

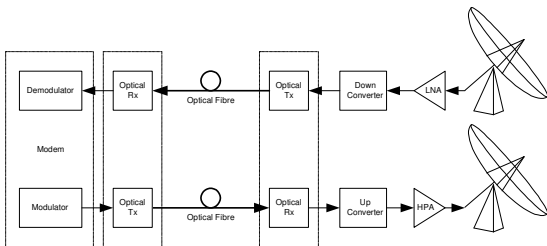
SATCOM L-BAND FIBRE-OPTIC-LINK

PPM's **ViaLite** L-Band Interfacility Fibre-Optic-Link provides a high performance, high reliability, transparent cross-site connection between up/down-converters and modems in satellite ground station equipment.



The link's operation is independent of data format, and together with its inherently low phase noise performance, it is suitable for almost any type of signal modulation including FM and QPSK.

High reliability, alarm & status monitoring, wide dynamic range and the option of receiver output level control result in a product suitable for a wide range of installations.



Gain adjustment is offered in the receiver module for matching primary and secondary channels in dual redundant configurations.

The use of optical fibre has a number of inherent advantages over conventional coaxial alternatives:

- Low loss - enabling very long path lengths with minimal degradation of carrier-to-noise.
- Lightweight, highly flexible, small diameter cable.
- Frequency response is independent of path length.
- Immunity to electrical interference - the signal is not corrupted by radiated interference.
- Non-conductive - provides electrical isolation.
- Lower cost compared to coaxial cable over long distances

PPM's **ViaLite** product offers particular advantages:

- Wide dynamic range
- 950-2150MHz
- Receiver Gain Adjustment Option
- Suitable for all modulation formats
- Compact plug-in module – up to 8 in 19" rack case
- Front panel status LEDs and rear panel alarm outputs: laser status, received light level

Complementary PPM **ViaLite** Products

- Cost effective FP laser version
- OEM module version
- Alarm concentrator module
- Bi-directional RS422 optical data modules
- 19" Rack Case
- Dual redundant power supplies
- 1:1 RF Redundancy Switch
- 100Mb/s Ethernet Link
- Multiple signals on one fibre using CWDM
- Outdoor enclosure options

ViaLite Satcom L-BAND - SPECIFICATIONS

Bandwidth	Fixed Gain Receiver	Adjustable Gain Receiver
Bandwidth -L model:	<950MHz to >2150MHz	

Gain

RF Link Gain at 0dB optical loss	+9dB	+9dB +/-3dB	
Effect of optical loss	Subtract [2 x Optical Loss]dB for >0dB optical loss Optical Losses: Fibre = 0.4dB/km typ., Connectors = 0.5dB per connector typ.		
Transmitter Gain Range	Fixed	Fixed	
Receiver Gain Range	Fixed	+/-3dB	
Gain Flatness: (over 500MHz)	50Ω SMA 75Ω BNC	+/-0.75dB +/-1.5dB	+/-1.5dB over 6dB gain adjust range +/-2.0dB over 6dB gain adjust range
Gain Slope:	50Ω SMA 75Ω BNC	<0.7dB/36MHz <1.0dB/36MHz	<0.7dB/36MHz <1.0dB/36MHz
Gain Stability over Temperature Tx Rx	< +/-3dB over operating range <0.08dB/°C below 40°C typ., <0.1dB/°C above 40°C typ. <0.05dB/°C typ.		

Dynamic Range

Input Third Order Intercept	>+7dBm
Input P1dB @ 1.2GHz	>-3dBm
Total Input Power for -40dBc IMD	-13dBm
Noise Figure @ 1.2GHz	<26dB, 0dB optical loss <34dB, 12dB optical loss
Carrier to Noise Ratio 1MHz bandwidth, -40dBc IMD	>75dB for 0dB optical loss >67dB for <12dB optical loss

