



1-2 Channel DWDM Transponders

DarkStar DQT100 Series

The DQT100 is part of XKL's DarkStar DWDM Transponder family of products and is based on XKL's DarkStar architecture, the foundation for addressing today's IT challenges and scalable growth.

These systems enable customers to soft-configure the aggregation of Ethernet services at multiple data rates. Organizations can easily plan for increasing capacity to address bandwidth needs, as well as to meet the demand in the growth of mobile devices, streaming video, and bandwidth intensive applications.

The DQT100 utilizes the DarkStar DMD Mux/Demux in order to aggregate up to 96 wave lengths on a single fiber pair. Alternatively, the DQT100 can provide alien wave injection into an existing customer network. The DQT100 systems are fully tunable and allow for a customer to grow their network to 9.6 terabits of line-side bandwidth.

The DQT100 solution includes a powerful aggregation scheme based on statistical multiplexing. This approach to data aggregation optimizes channel utilization, provides bandwidth shaping controls, and gives the customer complete control over their data transport. Under the instantaneous demands of real-world internet traffic, statistical multiplexing leverages the statistics of real-time demand, allowing many more users to transmit their data packets over a shared channel than would normally be the case if a static aggregation approach, such as time-division multiplexing, were employed. As a result, statistical multiplexing can help lower the cost of building and maintaining an optical network.

DQT100 systems install in under an hour and are available in 1 rack unit (1U) or 2 rack unit (2U) configurations. A typical DQT100 (i.e., 1 port) uses 164 watts of power.

Network administrators can deploy and commission these systems in a fraction of the time it takes to deploy traditional optical transport equipment. Setting up the management network, as well as configuring services, are done in minutes. All the complexities of building an optical network are handled by the DQT100 system, leaving network administrators with confidence in their deployments.

More about this product...

Integrated System Architecture:

- DWDM Solution
- Tunable system (based on ITU grid)
- Statistical multiplexing
- Dynamic bandwidth allocation
- Digital ROADM (Reconfigurable Optical Add Drop Multiplexer): remotely switch traffic, any-to-any mapping
- Soft-configured weighted round-robin priority scheduler
- Alien wavelength support
- Media converter

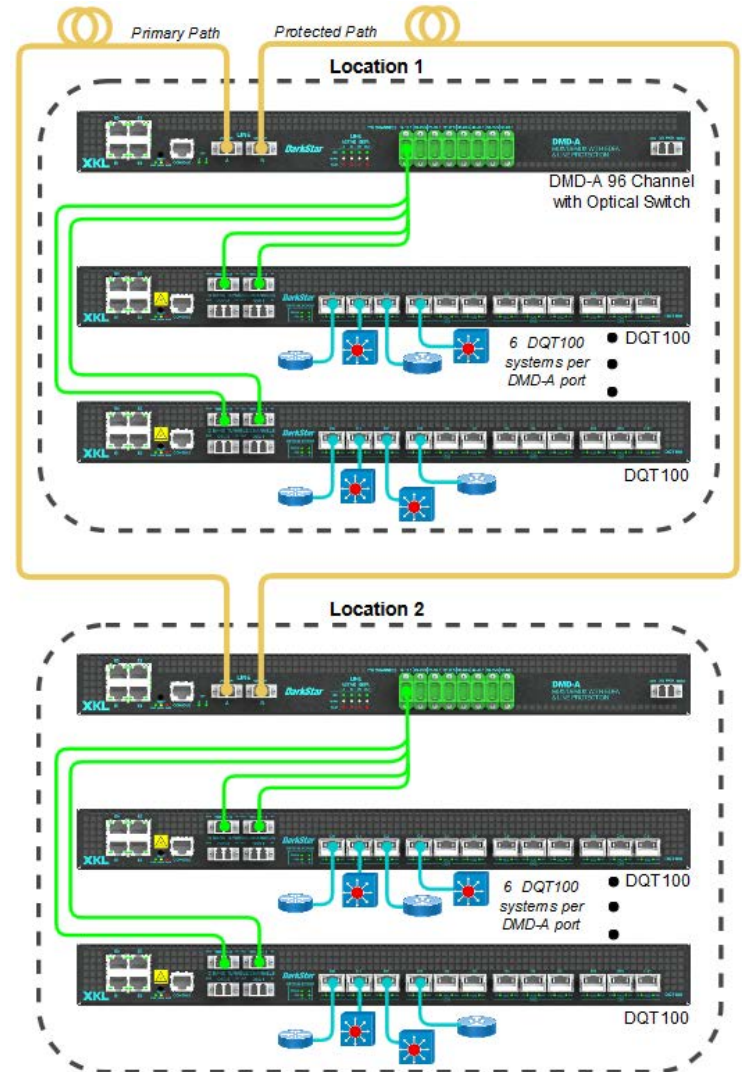
System Level Features:

- Hot-swap components:
 - 1+1 redundant power supplies, supports AC and DC
 - Redundant fans
 - Laser transceivers: QSFP+, Optical Service Channel (OSC)
 - Field-replaceable dual flash storage modules; one is write-protected
 - Hitless software upgrades - no customer data loss
 - System-wide watchdog timer to ensure software response
- Also see "Technical Specifications" on back.



