

Comet 1612/1614

Comet 1622/1624

Comet 1632/1634

# Comet 1600 Series

## EFM/TDM G.SHDSL.bis



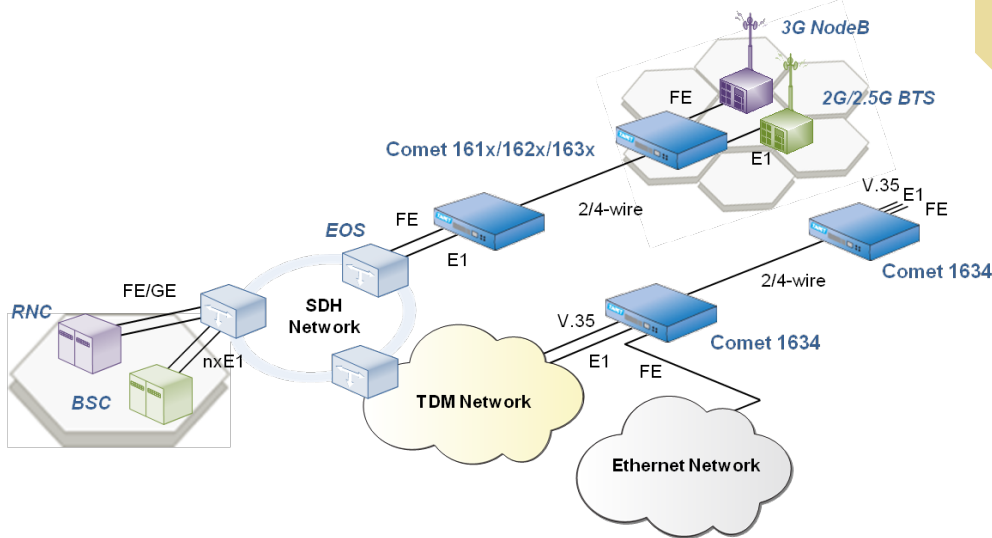
- Supports EFM and TDM Dual Bearer Mode
- Point to point Ethernet, E1 and Nx64k Data extension over multiple G.SHDSL.bis copper lines
- All interfaces E1/Nx64k Data/Ethernet can work simultaneously
- Compliant with IEEE 802.3ah EFM 2Base-TL bonding technology
- Compliant with ITU-T G.991.2 standard, TC-PAM 16/32/64/128 line coding
- 1 or 2 pairs G.SHDSL.bis with 5.7Mbps per pairs
- Supports extension rate up to 15Mbps over a single pair of copper
- CO and CPE mode selectable
- Automatic line rate selection with Line Probe enabled
- Front panel status LED indicators for easy monitoring
- Easy installation with console, Telnet, WEB GUI and SNMP
- Front panel test button with BERT for easy loop diagnostic
- Provides extensive diagnostics, including loopback, G.SHDSL.bis and E1 performance monitoring
- Easy software upgrade for field-deployed units via TFTP
- DSL line protection for data transmission
- Ethernet switching and bridging with VLAN prioritization and QoS
- Optional temperature-controlled FAN
- Optional Ethernet port surge protection
- Supports security-link

TAINET's Comet 1600 EFM/TDM series, which takes advantage of the latest G.SHDSL.bis standard, is a mini-terminal enabling the transport of traffic from Ethernet, E1 and Nx64k Data interface with speed 5.7M/11.4M over EFM bonded 2/4 wires G.SHDSL.bis link.

Comet 1600 EFM/TDM series supports high-speed dedicated symmetrical data transmission and utilizes DSL bandwidth. The automatic line rate can be up to 5.7Mbps over 2-wire copper line. Along with time-slot assignment feature, Comet 1612/1614, 1622/1624, 1632/1634 series provide multiple user interfaces for TDM traffic including E1 and/or Nx64k Data port and also with Ethernet traffic together.

Comet 1600 EFM/TDM series is a perfect solution for Telecom Carriers, Service Providers and business users. To reduce operation/management burden, Comet 1600 series can control and monitor remote unit via Embedded Operation Channel (EOC) by following ITU-T G.991.2. Administrators can also easily configure Comet 1600 EFM/TDM series through Telnet, Web/HTTP or through SNMP agent.





