis VBR/ABR/MBR H.264/H.265 Modo de baixa latência Indicador de streaming de vídeo		
Relação sinal-ruído	> 55 dB		
WDR	Forensic WDR: até 120 dB, dependendo da cena		
Streaming multiexibição	Até 8 áreas de exibição recortadas individualmente.		
Redução de ruído	Filtro espacial (redução de ruído 2D) Filtro temporal (redução de ruído 3D)		
Configurações da imagem	Contraste, brilho, nitidez, balanço de branco, limite dia/noite, mapeamento de tons, modo de exposição, zonas de exposição, remoção de névoa, correção de distorção de barril, compactação, rotação: 0°, 90°, 180°, 270°, incluindo Formato Corredor, espelhamento, sobreposição de texto e imagens, sobreposição dinâmica de texto e imagens, máscaras de privacidade, máscara de privacidade poligonal, abertura-alvo Perfis de cena: forense, vivo, visão geral de tráfego		
Processamento de imagem	Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR		
Pan/Tilt/Zoom	PTZ digital, posições predefinidas Tour por posições predefinidas, fila de controle, indicador direcional na tela Guard tour (máx. 100)		
Áudio			
Recursos de áudio	Controle de ganho automático Emparelhamento de alto-falantes		

Auxílios de instalação integrados	Assistente de nivelamento, retrofoco remoto
Análise	
Aplicativos	Incluídos: Compatíveis: AXIS Perimeter Defender, AXIS License Plate Verifier, AXIS Speed Monitor Suporte à AXIS Camera Application Platform, possibilitando a instalação de aplicativos de outros fabricantes, consulte axis.com/acap
AXIS Object Analytics	Cenários: cruzamento de linhas, objeto na área, tempo na área, contagem de cruzamentos de linhas, ocupação na área Até 10 cenários Outros recursos: objetos acionadores exibidos com trajetórias, caixas delimitadoras coloridas e tabelas Áreas de inclusão/exclusão poligonais Configuração de perspectivas Evento de ONVIF® Motion Alarm
AXIS Scene Metadata	Classes de objeto: pessoas, rostos, veículos (tipos: carros, ônibus, caminhões, bicicletas), placas de licença Atributos do objeto: confiança, posição
Aprovações	
Marcações de produtos	UL/cUL, UKCA, CE, KC, EAC, VCCI, RCM
Cadeia de suprimentos	Compatível com TAA
EMC	CISPR 35, CISPR 32 Classe A, EN 55035, EN 55032 Classe A, EN 50121-4, EN 61000-6-1, EN 61000-6-2 Japão: VCCI Classe A Coreia: KS C 9835, KS C 9832 Classe A EUA: FCC Parte 15 Subparte B Classe A
Segurança	CAN/CSA C22.2 N° 62368-1 ed. 3, IEC/EN/UL 62368-1 ed. 3, IS 13252
Ambiente	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10, ISO 4892-2 NEMA 250 Tipo 4X, NEMA TS 2 (2.2.7-2.2.9)
Rede	NIST SP500-267, IPv6 USGv6
Segurança cibernética	ETSI EN 303 645, FIPS 140
Segurança cibernética	
Segurança de borda	Hardware: Plataforma segurança cibernética AXIS Edge Vault Elemento seguro (CC EAL 6+), ID de dispositivo Axis, repositório de chaves seguro, vídeo assinado, inicialização segura
Segurança de rede	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Segurança de tempo de rede (NTS), certificado X.509 PKI, filtragem de endereço IP
Documentação	<i>Guia de Fortalecimento do AXIS OS</i> <i>Política de gerenciamento de vulnerabilidades da Axis</i> <i>Modelo de desenvolvimento de segurança da Axis</i> Lista de materiais (SBOM) de software do AXIS OS Para baixar documentos, vá para axis.com/support/cybersecurity/resources Para saber mais sobre o suporte da Axis à segurança cibernética, acesse axis.com/cybersecurity
Geral	
Caixa	Classificações IP66, IP67, NEMA 4X e IK10 Caixa em alumínio e plástico Proteção climática com revestimento antirreflexo preto Cor: branco NCS S 1002-B Para obter instruções de repintura, acesse a página de suporte do produto. Para obter informações sobre o impacto sobre a garantia, acesse axis.com/warranty-implication-when-repainting . Este produto pode ser repintado.
Montando	Base da câmera incluída
Alimentação elétrica	Power over Ethernet (PoE) IEEE 802.3af/802.3at Tipo 2 Classe 4 Típico 9,12 W, máx. 25,5 W 10 – 28 VCC, típico 8,49 W, máx. 25,5 W Iluminação IR ativada: classe 4, máx. 25,50 W Iluminação IR desativada: classe 3, máx. 12,95 W

Conectores	Rede: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE blindado E/S: Bloco terminal com 6 pinos de 2,5 mm para 2 entradas de alarme supervisionadas e 2 saídas (saída de 12 VCC, carga máxima de 50 mA) Áudio: Entrada de 3,5 mm para microfone/linha Comunicação serial: RS485/RS422, 2 pçs, 2 pos, full duplex, bloco de terminais Potência: Entrada CC, bloco de terminais Lente: Conector i-CS (compatível com P-Iris e DC-iris) AXIS T92G20 Connector
Iluminação IR	OptimizedIR com LEDs IR de 850 nm de longa duração e alta eficiência energética Alcance de 50 m (164 ft) ou mais, dependendo da cena
Armazenamento	Suporte a cartões microSD/microSDHC/microSDXC Suporte a criptografia de cartões SD (AES-XTS-Plain64 256 bits) Gravação em armazenamento de rede (NAS) Para obter recomendações de cartões SD e NAS, consulte axis.com
Condições operacionais	-40 °C a 60 °C (-40 °F a 140 °F) Umidade relativa de 10 – 100% (com condensação) Carga eólica (estável): 55 m/s (123 mph)
Condições de armazenamento	-40 °C a 65 °C (-40 °F a 149 °F) Umidade relativa de 5 – 95% (sem condensação)
Dimensões	Para obter as dimensões gerais do produto, consulte os esquemas de dimensões nesta folha de dados. Área projetada efetiva (EPA): 0,06 m ² (0,20 ft ²)
Peso	3350 g (7,4 lb) incluindo suporte de parede 2470 g (5,4 lb) somente para a câmera
Conteúdo da embalagem	Câmera, guia de instalação, conectores de bloco de terminais, AXIS TQ1003-E Wall Mount, chave de autenticação do proprietário
Acessórios opcionais	Microfones AXIS, Midspans AXIS AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards Para mais acessórios, acesse axis.com/products/axis-p1387-le#accessories
Ferramentas do sistema	AXIS Site Designer, AXIS Device Manager, AXIS Device Manager Extend, seletor de produtos, seletor de acessórios, calculadora de lentes Disponível em axis.com
Idiomas	Inglês, alemão, francês, espanhol, italiano, russo, chinês simplificado, japonês, coreano, português, polonês, chinês tradicional, holandês, tcheco, sueco, finlandês, turco, tailandês, vietnamita
Garantia	Garantia de 5 anos, consulte axis.com/warranty
Números de peça	Disponível em axis.com/products/axis-p1387-le#part-numbers
Sustentabilidade	
Controle de substâncias	Sem PVC, sem BFR/CFR de acordo com o padrão JEDEC/ECA JS709 RoHS de acordo com a diretiva RoHS da UE 2011/65/EU e EN 63000:2018 REACH de acordo com a (EC) No 1907/2006. Para SCIP UUID, consulte echa.europa.eu
Materiais	Conteúdo de plástico reciclável baseado em carbono: 36% (base bio) Triagem de minerais de conflito de acordo com as diretrizes da OCDE Para saber mais sobre a sustentabilidade na Axis, acesse axis.com/about-axis/sustainability
Responsabilidade ambiental	axis.com/environmental-responsibility A Axis Communications é signatária do Pacto Global da ONU, leia mais em unglobalcompact.org

