GPS RS422 FIBRE-OPTIC-LINK

PPM's ***ViaLite*** GPS RS422 Fibre-Optic-Link provides a high reliability connection for the transmission of RS422 signals over optical fibre for distances of up to 20km.

It has been designed specifically for GPS systems, where there is a requirement for two channels for full duplex RS422 control data, in addition to an independent 1PPS channel.

The use of optical fibre overcomes problems due to path loss and electro-magnetic interference etc. It has a number of inherent advantages over conventional coaxial alternatives:

- Low loss - enabling very long path lengths
- Lightweight, highly flexible, small diameter cable.
- Immunity to electrical interference - the signal is not corrupted by radiated interference.
- Non-conductive - provides electrical isolation.

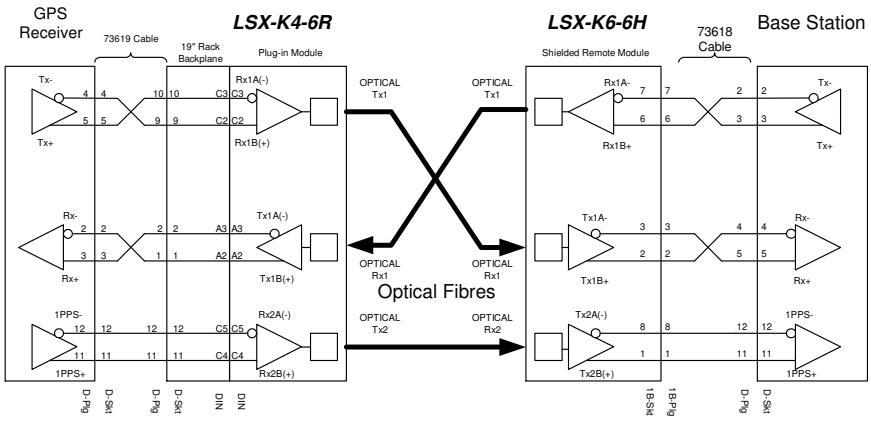
PPM's ***ViaLite*** product offers particular advantages:

- DC-115kb/s operation
- 3 channels for full-duplex data and 1PPS
- No special signal coding required
- Operation from 0m to >20km
- Compact plug-in module – up to 8 in 19" rack case
- Shielded module option for use in high levels of electrical interference or over a wide operating temperature range
- Front panel status LEDs

Complementary PPM ViaLite Products

- RF Signal modules for RF GPS, L Band, satellite inter-facility etc.
- 19" Rack Case
- Dual redundant power supplies for maximum availability
- 1:1 Redundancy Switch
- Alarm concentrator module
- IP66 Environmental Enclosure

The following diagram shows a typical application in a GPS system, conveying 1PPS signals as well as full duplex data between a GPS receiver and a base station.



ViaLite GPS RS422 FIBRE-OPTIC-LINK SPECIFICATIONS

Data Format

Data Rate	DC to >115kb/s, asynchronous, NRZ
Data Format	RS422 EIA/TIA-422 Compliant
Maximum "Low" Pulse Width	∞
Maximum "High" Pulse Width	∞
Data Electrical Input Impedance	120Ω
Duty Cycle Distortion	<5%
Bit Error Rate	<1 in 10^8
Jitter	<200ns rms
Output Rise/Fall Time 10/90%	<2.5µs
Delay	<5µs for Tx + Rx with 1m fibre Approx. 5ns/metre delay due to optical fibre

Module Format

Module Function (2 x Tx + 1 x Rx version)	Data 1 Transmit Data 1 Receive Data 2 Transmit
Module Function (1 x Tx + 2 x Rx version)	Data 1 Transmit Data 1 Receive Data 2 Receive
Indicators	Front Panel LED "Power" Front Panel LED "Opt Tx 1" Front Panel LED "Opt Rx 1" Front Panel LED "Opt Tx 2" OR "Opt Rx 2" depending on version
Plug-in Module Electrical Signal/Power Connector	User accessible 15-way D-Type Female via 19" Rack Shelf backplane
Shielded Remote Module Electrical Signal/Power Connector	Lemo 8 pin 1B Socket on front panel.
Current Consumption	<4W

Operating Conditions

Operating Temperature	
Rack plug-in module	0°C to +40°C
Shielded remote module	-20°C to +50°C
Storage Temperature	-40°C to +70°C
Optical	>60dB return loss. Suhner FCPC-Z/M-A601 narrow keywidth connector. Use with other types may compromise system performance.

Optical Characteristics

Output Power	-7dBm nominal
Wavelength	1310+/-20nm
Fibre	Singlemode 9/125, Corning SMF28 or equivalent
Optical Connector	FC/APC Narrow key, >60dB return loss, Suhner FCPC-Z/M-A601
Optical Path Length	0m to 20km for 1300nm, single-mode fibre
Optical Power Budget	10dB (Typical fibre losses: Fibre: 0.4dB/km; Connectors: 0.5dB max.)

