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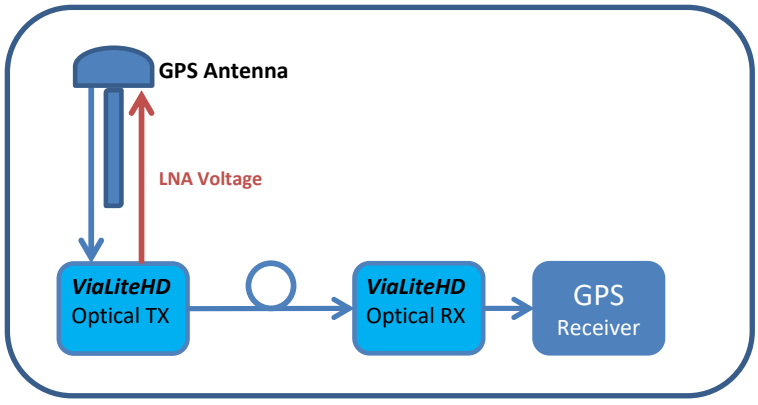
ViaLiteHD® - GPS over Fiber Extension Kit

***ViaLite* Kit Number: VCS6FEK**

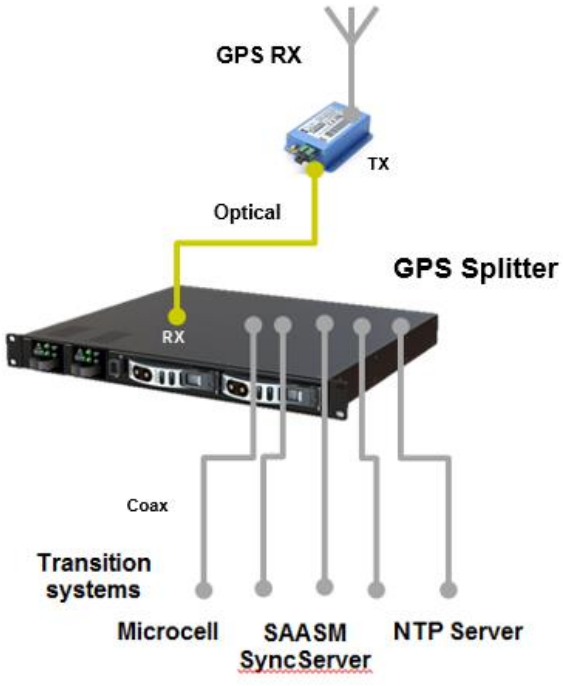
- **Suitable for timing & synchronization applications**
- **Transmits GPS L1, L2, L5 / GALILEO / GLONASS / BeiDou**
- **DC voltage feed to GPS antenna**
- **GPS no signal received alarm feature**
- **Transmission distances up to 10 km standard**
- **>50 km solutions also available**
- **Design options for multiple GPS signal distribution from a single antenna**
- **Design options to address redundant antenna systems, redundant RF and redundant fiber configurations**

Many Network Time Protocol (NTP) server networks are required to maintain extremely accurate clock systems for timing synchronization. The ***ViaLiteHD*** GPS link is ideal for providing a remote GPS signal or derived timing reference to equipment positioned where no GPS signal is available. For example inside a building, tunnel or underground mine. By using fiber instead of traditional coax, longer distances are possible with no RF loss and zero introduction of noise.

The GPS TX modules have the ability to support GLONASS, Galileo and BeiDou bands. ***ViaLiteHD*** RF over fiber equipment for GPS is specifically designed to provide high dynamic range and low noise performance. ***ViaLiteHD*** GPS RF links support signal levels that vary between -110 to -135 dBm over the air.



ViaLiteHD fiber optic links are available as rack mounted cards and small form factor OEM modules.