### Model

- Comet 1612, 2-wire, 1 Nx64k Data, 1 Ethernet port
- Comet 1614, 4-wire, 1 Nx64k Data, 1 Ethernet port
- Comet 1622, 2-wire, 1 E1 G.703, 1 Ethernet port
- Comet 1624, 4-wire, 1 E1 G.703, 1 Ethernet port
- Comet 1632, 2-wire, 1 E1 G.703, 1 Nx64k Data, 1 Ethernet port
- Comet 1634, 4-wire, 1 E1 G.703, 1 Nx64k Data, 1 Ethernet port

### Line Interface - G.SHDSL.bis

- Type: 2 or 4-wire
- Standard: ITU-T G.991.2, ETSI 101 524
- Bonding protocol: IEEE 802.3ah EFM 2Base-TL
- Line rate:  $n \times 64\text{Kbps}$ ,  $n=3\sim 89$  (2w),  $6\sim 178$  (4w)
- Connector: 1xRJ-45
- Line coding: TC-PAM 16/32/64/128
- Impedance: 135  $\Omega$
- ITU K.21 compliant

### DTE Interface - Ethernet

- Ethernet type: 10/100 BaseT
- Connector: RJ-45
- Supports 802.3x flow control
- Auto-MDI/MDIX detection
- Auto-negotiation for speed and duplex
- Full duplex / Half duplex support

### DTE Interface - E1

- Data Rate: 2.048 Mbps
- Connector: RJ-45 for balanced E1 120  $\Omega$   
(Optional external convert cable for unbalanced 75  $\Omega$ )
- Line coding: HDB3
- Framing: Framed /Framed+CRC /Unframed
- Compliance: ITU-T G.703, G.704, G.706 and G.732
- Jitter Performance: compliant with ITU-T G.823

### DTE Interface - Nx64k Data

- Data Rate:  $n \times 64\text{Kbps}$ , up to 4.6 Mbps
- Connector: DB-25 Female with optional adapter cable (V35/X21/RS530)
- DTE and DCE clock settings

### Timing Source Function

- Synchronous and Plesiochronous dual clock mode
- Internal clock
- Received clock from DSL line
- External clock from DTE interface (E1 or Nx64k Data)

### Ethernet L2 function

- Supports 802.1d transparent bridge function
- Supports Bridge filter function based on source MAC addresses
- Scalable per port bandwidth control (Step = 64K, up to 100M)
- 2K MAC learning address
- Ethernet packet length up to 1522/\*1664 bytes
- Supports 802.3x flow control
- Provides 802.1q VLAN tagging
- Supports 802.1p QoS facility

### Management

- Configuration via craft port VT-100, Telnet, WEB GUI and SNMP
- Multiple Web browsers supported: IE, Firefox, Chrome
- Console: DB9 connector (RS232C)
- Support remote management
- Independent Local and Remote loopback for E1 and Nx64k Data port diagnostic
- Support Performance Monitoring function
- Front panel test button for easy loop healthy testing
- Front panel reset to default button

### LED Indicators

- Comet 1612/1614/1622/1624/1632/1634:  
PWR, TST, ALM, CPE, DSL1~2, LAN, E1, V35
- Dual color LED for easy status monitoring

### Power Requirement

- AC/DC, DC/DC external power adapter (12V, 1A)
- Dual 12VDC power jack input for redundancy
- Power consumption: 6W

### Dimension

- 200(W) x 150(D) x 39(H) mm

### Operating Environment

- Operation Temperature: 0  $^{\circ}\text{C}$  ~ 50  $^{\circ}\text{C}$
- Storage Temperature: -40  $^{\circ}\text{C}$  ~ 70  $^{\circ}\text{C}$
- Humidity: 90%, non-condensing

## Ordering Information

## Note:

1. Supplied Accessories: 1xRJ45 cable and 1xPhoneBox for DSL connection, please specify the 1st AC or DC power adapter type below
2. If redundant power is required, please order the 2nd AC or DC power adapter /?2 additionally
3. If necessary, please order the console cable /^ and user interface cable />

