



## FS-3000GL1 Series

## Quad Fiber Optic Transmitter & Receiver for GPS Transmission System

### FS-3000GL1-TQ Transmitter, Key Features :

- Up to Four Independent Optical Transmitters
- +5V Bias/30 mA for LNA/Antenna
- NEMA 4X Outdoor Rated Enclosure, all Connectors Bottom-Mounted
- Internal Hot Standby Redundant AC-DC Power Supply
- Local Alarm LEDs, Local Power LED
- Alarms: Antenna Bias, Laser, Power Supply failure
- Through Fiber Alarms Communication to Receiver

### DESCRIPTION

The FS-3000GL1-TQ Transmitter is comprised of up to four independent RF-to-Optical signal paths, enabling remote connectivity for up to four separate GPS channels. A hot-standby redundant power supply and comprehensive alarm detection and reporting capabilities help to ensure high system availability.

Support for GPS antenna LNA bias current is provided, as are local on-board LED alarm and Power-On indicators. Alarms indications are also delivered over fiber to the companion Quad Receiver for local display and monitoring.

The FS-3000GL1-TQ Transmitter performs the Electrical-to-Optical conversion for the GPS RF on Fiber Link. The laser transmitter utilizes ultra-linear, high dynamic range DFB laser technology. APC (Automatic Power Control) is also used to stabilize the optical output power.



Quad Transmitter in NEMA 4X Rated Wall-mount Enclosure

### FS-3000GL1-RQ Receiver, Key Features :

- Up to Four Independent Optical Receivers
- 19-Inch Standard Rack-mount Enclosure, Optical, RF Connections, and LEDs on Front Panel
- Internal Hot Standby Redundant AC-DC Power Supply
- Local Alarm LEDs, Local Power LED
- Alarms: Optical Power, Power Supply failure
- Through Fiber Remote Transmitter Remote Alarms LEDs

### DESCRIPTION

The FS-3000GL1-RQ Receiver is the companion to the FS-3000GL1-TQ Quad Transmitter. It contains up to four independent Optical-to-RF signal paths, supporting independent end-to-end connectivity for each of the four GPS channels.

Summary status indicators with corresponding dry-contact closure outputs for Local and Remote Alarms, and hot-standby redundant Power Supply units both contribute to high system availability.

The FS-3000GL1-RQ Receiver performs the Optical-to-Electrical conversion for the GPS RF on Fiber Link. The optical receiver uses an ultra-linear PIN photodiode in unison with high-linearity RF amplifiers. The RF interface is terminated with a 200 Ohm Load for compatibility with standard GPS receivers.



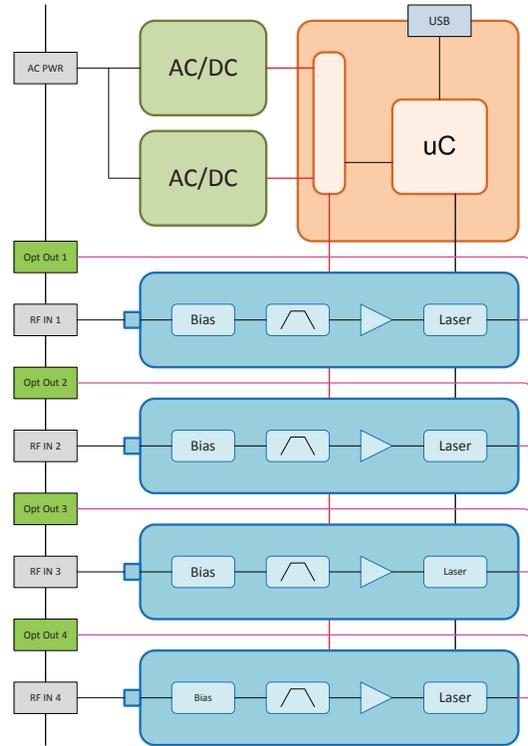
Quad Receiver in 19-Inch 1U Rack-mount Enclosure

**Laser Warning:** Invisible Laser Radiation emitting from optical connector. Avoid direct exposure to beam. 20 mW max. @1310 and 1550 nm. CDRH Class IIIB.

