

Troubleshooting

Transmitter Problems

The first step in troubleshooting the Transmitter is to reset the unit. If the Transmitter fails to receive a GPS signal and is set to time within 15 minutes, please reset the Transmitter.

Note: The Transmitter does not have an ON/OFF switch. To reset the unit, unplug the power supply and then plug the unit back in.

Power glitches, line spikes, power interruptions, static discharge or other voltage fluctuations can cause loss of communication with the GPS Unit if the disruption occurs during the initial setup communication between the Transmitter and the GPS.

Note: The time of day, view of the sky, weather, solar flares and local interference also influence signal reception and can cause temporary loss of the GPS signal. If reception problems persist, see Signal Reception Problems.

Display Does Not Light Up

If the display does not light up, check the power supply connection to the Transmitter and to the 120 VAC outlets. Also verify that the AC outlet has power. If this does not correct the problem, either the power supply or the Transmitter is defective. Call Primex Technical Support at 1-800-404-8112.

Display Lights Up, But Is Blank or Very Faint

Call Primex Technical Support at 1-800-404-8112. The Transmitter will probably need to be replaced.

Signal Reception Problems

1. Verify that the GPS Unit is properly connected to the Transmitter.
2. Verify that the GPS Unit is properly mounted on a Low-E glass window or on a rooftop or pole outside with a clear view of the sky.
3. Check to assure that the GPS Communication indicator is showing on the display (looks like a "Y" with a line over it). If this symbol is displayed, then the Transmitter is communicating with the GPS Unit.
 - a. If the GPS Communication indicator is not being displayed, then the Transmitter, GPS Unit, or the connection between Transmitter and GPS Unit is defective. Check GPS cable connections.

Note: The use of unshielded or standard shielded cables to extend the distance between the GPS Unit and the Transmitter beyond 50 feet can cause this failure mode. A special shielded cable with low resistance on the voltage supply line is required for distances over 50 feet. If cable connections are good, replace the GPS Unit.

- b. If the GPS Communication indicator is displayed but the parentheses are not flashing, then the problem is with the GPS Unit or with its signal reception.
 - i. Check to make sure that the GPS Unit has a clear view of the sky and that its view is not obstructed.

Note: Double pane Low-E glass windows are coated with a transparent metal layer that reflects infrared heat rays; this will also reflect the GPS signal. The GPS Unit will not receive the signal through Low-E windows.

- ii. Local interference can affect GPS reception. Try moving the location of the GPS receiver to improve reception.
- iii. Weather conditions, solar flares, time of day, and exact satellite position may also effect signal reception; however, these conditions are normally of a short duration.

Displayed Time/Date is Incorrect

1. If the minutes and seconds are correct, but the hours are off or the day is off by one, then switches #2, #3, or Rotary Switch B are in the wrong position. Correct switch settings. See Switch Settings for proper settings.
2. Other than for the above reason, or the loss of the GPS signal, the Transmitter, whose time is controlled by a GPS signal, should never display the wrong time or date. If such an event occurs, please contact Primex Wireless Technical Support at 1-800-404-8112.

Extremely Weak Transmitter Power (About 100 Feet or Less)

1. Unplug the Transmitter and ground yourself to eliminate static electricity.
2. Check to make sure that the antenna is not cross-threaded. The base of the antenna must be flat on the Transmitter case.
3. Check to make sure that the antenna rod is secure in the antenna base (hand tighten only).
4. Check to make sure that the base of the antenna is tightly mounted on the Transmitter case.
5. Check to make sure that the antenna is not touching anything.
6. Plug in the Transmitter. If the Transmitter power is still extremely weak, the output stage of the Transmitter may have failed. Contact Primex Wireless at 1-800-404-8112.

Weak Signal (Limited Coverage Area)

The coverage area is determined by many factors. One of the primary factors is the transmitted signal compared to the background noise. For the clocks to receive a clear signal from the Transmitter, the signal must be several times stronger than the background noise. Therefore, Transmitters located in areas with generally higher background interference will have reduced coverage. The Transmitter has 16 selectable channels. By selecting the channel with the lowest level of background noise, the maximum range for the particular area may be achieved.

