

3G/HD/SD-SDI/ASI + Ethernet to Optical Fibre Transceiver

FEATURES

- Bi-directional¹ combined digital video and Ethernet on a single fibre.
- Suitable for 3G-SDI, HD-SDI, SD-SDI or ASI signal rates and 10/100/1000 Base-T Ethernet.
- Standard RJ-45 CAT-5 Ethernet connection.
- Supports Jumbo frames.
- Path lengths up to 27dB^{2,3} optical path loss using 9/125µm single mode fibre.
- DashBoard™ or SNMP software monitoring.

GENERAL

The IRT-6590-EOT transceiver module is designed principally for use as a single 3G/HD/SD-SDI/ASI digital video plus 10/100/1000 Base-T Ethernet to fibre optic transmission link¹, using 9/125µm single mode fibre, with optical paths losses up to 30dB^{2,3}.

The EOT-4590 conforms to the SMPTE standards 424M, 292M and 259M-C for digital video signals, as well as the DVB standard for ASI; and IEEE 802.3i, 802.3y and 802.3ab standards for Ethernet over CAT-5 cable.

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 (10/100/1000 Mb/s).

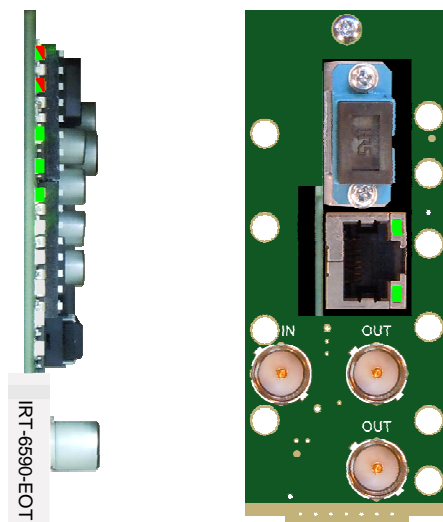
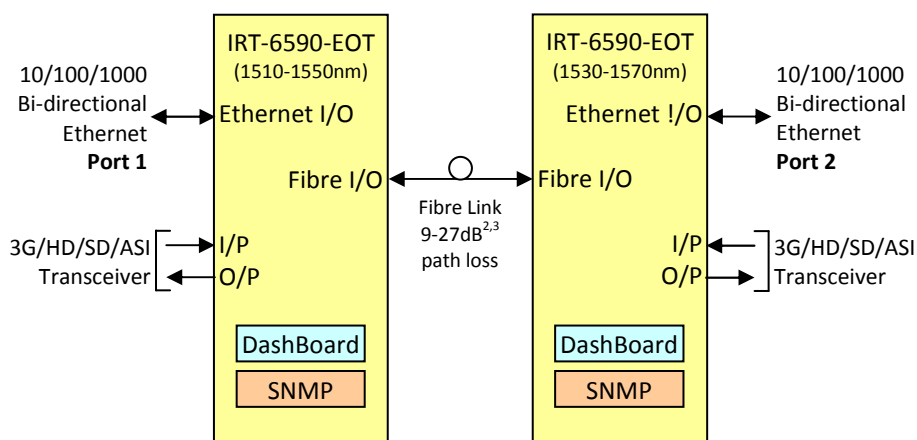
The IRT-6590-EOT is also able to support Jumbo frames, which are Ethernet frames with more than 1500 bytes of payload data, up to a maximum frame size of 10,240 bytes.

A fibre transceiver is incorporated on the one card allowing bi-directional¹ communication over a single SC/PC single mode fibre optic cable.

The IRT-6590-EOT is designed to fit the openGear® standard 2RU frames which allow a mixture of cards from various manufacturers to be mounted within the same frame.

The DashBoard™ monitoring software is available as a free download.

BLOCK DIAGRAM IRT-6590-EOT SIGNAL PATH



IRT-6590-EOT
Rear Assembly

- NOTE 1** When operating as a pair, one IRT-6590-EOT must be fitted with 1510nm & 1550nm transceivers and the other with 1530nm & 1570nm transceivers.
- 2** Optical attenuator required for IRT-6590-EOT when optical path loss is less than 9dB.
- 3** At 3G-SDI rate optical path loss is reduced by 2dB to 25dB maximum optical path loss.

Due to our policy of continuing development, these specifications are subject to change without notice.

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TECHNICAL SPECIFICATIONS (PRELIMINARY)

Ethernet:

Type	Standard IEEE 802.3i, 802.3y & 802.3ab
Data Rate	10/100/1000 Mb/s, automatic.
Maximum Frame Size	10,240 bytes.
Connector	RJ-45.

Digital Video Input:

Type	2.97 Gb/s (3G-SDI) to SMPTE 424M; 1.485 Gb/s (HD-SDI) to SMPTE 292M; 270 Mb/s (SD-SDI) to SMPTE 259M-C and DVB-ASI.
Input Impedance	75 Ω .
Input Return Loss	> 15 dB 5 MHz to 1.5 GHz; > 10 dB 1.5 GHz to 2.97 GHz.
Automatic Cable Compensation	> 100 m at 2.97 Gb/s (3G-SDI) with Belden 1694A; > 100 m at 1.485 Gb/s (HD-SDI) with Belden 1694A; > 250 m at 270 Mb/s (SD-SDI/ASI) with Belden 8281.
Input Connector	1 x BNC on rear assembly.

Digital Video Output:

Type	1 data reclocked, AC coupled.
Output Level	800 mV \pm 10%.
Output Impedance	75 Ω .
Output Return Loss	> 15 dB 5 MHz to 1.5 GHz; > 10 dB 1.5 GHz to 2.97 GHz.
Output Rise and Fall Time	< 135 ps at 2.97 Gb/s and 1.485 Gb/s; > 0.4 ns and < 1.5 ns at 270 Mb/s.
Intrinsic Jitter	< 0.3 UI at 2.97 Gb/s reclocked; < 0.2 UI at 1.485 Gb/s reclocked; < 0.1 UI at 270 Mb/s reclocked.
Output Connector	1 x BNC on rear assembly.

Optical:

Type	Combined CWDM IEEE 802.3z and SMPTE 297-2006 Standards.
Data Rate	Combined 1000 Mb/s Ethernet and 2.97Gb/s, 1.485Gb/s or 270Mb/s Digital Video.
Optical Path Loss ^{3,4}	9 to 27 dB.
Optical Fibre	Designed for use with 9/125 single mode fibre.
Optical Wavelengths	1510/1550nm or 1530/1570nm.
Optical Connectors	Single SC/PC (standard).
Optical Output	0 dBm +4.5/-0 dB DFB lasers.
Optical Input	APD detector (standard), -9 to -27 dBm input level.

Power Requirements:

Voltage	+ 12 Vdc.
Power consumption	< 10 VA.

Other:

Temperature range	0 - 50° C ambient.
Mechanical	Suitable for mounting in an openGear® 2RU rack chassis.
Dimensions (openGear® standard)	33.6 mm x 2U x 325 mm.

Supplied accessories	Rear assembly.
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Ordering:

IRT-6590-EOT/1510-1550	IRT-6590-EOT fitted with 1510nm and 1550nm lasers, programmed with DashBoard™ control.
IRT-6590-EOT/1530-1570	IRT-6590-EOT fitted with 1530nm and 1570nm lasers, programmed with DashBoard™ control.

NOTE: 3	Optical attenuator required for IRT-6590-EOT when optical path loss is less than 9dB.
4	At 3G-SDI rate optical path loss is reduced by 2dB to 25dB maximum optical path loss.