

IQGBE40/80

Ethernet Fiber Converter with 4/8 Port Switch

The IQGBE40/80 is a range of Gigabit Fiber Media Converter modules with either a 4 or 8 port Ethernet switch occupying either a single or double slot in an IQ modular frame. The RJ45 copper ports are triple speed auto negotiating enabling connectivity to 10, 100 or 1000Base Ethernet devices using standard CAT5 or CAT6 cable assemblies. The fiber interface utilizes an SFP (Small Form factor Pluggable) fiber module receptacle cage compliant with the SFP MSA (Multi Source Agreement). It accepts a single 1000Base SFP Fiber Transceiver with 1310nm singlemode laser transmitter and medium sensitivity receiver. A copper SFP option is also available to make the unit a 4 or 8 port electrical switch if required.

The IQGBE40/80 may be used for direct links to other fiber enabled Ethernet devices or used as part of a system using WDM or CWDM techniques to transport multiple serial digital data streams over a single optical cable.

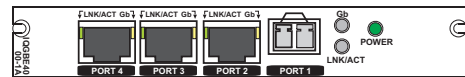
Features

- 4 or 8 port Ethernet switch including fiber optic I/O
- 10, 100 or 1000 Base Ethernet operation
- Low and high power 1310 nm output wavelengths available, plus copper RJ45 SFP option
- Conforms to IEEE 802.3 wired Ethernet and fibre channel FC-PI-2 Rev. 10.0 standards
- Provides typical fiber link distances of 10 to 55km
- Easily integrates into a CWDM system by using the 'express' channel of the IQCWM10 fiber combiner module
- Front and rear of card power and port status LEDs
- SFP status monitoring via RollCall

Why should you choose this module?

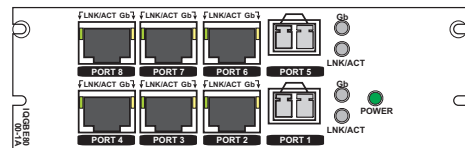
- Adds network based devices into fiber links between facilities or sites
- Include RollCall or other network data into existing video fiber links, when partnering with IQCWM10
- Full RollCall and SNMP compatibility allows easy integration with SAM, or third party, network management systems providing an all-inclusive monitoring and control solution

Order codes



IQGBE4000-1A, IQGBE4000-1B

Ethernet fiber converter with 4 port switch.
3 copper Ethernet I/O, 1 Optical I/O.



IQGBE8000-2A, IQGBE8000-2B

Ethernet fiber converter with 8 port switch.
6 copper Ethernet I/O, 2 Optical I/O.

SFP options

FC1-10KGB-13T - 1310nm SFP Transceiver, 10km typical on 9/125µm SMF

FC1-40KGB-13T - 1310nm SFP Transceiver, 55km typical on 9/125µm SMF

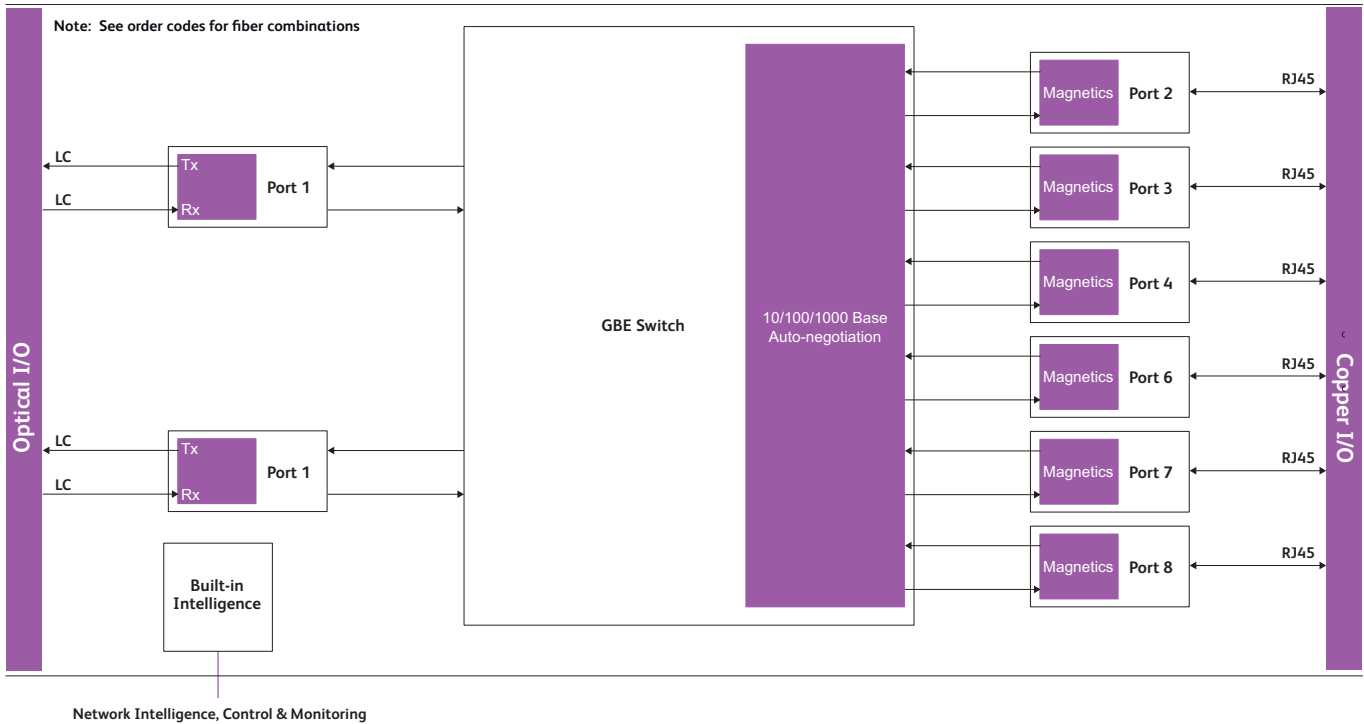
FC1-GBE-CT5 - Copper Ethernet RJ-45 SFP Transceiver