Product Code	Part/Ordering No.	Description
<b>Comet 161x G.SHDSL.bis Nx64k Data/Ethernet Modem</b>		
Comet 1612/AC /?2/^/>	000-117-0006L-0001	2-wire G.SHDSL.bis EFM bonded standalone unit, support Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1612/DC /?2/^/>	000-117-0006L-0002	2-wire G.SHDSL.bis EFM bonded standalone unit, support Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1614/AC /?2/^/>	000-117-0007L-0001	4-wire G.SHDSL.bis EFM bonded standalone unit, support Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1614/DC /?2/^/>	000-117-0007L-0002	4-wire G.SHDSL.bis EFM bonded standalone unit, support Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
<b>Comet 162x G.SHDSL.bis E1/Ethernet Modem</b>		
Comet 1622/AC /?2/^/>	000-117-0008L-0001	2-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1622/DC /?2/^/>	000-117-0008L-0002	2-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1624/AC /?2/^/>	000-117-0009L-0001	4-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1624/DC /?2/^/>	000-117-0009L-0002	4-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
<b>Comet 163x G.SHDSL.bis E1/Nx64k Data/Ethernet Modem</b>		
Comet 1632/AC /?2/^/>	000-117-0005L-0001	2-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45), Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1632/DC /?2/^/>	000-117-0005L-0002	2-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45), Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1634/AC /?2/^/>	000-117-0001L-0001	4-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45), Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
Comet 1634/DC /?2/^/>	000-117-0001L-0002	4-wire G.SHDSL.bis EFM bonded standalone unit, support E1 (120Ω, RJ45), Nx64k Data (DB25) and Ethernet (RJ45) interfaces, dual 12VDC power jacks for power redundancy
<b>/AC, Please specify the 1st AC power adapter</b>		
/A		North American AC-DC LINEAR ADAPTOR, 120VAC/60Hz ~ 12VDC/1.0A
/C		China AC-DC LINEAR ADAPTOR, 220VAC/50HZ ~ 12VDC/1.0A
/E		European AC-DC SWITCH ADAPTOR, 100-230VAC ~ 12VDC/1.0A
/J		Japan AC-DC LINEAR ADAPTOR, 100VAC/50-60Hz ~ 12VDC/1.0A
<b>/DC, Please specify the 1st DC power adapter</b>		
/D3		DC-DC SWITCH ADAPTOR, 36-72VDC ~ 12VDC/1.5A
/D24		DC-DC SWITCH ADAPTOR, 18-36VDC ~ 12VDC/1.0A
<b>/?2, Optional 2nd power adapter for redundant capability</b>		
/A	500-010-0050L	North American AC-DC LINEAR ADAPTOR, 120VAC/60Hz ~ 12VDC/1.0A
/C	500-010-0079L	China AC-DC LINEAR ADAPTOR, 220VAC/50HZ ~ 12VDC/1.0A
/E	500-010-0087L	European AC-DC SWITCH ADAPTOR, 100-230VAC ~ 12VDC/1.0A
/J	500-010-0051	Japan AC-DC LINEAR ADAPTOR, 100VAC/50-60Hz ~ 12VDC/1.0A
/U	500-010-0090L	U.K. AC-DC SWITCH ADAPTOR, 100-240VAC ~ 12VDC/1.0A
/D3	500-100-0010L	DC-DC SWITCH ADAPTOR, 36-72VDC ~ 12VDC/1.5A
/D24	500-010-0107L	DC-DC SWITCH ADAPTOR, 18-36VDC ~ 12VDC/1.0A
<b>/^, Optional Console Cable</b>		
/RS-232 cable	3301-000-007L	DB9P(M)-DB9P(F) 1M 26AWG
<b>/&gt;, Optional adapt cable &amp; box</b>		
/Phone box	350-150-0001L	RJ45 Terminal box, for E1 or DSL loop
/RJ45 Cat5e	330-080-0010L	RJ45 CAT5e twist cable 1.8M, 24AWG, for E1, DSL loop or Ethernet
/G.703 cable	330-100-0049L	E1 G.703 unbalanced 75Ω, RJ45(Male)~ BNCx2(Female) 20cm
/V.35 cable	330-100-0002L	V.24~V.35, DB25(Male)~ M34(Female) 20cm 24AWG
/X.21 cable	330-100-0023L	V.24~X.21, DB25(Male)~ DB15(Female) 20cm 26AWG
/RS530 cable	330-100-0006L	V.24~EIA530, DB25(Male)~ DB25(Female) 1.8M 24AWG