

ViaLiteHD® – GPS Link

GNSS/GPS RF over Fiber Link

- **Transmission distance >50 km**
- **Supported Constellations include:**
 - **GPS**
 - **GALILEO**
 - **GLONASS**
 - **BEIDOU**
- **Wide range of gain options**
- **GPS antenna monitoring & alarm**
- **5 year warranty**



ViaLiteHD GPS fiber optic links have been designed to transport all common low signal level GPS type signals; connecting the antenna to distant equipment such as Time Servers, Repeaters, DAS systems, Tetra and Cellular base stations – for both live and test environments. Can be configured as single point-to-point, fully redundant, as well as point-to-multipoint receive points via optical splitting.

The transmitter link powers and monitors the GPS antenna. If the antenna fails, it passes the fault to the internal equipment, allowing an antenna fault to be displayed internally. The receiver has an antenna spoofing output which allows customer equipment to believe it has a hard wired antenna attached. This spoofing is switched off if the receiver has any major alarm, which will in turn force an alarm in the attached customer equipment.

Options include:

- 50 Ω electrical connectors: SMA and MCX
- Optical connectors: SC/APC, LC/APC, FC/APC and E2000/APC
- Built-in antenna powering
- Antenna monitoring and alarm function as standard
- Blind mate connectivity (SC/APC and SMA)
- Antenna spoofing output from receiver.

Applications

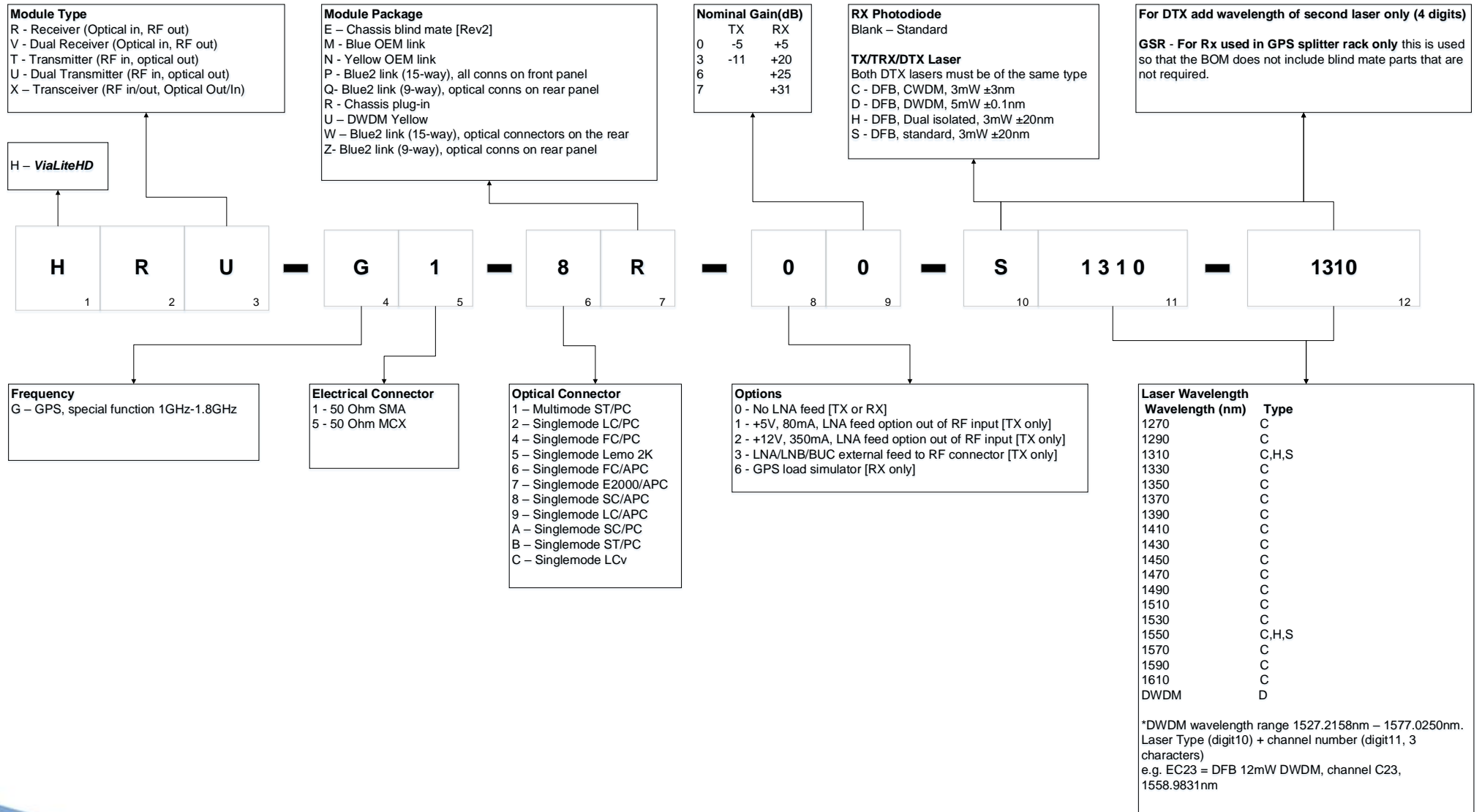
GPS/Timing input for:

- Network time servers
- DAS and remote cellular base stations
- GPS test systems
- Tetra base stations.

