Cisco ONS 15454 M6 Multiservice Transport Platform

Service provider networks are under tremendous pressure as traffic from video, mobile, and collaboration applications grow exponentially. To meet these demands, they need a transport platform that can cost-effectively scale with operational ease. The Cisco® ONS 15454 M6 Multiservice Transport Platform (MSTP) sets the industry benchmark for compact, easy to operate, fast, and intelligent DWDM solutions. It includes a unique set of integrated features and its low power consumption reduces capital and operating expenses. The flexible Cisco ONS 15454 M6 platform supports a broad range of solutions, from edge aggregation solutions to metro core and long haul applications.

Figure 1. Cisco ONS 15454 M6 Multiservice Transport Platform (with and without front cover)

Key Features and Benefits

The Cisco ONS 15454 M6 chassis has two slots for redundant control cards and six slots for service cards (Figure 2). These six line card slots provide increased power and cooling capability over the original Cisco ONS 15454 chassis and a high-speed backplane for card-to-card interconnection. You can configure the Cisco ONS 15454 M6 with integrated and redundant DC or AC power inputs or a single power module for low-power and low-cost configurations. The Electrical Connection Unit (ECU, Figure 3) is a narrow, front-facing termination panel for all management, alarm, and multi-shelf connections. With all connections to the Cisco ONS 15454 M6 located on the front, this platform is ideal for cabinet installations and ETSI front connection requirements, making it truly global in its appeal. The ECU comes in two versions; the ECU2 version includes an RJ-45 connector for time-of-day (ToD) input and pulse-per-second (PPS) input.

Although the node can be configured with redundant control or processor cards, simplex mode or single control-card operation is permitted. The Cisco ONS 15454 M6 has a built-in memory module to back up the software package, IP address, and circuit database, making simplex mode more attractive in cost-sensitive applications. This built-in backup memory improves mean time to repair (MTTR) and increases operational simplicity. The Cisco ONS 15454 M6 can connect via USB to up to 12 Cisco ONS passive devices for inventory management. Some Cisco ONS 15216 passive devices, such as the single-module reconfigurable optical add-drop multiplexer (ROADM) patch panel, have an erasable programmable ROM (EEPROM) in the device that the Cisco ONS 15454 M6 can read, so it appears in the Cisco Transport Controller inventory management pane.

You can mount the Cisco ONS 15454 M6 MSTP into 19-inch, 21-inch, or 23-inch racks or cabinets. Brackets come with the shelf assembly and can also be ordered as spares. Optional air deflectors can be used in 21-inch and 23-inch installations. With 19-inch brackets, the airflow is right to left. With 21-inch brackets, you can select the airflow as right to left; right front in, and left front out; left up out; or left back out. With 23-inch brackets, airflow is from right front in to left back out.

The Cisco ONS 15454 M6 MSTP has a single high-capacity fan tray assembly where the three fans are individually monitored and controlled. If a single fan fails, a fan fail alarm is raised and the other fans increase in speed to provide sufficient airflow to give you time to safely replace the fan tray.

Doors are optional and hence do not come with the shelf assembly. They can be ordered as spares.

Specifically designed for the Cisco ONS 15454 M6 MSTP are control cards that consolidate the functions of the shelf processor, optical service channel (OSC) termination, multi-shelf switch, and external alarm contacts into just one card. The OSC also supports Fast Ethernet and Gigabit Ethernet connections, in addition to OC-3/STM-1, providing more bandwidth for use with the user data channel (UDC).

