GARMIN GWX SERIES WEATHER RADAR SYSTEM - ADJUSTMENT/TEST

1. General

A. This section gives adjustment and test procedures for the weather radar system installed on the airplane. The weather radar control indications and mode data is shown on the Multifunction Display (MFD) and primary flight displays (PFD's). It is not permitted to do these weather radar test procedures inside a hangar.

WARNING: Be very careful when you use the WEATHER or GROUND mode on the radar during tests. When the weather radar is operated in the typical flight mode (WEATHER), or in GROUND it will radiate dangerous RF energy.

B. For GWX 68/70 Weather Radar Software Configuration and GWX 70 turbulence detection and ground clutter suppression configuration, refer to Chapter 34, Garmin G1000 Integrated Avionics System - Adjustment/Test Section heading G1000 Baseline Software/Configuration Load.

C. For GWX 75 Weather Radar Software configuration, refer to Chapter 34, Garmin G1000 Integrated Avionics System - Adjustment Test, Section heading G1000 NXi GWX-75 Weather Radar Configuration (G1000 System Software v.2499.10 and On), for GWX 75 turbulence detection and ground clutter suppression configuration, refer to Chapter 34, Garmin G1000 Integrated Avionics System - Adjustment Test, Section heading G1000 NXi GWX TD GCS Configuration (G1000 System Software v.2499.10 and On).

2. Weather Radar Test

A. Do the Weather Radar Test.

(1) Connect external power to the airplane.

(2) Put the EXTERNAL POWER switch in the BUS position.

(3) Put the BATTERY switch in the ON position.

(4) Put the AVIONICS 1 and AVIONICS 2 switches in the ON position.

(5) Use the outer FMS knob to select the MAP page group (highlighted).

(6) Use the inner FMS knob to select the MAP-WEATHER RADAR page. Immediately make sure that the weather radar is in the OFF mode.

(a) If the weather radar is in the WEATHER or GROUND mode, immediately push the MODE softkey, then the OFF softkey.

(7) Make sure that the radar is in the OFF mode by the indications that follow:

(a) OFF (cyan) shows in the upper left corner of the radar map on the MFD

(b) OFF (white) shows in the center of the radar map on the MFD

(c) The OFF softkey shows as a black letters on a gray background.

(8) Set the weather radar mode to STANDBY.

(a) Push the MODE softkey.

(b) Push the STANDBY softkey.

(9) Make sure that the radar is in the STANDBY mode by the indications that follow:

(a) STANDBY (cyan) shows in the upper left corner of the radar map on the MFD

(b) For about 60 seconds, WARM-UP (white) shows BELOW the center of the second range ring. A count down timer (white) shows below the WARM-UP indication.

(c) At the end of the warm-up period, STANDBY (white) shows in place of the WARM-up indication.

(d) The standby softkey shows as a black letters on a gray background.

(10) Make sure that on the GWX-68 weather radar, a white WARM-UP message is displayed for approximately 60 seconds below the center of the second range ring on the MFD.

NOTE: A white timer will be shown below the WARM-UP indication. At the end of the warm-up period, the WARM-UP indication will be replaced with the white STANDBY indication.

NOTE: The 60 second warm-up period is not applicable to the GWX-70/75, the GWX-70/75 enters standby mode immediately upon selection.

(11) Push the inner FMS knob to start a cursor that highlights the field to the right of the TILT indication.

(12) Turn the outer FMS knob and make sure that the cursor does not move.

(13) Make sure that the MODE softkey is available.

(a) If the MODE softkey is not available, push the BACK softkey.

(14) Put the system in test mode.

(a) To enter test mode, push the 7 and 9 softkey on the MFD in the following order:

- Softkey 7
- Softkey 9
- Softkey 9
- Softkey 7

(15) Push the MODE softkey.

(a) When asked if you are sure, select YES.

NOTE: The antenna will move to the horizontal and vertical stops, then start the azimuth scan. When the antenna reaches a stop, it will ratchet against the stop. This is known as synchronization. It will cause significant vibration and noise, and will stop in less than 10 seconds.

(16) Push the TEST softkey.

(17) Push the BACK softkey.

NOTE: The antenna will move to the horizontal and vertical stops, then start the azimuth scan. When the antenna reaches a stop, it will ratchet against the stop. This is known as synchronization ratcheting. It will cause significant vibration and noise, and will stop in less than 10 seconds.

(18) Push the BRG softkey.

NOTE: A cyan bearing selector will come on the radar azimuth scan area, and a cursor will come on in the field to the left of the BEARING indication in the bottom right quadrant of the MFD display.

(19) Change the bearing angle to L 45° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the left 45-degree azimuth and start a vertical sweep.

(20) Change the bearing angle to L 30° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the left 30-degree azimuth and start a vertical sweep.

(21) Change the bearing angle to L 15° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the left 15-degree azimuth and start a vertical sweep.

(22) Change the bearing angle to L 0° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will start a vertical sweep.

(23) Change the bearing angle to R 15° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the right 15-degree azimuth and start a vertical sweep.

(24) Change the bearing angle to R 30° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the right 30-degree azimuth and start a vertical sweep.

(25) Change the bearing angle to R 45° and push the VERTICAL softkey.

(a) While the antenna sweeps up and down, make sure that the antenna does not touch the radome or structure.

NOTE: The antenna will continue its horizontal sweep until it reaches the right 45-degree azimuth and start a vertical sweep.

(26) Push the HORIZON softkey.

NOTE: This will bring the radar back to the azimuth scan.

(27) Push the inner FMS knob to start a cursor that highlights the field to the right of the TILT indication.

(28) Push the TILT softkey.

NOTE: A cursor will come on in the field to the left of the TILT indication, in the bottom right quadrant of the MFD display.

(29) Change the tilt angle to UP 15.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

NOTE: The antenna will move to the horizontal and vertical stops, then start the azimuth scan. When the antenna reaches a stop, it will ratchet against the stop. This is known as synchronization. It will cause significant vibration and noise, and will stop in less than 10 seconds.

(30) Change the tilt angle to UP 10.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(31) Change the tilt angle to UP 5.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(32) Change the tilt angle to UP 0.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(33) Change the tilt angle to DOWN 5.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(34) Change the tilt angle to DOWN 10.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(35) Change the tilt angle to DOWN 15.00°.

(a) While the radar sweeps left and right, make sure that the antenna does not touch the radome and structure.

(36) Disengage the RADAR R/T circuit breaker on the avionics circuit breaker panel.

(a) Make sure the RADAR FAILED message appears on the weather radar page on the MFD.

(37) Engage the RADAR R/T circuit breaker on the avionics circuit breaker panel.

(38) Put the AVIONICS 1 and AVIONICS 2 switches in the OFF position.

(39) Put the BATTERY switch in the OFF position.

(40) Put the EXTERNAL POWER switch in the OFF position.

CAUTION: Disconnect external power when not in use to prevent an accidental discharge of the battery.

(41) Disconnect external power from the airplane.