Warning: Changing the channel from the one specified on the FCC application will require that you again file an application for the new channel.

Red LED is Flashing

The Red LED flashes when the unit has not received an updated time signal for 48 hours. It will also flash during initial setup.

1. Check the GPS Unit and its cable for proper connection to the Transmitter and possible damage to the cable. Check the mounting of the GPS Unit to ensure that the mounting did not slip or change and that it has an unobstructed view of the sky.

2. Check the display panel for the GPS Communication indicator. If the symbol is there, re-check the location of the GPS Unit and its view of the sky and resolve any obstructions. Then disconnect power from the Transmitter, wait five seconds and reconnect power to the Transmitter.
3. Check the display panel for the GPS Communication indicator. If the symbol is not there, disconnect power from the Transmitter, disconnect the GPS Unit from the Transmitter, and check the GPS cable and connections. Then reconnect the GPS Unit to the Transmitter and reconnect power to the Transmitter. If the GPS Communication symbol still does not appear in the display, replace the GPS Unit.

System Analog Clock Problems

Mechanical Failure

Clock Hands Do Not Move or Clock Loses Time

Check for the following possible causes:

1. **Low Battery Voltage:** Remove and check batteries to make sure that batteries are good (1.3 Volt minimum). Replace the batteries, if needed, and reset the clock. See **System Clock Battery Replacement**.
2. **Back Cover Loose:** Look at the back of the clock and check the clock movement cover to make sure that the cover is down securely over the locking tabs.
3. **Clock Hands Obstructed:** Look at the clock hands to make sure that the clock hands do not interfere with each other or scrape against the dial or lens.
4. **Battery Voltage Interrupted:** If the unit is severely jarred, the batteries can momentarily become disengaged and cause the unit to reset. If this has occurred, the clock will run but it will not correct itself. To determine if an accidental reset has occurred, press the red button. The clock should beep three times and stop. If it does not, then an accidental reset has occurred and the clock will need to be reset. See **System Clock Battery Replacement**.

Problems with Setting the System Analog Clock Accurately

There are several ways to set the System Analog Clock, but all methods should contain the following three steps:

1. The clock must be initially set to within +/-29 minutes of the correct local time. (This effectively sets the time zone and determines the position of the hour hand.)
2. The red button should first be pressed and released when the second hand is at the "12" position. (This identifies the position of the second hand.)
3. Then the red button should be pressed and released just after the second hand crosses the minute hand. (This identifies the position of the minute hand.)

In addition to the above three basic steps, a precision setting also requires the following steps:

1. The final adjustment (last 15 minutes) of the minute hand must be set in the forward (clockwise) direction.
2. The position of the minute hand with respect to the second hand must be carefully set.

Precision Setting Procedure for System Analog Clock

This method of setting avoids the uncertainty and setting inaccuracies that can result if the second hand does not fall exactly on the minute marks or the minute hand is not precisely aligned with the second hand.

1. Insert batteries and watch the second hand. When the second hand gets to the "11" position, remove the battery. Putting the second hand at the "11" position places the second hand in the ideal position for aligning the second hand with the minute hand, and clears any stored data in the electronics.
2. Set the clock precisely to the nearest hour. For example, if it is 2:45, set the clock to 3:00; if it is 3:20 set the clock to 3:00). Setting the clock to the nearest hour sets the time zone and determines the hour hand position. The clock can be set in either direction, but the last 15 minutes of adjustment of the minute hand must be turned in the clockwise direction. Setting the clock in the clockwise direction sets the backlash spring and eliminates gear play.
3. Press the red button to identify hand position.

Note: This step takes only six seconds. Please read and understand this step before inserting the battery.

- a. Insert the battery and watch the second hand. When the second hand reaches the "12" position, press and release the red button. You should hear two beeps. This tells the electronics that the second hand is at the "12" position.
- b. After the second hand makes its next one-second step, again press and release the red button. You should hear another two beeps. Pressing the red button tells the electronics that the minute hand is also at the 12:00 position.
- c. The clock is now set and will double step until it receives a valid time signal. In 1 to 45 seconds, the clock will begin to set to the precise time by going at eight times normal speed or at half speed until the clock displays the correct time.