

Egate-100

Channelized Ethernet Gateway



FEATURES

- A channelized Ethernet gateway, extending Ethernet services over TDM access networks
- Aggregates Gigabit Ethernet traffic to a single STM-1/OC-3 port for:
 - Up to 63 or 84 remote LANs over E1 or T1 lines
 - Up to 126 remote LANs over fractional E1 or T1 lines
- Lower equipment and maintenance costs than other alternatives
- Provides QoS by utilizing four priority queues per 802.1p, DSCP and IP precedence
- Enables transparent Ethernet services by utilizing VLAN tagging and stacking
- Secure management by separating user and management traffic with different VLANs
- Inband and out-of-band management access via:
 - ASCII terminal / Telnet
 - Web browser using ConfiguRAD
 - SNMP using RADview-Lite
- Comprehensive diagnostic and statistics collection tools
- 1U high, 19" wide enclosure

DESCRIPTION

- Egate-100 aggregates and switches Ethernet traffic to a single STM-1/OC-3 port, for up to 63 or 84 remote LANs over E1 or T1 circuits, or up to 126 remote sites over fractional E1 or T1 circuits. The traffic is combined into a channelized STM-1/OC-3 stream, and handed over to the PSN via the unit's Gigabit Ethernet port.
- Egate-100 is typically deployed at a central location, aggregating user Ethernet traffic received from remote devices, such as RAD's RICi, FCD, and ASMi, thus completing a full access solution from the service provider central site to the customer premises.
- Typical applications include:
 - Ethernet private line/LAN
 - IP DSLAM and IP base station traffic backhaul
 - Aggregation of Ethernet over PDH radios
 - Network management backhauling

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- Egate-100 replaces current high-priced solutions, such as channelized STM-1/OC-3 routers or multibox solutions based on converter racks and switches. This one-box solution reduces equipment cost and simplifies operation, together with service scalability, small footprint, and low power consumption.
- To enable transparent LAN services in point-to-point (E-Line) or point-to-multipoint (E-LAN) topologies, Egate-100 uses a Providers VLAN by employing VLAN tagging and stacking (Q-in-Q). Secure separation of customer and management traffic is ensured using a dedicated management VLAN.
- VLAN switching permits specific VLANs to be forwarded to virtual ports, while blocking others. This enables defining different traffic domains.
- Since Egate-100 functions as a bridge in an SDH/SONET environment, service providers can achieve a seamless interconnection between customers connected over the TDM network and customers connected over the packet network while maintaining the same service level attributes.
- Comprehensive diagnostic and performance monitoring capabilities include:
 - Ping for IP connectivity checks
 - Statistics and alarms for the physical interfaces and internal bridge.
- In a typical service provisioning structure (see *Figure 2*), Egate-100 links between users connected to the packet-switched network, and users connected to the TDM network. Virtual channels are established between the far-end users by tagging separate user traffic channels with VLANs (B and C). These virtual channels enable transparent forwarding of all user traffic. In addition, all devices are managed over the VLAN A management channel, which enables secure separation between user traffic and management traffic.
- The unit can be managed using different ports and applications:
 - Local out-of-band management via an ASCII terminal connected to the RS-232 port
 - Remote out-of-band management via the dedicated 10/100BaseT port
 - Remote inband management via the Gigabit Ethernet port
 - Remote management is performed using Telnet, Web browser or RADview-Lite, RAD's SNMP-based element management system.

