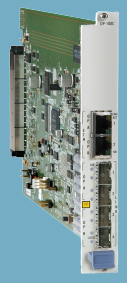
Data Sheet

Megaplex-4

OP-108C

Dual Fiber Multiplexer Module for 4E1 and Ethernet



- Four E1 channels and up to 100 Mbps Ethernet traffic multiplexed over each fiber optic link
- Various SFP-based fiber interfaces: multimode, single-mode (up to 120 km), and single-mode over single fiber
- Automatic SFP link backup with optional hot-swappable second optical link
- E1 interface compliant with ITU-T Rec. G.703, G.704 and G.732

The OP-108C multiplexer module for the Megaplex-4 chassis combines up to eight E1 channels and two Ethernet links over two fiber optic links from two remote units.

OP-108C has a capacity of up to four E1 streams and 100 Mbps Ethernet traffic from each remote unit.

The Megaplex-4100 chassis provides up to 20 links and Megaplex-4104 – up to 8 links. An Optimux link is a simple and low-cost solution for connectivity over distances of up to 120 km (74.5 miles).

In addition to the resiliency offered by Megaplex-4 (power and CL redundancy), an optional second link in the Optimux modules provides automatic backup upon link failure.

The DS0 cross-connect matrix of the Megaplex-4 chassis enables flexible payload routing in the OP-108C modules, independently configurable for each port, at the individual timeslot (DS0) level.

TDM SERVICES

The optical interface of the module is provided by a choice of fiber optic SFP transceivers (see *Table 1*), inserted into SFP sockets on the module panel. RAD offers several types of SFPs with optical interfaces, for meeting a wide range of operational requirements.

It is strongly recommended that this device be ordered with original RAD SFPs installed. This will ensure that prior to shipping, RAD has performed comprehensive functional quality tests on the entire assembled unit, including the SFP devices. RAD cannot guarantee full compliance to product specifications for units using non-RAD SFPs.

ETHERNET SERVICES

The Ethernet services are provided by means of an internal Layer-2 Ethernet switch that fully complies with the IEEE 802.3/Ethernet V.2 standards, including VLANs.

The module is supplied with two 10/100BaseT Ethernet user ports. The external Ethernet ports have 10/100BaseTx interfaces terminated in RJ-45 connectors.

The total maximum Ethernet traffic that can be transferred via the backplane for aggregation (from one or two ports) is 100 Mbps.

DIAGNOSTICS

Diagnostic capabilities include local and remote loopbacks on the optical links and internal DS1 (E1) ports (per port and per timeslot).

Performance statistics for the DS1 and Ethernet ports may be obtained and analyzed via the Megaplex management system.

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Specifications

Internal E1 (DS1) PortS

Number
8 (4 per section)

Type, Bit Rate, and Framing Options
E1, 2.048 Mbps, selectable framing (G.732N, G.732N with CRC-4, G.732S, G.732S with CRC-4), unframed

Compliance
ITU-T Rec. G.703, G.823

Timing
Locked to the Megaplex-4 nodal clock

Jitter Performance
Per ITU-T Rec. G.823

OPTICAL LINKS

Number
2

Interface Options
See *Table 1*

Indicators
LOSS
On (red): Sync/Signal Loss on OP A/B
Off: Normal operation

AIS
On (yellow): AIS detected (only when used with Optimux-108 that does not have an Ethernet port)
Off: Normal operation

(OP A/B LOSS and AIS are ON if the SFP is not inserted.)

