# Comet1602F-R
# Comet1604F-R
# Comet1608F-R

# Industrial G.SHDSL.bis Modem EFM/ATM Ethernet Router



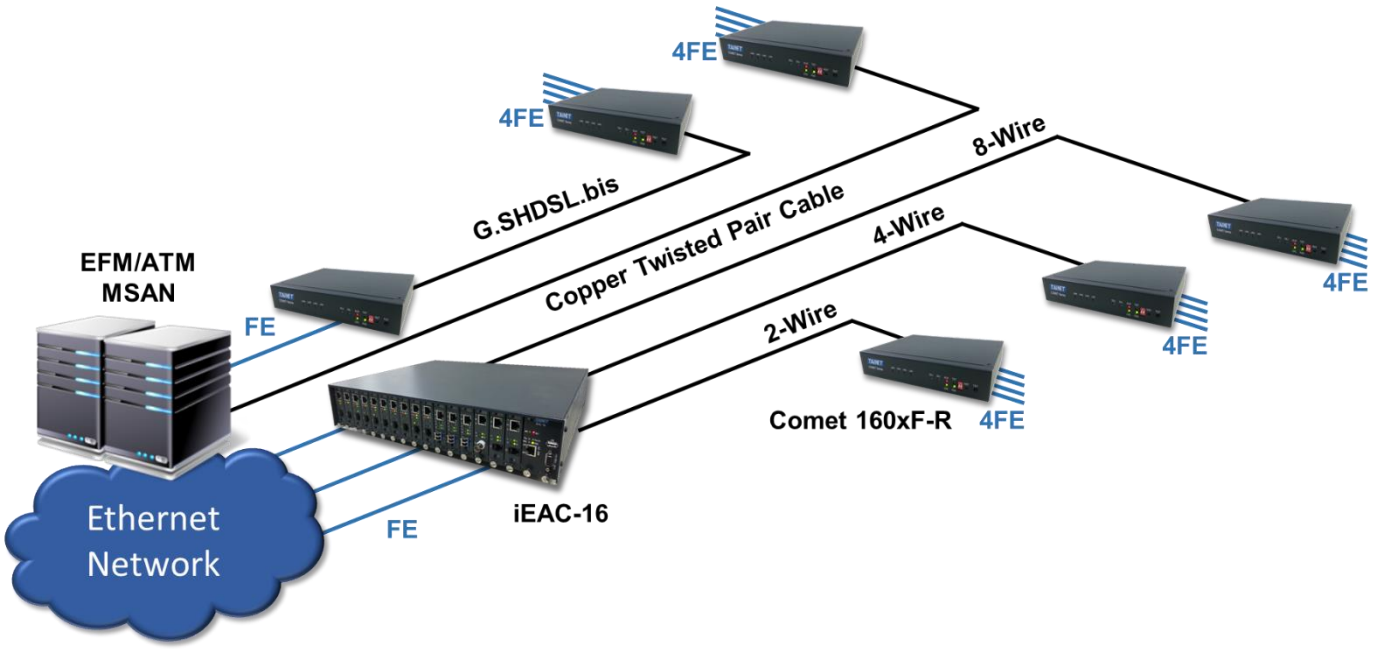
- Point to point Ethernet extender over multiple copper wires
- EFM mode complies with ITU-T G.991.2 standard, TC-PAM 4/ 8/ 16/ 32/ 64/ 128line coding and IEEE 802.3ah 2Base-TL bonding
- ATM mode complies with RFC 1483 and RFC 2684 Multiprotocol over AAL5 bridged mode
- 1, 2 or 4 pairs G.SHDSL.bis with 5.7Mbps per pair
- Supports extension rate up to 60Mbps over 4 pairs of copper
- CO and CPE mode configurable
- Easy installation by DIP-Switches, Console, Telnet (SSH), WEB GUI(HTTPS), SNMP (v1/ v2c/ v3) or TR-069
- Remote software upgrade for field-deployed units via TFTP or HTTP/ HTTPS
- Ethernet switching and bridging with VLAN prioritization and QoS
- Router function supports NAT/ PAT, DNS relay, DHCP client/ server/ relay, RIP1/ RIP2, VRRP, Static route and OSPF, BGP
- Support TACSCA+, security-link feature and DSL line protection for data transmission
- Console/Serial COM switchable, comply with RFC 2217, may connect via TCP client/server or UDP mode

TAINET's Comet 160xF-R EFM/ ATM series is the so-called Ethernet Access Devices (EAD), Ethernet Media Data Converter (MDC) or Ethernet DSL Bridge/ Router/ Modem, which takes advantage of the latest G.SHDSL.bis standard. This mini-terminal enables the transport of traffic from Ethernet interface with speed of 15/ 30/ 60Mbps over EFM bonded 2/ 4/ 8 wires G.SHDSL.bis link.

