



RF Over Fiber Systems

L-Band HTS RF over Fiber Links

50Ω DWDM High Power L-Band HTS

- L-Band HTS (700-2450MHz)
- Up to 500km systems available
- 1 to 96 channels per fiber
- Ideal for Ka-Band rain fade diversity
- Up to 100km with no EDFA
- 12mW 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 500kms 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 500MHz, 800MHz or even 1500MHz 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

- 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)

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

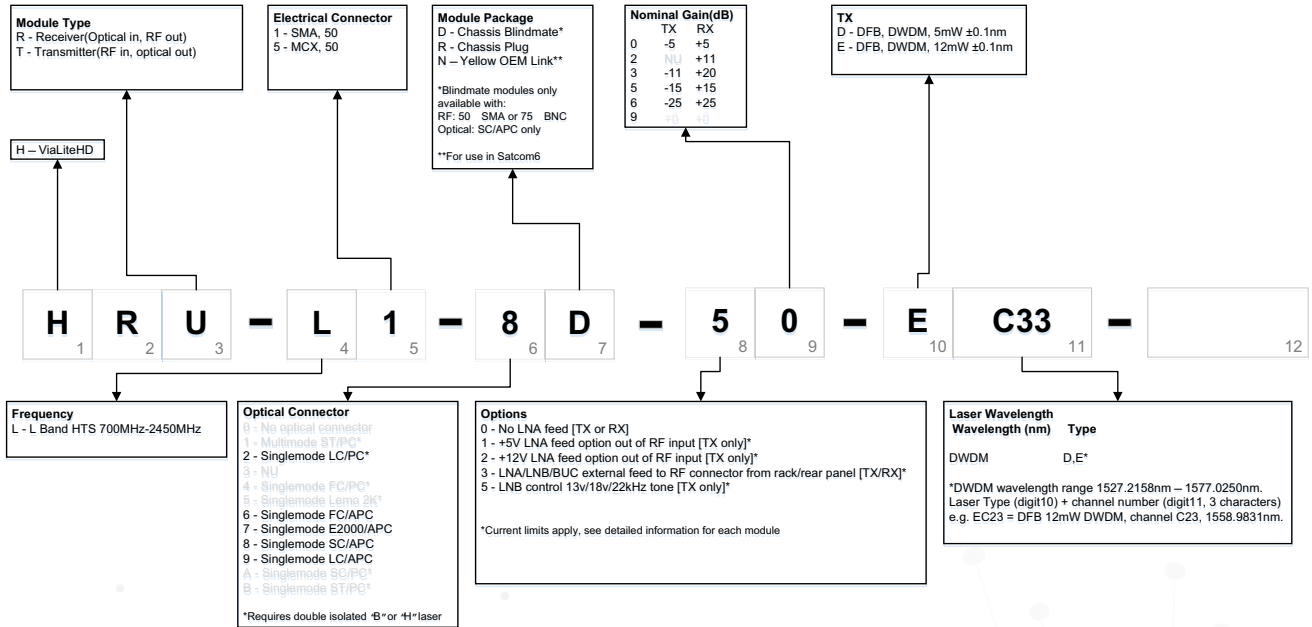
- 50km 1550nm L-Band HTS
- 75 Ohm DWDM L-Band HTS
- 100km+ systems



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PRODUCT CONFIGURATOR



POPULAR PRODUCTS

HRT-L1-8D-50-DC33

L-Band HTS (700-2450MHz) chassis plug-in High Power DWDM transmitter with built-in LNB power, 50 ohm SMA and SC/APC blind mate connectors

HRR-L1-8D-00

L-Band HTS (700-2450MHz) chassis plug-in transmitter, 50 ohm SMA and SC/APC blind mate connectors

HRT-L1-6N-30-EC33

L-Band HTS (700-2450MHz) Yellow OEM High Power DWDM transmitter with 50 ohm SMA and FC/APC connectors

HRR-L1-8N-00

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

RF PARAMETERS FOR POPULAR LINK GAINS

Links	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-EC33 & HRR-L1-xx-x3 (Low noise 15dB Gain Link)	-5dB (+5/-10.5dB)	+20dB (+7.5/-8dB)	14dB	9dB	-1.5dBm	-6.5dBm
HRT-L1-xx-x5-EC33 & HRR-L1-xx-x5 (Unity Gain Link)	-15dB (+11.5/-4dB)	+15dB (+7.5/-9dB)	24dB	12.5dB	+8.5dBm	-3dBm
HRT-L1-xx-x6-EC33 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25dB (+5/-10.5dB)	+25dB (+7.5/-9dB)	34dB	29dB	+18.5dBm	+14.5dBm





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TECHNICAL SPECIFICATION

Transmitter	HRT-L1-8D-50-EC34 (example)
Receiver	HRR-L1-8D-03 (example)
Frequency range	700-2450 MHz
Impedance, RF connector	50Ω SMA, blind mate
VSWR	1:1.5 (typ)
Link gain (Tx gain / Rx gain), default	15 (-5 / +20) dB (nom) ^a
Tx gain adjustment range	15.5 dB (typ)
Tx gain adjustment from default gain	-8.0 to +7.5 dB (typ)
Rx gain adjustment range	15.5 dB (typ)
Rx gain adjustment from default gain	-8.0 to +7.5 dB (typ)
Gain adjustment step size Rx and Tx	0.5 dB (typ)
Flatness, fullband	±1.5 dB (max) ^{a,h} ±0.5 dB (typ) ^{a,h}
Flatness, 36MHz	±0.2 dB (typ) ^a
Gain stability over temperature range	±1 dB (max) ^a
Gain stability	0.25 @ 24 hrs dB (typ)
Nominal input signal / output signal	-20 / -20 dBm
IMD @ nominal output power	-69 dB (typ) ^c
CNR @ nominal input power, 36MHz	-60 dB (typ) ^b
P1dBinput	-1.5 dB (typ) ^{a,k}
P1dBinput, at minimum Tx gain	-6.5 dB (typ) ^{a,k}
IP3input, at default gain	+11.5 dB (typ) ^{a,k}
Noise figure, at default gain	14 dB (typ) ^{a,k}
Noise figure, at maximum Tx gain	9 dB (typ) ^{a,k}
Noise figure, 5dB optical loss	19.5 dB (typ) ^{c,k}
SFDR	114 dB/Hz ^{2/3} (typ) ^a
Test port gain, transmitter	-20 dB (typ) ^l
Test port gain, receiver	-20 dB (typ) ^l
Test port flatness	±1 dB (typ) ^l
Maximum input power (without damage)	15
LNB power	Internal 13/18/22V @ 700mA with switchable tone
Power consumption Tx	3.5 W excluding LNA power
Power consumption Rx	2.8 W
Optical connector	SC/APC, blind mate
Optical wavelength	1550.12 ± 0.16 nm
Laser type	DFB (Distributed feedback), thermo-electric cooled laser
Optical power output	10.8 dBm (typ)
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	95% non-condensing humidity RH



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





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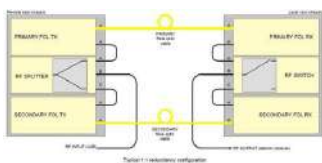
ACCESSORIES

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 cards
- 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 redundancy 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-reconfigure 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

DWDM Systems



- DWDM multiplexers
- EDFAs
- Delay lines
- Optical switches
- Dispersion Compensation
- System design and configuration
- Remote link monitoring