Figure 2. Cisco ONS 15454 M6 MSTP Modules

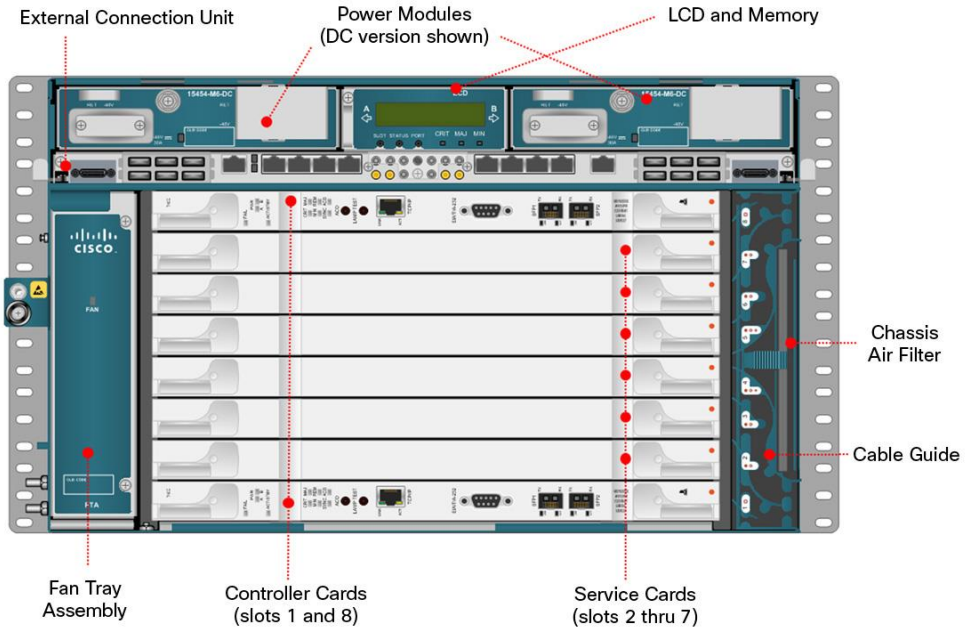
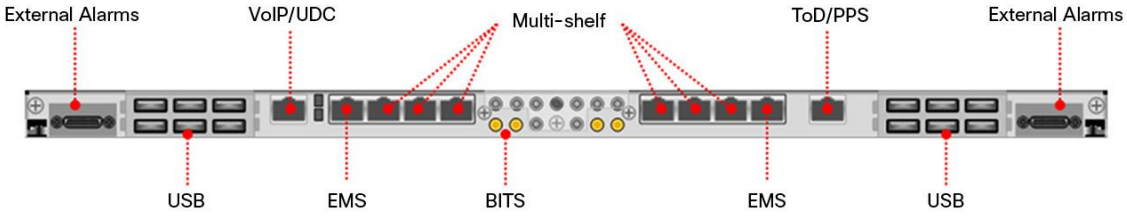


Figure 3. Electrical Connection Unit



Product Specifications

Table 1 lists the modules that make up the Cisco ONS 15454 M6 MSTP.

Table 1. Cisco ONS 15454 M6 Modules

Module	Part Number
Common Equipment for the Cisco ONS 15454 M6	
Shelf Assembly with brackets Chassis door (optional), and Deep Door	15454-M6-SA 15454-M6-DR, 15454-M6-DDR
Fan Tray Assembly Chassis air filter	15454-M6-FTA, 15454-M6-FTA2 15454-M6-FTF
External Connection Unit Integrated multishelf connection Cisco Element Management System connection UDC connection Voice-over-IP (VoIP) connection Alarms connection USB connection to passive Cisco ONS devices for inventory management Building Integrated Timing Supply (BITS) 1 and BITS 2 input and output (ANSI and ETSI) Time of Day (ToD)/Pulse Per Second (PPS)	15454-M6-ECU 15454-M6-ECU2
LCD Status and Backup Memory	15454-M6-LCD
Power Options DC power module with ANSI and ETSI connectors AC power module with universal IEC power connector	 15454-M6-DC, 15454-M6-DC20 15454-M6-AC, 15454-M6-AC2
Brackets and Air Deflectors (Optional spares) 19-in., 21-in., and 23-in. brackets 21-in. air deflectors 23-in. air deflectors	 15454-M6-BRKT 15454-M6-DEFL21 15454-M6-DEFL23
Common Equipment for the Cisco ONS 15454 M6 and M2	
Transport Node Controller card (TNC) Transport Shelf Controller card (TSC) Enhanced TNC card Enhanced TSC card	15454-M-TNC 15454-M-TSC 15454-M-TNCE 15454-M-TSCE
Slot-Filler Cards Line-card blank Line-card slot-detectable filler Control-card slot-detectable filler Cisco ONS 15454 M6 Power Module blank filler	 15454-BLANK 15454-M-FILLER 15454-M-T-FILLER 15454-M6-PWRFLR

