5.5.2 Signal Acquisition Check

NOTE

All other avionics should be turned off at the start of this test. Turn on the GNS 400W Series unit.

Upon acknowledgement of the Instrument Panel Self-Test Page, the Satellite Status Page is displayed. If the unit is unable to acquire satellites, relocate the aircraft away from obstructions which might be shading GPS reception. If the situation does not improve, check the GPS antenna installation.

NOTE

After installation, the initial acquisition of position can take up to 20 minutes. Subsequent acquisitions will not take that long.

Once GPS position information is available, perform the following steps:

1. On the Position Page, verify that the lat/lon agree with a known reference position.
2. While monitoring the Satellite Status Page, turn on other avionics one at a time and check the GPS signal reception to make sure it is not affected (no significant signal degradation).
3. Before proceeding with the VHF COM interference check, ensure that any connected equipment is transmitting and/or receiving data from the 400W Series unit and is functioning properly.

5.5.3 VHF COM Interference Check

NOTE

The interference check must be completed on all IFR installations.

NOTE

It is known that certain non-aviation radios, including marine transceivers, can interfere with civil aviation navigation and surveillance equipment including the Garmin GNS 400W Series. When installing GNS 400W Series equipment in accordance with the appropriate STC, it is the responsibility of the installer to ensure that the GNS 400W Series unit modification is compatible with all previous aircraft modifications. Garmin recommends that whenever a GNS 400W Series unit is installed in an aircraft that has been modified with non-aviation radios, particular care should be exercised to verify that these do not interfere with proper function of the GNS 400W Series unit. Special care should also be taken to ensure that there is no interference with the GNS 400W Series unit if non-aviation radios are installed in an aircraft after a GNS 400W Series unit has been installed. If interference is found, it can be addressed by relocating antennas, rerouting cables, using filters to attenuate unintentional harmonic frequency transmissions, or using various other techniques for elimination of the interference. It may be necessary to remove or replace the interfering radio with a model that does not interfere with the proper functioning of the GNS 400W Series unit.

If you are testing a transmitter from a non-aviation device, each frequency must be verified by transmitting for at least 30 seconds on each channel.

Once the Signal Acquisition Test has been completed successfully, perform the following steps:

1. View the Satellite Status Page and verify that at least 7 satellites have been acquired on the 400W Series unit.
2. Verify that the GPS "NAV" flag is out of view.
3. Select 121.150 MHz on the COM transceiver to be tested.
4. Transmit for a period of 35 seconds.
5. Verify that the GPS "NAV" flag does not come into view.
6. Repeat steps 4 and 5 for the following frequencies:

   25 kHz COM Channel Spacing

   - 121.150 MHz
   - 121.175 MHz
   - 121.200 MHz
   - 121.225 MHz
   - 121.250 MHz
   - 131.200 MHz
   - 131.225 MHz
   - 131.250 MHz
   - 131.275 MHz
   - 131.300 MHz
   - 131.325 MHz
   - 131.350 MHz

NOTE

For VHF radios with 8.33 kHz channel spacing, include the following frequencies in addition to those listed above.

8.33 kHz COM Channel Spacing

- 121.185 MHz
- 121.190 MHz
- 130.285 MHz
- 131.290 MHz

7. Repeat steps 3 through 6 for all remaining COM transceivers installed in the aircraft.
8. If aircraft is TCAS-equipped, turn on the TCAS system and verify that GPS position remains valid (if position is lost, the status on the Satellite Status Page will change to "ACQUIRING").
9. If aircraft is SATCOM-equipped, use the SATCOM system and verify that GPS position remains valid (if position is lost, the status on the Satellite Page will change to "ACQUIRING).
10. If the GPS "NAV" flag comes into view, see Section 2.4.6 for options to improve performance.