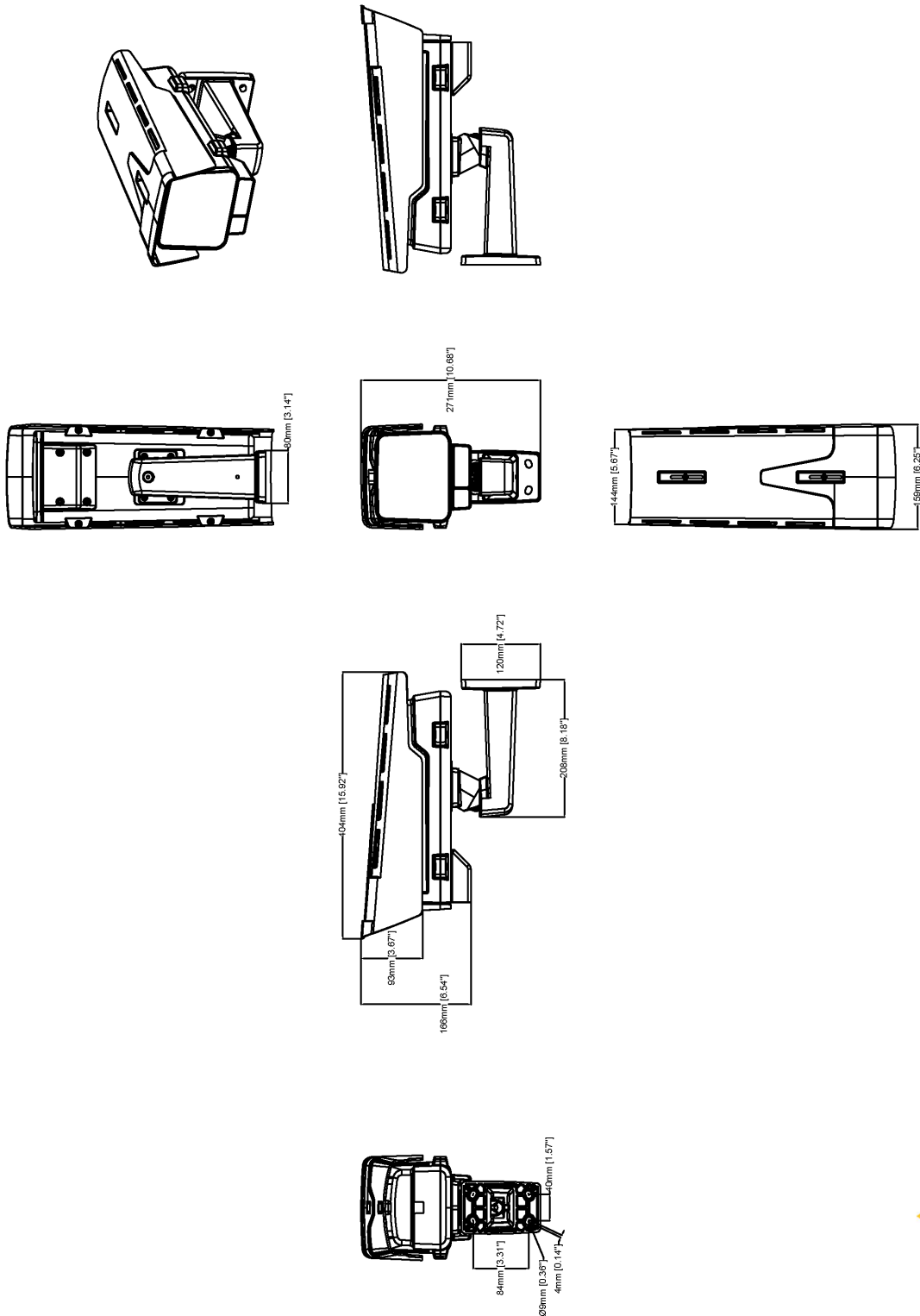
- Recomenda-se um máximo de 3 streams de vídeo únicos por câmera ou canal para otimizar a experiência do usuário, a largura de banda da rede e a utilização do armazenamento. Um stream de vídeo único pode ser fornecido a vários clientes de vídeo na rede usando o método de transporte multicast ou unicast via funcionalidade de reutilização de stream integrada.*
- Este produto inclui software desenvolvido pelo OpenSSL Project para uso no OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (ey@cryptsoft.com)*

Detectar, Observar, Reconhecer, Identificar (DORI)

	Definição de DORI	Distância (grande angular)	Distância (teleobjetiva)
Detectar	25 px/m (8 px/pé)	56,2 m (184,3 ft)	244,2 m (801,3 ft)
Observar	63 px/m (19 px/ft)	22,3 m (73,2 ft)	96,9 m (318,0 ft)
Reconhecer	125 px/m (38 px/ft)	11,2 m (36,9 ft)	48,8 m (160,3 ft)
Identificar	250 px/m (76 px/pé)	5,6 m (18,4 ft)	24,4 m (80,1 ft)

Os valores de DORI são calculados usando densidades de pixels para diferentes casos de uso, conforme recomendado pelo padrão EN-62676-4. Os cálculos usam o centro da imagem como ponto de referência e consideram a distorção da lente. A possibilidade de reconhecer ou identificar uma pessoa ou um objeto depende de fatores como movimento de objetos, compactação de vídeo, condições de iluminação e foco da câmera. Use as margens ao planejar. A densidade de pixels varia na imagem, e os valores calculados podem ser diferentes das distâncias do mundo real.