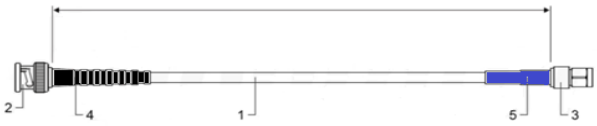
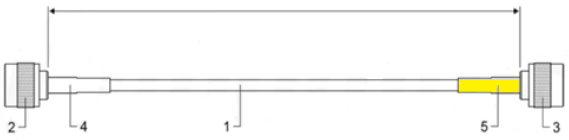


***ViaLite* Kit Number: VCS6FEK**

HRT-G1-8M-20-H1310-MS
ViaLiteHD RF Link, Transmitter (E/O), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Single mode SC/APC, Rack plug-in module, Internal +12 V@ 350 mA LNA feed to RF connector, -5 dB RF Gain, Dual isolated DFB, Wavelength 1310 +/- 20 nm.

HRR-G1-8M-60-MS
ViaLiteHD RF Link, Receiver (O/E), GPS & Galileo 1000-1800 MHz, 50 Ohm SMA, Single mode SC/APC, Blue OEM link, GPS & LF Load Simulator (Rx modules only), 5 dB RF Gain.

Parts list

Item	Visual part	Part number & description
1		***ViaLite*** P/N 55808 BNC Plug (black end) to SMA Plug (blue end) fitted between a Time Server and ***ViaLiteHD*** RF over fiber receiver – 1 meter long
2		***ViaLite*** P/N HRR-G1-8M-60 *ViaLiteHD* GPS RF over fiber receiver with alarm state pass through
3		***ViaLite*** P/N HPS-CS-3 & 93407 ***ViaLiteHD*** PSU & Power Cord
4		***ViaLite*** P/N F8R1/3 SC/APC to SC/APC fiber optic bench test cable – 3 meters long
5		***ViaLite*** P/N HRT-G1-8M-20-H1310 ***ViaLiteHD*** GPS RF over fiber transmitter with GPS antenna powering via RF connector
6		***ViaLite*** P/N HPS-CS-3 & 93407 ***ViaLiteHD*** PSU & Power Cord
7		***ViaLite*** P/N 55809 N-Type socket (white end) to SMA Plug (blue end) fitted between GPS antenna and ***ViaLiteHD*** RF over fiber transmitter – 1 meter long
8		***ViaLite*** P/N 55810 N-Type plug (white end) to N-Type plug (yellow end) fitted between 55809 and Lightning Arrestor. 1 meter long (only used with lightning arrestor)

Green items in list located with GPS Time Server
Purple items in list are for bench testing only
Blue items in list are located near GPS antenna

RF performance characteristics

	GPS/GNSS Link
Frequency range	1000-1800 MHz
Link gain (TX gain / RX gain), default	(-5 / +5), 0 dB (nom)
Flatness (full band)	±0.3 dB (typ)
Gain stability	0.25 dB (typ) @ 24 hrs
VSWR (50 Ohm)	1:1.5 (typ)
Noise figure (at default gain)	15 dB (typ)
Input P1dB	-8 dBm (typ)
Input IP3 (at default gain)	4 dBm (typ)
Maximum input power	13 dBm (min)
SFDR	109 dB/Hz$^{2/3}$ (typ)
LNA power	Internal +12 V @ 350 mA
Laser type	DFB
Optical wavelength	1310 nm ± 20 nm (1550 nm & CWDM option available)
Optical power output	4.5 dBm (typ)
Operating temperature	-20 °C to +60 °C
Storage temperature	-40 °C to +70 °C
Size (W) x (D) x (H)	21.5 x 43 x 69 mm

Distributed options for end user equipment	
Standalone Blue OEM module (TX or RX)	
Standalone Blue2 OEM module (Dual TX, Dual RX and transceiver TRX option)	
1U chassis with dual PSU and SNMP	
Local Integrated GPS RF Splitter Supports 1x8, 2x8, 4x8, 1x16 2x16 outputs	
Wide area Multi-zone Lossless Optical Splitter Supports 8, 16, 32 and 64 way splitting with no loss