Table 2. Cisco ONS 15454 M6 Cables for Original AC power Supply (15454-M6-AC)

Product Part Number	Description	Length	Gauge	Connector 1	Connector 2
15454-M2-DCCBL-LE(=)	DC power cable for ETSI left exit	10 m	12 AWG	Power D-Sub 2 poles	none
15454-M6-DCCBL-LE(=)	DC power cable for ETSI left exit	10 m	8 AWG	Power D-Sub 3 poles	none
15454-M6-DCCBL-RE(=)	DC power cable for ETSI right exit	10 m	8 AWG	Power D-Sub 3 poles	none
15454-M-ACCBL-L(=)	AC power cable ANSI 110Vac left exit	3 m	15A - 125V	C13	NEMA 5-15P
15454-M-ACCBL-L2(=)	AC power cable ANSI 220Vac left exit	3 m	15A - 250V	C13	NEMA 6-15P
15454-M-ACCBL-R(=)	AC power cable ANSI 110Vac right exit	3 m	15A - 125V	C13	NEMA 5-15P
15454-M-ACCBL-R2(=)	AC power cable ANSI 220Vac right exit	3 m	15A - 250V	C13	NEMA 6-15P
15454-M-ACL6-L(=)	AC power cable for Data Center	3 m	15A - 250V	C13	NEMA WD 6 L6-20P
15454-M-ACL6-R(=)	AC power cable for Data Center	3 m	15A - 250V	C13	NEMA WD 6 L6-20P
15454-M-CBL-LARG(=)	AC power cable - ARG left exit	3 m	10A - 250V	C13	IRAM 2073 - IEC 60884-1
15454-M-CBL-LAUS(=)	AC power cable - AUS left exit	3 m	10A - 250V	C13	AS/NZS 3112: 2000
15454-M-CBL-L-CHI(=)	AC power cable - China left exit	3 m	10A - 250V	C13	GB2099.1/GB1002
15454-M-CBL-L-EU(=)	AC power cable - EU left exit	3 m	10A - 250V	C13	CEE 7 STANDARD SHEET VII
15454-M-CBL-L-IND(=)	AC power cable - India left exit	3 m	10A - 250V	C13	IS 1293
15454-M-CBL-L-JPN(=)	AC power cable - Japan left exit	3 m	15A - 125V	C13	JIS C8303 & JIS C8306
15454-M-CBL-LKOR(=)	AC power cable - KOR left exit	3 m	10A - 250V	C13	K60884-01
15454-M-CBL-L-UK(=)	AC power cable - UK left exit	3 m	10A - 250V	C13	BS 1363/A & SS145/A
15454-M-CBL-RARG(=)	AC power cable - ARG right exit	3 m	10A - 250V	C13	IRAM 2073 - IEC 60884-1
15454-M-CBL-RAUS(=)	AC power cable - AUS right exit	3 m	10A - 250V	C13	AS/NZS 3112: 2000
15454-M-CBL-R-CHI(=)	AC power cable - China right exit	3 m	10A - 250V	C13	GB2099.1/GB1002
15454-M-CBL-R-EU(=)	AC power cable - EU right exit	3 m	10A - 250V	C13	CEE 7 STANDARD SHEET VII
15454-M-CBL-R-IND(=)	AC power cable - India right exit	3 m	10A - 250V	C13	IS 1293
15454-M-CBL-R-JPN(=)	AC power cable - Japan right exit	3 m	15A - 125V	C13	JIS C8303 & JIS C8306
15454-M-CBL-RKOR(=)	AC power cable - KOR right exit	3 m	10A - 250V	C13	K60884-01
15454-M-CBL-R-UK(=)	AC power cable - UK right exit	3 m	10A - 250V	C13	BS 1363/A & SS145/A

Table 3. Cisco ONS 15454 M6 Cables for AC2 Power Supply (15454-M6-AC2)