Typical Use Case

12 x 100G Channels Protected with Growth to 96 Channels



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Supported Topologies

Point-to-Point, Ring, Linear, Mesh, and Protected (using DMD-A)

Capacity/Growth

A collection of DQT100 systems, along with a DMD-P/DMD-A, can grow a network to 48/96 channels. For example, a 48-channel solution would use 24 DQT100 systems and a 48-channel DMD Mux/Demux. Similarly, a 96-channel solution would use 48 DQT100 systems and a 96-channel DMD Mux/Demux.

Network Management and Control Plane

Command line interface (CLI):

RS-232 serial console port
TELNET and SSH

Dedicated management network:

4x 10BASE-T/100BASE-TX Ethernet ports
IPv4/IPv6 dual stack
IPv4 forwarding, RIP routing
DHCP boot client, BOOTP relay
DHCP server

Security:

Simple password
Local account database
RADIUS and TACACS+ client
Host-based Access Control Lists (ACLs)

Monitoring:

Network Syslog, Local event log
SNMP versions 1 and 2C
RFC1213-MIB, SNMPv2-MIB, IF-MIB, XKL-MIB

Administration:

SNTP time synchronization client
TFTP file transfer client
Telnet remote command-line client
Reboot and upgrade management operating system without interrupting customer data

Optical Service Channel: 1 or 2

Supported Reach

Links up to 80km, 2000km with DarkStar DLA systems
(0.25dB/km of fiber loss)

Supported Fiber Types

G.652, G.654, G.655 (others supported on demand)

Product Configurations

Optionally includes: various client interfaces, AC/DC power supplies, 1U or 2U chassis

Optical Components/Characteristics

Client-side Optics: QSFP+: 40GBase-SR4 (4 x 850nm), 40GBase-PSM4 (4 x 1310nm), 40GBase-LR4 (CWDM: 1271nm, 1291nm, 1311nm, 1331nm)

Line-side Optics:

DWDM: Coherent CFP (C Band: 1533.47nm-1561.42nm) with 50GHz spacing
Non-DWDM: 100GBase-LR4, 100GBase-SR10

Optical Protection

Optical Protection available via the DMD-A

Services

Ethernet: 10GE

Client Interfaces

Number of client-side ports per system: 3 or 6 (QSFP+) - Up to 240Gbps client-side services (up to 480Gbps, upcoming feature)

Line Interfaces

Number of line-side ports per system: 1 or 2 (CFP) - 100Gbps or 200Gbps line-side bandwidth

Physical Dimensions

IEC 60297-3 Compliant

Height: 1U (1.75"/44.5mm)/2U (3.5"/88.9mm)

Width/Depth:

1U: 16.9"/27.3" (29.5" with cable relief)
429.3mm/693mm (749.3mm with cable relief)
2U: 16.9"/17.5" (19.8" with cable relief)
429.3mm/444.5mm (502.9mm with cable relief)

Weight, minimum: 32lbs/14.5kg

Power and Cooling

Power input AC: 90-264V AC, 50/60Hz

Power input DC: -40 to -75V DC
(+1 redundant AC or DC, or both)

Power consumption, typical:

DQT100 (2 port): 160W
DQT100 (1 port): 125W

Power consumption, maximum:

DQT100 (2 port): 190W
DQT100 (1 port): 155W

Environmental

Operating temperature: 0 to 50°C

Storage temperature: -40 to 70°C

MTBF: 87,600 hours

Non-operating (Shock and Vibration): ISTA-2A, IEC60068-2-6, 60068-2-64, 60068-2-27

Laser Safety Classification

Class 1

Regulatory Compliance

UL: IEC 60950-1(ed.1), IEC 60825-1:2007 (2nd Edition)

FCC: Conducted and Radiated Emissions, Part 15 Subpart B
Sections 15.107 and 15.109 Class A

CE: EN55024 (1998 w/A1: 01 & A2: 03, EN61000-3-2 (2006), EN61000-3-3 (1995 w/A1:01 & A2:06), EN55022 (2006) Class A & CISPR 22 (2005) Class A