

IQOTR32

3G/HD/SD-SDI Flexible Fiber Optic Interfacing Module

User-configurable fiber optic transceiver ideal for mixed coax and fiber workflows.

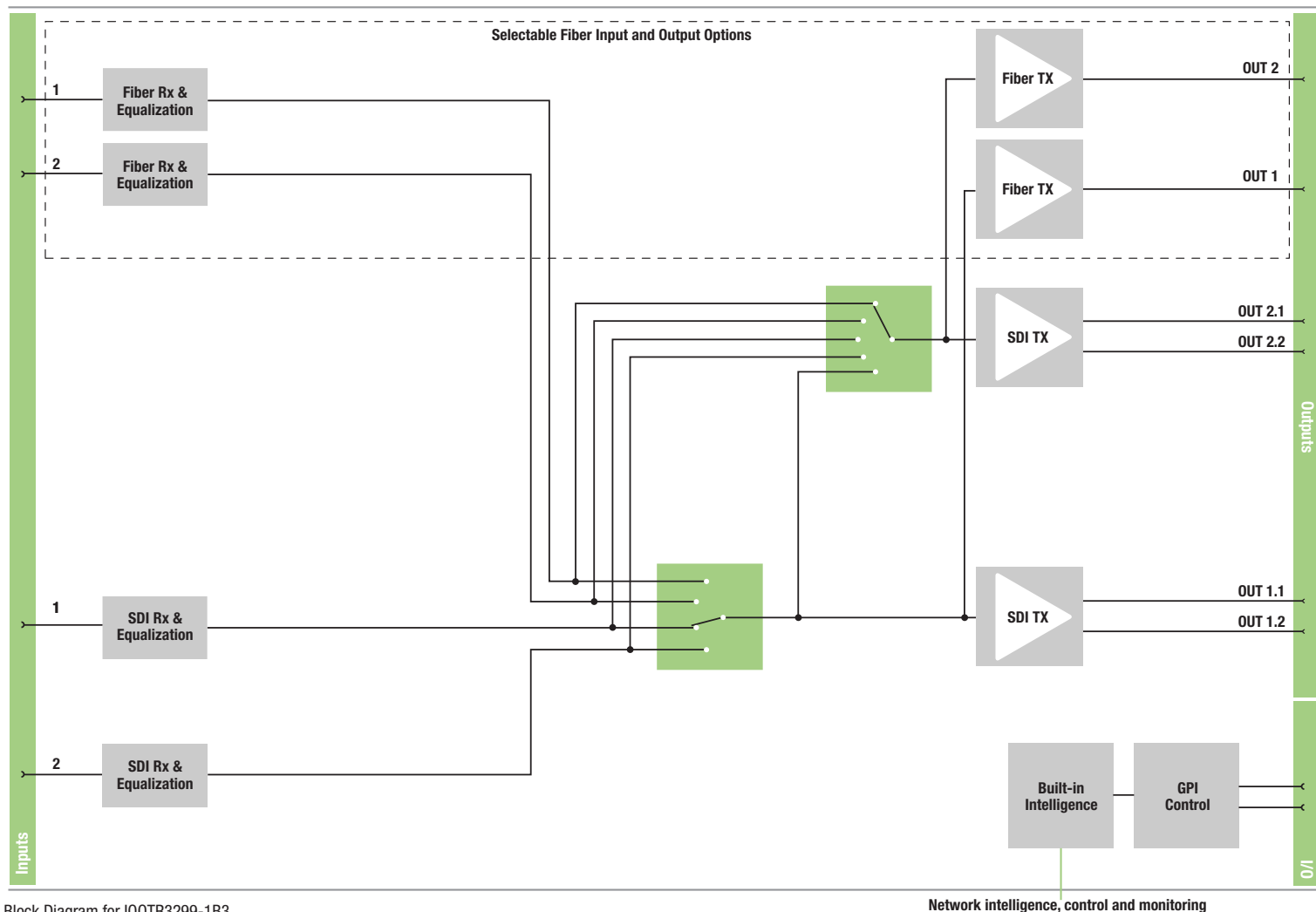
The IQOTR32 from Grass Valley is a user-configurable fiber optic transceiver for bidirectional conversion of 3 Gb/s, HD and SD-SDI signals to 1310 nm optical signals. Ideal for mixed coax and fiber workflows, the IQOTR32 allows the user to configure the inputs and outputs to match their infrastructure needs.

