

ViaLiteHD® – L-Band HTS – HWDR Links

Hyper-wide Dynamic Range (S1 & S2)

- Hyper-wide Dynamic Range (HWDR)
- L-Band HTS (400-2500 MHz)
- Up to 115 dB/Hz^{2/3} SFDR*
- 0-100 km range**
- DWDM channels available
- Standard 5-year warranty



The **ViaLiteHD** L-Band HTS HWDR RF over fiber links have been designed for customers who need even greater dynamic range. The HWDR links (S1 and S2) have a Spurious-Free Dynamic Range (SFDR) with an extra 4 and 5 dB/Hz respectively over the standard **ViaLiteHD** product. This increase in SFDR allows an extra 5 dB of dynamic range for High Throughput Satellite (HTS) transponder bandwidths of 500, 800 or even 1500 MHz, allowing customers to improve intermodulation performance and/or reduce the minimum signal that can be detected. This is extremely important in HTS and Signals Intelligence (SIGINT) applications.

Options include

- 50 Ω RF: SMA
- Optical: SC/APC, FC/APC & E2000/APC
- Test ports on Tx and Rx modules
- Built-in Bias-T for LNB powering through RF connection
- LNB control circuit with 13/18 VDC & 22 kHz tone
- Blind mate connection (SC/APC only)



The HWDR cards are available with **ViaLiteHD** blind mate, which allows all cables to be connected at the rear of the chassis when installed. Blind mate also allows configuration changes to be completed without disturbing the connections and very fast changeover of cards; enabling five 9s reliability.

Applications

- Full Satcom transponder applications
- Defence Signals Intelligence (SIGINT)
- Fixed Satcom earth stations and teleports
- Telemetry
- Government installations
- Remote monitoring stations