ETHERNET INTERFACE

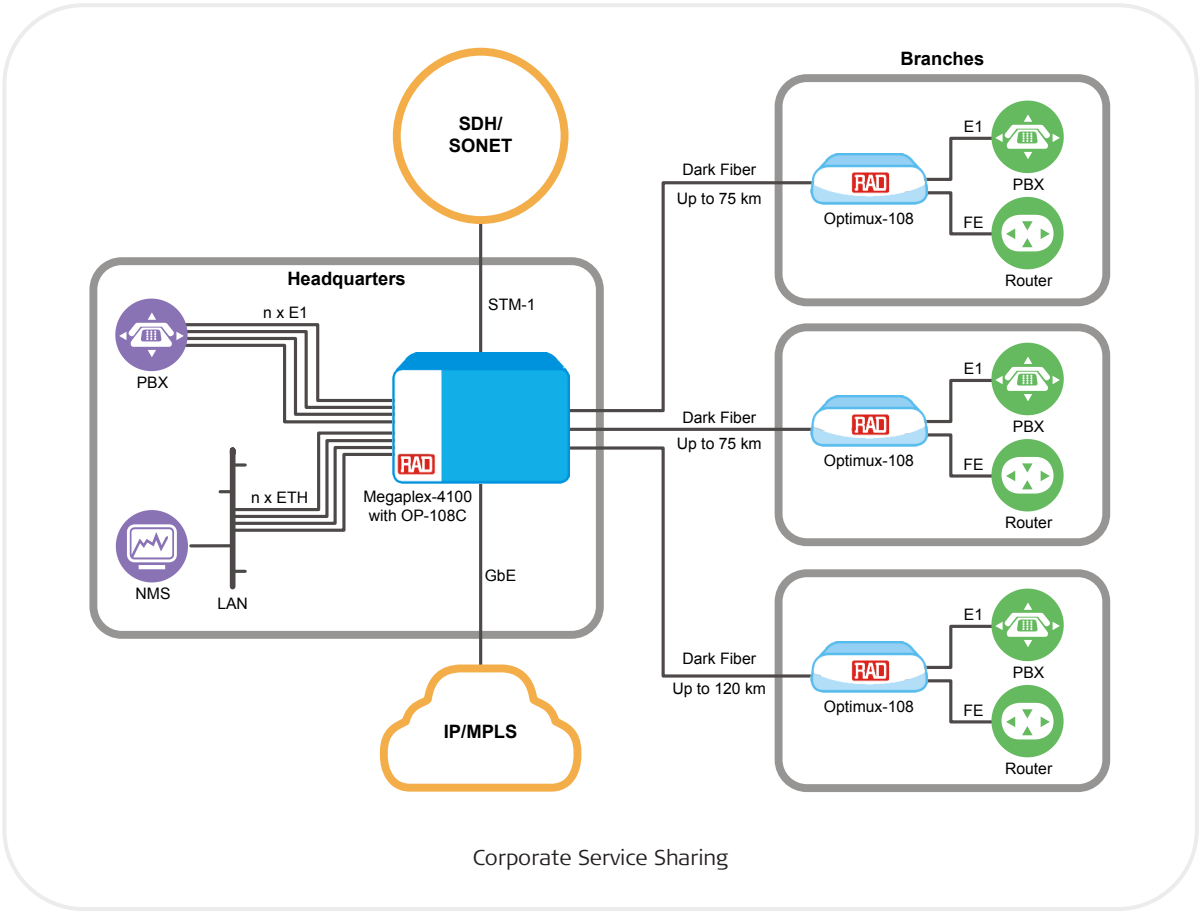
Number of Ports
2

Data Rate
10/100BaseTx with user-configurable autonegotiation

Connector
Shielded RJ-45

Port Throughput
100 Mbps

Compliance
IEEE 802.3



Corporate Service Sharing

Indicators
LINK/ACT
On (yellow): link is up
Off: link is down
Flashes: frames are transmitted

100
On (green): 100 Mbps mode
Off: 10 Mbps mode

GENERAL

Diagnostics
Local and remote loopbacks on the optical links
Local and remote loopbacks on internal DS1 ports, per port and per timeslot

Power Consumption
8W

Environment
Operating temperature: -10°C to 55°C (14°F to 131°F)
Storage temperature: -20°C to +70°C (-4°F to +158°F)
Humidity: up to 95%, non-condensing

Table 1. Fiber Optic Interface Characteristics

Module Name (Ordering Option)	Transmitter Type and Wavelength [nm]	Connector Type	Fiber Type	Output Power [dBm] [min]	Output Power [dBm] [max]	Input Power [dBm] [min]	Input Power [dBm] [max]	Typical Range [km]	Typical Range [miles]
SFP-1	LED, 1310	LC	62.5/125 Multimode	-20	-14	-30	-14	2	1.2
SFP-2	Laser, 1310	LC	9/125 Single mode	-15	-8	-28	-8	20	12.4
SFP-3	Long haul laser, 1310	LC	9/125 Single mode	-5	0	-34	-10	40	24.8
SFP-4	Long haul laser, 1550	LC	9/125 Single mode	-5	0	-34	-10	80	49.7
SFP-10a	Laser WDM, Tx –1310, Rx –1550	LC	9/125 Single mode (single fiber)	-14	-8	-28	-8	20	12.4
SFP-10b	Laser WDM, Tx –1550, Rx –1310	LC	9/125 Single mode (single fiber)	-14	-8	-28	-8	20	12.4
SFP-24	VCSEL 850	LC	62.5/125 Multimode	-10	-4	-25	-2	1	0.6

***Note**: Typical ranges are calculated according to attenuation of 0.4 dB/km for 1310 nm, 0.25 dB/km for 1550 nm for single mode fiber.*

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Ordering

RECOMMENDED CONFIGURATIONS

MP-4100M-OP-108/ETH/2XSFP3
Dual Fiber Multiplexer Module with dual SFP-3 transceivers

MP-4100M-OP-108/ETH/SFP2
Dual Fiber Multiplexer Module with SFP-2 transceiver

SPECIAL CONFIGURATIONS

Please contact your local RAD partner for additional configuration options.

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