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# *ViaLiteHD*® – L-Band HTS RF over Fiber Links

## 50Ω DWDM Medium Power L-Band HTS

- ***L-Band HTS (700-2450 MHz)***
- ***Up to 600 km systems available***
- ***1 to 96 channels per fiber***
- ***Ideal for Ka-Band rain fade diversity***
- ***5 mW 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 600 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

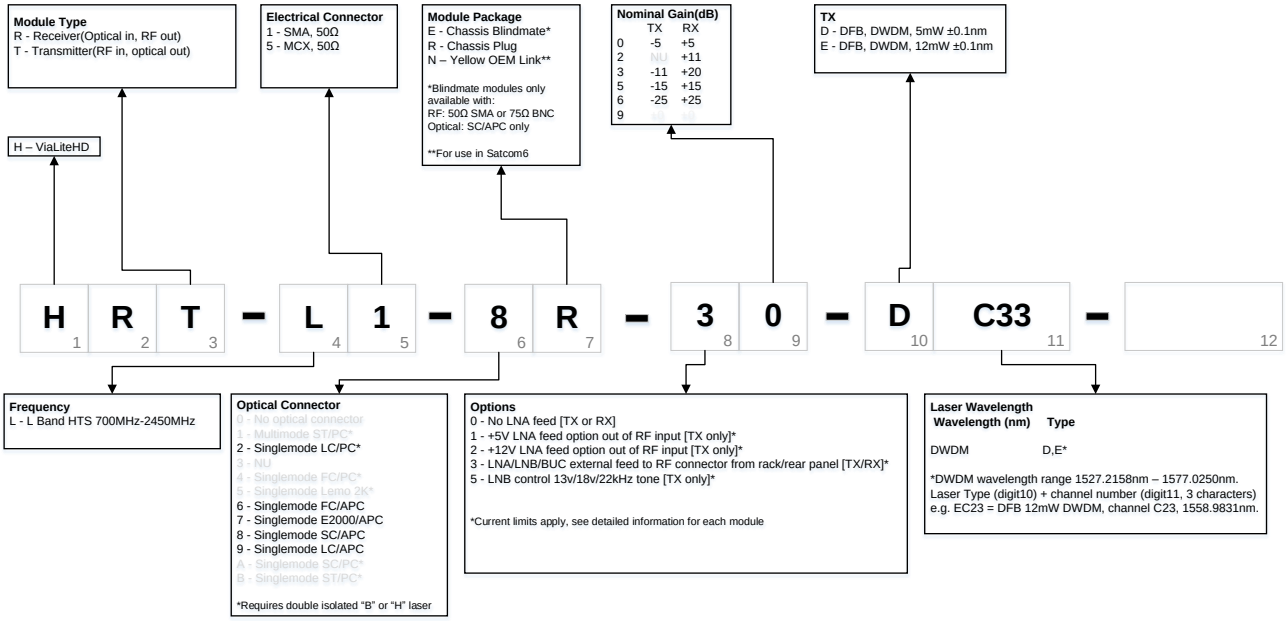
### Formats

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

## Product configurator




## Popular products

HRT-L1-8R-30-DC33
***ViaLiteHD*** RF Link, Transmitter (E/O), L Band 700-2450MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, LNA/LNB or BUC DC voltage feed to RF input or output conn' supplied from rear chassis SCSI conn' or OEM header conn', -5dB RF Gain, DFB 5mW DWDM, 10km+, ITU 100GHz grid, Channel C33, 1550.91nm.

HRR-L1-8R-03
***ViaLiteHD*** RF Link, Receiver (O/E), L Band 700-2450MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, No LNA Feed, 20dB RF Gain.

## 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

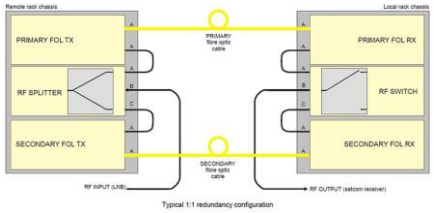
## Technical specification

| | 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 |
| $P1dB_{input}$ | dBm (typ) | a k | -1.5 |
| $P1dB_{input}$, at maximum Tx gain | dBm (typ) | a k | -6.5 |
| $IP3_{input}$, 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 | $dB/Hz^{⅔}$ (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

ViaLite® COMMUNICATIONS CE FC UK CA

## Accessories

| Type | Key Features |
|---|---|
| **SNMP/Web Browser Card**<br>  | • Easy to use graphical user interface (GUI)<br>• Real time monitoring of card performance<br>• Alarm monitoring and event logging<br>• Control of gain adjustment<br>• Compatible with all ***ViaLiteHD*** rack chassis and modules<br>• Easy integration with network management systems (NMS) using management information base (MIB) tables<br>• Actively manage redundancy switching<br>• New RF cards can be automatically reprogrammed with the previous card parameters<br>• Remote SNMP to local SNMP connection via optical fiber<br>• Provides remote LAN 10/100 Ethernet link |
| **Dual Redundancy**<br>  | • 1:1 redundancy for L-Band<br>• Maximises link up-time<br>• Can be used to backup copper coax<br>• Manual and automatic control via SNMP<br>• Flexible configuration options<br>• Other options available |
| **Rack Chassis**<br>  | • 3U accepts up to 13 RF or Support cards, plus an SNMP card and dual power supplies<br>• A 1U chassis accepts up to 3 RF or Support cards or 2 cards and an SNMP card (with dual power supplies)<br>• Up to 26 channels per 3U chassis (using dual RF cards) – reducing the amount of rack space required<br>• Blind mate option<br>• All modules hot-swappable and auto-reconfiguration with SNMP option<br>• On-card LNB and BUC power options<br>• Power fed through rear chassis connector to card Bias Tees<br>• System can be monitored and controlled remotely via SNMP using a web browser |
| **DWDM Systems**<br>  | • DWDM multiplexers<br>• EDFAs<br>• Delay lines<br>• Optical switches<br>• Dispersion Compensation<br>• System design and configuration<br>• Remote link monitoring |