ViaLiteHD

L Band CWDM 50 Ohm
HRx-L1 DS_5

STEP ELECTRONICS
A Division of Av-Comm

50 Ohm CWDM L-Band HTS

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

- 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)
- Serial digital channel to 20 kb/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
50 km L-Band HTS
75 Ohm CWDM L-Band HTS
HTS 100 km+ systems
DWDM links

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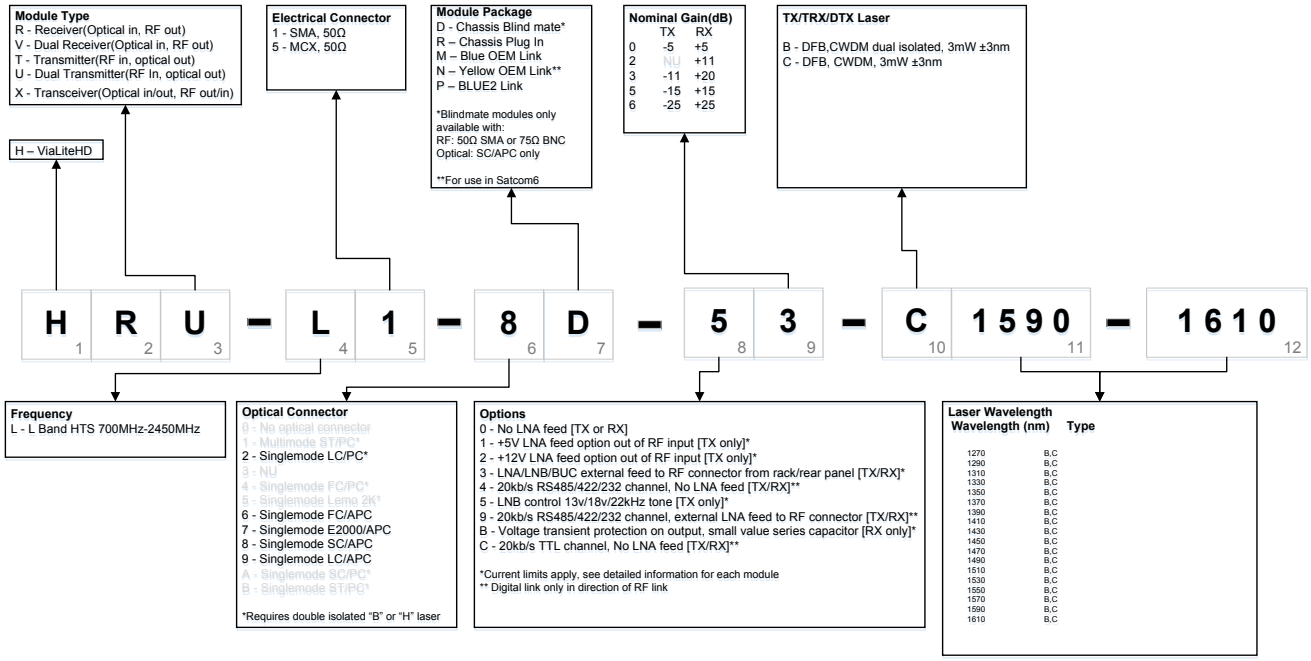
Product Configurator



Popular products

HRT-L1-8R-33-C1610
L-Band 700-2450 MHz, 50 Ohm SMA, Singlemode SC/APC, Rack plug-in module, Wavelength 1610 nm

HRR-L1-8R-03
L-Band 700-2450 MHz, 50 Ohm SMA, 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 P1 dB (Default Tx Gain)	Link P1 dB (Max Tx Gain)
HRT-L1-xx-x3-C1610 & HRR-L1-xx-x3 (9dB Gain Link)	-11 dB	+20 dB	20 dB	12.5 dB	-1 dBm	-8.5 dBm
HRT-L1-xx-x5-C1510 & HRR-L1-xx-x5 (Unity Gain Link)	-15 dB	+15 dB	24 dB	12.5 dB	+3 dBm	-8.5 dBm
HRT-L1-xx-x6-C1530 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25 dB	+25 dB	34 dB	29 dB	+13 dBm	+9 dBm

