

### 50Ω DWDM Medium Power L-Band HTS

- *L-Band HTS (700-2450 MHz)*
- *Up to 500km systems available*
- *1 to 96 channels per fiber*
- *Ideal for Ka-Band rain fade diversity*
- *5mW Laser*
- *Standard 5-year warranty*



**ViaLiteHD** DWDM L-Band HTS RF over fiber links use dense wavelength division multiplexer (DWDM) lasers and have been designed for the satellite industry to transport RF signals over long distances, enabling Ka-Band diversity or remote location of antennas up to 500 kms away. Due to the very wide dynamic range, the same link can be used in both the transmit or receive paths. This dynamic range allows High Throughput Satellite (HTS) transponder bandwidths of 500 MHz, 800 MHz or even 1500 MHz to be transported, even over long distances. A full suite of DWDM accessories is available as well as system design, commissioning expertise and system setup.

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 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 & 22 kHz tone
- Blind mate connectivity (SC/APC and SMA)

#### Applications

- Ka-Band diversity rain-fade application
- Fixed satcom earth stations and teleports
- Gateway reduction within a satellite footprint
- Government installations
- Remote monitoring stations
- Leased fiber reduction

#### Formats

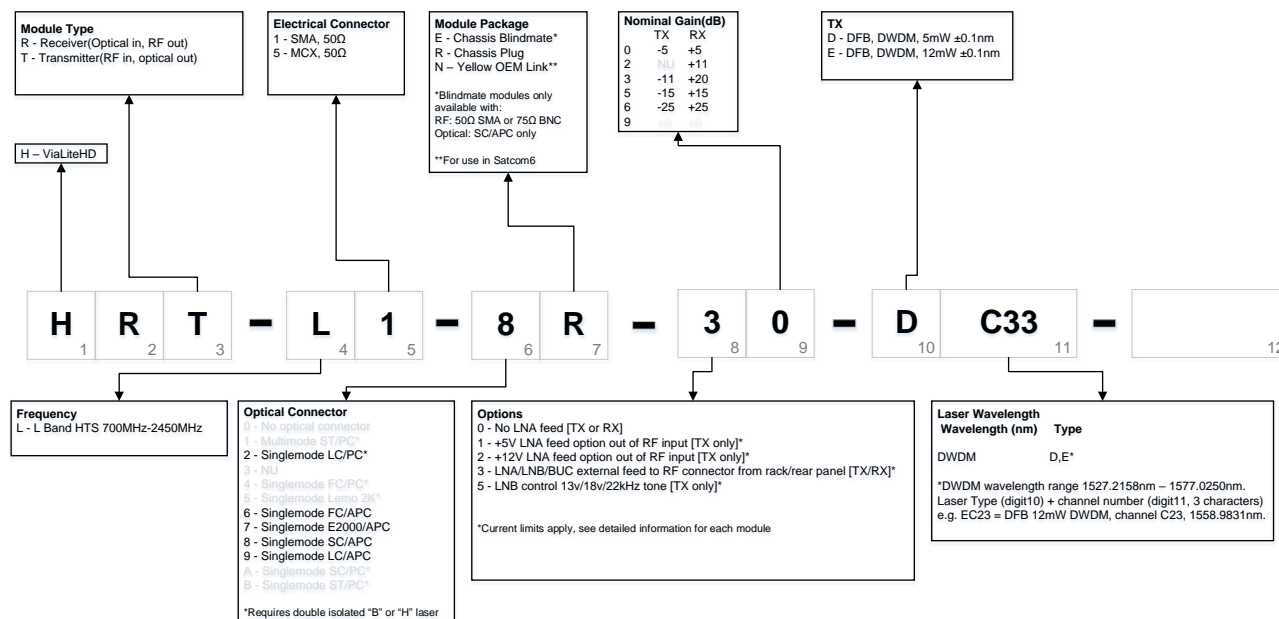
3U Chassis  
1U Chassis  
Yellow OEM  
Outdoor enclosures

