50 Ohm CWDM L-Band HTS

- **Up to 50km**
- **L-Band HTS (700-2450MHz)**
- **Up to 16 channels in a single fiber**
- **65dB dynamic range for 500MHz traffic**
- **13/18V and 22KHz 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 500MHz, 800MHz or even 1500MHz to be transported, as well as multiple standard 36MHz 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:

- 50Ω 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 13/18VDC and 22kHz tone
- Blind mate connectivity (SC/APC and SMA)
- Serial digital channel to 20kb/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**

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

Due to our policy of continuing product development, these specifications are subject to change and improvement without notice.
Product Configurator

Module Type
- R: Receiver/Optical in, RF out
- V: Dual Receiver/Forwarded In, RF out
- T: Transmitter/RF in, optical out
- U: Dual Transmitter/RF in, optical out
- K: Transmitter/Forwarded Optical in, RF out

Electrical Connector
- SMA, 50Ω
- MCX, 50Ω

Module Package
- D: Chassis blind mate
- F: Chassis Plug In
- I: Blue OEM Links
- Y: Yellow OEM Link
- N: -BLUE link

Nominal Gain (dB)
- Tx: -5 ≤ +5
- Rx: -11 ≤ +20
- RF: -15 ≤ +15
- LNB: -25 ≤ +25

“Tx” for use in transmit

Frequency
- L: L Band HTS 730MHz-2450MHz

Optical Connector
- Singlemode LC/PC
- Singlemode SC/PC
- Singlemode FC/PC
- Singlemode ST/PC
- Singlemode FC/APC
- Singlemode SC/APC
- Singlemode LC/APC

Options
- 1: No LNA feed [TX or RX]
- 2: +5V LNA feed option out of RF input [TX only]
- 3: +15V LNA feed option out of RF input [TX only]
- 5: UltraLNB/BUC external feed to RF connector from rack rear panel [TX/RX]
- 6: 20mA MAX 485/422/232 channel, No LNA feed [TX/RX] only

Notes:
- Requires double isolated 8’ or 14’ laser
- 100W in BiasT, 50 Ohm SMA and SC/APC blind mate connectors

Laser Wavelength
- 1310nm
- 1330nm
- 1390nm
- 1410nm
- 1450nm
- 1470nm
- 1490nm
- 1510nm
- 1530nm
- 1560nm
- 1590nm
- 1610nm

Popular products

HRT-L1-6R-53-C1610
L-Band HTS (700-2450MHz) chassis plug in transmitter with built-in LNB power, 50 ohm SMA and FC/APC connectors

HRU-L1-8D-33-C1530-1550
L-Band HTS (700-2450MHz) dual chassis plug-in transmitter with built-in BiasT, 50 ohm SMA and SC/APC blind mate connectors

HRR-L1-8D-03
L-Band HTS (700-2450MHz) chassis plug-in receiver with 50 ohm SMA and SC/APC blind mate connectors

HRV-L1-8D-03
L-Band HTS (700-2450MHz) dual chassis plug-in receiver with 50 ohm SMA and SC/APC blind mate connectors

HRXL1-6R-33-C1510
L-Band HTS (700-2450MHz) chassis plug-in transceiver with 50 ohm SMA and FC/APC connectors

HRR-L1-8N-03
L-Band HTS (700-2450MHz) Yellow OEM receiver with 50 ohm SMA and SC/APC connectors

