# DarkStar® DQT10 Series

12-36 Channel DWDM Transponders

# Technical Specifications

## Physical Dimensions

**Height:** 1RU
**Width/Depth:** 16.9"/27.25" (29.5" with cable relief )
**Weight, minimum:** 32lbs

## Power Requirements

**Power input AC:** 90-264V AC, 50/60Hz
**Power input DC:** -40 to -75V DC
**Power consumption, typical:**
DQT10 (12 channel): 90W
DQT10 (24 channel): 140W
DQT10 (36 channel): 190W

## 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

## Management

**Command line interface:**
- 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

## Redundancy, Availability, Scalability

1+1 redundant, hot-swap power supplies
Redundant, hot-swap fans
Hot-swap laser transceivers: SFP+, QSFP+, and OSC (Optical Service Channel)
Field-replaceable dual flash storage modules, one is write-protected
Optical network uninterrupted during software reset and upgrade
System-wide watchdog timer to ensure software response

## Architecture

Tunable system (based on ITU grid)
Digital reconfigurable optical add-drop multiplexer (ROADM)
No layer 2-3 payload/protocol processing as well as no data buffering. This is both a reliability and security feature, impossible to access transport data through management network.

## Optical Wavelengths

**Client:** QSFP+: 40GBase-SR4 (4 x 850nm), 40GBase-PSM4 (4 x 1310nm), 40GBase-LR4 (CWDM: 1271nm, 1291nm, 1311nm, 1331nm)
**Line-side Optics:** 1528.77nm-1566.31nm with 100GHz spacing

## Supported Interfaces

**Ethernet:** 1GE, 10GE, 10GE+FEC, 40GE (4 lambdas), 100GE (10 lambdas)
**SONET:** OC48/STM16, OC192/STM64, OC192+FEC
**Fibre Channel:** 2G, 4G, 8G, 10G
**Number of client-side ports per system:** 3/6/9 (QSFP+)
**Number of line-side ports per system:** 12/24/36 (SFP+)

## Standards 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

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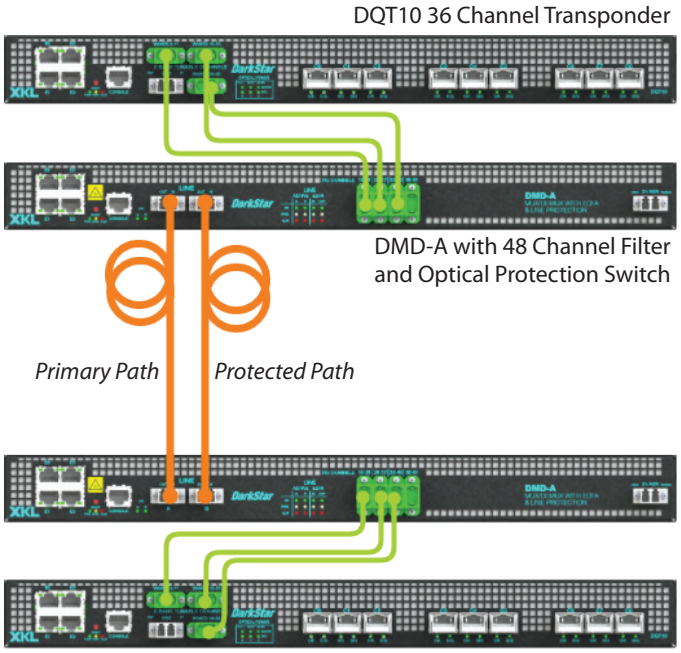
# Use Cases

## Use Case: Protected Path using Optical Switch




## Installation

Systems install in under an hour and require 1RU of rack space.

## Green: Low Power Consumption

Industry-leading low power consumption, a typical DQT10 (12 channel) uses 90 watts.

## Flexible and Innovative

By injecting alien waves in unused channels of a standard ITU mux/demux filter, DQT10 systems can expand existing optical transport networks from other vendors. Digital ROADM and FlexArc technology provides add/drop functionality in addition to point-to-point, ring, and mesh topologies.

## Performance and Latency

DQT10 systems are Layer 1 devices and operate at line speed. Latency for the DQT10 is 25 nanoseconds.

## No License Fees

No recurring cost for license fees, for the life of the product.

## Hitless Upgrade

Operating system upgrades are typically once per year and take about 20 minutes. The upgrade is reversible and launches from a single command. A DQT10 system can be rebooted without affecting customer data.

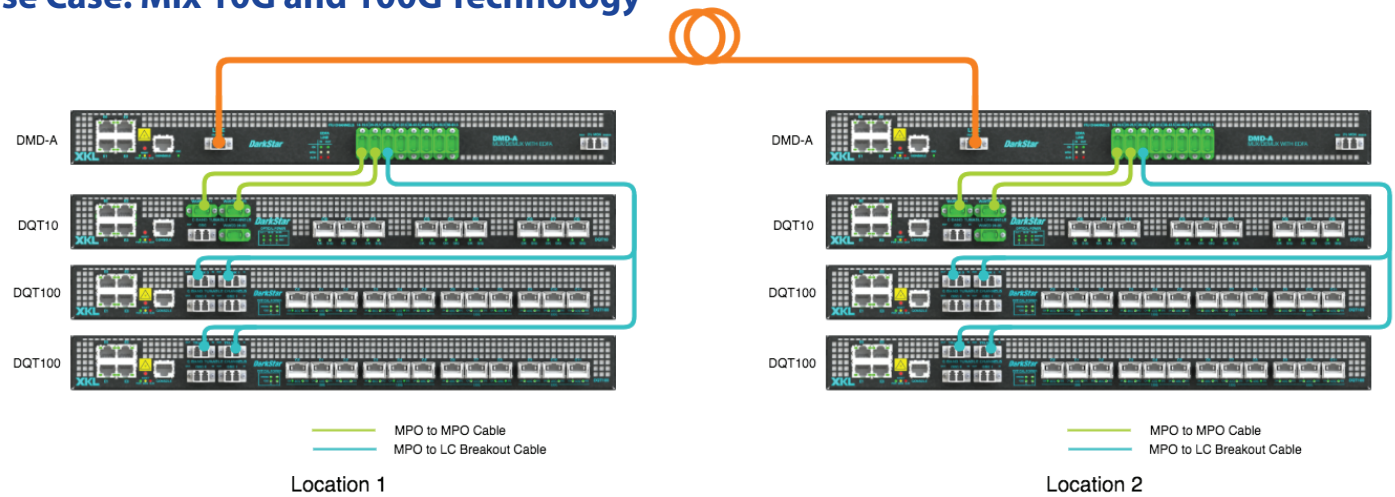
## Pay As You Grow

1RU systems are field upgradeable, from 120G to 240G or 360G. They can be further expanded by adding an external passive optical filter. The DQT10 is ideal for those who are unsure about future bandwidth requirements.

## DQT10 Field Upgradable Transponder Models

**DQT10 (12 channels):** 12 x 10G
**DQT10 (24 channels):** 24 x 10G
**DQT10 (36 channels):** 36 x 10G

## Use Case: Mix 10G and 100G Technology

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