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	Units	Note	L-Band HTS 50 ohms
Transmitter (Tx)			HRT-L1-8R-33-S1310 (example)
Receiver (Rx)			HRR-L1-8R-03 (example)
Frequency range	MHz		700-2450
Impedance, RF connector			50 Ω SMA, blind mate
VSWR	(typ)		1:1.5
Transmitter (Tx) gain, default	dB (typ)	a	-11 +/- 0.5
Receiver (Rx) gain, default	dB (typ)	a	+20 +/- 0.5
Link gain (Tx & Rx), default	dB (typ)	a	+9 +/- 1.5
Tx gain adjustment range	dB (typ)		15.5
Tx gain adjustment from default gain	dB (min)	d	+/- 3
Rx gain adjustment range	dB (typ)		15.5
Rx gain adjustment from default gain	dB (min)	d	+/- 3
Gain adjustment step size Rx and Tx	dB (typ)		0.5
Flatness, fullband	dB (max)	a h	±1.2
Flatness, fullband	dB (typ)	a h	±0.5
Flatness, 36 MHz	dB (typ)	a	±0.2
Gain stability over temperature range	dB (max)	a	±3
Gain stability	dB (typ)		0.25 @ 24 hrs
Nominal input signal / output signal	dBm		-20 / -20
IMD @ nominal output power	dB (typ)	c	-61
CNR @ nominal input power, 36 MHz	dB (typ)	b	57
$P1dB_{input}$	dBm (typ)	a k	-1
$P1dB_{input}$, at minimum Tx gain	dBm (typ)	a k	0.5
$IP3_{input}$, at default gain	dBm (typ)	a k	11
Noise figure, at default gain	dB (typ)	a k	20
Noise figure, at maximum Tx gain	dB (typ)	a k	13
Noise figure, 5 dB optical loss	dB (typ)	c k	26
SFDR	$dB/Hz^{⅔}$ (typ)	a	110
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 (min)		15
LNB power			External 0-28 V @ 350 mA from chassis power connector
Power consumption Tx	W (typ)		1.9
Power consumption Rx	W (typ)		1.3
Optical connector			SC/APC, blind mate
Optical wavelength	nm		1310 ± 20
Laser type			DFB (Distributed feedback) laser
Optical power output	dBm (typ)		4.5
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
l Relative to rear port @1.2 GHz
All tests @ 25 °C after 15 minutes warm up
d Guaranteed minimum adjustment from default gain

e Datasheet parameters based on temperature range -10°C to +50°C, refer to user manual for performance parameters @ -20 °C and +60 °C

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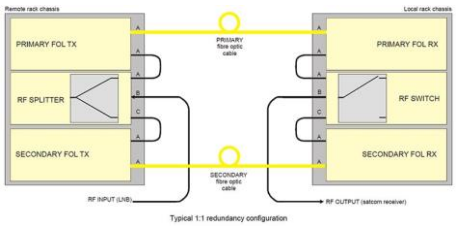
Type	Key Features
SNMP/Web Browser card 	• Easy to use graphical user interface (GUI) • Real time monitoring of card performance • Alarm monitoring and event logging • Control of gain adjustment • Compatible with all ***ViaLiteHD*** rack chassis and modules • Easy integration with network management 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  Typical 1:1 redundancy configuration	• 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

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L Band CWDM 75 Ohm
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- **L-Band HTS (700-2450MHz)**
- **Up to 16 channels in a single fiber**
- **65 dB dynamic range for 500 MHz traffic**
- **13/18V and 22 KHz tone LNB option**
- **Blind mate option**
- **Standard 5-year warranty**

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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:

- 75Ω electrical connectors: BNC, F-Type 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 BNC)
- Serial digital channel to 20 kb/s on same optical path

