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

APPLICATION

- 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



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POPULAR PRODUCTS

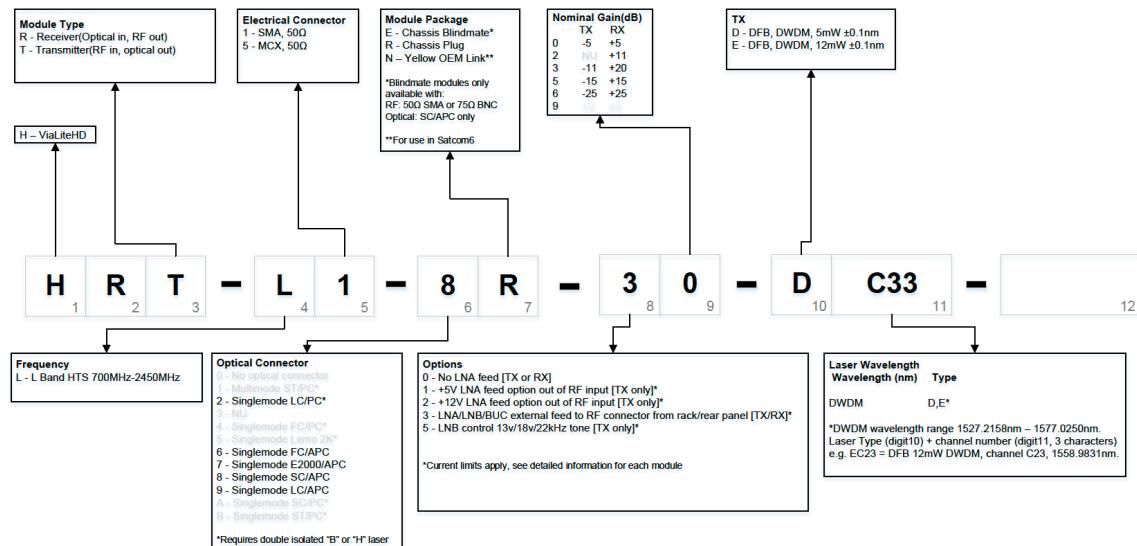
HRT-L1-8R-30-DC33

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.

PRODUCT CONFIGURATOR



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 dB	-6.5 dB
HRT-L1-xx-x5-DC33 & HRR-L1-xx-x5 (Unity Gain Link)	-15 dB	+15 dB	24 dB	12.5 dB	+8.5 dB	-3 dB
HRT-L1-xx-x6-DC33 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25 dB	+25 dB	34 dB	29 dB	+18.5 dB	+14.5 dB



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	Units	Note	50 Ohm DWDM L-Band HTS
Transmitter (Tx)	-		HRT-L1-8R-30-DC33 (example)
Receiver (Rx)	-		HRR-L1-8R-03 (example)
Frequency range	MHz		700-2450
Impedance, RF connector	-		
VSWR	(typ)		1:1.5
Link gain (Tx gain / Rx gain), default	dB (nom)	a	15 (-5 / +20)
TX gain adjustment range	dB (typ)	d	15.5
TX gain adjustment from default gain	dB (typ)		+/- 3
RX gain adjustment range	dB (typ)	d	15.5
RX gain adjustment from default gain	dB (typ)		+/- 3
Gain adjustment step size Rx and TX	dB (typ)	a h	
Flatness, fullband	dB (max)	a h	± 1.5
Flatness, fullband	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	c	-20 / -20
IMD @ nominal output power	dB (typ)	b	-69
CNR @ nominal input power, 36 MHz	dB (typ)	a k	60
P1dB _{input}	dBm (typ)	a k	-1.5
P1dB _{input} , at minimum 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)	c k	9
Noise figure, 5dB optical loss	dB (typ)	a	19.5
SFDR	dB/Hz ^{2/3} (typ)	i	114
Test port gain, transmitter	dB (typ)	i	-20
Test port gain, receiver	dB (typ)	i	-20
Test port flatness	dB (typ)		± 1
Maximum input power without damage	dBm (min)		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, blind mate
Optical wavelength	nm		1550.12 \pm 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
- ^h Default gain setting
- ^k Measured @ 1.2 GHz
- ⁱ Relative to rear port @ 1.2 GHz
- ^e All tests @ 25 °C after 15 minutes warm up
- ^d Guaranteed minimum adjustment from default gain



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ACCESSORIES

Type	Key features
SNMP/Web Browser Card	<ul style="list-style-type: none"> 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
Dual Redundancy	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> DWDM multiplexers EDFAs Delay lines Optical switches Dispersion Compensation System design and configuration Remote link monitoring



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