Telecast Fiber Systems, Inc.

A BELDEN BRAND

Rattler™ 3G

Modular 3Gbps HD/SDI Video Transport Links

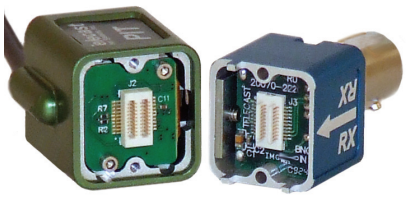
Reconfigurable and Serviceable

Patent Pending

Telecast's unique family of Rattler 3G devices provide unprecedented ***modular*** flexibility to the industry's most widely used fiber optic transmitters and receivers. These miniature (3 inch long) serial digital transmission modules offer the entire range of digital video rates while maintaining the signal quality that broadcasters demand. No matter what your format, the Rattlers allow you to transmit:

- 3 Gbps SMPTE 424M HD/SDI
- 1.5 Gbps SMPTE 292M HD/SDI
- 19.4 Mbps SMPTE 310M
- 143 to 540 Mbps SMPTE 259M/344M
- DVB/ASI 270Mbps
- AES and MADI Audio
- plus non-standard digital signals to 3 Gbps

Rattlers are also interoperable with industry standard optical HD/SDI signals to/from other equipment, such as routers, DAs, etc., as well as Telecast's Python™, Teleport™ and Telethon™ series, and our Viper™ series frames and modules.



The Rattler 3G is based on Telecast's revolutionary TeleCube™ modular media interfaces. Developed for OEM applications, these active connector devices contain lasers, detectors, EQ, cable drivers, etc., and make it easy to configure any type of device for 3 Gbps optical or electrical input and/or output, just by plugging the Cube into a small multipin footprint. Think of these as "snake eyes".

Modular Flexibility

Unlike any other fiber optic system, Rattler 3G gives you the power to create exactly the conversion device you need, and change it when your needs change. Based on Telecast's groundbreaking TeleCube™ *(patent pending)* modular media interface technology, the Rattler 3G can be configured using red transmitter cubes and blue receiver cubes, where each cube is a fiber (ST) or 75 ohm coaxial (BNC) input or output. Just plug a different Cube into the green center "Pit", and you have a completely different Rattler.

Make just the device you need, whether it's a fiber transmitter or receiver, an inline coaxial equalizer, a fiber to fiber repeater, an optical wavelength shifter, a fiber optic mode converter, or a CWDM transport link. TeleCubes are available in several optical power levels and 16 CWDM wavelengths, so the possible combinations are astounding.

Serviceability

Even Telecast gear can get damaged, and if something happens, you need to get back on the air as quickly as possible. The Rattler 3G is the first fiber product designed for easy service. Cut the power cord? Open the Pit, unplug the cord and replace it with a spare. Damage a receiver's ST connector? Replace the optical cube with a spare, blue RX cube.

The center Pit device includes LED indicators to display Power On, HD/SDI Signal Presence and on the RX, Received Optical Power level. This provides critical system diagnostic information without the need for additional test equipment, such as an optical power meter.

Features

- *Portable, lightweight devices*
- *Modular, flexible design*
- *Very Low system jitter*
- *>10dB Return Loss @3GHz*
- *19.4 Mbps to 3 Gbps*
- *Compatible with SMPTE 310M, 292M, 259M, 297M, 424M*
- *16 CWDM Wavelengths*
- *Up to 50 km 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*
- *USB power capable*
- *Durable, reliable & serviceable*

Configuration Examples

- *BNC-to-ST Fiber Transmitter*
- *ST-to-BNC Fiber Receiver*
- *CWDM Fiber Transmitter*
- *Fiber-Fiber Mode Converter*
- *CWDM Wavelength Shifter*
- *Inline Coaxial Equalizer*

