

GARMIN SYNTHETIC VISION TECHNOLOGY SYSTEM - DESCRIPTION AND OPERATION

1. Scope

- A. This chapter gives optional Garmin Synthetic Vision Technology (SVT) System description and operational data. For more maintenance data concerning the SVT refer to the Garmin G1000 Pilots Guide Cessna Caravan listed in introduction, List of Manufacturers Technical Publications.
- B. For the SVT enable/configuration upload procedures refer to Garmin G1000 Integrated Avionics System - Adjustment/Test, G1000 Synthetic Vision Technology (SVT) Enable Configuration.

2. Description

- A. Garmin Synthetic Vision Technology System.
 - (1) The Synthetic Vision System (SVT) gives the pilot a three-dimensional view of the adjacent terrain, obstacles and other airplane positions. This gives the pilot more situational awareness to these items to improve flight safety.
 - (2) The SVT terrain display shows a forward-looking view of land contours, large water features, towers, and other obstacles. Obstacles show that are more than 200 feet above ground level (AGL) from the obstacle database. Surface features, such as roads, highways, railroad tracks, cities, and state boundaries, do not show even if those features show on the MFD map. The terrain display also includes a compass grid to help in direction relative to the terrain. The colors used to show the terrain elevation contours are equivalent to those found on a topographic map view.
 - (3) The operation of the SVT is controlled with Primary Flight Display (PFD) softkeys.
 - (4) The Terrain Awareness and Warning System (TAWS) is integrated within SVT to give visual and auditory alerts to indicate the presence of terrain and obstacle threats relevant to the projected flight path. Terrain alerts are displayed in red and yellow shades on the PFD.
 - (5) The SVT visual additions that show on the PFD are as follows:
 - Pathways
 - Flight path marker
 - Horizon heading marks
 - Traffic display
 - Airport signs
 - Runway display
 - Terrain alerting
 - Obstacle alerting.

3. Operation

- A. The SVT display shows a perspective view of the terrain ahead of the airplane up to 35° to the left and 35° to the right of the airplane heading. The display shows land contours, large areas of water, and all obstacles in the G1000 data base that are over two hundred feet. Other ground objects such as roads, railroad tracks and cities are not shown on the PFD display even if they do show on the MFD map. The G1000 Terrain or TAWS system generates an alert or warning and if the obstacle is in the FPM field of view, the obstacle is colored yellow or red, respectively. The G1000 database covers the terrain as follows:
 - (1) The terrain database covers north 75° latitude to south 60° for all longitudes.
 - (2) The airport database covers the United States, Canada, Mexico, Latin America, and South America.
 - (3) The obstacle database covers the United States.
- B. The SVT shows a green circular barbed symbol Flight Path Marker (FPM) that represents the current path of the airplane relative to the terrain display. The FPM is shown when the ground speed exceeds thirty knots and the SVT is shown on the PFD. The FPM shows only the current path and will change with a change in airspeed, crosswind, and power setting.
- C. A pathway shows on the PFD if PATHWAY is enabled on the SVT menu and a defined navigation path is entered on the G1000. The pathway representation of the programmed flight path. The pathway shows for GPS and ILS navigation paths but not for heading legs, VOR, LOC, BC, and ADF navigation aids. The pathway is not to be used as the primary navigation path reference.
- D. The SVT utilizes the TAS to present traffic symbols on both PFD displays. If traffic that is within the SVT field of view is detected by the TAS, white diamond symbols will show on the two PFD displays. If the traffic is close enough to generate an alert the traffic symbols will show as solid yellow circles.

- E. If APT SIGNS is enabled an airport signpost shows on the SVT when the airplane is within 15 miles of airports that are in the G1000 database. There is also a runway representation shown on the PFD. The runway helps the pilot visually acquire the runway.
- F. The SVT continually shows a white horizontal line that represents the true horizon. The horizon line shows the terrain above and below the airplane altitude.
- G. For more operational data, refer to the Garmin G1000 Integrated Flight Deck Pilot's Guide. Refer to the Model 208 Illustrated Parts Catalog, Introduction, Supplier Publication List.