Why should you choose this module?

- Ideal for applications that require mixed coax and fiber interfacing, to integrate an existing router into a new 3G/HD operation for example
- Suitable for transporting 3G/HD-SDI signals over long distances either within the facility or between sites
- 2x GPI control interface allows external control of input selection or status reporting
- Lower weight and higher density compared with copper cables
- Full GV Orbit compatibility provides an all-inclusive remote configuration, control and monitoring solution
- Comprehensive SNMP support allows easy integration with third-party Network Management Systems

KEY FEATURES

- Single-mode fiber optic receiver and transmitter for 3G/HD/SD-SDI signals
- Independent input selection for each channel, or all outputs follow input mode
- User-selectable 3G/HD/SD-SDI outputs for fiber or coax inputs in accordance with SMPTE ST 424, SMPTE ST 292 and SMPTE ST 259
- Input wavelength range 1260-1620 nm, output wavelength of 1310 nm
- 2x GPI/O control interface
- GPIO embedding for long distance transport within the SDI stream to SMPTE ST 291 user application area specification



Block Diagram for IQOTR3299-1B3

Network intelligence, control and monitoring

SPECIFICATIONS

Inputs and Outputs

Signal Inputs

Electrical: 3 Gb/s HD-SDI, 1.485 Gb/s HD-SDI or 270 Mb/s SD-SDI
Connector/format: BNC/75Ω panel jack

Conforms to:

- SMPTE ST 424 (HD level A/B)
- SMPTE ST 292 (HD)
- SMPTE ST 259-C (SD)

Inputs: 2

Input 1 cable length:

- Up to 70m Belden 1694A @ 3 Gb/s (40m with relay rear version)
- Up to 160m Belden 1694A @ 1.5 Gb/s
- >350m Belden 1694A @ 270 Mb/s

Input 2 cable length:

- Up to 60m Belden 1694A @ 3 Gb/s (40m with relay rear version)
- Up to 100m Belden 1694A @ 1.5 Gb/s
- Up to 100m Belden 1694A @ 270 Mb/s

Fiber Signal Input

Inputs: Up to 2

Optical: 3 Gb/s HD-SDI, 1.485 Gb/s HD-SDI or 270 Mb/s SD-SDI
Connector/format: LC singlemode

Conforms to:

- SMPTE ST 297-2006
- SMPTE ST 424 (HD level A/B)
- SMPTE ST 292 (HD)
- SMPTE ST 259-C (SD)

Signal Outputs

Electrical: 3 Gb/s HD-SDI, 1.485 Gb/s HD-SDI or 270 Mb/s SD-SDI
Connector/format: BNC/75Ω panel jack

Outputs: 2x 2 selectable reclocked

Conforms to:

- SMPTE ST 424 (HD level A/B)
- SMPTE ST 292 (HD)
- SMPTE ST 259-C (SD)

Fiber Signal Output

Optical: 3 Gb/s HD-SDI, 1.485 Gb/s HD-SDI or 270 Mb/s SD-SDI
Connector/format: LC singlemode

Conforms to:

- SMPTE ST 297-2006
- SMPTE ST 424 (HD level A/B)
- SMPTE ST 292 (HD)
- SMPTE ST 259-C (SD)

Outputs: Up to 2, selectable per channel

Control Interface

GPI I/O: 2x closing contact via screw terminal connector (ST)

Controls

Indicators

- Power: OK (Green)
- CPU running: OK (Green flashing)
- FPGA running: OK (Yellow flashing)
- Status: OK (Green)
- Warning: (Yellow)
- Error: (Red)
- Input 1: OK (Green)
- Input 2: OK (Green)
- Rx 1: OK (Green)

SPECIFICATIONS (CONT.)**Video Controls**

Output 1: Select Serial 1, Serial 2, RX1, RX2

Output 2: Select Serial 1, Serial 2, RX1, RX2, Follow Output 1 Selection

Laser disable: On/Off

Other Controls

User memories: 16x Save, Recall, Rename

GPI inputs: Memory recall 1 to 16, memory toggle

GPI Outputs: Input Present or Loss for SDI 1, 2, Fiber 1, 2

Memory naming: User configurable naming of memories 1–16

Information window: Video input status

RollTrack index: Up to 70 RollTrack destinations

Optical logging*:

Tx Laser Bias High Warning

Tx Power Low Warning

Tx Power High Warning

Laser wavelength:

Input 1 (2) Rx Power High Warning

Input 1 (2) Rx Power Low Warning

Input 1 (2) Rx Power Measurement

RollTrack Sources: Unused, Input Present (1&2, Fiber 1&2), Input Loss (1&2, Fiber 1&2), Output Rate/Std (1&2), Out 1 Selects (In1 & 2 & Rx1 & Rx2), Out 2 Selects (In1 & 2 & Rx1 & Rx2), Fiber Rx Power OK (1&2), Fiber Rx Power Fail (1&2), Fiber Tx Power OK (1&2), Fiber Tx Power Fail (1&2), Fiber Tx Bias OK (1&2), Fiber Tx Bias High (1&2)

Factory default: Resets all module settings to factory specified default values and clears memories

Default settings: Resets all module settings to factory specified defaults but does not clear memories

Restart: Software restart of the module

Module information:

Reports following module information: Software version, Serial number, Build number, KOS version, Firmware version, PCB version

General Specifications

Electrical:

3 Gb/s SDI, SMPTE ST 424

1.5 Gb/s HD-SDI, SMPTE ST 292

270 Mb/s SDI, SMPTE ST 259-C / DVB-ASI

Connector/format: BNC/75Ω panel jack on standard IQ connector panel

Return loss:

>-15 dB (270 Mb/s, 1.5 Gb/s)

>-10 dB (3 Gb/s)

Output jitter:

SD-SDI 0.2 UI (10 Hz) / 0.2 UI (1 kHz)

3G/HD-SDI 1.0 UI (10 Hz) / 0.2 UI (100 kHz)

Optical 1310 nm Tx

Wavelength: 1310 nm

Spectral width (FWHM): >1.5 nm (typ)

Output power: 0 to -5 dBm typical (-2 dBm typical)

Rise and fall time:

135 ps @ 3 Gb/s

270 ps @ 1.5 Gb/s

1.5 ns @ 270 Mb/s

Extinction ratio >7.5:1 (typ)

Optical return loss: -27 dB

Link distance:

Up to 30 km @ 270 Mb/s

Up to 21 km @ 1.5 Gb/s

Up to 10 km @ 3 Gb/s

Optical Rx

Input wavelength range: Min. 1260 nm, Max. 1620 nm

Input sensitivity: -21 dBm

Optical power input range: > -0 dBm, < -20 dBm

Link distance:

Up to 30 km @ 270 Mb/s

Up to 21 km @ 1.5 Gb/s

Up to 10 km @ 3 Gb/s

Video standards:

1125(1080)/50p (A & B), 1125(1080)/59p (A & B)

750(720)/50p, 750(720)/59p

1125(1080)/25i, 1125(1080)/29i

625(576)/25i, 525(480)/29i

Power Consumption

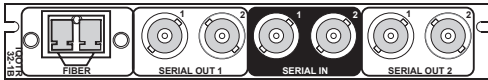
Module power consumption:

8.5 PR (B Frames)

* Dependent upon the SFP variant inserted.

ORDERING**IQOTR3299-1B3**

Flexible dual-channel fiber optic transceiver for 3G/HD/SD-SDI. 2x 3G/HD/SD-SDI inputs, 4x 3G/HD/SD-SDI outputs, single fiber cage but no SFP fitted.

**IQOTR3299-1B3G**

Flexible dual-channel fiber optic transceiver for 3G/HD/SD-SDI with GPIs. 2x 3G/HD/SD-SDI inputs, 3x 3G/HD/SD-SDI outputs, 2x GPI, single fiber cage but no SFP fitted.

**Fiber SFP Options****FC1-13T1** – Single 1310 nm Tx**FC1-13T2** – Dual 1310 nm Tx**FC1-R1** – Single Rx**FC1-R2** – Dual Rx**FC1-13TR** – Transceiver 1310 nm/Rx**FC1-HDBT2** – HD-BNC Dual Tx**FC1-HDBR2** – HD-BNC Dual Rx**FC1-HDMI2** – HDMI Tx with 2m cable**CWDM Tx** – Wavelengths available on request**Note:** Fiber SFP must be ordered in addition to the module.

For more details on enclosure types please refer to the IQ Modular Enclosures datasheet.

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