



Data Sheet

## Cisco ONS 15454 SDH 12-Port STM-1 Electrical Interface Card

The Cisco® ONS 15454 SDH 12-Port STM-1 Electrical Interface Card (STM-1E) provides a cost-effective, high-speed electrical interface for interconnections between voice switches, digital cross-connects, add/drop multiplexers (ADMs), and other existing network equipment, while reducing footprint requirements and offering multiservice flexibility.

### Product Overview

The Cisco ONS 15454 STM-1E Card provides 12 STM-1 electrical interfaces (ITU-T G.703, 155.520 Mbps) on a single card (Figure 1).

#### Figure 1

Cisco ONS 15454 STM-1E Card



The STM-1E card can be installed into multiservice slots 1–4 and 14–17 in the shelf assembly. With the front-mount-electrical-connection (FMEC) modules installed in the electrical-facility-connector-assembly (EFCA) slots, STM-1E services can be deployed in 1:1 protection or unprotected configurations. The high-density card footprint allows a single Cisco ONS 15454 SDH chassis to service up to 48 1:1 protected STM-1E interfaces or 96 unprotected interfaces.

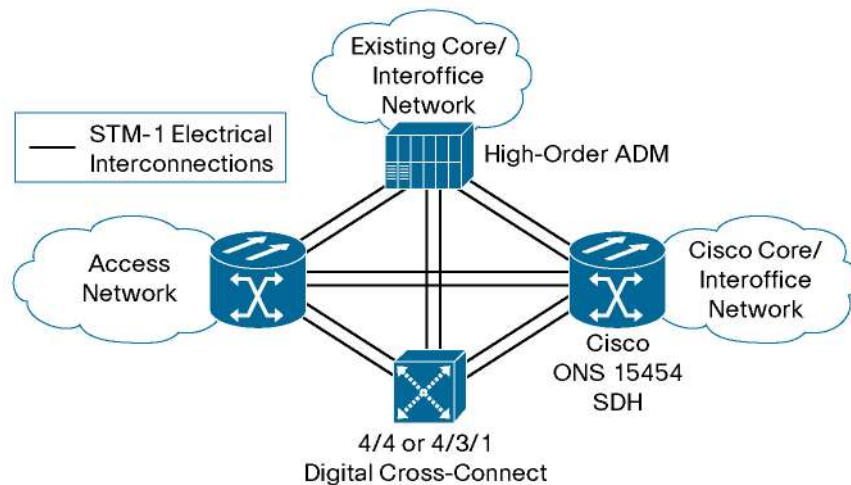
The STM-1E card has three card-level LED indicators. The red FAIL LED indicates a hardware problem on the STM-1E card; the green ACTV LED indicates that the STM-1E card is active and ready to carry traffic. The yellow SF LED indicates a problem receiving incoming data (loss of signal [LOS], loss of frame [LOF], or high bit error rate [BER]) on one or more of the STM-1E ports on the card. You can query individual ports for further alarm resolution or port conditions through the LCD display located on the fan-tray assembly or access the system with the Cisco Transport Controller.

## Applications

The STM-1E card for the Cisco ONS 15454 SDH Multiservice Provisioning Platform (MSPP) bridges the gap between existing traditional infrastructure and next-generation multiservice networks that require the flexibility to meet the demands of a wide variety of network applications found within many service provider and enterprise transport networks.

The STM-1E interface interconnects equipment such as ADMs and digital cross-connects (DXCs) at high rates (155 Mbps). The addition of the STM-1E interface card on the Cisco ONS 15454 SDH MSPP allows for ease of interconnection to the existing network infrastructure (Figure 2) as STM-1 electrical handoffs have become prevalent because of the significant cost savings of the electrical optical interfaces.

**Figure 2**  
STM-1 Electrical Interconnections



## Key Features and Benefits

The Cisco ONS 15454 MSPP with the STM-1E card offers the following features and benefits:

### Compact Design

- Single-slot-width card design for improved shelf flexibility and scalability
- Up to 8 STM-1E cards per shelf assembly to support high-density applications

### Interface Provisioning Options

- STM-1E subnetwork connection protection (SNCP), ring and mesh
- Multiplex section protection (MSP), 1 + 1 uni- or bidirectional
- Unprotected (0 + 1)

### Platform Network Architecture Flexibility

- Ring
- Multiple rings
- Linear ADM
- Terminal

## Summary

The Cisco ONS 15454 SDH MSPP is an important building block in today's optical networks because of its next-generation transport capabilities and economics. It offers unprecedented multiservice transport capabilities by combining the best of a time-division multiplexing (TDM) system along with extensive Ethernet and IP data service offerings in a single platform. The Cisco ONS 15454 MSPP can aggregate traditional facilities such as asynchronous E1, or DS-3/E3 and synchronous optical interfaces onto optical transport facilities from STM-1 to STM-64. It can also aggregate data services such as 10BASE-T, 100BASE-T, or Gigabit Ethernet, and Fibre Channel storage interfaces. Lastly, it can aggregate dense wavelength-division multiplexing (DWDM) optics options for network scalability. The superior flexibility of the Cisco ONS 15454 helps enable drastically improved efficiencies in the transport layer and breakthrough cost savings for initial and lifecycle deployment.

## Product Specifications

Table 1 outlines the product specifications for the Cisco ONS 15454 STM-1E Card.

**Table 1.** Product Specifications for Cisco ONS 15454 STM-1E Card

Description	Specification
Signal interface	12 ports, ITU-T G.703 STM-1 electrical
Payload mapping	VC-4 per ITU-T G.707 interfaces
Return loss	15 dB
Insertion loss	12 dB
Card redundancy	Unprotected and 1:1 protection
Facility termination	75-ohm 1.0 or 2.3 subminiature connector

Description	Specification
Performance monitoring	ITU-T G.826
Jitter	STM-1E: ITU-T G.825
Power	60W maximum, including FMEC
Operating temperature and humidity	–5 to 45°C/23 to 113°F (ETSI Class 3.1E) 5 to 95% noncondensing
Storage temperature and humidity	–40 to 85°C/–40 to 185°F (ETSI Class 3.1E) 5 to 95% noncondensing

## System Requirements

Table 2 outlines the system requirements to deploy the Cisco ONS 15454 STM-1E Card.

**Table 2.** System Requirements

Description	Specification
Shelf assembly	ETSI version with SDH –48-VDC fan-tray assembly
Processor	TCC2 and TCC2P
Cross-connect	XC-10G, XC-VXL-2.5G, XC-VXL-10G, or XC-VXC-10G
System software	Release 6.1 or greater release number
Slot compatibility	Slots 1 to 4 and 14 to 17

## Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#) or refer to Table 3.

**Table 3.** Ordering Information for Cisco ONS 15454 STM-1E Card

Product Name	Part Number
STM-1E electrical interface card, 12 ports, SDH systems	15454E-STM1E-12
STM-1E FMEC, 12 ports for 1:1 protection or 24 ports for unprotected, 75-ohm 1.0 or 2.3 connectors, 2 slots, SDH systems	15454E-STM11-FMEC

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## For More Information

For more information about the Cisco ONS 15454 SDH MSPP, visit <http://www.cisco.com/en/US/products/hw/optical/ps2006/ps2008/index.html> or contact your local Cisco account representative.

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