Applications
Fiber count reduction
Broadcast facilities
Mobile SNG, military and flyaways
Television Receive-Only (TVRO)
Fixed satcom earth stations and teleports
VSAT hubs (IP gateways)
Marine antennas
Telemetry, Tracking and Command (TT&C)
Oil and gas platforms

Formats
3U Chassis
1U Chassis
Blue OEM
Yellow OEM
Outdoor enclosures

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

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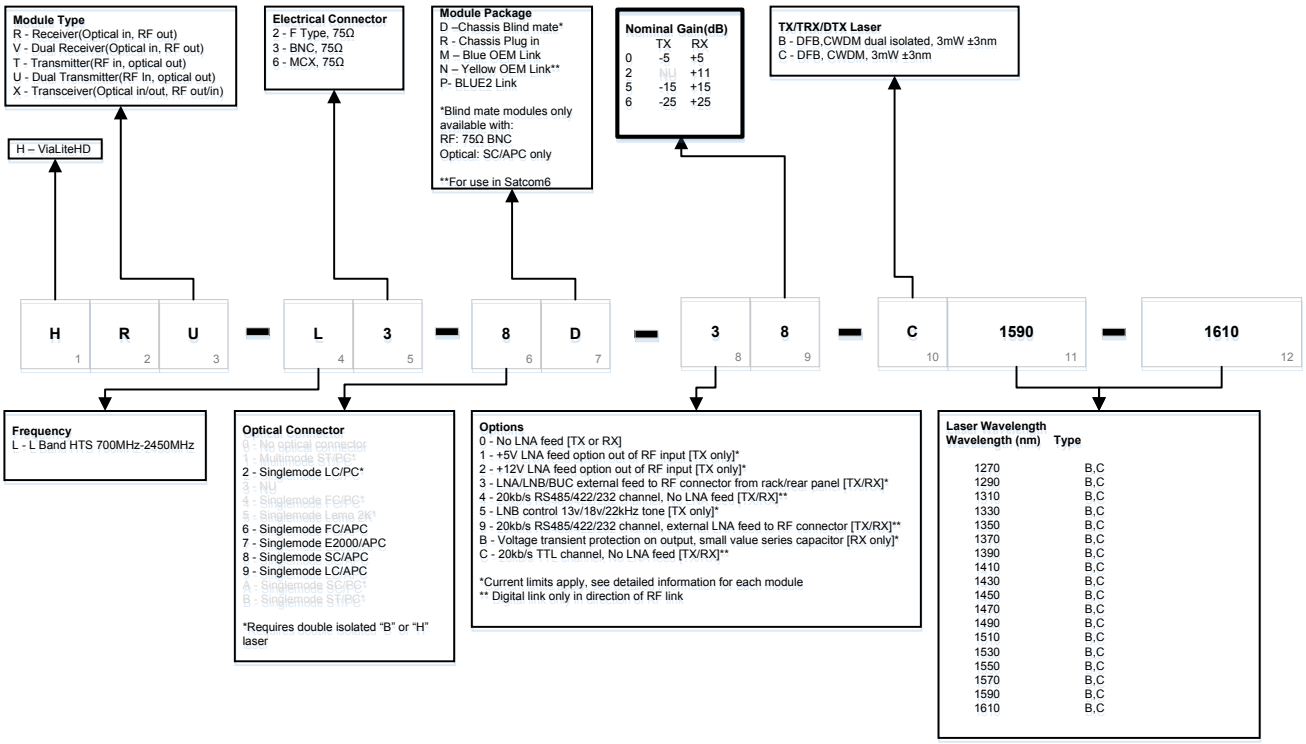
Product Configurator



Popular products

HRT-L3-6R-58-C1610
L-Band 700-2450 MHz, 75 Ohm BNC, Singlemode SC/APC, Rack plug-in module, Wavelength 1610 nm

