

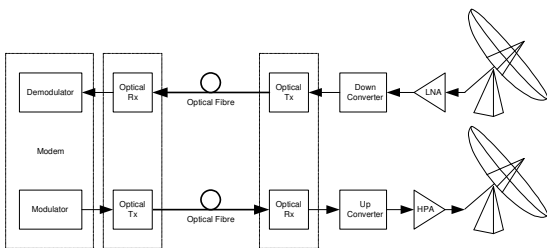
SATCOM 70/140MHZ FIBRE-OPTIC-LINK

PPM's **ViaLite** 70/140MHz 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
- 10-200MHz bandwidth
- 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
- RF connector options: 50Ω BNC, 50Ω SMA, 75Ω BNC

Complementary PPM **ViaLite** Products

- OEM module versions
- 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

ViaLite SATCOM 70/140MHZ - SPECIFICATIONS

Bandwidth	Fixed Gain Receiver	Adjustable Gain Receiver
Bandwidth	<10MHz to >200MHz	
Gain		
RF Link Gain at 0dB optical loss	+9dB nominal	+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	+/-0.5dB	+/-1.5dB over 6dB gain adjustment range
Gain Slope	<0.7dB/36MHz	<0.7dB/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 @ 100MHz	>-3dBm	
Total Input Power for -40dBc IMD	-13dBm	
Noise Figure @ 100MHz	<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, ≤2:1 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 BNC Female 75Ω BNC Female 50Ω SMA 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	0°C to +40°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
Supply Voltage Rack Plug-in Module Plug-in Converter Sleeve	+12Vdc from LRK power supply +12Vdc +/-10% from external supply via 2.1mm or D-type connector
Weight Rack plug-in module Plug-in Converter Sleeve	600g 600g + module
19" Rack Case Suitability	LRK1S, LRK2S

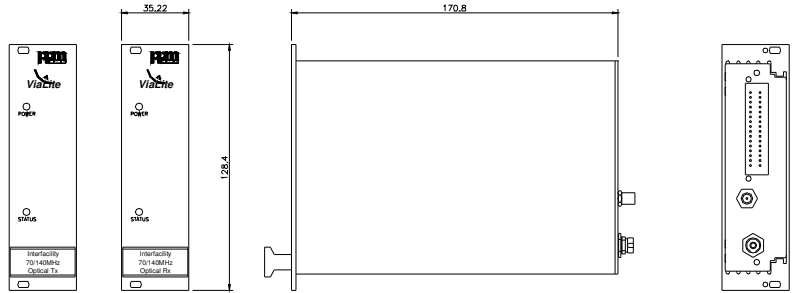


Figure 1: Plug-in Module

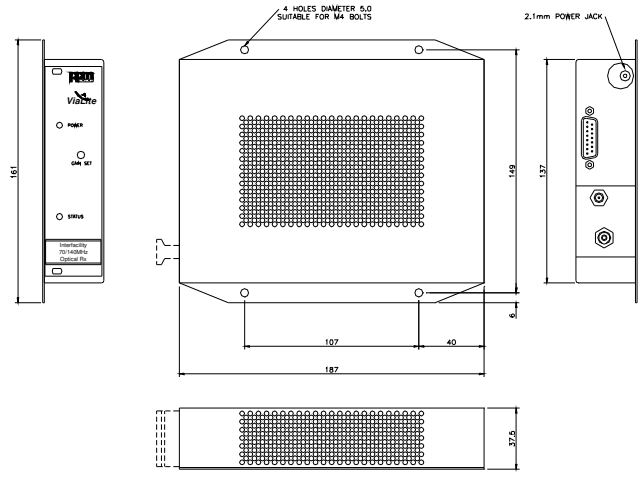
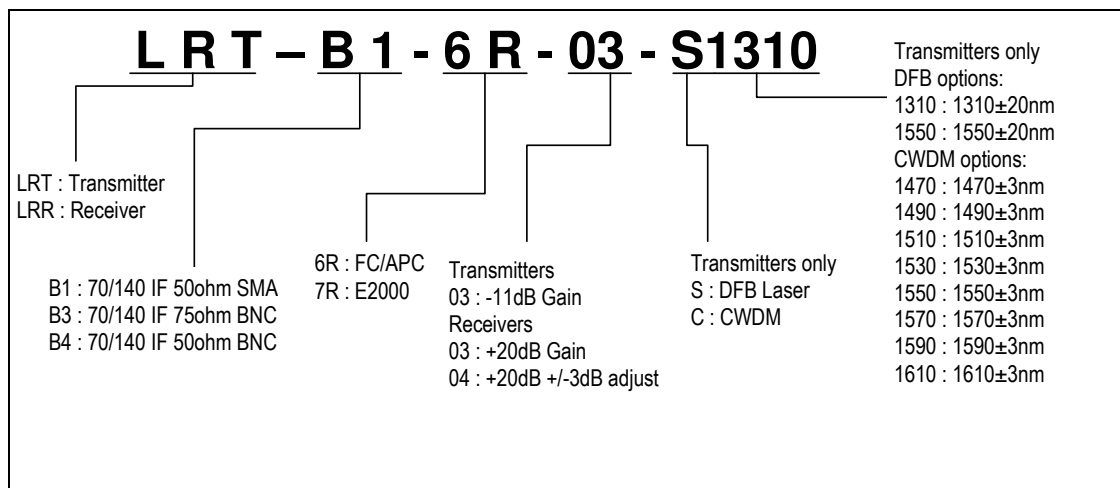


Figure 2: Plug-in Module in Converter Sleeve for standalone operation

Ordering Information



Standard parts available on short lead times:

- LRT-B1-6R-03-S1310
- LRR-B1-6R-03
- LRR-B1-6R-04
- LRT-B3-6R-03-S1310
- LRR-B3-6R-03
- LRR-B3-6R-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-xx	1:1 Redundancy Switch Module. (Substitute 10, 30 or 40 for xx to select connector type. -10 for 50Ω SMA; -30 for 75Ω BNC or -40 for 50Ω BNC)
LRD-x	Broadband Low-loss RF Splitter, 10-2500MHz. (Substitute 1, 3 or 4 for x to select connector type. -1 for 50Ω SMA; -3 for 75Ω BNC or -4 for 50Ω BNC)
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

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