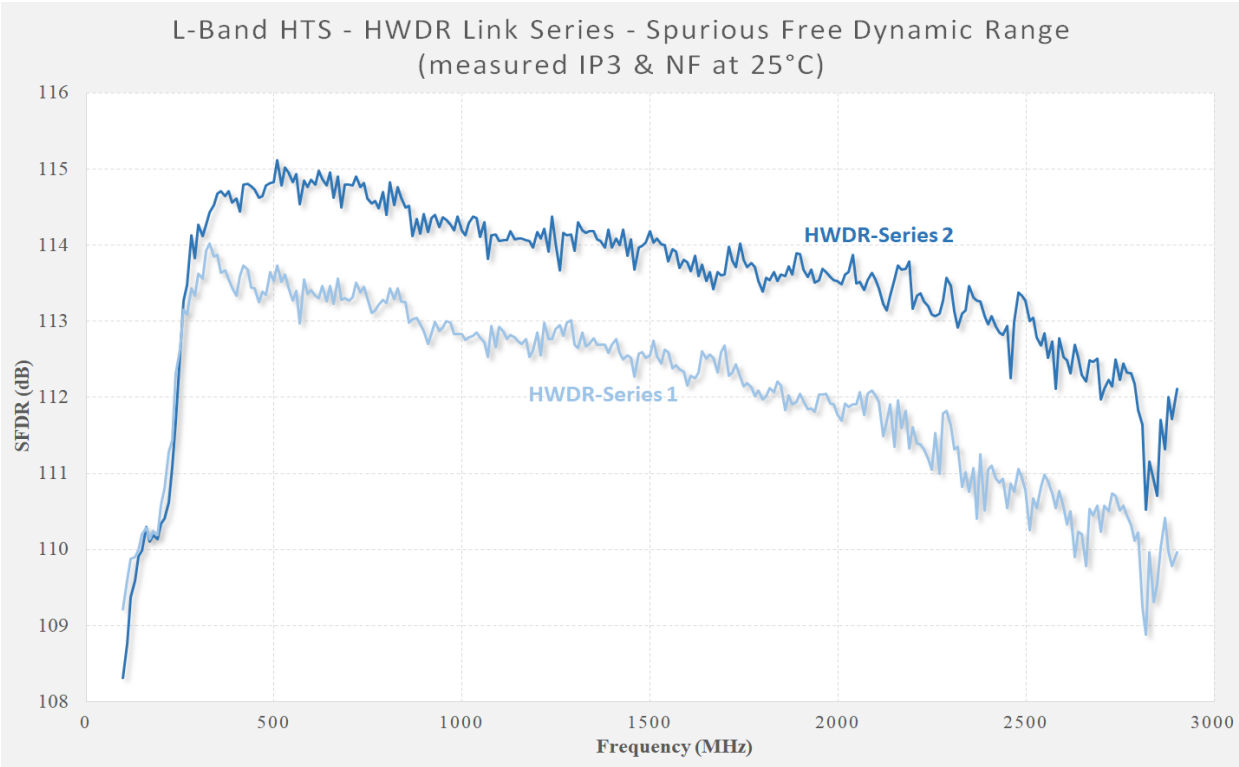
Enclosure formats

- 3U Chassis
- 1U Chassis
- Yellow OEM (S1 only)
- Outdoor enclosures

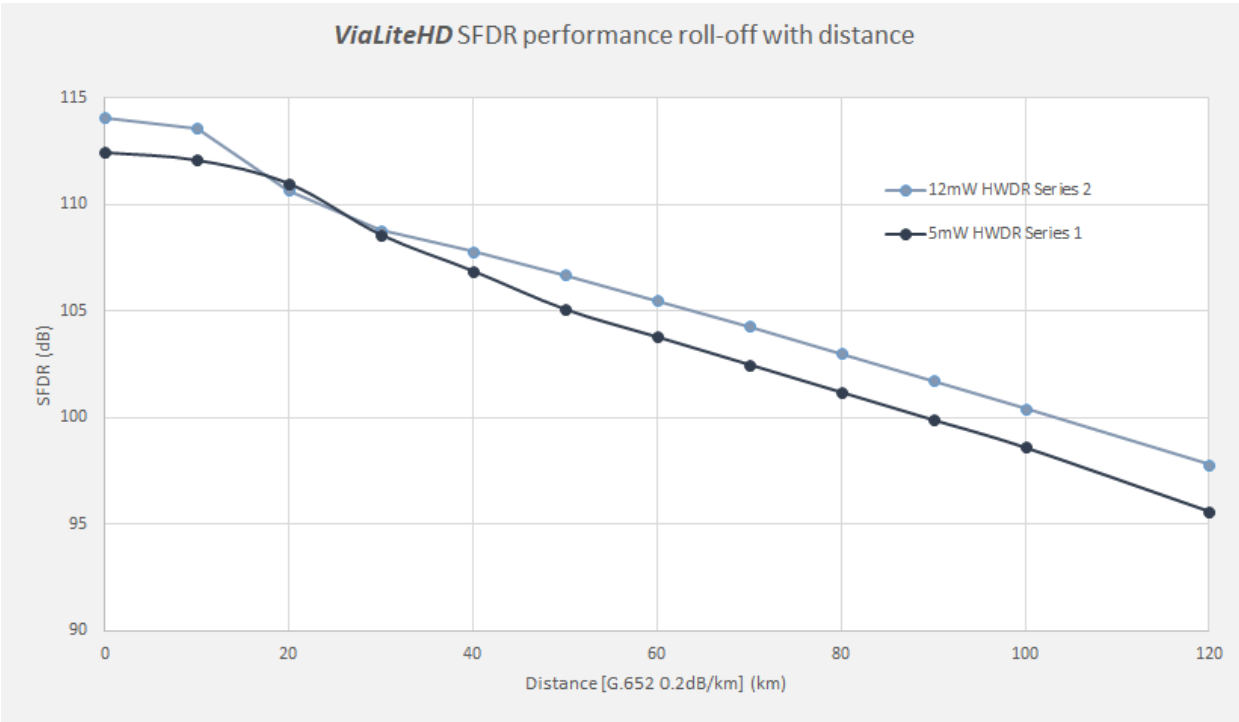
* & ** See Charts on Page 2

Performance graphs