Esquema de dimensões



AXIS® **COMMUNICATIONS** **AXIS P1387-LE Box Camera**

Revision	v.01	Revision date	2024-01-05
Paper size	A4	Release date	2024-01-05
Created by	MS	Scale	1:8

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Recursos em destaque

AXIS Object Analytics

O AXIS Object Analytics é uma análise de vídeo pré-instalada e multifuncional que detecta e classifica humanos, veículos e tipos de veículos. Graças a algoritmos baseados em IA e a condições comportamentais, ele analisa a cena e o respectivo comportamento espacial dos objetos em – tudo personalizado para suas necessidades específicas. Escalável e baseado na borda, requer um mínimo de esforço para configurar e oferecer suporte a vários cenários que são executados simultaneamente.

Axis Edge Vault

O AXIS Edge Vault é a plataforma segurança cibernética baseada em hardware que protege o dispositivo Axis. Ele forma a base de que todas as operações seguras dependem e oferece recursos para proteger a identidade do dispositivo, proteger sua integridade e proteger informações confidenciais contra acesso não autorizado. Por exemplo, a **inicialização segura** garante que um dispositivo possa inicializar apenas com o sistema operacional assinado, o que impede a violação da cadeia de suprimentos física. Com o sistema operacional assinado, o dispositivo também é capaz de validar o novo software do dispositivo antes de aceitar instalá-lo. O **armazenamento de chaves seguro** é o bloco de construção crítico para a proteção de informações de criptografia usadas para comunicação segura (IEEE 802.1x, HTTPS, ID de dispositivo da Axis, chaves de controle de acesso, etc.) contra extração maliciosa em caso de violação de segurança. O armazenamento de chaves seguro e as conexões seguras são fornecidos através de um módulo de computação criptográfica com certificação de critérios comuns e/ou FIPS 140.

Além disso, o vídeo assinado garante que as evidências em vídeo possam ser verificadas como não testadas. Cada câmera usa sua chave de assinatura de vídeo exclusiva, a qual é armazenada de forma protegida no armazenamento seguro para adicionar uma assinatura ao stream de vídeo, permitindo que o vídeo seja rastreado até a câmera Axis que o gerou.

Para saber mais sobre o Axis Edge Vault, acesse axis.com/solutions/edge-vault.

Estabilização eletrônica de imagem

A estabilização eletrônica de imagem (EIS) oferece vídeos suaves em situações em que uma câmera está sujeita a vi-

brações. Sensores giroscópicos integrados detectam continuamente os movimentos e vibrações da câmera, e eles ajustam automaticamente o quadro para garantir que você sempre capture os detalhes de que precisa. A estabilização eletrônica de imagem depende de algoritmos diferentes para modelar o movimento da câmera, os quais são usados para corrigir as imagens.

Forensic WDR

As câmeras Axis com tecnologia de amplo alcance dinâmico (WDR, wide dynamic range) fazem a diferença entre observar detalhes forenses importantes com clareza e ver nada além de borrões em condições de iluminação desafiadoras. A diferença entre os pontos mais escuros e mais claros pode causar problemas para a usabilidade e a clareza da imagem. A tecnologia Forensic WDR reduz de forma eficiente ruídos e artefatos visíveis para fornecer vídeo otimizado para a usabilidade forense máxima.

Lightfinder

A tecnologia Axis Lightfinder oferece vídeo em cores de alta resolução com um mínimo de desfoque de movimento, mesmo quase na escuridão. Como ela remove ruídos, a Lightfinder torna visíveis as áreas escuras de uma cena e captura detalhes em condições de pouca luz. As câmeras com Lightfinders diferenciam cores em condições de pouca luz melhor do que o olho humano. Em situações de vigi-lância, a cor pode ser o fator crítico para identificar uma pessoa, um objeto ou um veículo.

OptimizedIR

A tecnologia Axis OptimizedIR fornece uma combinação exclusiva e poderosa de inteligência de câmeras e tecnologia de LED sofisticada, resultando em nossas soluções de infravermelho integradas à câmera mais avançadas para trabalhar na escuridão total. Em nossas câmeras pan-tilt-zoom (PTZ) com OptimizedIR, o feixe de infravermelho se adapta e torna-se mais largo ou estreito, pois a câmera aumenta ou diminui a sua aplicação para garantir que todo o campo de visão seja sempre iluminado de forma uniforme.

Para obter mais informações, consulte axis.com/glossary

São Paulo, 31 de outubro de 2024.

À
ADMINISTRAÇÃO DOS PORTOS DE PARANAGUÁ E ANTONINA

Ref.: Pregão Eletrônico nº 50/2024

DECLARAÇÃO

A **Axis Communications Ltda.**, situada na Avenida Paulista, 37, 3º andar, no bairro Bela Vista, na cidade de São Paulo, inscrita sob CNPJ 09.214.906/0001-83, na condição de fabricante de câmeras e soluções de vídeo vigilância, declara que:

Os equipamentos listados abaixo foram descontinuados e substituídos por modelos equivalentes ou superiores:

Equipamentos descontinuados:

- P1375-E
- P1377-LE
- P1378-LE

Equipamentos substitutos:

- P1385-E
- P1387-LE
- P1388-LE

Apesar de descontinuados, pode haver disponibilidade em nossos distribuidores para entrega imediata. Mesmo sendo descontinuado, o produto permanece com garantia do fabricante por 5 (cinco) anos.

Para mais informações sobre os modelos substitutos, acesse nosso site.