## QUAD TRANSMITTER

The FS-3000GLI-TQ Transmitter is comprised of up to four independent RF-to-Optical signal paths, enabling remote connectivity for up to four separate GPS channels.

Alarm status is sent via fiber for reporting and displaying at the receiver. With the optional GUI, discrete alarms can also be monitored.

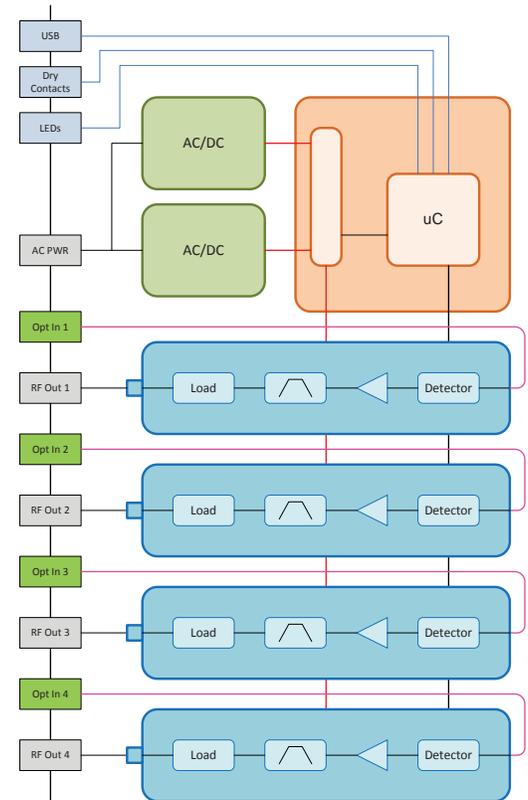
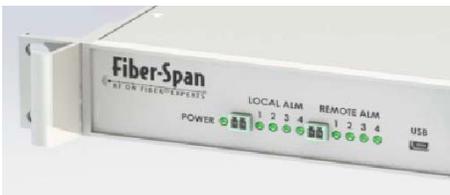


Quad GPS Transmitter Block Diagram

## QUAD RECEIVER

The FS-3000GLI-RQ Receiver is the companion to the FS-3000GLI-TQ Quad Transmitter.

The receiver can be equipped with up to four (4) independent signal paths. Summary alarms for local and remote units can be monitored with the local LED indicators, dry contact closures, or the optional GUI interface.



Quad GPS Receiver Block Diagram

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## GRAPHICAL USER INTERFACE (GUI)

The FS-3000GL1-Series System may be used with an optional Graphical User Interface (GUI). This utility is available separately as an enhancement to user operation, maintenance and troubleshooting functions.

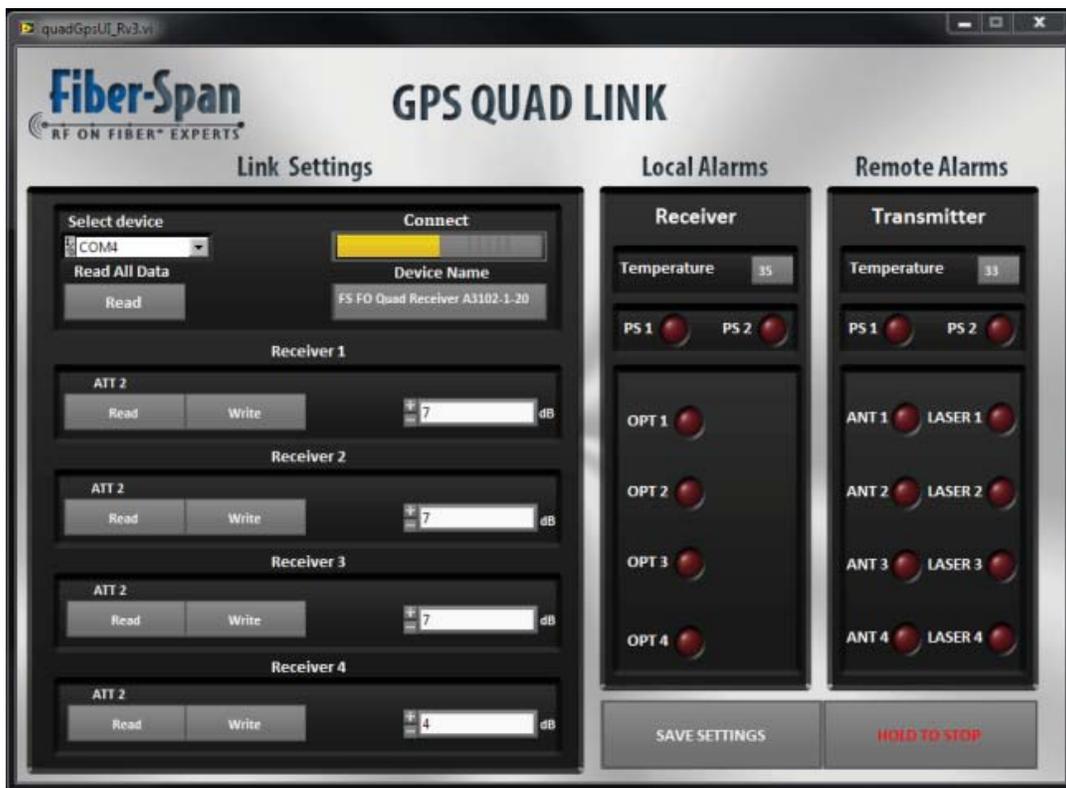
The software utility is supplied as a file for installation on any Windows-based PC. Most conveniently, this could be installed on a laptop PC with a USB port used for connection to the local USB port on the FS-3000GL1 Receiver unit.