#### Related Products

50km 1550 nm L-Band HTS  
75 Ohm DWDM L-Band HTS  
100 km+ systems

# 50Ω DWDM Medium Power L-Band

## Product configurator



## Popular products

HRT-L1-xx-x0-DC33

L-Band 700-2450 MHz Transmitter, Singlemode SC/APC, Rack Plug-in Module, LNA/LNB or BUC DC Voltage Connector

HRR-L1-8R-03

L-Band 700-2450 MHz Receiver, 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 P1dB (Default Tx Gain)	Link P1dB (Max Tx Gain)
HRT-L1-xx-x0-DC33 & HRR-L1-xx-x3 (Low noise 15dB Gain Link)	-5 dB	+20 dB	14 dB	9 dB	-1.5 dBm	-6.5 dBm
HRT-L1-xx-x5-DC33 & HRR-L1-xx-x5 (Unity Gain Link)	-15 dB	+15 dB	24 dB	12.5 dB	+8.5 dBm	-3 dBm
HRT-L1-xx-x6-DC33 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25 dB	+25 dB	34 dB	29 dB	+18.5 dBm	+14.5 dBm

# 50Ω DWDM Medium Power L-Band

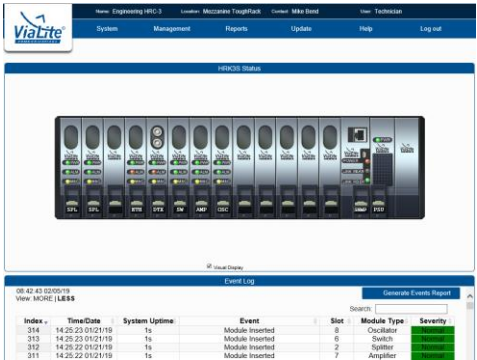
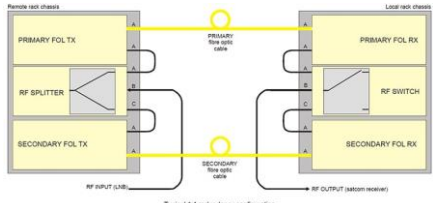


## Technical specification

	Units		50 Ohm DWDM L-Band HTS
Transmitter			HRT-L1-8R-30-DC33 (example)
Receiver			HRR-L1-8R-03 (example)
Frequency range	MHz		700-2450
Impedance, RF connector			50 Ω SMA, blind mate
VSWR	(typ)		1:1.5
Link gain (Tx gain / Rx gain), default	dB (nom)	a	15 (-5 / +20)
Tx gain adjustment range	dB (typ)		15.5
Tx gain adjustment from default gain	dB (typ)	d	+/-3
Rx gain adjustment range	dB (typ)		15.5
Rx gain adjustment from default gain	dB (typ)	d	+/-3
Gain adjustment step size Rx and Tx	dB (typ)		0.5
Flatness, fullband, L-Band	dB (max)	a h	±1.5
Flatness, fullband, L-Band	dB (typ)	a h	±0.5
Flatness, 36MHz, L-Band	dB (typ)	a	±0.2
Gain stability over temperature range	dB (max)	a	±1
Gain stability	dB (typ)		0.25 @ 24 hrs
Nominal input signal / output signal	dBm		-20 / -20
IMD @ nominal output power	dB (typ)	c	-69
CNR @ nominal input power, 36MHz	dB (typ)	b	60
P1dB <sub>input</sub>	dBm (typ)	a k	-1.5
P1dB <sub>input</sub> , at maximum Tx gain	dBm (typ)	a k	-6.5
IP3 <sub>input</sub> , at default gain	dBm (typ)	a k	+11.5
Noise figure, at default gain	dB (typ)	a k	14
Noise figure, at maximum Tx gain	dB (typ)	a k	9
Noise figure, 5dB optical loss	dB (typ)	c k	19.5
SFDR	dB/Hz <sup>2/3</sup> (typ)	a	114
Test port gain, transmitter	dB (typ)	l	-20
Test port gain, receiver	dB (typ)	l	-20
Test port flatness	dB (typ)	l	±1
Maximum input power without damage	dBm		15
LNB power			Internal 13/18/22 V @ 700 mA with switchable tone
Power Consumption Tx	W (typ)		3.5, excluding LNA power
Power Consumption Rx	W (typ)		1.3
Optical connector			SC/APC, blindmate
Optical wavelength	nm		1550.12 ± 0.16
Laser type			DFB (Distributed feedback), thermo-electric cooled laser
Optical power output	dBm (typ)		7
Summary alarm output			Open drain alarm: OPEN: Alarm, CURRENT SINK: okay
Operating temperature range		e	-20 °C to +60 °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
- e Datasheet parameters based on temperature range -10 °C to +50 °C, refer to user manual for performance parameters @ -20 °C and +60 °C
- h Default gain setting
- k Measured @ 1.2 GHz
- l Relative to rear port @ 1.2 GHz
- d Guaranteed minimum adjustment from default gain