Atenciosamente,

Márcia Oliveira

Regional Controller – LATAM

Email: marcia.oliveira@axis.com

Axis Communications

Axis Communications Ltda. Av. Paulista, 37, 3. Andar, São Paulo – SP - Brasil. Tel: +55 11 3050-6600, www.axis.com

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31/10/2024 14:23 UTC-03:00

Tipo: Certificado Digital



AXIS P1375-E Network Camera

Stable, 2 MP surveillance for the great outdoors

With a robust design, AXIS P1375-E Network Camera offers excellent video for outdoor scenes. It handles temperatures between -40 °C to 60 °C (-40 °F to 140 °F) and delivers details even in challenging light conditions or low-light, with Forensic WDR and Lightfinder 2.0. For pitch darkness, an optional IR kit is available. Enhanced security features such as signed firmware and secure boot ensure the integrity and authenticity of the camera's firmware. Furthermore, tampering alarm and video streaming indicator ensure full control of the video. With CS mount and built-in camera rails, a bigger variety of lenses can be used.

- > **HDTV 1080p at up to 60 fps**
- > **Electronic image stabilization and IK10**
- > **Signed firmware and secure boot**
- > **Zipstream with H.264 and H.265**
- > **PoE and DC power**



AXIS P1375-E Network Camera

Camera		System integration	
Image sensor	1/2.8" progressive scan RGB CMOS	Application Programming Interface	Open API for software integration, including VAPIX® and AXIS Camera Application Platform, specifications at axis.com AXIS Video Hosting System (AVHS) with One-Click Connection One-click cloud connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S and ONVIF® Profile T, specification at onvif.org
Lens	Lens CS 2.8–8 mm F1.2 P-Iris 5 MP With IK10 protection in the front window Horizontal field of view: 107°–42° Vertical field of view: 57°–24° Without IK10 protection in the front window Horizontal field of view: 124°–42° Vertical field of view: 65°–24°	Onscreen controls	Electronic image stabilization Day/night shift Defogging Wide dynamic range
Day and night	Automatically removable infrared-cut filter	Event triggers	Analytics, shock detection, open casing, edge storage events, supervised external input, audio level, time scheduled MQTT subscribe
Minimum illumination	HDTV 1080p 25/30 fps with Forensic WDR and Lightfinder: Color: 0.05 lux, at 50 IRE F1.2 B/W: 0.01 lux, at 50 IRE F1.2 HDTV 1080p 50/60 fps with Lightfinder: Color: 0.10 lux, at 50 IRE F1.2 B/W: 0.02 lux, at 50 IRE F1.2 0 lux with accessory IR illumination on (optional AXIS Fixed Box IR Illuminator Kit A)	Event actions	File upload: FTP, SFTP, HTTP, HTTPS, network share and email Notification: email, HTTP, HTTPS and TCP External output activation Video recording to edge storage, Play audio clip Pre- and post-alarm video buffering PTZ preset, Guard tour, Overlay text Day/Night switching, Status LED activation MQTT publish Send SNMP trap
Shutter speed	WDR: 1/34500 s to 2 s No WDR: 1/66500 s to 2 s	Built-in installation aids	Focus assistant, pixel counter, remote back focus, autorotation, remote focus and zoom and with optional i-CS lens.
System on chip (SoC)		Analytics	
Model	ARTPEC-7	Applications	Included AXIS Object Analytics, Scene metadata, AXIS Live Privacy Shield ^a , AXIS Video Motion Detection Supported AXIS Perimeter Defender, AXIS License Plate Verifier Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap
Memory	1 GB RAM, 512 MB Flash	AXIS Object Analytics	Object classes: humans, vehicles Scenarios: line crossing, object in area, crossline counting, time in area Up to 10 scenarios Other features: triggered objects visualized with trajectories, color-coded bounding boxes and tables Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Compute capabilities	Machine learning processing unit (MLPU)	Scene metadata	Object classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position
Video		Cybersecurity	
Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Motion JPEG Controllable frame rate and bandwidth	Edge security	Software: Signed firmware, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 OpenID Authorization Code Flow for centralized ADFS account management, password protection, AES-XTS-Plain64 256bit SD card encryption Hardware: Secure boot
Resolution	1920x1080 (HDTV) to 160x90	Network security	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AE (MACsec PSK/EAP-TLS), HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Frame rate	Forensic WDR: 25/30 fps (50/60 Hz) No WDR: 50/60 fps (50/60 Hz)	Documentation	<i>AXIS OS Hardening Guide</i> <i>Axis Vulnerability Management Policy</i> <i>Axis Security Development Model</i> AXIS OS Software Bill of Material (SBOM) To download documents, go to axis.com/support/cybersecurity/resources To read more about Axis cybersecurity support, go to axis.com/cybersecurity
Video streaming	Multiple, individually configurable streams in H.264, H.265, and Motion JPEG Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265 Low latency mode Video streaming indicator	General	
Multi-view streaming	Up to 8 individually cropped out view areas	Casing	IP66-, IP67- and NEMA 4X-rated, IK10 impact-resistant polymer enclosure with aluminium base and intrusion alarm switch Weathershield with black anti-glare coating Color: White NCS S 1002-B
Image settings	Saturation, contrast, brightness, sharpness, Forensic WDR: Up to 120 dB depending on scene, white balance, day/night threshold, exposure mode, exposure zones, local contrast, tone mapping, compression, orientation: auto, 0°, 90°, 180°, 270° including Corridor Format, mirroring of images, dynamic text and image overlay, privacy masks, defogging, electronic image stabilization, barrel distortion correction, scene profiles: forensic, vivid, traffic overview	Sustainability	PVC free
Pan/Tilt/Zoom	Digital PTZ Uploadable PTZ driver (Pelco D pre-installed)	Power	12–28 V DC, max 25.5 W (incl. AXIS Fixed Box IR Illuminator Kit A and front heater), typical 5.3 W
Audio			
Audio streaming	Two-way, full duplex		
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM 8/16/32/48 kHz Configurable bit rate		
Audio input/output	External microphone input, line input, digital input with ring power, line output, automatic gain control		
Network			
Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS, HTTP/2, TLS, QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SFTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf)		