The utility is intended for on-site use by technical personnel, supporting the collection and presentation of all pertinent operational data from both transmitter and receiver units, in one convenient location.

## Key Features

- Convenient Receiver FS serial number display.
- Alarm Status indications (providing better granularity than physical LEDs), with continuous polling.
- Independent Redundant Power Supply status indicators for Transmitter and Receiver.
- Ability to configure Optical Link attenuation for link budget optimization.
- Transmitter and Receiver board temperature indicators.

Contact Fiber-Span Sales for further information.

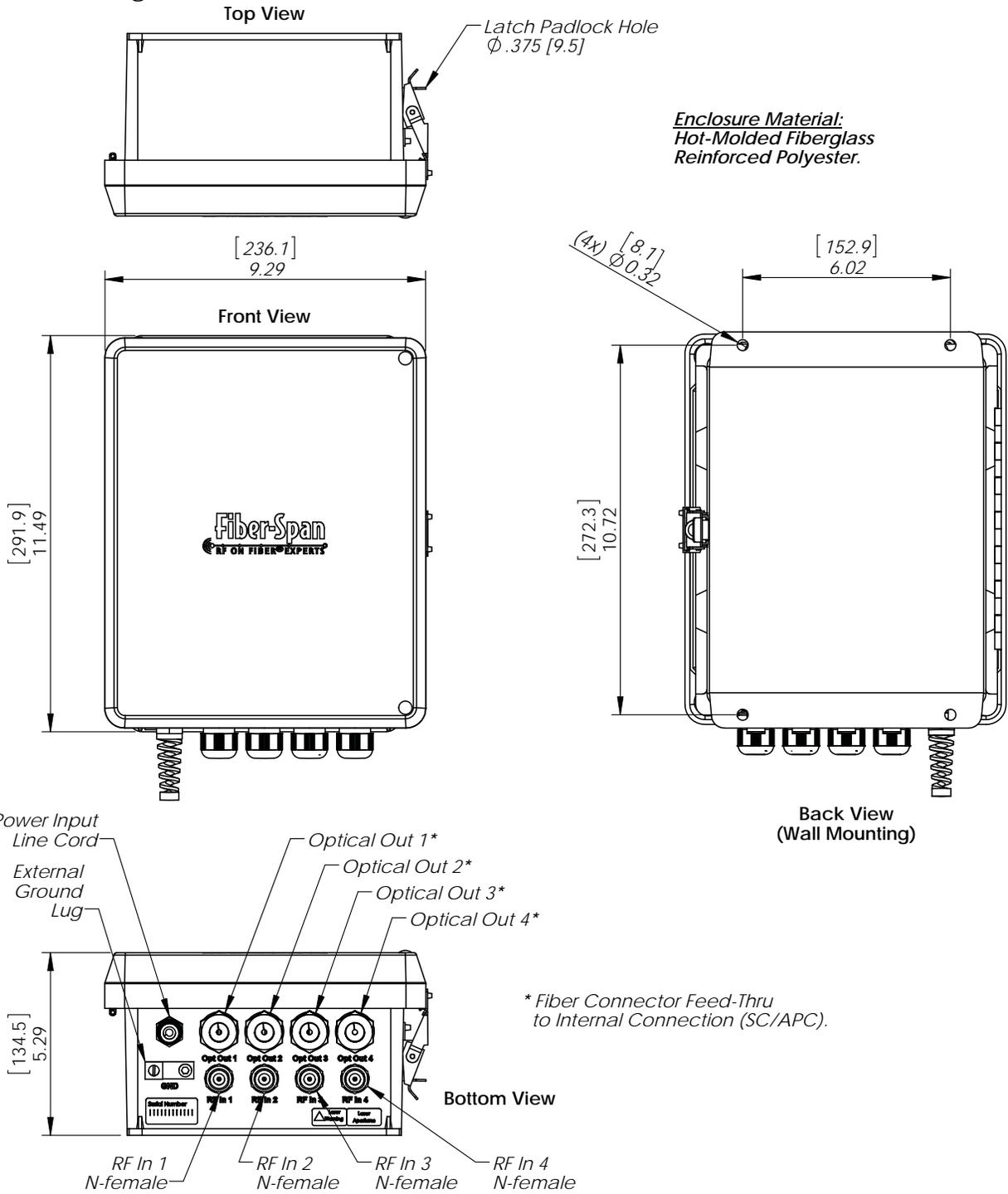


FS-3000GL1 GPS System Optional GUI

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*FS3000GL1-TQ-W-RP, Fiber Optic GPS Quad TX,  
Redundant Power Supply, NEMA 4X Wall-Mount Enclosure*

