

DFX1000 TDM & Ethernet Transport



The DFX1000 is a TDM aware layer 2 switch that provides switched ethernet, E1 and serial data interfaces for transmission over gigabit ethernet layer 2 networks.

The Avara DFX1000 has been designed to empower PDH Multiplexer equipment by providing a seamless transport system to transport E1 circuits over gigabit per second transmission links together with high capacity switched Ethernet connections.

The DFX1000 enhances PDH Multiplexer installations by providing Gigabit and Fast Ethernet interfaces together with 4/8 G.703/2M (120/75 ohm balanced) and two V.11/X.21 to complement legacy TDM circuits provided by PDH Multiplexers.

The product enables existing PDH installations to be upgraded to deliver true broadband Ethernet services, whilst maintaining support for existing PDH applications seamlessly.

With its unique clock distribution and node timing synchronization protocols, the DFX is capable of transporting synchronous traffic that meet the jitter and wander performance specified in G.823 efficiently and effectively.

Each unit has SFP based 1000Mbps uplink interfaces. These can be configured for protected point-to-point, linear or ring operation. When configured in a ring architecture, it is possible to map E1's between any port at any site. In this configuration, the E1's and serial data circuits are protected against fibre breaks and intermediate node failures. The protection switchover time is less than 50 msec.

A range of SFP modules are available to support short haul and long haul applications up to distances of 120kms, with digital diagnostics support for power level monitoring. Single Fibre and Dual Fibre Working options are also available.

The DFX1000 delivers high performance layer 2 Ethernet switching in a compact form factor.

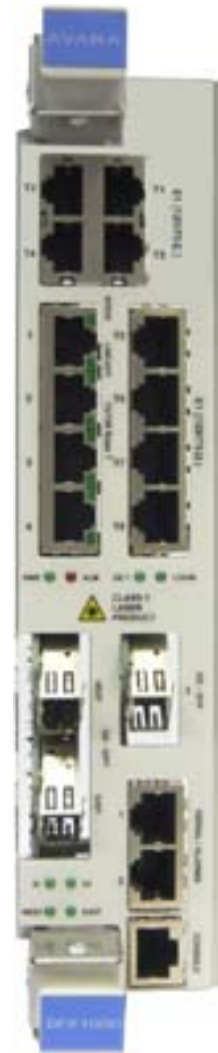
Tag based VLANs (802.1q) are supported allowing network segmentation without being restricted by physical connections. QoS (802.1p) is available providing four queues for the traffic prioritization. Queuing control mode can be configured as Strict or WRR.

Advanced features such as rate limitation on the Ethernet ports is provided, allowing users to better manage traffic profiles.

The DFX1000 can be managed locally via the console port or remotely using Telnet, SNMP or Avara's Web Server over secure VLAN.

The DFX1000 can also be managed using the Q1 protocol used to manage Dynanet nodes. This protocol can also be seamlessly transported over the provided V.11 interfaces, ensuring that existing management systems are maintained.

Full remote configuration and software download options reduces upgrade time. A comprehensive set of SNMP traps and alarms are provided to assist fault management and isolation.



Technical Highlights

Interfaces

- 4 x 10/100Base-T Ethernet Ports
- 4/8 x G.703/2M E1 Ports
- 2 x V.11 Serial Data Ports supporting asynchronous operation
- 2 x 1000Base-FX (SFP based) Network Interfaces
- 1 x 1000Base-FX (SFP based) Tributary Interface
- Supports Single Fibre and Dual Fibre Working

Key Features

- Point to point, linear and ring topology support
- Sub 50ms protection switching in ring mode
- Supports multiple external PRC synchronisation inputs
- High performance Ethernet layer 2 switch fabric with 802.1p/q VLAN capabilities
- Rate Limiting on Ethernet ports
- Supports both VLAN access ports as well as trunk ports
- High MTBF
- Management via Q1, SNMP, Telnet, CLI, Web Browser
- 20-72 VDC Power Supply
- -20 to +65 °C operation

Technical Specifications

Model Order Code	P21021.02	Management	Local Remote	CLI via Console Q1, Telnet, SNMP, Web Server
Mechanical		Security	Data Interfaces	802.1x, MAC Address Locking, Dedicated VLAN
Height	233mm	Management		Password Protection, Dedicated VLAN
Depth	160mm	Power	Power Supply	-20 to -72 VDC
Width	100mm	Power	Power Consumption	Power Consumption 10W
Interfaces		Alarm Contacts		2x Relay outputs with current carrying capacity of 1A @ 24V Capable of driving A & B sub-rack alarms on M4 sub-rack
Optical	1000Base-X (SFP based *)	MTBF		50 Years
E1	G.703	Environmental	Operating	
Ethernet (Electrical)	10/100Base-T (RJ45) (Switched)	Temperature	Relative Humidity	-20 °C to +65 °C 5-90% (Non-condensing)
Ethernet (SFP)	1000Base-X (Switched)	Standards		IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.1p VLAN Tagging IEEE 802.1q Priority Queuing IEEE 802.3x Flow Control RFC1157 SNMP RFC1213 MIB II RFC854 Telnet RFC783 TFTP RFC 4553 SAToP S002 PSTN Interconnection S003 Customer Premises Switching S004 VF Performance EN55022 Class A Emissions EN60950 Safety 41003 Laser Safety AS/ACIF S016 EN55024 Immunity EN50082-2 Generic Immunity EN60825-1 Class 1 ITU-T X.21 ITU-T V.11 ITU-T G.823 ITU-T G.8261 ETS 300 019 -1-1 Operational ETS 300 019 -1-2 Storage ETS 300 019 -1-3 Transport
Serial	V.11			
Optical Network Interfaces				
Speed	1000Base-X			
Operating Modes	Single Fibre Working & Dual Fibre Working			
Type	Available on all SFP versions			
E1 Interface Parameters				
Speed	2.048Mbps (G.703)			
Impedance	120/75 Ohm (RJ45)			
Timing	User provided (pass through)			
Switch Parameters				
Speed	10/100Base-T			
Autonegotiation	Yes			
Duplex	Full/Half			
MDI/MDIX Support	Yes			
IEEE 802.1p/q	Yes			
MAC Address Size	8K			
VLANs Supported	4096			
Rate Limiting	128K, 256K, 512K, 1M, 2M, 4M, 8M			
Traffic Shaping	Strict & Weighted Round Robin			
Priority Queues Per Output	4			
Port Mirroring	Yes			
Network Topology				
Topology	Point to point, linear or ring			
Protection Switch Time	< 50ms for E1 circuits as well as for Ethernet connections			
Protection Switch Mode	Revertive & non-revertive for E1 circuits, revertive only for Ethernet			

*Refer to SFP specification brochure



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