	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 4, max 25.5 W (incl. AXIS Fixed Box IR Illuminator Kit A and front heater), typical 5.9 W Power redundancy	IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 62262 IK10 Network NIST SP500-267
Connectors	RJ45 10BASE-T/100BASE-TX/1000BASE-T I/O: 6-pin 2.5 mm terminal block, for 2 supervised alarm inputs and 2 outputs RS485/RS422, 2 pcs, 2 pos, full duplex, terminal block 3.5 mm mic/line in, 3.5 mm line out i-CS connector (compatible with P-Iris and DC-iris) IR illuminator connector	Dimensions 404 x 159 x 143 mm (15.9 x 6.26 x 5.63 in)
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Support for recording to network-attached storage (NAS) For SD card and NAS recommendations see axis.com	Weight 2.2 kg (4.9 lb)
Operating conditions	-40 °C to 60 °C (-40 °F to 140 °F) Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F) Humidity 10–100% RH (condensing) Wind load (sustained): 55 m/s (123 mph)	Included accessories Installation guide, Windows® decoder 1-user license, wall mount bracket, sunshield, connector kit IK10 tool Torx® T20 screw driver, Torx® T30 screw bit AXIS P13 Weathershield Kit A
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95% RH (non-condensing)	Optional lenses Theia Varifocal Ultra Wide Lens 1.8–3.0 mm Lens Computar i-CS 2.8–8.5 mm Lens CS 4–10 mm F0.9 P-Iris Lens i-CS 9–50 mm F1.5 8 MP Tamron 5MP Lens P-Iris 8–50 mm F1.6
Approvals	EMC EN 55032 Class A, EN 50121-4, IEC 62236-4, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR 32 Class A, KCC KN32 Class A, KN35 Safety IEC/EN/UL 62368-1, CAN/CSA C22.2 No. 62368-1, IEC/EN/UL 60950-22, CAN/CSA-C22.2 No. 60950-22, IS 13252 Environment IEC/EN 60529 IP66/IP67, NEMA 250 Type 4X, NEMA TS 2 (2.2.7–2.2.9), IEC 60068-2-1, IEC 60068-2-2,	Optional accessories Axis mounts, Axis lenses, Axis midspans, Axis microphones AXIS Fixed Box IR Illuminator Kit A (range of reach 50 m (164 ft) or more depending on the scene) AXIS P13 Weathershield Extension A AXIS T8355 Digital Microphone AXIS T99A10 Positioning Unit 24 V AC/DC For more accessories, see axis.com
		Video management software AXIS Companion, AXIS Camera Station, Video management software from Axis' Application Development Partners available at axis.com/vms
		Languages English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
		Warranty 5-year warranty, see axis.com/warranty

a. Available for download

AXIS P1385-E Box Camera

Monitoramento confiável em ambientes externos de 2 MP

Esta câmera robusta entrega excelente qualidade de imagem em 2 MP. Ela é capaz de operar em temperatura que variam de -40 °C a 60 °C (-40 °F a 140 °F). Um aquecedor frontal garante que a lente esteja livre de gelo e neblina. E as tecnologias Lightfinder 2.0 e Forensic WDR oferecem cores verdadeiras e detalhes excepcionais em condições de iluminação desafiadoras ou quase na escuridão total. E os perfis de cena podem ser otimizados automaticamente para atender a cenários específicos. PoE e alimentação CC redundante garantem uma instalação flexível. Com uma DLPU, você pode executar recursos avançados e análises sofisticadas na borda. Além disso, o Axis Edge Vault protege seu dispositivo e protege informações confidenciais contra acesso não autorizado.

- > Excelente qualidade de imagem em HDTV 1080p
- > -40 °C a 60 °C (-40 °F a 140 °F)
- > Design robusto e resistente a impactos
- > Análise com aprendizado profundo
- > Segurança cibernética integrada com o Axis Edge Vault



