IRT COMMUNICATIONS

ASI | **RJ45** | **⇄**

MEM-4750

## ASI / TSoIP (Ethernet) Network Interface Adapter

FEATURES

- **ASI to TSoIP, or TSoIP to ASI conversion.**

- **Set up as either transmitter or receiver.**

- **Supports enabling of Forward Error Correction (FEC).**

- **IP de-jittering.**

- **UDP or RTP encapsulation.**

- **DIP switch or SNMP software monitoring and control.**

BLOCK DIAGRAM MEM-4750 SIGNAL PATH

GENERAL

The MEM-4750 is a Transport Stream over Internet Protocol (TSoIP) converter that acts as a gateway between an ASI and an Ethernet network environment.

The MEM-4750 is designed to operate independently as either a transmitter (ASI to TSoIP) or receiver (TSoIP to ASI) or can be used as a pair with one unit at each end of an Ethernet link.
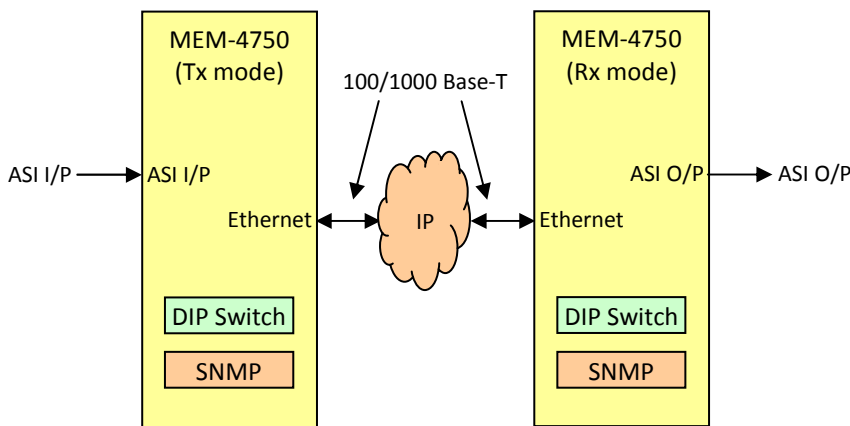
When configured as an ASI to TSoIP converter (transmitter mode), the input ASI stream is encapsulated into either UDP or RTP Ethernet packets with controlled scheduling of IP packets to prevent IP jitter. Forward error correction (FEC) in accordance to SMPTE 2022-1 can also be added to the conversion when in RTP mode.

An interesting application for the transmitter mode is for visual monitoring of the ASI stream's content on an Ethernet link by third party software, such as by VideoLAN's VLC media player (for a single content ASI stream) downloadable as a free download from the internet.

When configured as a TSoIP to ASI converter (receiver mode), the MEM-4750 accepts unicast and multicast IP streams over its Gigabit Ethernet port. The UDP or RTP packets are de-encapsulated with IP jitter removal and error correction applied as per SMPTE 2022-1. The resultant output being either a 188 or 204 byte (settable) ASI signal.

The Ethernet port has automatic MDI/MDI-X detection, this detects whether the Ethernet interconnect cable is a straight through or cross over type and automatically switches itself to accommodate, and will automatically select the link speed of the connected network (100/1000Mb/s).

All parameters are set via a preset range of DIP switch settings, or via a Simple Network Management Protocol (SNMP) system.

The MEM-4750 is designed to fit IRT's standard 1000 and 4000 series Eurocard frames and may be used alongside any other of IRT's analogue or digital Eurocards.
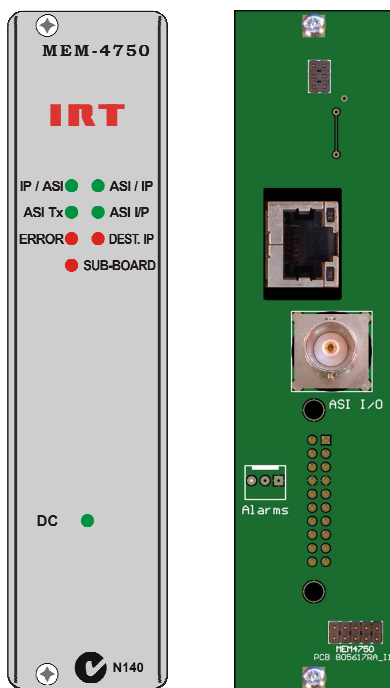
TECHNICAL SPECIFICATIONS

Input/Output:

Type	1 x ASI, BNC connector.
Transport Stream Bit Rate	0.01 to 214 Mb/s.
Packet Size	188/204.
Impedance	75 Ohm.
Return Loss	> 15 dB @ 270 MHz.
Equalisation	> 250 metres at 270 Mb/s for Belden 8281 or equivalent cable.

Ethernet:

Type	Standard IEEE 802.3a.
Data Rate	100 Mb/s or 1 Gb/s, automatic.
Connector	RJ-45.
Ethernet Encapsulation	IEEE 802.2 SNAP and Ethernet II.
IP Support	IPv4.
IP Address Assignment	DHCP, DIP switch local or static.
Multicast Support	IGMP v2.

Transport Stream Input/Output over IP:

TSoIP Encapsulation	UDP or SMPTE 2022-2.
Input-to-IP Delay	≤ 1 ms.
IP-to-Output Delay	1 to 120[1] ms (programmable).
IP Input Jitter Tolerance	1 to 120[2] ms (computed).

UDP:

TS Packet Size	188 or 204 bytes.
TS Packets per IP Packet	1 to 7.

SMPTE 2022-2:

Transport Protocol	RTP.
Forward Error Correction (FEC)	SMPTE 2022-1.
Packet Size	188 or 204 bytes.
TS Packets per IP Packet	1 to 7.
FEC Size L	1 to 20.
FEC Size D	4 to 20.
FEC Size LxD	4 to 100.

Power Requirements:

Voltage	28 Vac CT (14-0-14) or ±16 Vdc.
Power consumption	< 5 VA.

Other:

Temperature range		0 - 50° C ambient.
Mechanical		For mounting in IRT 19" rack chassis with input, output and power connections on the rear panel.
Finish	**Front panel**	Grey background, black lettering & red IRT logo.
	Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions		6 HP x 3 U x 220 mm IRT Eurocard.

NOTE:	**1**	Maximum delay depends on input bit rate and number of TS packets per IP packet.
	2	Maximum jitter tolerance depends on programmed IP-to-output delay and on FEC delay.