Rattler 4

Ultra-miniature Single Link, Dual Link and Bidirectional Fiber Optic Media Converters

Lightweight, easy-to-deploy fiber connectivity solutions.

The unique Rattler 4 miniature fiber optic serial digital video transmission modules from Grass Valley, a Belden Brand, offer the industry's broadest range of digital rates while maintaining the signal quality that broadcasters demand. No matter what your format, the Rattler 4 systems allow you to transmit one or two streams of:

- 3 Gb/s SMPTE ST 424 HD-SDI
- 1.5 Gb/s SMPTE ST 292 HD-SDI
- 19.4 Mb/s SMPTE ST 310
- 143 to 540 Mb/s SMPTE ST 259/SMPTE ST 344
- DVB/ASI 270 Mb/s
- AES and MADI audio
- Plus non-standard digital signals to 3 Gb/s

Singles, doubles and bidirectionals

At just 81.28 mm (3.2 in.) in length, these tiny modules can be deployed almost anywhere. They are available as single transmitters and receivers, dual transmitters (Tx) and receivers (Rx), and bidirectional transceivers (TR). Each Rattler 4 Tx accepts one or two 75 ohm coaxial inputs and converts it into an optical stream via standard ST connectors. The Rx units reconvert the uncompressed signal back to BNC outputs.

Ensure pristine trouble-free signals

The Tx modules include equalization for long lengths of coaxial cable, so you can use them at nearly any point in your HD-SDI chain. The Rx modules automatically reclock the incoming SMPTE standard signals at 270 Mb/s, 1.5 Gb/s and 3 Gb/s.

Universal interoperability

Rattler 4 modules are interoperable with industry standard optical HD-SDI signals to/from other Grass Valley equipment such as routers, DAs and fiber converters from the Densité Series, NVISION routers, picoLink converters and other Grass Valley fiber products including Python, TeleThon and Terrapin products. They make it easy to expand the systems that you already have and create a wide variety of network topologies.

Intuitive displays with built-in metering

Each Rattler 4 unit includes LED indicators to display Power on, HD-SDI signal presence and received optical power level on the Rx. This provides critical system diagnostic information without the need for additional test equipment, such as an optical power meter.

Available in all wavelengths

The Rattler 4 transmitters are available in standard 1310 nm and 1550 nm wavelengths, as well as in all 18 CWDM wavelengths.

Secure power

The Rattlers use their own in-line power supplies or accept any DC voltage from 5 to 16 volts via a mini-XLR jack.

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KEY FEATURES

- Portable, lightweight devices
- Five models:
  - Single Tx
  - Single Rx
  - Dual Tx
  - Dual Rx
  - Bidirectional transceiver
- 19.4 Mb/s to 3 Gb/s
- Compatible with:
  - SMPTE ST 310
  - SMPTE ST 292
  - SMPTE ST 259
  - SMPTE ST 297
  - SMPTE ST 424
- Standard formats internally reclocked: 270 Mb/s, 1.5 Gb/s and 3 Gb/s
- 18 CWDM wavelengths
- Up to 50 km (31 mi.) distance
- Cool, efficient, reliable
- Quick, easy installation
- LED indicators show you:
  - Power on
  - HD-SDI data presence
  - Rx optical power levels
- Supports embedded audio
- Power from 5-16 VDC
- Durable, reliable and serviceable
- Very low system jitter
- >10 dB return loss at 3 GHz

SPECIFICATIONS

Video
Transmission method: Digital
Input level: 800 mV p-p
Input impedance: 75Ω
Coax equalization at 2.97 Gb/s: 100m (328 ft.)
Output impedance: 75Ω
Bit-error rate at -22 dBm: 10-11
Jitter (pathological data pattern): <0.2 UI
Rise/fall times: <120 ps

