



GPS / GNSS Solutions

GPS / GNSS Time Distribution System for Tunnels

Foxcom's unique redundant GNSS Time Distribution System (TDS) ensures failsafe global satellite navigation signal transmission in tunnels.



Product Description

Foxcom's redundant TDS provides an easy electrical isolated way to receive navigation satellite signals and transfer them within a long tunnel using multiple receivers connected in series.

The system supports up to 16 GNSS optical receivers while maintaining signal integrity and sensitivity performance. By adding an optional second laser the system can support additional 16 (total of 32) or 16 redundant receivers (using a redundant optical receiver).

With the redundant system option the system delivers two GNSS signals to each receiver via separate dedicated fibers sourced from a separate antenna.

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Foxcom's unique GNSS distribution system can identify an RF signal drop caused by sky blockage or a failed antenna and toggle to the backup channel creating a true failsafe redundant path.

The system consists of:

- Indoor transmitter equipped with a single or dual lasers
- Two optical receiver units
- Dual outdoor optical transmitters
- Indoor optical splitter
- Indoor redundant optical receiver
- Dual hot-swappable power supply units
- Eight GNSS RF outputs

Features

- GPS / GNSS distribution over a single fiber
- Auto-redundancy for Antenna Backup
- Phase free reference signal
- Connect in series up to 60 Km

Advantages

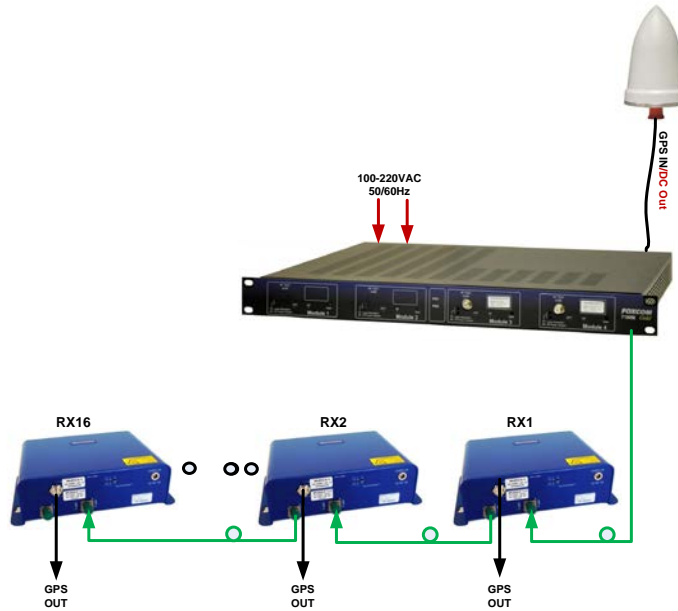
- Failsafe synchronization
- Electromagnetically isolated
- Customizable

Benefits

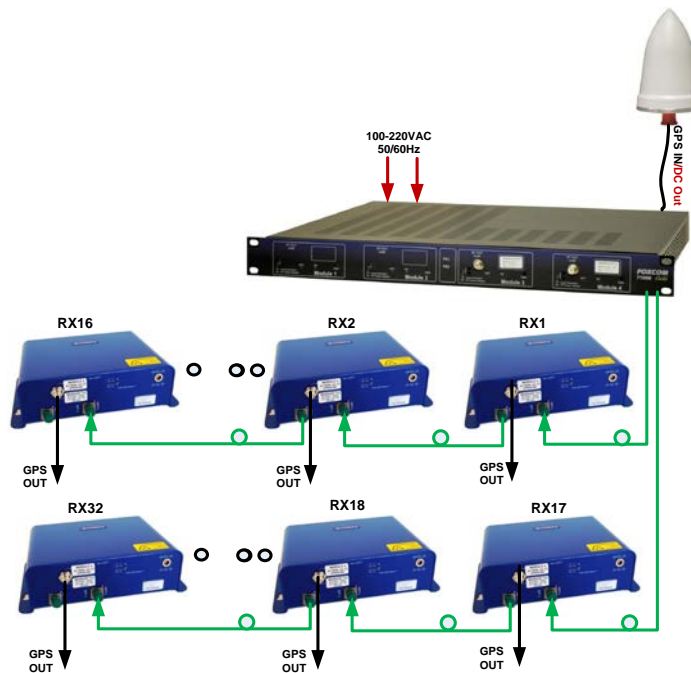
- Minimized phase noise and jitter during signal transmission
- Lightning safe
- Robust solution with redundancy, which reduces down-time

