



CTDI Products: End-to-End Solutions

EdgeVideo™ Return Path Receiver

CTDI **Return Path Receivers** are an integral part of two-way RF access networks, converting return path optical signals into RF signals at the headend or remote hubs. Four independent receivers are packaged in a compact 1RU enclosure, serving 256 MicroNode™ RFoG ONUs in a 1RU 19-inch rack-mounted unit. The CTDI low-noise receiver design improves noise performance by as much as 5dB or more over typical return receivers, critical for DOCSIS 3.0 channel bonding performance.

CTDI offers three versions of the Return Path Receiver. The EVRR and EVRRL series receivers are optimized for applications with low optical input at the receiver. The EVRR series provides higher RF output for larger combining networks while the the EVRRL series provides lower RF output for smaller combining networks. The EVRRL410 series offers ultra low noise performance over a wide dynamic range. The EVRRC series receivers are optimized for applications with high input optical power at the receiver.

Two configurations of CTDI Return Path Receivers are available to fit the cabling requirements of various installations. Models have either front or rear RF ports. All receivers are temperature-hardened, allowing installation in any network environment including outside plant sites where temperatures are not controlled. SNMP management along with front panel controls complement the features that optimize the CTDI Return Path Receiver for headend and remote installations.

Features and Benefits

- Supports greater than 32 optical splits for increased economic efficiencies (optical budget dependent)
- Low gain version eliminates need for attenuators
- Compact size: 19" rack mounted, 1 RU form factor
- Flexible management: Front-panel & remote SNMP controls
- Temperature-hardened for outside plant environments
- Test/monitor points for each RF output
- Compatible with industry standard BPON, GPON and EPON systems
- Compatible with CTDI MicroNode™ RFoG ONUs
- -48VDC power, redundant A/B inputs



CTDI Product Sales ~ 866-953-9030 ~ www.CTDI.com



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Specifications

Physical

- 1RU 19" Rack Mounting
- 19.0"W x 12"D x 1.72"H
48.3cm W x 30.5cm D x 4.4cm H
- Weight: 9 lbs / 4.1 kgs

Optical Ports

- SC/APC Connectors
- Wavelength: 1200-1620nm
- Optical input range:
 - EVRR & EVRRL series: -13dBm to -27dBm
 - EVRRC series: 0 to -10 dBm

RF Ports

- Female "F" type connectors
- RF Output Bandwidth: 5MHz to 100MHz
- Flatness (peak to valley): ±0.75dB
- RF output power
 - EVRR series: +30dBmV/Ch to +60dBmV/Ch (30% OMI, -20dBm receiver input)
 - EVRRL series: +5dBmV/Ch to +35dBmV/Ch (30% OMI, -20dBm receiver input)
 - EVRRC series: +15dBmV/Ch to +45dBmV/Ch (15% OMI, -5dBm receiver input)
- Tilt over 5-100MHz: 1dB
- RF Gain Adjustment: 0dB to 30dB settable in 1dB increments
- RF Test Point/Monitor: -20dB ±0.5dB from RF output power
- Return Loss (min): 16dB

Performance

- Equivalent Input Noise Current (EINC):
 - EVRR & EVRRL400 series: 4pA/Hz
 - EVRRL410 series: 1.5pA/Hz
 - EVRRC series: 5.5pA/Hz
- NPR/Dynamic Range:
 - EVRR & EVRRL400 series: 30/10dB @ -20dBm into receiver
 - EVRRL410 series: 30/15dB @ -20dBm into receiver
 - EVRRC series: 40/13dB @ -5dBm into receiver

Indicators and Alarms

- Power, Port Activity, Port Select
- Attenuator Display

Power and Environmental

- Operating Temperature: -40C to +65C
- Humidity: 5% -95%, non-condensing
- Dual feed, redundant input power support
- Power input voltage: -48VDC
- Power consumption:
 - EVRR series: 12W/receiver module, 48W max
 - EVRRC & EVRRL series: 9W/receiver module, 36W max

Regulatory

- FCC Part 15, Class B
- CISPR 22 Level B
- UL 60950 3rd edition
- TUV
- CE Mark
- RoHS

Ordering information

Part #	Description
EVRR0401	4-Input Return Path Receiver, front RF output, high RF power
EVRR0402	4-Input Return Path Receiver, rear RF output, high RF power
EVRRC401	4-input Return Path Receiver, front RF output, high input power
EVRRC402	4-input Return Path Receiver, rear RF output, high input power
EVRRL401	4-input Return Path Receiver, front RF output
EVRRL402	4-input Return Path Receiver, rear RF output
EVRRL411	4-Input Return Path Receiver, low noise, front RF output
EVRRL412	4-Input Return Path receiver, low noise, rear RF output

Power

The following CTDI power supplies may be used to operate the Return Path Receiver products. See CTDI "Power Options" datasheet for additional details.

Part #	Description
PSB1001	-48VDC, 50W UPS with 20AH battery
PSAC001	-48VDC, 60W brick
PSAC002	-48VDC, 125W rack mounted power supply
PSBRCK1B	-48VDC, 500W, 10A rack-mounted power with UPS option
PSBRCK10	-48VDC, 500W, 10A rack-mounted power supply
PSBRCK2B	-48VDC, 1000W, 20A rack-mounted power with UPS option
PSBRCK20	-48VDC, 1000W, 20A rack-mounted power supply

Headend and Hub Application