AXIS P1385-E Box Camera

Câmara		Entrada de áudio	
Sensor de imagem	CMOS RGB de 1/2,8 pol. com varredura progressiva Tamanho do pixel 2,9 µm	Saída de áudio	Entrada para microfone externo não equalizado, alimentação de 5 V para microfone opcional Entrada digital, ring power de 12 V opcional Entrada de linha não equalizada
Lente	Varifocal, 2,8 – 13 mm, F1.4 Campo de visão horizontal: 121°–26° Campo de visão vertical: 64°–15° Correção de IR, lente com encaixe CS, controle P-iris	Codificação de áudio	Saída via pareamento de alto-falante 24bit LPCM, AAC-LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz
Dia e noite	Filtro de bloqueio de infravermelho removível automaticamente	Rede	
Iluminação mínima	1080p 25/30 fps com Forensic WDR e Lightfinder 2.0: Cor: 0,05 lux a 50 IRE, F1.4 P/B: 0,01 lux a 50 IRE, F1.4 1080p 50/60 fps com Lightfinder 2.0: Cor: 0,1 lux a 50 IRE, F1.4 P/B: 0,02 lux a 50 IRE, F1.4 1080p 25/30 fps com Forensic WDR e Lightfinder 2.0: Com lente F0.9 opcional Cor: 0,02 lux a 50 IRE, F0.9 P/B: 0,005 lux a 50 IRE, F0.9	Protocolos de rede	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS ^b , HTTP/2, TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP [®] , SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLD, CDP, MQTT v3.1.1, Syslog seguro (RFC 3164/5424, UDP/TCP/TLS), endereço Link-Local (configuração zero), IEEE 802.1X (EAP-TLS), IEEE 802.1AR
Velocidade do obturador	1/37000 s a 2 s com 50 Hz 1/37000 s a 2 s com 60 Hz	Integração de sistemas	
Sistema em um chip (SoC)		Interface de programação de aplicativo	API aberta para integração de software, incluindo VAPIX [®] , metadados e AXIS Camera Application Platform (ACAP); especificações disponíveis em axis.com/developer-community . A ACAP inclui o Native SDK e o Computer Vision SDK. One-click Cloud Connection ONVIF [®] Profile G, ONVIF [®] Profile M, ONVIF [®] Profile S e ONVIF [®] Profile T, especificações disponíveis em onvif.org
Modelo	ARTPEC-8	Sistemas de gerenciamento de vídeo	Compatível com AXIS Companion, AXIS Camera Station, software de gerenciamento de vídeo de Parceiros de Desenvolvimento de Aplicativos Axis disponíveis em axis.com/vms
Memória	1024 MB de RAM, 8192 MB de flash	Controles na tela	Estabilização eletrônica de imagem Alternância dia/noite Remoção de névoa Ampla alcance dinâmico Indicador de streaming de vídeo Foco automático Máscaras de privacidade Clipe de mídia Aquecedor
Vídeo		Edge-to-edge	Pareamento de microfone Emparelhamento de alto-falantes
Compactação de vídeo	H.264 (MPEG-4 Parte 10/AVC) perfis Baseline, Main e High H.265 (MPEG-H Part 2/HEVC) perfil Main Motion JPEG	Condições de eventos	Áudio: detecção de áudio, reprodução de clipes de áudio Status do dispositivo: acima/abaixo/na temperatura de operação, remoção/bloqueio de endereço IP, endereço IP novo, perda de rede, sistema pronto, proteção contra sobrecorrente ring power, stream ao vivo ativo Status da entrada de áudio digital Armazenamento de borda: gravação em andamento, interrupção no armazenamento, problemas de integridade de armazenamento detectados E/S: entrada digital, saída digital, acionador manual, entrada virtual MQTT: stateless Agendados e recorrentes: cronograma Vídeo: degradação média da taxa de bits, modo dia/noite, violação
Resolução	1920 x 1080 a 160 x 90	Ações de eventos	
Taxa de quadros	Com Forensic WDR: Até 25/30 fps (50/60 Hz) em todas as resoluções Sem WDR: Até 50/60 fps (50/60 Hz) em todas as resoluções	Clipes de áudio: reproduzir, parar Modo dia/noite E/S: alternar E/S uma vez, alternar E/S enquanto a regra está ativa. MQTT: publicar Notificação: HTTP, HTTPS, TCP e email Sobreposição de texto Gravações: gravar, gravar vídeo enquanto a regra está ativa Interceptações SNMP: enviar, enviar enquanto a regra está ativa LED de status: piscar, piscar enquanto a regra está ativa Upload de imagens ou clipes de vídeo: FTP, SFTP, HTTP, HTTPS, compartilhamento de rede e email Modo WDR	
Streaming de vídeo	Até 20 streams de vídeo únicos e configuráveis ^a Tecnologia Axis Zipstream em H.264 e H.265 Taxa de quadros e largura de banda controláveis VBR/ABR/MBR H.264/H.265 Modo de baixa latência Indicador de streaming de vídeo		
Relação sinal-ruído	> 55 dB		
WDR	Forensic WDR: até 120 dB, dependendo da cena		
Streaming multiexibição	Até 8 áreas de exibição recortadas individualmente.		
Redução de ruído	Filtro espacial (redução de ruído 2D) Filtro temporal (redução de ruído 3D)		
Configurações da imagem	Contraste, brilho, nitidez, balanço de branco, limite dia/noite, mapeamento de tons, modo de exposição, zonas de exposição, remoção de névoa, correção de distorção de barril, compactação, rotação: 0°, 90°, 180°, 270°, incluindo Formato Corredor, espelhamento, sobreposição de texto e imagens, sobreposição dinâmica de texto e imagens, máscaras de privacidade, máscara de privacidade poligonal, abertura-alvo Perfis de cena: forense, vívido, visão geral de tráfego		
Processamento de imagem	Axis Zipstream, Forensic WDR, Lightfinder 2.0		
Pan/Tilt/Zoom	PTZ digital, posições predefinidas Tour por posições predefinidas, fila de controle, indicador direcional na tela Guard tour (máx. 100)		
Áudio			
Recursos de áudio	Controle de ganho automático Emparelhamento de alto-falantes		
Streaming de áudio	Duplex configurável: Unidirecional (simplex) Bidirecional (half duplex, full duplex)		

Auxílios de instalação integrados	Assistente de nivelamento, retrofoco remoto
Análise	
Aplicativos	Incluídos: Compatíveis: AXIS Perimeter Defender, AXIS License Plate Verifier, AXIS Speed Monitor Suporte à AXIS Camera Application Platform, possibilitando a instalação de aplicativos de outros fabricantes, consulte axis.com/acap
AXIS Object Analytics	Cenários: cruzamento de linhas, objeto na área, tempo na área, contagem de cruzamentos de linhas, ocupação na área Até 10 cenários Outros recursos: objetos acionadores exibidos com trajetórias, caixas delimitadoras coloridas e tabelas Áreas de inclusão/exclusão poligonais Configuração de perspectivas Evento de ONVIF® Motion Alarm
AXIS Scene Metadata	Classes de objeto: pessoas, rostos, veículos (tipos: carros, ônibus, caminhões, bicicletas), placas de licença Atributos do objeto: confiança, posição
Aprovações	
Marcações de produtos	UL/cUL, UKCA, CE, KC, EAC, VCCI, RCM
Cadeia de suprimentos	Compatível com TAA
EMC	CISPR 35, CISPR 32 Classe A, EN 55035, EN 55032 Classe A, EN 50121-4, EN 61000-6-1, EN 61000-6-2 Japão: VCCI Classe A Coreia: KS C 9835, KS C 9832 Classe A EUA: FCC Parte 15 Subparte B Classe A
Segurança	CAN/CSA C22.2 N° 62368-1 ed. 3, IEC/EN/UL 62368-1 ed. 3, IS 13252
Ambiente	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10, ISO 4892-2 NEMA 250 Tipo 4X, NEMA TS 2 (2.2.7-2.2.9)
Rede	NIST SP500-267, IPv6 USGv6
Segurança cibernética	ETSI EN 303 645, FIPS 140
Segurança cibernética	
Segurança de borda	Hardware: Plataforma segurança cibernética AXIS Edge Vault Elemento seguro (CC EAL 6 +), ID de dispositivo Axis, repositório de chaves seguro, vídeo assinado, inicialização segura
Segurança de rede	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Segurança de tempo de rede (NTS), certificado X.509 PKI, filtragem de endereço IP
Documentação	<i>Guia de Fortalecimento do AXIS OS</i> <i>Política de gerenciamento de vulnerabilidades da Axis</i> <i>Modelo de desenvolvimento de segurança da Axis</i> Lista de materiais (SBOM) de software do AXIS OS Para baixar documentos, vá para axis.com/support/cybersecurity/resources Para saber mais sobre o suporte da Axis à segurança cibernética, acesse axis.com/cybersecurity
Geral	
Caixa	Classificações IP66, IP67, NEMA 4X e IK10 Caixa em alumínio e plástico Proteção climática com revestimento antirreflexo preto Cor: branco NCS S 1002-B Para obter instruções de repintura, acesse a página de suporte do produto. Para obter informações sobre o impacto sobre a garantia, acesse axis.com/warranty-implication-when-repainting . Este produto pode ser repintado.
Montando	Base da câmera incluída