Product Part Number	Description	Length	Gauge	Connector 1	Connector 2
15454-M-ACCBL2-L(=)	AC2 power cable ANSI 110Vac left exit	3 m	20A - 125V	C19	NEMA 5-20P
15454-M-ACCBL2-L2(=)	AC2 power cable ANSI 220Vac left exit	3 m	20A - 250V	C19	NEMA 6-20P
15454-M-ACCBL2-R(=)	AC2 power cable ANSI 110Vac right exit	3 m	20A - 125V	C19	NEMA 5-20P
15454-M-ACCBL2-R2(=)	AC2 power cable ANSI 220Vac right exit	3 m	20A - 250V	C19	NEMA 6-20P
15454-M-CBL2-LARG(=)	AC2 power cable - ARG left exit	3 m	16A - 250V	C19	IRAM 2073 - IEC 60884-1
15454-M-CBL2-LAUS(=)	AC2 power cable - AUS left exit	3 m	16A - 250V	C19	AS/NZS 3112: 2000
15454-M-CBL2L-CHI(=)	AC2 power cable - China left exit	3 m	16A - 250V	C19	GB2099.1/GB1002

Product Part Number	Description	Length	Gauge	Connector 1	Connector 2
15454-M-CBL2-L-EU(=)	AC2 power cable - EU left exit	3 m	16A - 250V	C19	CEE 7 STANDARD SHEET VII
15454-M-CBL2L-IND(=)	AC2 power cable - India left exit	3 m	16A - 250V	C19	IS 1293
15454-M-CBL2L-JPN(=)	AC2 power cable - Japan left exit	3 m	20A - 125V	C19	JIS C8303 & JIS C8306
15454-M-CBL2-LKOR(=)	AC2 power cable - KOR left exit	3 m	16A - 250V	C19	K60884-01
15454-M-CBL2-L-UK(=)	AC2 power cable - UK left exit	3 m	13A - 250V	C19	BS 1363/A & SS145/A
15454-M-CBL2-RARG(=)	AC2 power cable - ARG right exit	3 m	16A - 250V	C19	IRAM 2073 - IEC 60884-1
15454-M-CBL2-RAUS(=)	AC2 power cable - AUS right exit	3 m	16A - 250V	C19	AS/NZS 3112: 2000
15454-M-CBL2R-CHI(=)	AC2 power cable - China right exit	3 m	16A - 250V	C19	GB2099.1/GB1002
15454-M-CBL2-R-EU(=)	AC2 power cable - EU right exit	3 m	16A - 250V	C19	CEE 7 STANDARD SHEET VII
15454-M-CBL2R-IND(=)	AC2 power cable - India right exit	3 m	16A - 250V	C19	IS 1293
15454-M-CBL2R-JPN(=)	AC2 power cable - Japan right exit	3 m	20A - 125V	C19	JIS C8303 & JIS C8306
15454-M-CBL2-RKOR(=)	AC2 power cable - KOR right exit	3 m	16A - 250V	C19	K60884-01
15454-M-CBL2-R-UK(=)	AC2 power cable - UK right exit	3 m	13A - 250V	C19	BS 1363/A & SS145/A

Table 4. Cisco ONS 15454 M6 Miscellaneous Cables

Product Part Number	Description	Length	Gauge	Connector 1	Connector 2
15454-M2-DCCBL-LE(=)	DC power cable for ETSI left exit	10 m	12 AWG	Power D-Sub 2 poles	none
15454-M6-DCCBL-LE(=)	DC power cable for ETSI left exit	10 m	8 AWG	Power D-Sub 3 poles	none
15454-M6-DCCBL-RE(=)	DC power cable for ETSI right exit	10 m	8 AWG	Power D-Sub 3 poles	none
15454-M-120TMGCBL(=)	BITS IN/OUT cable for ANSI	0.6 m	COAX 23 AWG	DIN 1.0/2.3	2 WIRE WRAP PINS
15454-M-ALMCBL(=)	SCSI Alarm cable	20 m	28 AWG	Mini SCSI	None
15454-M-ALMCBL2(=)	SCSI Alarm cable limited to 8 inputs	20 m	24 AWG	Mini SCSI	None
15454-M-TMGCBL(=)	BITS IN/OUT cable for ETSI	20 m	COAX 23 AWG	DIN 1.0/2.3	none
15454-M-USBCBL(=)	USB cable for passive devices	3 m	28#/1P + 24#/2C + AEB	USB "A" MALE	USB "A" MALE

Table 5 provides details about physical and operational specifications for the Cisco ONS 15454 M2 MSTP.