RF parameters for popular link gains

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<th>Link</th>
<th>Tx Gain (dB)</th>
<th>Rx Gain (dB)</th>
<th>Link Noise Figure (Default Tx Gain)</th>
<th>Link Noise Figure (Max Tx Gain)</th>
<th>Link P1dB (Default Tx Gain)</th>
<th>Link P1dB (Max Tx Gain)</th>
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<tr>
<td>HRT-L1-xx-x3-C1610 &amp; HRR-L1-xx-x3 (9dB Gain Link)</td>
<td>-11dB (+7.5/-8dB)</td>
<td>+20dB (+7.5/-8dB)</td>
<td>20dB</td>
<td>12.5dB</td>
<td>-1dBm</td>
<td>-8.5dBm</td>
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<tr>
<td>HRT-L1-xx-x5-C1510 &amp; HRR-L1-xx-x5 (Unity Gain Link)</td>
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<td>+15dB (+7.5/-8dB)</td>
<td>24dB</td>
<td>12.5dB</td>
<td>+3dBm</td>
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<tr>
<td>HRT-L1-xx-x6-C1530 &amp; HRR-L1-xx-x6 (High P1dB Unity Gain Link)</td>
<td>-25dB (+5/-10.5dB)</td>
<td>+25dB (+7.5/-8dB)</td>
<td>34dB</td>
<td>29dB</td>
<td>+13dBm</td>
<td>+9dBm</td>
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## Technical specification

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<th>Note</th>
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<tr>
<td>Receiver</td>
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<td>MHz</td>
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<tr>
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<td>VSWR</td>
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<td>Tx gain adjustment range</td>
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<td>dB (typ)</td>
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<tr>
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<td>Gain stability over temperature range</td>
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<tr>
<td>Gain stability</td>
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<td>Nominal input signal / output signal</td>
<td>dBm</td>
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<td>IMD @ nominal output power</td>
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<td>CNR @ nominal input power, 36MHz</td>
<td>dB (typ)</td>
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<td>P1dBinput</td>
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<td>P1dBinput, at minimum Tx gain</td>
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<td>Noise figure, at default gain</td>
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<td>Noise figure, 5dB optical loss</td>
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<td>Open drain alarm: OPEN: Alarm, CURRENT SINK: okay</td>
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<td>-10°C to +50°C</td>
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<tr>
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<td>-40°C to +70°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>RH</td>
</tr>
</tbody>
</table>

* Nominal input power @ 0dB optical loss
* Nominal input power @ 1dB optical loss
* Nominal output power @ 5dB optical loss
* Default gain setting
* Measured @ 1.2GHz
* Relative to rear port @1.2GHz
* All tests @ 25°C after 15 minutes warm up
## Accessories

<table>
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<th>Type</th>
<th>Key Features</th>
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</table>
| SNMP/Web Browser card         | - Easy to use graphical user interface (GUI)  
- Real time monitoring of card performance  
- Alarm monitoring and event logging  
- Control of gain adjustment  
- Compatible with all ViaLiteHD rack chassis and modules  
- Easy integration with network management systems (NMS) using management information base (MIB) tables  
- Actively manage redundancy switching  
- New RF cards can be automatically reprogrammed with the previous card parameters  
- Remote SNMP to local SNMP connection via optical fiber  
- Provides remote LAN 10/100 Ethernet link                                                                                                                                                                                                 |
| Dual Redundancy               | - 1:1 redundancy for L-Band  
- Maximises link up-time  
- Can be used to backup copper coax  
- Manual and automatic control via SNMP  
- Flexible configuration options  
- Other options available                                                                                                                                                                                                 |
| Rack Chassis                  | - 3U accepts up to 13 RF or Support cards, plus an SNMP card and dual power supplies  
- A 1U chassis accepts up to 3 RF or Support cards or 2 cards and an SNMP card (with dual power supplies)  
- Up to 26 channels per 3U chassis (using dual RF cards) – reducing the amount of rack space required  
- Blind mate option  
- All modules hot-swappable and auto-reconfiguration with SNMP option  
- On-card LNB and BUC power options  
- Power fed through rear chassis connector to card Bias Tees  
- System can be monitored and controlled remotely via SNMP using a web browser                                                                                                                                                                                                 |
| Outdoor Enclosures            | - CE approved and EMC compatible  
- IP rated and NEMA approved  
- Plug and play format  
- Suitable for harsh environments  
- All modules hot swappable  
- Dual redundant power options  
- Interface for monitor and control (M&C) systems