Alimentação elétrica	Power over Ethernet (PoE) IEEE 802.3af/802.3at Tipo 2 Classe 4 Típico 3,87 W, máx. 25,5 W 10 – 28 VCC, típico 3,58 W, máx. 25,5 W
Conectores	Rede: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE blindado E/S: Bloco terminal com 6 pinos de 2,5 mm para 2 entradas de alarme supervisionadas e 2 saídas (saída de 12 VCC, carga máxima de 50 mA) Áudio: Entrada de 3,5 mm para microfone/linha Comunicação serial: RS485/RS422, 2 pcs, 2 pos, full duplex, bloco de terminais Potência: Entrada CC, bloco de terminais Lente: Conector i-CS (compatível com P-Iris e DC-iris) AXIS T92G20 Connector
Armazenamento	Suporte a cartões microSD/microSDHC/microSDXC Suporte a criptografia de cartões SD (AES-XTS-Plain64 256 bits) Gravação em armazenamento de rede (NAS) Para obter recomendações de cartões SD e NAS, consulte axis.com
Condições operacionais	-40 °C a 60 °C (-40 °F a 140 °F) Umidade relativa de 10 – 100% (com condensação) Carga eólica (estável): 55 m/s (123 mph)
Condições de armazenamento	-40 °C a 65 °C (-40 °F a 149 °F) Umidade relativa de 5 – 95% (sem condensação)
Dimensões	Para obter as dimensões gerais do produto, consulte os esquemas de dimensões nesta folha de dados. Área projetada efetiva (EPA): 0,06 m² (0,20 ft²)
Peso	3165 g (7,0 lb) incluindo suporte de parede 2280 g (5,0 lb) somente para a câmera
Conteúdo da embalagem	Câmera, guia de instalação, conectores de bloco de terminais, AXIS TQ1003-E Wall Mount, chave de autenticação do proprietário
Acessórios opcionais	Microfones AXIS, Midspans AXIS AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards Para mais acessórios, acesse axis.com/products/axis-p1385-e#accessories
Ferramentas do sistema	AXIS Site Designer, AXIS Device Manager, AXIS Device Manager Extend, seletor de produtos, seletor de acessórios, calculadora de lentes Disponível em axis.com
Idiomas	Inglês, alemão, francês, espanhol, italiano, russo, chinês simplificado, japonês, coreano, português, polonês, chinês tradicional, holandês, tcheco, sueco, finlandês, turco, tailandês, vietnamita
Garantia	Garantia de 5 anos, consulte axis.com/warranty
Números de peça	Disponível em axis.com/products/axis-p1385-e#part-numbers
Sustentabilidade	
Controle de substâncias	Sem PVC, sem BFR/CFR de acordo com o padrão JEDEC/ECA JS709 RoHS de acordo com a diretiva RoHS da UE 2011/65/EU e EN 63000:2018 REACH de acordo com a (EC) No 1907/2006. Para SCIP UUID, consulte echa.europa.eu
Materiais	Conteúdo de plástico reciclável baseado em carbono: 36% (base bio) Triagem de minerais de conflito de acordo com as diretrizes da OCDE Para saber mais sobre a sustentabilidade na Axis, acesse axis.com/about-axis/sustainability
Responsabilidade ambiental	axis.com/environmental-responsibility A Axis Communications é signatária do Pacto Global da ONU, leia mais em unglobalcompact.org

a. *Recomenda-se um máximo de 3 streams de vídeo únicos por câmera ou canal para otimizar a experiência do usuário, a largura de banda da rede e a utilização do armazenamento. Um stream de vídeo único pode ser fornecido a vários clientes de vídeo na rede usando o método de transporte multicast ou unicast via funcionalidade de reutilização de stream integrada.*

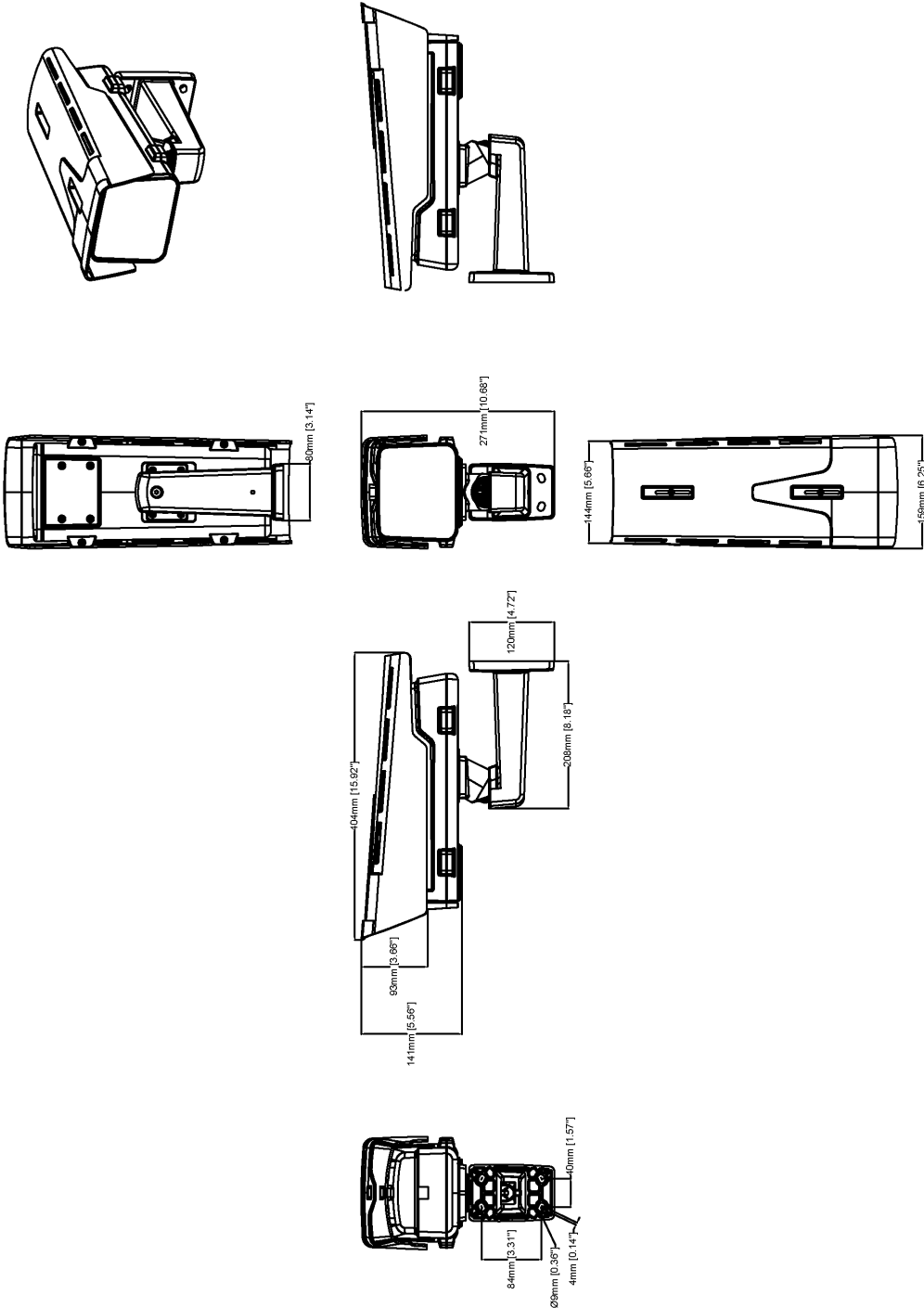
b. *Este produto inclui software desenvolvido pelo OpenSSL Project para uso no OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com)*