*Outline Drawing*

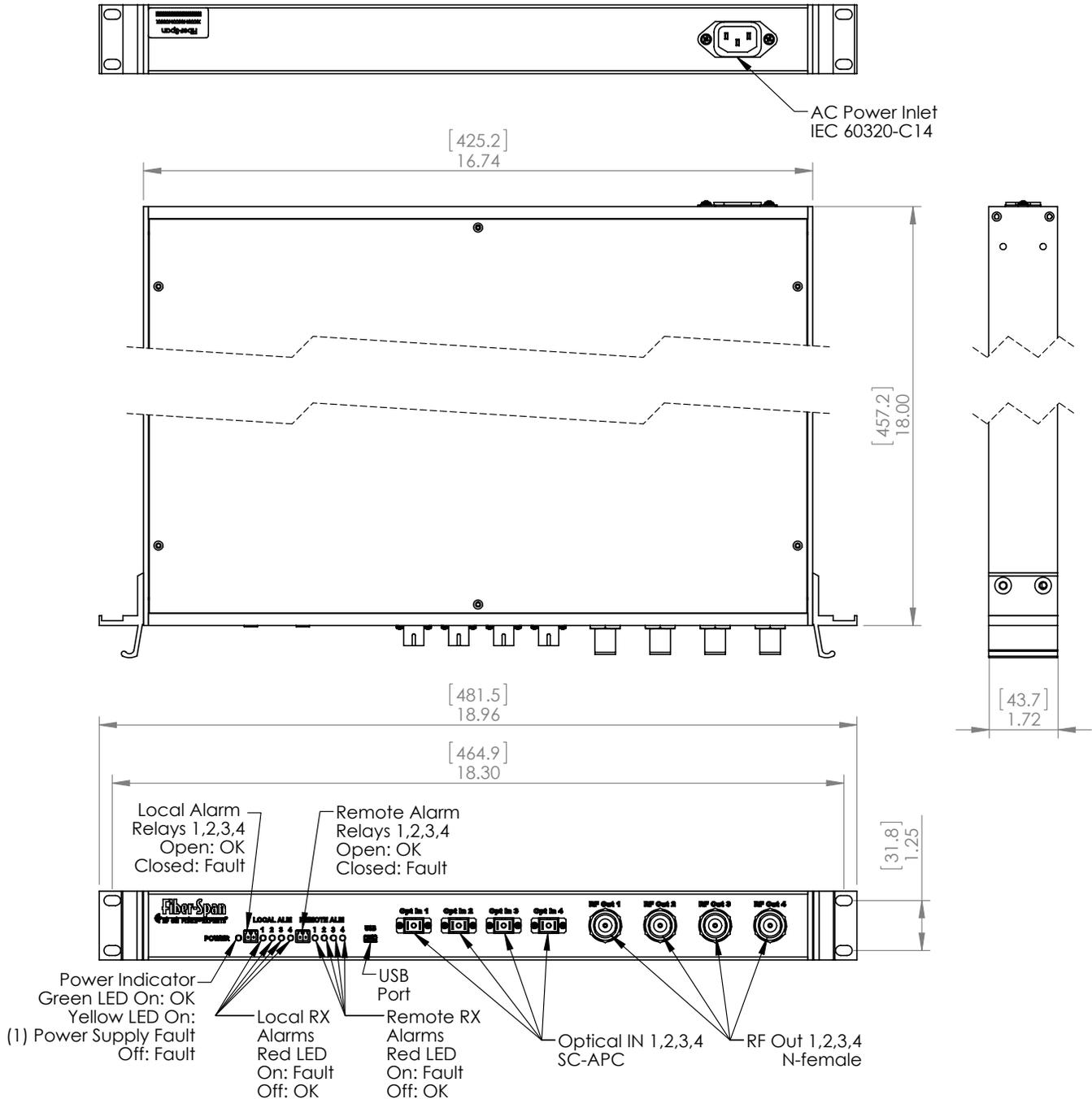


**Quad GPS Transmitter Outline Drawing**

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FS3000GL1-RQ-R-RP, Fiber Optic GPS Quad Receiver, Redundant Power Supply, 1U Rack Mount

Outline Drawing



Quad GPS Receiver Outline Drawing

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# FS-3000GL1 | Specifications

Parameter	Specification
Frequency Range	1565.42 - 1585.42 MHz (L1 Band, Note 1)
Bandwidth	20 MHz
Noise Figure	2 - 3 dB
Overall Gain	10 dB (Factory set - 1 meter fiber link)
Connectors	RF : N Female Fiber Optic : SC/APC (FC/APC optional)
Cable	9/125 $\mu$ m Single Mode Fiber Optic cable
Power Consumption	< 50 Watts
Operating Temperature	-20° C to +70° C

Note 1: Other GPS Frequency bands are available (L2, L3, L4, L5)

## Electrical

AC Power (Dual Power Supplies)	50/60 Hz, 115-230 VAC
Power Consumption (max)	Transmitter: < 50 W @ 55°C Receiver: < 50 W @ 55°C

## Alarm Monitor

Alarm Indications	(dry contact closures) available at each Transmitter and Receiver unit