Note: SFP type must be ordered in addition to the module.

For more details on enclosure types please refer to Frames and Hardware section.

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Block Diagram for IQGBE8000-2A

Technical Specification

Inputs and Outputs

Signal Inputs and Outputs

Electrical Ethernet	3 (4 with copper SFP) IQGBE40 6 (up to 8 with copper SFPs) IQGBE80
Connector / format	RJ-45, CAT 5, 6, 7 Electrical Interfaces LC singlemode Optical Interfaces
Conforms to	IEEE 802.3 Electrical Interfaces FC-PI-2 Rev. 10.0 Optical Interfaces
Cable length	Up to 100m for 1000Base-T (Electrical Interfaces) Up to 55 km 1000Base-X, depending on SFP and cable (Optical Interfaces)

Controls

Indicators

Indicators	
Power	OK (Green)
CPU	OK (Green flashing)
Per Channel:	
Link	Link Up (Green)
Rate	10Mbps (Yellow), 100Mbps (Green), 1000Mbps (Blue)

RollCall Functions

Port Status	Link, Speed, and Connector type
Information Window	Port Status
Logging:	Port Logging, Name, Link Status, Speed SFP Logging, Type, Status, Connector, Vendor, Vendor Part Number, Serial Number, Rx Power State, Rx Power, Tx Power State, Tx Power, Wavelength, Laser Bias, Laser Bias State
RollTrack Index	Up to 16 RollTrack destinations
RollTrack controls	On/Off, Index, Source, Address, Command, Status, Sending
RollTrack Sources	Unused, Link Down, Link Up, Speed None/10Mbps/100Mbps/1Gbps, SFP 1/2 Not Fitted, SFP 1/2 Fitted, SFP 1/2 Signal LOST/OK, SFP 1/2 RX Pwr FAIL/OK, SFP 1/2 TX Pwr FAIL/OK, SFP 1/2 TX Bias FAIL/OK
Factory Default	Resets all module settings to factory specified default values
Module Information	Reports following module information: Software version, Serial number, Build number, KOS version, Firmware version, PCB version, Uptime, Rear ID, Rear Status, Power Usage

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Technical Specification

Specifications

1310 nm Standard Haul Transceiver (FGAN FC1-10KGB-13T)

Tx	
Wavelength	1310 nm
Spectral width (FWHM)	3 nm
Output power	-9.5 dBm (min), -3 dBm max
Extinction ratio	9:1 (min)
Transmission distance	10 km* (at 0.55db/km loss, dispersion limited per FC-PI-2 Rev.10)

*actual transmission distances depend on type of fiber, data rate and receiver sensitivity as well as other system components.

Rx	
Average Rx Sensitivity	-19 dBm (max)
Optical Center Wavelength	1265nm – 1600nm
LOS De Assert	-19 dBm
LOS Assert	-30 dBm
LOS Hysteresis	0.5 dB

1310 nm Long Haul Transceiver (FGAN FC1-40KGB-13T)

Tx	
Wavelength	1310 nm
Spectral width (FWHM)	1 nm
Output power	0 dBm (min), +5 dBm max
Extinction ratio	9:1 (min)
Transmission distance	up to 55 km* (at 0.4db/km loss, dispersion limited per FC-PI Rev.13)

*actual transmission distances depend on type of fiber, data rate and receiver sensitivity as well as other system components.

Rx	
Average Rx Sensitivity	-22 dBm (max)
Optical Center Wavelength	1270nm – 1600nm
LOS De Assert	-23 dBm
LOS Assert	-25 dBm
LOS Hysteresis	0.5 dB

Copper Interface Transceiver (FGAN FC1-GBE-CTS)

Standard IEEE 802.3 interface
Only operates at 1000Base-T

Power Consumption

Module power consumption	IQGBE40 - 4W Max IQGBE80 - 6.3W Max
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Example Application - Using IQGBE to link communications between central and remote locations:

Central Equipment Area