System Schematic

Standard System (Single laser transmitter, standard receiver)

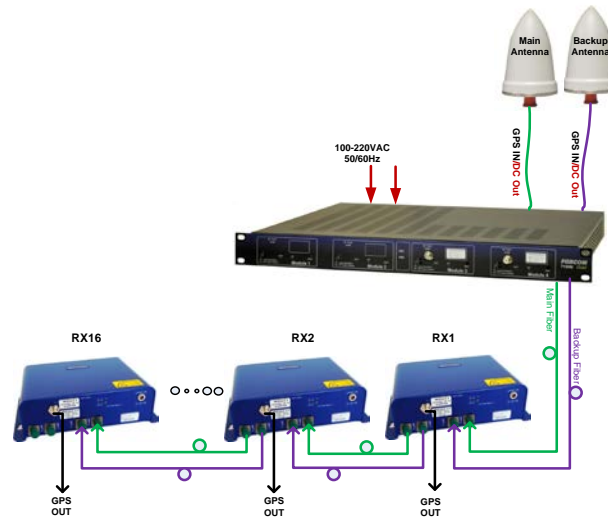


Standard System (Dual laser transmitter, standard receiver)



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Redundant System (Dual laser transmitter, redundant receiver)



System Specifications

System Specification	Description
Satellite support	GPS L1, Galileo E1, GLONASS G1 (call for more options)
Operating frequency band	1.5 to 1.65GHz bandpass filtered
Number of GPS antenna supported	1 or 2 (main and backup)
GPS LNA powering	3.3VDC/5VDC (selectable)
System reception sensitivity	Not affected by the TDS system
Max optical receiver supported	Up to 32 with dual laser option (16 for a redundant setup)
Transmitter Specification	
Modules installed	Single/Dual GPS high sensitivity filtered optical transmitter
Laser type	DFB
Operating wavelength	D1310nm/1550/CWDM/DWDM
Optical connector quantity	1 or 2
LNA powering	3, 5 or 12VDC factory preset
Case type	19" 1RU
Powering	110-220VAC / dual hot-swappable PS
Receiver Specification	
GPS signal output	1
GPS RF connector	SMA
Front panel indication	PWR, OPT status, active GPS channel, GPS signal status
Redundant receiver monitored parameters	GPS RF signal level, optical signal level
Case Type	20x10x7cm compact enclosure
Powering	12VDC/1A VIA DC Jack (AC-DC Power adapter provided)

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Ordering Information

Model Number	Description
TDS-GPS-00-FC-SM-01-00-1R-TX	GNSS distribution transmitter housed in Foxcom 7190M 19" 1RU enclosure, single laser, single optical FC-APC output port, SMA GPS IN RF connector with 3.3VDC LNA powering. Equipped with dual hot-swappable 100-220V 50/60Hz AC to DC high reliability power supply units.
TDS-GPS-00-FC-SM-02-01-1R-TX	GNSS distribution transmitter housed in Foxcom 7190M 19" 1RU enclosure, dual laser , dual optical FC-APC output port, SMA GPS IN RF connector with 3.3VDC LNA powering. Equipped with dual hot-swappable 100-220V 50/60Hz AC to DC high reliability power supply units.
TDS-GPS-00-FC-SM-01-00-RX	GNSSSS optical receiver. Housed in a compact Foxcom enclosure, FC-APC optical input ports, single-GNSS SMA type RF output. Supplied with 100-220V 50/60Hz AC to DC power adapter.
TDS-GPS-04-FC-SM-01-00-RX	Redundant GNSSSS optical receiver. Housed in a compact Foxcom enclosure, Dual FC-APC optical input ports, single-GNSS SMA type RF output. Supplied with 100-220V 50/60Hz AC to DC power adapter.
FOXANT-RP-155-161-TF-40-01	High Gain >4dBi 1559-1606 RHCP antenna with built in high gain 40dB LNA and band pass immunity filter.