



ViaLite Fibre Optic OEM Modules



ESD Precautions



Precautions for handling electro-static sensitive devices should be observed when handling the **ViaLite** RF Transmitter and Receiver modules.

Optical Safety



The **ViaLite** RF Transmitter modules contain laser diode sources operating at 1300nm / 1550nm. These devices are rated at under EN60825-1:1994 as CLASS 1 radiation emitting devices.

- Never look into the end of an optical fibre directly or by reflection either with the naked eye or through an optical instrument.
- Never leave equipment with radiating bare fibres accessible – always cap the connectors.
- Do not remove equipment covers when operating.

Adjustment, maintenance and repair of the equipment should only be carried out by suitably qualified personnel.

This product is supplied with angle-polished connectors and these must not be confused with standard flat, spherical or "super" polished connectors. These connector types are not interchangeable and mating one with the other will damage both the cable and the equipment.

The specification of the optical connector is critical to the performance of the complete fibre optic link. System performance can only be guaranteed with fibre optic cables and connectors supplied by PPM.

Connecting and Disconnecting Optical Connectors

Before connecting optical fibres to the module or to each other, ensure that the mating connectors are clean. Please read the cleaning instructions which accompany the connector cleaning kit.

To connect FC/APC optical connectors, remove the dust caps and align the white ceramic centre ferrule on the cable connector with the receptacle. There is a lug on the side of the ferrule, which must match the gap in the receptacle shroud. When they are aligned, gently push the plug home and finger tighten the knurled collet nut onto the threaded receptacle. To disconnect, unscrew the knurled collet on the plug and gently withdraw the plug. Replace the dust caps on both the receptacle and the cable plug.

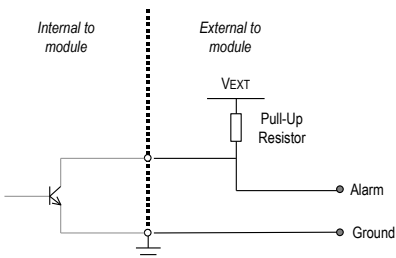
To connect E2000 optical connectors, gently push the plug into the E2000 adapter until a click is heard and the connector locks. To disconnect, depress the lever at the rear of the connector and withdraw the connector.

Minimum Bend Radius of Fibre Optic Cable is 50mm.

Connecting and Disconnecting RF Connectors

This product uses SMA RF connectors. To connect a cable to the module, screw the cable connector onto the module connector to finger tightness, then use an SMA torque spanner to tighten the connector to the specified torque. To remove the connector, loosen the connector with an 8mm spanner, then remove the connector using fingers only.

Alarm Outputs



Transmitter Alarm Output : Laser failed or degraded

Receiver Alarm Output : No received optical signal

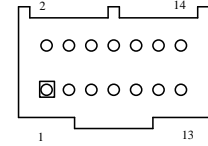
"Alarm" condition is active high - see diagram

Maximum current through alarm circuit = 50mA

VEXT allowable range = +1VDC to +15VDC

14 way connector

Pin Number	Cable Colour	Function
1	Pink	Not used (only used on digital modules)
2	Pink	Not used (only used on digital modules)
3	Pink	Not used (only used on digital modules)
4	Pink	Not used (only used on digital modules)
5	Orange	Alarm Output (Open Drain)
6	Pink	Not used (only used on digital modules)
7	Red	+12.0VDC Supply to Module
8	Black	Supply 0VDC Return
9	Pink	Not used (only used on digital modules)
10	Purple	Not used on this module type
11	Black	Supply 0VDC Return
12	Pink	Not used (only used on digital modules)
13	White	LNA Feed (-36VDC to +36VDC, 330mA max.) *
14	Green	Analogue Monitor Output



Top view of the 14-pin header

cable assembly part number 73664 (supplied) for connection to the submodule.

* only used on some versions typically B1/D1/N1/L1/G1 variants

Monitor Outputs

Transmitter

The forward current monitor (IFL) gives an absolute measure of the laser drive current.

VI_{FL} = 68 x I_{fld} (A). E.g. Laser drive current of 40mA, produces 2.7V. Typical room temperature range is 20 to 50mA.

Recommended thresholds: max. 80mA; min. 10mA.

Receiver

The Received Light Level (RLL) monitor gives a relative measure of the optical power at the receiver module.

VR_{LL} = 7.75V at nominal system gain with 1m fibre and reduces by 0.125V per dB of RF link loss due to losses in the optical path.

E.g. if the measured voltage is 6.7V, the expected link gain is 8.4dB below the nominal link gain.

LNA Feed

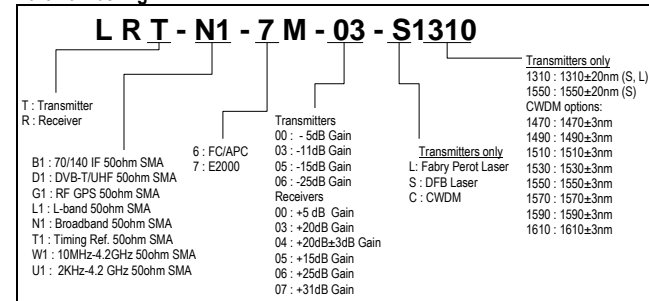
All information in this section refers to fibre optic transmitter modules only. LNA voltages are fed **out** through the RF **input** connector on the Tx modules. Modules in this range DO NOT offer an internally generated LNA feed voltage.

Some modules do offer an ability to route a user fed LNA voltage through PIN 13 on the 14-way header, details shown below.

When using PPM Outdoor Enclosure, external LNA feed is available via the outdoor enclosure motherboard.

Module Type	
B, IF 10-200MHz	External +/-36Vdc 330mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
D, UHF/DVB-T	External +/-36Vdc 330mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
G, GPS	External +/-36Vdc 330mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
L, L-band 950-2150MHz	External +/-36Vdc 330mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
N, 10MHz-1GHz	External +/-36Vdc 330mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
T, Timing 10kHz-50MHz	External +/-36Vdc 180mA LNA feed allowed. To enable apply voltage to PIN 13 of the 14 way header connector.
U, 2kHz - 4.2GHz	No external LNA feed allowed
W, RF+ Digital	No external LNA feed allowed

Part Numbering



Contact

PPM Limited, 65 Shrivensham Hundred Business Park, Watchfield, Swindon, SN6 9TY, U.K.
Tel : +44 (0) 1793 784389 Fax : +44 (0) 1793 784391 http://www.vialite.co.uk