

## 50 Ohm CWDM L-Band HTS

- Up to 50 km
- L-Band HTS (700-2450 MHz)
- Up to 16 channels in a single fiber
- 65 dB dynamic range for 500 MHz traffic
- 13/18 V and 22 KHz tone LNB option
- Blind mate option
- Standard 5-year warranty



**ViaLiteHD** L-Band HTS CWDM fiber optic links use coarse wavelength division multiplexer (CWDM) lasers and have been designed for the satellite industry to transport RF signals between antennas and control rooms, where reducing fiber count is key. Due to the very wide dynamic range, the same link can be used in both the transmit and receive paths, over the same fiber. This dynamic range allows High Throughput Satellite (HTS) transponder bandwidths of 500, 800 or even 1500 MHz to be transported, as well as multiple standard 36 MHz transponders.

The chassis cards are available with the **ViaLiteHD** blind mate option, which allows all cables to be connected at the rear of the chassis when installed. It also allows any configuration changes to be completed without disturbing the connections and very fast changeover of cards; enabling five 9s reliability.

Options include:

- 50 Ω electrical connectors: SMA and MCX
- Optical connectors: SC/APC, LC/APC, FC/APC and E2000/APC
- Test ports on Tx and Rx modules
- Built-in BiasT for LNB powering through RF connection
- LNB control circuit with 13/18 VDC and 22 kHz tone
- Blind mate connectivity (SC/APC and SMA)
- Serial digital channel to 20 kb/s on same optical path

### Applications

Fiber count reduction  
Fixed satcom earth stations and teleports  
Broadcast facilities  
Mobile SNG, military and flyaways  
VSAT hubs (IP gateways)  
Marine antennas  
Telemetry, Tracking and Command (TT&C)  
Oil and gas platforms  
Television Receive-Only (TVRO)