Transmission
Operating wavelength: 1310, 1550 or 1270-1610 nm (CWDM)
Coaxial video connector I/O: BNC
Optical connector: ST
Optical source: Laser diode (FP or CWDM DFB)
Optical detector: PIN-TIA diode
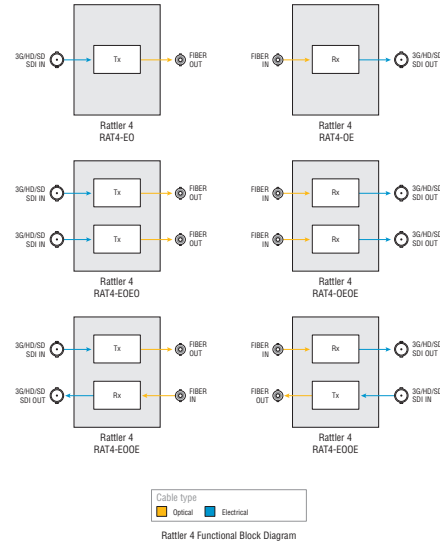**Transmitter output:** -7 to +3 dBm

Receiver sensitivity: -22 dBm
Link margin/distance: 15-25 dB / 20-50 km
Fiber type: Single-mode or multimode*

Mechanical/Environmental
Dimensions (W x H x D):
  Singles: 19.05 x 19.05 x 81.28 mm (0.75 x 0.75 x 3.2 in.)
  Doubles: 19.05 x 38.1 x 81.28 mm (0.75 x 1.5 x 3.2 in.)
Weight, each end: 85g (3 oz.)
Input voltage: 5-16 VDC
Power connector: plug replaceable, mini XLR
Power consumption (typ.): 600 mW
Indicators: Power, signal, link, optical power
Temperature range, operating: -25° to 55° C (-13° to 131° F)
Humidity range: 0 to 95% RH, non-condensing

*Check for availability

Rattler 4 Functional Block Diagram

ORDERING

Single Transmitters and Receivers

RAT4-EO-A-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; 1310 nm, -7 dBm; EQ and reclocking; mini-XLR locking cord
RAT4-OE-MXLR	Rattler 4, optical (ST, -22 dBm) in to electrical (BNC) OUT; mini-XLR locking cord
RAT4-KIT1-T-MXLR	Rattler 4 kit, 1310 nm, mini-XLR power, in injection-molded road case: TX-RAT4-EO-A-MXLR, Rx: RAT4-OE-MXLR, 2x LKS-WSU

CWDM Transmitters

RAT4-EO-1271-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1271 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1291-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1291 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1311-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1311 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1331-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1331 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1351-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1351 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1371-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1371 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1411-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1411 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1431-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1431 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1451-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1451 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1471-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1471 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1491-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1491 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1511-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1511 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1531-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1531 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1551-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1551 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1571-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1571 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1591-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1591 nm; EQ and reclocking; mini-XLR locking cord
RAT4-EO-1611-MXLR	Rattler 4, electrical (BNC) in to optical (ST) OUT; CWDM laser, 0 dBm OUT, 1611 nm; EQ and reclocking; mini-XLR locking cord

Dual Transmitters and Receivers

RAT4-EOEO-A-MXLR	Rattler 4, dual electrical (BNC) in to optical (ST) OUT; 1310 nm, -7 dBm; EQ and reclocking; mini-XLR locking cord
RAT4-OEOE-MXLR	Rattler 4, dual optical (ST, -22 dBm) in to electrical (BNC) OUT; mini-XLR locking cord
RAT4-KIT2-TT-MXLR	Rattler 4 kit, 1310 nm, mini-XLR power, in injection-molded road case: Dual Tx: RAT4- EOEO-A-MXLR, Dual Rx: RAT4-OEOE-MXLR, 2x LKS-WSU

Bidirectional Transceivers

RAT4-EOOE-A-MXLR	Rattler 4, transceiver. Tx: electrical (BNC) in to optical (ST) OUT; 1310 nm, -7 dBm; EQ and reclocking; Rx: optical (ST, -22 dBm) in to electrical (BNC) OUT. Reclocking; mini-XLR locking cord
RAT4-KIT3-TR-MXLR	Rattler 4 kit, bidirectional link, 1310 nm: 2x TR: RAT4-EOOE-A-MXLR, 2x LKS-WSU in Pelican case

Accessories

LKS-WSU Universal Power Supply	Inline power supply for 110V or 220V

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