



Haliplex
Communication Systems

HPX-1600 USER GUIDE

**Chapter 2-20:
HPX-IM-1680-EL
Electrical STM-1 & STS-3 IM**

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1. GENERAL CHARACTERISTICS

The STM-1 & STS-3 Electrical IM is only compatible with the HPX-1600-SS models. It allows the user to transmit up to 63/84 E1/T1 circuits over a coaxial cable, typically connected to a wireless transceiver or a higher order multiplexer. It transmits at speeds up to 155Mb/s. Two modules can be installed for redundant link protection.

The Electrical IM must be connected to a STM-1 or STS-3 interface supplied by Haliplex or other supplier. The module uses a 75ohm co-axial BNC connector.



Figure 1: STM-1/STS-3 IM

The electrical interface module can be installed in slot 15 or slot 16 of the HPX-1600-SS chassis.

2. IM CONFIGURATION

There are no user configuration objects in the electrical STM-1/STS-3 interface module.

3. IM ALARMS

The STM-1 & STS-3 IM has a Loss of Carrier alarm that can be configured and monitored via the IM alarm monitor setup window.

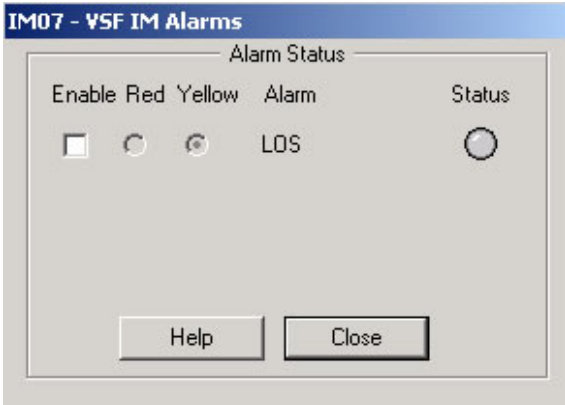


Figure 2: STM-1 & STS-3 IM Alarm Monitor Setup Window

4. IM INDICATORS

The STM-1 & STS-3 IM has a single LED, which alights in green or red. The state of the LED indicates the presence of a carrier signal and when a transmit or receiver buffer overflow is occurring.

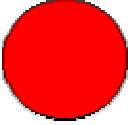
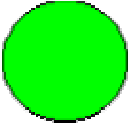
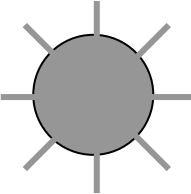
	<p>Red Steady LED: Indicates that the carrier signal is not present.</p>
	<p>Green Steady LED: Indicates that the carrier signal is present and normal data transmission is occurring.</p>
	<p>Flashing LED: Indicates that the transmit or receive buffer has overflowed.</p>

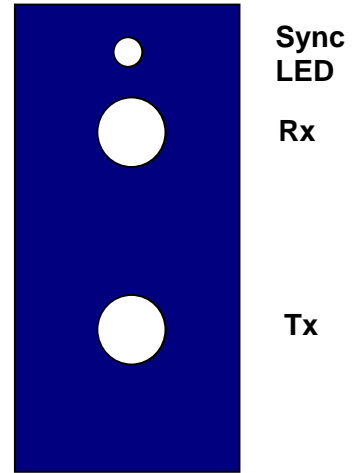
Table 1: STM-1 & STS-3 LED Interpretations

5. IM CABLES

The Electrical IM has two coaxial BNC connectors on the front of the IM.

The top connector is used for Receive,
the lower connector for Transmit.

Figure 3: Electrical STM-1/STS-3 IM



6. INTERFACE SPECIFICATIONS

IM Connector	BNC
Connector impedance	75 ohm
Line framing	CMI
Power Consumption	Max 1.1W
Alarm Monitoring	Loss of incoming signal (LOS)
Bit Rate	155 Mbps
Bit Rate Tolerance	± 20 ppm
Indicator LED's	Red: Loss of carrier Green: Carrier detected
Mode	Full duplex: two cables, one cable per direction (Tx & Rx)
Capacity	One transmitter and receiver pair per module
Jitter Generation	< 0.01 UIrms
Standards	G703 (11/01), G.825 (03/00)
Peak-to-peak output voltage	1V
Maximum cable loss	15dB
LOS threshold	-18dB

Table 2: Interface Specifications

7. INTERNATIONAL COMPLIANCES

- CE
- A Tick
- C Tick
- FCC part 15 class B
- UL



FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures

- *Reorient or relocate the receiving antenna*
- *Increase the separation between the equipment and the receiver*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected*
- *Consult the dealer or an experienced radio/TV technician for help*

Warning: *Any changes or modifications not expressly approved by Haliplex Pty Ltd could void the user's authority to operate this equipment.*

7.1. ELECTROMAGNETIC COMPATIBILITY (EMC)

- CISPR 22 class B
- EN55022
- FCC part 15 class B
- AS/NZS3548
- EN300386-1

7.2. IMMUNITY

- EN61000-4-2
- EN61000-4-3
- EN61000-4-4
- EN61000-4-5
- EN61000-4-11