*SFDR over frequency



**SFDR over distance in Km
Tests performed at 1200 MHz

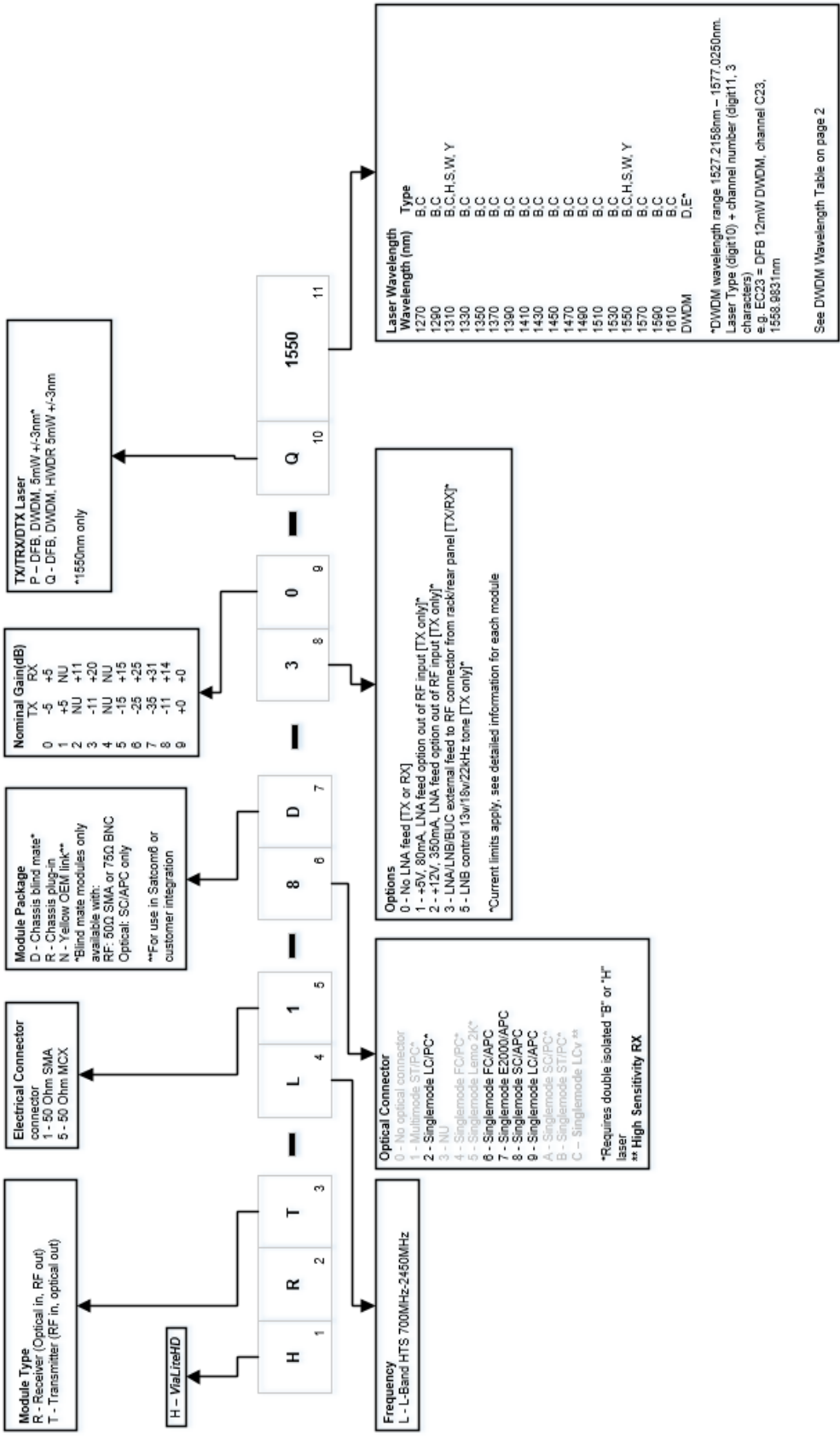


Note: Best SFDR result seen <10 Km, 40 Km+ links ideal where a Mux is used and losses are present.