HRR-L3-8R-08
L-Band 700-2450 MHz, 75 Ohm BNC, 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-x8-C1610 & HRR-L1-xx-x8 (3dB Gain Link)	-11 dB	+14 dB	21 dB	13.5 dB	0 dBm	-7.5 dBm
HRT-L1-xx-x5-C1610 & HRR-L1-xx-x5 (Unity Gain Link)	-15 dB	+15 dB	25 dB	13.5 dB	+2 dBm	-8.5 dBm
HRT-L1-xx-x8-C1610 & HRR-L1-xx-x2 (Low Noise Unity Gain Link)	-11 dB	+11 dB	21 dB	13.5 dB	0 dBm	-7.5 dBm

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	Units		L-Band HTS 75 ohms
Transmitter			HRT-L3-8D-38-C1610 (example)
Receiver			HRR-L3-8D-08 (example)
Frequency range	MHz		700-2450
Impedance, RF connector			75Ω BNC, blind mate
VSWR	(typ)		1:1.5
Link gain (Tx gain / Rx gain), default	dB (nom)	a	+3 (-11 /+14)
Tx gain adjustment range	dB (typ)		15.5
Tx gain adjustment from default gain	dB (typ)		-7.5 to +8.0
Rx gain adjustment range	dB (typ)		15.5
Rx gain adjustment from default gain	dB (typ)		-7.5 to +8.0
Gain adjustment step size Rx and Tx	dB (typ)		0.5
Flatness, fullband	dB (max)	a h	±1.4
Flatness, fullband	dB (typ)	a h	±0.6
Flatness, 36MHz	dB (typ)	a	±0.2
Gain stability over temperature range	dB (max)	a	±3
Gain stability	dB (typ)		0.25 @ 24 hrs
Nominal input signal / output signal	dBm		-20 / -20
IMD @ nominal output power	dB (typ)	c	-50
CNR @ nominal input power, 36MHz	dB (typ)	b	56
P1dBinput	dBm (typ)	a k	0
P1dBinput, at minimum Tx gain	dBm (typ)	a k	5
IP3input, at default gain	dBm (typ)	a k	12
Noise figure, at default gain	dB (typ)	a k	21
Noise figure, at maximum Tx gain	dB (typ)	a k	18
Noise figure, 5dB optical loss	dB (typ)	c k	27
SFDR	dB/Hz⅔ (typ)	a	110
Test port gain, transmitter	dB (typ)	l	-26
Test port gain, receiver	dB (typ)	l	-14
Test port flatness	dB (typ)	l	±1
Maximum input power without damage	dBm (min)		15
LNB power			External 0-28V @ 350mA from chassis power connector
Power configuration Tx	W (typ)		1.9
Power configuration Rx	W (typ)		1.3
Optical connector			SC/APC, blind mate
Optical wavelength	nm		1270-1610 ± 3
Laser type			DFB (Distributed feedback) laser
Optical power output	dBm (typ)		4.5
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 @ 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

e Datasheet parameters based on temperature range -10°C to +50°C, refer to user manual for performance parameters @ -20 °C and +60 °C

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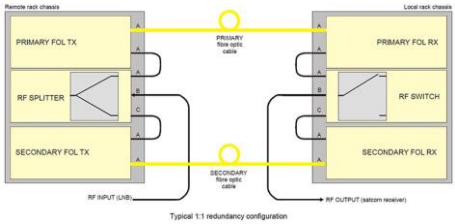
Type	Key Features
SNMP/Web Browser Card 	• Easy to use graphical user interface (GUI) • Real time monitoring of card performance • Alarm monitoring and event logging • Control of gain adjustment • Compatible with all ***ViaLiteHD*** rack chassis and modules • Easy integration with network management 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  Typical 1:1 redundancy configuration	• 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 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

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ViaLiteHD

L Band 50 Ohm DWDM HP
HRx-Lx-ECxx-DS-3

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50 Ω DWDM High Power L-Band HTS

- ***L-Band HTS (700-2450 MHz)***
- ***Up to 500 km systems available***
- ***1 to 96 channels per fiber***
- ***Ideal for Ka-Band rain fade diversity***
- ***Up to 100 km with no EDFA***
- ***12 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 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

