Transparent Bandwidth Limiter

Overview

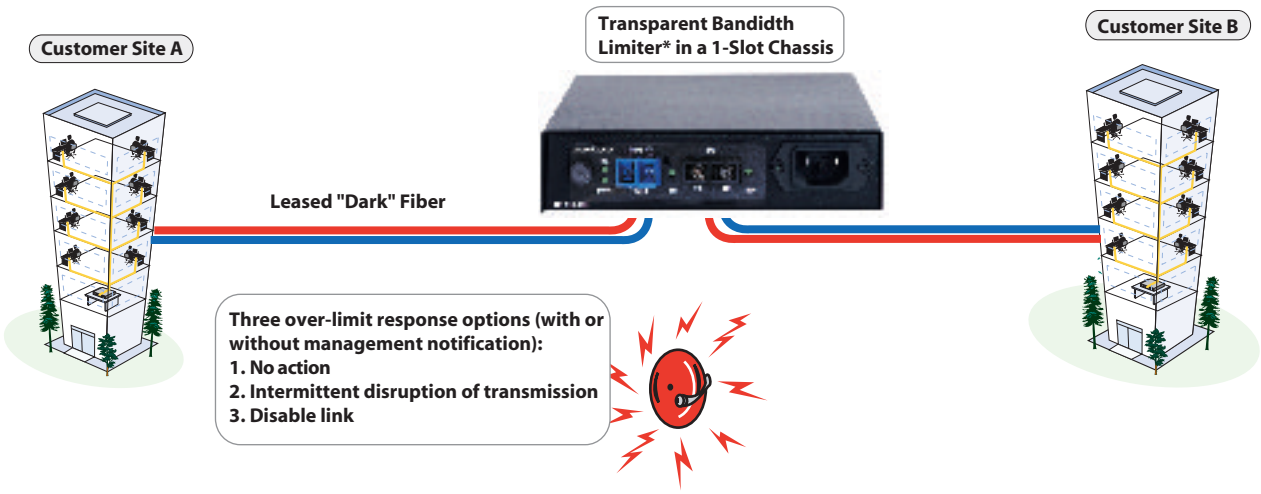
The leasing of "dark" fiber to customers looking for dedicated and secure high-speed data connectivity gives service providers a means of generating revenue from otherwise unused or under utilized fiber plant. By being able to offer service level agreements (SLAs) to their customers, providers can maximize the potential of this revenue source.

Implementing and maintaining SLAs, however, can present a problem. Different customers will use their leased fiber for different purposes. One customer may use ATM, another Gigabit Ethernet, and yet another Fibre Channel. Typically, to support and manage these different types of leased fiber networks would take a substantial investment in protocol specific, SLA-enable switches and routers. The Fiber Driver Transparent Bandwidth Limiter (TBL) presents a simpler, cost-effective alternative to this type of deployment.

Features

- Limits and monitors data carrier speed for implementation of SLAs
- Supports four protocol transparent service levels*: ≤ 45 Mbps (Level 1), ≤ 155 Mbps (Level 2), ≤ 622 Mbps (Level 3), and ≤ 1 Gbps (Level 4)
- Three over-limit response options (with or without management notification):
  - No action
  - Intermittent disruption of transmission
  - Disable link
- Management reporting of real-time data carrier speed
- DIP switches for easy onsite configuration of service level and over-limit response
- Link distances of up to 80 km over Singlemode dual fiber, 50 km over Singlemode single fiber, and 6** km over Multimode fiber or Multimode single fiber
- SNMP support when used with the Fiber Driver Network Management Module
- Supports Loopback and LIN
- Front panel diagnostic LED indicators
- Hot swappable
- Compatible with all Fiber Driver products and technologies, including media converters, WDMs and OADMs

* Monitors digital transitions of carrier signal
** 2 km guaranteed. Maximum range depends upon grade and condition of fiber plant used.



*** Monitors digital transitions of carrier signal**

Datasheet

The Fiber Driver TBL functions at the network physical layer measuring the digital transitions of the carrier signal, so it is able to monitor and limit the usage of a fiber optic link while remaining protocol transparent. A high level of security is maintained as the device never reads or taps into the user data stream. This technology allows for greater ease and flexibility of deployment as the unit can be placed in virtually any environment with little configuration. Most importantly, its operation remains transparent to the user.

The TBL provides up to four carrier provisioning levels: ≤ 45 Mbps (Level 1), ≤ 155 Mbps (Level 2), ≤ 622 Mbps (Level 3), and ≤ 1 Gbps (Level 4). The desired provisioning level can be set using on-board DIP switches, or set remotely using the optional in-band SNMP management agent.