Detectar, Observar, Reconhecer, Identificar (DORI)

	Definição de DORI	Distância (grande-angular)	Distância (teleobjetiva)
Detectar	25 px/m (8 px/pé)	38,8 m (127,1 ft)	168,4 m (522,6 ft)
Observar	63 px/m (19 px/ft)	15,4 m (50,5 ft)	66,8 m (219,3 ft)
Reconhecer	125 px/m (38 px/ft)	7,7 m (25,4 ft)	33,7 m (110,5 ft)
Identificar	250 px/m (76 px/pé)	3,9 m (12,7 ft)	16,8 m (55,3 ft)

Os valores de DORI são calculados usando densidades de pixels para diferentes casos de uso, conforme recomendado pelo padrão EN-62676-4. Os cálculos usam o centro da imagem como ponto de referência e consideram a distorção da lente. A possibilidade de reconhecer ou identificar uma pessoa ou um objeto depende de fatores como movimento de objetos, compactação de vídeo, condições de iluminação e foco da câmera. Use as margens ao planejar. A densidade de pixels varia na imagem, e os valores calculados podem ser diferentes das distâncias do mundo real.

Esquema de dimensões



AXIS® **COMMUNICATIONS** **AXIS P1385-E Box Camera**

www.axis.com

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Recursos em destaque

AXIS Object Analytics

O AXIS Object Analytics é uma análise de vídeo pré-instalada e multifuncional que detecta e classifica humanos, veículos e tipos de veículos. Graças a algoritmos baseados em IA e a condições comportamentais, ele analisa a cena e o respectivo comportamento espacial dos objetos em – tudo personalizado para suas necessidades específicas. Escalável e baseado na borda, requer um mínimo de esforço para configurar e oferecer suporte a vários cenários que são executados simultaneamente.

Axis Edge Vault

O AXIS Edge Vault é a plataforma segurança cibernética baseada em hardware que protege o dispositivo Axis. Ele forma a base de que todas as operações seguras dependem e oferece recursos para proteger a identidade do dispositivo, proteger sua integridade e proteger informações confidenciais contra acesso não autorizado. Por exemplo, a **inicialização segura** garante que um dispositivo possa inicializar apenas com o **sistema operacional assinado**, o que impede a violação da cadeia de suprimentos física. Com o sistema operacional assinado, o dispositivo também é capaz de validar o novo software do dispositivo antes de aceitar instalá-lo. O **armazenamento de chaves seguro** é o bloco de construção crítico para a proteção de informações de criptografia usadas para comunicação segura (IEEE 802.1x, HTTPS, ID de dispositivo da Axis, chaves de controle de acesso, etc.) contra extração maliciosa em caso de violação de segurança. O armazenamento de chaves seguro e as conexões seguras são fornecidos através de um módulo de computação criptográfica com certificação de critérios comuns e/ou FIPS 140.

Além disso, o vídeo assinado garante que as evidências em vídeo possam ser verificadas como não testadas. Cada câmera usa sua chave de assinatura de vídeo exclusiva, a qual é armazenada de forma protegida no armazenamento seguro para adicionar uma assinatura ao stream de vídeo, permitindo que o vídeo seja rastreado até a câmera Axis que o gerou.

Para saber mais sobre o Axis Edge Vault, acesse axis.com/solutions/edge-vault.

Estabilização eletrônica de imagem

A estabilização eletrônica de imagem (EIS) oferece vídeos suaves em situações em que uma câmera está sujeita a vibrações. Sensores giroscópicos integrados detectam continuamente os movimentos e vibrações da câmera, e eles ajustam automaticamente o quadro para garantir que você sempre capture os detalhes de que precisa. A estabilização eletrônica de imagem depende de algoritmos diferentes para modelar o movimento da câmera, os quais são usados para corrigir as imagens.

Forensic WDR

As câmeras Axis com tecnologia de amplo alcance dinâmico (WDR, wide dynamic range) fazem a diferença entre observar detalhes forenses importantes com clareza e ver nada além de borrões em condições de iluminação desafiadoras. A diferença entre os pontos mais escuros e mais claros pode causar problemas para a usabilidade e a clareza da imagem. A tecnologia Forensic WDR reduz de forma eficiente ruídos e artefatos visíveis para fornecer vídeo otimizado para a usabilidade forense máxima.

Lightfinder

A tecnologia Axis Lightfinder oferece vídeo em cores de alta resolução com um mínimo de desfoque de movimento, mesmo quase na escuridão. Como ela remove ruídos, a Lightfinder torna visíveis as áreas escuras de uma cena e captura detalhes em condições de pouca luz. As câmeras com Lightfinders diferenciam cores em condições de pouca luz melhor do que o olho humano. Em situações de vigilância, a cor pode ser o fator crítico para identificar uma pessoa, um objeto ou um veículo.

Para obter mais informações, consulte axis.com/glossary