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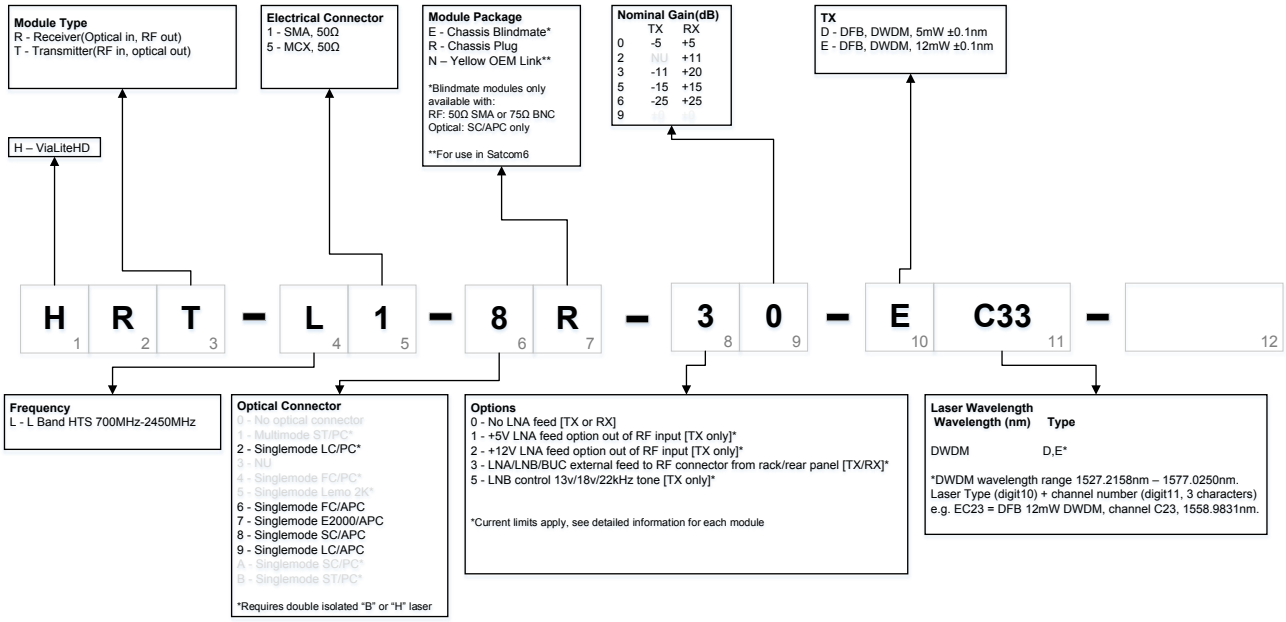

Popular products

HRT-L1-6N-30-EC33
L-Band HTS 700-2450 MHz Yellow OEM High Power DWDM Transmitter, FC/APC Connectors

HRR-L1-8N-00
L-Band HTS 700-2450 MHz Yellow OEM receiver, SC/APC Connectors

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-EC33 & 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-EC35 & 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-EC33 & HRR-L1-xx-x6 (High P1dB Unity Gain Link)	-25 dB	+25 dB	34 dB	29 dB	+18.5 dBm	+14.5 dBm

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Technical specification

	Units	Note	50 Ohm DWDM L-Band HTS
Transmitter			HRT-L1-8R-30-EC33 (example)
Receiver			HRR-L1-8R-03 (example)
Frequency range	MHz		700-2450
Impedance, RF connector			50Ω 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)		2.8
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)		10.8
Summary alarm output			Open drain alarm: OPEN: Alarm, CURRENT SINK: okay
Operating temperature range			-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
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l Relative to rear port @1.2 GHz
All tests @ 25 °C after 15 minutes warm up
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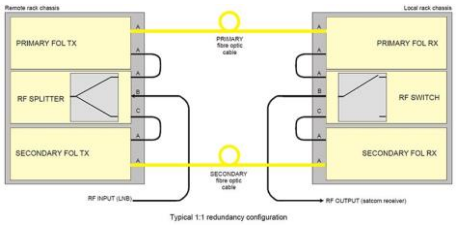
Dual Redundancy 	• 1:1 redundancy for L-Band • Maximises link up-time • Can be used to backup copper coax • Manual and automatic control via SNMP • Flexible configuration options • Other redundancy options available
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ViaLiteHD