Once in place, it continuously monitors the carrier speed of the optical link. If usage exceeds the assigned service level, the unit will respond in one of three possible ways: no action is taken, the data carrier signal is disrupted for one second every five seconds, or the link is disabled. For each type of response, management notification can be enabled or disabled. Like the provisioning level, the type of response can be set using on-board DIP switches, or set remotely via SNMP.

It is important to note that because it is the speed of the carrier signal that is measured and not the amount of data being transmitted, that if, for example, a Gigabit Ethernet device is connected to a link limited to 45 Mbps an over limit response will be triggered even if no actual data is transferred.

The Fiber Driver TBL is available with either Multimode or Singlemode optics. Link distances of up to 80 km can be achieved over Singlemode dual fiber, up to 45 km over Singlemode single fiber, and up to 6* km over Multimode fiber using our exclusive Multimode Extender (MX) technology.

When paired with the Fiber Driver Network Management Module, several management interfaces are supported, including the graphical interface of MegaVision Web™, our own comprehensive network management system (NMS), HP OpenView, or any other SNMP compliant NMS. Access to the built-in Command Line Interface (CLI) is available through Telnet, and via an RS-232 serial interface.

Front panel diagnostic LED indicators, loopback, and Link Integrity Notification (LIN) functionality are standard. With LIN enabled, if one port on the module loses connectivity, the other port is automatically disabled in order to maintain end-to-end link state continuity.

The Transparent Bandwidth Limiter is a single slot, hot swappable module that fits any powered Fiber Driver chassis. It is compatible with all Fiber Driver products and technology, including media converters, Wave Division Multiplexers (WDMs), and Optical Add/Drop Multiplexers (OADMs).

For additional information, including pricing and availability, contact your MRV Communications sales representative.

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Physical Specifications: Transparent Bandwidth Limiter

Operating Temperature:	0º to 50º C / 32º to 122º F
Storage Temperature:	-10º to 60º C / 14º to 140º F
Relative Humidity:	85% maximum, non-condensing
Physical Dimensions:	25 mm x 75 mm x 175 mm deep (1" x 3" x 7" deep)
Weight:	360 g (9.6 oz)
Emission Compliance:	FCC-PART 15, SUBPART J, Class A, ETL (UL-1950), TUV/VDE, CSA

Datasheet

Ordering Info

Product	Description	Port / Trunk Protocol	Port / Trunk Connector	Port / Trunk Wavelength (nm)	Port /Trunk Budget (dB)	Port /Trunk Approx. Range (km)
EM316TBL4/MMX	TBL, Level 4 with MM 850 nm SX Input and Extended MM 1310 nm Output	Level 1-4 / Level 1-4	DSC / DSC	850 / 1310	N/A / DL	0-0.5 / 0-6 *
EM316TBL4SF/MMX	TBL, Level 4 with MM 850 nm SX Input and Single Fiber Extended MM 1310 nm Output	Level 1-4 / Level 1-4	DSC / SC-APC	850 / 1310	N/A / DL	0-0.5 / 0-6 *
EM316TBL4/MS1	TBL, Level 4 with MM 850 nm SX Input and SM 1310 nm Output	Level 1-4 / Level 1-4	DSC / DSC	850 / 1310	N/A / 3	0-0.5 / 0-10
EM316TBL4/MS2	TBL, Level 4 with MM 850 nm SX Input and SM 1550 nm Output	Level 1-4 / Level 1-4	DSC / DSC	850 / 1550	N/A / 8	0-0.5 / 0-30
EM316TBL4/MS3	TBL, Level 4 with MM 850 nm SX Input and SM 1550 nm Output	Level 1-4 / Level 1-4	DSC / DSC	850 / 1550	N/A / 15	0-0.5 / 15-60
EM316TBL4/MS4	TBL, Level 4 with MM 850 nm SX Input and SM 1550 nm Output	Level 1-4 / Level 1-4	DSC / DSC	850 / 1550	N/A / 20	0-0.5 / 35-80
EM316TBL4SF/MS2	TBL, Level 4 with MM 850 nm SX Input and Single Fiber SM 1550 nm Output	Level 1-4 / Level 1-4	DSC / SC-APC	850 / 1550	N/A / 8	0-0.5 / 0-35
EM316TBL4SF/MS3	TBL, Level 4 with MM 850 nm SX Input and Single Fiber SM 1550 nm Output	Level 1-4 / Level 1-4	DSC / SC-APC	850 / 1550	N/A / 11	0-0.5 / 0-50

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DL=Dispersion Limited

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