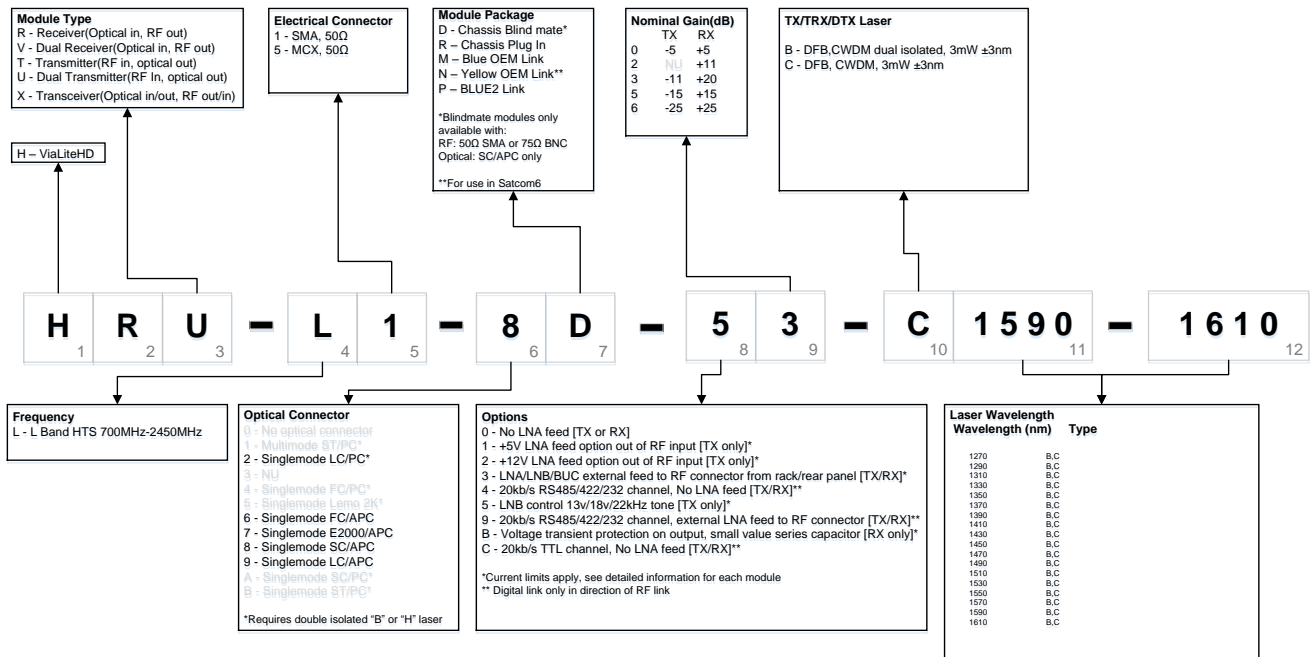
### Formats

3U Chassis  
1U Chassis  
Blue OEM  
Yellow OEM  
Outdoor enclosures

### Related Products

50 km L-Band HTS  
75 Ohm CWDM L-Band HTS  
HTS 100 km+ systems  
DWDM links

## Product Configurator



## Popular products

HRT-L1-8R-33-C1610

L-Band 700-2450 MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, Wavelength 1610 nm

HRR-L1-8R-03

L-Band 700-2450 MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module

## RF parameters for popular link gains

Link	Tx Gain	Rx Gain	Link Noise Figure (Default Tx Gain)	Link Noise Figure (Max Tx Gain)	Link P1 dB (Default Tx Gain)	Link P1 dB (Max Tx Gain)
HRT-L1-xx-x3-C1610 & HRR-L1-xx-x3 (9dB Gain Link)	-11 dB	+20 dB	20 dB	12.5 dB	-1 dBm	-8.5 dBm
HRT-L1-xx-x5-C1510 & HRR-L1-xx-x5 (Unity Gain Link)	-15 dB	+15 dB	24 dB	12.5 dB	+3 dBm	-8.5 dBm
HRT-L1-xx-x6-C1530 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25 dB	+25 dB	34 dB	29 dB	+13 dBm	+9 dBm

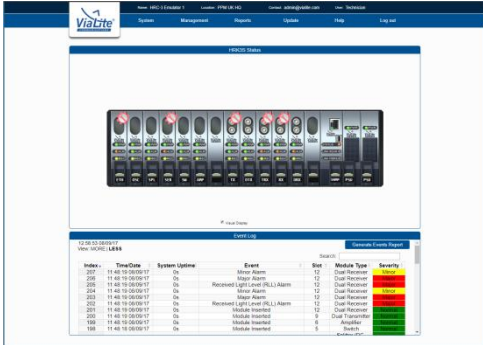
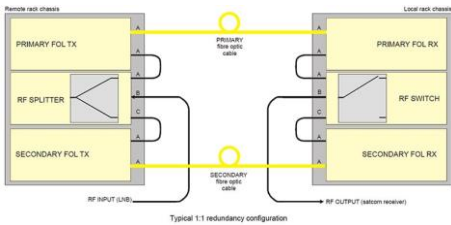


## Technical specification

	Units	Note	L-Band HTS 50 ohms
Transmitter (Tx)			HRT-L1-8R-33-S1310 (example)
Receiver (Rx)			HRR-L1-8R-03 (example)
Frequency range	MHz		700-2450
Impedance, RF connector			50 Ω SMA, blind mate
VSWR	(typ)		1:1.5
Transmitter (Tx) gain, default	dB (typ)	<sup>a</sup>	-11 +/- 0.5
Receiver (Rx) gain, default	dB (typ)	<sup>a</sup>	+20 +/- 0.5
Link gain (Tx & Rx), default	dB (typ)	<sup>a</sup>	+9 +/- 1.5
Tx gain adjustment range	dB (typ)		15.5
Tx gain adjustment from default gain	dB (min)	<sup>d</sup>	+/- 3
Rx gain adjustment range	dB (typ)		15.5
Rx gain adjustment from default gain	dB (min)	<sup>d</sup>	+/- 3
Gain adjustment step size Rx and Tx	dB (typ)		0.5
Flatness, fullband	dB (max)	<sup>a h</sup>	±1.2
Flatness, fullband	dB (typ)	<sup>a h</sup>	±0.5
Flatness, 36 MHz	dB (typ)	<sup>a</sup>	±0.2
Gain stability over temperature range	dB (max)	<sup>a</sup>	±3
Gain stability	dB (typ)		0.25 @ 24 hrs
Nominal input signal / output signal	dBm		-20 / -20
IMD @ nominal output power	dB (typ)	<sup>c</sup>	-61
CNR @ nominal input power, 36 MHz	dB (typ)	<sup>b</sup>	57
P1dB <sub>input</sub>	dBm (typ)	<sup>a k</sup>	-1
P1dB <sub>input</sub> , at minimum Tx gain	dBm (typ)	<sup>a k</sup>	0.5
IP3 <sub>input</sub> , at default gain	dBm (typ)	<sup>a k</sup>	11
Noise figure, at default gain	dB (typ)	<sup>a k</sup>	20
Noise figure, at maximum Tx gain	dB (typ)	<sup>a k</sup>	13
Noise figure, 5 dB optical loss	dB (typ)	<sup>c k</sup>	26
SFDR	dB/Hz <sup>2/3</sup> (typ)	<sup>a</sup>	110
Test port gain, transmitter	dB (typ)	<sup>l</sup>	-20
Test port gain, receiver	dB (typ)	<sup>l</sup>	-20
Test port flatness	dB (typ)	<sup>l</sup>	±1
Maximum input power without damage	dBm (min)		15
LNB power			External 0-28 V @ 350 mA from chassis power connector
Power consumption Tx	W (typ)		1.9
Power consumption Rx	W (typ)		1.3
Optical connector			SC/APC, blind mate
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		<sup>e</sup>	-20 °C to +60 °C
Storage temperature range			-40 °C to +70 °C
Humidity	RH		95% non-condensing humidity