User Interface

Input/Output Impedance, VSWR	50Ω, 75Ω: ≤2: 1
Power LED	Indicates DC power is applied to the module
Transmitter Status LED	Green: Transmitter laser functioning Red: Transmitter laser degraded
Receiver Status LED	Green: Received light level above threshold (threshold factory set to nominal 20dB optical / 40dB electrical loss) Red: Received light level below threshold
Transmitter Alarm Output	Current sink "Laser Degraded" Alarm
Receiver Alarm Output & Monitor	Current sink "Light Low" Alarm Analogue Received Light Level (RLL) monitor. RLL monitor voltage = 7.75V for a gain of +9dB (+/- any front panel gain adjustment) and reduces by 0.125V per dB of RF link loss due to losses in the optical path.
RF Connector options	50Ω SMA Female 75Ω BNC Female
Optical connector options	FC/APC: Suhner FCPC-Z/M-A601 narrow keywidth connector >60dB return loss E2000/APC: Suhner FLSH-2000-A608 >60dB return loss
Monitor & Alarm Interface Rack plug-in module Converter Sleeve	15pin female D-type on 19" rack case backplane 15pin female D-type
Current Consumption	Rx < 4W, Tx < 4.5W

Operating Conditions

Absolute Maximum RF Input (RF in)	>+15dBm, 5Vdc
Optical	>60dB return loss. See above for approved connectors. Use with other types may compromise system performance.
Operating Temperature Rack plug-in module Shielded remote module	0°C to +40°C -20°C to +50°C
Storage Temperature	-40°C to +70°C

Optical Characteristics

Wavelength	1310+/-20nm
Fibre	Singlemode 9/125, Corning SMF28 or equivalent
Output Power	+4.5dBm/3mW nominal

All parameters specified after 15 minutes warm-up.

Physical Format

Housing Options	Rack Plug-in Module - suitable for Rack Case or Plug-in Converter Sleeve Shielded Module
Supply Voltage Rack Plug-in Module Shielded Module Plug-in Converter Sleeve	+12Vdc from LRK power supply +12Vdc from external supply via Lemo 1B connector +12Vdc +/-10% from external supply via 2.1mm or D-type connector
Weight Rack plug-in module Shielded Module Plug-in Converter Sleeve	600g 750g 600g + module
19" Rack Case Suitability	LRK1S, LRK2S

