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ViaLiteHD® – Wideband Link

Wideband RF over Fiber Link

- **10 MHz – 3 GHz bandwidth**
- **Superior linear performance**
- **Low noise performance**
- **Wide dynamic range**
- **Transmits all video, data and audio modulation formats**
- **Transmission distances of >50 km**
- **Interfaces with M&C systems for remote monitoring**
- **Multiple carrier transmissions**

The ***ViaLiteHD*** Wideband RF over fiber optic link provides a high performance, high reliability, transparent cross-site connection between RF communications equipment. The link is ideal for low frequency radio and distribution of wireless standards such as cellular, Wi-Fi and WiMAX. The wide dynamic range results in negligible degradation of signals due to noise or inter-modulation effects.

The ***ViaLiteHD*** Wideband RF over fiber link has options for either 0 dB or +9dB link gain. For installations where the number of cross site fibre connections is limited the complete ITU range of CWDM transmitter wavelengths is offered allowing up to 18 channels to be carried on one fibre.

ViaLiteHD fiber optic links come in various form factors, such as stand-alone modules (Blue OEM) and Rack Chassis cards for use in a ***ViaLiteHD*** 1U or 3U Rack chassis. Rack Chassis cards can be managed and configured via a site controller which utilizes SNMP and web interface, whereas stand-alone modules are field configurable via the module electrical interface connector.

Features/Options

- Independent of data format
- Comprehensive alarm/status monitoring
- Suitable for most analogue or digital signal modulation including FM and QPSK
- High link reliability
- Electrical connectors: 50 Ω SMA and MCX
- Optical connectors: SC/APC, LC/APC, FC/APC
- Rack Chassis Blind mate connectivity: 50 Ω SMA and LC/APC

Applications

- Fixed satcom earth stations and teleports
- Broadcast facilities
- Telemetry, Tracking and Command (TT&C)
- Oil and gas platforms

Formats

- 3U Rack Chassis
- 1U Rack Chassis
- Blue OEM and Blue2 Link
- Yellow OEM
- Outdoor Enclosures

Technical Specification

	Units	Note	Wideband Link
Transmitter			HRT-S1-8R-05-S1310
Receiver			HRR-S1-8R-05
Frequency range	MHz		10 – 3000
Impedance, RF connector			50 Ω SMA
VSWR (50 Ω)	(Typ)		1.5:1
Link gain (Tx gain / Rx gain), default	dB (Nom)	a	0 (-15 / +15)
Tx gain adjustment range	dB (Typ)		15.5
Tx gain adjustment from default gain	dB (Typ)		-12.0 to +3.5
Rx gain adjustment range	dB (Typ)		15.5
Rx gain adjustment from default gain	dB (Typ)		-12.5 to +3.0
Gain adjustment step size Rx and Tx	dB (Typ)		0.5
Flatness, fullband	dB (Typ)	a h	±0.7
Flatness, fullband	dB (Max)		±1.0
Gain stability over temperature, Link	dB (Max)	a	±3
Gain stability	dB (Typ)		±0.25 @ 24 hrs
Nominal Input Signal / Output Signal	dBm	c	-20 / -20
IMD @ nominal output power	dB (Typ)		-50
$P1dB_{input}$	dBm (Typ)	a k	3
$P1dB_{input}$, at minimum Tx gain	dBm (Typ)	a k	4
$IP3_{input}$, at default gain	dBm (Typ)	a k	15
Noise figure, at default gain	dB (Typ)	a k	23.5
Noise figure, at maximum Tx gain	dB (Typ)	a k	21.5
Noise figure, 5 dB optical loss	dB (Typ)	c k	27
SFDR	dB / Hz $^{2/3}$ (Typ)	a	110
Test port gain, transmitter	dB (Typ)	l	No test port
Test port gain, receiver	dB (Typ)	l	No test port
Maximum no damage RF input power	dBm		15
LNA power			No LNA power
Power Tx	W (Typ)		1.9
Power Rx	W (Typ)		1.3
Optical connector			SC/APC, LC/APC, FC/APC
Optical wavelength	nm		1310 nm ± 20 nm (1550 nm / CWDM options)
Laser type			DFB – Distributed feedback laser
Optical power output	dBm (Typ)		4.5
Summary alarm output			Open drain alarm: OPEN: Alarm CURRENT SINK: OK
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
k Measured @ 1.2 GHz
l Relative to rear port @1.2 GHz
All tests @ 25 °C after 15 minutes warm up