Table 5. Product Specifications

Item	Specification
Power Requirements	**Maximum**
M6 AC power configuration	1400W
M6 DC power configuration	1400W
Power Consumption	
M6 fan tray assemblies	120W
M6 AC power module	Original AC power supply: 15% of the sum of the max consumption of all populated cards AC2 power supply: 15% of the sum of the max consumption of all populated cards
M6 DC power modules	40W

Item	Specification
Physical Dimensions	
Rack mounting	19- or 23-in. (483- or 584-mm) EIA rack mounting 19-in. (483-mm) rack mounting or 21-in. (533-mm) cabinet mounting
Shelf assembly	
Cisco ONS 15454 M6 shelf assembly	(H x W x D): 10.45 x 17.45 x 11.02 in. (265.4 x 443.3 x 280 mm)
Environmental conditions	
Storage temperature	-40 to 158ºF (-40 to 70ºC)
Operating temperature • Normal • Short-term[1]	 32 to 131ºF (0 to 55ºC) 23 to 131ºF (-5 to 55ºC)
Relative humidity • Normal • Short-term[2]	 5 to 85%, noncondensing 5 to 90% but not to exceed 0.024 kg water/kg of dry air

[1]. Refers to a period of not more than 96 consecutive hours and a total of not more than 15 days in one year.
[2]. Refers to a total of 360 hours in any given year, but no more than 15 occurrences during that one-year period.

Regulatory Standards Compliance

Table 6 summarizes regulatory standard compliance and agency approvals.

Table 6. Regulatory Standard Compliance and Agency Approvals

ANSI (Cisco ONS 15454) System	ETSI (Cisco ONS 15454E) System
Supported Countries	
• Canada • United States • Korea	• Europe • Latin America • Japan • Asia Pacific • Middle East and Africa
EMC (Class A)	
• ICES-003 Issue 4(2004) • GR-1089-CORE, Issue 4 (Type 2 and Type 4 equipment) • GR-1089-CORE - Issue 03 (Oct 2002) (Objective O3-2 - Section 3.2.1 - Radiated Emissions requirements with all doors open) • FCC 47CFR15, Class A subpart B (2006)	• EN 300 386 v1.3.3 (2005) and v1.4.1 (2007) • CISPR 22 - Fifth edition (2005-04) Class A and the amendment 1 (2005-07) • CISPR 24 - First edition (1997-09) and amendment 1 (2001-07) and amendment 2 (2002-10). • EN 55022:1998 Class A - CENELEC Amendment A2:2003 • EN 55024:1998 - CENELEC Amendment A1:2001 and Amendment A2:2003 • Resolution 237 (Brazil) • VCCI V-3/2006.04 • EN 61000-6-1:2001 • EN 61000-6-2:1999
Safety	
• UL/CSA 60950-1 2nd Ed. 2011 • GR-1089-CORE, Issue 4 (Type 2 and Issue 6 equipment)	• UL/CSA 60950-1 2nd Ed. 2011 • IEC 60950-1 2nd Ed. + Amendment 1:2009, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 (with all country deviations)
Environmental	
• GR-63-CORE, Issue 3 (2006)	• ETS 300-019-2-1 V2.1.2 (Storage, Class 1.1) • ETS 300-019-2-2 V2.1.2 (Transportation, Class 2.3) • ETS 300-019-2-3 V2.1.2 (Operational, Class 3.1E) • EU WEEE regulation • EU RoHS regulation
Power and Grounding	
• GR-1089-CORE, Issue 4	• ETS 300 132-2

