

GARMIN G1000 GLOBAL POSITIONING SYSTEM - DESCRIPTION AND OPERATION**1. General**

- A. This section gives a general description and the operation of the Garmin G1000 Global Positioning System (GPS). The line replaceable units (LRU)'s in the GPS are the Comant dual GPS/XM antenna No.1 and the Comant GPS antenna No.2. The GPS receiver functionality is found in the Garmin GIA 63W Integrated Avionics Units, No. 1 and No. 2.
- B. Refer to Figure 1 for a general view of the Garmin dual GPS system.

2. Description

- A. The Comant GPS/XM antenna No.1 is installed on the top of the airplane at approximately FS 154.00 and LBL 6.50. The Comant CI428-410 antenna No.1 is a wide area augmentation system (WAAS)-compatible GPS antenna that is used by the GPS receiver in the No.1 GIA 63W Garmin integrated avionics unit (GIA). The Comant GPS/XM antenna No.1 is also used as the antenna for the optional XM radio receiver as part of the passenger entertainment system. Each system has its own coaxial connector to connect each system to the antenna.
- B. The Comant GPS antenna No.2 is installed on the top of the airplane at approximately FS 154.00 and RBL 10.49. The Comant CI428-200 GPS antenna No.2 is a wide area augmentation system (WAAS) compatible GPS antenna that is used by the GPS receiver in the No.2 GIA.

3. Operation

- A. The GPS receiver has the ability to determine its position within 12 minutes time (maximum) from the time power is applied to the unit. The following table summarizes GPS acquisition times based on cold and warm startup. GPS data that is supplied by each of the two GIA units is used by many different Garmin integrated avionics systems to calculate display functions.
- B. The GPS is the dual Garmin GPS with compatible wide area augmentation system (WAAS)/localizer performance with vertical guidance (LPV) that is used by the satellite radio receivers in the No.1 and the No.2 GIA 63W Garmin integrated avionics units (GIA's). For a general description of the GIA 63W, refer to Chapter 41, Garmin Integrated Avionics System - Description and Operation.
- C. The GPS system gives satellite-based navigational and Wide Area Augmentation System (WAAS) data to the pilots and displays it graphically on the Primary Flight Display (PFD) and the Multifunction Display (MFD) in the cockpit. The Garmin GIA 63W units have a 15 channel GPS receiver subassembly installed in them that receives a signal from up to 12 satellites at one time. The color map display on the MFD shows terrain, airports, navigational aids, airspace, and other navigational waypoints. To show the airplane's position, an airplane icon is displayed in the center of the map.

Figure 1 : Sheet 1 : Garmin Global Positioning System

