Data Sheet

Cisco ONS 15800 DWDM Platforms

Cisco ONS 15800 DWDM ANSI Platform

Cisco ONS 15801 DWDM ETSI Platform

The Cisco ONS 15800 Dense Wavelength Division Multiplexing (DWDM) Platforms, including the Cisco ONS 15800 DWDM ANSI Platform and the Cisco ONS 15801 DWDM ETSI Platform are field-proven, Internet-scale, carrier-class optical transport systems, with more than 4000 OC-192/STM-64 channels deployed over more than 70,000 route miles. These scalable and economic platforms allow service providers to maximize the use of installed fiber, offering the high-speed, high-capacity transport services that their customers want at competitive prices. In particular, the multiple-band architecture of the Cisco ONS 15800 allows carriers incomparable flexibility and scalability when deploying applications and additional wavelengths as needed. The modularity of the platform assures both low startup costs and flexibility in operating over all fiber types.

Figure 1
Cisco ONS 15800

Part of the unrivalled Cisco COMET (Complete Optical Multiservice Edge and Transport) product line, the Cisco ONS 15800 architecture allows IP, Asynchronous Transport Mode (ATM), Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH) transport and Wavelength services all in a single platform.

Product Description

The Cisco ONS 15800 supports up to 64 channels; based on a modular design, it allows service providers to add wavelengths and deploy services as needed, investing in the infrastructure as they generate revenue to support it. This platform accommodates tributaries of STM-4, OC-48/STM-16, and OC-192/STM-64. Multiplexed wavelengths can be transmitted unregenerated up to 600 km (8 spans) through the use of distributed optical amplifiers along the optical route and can reach distances of up to 6000 km adding the Line Extender Modules (LEMs). The integral LEMs eliminate the need for SONET (and SDH) regenerators and consolidate this functionality onto a single plug-in module.

Optical add-drop multiplexer (OADM) is available at each line site. With hardware modules, service providers can add or drop up to four channels per site on the Cisco ONS 15800 and ONS 15801 platforms. Each optical line amplification site can be upgraded to an OADM site (all at the same time, with no limitation) without any decrease in performance.

Integrated, nonintrusive B1 and FEC performance monitoring are available to assure high quality-of-service (QoS) levels and to allow for constant system monitoring of its integral components. The system also features an optical service channel that provides the medium through which the vital system parameters are transmitted to the element management system. The Cisco ONS 15800 and ONS 15801 platforms can be managed through a local craft interface. Being part of the ONS 15000 product family the platforms are managed by Cisco Transport Manager.

Product Value

With the Cisco ONS 15800 and ONS 15801 platforms, Cisco offers a network solution that can scale with the rapid growth of the Internet while providing unrivaled reliability. The Cisco ONS 15800 uses Out-of-Band Forward Error Correction (OOBFEC) to yield a significant improvement in Optical Signal-to-Noise Ratio (OSNR) margins over a nonFEC solution. This is a substantial gain that service providers can apply toward additional channels, increased number of spans and span length, or a hybrid of both. Reducing the error rates of long-haul optical transport networks, service providers can establish QoS standards and sell tiered services to their customers. Performance monitoring is crucial to powering an error-free network and provides a standardized approach to address ongoing maintenance issues.

The introduction of the Infra Red (IR) band, also known as L band, allows the Cisco ONS 15800 to double the channel count. Tangible benefits of scaling the capacity of the Cisco ONS 15800 by adding the L band include:

- Capacity upgrades is non-traffic affecting
- There is no need for tighter channel spacing
- There is a better channel count on dispersion-shifted fiber

Service providers who have already exhausted the available C-band capacity or have fiber types that significantly limit capacity in the C band are those who benefit most from the addition of the L band.

The Cisco ONS 15801 DWDM ETSI Platform also provides optical channel protection, through the optical switching unit (OSU). The OSU implements the 1+1 optical protection at channel level in the DWDM system, protecting the client signal from failures within the optical transport domain. The OSU protects a generic client signal independent of the bit rate (622 Mbps, 2.5 Gbps, or 10 Gbps), format protocol, and wavelength (in the range 1300 to 1550 nm). Optical channel protection is particularly beneficial in networks that do not supply protection at client signal, like ATM switches, IP routers, and so on.

The flexible Cisco ONS 15800 and ONS 15801 platforms adapt well to different network architectures such as point-to-point, mesh, star, and ring. An open architecture allows the platforms to be building blocks of both legacy time-division multiplexing (TDM) voice networks and "greenfield" pure-IP networks. The main application is, of course, the long-haul network in the 600-km range, but the platform also provides an efficient solution for multilambda 10-Gbps interoffice transport in the metro core networks.

Key Benefits

The Cisco ONS 15800 and ONS 15801 platforms offer flexibility, scalability, and enhanced performance in an economical design. The Cisco ONS 15800 is built with future growth in mind. Benefits for the service provider include:

- Grow your system by adding modules or subracks for low startup costs
- Get system flexibility through its multiband architecture (Red and Blue in the C-band and L-band)

- Increase capacity and improve distance with superior OOBFEC
- Gain network flexibility with OADM capability at any site
- Install the platforms easily- because all equipment is pre-cabled in manufacturing
- Use local craft interface software on PCs
- Manage network with Cisco Transport Manager

Table 1

Technical Specifications

Channel input	STM-4, OC-48/STM-16, OC-192/STM-64
Supported services	IP, ATM, SONET, and SDH
Number of channels	1 to 64
Channel spectrum	1529 to 1602 nm
Optical service channel	2.048 Mbps
Input power range	-8 to 0 dBm
Physical dimensions	Standard 23 in. mechanics (ANSI) Standard ETS 300 119 mechanics (ETSI)
Network fiber connections	Front access
Fiber types supported	SMF-28, E-LEAF, TrueWave, LS, DS, TeraLight
SONET/SDH monitoring	B1, BER through OOBFEC
SONET/SDH regeneration	Integrated (LEM)
Span budget	5x27 dB for OC-192/STM-64 at full capacity
Add-drop supported at any line site	4 channels
System dispersion tolerance (without LEM)	12,800 ps/nm at 2.5 Gbps
Power	350 to 1250 watts (depending on configuration)
Compliance	NEBS Level 3 CE-Mark

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 Europe
11, Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

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: 65 317 7777
Fax: 65 317 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

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

LB/JSI/01/02