ANSI (Cisco ONS 15454) System	ETSI (Cisco ONS 15454E) System
Optical Safety	
• EN or IEC-60825-2 Third edition (2004-06) • EN or IEC 60825-1 Consol. Ed. 1.2 - incl. am1+am2 (2001-08) • 21CFR1040 (2004/04) (Accession Letter and CDRH Report) • IEC-60825-2 Third edition (2004-06) • ITU-T G.664 (2006)	
Miscellaneous	
• Acoustic noise ◦ GR-63-CORE, Issue 3 (2006) ◦ ETS 300 753 ed.1 (1997-10) • Rain, sand, dust, and moisture proofing ◦ AS 1939-1990, 4.2, IP 53 • Mechanical shock and bumps ◦ AS1099-2.27 • Customer-specific requirements ◦ AT&T Network Equipment Development Standards (NEDS) Generic Requirements, AT&T 802-900-260 ◦ SBC TP76200MP ◦ Verizon SIT.NEBS.NPI.2002.010	

Ordering Information

To place an order, visit the Cisco Ordering homepage and refer to Table 7. To download software, visit the Cisco Software Center: http://www.cisco.com/cisco/software/type.html?mdfid=278281788&i=rm.

Table 7. Ordering Information

Product ID	Description
Common Equipment	
15454-M6-SA=	Shelf assembly with brackets, Cisco ONS 15454 M6
15454-M6-DR=	Chassis Door, Cisco ONS 15454 M6
15454-M6-DDR=	Chassis Deep Door, Cisco ONS 15454 M6
15454-M6-FTA=	Fran Tray assembly, Cisco ONS 15454 M6
15454-M6-FTA2=	2nd Gen Fan Tray assembly, Cisco ONS 15454 M6
15454-M6-FTF=	Chassis Air Filter, Cisco ONS 15454 M6
15454-M6-DC=	30A DC Power Supply Module, Cisco ONS M6
15454-M6-DC20=	20A DC Power Supply Module, Cisco ONS M6
15454-M6-AC=	AC Power Supply Module, Cisco ONS M6
15454-M6-PWRFLR=	Power Module blank filler, Cisco ONS 15454 M6
15454-M6-ECU2=	External Connection Unit with PPS/ToD, Cisco ONS 15454 M6
15454-M6-LCD=	LCD and Memory, Cisco ONS 15454 M6
15454-M6-BRKT=	19-in./23-in. and 21-in. Brackets, Cisco ONS 15454 M6
15454-M6-DEF21=	21-in. Air deflector, Cisco ONS 15454 M6
15454-M6-DEF23=	23-in. Air deflector, Cisco ONS 15454 M6
15454-M-SHIPKIT=	Shipkit, Cisco ONS 15454 M6 and Cisco ONS 15454 M2
15454-M-TNCE-K9=	Enhanced Transport Node Controller
15454-M-TSCE-K9=	Enhanced Transport Shelf Controller
15454-BLANK=	Shelf slot-filler panel, fits any slot in Cisco ONS 15454 ANSI shelf assembly

Warranty

The following warranty terms apply to the Cisco ONS 15454 M6 MSTP as well as services you may use during the warranty period. Your formal warranty statement appears in the Cisco information packet that accompanies your Cisco product.

- Hardware warranty duration: Five years
- Software warranty duration: One year
- Hardware replacement, repair, or refund procedure: Cisco or our service center will use commercially reasonable efforts to ship a replacement part for delivery within 15 working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on customer location.

Product warranty terms and other information applicable to Cisco products are available at: http://www.cisco.com/go/warranty.

Service and Support

Cisco Services make networks, applications, and the people who use them work better together.

Today, the network is a strategic platform in a world that demands better integration among people, information, and ideas. The network works better when services, together with products, create solutions aligned with business needs and opportunities.

The unique Cisco Lifecycle approach to services defines the requisite activities at each phase of the network lifecycle to help ensure service excellence. With a collaborative delivery methodology that joins the resources of Cisco, our skilled network of partners, and our customers, we achieve the best results.

For More Information

For more information about the Cisco ONS 15454 Multiservice Transport Platform, contact your local Cisco account representative or visit Cisco at: http://www.cisco.com/go/optical or http://www.cisco.com/go/IPoDWDM.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Printed in USA C78-601956-06 09 /14