Physical Format

Housing Options	Rack Plug-in Module - suitable for Rack Case or Plug-in Converter Sleeve Shielded Remote Module (fixed gain modules only)
Supply Voltage Rack Plug-in Module Plug-in Converter Sleeve Shielded Remote Module	 +12Vdc from LRK power supply +12Vdc +/-10% from external supply via 2.1mm or D-type connector +12Vdc +/-10% from external supply via Lemo 1B connector
Weight Rack plug-in module Shielded Remote Module Plug-in Converter Sleeve	 600g 750g 600g + module
19" Rack Case suitability	LRK1, LRK2

Variants

Part Number	2Tx / 1Rx	1Tx / 2Rx	Plug-in Module	Shielded Module
LSX-K4-6R	•		•	
LSX-K4-6H	•			•
LSX-K6-6R		•	•	
LSX-K6-6H		•		•

19" Rack Case Solutions

Part Number	Description
LRK1	19" Rack Case 3U for desktop or 19" rack installation. Accommodates up to 8 plug-in modules and 2 mains power supplies.
LRK2	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 LRK1 or LRK2.
LPS-R	Reserve Power Supply plug-in for LRK1 or LRK2.
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
73618	Cable assembly, for connection to shielded remote module, 8pole 1B Plug to 15pin D-Type Plug
73619	Cable assembly, for connection to plug-in module, 15pin D-Type Socket to 15pin D-Type Plug
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, 5m, 10m)

CONTACT US

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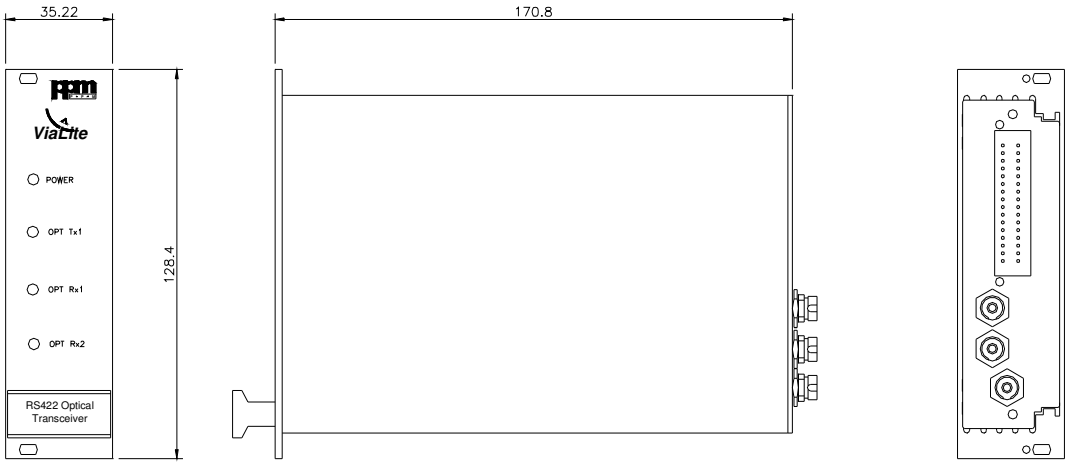

Figure 1: Plug-in Module

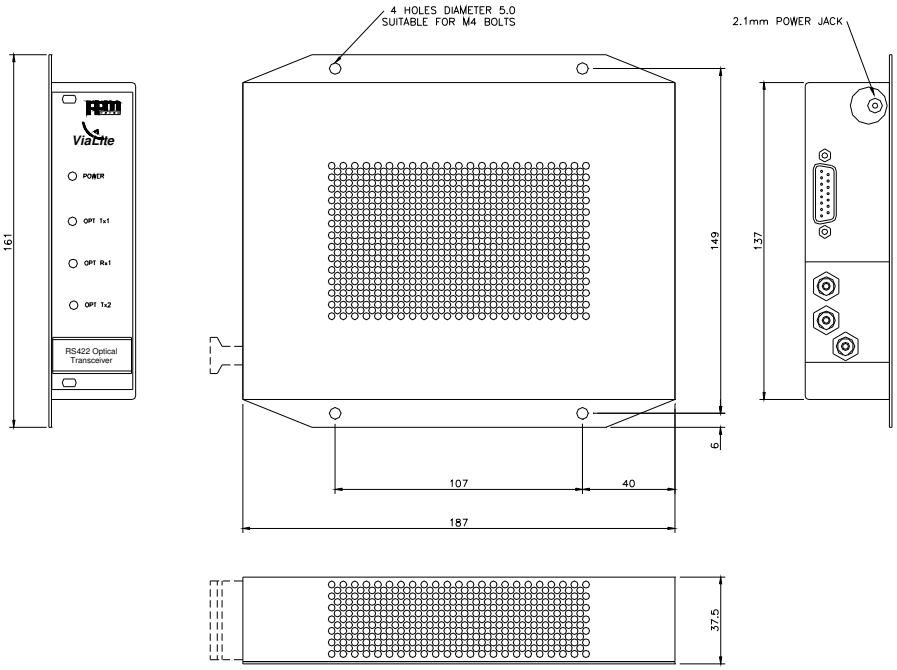

Figure 2: Plug-in Module in Converter Sleeve for standalone operation

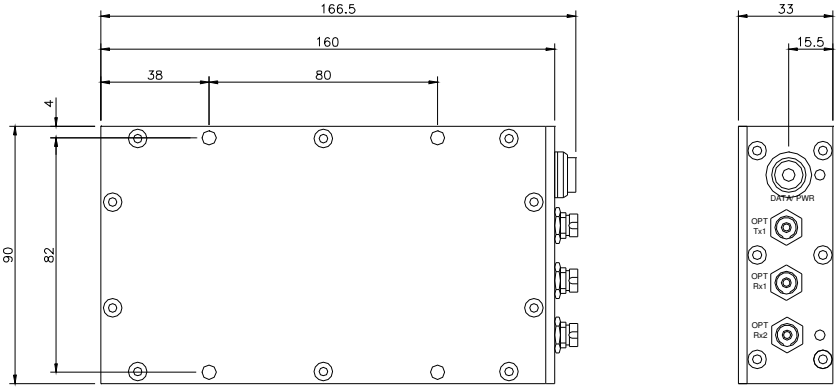

Figure 3: Shielded Remote Module