Re-radiating for:

- Aviation hangers
- Government
- Manufacturing facilities.

Product configurator



Popular products

HRT-G1-8R-10-S1310

ViaLiteHD RF Link, Transmitter (E/O), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, Internal +5V @ 80 mA LNA feed to RF connector, -5 dB RF Gain, DFB Laser, Wavelength 1310 +/- 20 nm.

HRU-G1-9E-10-S1310-1310

ViaLiteHD RF Link, Dual Transmitter (2 x E/O), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode LC/APC, Rack plug-in blind mate (Rev2) module, with LC/APC to SC/APC adaptors, Internal +5 V @ 80 mA LNA feed to RF connector, -5 dB RF Gain, DFB Laser, Wavelength 1310 +/- 20 nm, Wavelength 1310 +/- 20 nm.

HRR-G1-8R-66

ViaLiteHD RF Link, Receiver (O/E), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, GPS & LF Load Simulator (Rx modules only), 25 dB RF Gain.

HRV-G1-9E-66

ViaLiteHD RF Link, Dual Receiver (2 x O/E), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode LC/APC, Rack plug-in blind mate (Rev2) module, with LC/APC to SC/APC adaptors, GPS & LF Load Simulator (Rx modules only), 25 dB RF Gain.

HRR-G1-8N-00

ViaLiteHD RF Link, Receiver (O/E), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode SC/APC, Yellow OEM link, No LNA Feed, 5 dB RF Gain.

HRU-G1-8P-10-S1310-S1310

ViaLiteHD RF Link, Dual Transmitter (2 x E/O), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Singlemode SC/APC, Blue2 link (15-way), all conns on front panel, Internal +5 V @ 80 mA LNA feed to RF connector, -5 dB RF Gain, DFB Laser, Wavelength 1310 +/- 20 nm, Wavelength 1310 +/- 20 nm.

RF parameters for popular link gains

Link	Tx Gain	Rx Gain	Link Noise Figure (Default Tx Gain)	Link Noise Figure (Max Tx Gain)	Link P1dB (Default Tx Gain)	Link P1dB (Max Tx Gain)
HRT-G1-xx-x0-S1310 & HRR-G1-xx-x0 (Unity Gain Link)	-5 dB (+5/-10 dB)	+5 dB (+5/-10 dB)	15 dB	10 dB	-7 dBm	-12 dBm
HRT-G1-xx-x0-S1310 & HRR-G1-xx-x6 (+20 dB Gain Link)	-5 dB (+11.5/-4 dB)	+25 dB (+5/-10.5 dB)	15 dB	10 dB	-7 dBm	-12 dBm
HRT-G1-xx-x0-S1310 & HRR-G1-xx-x3 (+15 dB Gain Link)	-5 dB (+5/-10.5 dB)	+20 dB (+7.5/-8 dB)	15 dB	10 dB	-7 dBm	-12 dBm

Technical specification

	Units	Note	GPS 1000-1800 MHz
Transmitter			HRT-G1-6R-10-S1310 (example)
Receiver			HRR-G1-6R-00 (example)
Frequency range	MHz		1000-1800
Impedance, RF connector			50Ω SMA
VSWR	(typ)		1:1.5
Link gain (TX gain / RX gain), default	dB (nom)	a	0 (-5 / +5)
TX gain adjustment range	dB (typ)		15.5
TX gain adjustment from default gain	dB (typ)		-10.5 to +5.0
RX gain adjustment range	dB (typ)		15.5
RX gain adjustment from default gain	dB (typ)		-5.5 to +10.0
Gain adjustment step size Rx and TX	dB (typ)		0.5
Flatness, fullband	dB (typ)	a h	±0.3
Flatness, fullband	dB (max)		±0.75
Gain stability over temperature, Link	dB (max)	a	±3
Gain stability	dB (typ)		0.25 @ 24 hrs
P1dB _{input}	dBm (typ)	a k	-7
P1dB _{input} , at minimum TX gain	dBm (typ)	a k	0
IP3 _{input} , at default gain	dBm (typ)	a k	5
Noise figure, at default gain	dB (typ)	a k	15
Noise figure, at maximum TX gain	dB (typ)	a k	11
Noise figure, 5dB optical loss	dB (typ)	c k	20
SFDR	dB/Hz ^{2/3} (typ)	a	109
Test port gain, transmitter	dB (typ)	l	No test port
Test port gain, receiver	dB (typ)	l	No test port
No damage input power	dBm		13
LNA power			Internal +5V @ 80 mA
Power Tx	W (typ)		1.9
Power Rx	W (typ)		1.3
Optical connector			FC/APC
Optical wavelength	nm		1310 ± 20
Laser type			DFB - Distributed feedback laser
Optical power output	dBm (typ)		4.5
Summary alarm output			Open drain alarm: OPEN: Alarm CURRENT SINK: okay
Operating temperature range			-10 °C to +50 °C
Storage temperature range			-40 °C to +70 °C
Humidity	RH		95% non-condensing humidity



- a Nominal input power @ 0 dB optical loss
 - b Nominal input power @ 1 dB optical loss
 - c Nominal output power @ 5 dB optical loss
 - h Default gain setting
 - k Measured @ 1.2 GHz
 - l Relative to rear port @ 1.2 GHz
- All tests @ 25 °C after 15 minutes warm up