Comet 160xF EFM/ ATM series supports high-speed dedicated symmetrical data transmission and utilizes DSL bandwidth. The automatic line rate adjusting can be up to 15Mbps over 2-wire copper line symmetrically. Comet 1602F-R/ 1604F-R/ 1608F-R series typically works as an Ethernet extender, with up to 8 wires that could enhance the line rate and provide aggregated bandwidth up to 60Mbps. Furthermore, Comet 160xF EFM/ ATM series is fully compatible with TAINET iEAC-16, the intelligent Ethernet access chassis. This combination is designed to work as a central office especially for long distance Ethernet Access Service. It covers the ADSL/ VDSL's disadvantages of distance limitation by offering multi-pair bonding services.

Comet 160xF-R EFM/ ATM series is an ideal solution for Telecom Carriers, Service Providers, and business users. In order to reduce operation/ management burden, based on ITU-T recommendation G.991.2 standards, Comet 160xF EFM/ATM series can control and monitors its remote units via the Embedded Operation Channel (EOC). Administrators of Comet 160xF-R EFM/ATM series are entitled to configure the modems through DIP-Switch, Console, Telnet (SSH), Web (HTTP/ HTTPS), TR-069 or SNMP v1/ v2c/ v3 agent with ease.

# G.SHDSL.bis Modem




## Model

- Comet 1602F-R, 2-wire, 4 Ethernet ports
- Comet 1604F-R, 4-wire, 4 Ethernet ports
- Comet 1608F-R, 8-wire, 4 Ethernet ports

## Line Interface: G.SHDSL.bis

- Type: 2, 4 or 8-wire
- EFM Standard: ITU-T G.991.2, ETSI 101 524
- Bonding protocol: IEEE 802.3ah EFM 2Base-TL
- ATM Standard: RFC 1483/2684 Multiprotocol over AAL5 bridged and RFC 1577 IP over ATM
- Line rate: n x 64Kbps, n = 3~239 (2w), 6~478 (4w), 12~956 (8w)
- Connector: 1 x RJ-45
- Line coding: TC-PAM 16/ 32/ 64/ 128
- Impedance: 135 Ω

## DTE Interface: Ethernet

- Ethernet type: 10/ 100BASE-T
- Connector: 4 x RJ-45
- Auto-MDI/ MDIX detection, Full/ half duplex support
- Auto-negotiation for speed and duplex
- Support Layer 2 function
- IPv4/ IPv6 supports

## DTE Interface: Serial Port

- Serial type: RS-232C, DCE mode
- Connector: D-Sub 9 pin
- Data Rate: Asynchronous. 300~115200bps
- Pattern: 5~8 data bits, Even/ Odd/ Non-parity bit, 1 or 2 stop bit.
- Protocol: RFC-2217 (Telnet), TCP (Virtual COM), UDP
- Adaption Mode: Console, Client or Server mode
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## Management

- Configuration via DIP switches, Telnet (SSH), WEB GUI (HTTP/HTTPS), SNMP v1/ v2c/ v3 and TR-069
- Console: DB9 connector (RS232C)
- Local and Remote status for diagnostic
- Supports Performance Monitoring function (PM)
- Remote control and configuration through embedded operation channel (EOC), do not need remote IP
- Firmware upgradeable via Web or TFTP
- Front panel test button for easy loop healthy testing
- Terminal Access Controller Access-Control System (TACACS+)
- Support three access levels for administrator, operator, user, and operation log
- Support login password complexity of 6 characters, uppercase and lowercase letters, digits, special symbols
- Anti-camouflage attack mechanism: lock IP and delay login
- Dying Gasp function indicates the CPE mode lost power

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## Ethernet Networking function

- IEEE 802.3x flow control
- IEEE 802.1d transparent bridge function
- IEEE 802.1w RSTP for loop prevention
- IEEE 802.1q VLAN tagging, up to 4094 VLAN and VID
- IEEE 802.1p QoS with priority queues facility
- 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 9K Jumbo frame for LAN and up to 2048 bytes for WAN
- ITU-T G.8032 Ethernet Ring Protection switching (ERPS)
- Support SNTP protocol to get network time
- DHCP Client/ Server/ Relay
- Static Route, RIP1/ RIP2 dynamic routing, OSPF, BGP
- Virtual Router Redundant Protocol (VRRP)
- Point to Point over Ethernet (PPPoE) protocol support
- Network and Port Address Translation (NAT & NAPT)
- Virtual IP for different VLAN (LAN supports dual IP)
- VPN provides PPTP & L2TP protocol
- Firewall Anti-DDOS attack & ACL security protection

## LED Indicators

- PWR, TST, ALM, CPE, DSL1~4, LAN1~4
- Dual color LED for easy status monitoring

## Power Requirement

- DC 18-60V (Comet 160xF-R/ DC18-60)
- DC 9-36V (Comet 160xF-R/ DC9-36)
- Power consumption: 8W

## Certification

- ISO 9001 Quality Management
- CE Approval, EN 55032, 55035, 61000-3-2, 61000-3-3
- Railway EMC 50121-4

## Dimension

- 190 (W) x 145 (D) x 36 (H) mm

## Operating Environment

- Operation Temperature: -20 °C ~ 75 °C
- Storage Temperature: -20 °C ~ 85 °C
- Humidity: 90%, non-condensing