- <sup>a</sup> Nominal input power @ 0 dB optical loss
- <sup>b</sup> Nominal input power @ 1 dB optical loss
- <sup>c</sup> Nominal output power @ 5 dB optical loss
- <sup>h</sup> Default gain setting
- <sup>k</sup> Measured @ 1.2 GHz
- <sup>l</sup> Relative to rear port @ 1.2 GHz
- All tests @ 25 °C after 15 minutes warm up
- <sup>d</sup> Guaranteed minimum adjustment from default gain
- <sup>e</sup> Datasheet parameters based on temperature range -10°C to +50°C, refer to user manual for performance parameters @ -20 °C and +60 °C

## Accessories

Type	Key Features
<p><b>SNMP/Web Browser card</b></p> 	<ul style="list-style-type: none"> <li>• Easy to use graphical user interface (GUI)</li> <li>• Real time monitoring of card performance</li> <li>• Alarm monitoring and event logging</li> <li>• Control of gain adjustment</li> <li>• Compatible with all <b>ViaLiteHD</b> rack chassis and modules</li> <li>• Easy integration with network management systems (NMS) using management information base (MIB) tables</li> <li>• Actively manage redundancy switching</li> <li>• New RF cards can be automatically reprogrammed with the previous card parameters</li> <li>• Remote SNMP to local SNMP connection via optical fiber</li> <li>• Provides remote LAN 10/100 Ethernet link</li> </ul>
<p><b>Dual Redundancy</b></p>  <p>Typical 1:1 redundancy configuration</p>	<ul style="list-style-type: none"> <li>• 1:1 redundancy for L-Band</li> <li>• Maximises link up-time</li> <li>• Can be used to backup copper coax</li> <li>• Manual and automatic control via SNMP</li> <li>• Flexible configuration options</li> <li>• Other options available</li> </ul>
<p><b>Rack Chassis</b></p> 	<ul style="list-style-type: none"> <li>• 3U accepts up to 13 RF or Support cards, plus an SNMP card and dual power supplies</li> <li>• A 1U chassis accepts up to 3 RF or Support cards or 2 cards and an SNMP card (with dual power supplies)</li> <li>• Up to 26 channels per 3U chassis (using dual RF cards) – reducing the amount of rack space required</li> <li>• Blind mate option</li> <li>• All modules hot-swappable and auto-reconfiguration with SNMP option</li> <li>• On-card LNB and BUC power options</li> <li>• Power fed through rear chassis connector to card Bias Tees</li> <li>• System can be monitored and controlled remotely via SNMP using a web browser</li> </ul>
<p><b>Outdoor Enclosures</b></p> 	<ul style="list-style-type: none"> <li>• CE approved and EMC compatible</li> <li>• IP rated and NEMA approved</li> <li>• Plug and play format</li> <li>• Suitable for harsh environments</li> <li>• All modules hot swappable</li> <li>• Dual redundant power options</li> <li>• Interface for monitor and control (M&amp;C) systems</li> </ul>