APPLICATIONS

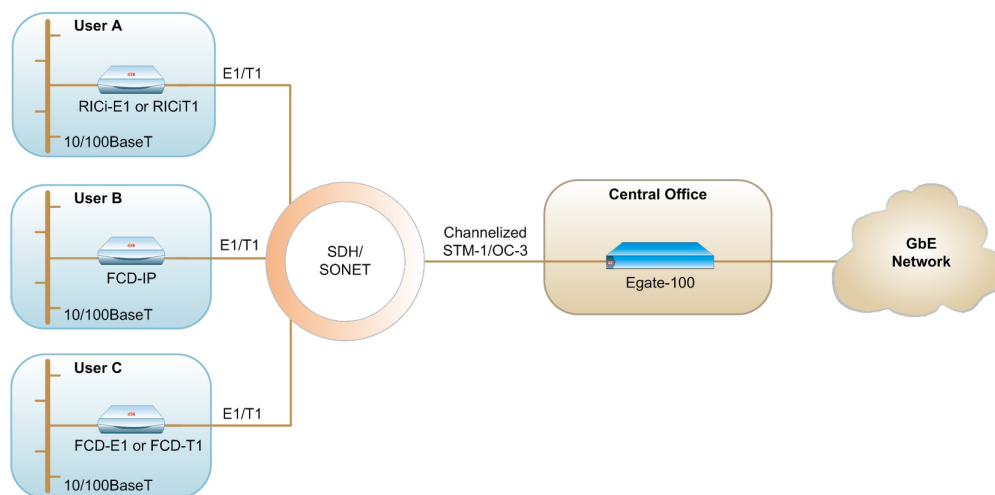


Figure 1. Aggregating Ethernet over E1/T1 Traffic

Channelized Ethernet Gateway

SPECIFICATIONS

STM-1/OC-3 INTERFACE

- **Number of Ports**
1
- **Compliance**
G.957 S1.1, G.957 L1.1, ANSI T1.646, G. 825 (jitter)
- **Data Rate**
155 Mbps
- **Operation Mode**
SDH/SONET
- **Fiber Optic Interface Types**
See *Table 1*

GIGABIT ETHERNET INTERFACE

- **Number of Ports**
1
- **Interface Type**
1000BaseSx, 1000BaseLx or 1000BaseT
- **Compliance**
Relevant sections of IEEE 802.3
- **Data Rate**
1000 Mbps
- **Max Frame Size**
1600 bytes
- **Connectors**
 - LC (SFF) for optical
 - RJ-45 for electrical (1000BaseT)

- **Electrical Cable Type**
Cat. 5

FAST ETHERNET INTERFACE

- **Number of Ports**
1
- **Interface**
10/100BaseT
- **Compliance**
Relevant sections of IEEE 802.3
- **Data Rate**
10/100 Mbps
- **Connector**
RJ-45 shielded
- **Modes**
Half/full duplex, autonegotiation

CONTROL INTERFACE

- **Interface Type**
RS-232/V.24 (DCE asynchronous)
- **Data Rate**
9.6, 19.2, 38.4, 57.6, 115.2 kbps
- **Connector**
9-pin, D-type, female

INTERNAL BRIDGE

- **Number of Ports**
Up to 128
- **Compliance**
Relevant sections of 802.1Q
- **LAN Table**
Up to 64,000 MAC addresses (learned, with automatic aging check)
- **Buffer**
3150 frames
- **Filtering and Forwarding**
Up to 220,000 pps (VLAN-aware or VLAN-unaware)

GENERAL

- **Power**
AC: 100–240 VAC (±10%), 50–60 Hz
DC: 48 VDC (±10%)
- **Power Consumption**
30W max
- **Environment**
Temperature: 0°–50°C/32°–122°F
Humidity: Up to 90%, non-condensing
- **Physical**
Height: 43.7 mm / 1.7 in (1U)
Width: 430 mm / 19.0 in
Depth: 240 mm / 9.4 in
Weight: 3.5 kg / 7.7 lb