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## Environmental

Operational Temperature Range	Transmitter: -20 to +50 °C Receiver: -5 to +50 °C
Humidity	10 to 95% non-condensing

## Ordering Information

Identification	Part Number
FS-3000GL1	FS-3000GL1-XX-Y-ZZ
	Where: XX = T4 for Quad Transmitter; R4 for Quad Receiver; T1 for 1 Transmitter, R1 for 1 Receiver; T2 for 2 Transmitters; R2 for 2 Receivers; T3 for 3 Transmitters; R3 for 3 Receivers. Y = W for Wall-mount; R for Rack-mount. ZZ = RP for Redundant Power Supply

## Mechanical Specifications

Receiver	
Dimensions (W x H x D) inches	Rack-mount: 19 x 1.75 x 21
Enclosure	19 inch 1U subrack
Weight (approx.)	Rack-mount: < 12 lbs.
RF Connector Type	N-Female
Optical Connector	SC/APC
Transmitter	
Dimensions (W x H x D) inches	Wall-mount: 9.29 x 11.49 x 5.29
Enclosure	NEMA 4X, Wall-mount
Weight (approx.)	Wall-mount: < 9 lbs.
RF Connector Type	N-Female
Optical Connector	SC/APC

LITERATURE ORDER CODE: FS-3000GL1-01-0314\_1v4

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