

XL-GPS Quick Start

This Quick Start guides you through an initial test configuration of the XL-GPS with a standard GPS receiver, antenna, and antenna cable. If you're using a different configuration, or for permanent installation instructions, see the "Installation/Configuration" section in the XL-GPS User Guide, included on the product CD.

Outline Procedure

- Position the GPS antenna with a good view of the sky and connect it to the unit.
- (optional) Connect the network port, serial port, timing inputs and outputs, as needed.
- Connect the power cord and wait for the unit to complete its startup.
- (optional) Configure the network settings using F100 on the front panel keypad.
- (optional) Configure the time display, using F1, F2, F66, and F69 on the front panel keypad.
- Verify GPS receiver is operating using F119, F73, and STATUS on the front panel keypad.

Positioning the GPS Antenna

Select a site for the standard antenna supplied with the XL-GPS. The optimal site:

- Is the highest point available.
- Offers a full 360° view horizontally, to within 10° vertically of the horizon.
- Is higher than neighboring buildings/obstructions.
- Is protected from strong radio frequency (RF) and microwave transmissions.
- Is set away from RF-reflective surfaces that cause multi-path interference.
- Is set 3 ft. (1 m) away from other GPS antennas.

If positioning the antenna outdoors is difficult or inconvenient, you may be able to test the system by placing the GPS antenna in a window that gets the noon-time sun (e.g., south-facing for users in the northern hemisphere). East/west-facing windows with good visibility are okay. Avoid views obstructed by nearby trees, buildings, metallic window coatings, and window shades, all of which block GPS signals. Window-mounted GPS antennas have reduced visibility of GPS satellites, and receive weaker GPS signals, so the unit may have difficulty locking to, and remain locked to, GPS satellite signals.

Connecting the GPS Antenna

Warning: Use an antenna rated for 12 Volts. Antennas not rated for 12 V will be damaged.

The GPS antenna cable has a TNC connector at one end, and a BNC connector at the other end. Run and connect this cable between the TNC connector on the GPS antenna, and the BNC connector marked "ANT" on the rear panel of the XL-GPS instrument.

Making Additional Connections

Make the following optional connections:

- Connect the network port, **NET**, to the LAN using with the **Cat-5 network cable** (supplied). This connection can be used to manage the XL-GPS remotely by network, or optionally, for NTP.
- Connect RS-232 null modem cable (supplied) from **SERIAL I/O** to the serial port on a PC. This connection can be used to manage the XL-GPS locally, using the command line interface.
- Make any other connections needed to J1, J2, J3, and the Expansion Module. Consult the XL-GPS User Guide as needed.

Connecting the Power Supply

Connect the Power Supply it to a power source. The green STATUS light indicates that the XL-GPS is receiving power.

Upon receiving power, the XL-GPS goes through its startup sequence; displaying "Booting", "Loading", and "Starting". After approximately 40 seconds, the XL-GPS displays the clock status, and user interfaces (front panel/command line) become available.

For more information, see both the Grounding, and Connecting the Power Supply sections in the XL-GPS User Guide.

Configuring Network Settings

The following additional steps are required to make the XL-GPS operational on a network. Make the XL-GPS operational on a network if you plan on:

- Managing the XL-GPS remotely over the network.
- Distributing timing information from the XL-GPS over the network.

<u>Press</u>	<u>Result</u>
ENTER	Displays "FUNCTION"
100	Enters 100 as the function number
ENTER	Displays Function 100's first screen: "COMPANY 00-A0-69..."
ENTER	Displays "IP ADDRESS..."
1-9...	Enter the unit's IP Address (e.g., 192.168.000.011)
ENTER	Displays "SUBNET MASK..."
1-9...	Enter the Subnet Mask (e.g., 255.255.255.000)
ENTER	Displays "DEFAULT GATEWAY..."
1-9...	Enter the Default Gateway's IP address (e.g., 192.168.000.001)
ENTER	Displays "10 100 BASE-T - 10"
ENTER	Displays "REMOTE LOCKOUT - UNLOCK" (Leave unchanged)
ENTER (5 times)	Displays "SAVE CHANGES - YES"
ENTER	Saves the new network parameters, and reboots the XL-GPS

Configuring the Time Display

Configure the XL-GPS to display time correctly. Use the menu-driven keypad/display interface, to enter the functions and select the desired settings, as follows:

- **F1 – Time Zone Offset:** Set the number of hours difference between your time zone and UTC. For example:
 - Pacific Standard Time is UTC -08:00
 - Mountain Standard Time is UTC -07:00
 - Central Standard Time is UTC -06:00
 - Eastern Standard Time is UTC -05:00
- **F2 – 12/24-Hour Format:** Select a 12 or 24-hour display format. By default, the XL-GPS is set to the 24-hour display format (for example, 6 P.M. is displayed as 18:00).
- **F66 – Daylight Saving Time (DST):** If needed, set when Local time enters and leaves DST.
 - The factory settings for F66 apply to most users in the continental US: DST begins at 2 A.M. on the second Sunday of March, and ends at 2 A.M. on the first Sunday of November.
 - DST is NOT observed in Hawaii, American Samoa, Guam, Puerto Rico, the Virgin Islands, the Eastern Time Zone portion of the State of Indiana, and most of Arizona (Navajo Indian Reservation observes DST).

- Throughout the European Union (EU), Summer Time begins and ends at 1 A.M. UTC. It starts the last Sunday in March, and ends the last Sunday in October. In the EU, all time zones change at the same moment.
- **F69 – Time Mode:** Select the type of time output on the front panel display, F8, F9, and F90. The four choices are as follows:
 - **UTC** (Coordinated Universal Time) differs from GPS Time by the addition of leap-second corrections to compensate for variations in the earth's rotation.
 - **GPS** time is derived directly from the GPS constellation and doesn't contain any leap-second adjustments or other GPS-to-UTC corrections.
 - **Standard Time** is UTC plus a time zone offset. For example, Pacific Standard Time is UTC minus 8 hours.
 - **Local Time** is UTC with a time zone adjustment and a daylight saving time adjustment.

Verifying Antenna Installation

After completing the above steps, use the keypad/display to verify the following:

- In F119 – GPS Receiver Configuration (manual pg.101), after approximately 20 minutes of operation, check that GPS STATUS is LOCKED and GPS ANTENNA is OK.
- In F73 – Alarm Control / Status (manual, pg. 61), check that the GPS is OK and is ALARM ENABLED. Clear any alarm latches if present after the instrument has locked.
- Press the STATUS key. "LOCKED GPS" should appear on the front panel display **without an asterisk**. If an asterisk appears, it means that a reference source is not available.

To troubleshoot a problematic Antenna installation, recheck the physical location of the antenna, the cabling, and the configuration settings described in this manual.

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