## Accessories

Type	Key Features																																			
<p><b>SNMP/Web Browser Card</b></p>  <p>The screenshot shows the ViaLite web management interface. At the top, there are navigation tabs: System, Management, Reports, Update, Help, and Log out. Below this is a 'HW/SW Status' section with a visual display of a rack chassis. At the bottom, there is a 'Card Log' table with the following data:</p> <table border="1"> <thead> <tr> <th>Index</th> <th>Time/Date</th> <th>System Uptime</th> <th>Event</th> <th>Slot</th> <th>Module Type</th> <th>Severity</th> </tr> </thead> <tbody> <tr> <td>314</td> <td>14.25.23 01:21:19</td> <td>1s</td> <td>Module Inserted</td> <td>6</td> <td>Switch</td> <td>2</td> </tr> <tr> <td>313</td> <td>14.25.23 01:21:19</td> <td>1s</td> <td>Module Inserted</td> <td>6</td> <td>Switch</td> <td>2</td> </tr> <tr> <td>312</td> <td>14.25.22 01:21:19</td> <td>1s</td> <td>Module Inserted</td> <td>2</td> <td>Splitter</td> <td>2</td> </tr> <tr> <td>311</td> <td>14.25.22 01:21:19</td> <td>1s</td> <td>Module Inserted</td> <td>7</td> <td>Amplifier</td> <td>2</td> </tr> </tbody> </table>	Index	Time/Date	System Uptime	Event	Slot	Module Type	Severity	314	14.25.23 01:21:19	1s	Module Inserted	6	Switch	2	313	14.25.23 01:21:19	1s	Module Inserted	6	Switch	2	312	14.25.22 01:21:19	1s	Module Inserted	2	Splitter	2	311	14.25.22 01:21:19	1s	Module Inserted	7	Amplifier	2	<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>
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<p><b>Dual Redundancy</b></p>  <p>The diagram illustrates a typical 1:1 redundancy configuration. It shows two 'Remote rack chassis' (Primary and Secondary) connected to a 'Local rack chassis'. The Primary rack chassis contains a PRIMARY FOL TX, an RF SPLITTER, and a SECONDARY FOL TX. The Secondary rack chassis contains a SECONDARY FOL TX. The Local rack chassis contains a PRIMARY FOL RX, an RF SWITCH, and a SECONDARY FOL RX. Primary and secondary optical links connect the Primary and Secondary FOL TX modules to the Primary and Secondary FOL RX modules, respectively. The RF SPLITTER and RF SWITCH are also connected to these modules.</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>  <p>The photograph shows a rack chassis with multiple modules installed. Below it is a single module, likely an RF or support card, showing its front panel with various connectors and indicators.</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>DWDM Systems</b></p>  <p>The photograph shows a tall rack chassis filled with various DWDM system components, including multiplexers, EDFAs, and delay lines.</p>	<ul style="list-style-type: none"> <li>• DWDM multiplexers</li> <li>• EDFAs</li> <li>• Delay lines</li> <li>• Optical switches</li> <li>• Dispersion Compensation</li> <li>• System design and configuration</li> <li>• Remote link monitoring</li> </ul>																																			