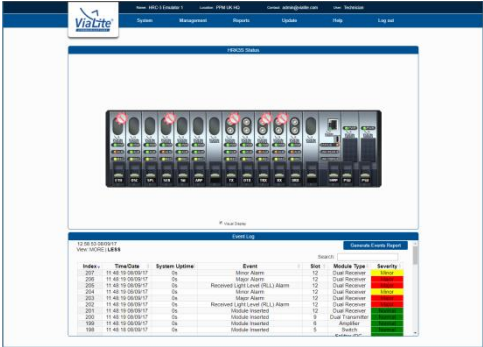
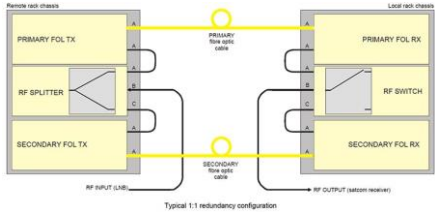


Technical specification

50 Ohm L-Band HTS - HWDR		
Frequency range	400-2500 MHz	
Impedance, RF connector	50Ω SMA, blind mate	
VSWR	1:1.5	
Link gain (Tx gain / Rx gain), default	0 dB (-5 / +5)	
Tx gain adjustment range	10 dB	
Tx gain adjustment from default gain	-6.5 to +3.5 dB	
Rx gain adjustment range	14 dB	
Rx gain adjustment from default gain	-10 to +4 dB	
Gain adjustment step size Rx and Tx	0.5 dB	
	Series 1 Series 2	
Flatness, fullband, L-Band	±1.5 dB	
Flatness, fullband, L-Band	±0.5 dB	
Flatness, 36 MHz, L-Band	±0.2 dB	
Gain stability over temperature range	±1 dB	
Gain stability	0.25 @ 24 hrs	
Nominal input signal / output signal	-20 / -20 dBm	
IMD @ nominal output power	-63 dB	
CNR @ nominal input power, 36MHz	60 dB	
P1 dB _{input}	-1.5 dBm	-1.2 dBm
P1 dB _{input} , at maximum Tx gain	-5 dBm	-3.5 dBm
IP3 _{input} , at default gain	+9 dBm	+10.8 dBm
Noise figure, at default gain	14 dB	12.5 dB
Noise figure, at maximum Tx gain	11.5 dB	9.6 dB
Noise figure, 5 dB optical loss	21dB	18.5 dB
SFDR, at default gain	112.5 dB	114.7 dB
Test port gain, transmitter	-20 dB	
Test port gain, receiver	-20 dB	
Test port flatness	±1 dB	
Maximum input power without damage	15 dBm	
LNB power	Internal 13/18/22 V @ 700 mA 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 nm ± 0.3 or DWDM	
Laser type	DFB (Distributed feedback), thermo-electric cooled laser	
Receiver	Standard	High Power
Optical power output	+7.0 dBm	+10.8 dBm
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	

Product specification



Accessories

Type	Key Features
<p>SNMP/Web Browser Card</p> 	<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 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
<p>Dual Redundancy</p> 	<ul style="list-style-type: none"> • 1:1 redundancy for L-Band • Maximizes link up-time • Can be used to backup copper coax • Manual and automatic control via SNMP • Flexible configuration options • Other redundancy options available
<p>Rack Chassis</p> 	<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
<p>Outdoor Enclosures</p> 	<ul style="list-style-type: none"> • 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