

# Cisco ONS 15530 Transponder Line Card

The Cisco® ONS 15530 Transponder Line Card provides the Cisco ONS 15530 Metro DWDM Multiservice Aggregation Platform with a transparent solution for connecting to client interfaces and transparently sending this signal over an ITU (International Telecommunication Union) wavelength. Supported client interfaces include Gigabit Ethernet, Fast Ethernet, ESCON, 1 Gbps and 2 Gbps Fibre Channel or FICON, Sysplex Timer, Coupling Link, Synchronous Optical Network/ Synchronous Digital Hierarchy (SONET/SDH) OC-3/STM-1, OC-12/STM-4, OC-48/STM-16, ATM, Broadcast Video, and other protocols.

### Benefits

- *Multiservice support*—Supports several client services including Sysplex Timer (ETR and CLO), Coupling Link (ISC1 and ISC3 compatibility and peer modes), ESCON, 1 and 2 Gbps Fibre Channel or FICON, Gigabit Ethernet, SONET/SDH, Asynchronous Transfer Mode (ATM), and other protocols in the range of 16 Mbps to 2.5 Gbps (single mode) and 16 to 622 Mbps (multimode).
- *Scalability*—With up to 32 wavelengths per fiber pair supported by a Cisco ONS 15530 system, the Cisco ONS 15530 Transponder Line Card allows a customer to scale its network as new client services are added. Additional

Cisco ONS 15530 transponder line cards can be added to a Cisco ONS 15530 network by using one of the other available wavelengths on the same fiber pair.

- *Software-provisionable*—Provides investment protection by allowing the software provisioning of a new service type (2 Gbps Fibre Channel, for example) on an existing Cisco ONS 15530 Transponder Line Card supporting a different protocol that is no longer needed—without requiring a card replacement.
- *Protection options*—Can be deployed with optical splitter-based protection or 1+1 protection to provide enhanced service protection by sending the optical trunk signal simultaneously over both east and west fiber paths. In addition, the Cisco ONS 15530 Transponder Line Card offers the ability to protect applications at a per-service level—a feature that is unmatched in the industry today.

Figure 1  
 Cisco ONS 15530  
 Transponder Line Card  
 with Optical Splitter  
 Protection





- *Performance monitoring*—Offers both optical and digital performance monitoring, providing the customer with the ability to monitor optical signal performance, as well as protocol behavior.
- *Inventory reduction*—Using dual-channel, tunable lasers the Cisco ONS 15530 Transponder Line Card allows customers to reduce their inventory of cards by half. Through software control, the laser on a transponder line card can be configured to generate one of two wavelengths on the trunk side (1 or 2, 3 or 4, for example).
- *Partners*—The Cisco ONS 15530 Transponder Line Card is fully compatible with storage applications from Cisco partners, including IBM GDPS, EMC SRDF, HP/Compaq DRM, and HDS TrueCopy. This gives customers the flexibility of deploying the Cisco ONS 15530 platform in many different storage environments with full confidence.
- *Storage applications*—The Cisco ONS 15530 Transponder Line Card can be used in storage networking applications such as business continuance, disaster recovery, disk mirroring, and SAN extension.
- *Data networking*—The Cisco ONS 15530 platform, configured with the Cisco ONS 15530 Transponder Line Card, can provide metro Gigabit Ethernet services over a 2.5-Gbps metro DWDM backbone for high-bandwidth intercampus networking applications. By networking IP traffic end to end in its native Ethernet format at wire speed and with full operations, administration, and maintenance (OAM) capabilities, enterprises can avoid the added complexity and cost of protocol conversion and rate adaptation into another MAN or WAN protocol.