Compliance

Laser Safety	*Class 1 Laser 21 CFR 1040.10*
EMI/RFI	*IEC/EN 60825-1*
	RoHS

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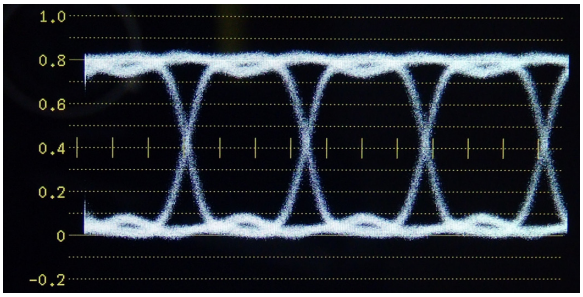
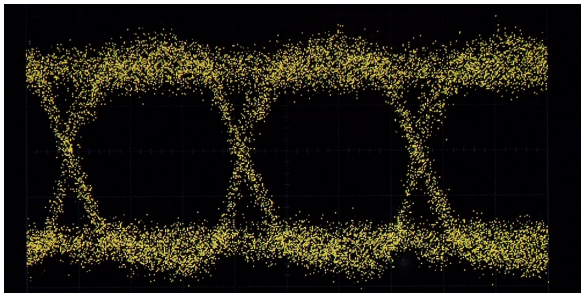
Specifications, Performance and Configurations



Electrical eye pattern — 1.5 Gbps


Optical eye pattern — 1.5 Gbps

Configuration Examples — Rattler 3G

Fiber Transmitter
RAT3G-EO-A-UAF

Rattler 3G configured E to O (Electrical to Optical); Blue coaxial BNC RX Cube to Red 1310nm FP laser transmitter ST Cube. USB Type A, female power cord standard.

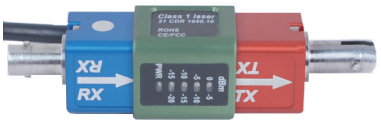
Fiber Receiver
RAT3G-OE-A-UAF

Rattler 3G configured O to E (Optical to Electrical); Blue ST RX Cube to Red BNC coaxial driver Cube.

CWDM Fiber TX
RAT3G-EO-1271-UAF
through (in 20nm steps)
RAT3G-EO-1611-UAF

Rattler 3G configured E to O; Blue coaxial BNC RX Cube to Red CWDM laser transmitter ST Cube. 16 standard CWDM wavelengths available, from 1271 to 1611nm, except 1471nm

Optical Repeater & Mode Converter
RAT3G-OO-A-UAF



Rattler 3G configured O to O; Inline optical amplifier, also allows changing from multimode to single mode fiber or vice versa. Use either standard, high power or CWDM laser Cubes

Wavelength Shifter
RAT3G-OO-1271-UAF
through (in 20nm steps)
RAT3G-OO-1611-UAF

Rattler 3G configured O to O; Allows changing optical wavelength of digital signals, from incoming RX wavelength to any of 16 standard CWDM "lambdas", from 1271 to 1611nm, except 1471nm

Inline Coax EQ
RAT3G-EE-EQ-UAF

Rattler 3G configured E to E; Equalizes and repeats incoming coaxial BNC signal for extended distances on copper cable.

Video

Transmission method	Digital
Input level	800 mV (peak to peak)
Input Impedance	75 ohms
Coax Equalization @ 2.97 Gbps	100 meters
Output Impedance	75 ohms
Bit-Error Rate (@ -22 dBm)	10^{-11}
Jitter (pathological data pattern)	< 0.2 UI
Rise/Fall Times	< 120 ps

Transmission

Operating wavelength (nm)	1310, or 1271-1611 (CWDM)
Coaxal video connector in/out	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 (disp. ltd.)

Mechanical/Environmental

Dimensions (LxWxH)	3.2" x 0.75" x 0.75"
Weight, each end	3 oz
Input Voltage	5-16 VDC
Power connector	plug replaceable, USB, female (std.)
Power Consumption (typ.)	600mW
Indicators	Power, signal, link, optical power
Temperature Range, operating	-25° C to +55°C
Humidity Range	0 to 95%RH, non-condensing

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