



Telephone Line Monitoring
Zebra Optical Gateway

Zebra optical gateway

The Zebra optical gateway is designed to connect the Zebra monitoring centre system to SDH/SONET and E3/DS3 telephony networks. It provides a highly dense connectivity solution: 2 bi-directional STM1/OC3 carriers can be intercepted in a single 1U 19" rack module. The unit supports 1 STM4/OC12 input. An expansion module (currently under development) provides connectivity for 12 E3/DS3 inputs. Used in conjunction with the Zebra monitoring centre system, the Zebra gateway provides a very powerful telecommunications monitoring solution.



Unlike general purpose media gateways and protocol converters, the Zebra gateway is designed to support the requirements of communication monitoring. This allows the Zebra monitoring centre system to support features that were not possible with the previous generation of monitoring equipment, for example:

- The Zebra gateway and Zebra monitoring centre system can process primary rate carriers containing only SS7 signaling timeslots (e.g.: 31 signaling timeslots on an E-1)
- The Zebra gateway supports any combination of hyper channels (consecutive timeslots used together to provide one bigger $n \times 64$ kbps channel) together with E0/D0 (64 kbps) channels on the same carrier
- The Zebra gateway supports channelized E1/T1, E3/DS3 and STM1/OC3 (unframed streams used as bit streams)
- E1/T1, E0/DS0 channels, hyper channels and channelized carriers can be mixed on the same gateway
- The Zebra optical gateway can be used in conjunction with other Zebra gateways (for example: the Zebra E1/T1 gateway) in the same Zebra monitoring centre system
- The Zebra monitoring centre system reads data from the Zebra gateway over Ethernet, allowing the processing of monitored streams to be farmed out to as many servers on the network as required for the connected capacity. This allows a Zebra system to be scaled up to an unprecedented capacity of over 150 000 monitored channels in a single system

Specifications

Dimensions and weight	The Zebra optical gateway is a 1U 19" rack module 8kg
Capacity	8 SDH inputs provide a capacity of 4 monitored SDH bearers, each with a protection switching input. The system supports automatic switchover to the backup bearer when protection switching is used. All the traffic offered on every connected STM-1 bearer, or one STM-4 bearer can be processed.
Carrier type configuration	4 × STM1/OC3 or 1 × STM4/OC12 On expansion module: 12 × E3/DS3
Channel configuration	Any combination of signaling channels, bearer channels, hyper channels and channelized primary rate, E3/DS3 or STM1/OC3 may be configured.
Input signal strength	0 to – 40dB
Termination and connectivity	SFP connectors offer: Optical connectivity short and long-haul. Electrical connectivity for STM1/OC3. Coaxial 1.6/5.6 connectors support electrical connection of E3/DS3.
LAN	3 × 1 Gbps Ethernet Copper or fibre
AC power input	110V to 240V AC Automatic switching
Redundant power input	110V to 240 VAC Automatic switching
Power consumption	100W
Multiplexing	All standard types of multiplexing are supported, including, E13, M13 and G.747.
VoIP	The Zebra gateway supports the interception of VoIP streams in hyper channels or channelized primary rate or higher multiplexed streams. Protocol processing is on open platforms.
ATM	Interception of ATM carried over E1/T1 is supported. Protocol processing happens on open platforms.



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