L Band 50 Ohm DWDM MP

HRx-Lx-DCxx-DS-2

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50Ω DWDM Medium Power L-Band HTS

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- ***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

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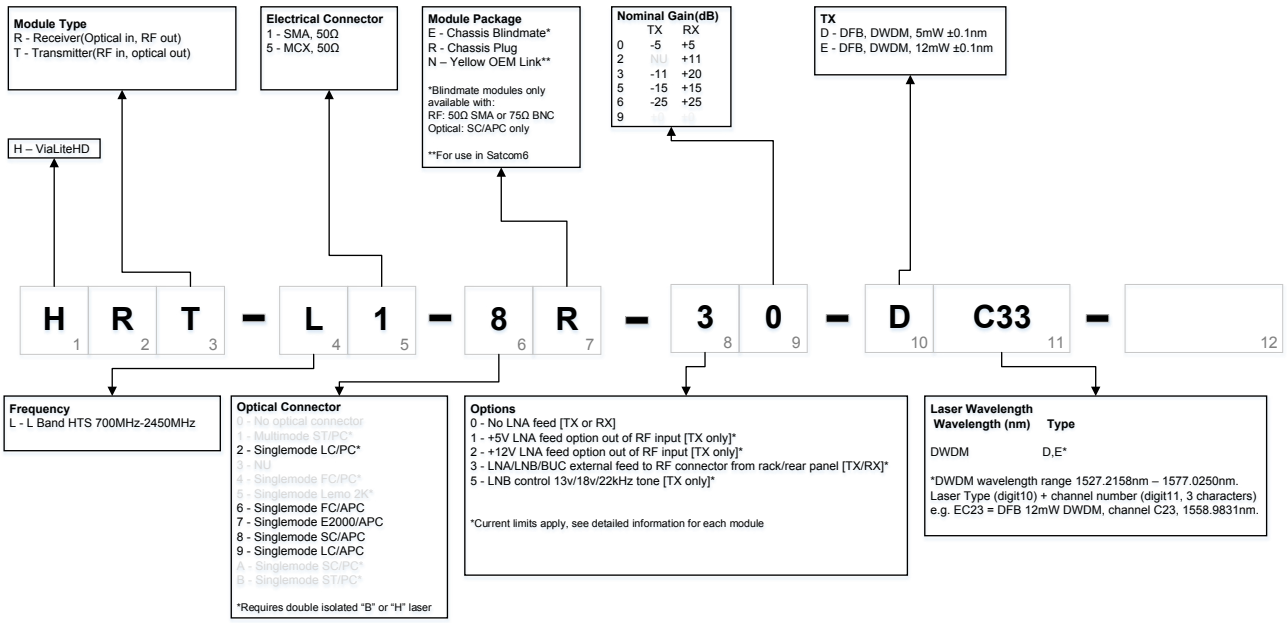
Product configurator



Popular products

HRT-L1-8R-30-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

	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

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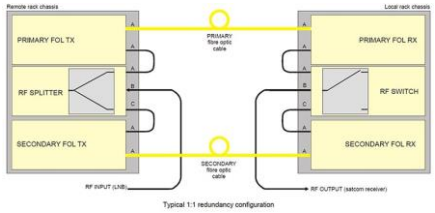
Type	Key Features
SNMP/Web Browser Card 	• Easy to use graphical user interface (GUI) • Real time monitoring of card performance • Alarm monitoring and event logging • Control of gain adjustment • Compatible with all ***ViaLiteHD*** rack chassis and modules • Easy integration with network management 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
DWDM Systems 	• DWDM multiplexers • EDFAs • Delay lines • Optical switches • Dispersion Compensation • System design and configuration • Remote link monitoring

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