## Specifications

Table 1 Optical Specifications

	Client				Trunk	
	Single Mode		Multimode		Min	Max
	Min	Max	Min	Max		
<b>Receiver Specification</b>						
Receiver sensitivity (dBm)	-19	—	-25	—	-28	—
Optical signal noise ratio (OSNR) (0.1 nm bandwidth) (dB) <sup>1</sup>	—	—	—	—	19	—
Receiver overload (dBm)	—	-1.5	—	-8	—	-8
Input wavelength (nm)	1249	1600	1249	1600	1430	1580
	Client				Trunk	
	Single Mode		Multimode		Min	Max
	Min	Max	Min	Max		
<b>Transmitter Specification</b>						
Transmitter output power (dBm)	-5	0	-5	0	5	10
Dispersion tolerance (ps/nm)	—	—	—	—	3200	—
Wavelength range (nm)	1260	1360	1260	1360	1527	1564
Center wavelength drift (pm)	—	—	—	—	-105	+105

1. Add proper network-level penalty to the OSNR and/or receive power sensitivity based on actual network topology characteristics, such as dispersion.



Table 2 Product Specifications

<p><b>Trunk Ports</b></p> <ul style="list-style-type: none"> <li>• Splitter             <ul style="list-style-type: none"> <li>– Fiber: ITU-T G.652</li> <li>– Connector: MU (2 pairs)</li> </ul> </li> <li>• Non-splitter             <ul style="list-style-type: none"> <li>– Fiber: ITU-T G.652</li> <li>– Connector: MU (1 pair)</li> </ul> </li> </ul>	<p><b>Configuration options</b></p> <ul style="list-style-type: none"> <li>• Up to 8 cards per chassis</li> <li>• Compatible in slots 1–4 and slots 7–10</li> </ul> <p><b>Channel options</b></p> <ul style="list-style-type: none"> <li>• Two channel tunable</li> <li>• 32 wavelengths in a 100-GHz ITU grid (C-band)</li> </ul>
<p><b>Client ports</b></p> <ul style="list-style-type: none"> <li>• Single Mode             <ul style="list-style-type: none"> <li>– Bit rate: 16 Mbps to 2.5 Gbps</li> <li>– Fiber: ITU-T G.652</li> <li>– Connector: SC</li> </ul> </li> <li>• Multimode             <ul style="list-style-type: none"> <li>– Bit rate: 16 to 622 Mbps</li> <li>– Fiber: 62.5 or 50/125 m</li> <li>– Connector: SC</li> </ul> </li> </ul>	<p><b>Specifications</b></p> <ul style="list-style-type: none"> <li>• Dimensions (H x W x D): 10.4 in. x 1.1 in. x 8.8 in.</li> <li>• BER: <math>1 \times 10^{-15}</math> (ESCON), <math>1 \times 10^{-12}</math> (other protocols)</li> <li>• Digital monitoring: 64- and 66-bit code errors</li> </ul>

Ordering Information

Table 3 Ordering Information

Product Code <sup>2</sup>	Product Description	Minimum Cisco IOS <sup>®</sup> Software Release
15530-TSP1-xx11	Cisco ONS 15530 Transponder Channel x/x+1 – 1310 nm multimode with splitter (where x = ITU Channel 01, 03, 05, ..., 31)	SO530C-12110EV
15530-TSP1-xx21	Cisco ONS 15530 Transponder Channel x/x+1 – 1310 nm multimode with non-splitter (where x = ITU Channel 01, 03, 05, ..., 31)	SO530C-12110EV
15530-TSP1-xx12	Cisco ONS 15530 Transponder Channel x/x+1 – 1310 nm single mode with splitter (where x = ITU Channel 01, 03, 05, ..., 31)	SO530C-12110EV
15530-TSP1-xx22	Cisco ONS 15530 Transponder Channel x/x+1 – 1310 nm single mode with non-splitter (where x = ITU Channel 01, 03, 05, ..., 31)	SO530C-12110EV

2. CLEI codes are available upon request.

For more information about the individual modules available with the Cisco ONS 15530 platform, please refer to the Cisco ONS 15530 technical specifications, available at:

<http://www.cisco.com/en/US/products/hw/optical/ps2011/ps4002/index.html>



Corporate Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

European Headquarters  
Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

Americas Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

Asia Pacific Headquarters  
Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 6317 7777  
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the  
**Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices)**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia  
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland  
Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland  
Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden  
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

All contents are Copyright © 1992-2003 Cisco Systems, Inc. All rights reserved. Cisco, Cisco IOS, Cisco Systems, and the Cisco Systems logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company.  
(0304R) AW/LW4785 06/03