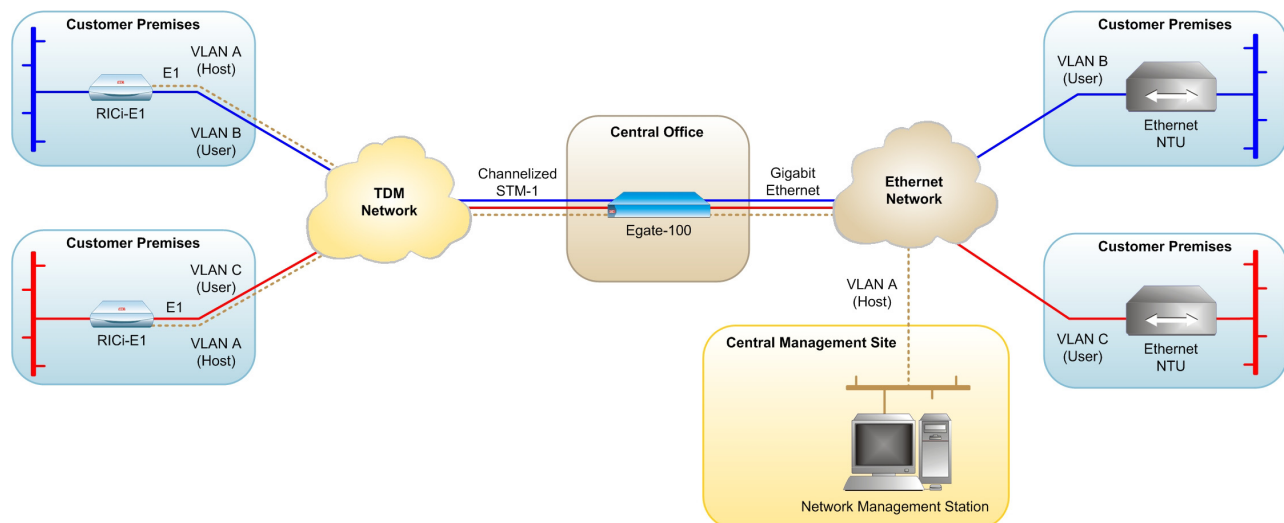


Figure 2. Uniform Service Provisioning over TDM and Ethernet Networks

Egate-100

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ORDERING

Egate-100*/#/\$/&
Channelized Ethernet gateway

* Specify power supply type:
AC for 100 to 230 VAC
48 for 48 VDC

Specify **R** for optional redundant hot-swappable power supply (same as first)

\$ Specify STM-1/OC-3 interface type:

SFP-1 (see Table 1)

SFP-2 (see Table 1)

SFP-3 (see Table 1)

& Specify Gigabit Ethernet interface type:

85 (see Table 1)

13L (see Table 1)

UTP (see Table 1)

SUPPLIED ACCESSORIES

- Power cord
- DC connection kit (if a DC-powered unit is ordered)

OPTIONAL ACCESSORIES

- CBL-DB9F-DB9M-STR
Control port cable
- RM-34
Hardware kit for mounting one Egate-100 unit into a 19-inch rack

Table 1. Interface Characteristics

Interface Option	Interface Type	Connector	Fiber Type [μm]	Wavelength [nm]	Standard	Transmitter Type	Input Range [dBm]		Output Power [dBm]		Typical Range	
							(min)	(max)	(min)	(max)	[km]	[miles]
SFP-1	STM-1/OC-3c Fiber Optic	LC	62.5/125 multimode	1310	ANSI T1646-1995	LED	-30	-14	-20	-14	2	1.2
SFP-2	STM-1/OC-3c Fiber Optic	LC	9/125 single mode	1310	G.957 S1.1	Laser (short haul)	-28	-8	-15	-8	15	9.3
SFP-3	STM-1/OC-3c Fiber Optic	LC	9/125 single mode	1310	G.957 L1.1	Laser (long haul)	-34	-10	-5	0	40	24.8
85	GbE Fiber Optic	LC	62.5/125 multimode	850	IEEE 802.3 1000BaseSX	Laser	-17	0	-9.5	0	270m	1000 ft
13L	GbE Fiber Optic	LC	9/125 single mode	1310	G.957 S1.1	Laser	-28	-8	-15	-8	15	9.4
UTP	GbE Copper	RJ-45	Cat. 5	—	IEEE 802.3 1000BaseT	Electrical					100m	330 ft



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405-100-09/05