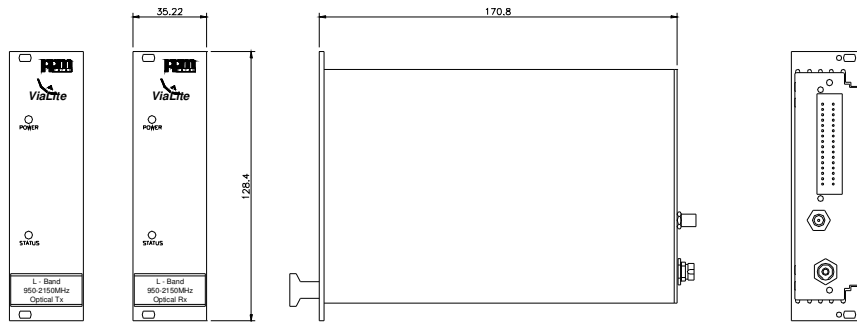


Figure 1: Plug-in Module

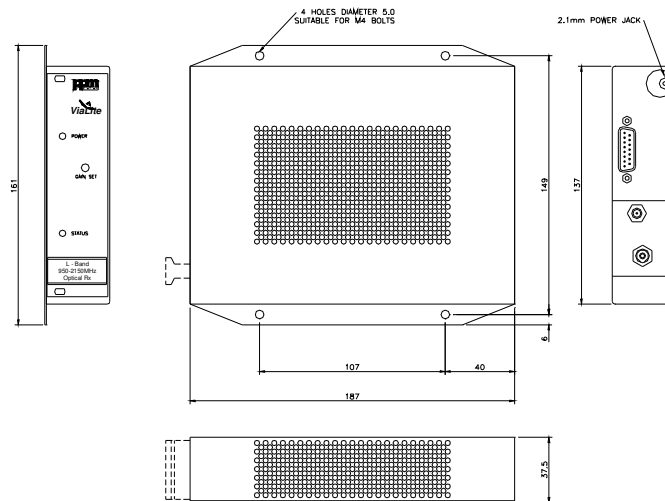


Figure 2: Plug-in Module in Converter Sleeve for standalone operation

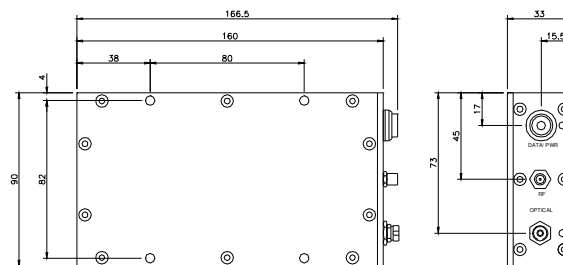
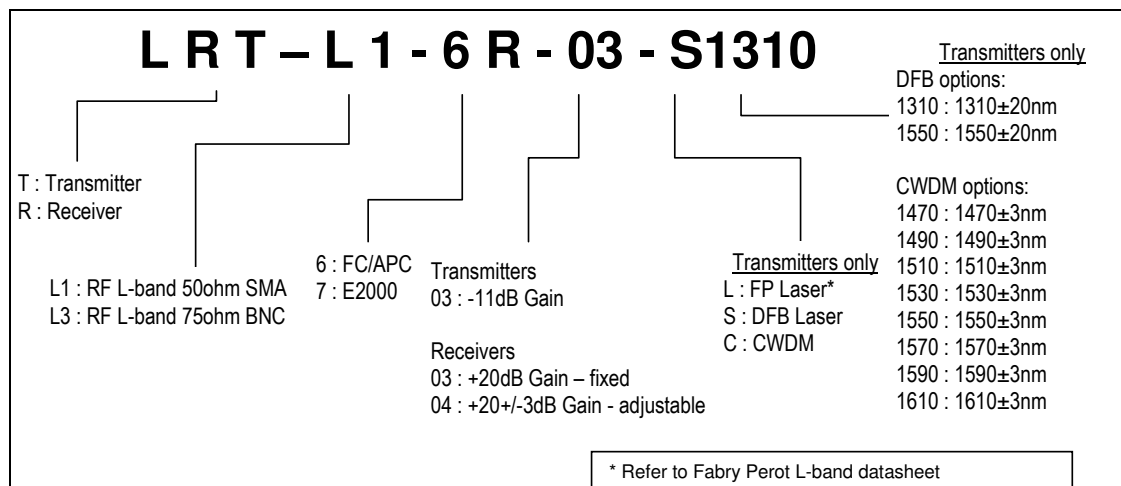


Figure 3: Shielded Remote Module

Ordering Information



Standard parts available on short lead times:

- LRT-L1-6R-03-S1310
- LRT-L1-6R-03-L1310
- LRR-L1-6R-03
- LRR-L1-6R-04

19" Rack Case Solutions

Part Number	Description
LRK1S	19" Rack Case 3U for desktop or 19" rack installation. Accommodates up to 8 plug-in modules and 2 mains power supplies.
LRK2S	19" Rack Case 3U for 19" rack installation. Accommodates up to 8 plug-in modules and 2 mains power supplies.
LPS-M	Main Power Supply plug-in for LRK1S or LRK2S.
LPS-R	Reserve Power Supply plug-in for LRK1S or LRK2S.
75004	19" Rack Case, 1U for desktop or 19" rack installation, integral power supply, accommodates 3 plug-in modules.

Stand alone Solutions

75003	Converter sleeve. Converts a single plug-in module for standalone operation.
73502	Power Supply, 12Vdc, with 2.1mm connector for Plug-in Converter Sleeve
LPS-CS	Power Supply, flange mounting, 12Vdc, with 15 pin D connector for Plug-in Converter Sleeve

Accessories

Part Number	Description
LRS-10	1:1 Redundancy Switch Module
LRD-1	Broadband Low-loss RF Splitter, 10-2500MHz
LAC-1	Alarm Concentrator Transceiver Fibre Optic Link module
F6R1/x	FC/APC Patchlead, 2.8mm jacket. Length defined in metres by "x" (1m, 2m, 10m)

CONTACT US

For further details of this or any other product from PPM, please contact us at:

PPM Ltd, 65 Shrivensham Hundred Business Park, Watchfield, Swindon, Wiltshire, SN6 8TY, UK.

Email: sales@ppm.co.uk, Tel.: +44 (0)1793 784389 Fax: +44 (0)1793 784391

Web: www.vialite.co.uk or www.ppm.co.uk