

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR23LA098

## **ELECTRONIC DEVICES**

Specialist's Factual Report

June 8, 2023

## **A. ACCIDENT**

Location: Murrieta, California  
Date: January 27, 2023  
Time: 0837 Pacific standard time (PST)  
Airplane: Cessna T210N, N4758C

## **B. ELECTRONIC DEVICES SPECIALIST**

Specialist: W. Deven Chen  
Electrical Engineer - Recorder Specialist  
National Transportation Safety Board (NTSB)

## **C. DETAILS OF THE INVESTIGATION**

A recorder group was not convened. The NTSB Vehicle Recorder Division received the following electronic devices:

Recorder Manufacturer/Model:	Aspen Avionics EFD1000
Recorder Serial Number:	9710095
Recorder Manufacturer/Model:	Garmin GTN 750
Recorder Serial Number:	1ZA018682

### **1.0 Aspen Avionics EFD1000 - Description**

The Aspen EFD1000 is a Primary Flight Display (PFD). Working as a full Electronic Flight Instrument System, the EFD1000 can provide the pilot with hazard awareness and synthetic vision. The Aspen displays do not record any flight data.

### **1.1 Aspen Avionics EFD1000 - Condition and Data Recovery**

The Aspen Avionics EFD1000 was in good condition upon arrival at the Vehicle Recorder Division, as shown in figure 1. The device was incapable of storing historical flight data. There were no non-volatile memory (NVM) chips on its circuit board to record flight parameters. A microSD card was found in the front bottom card slot of the device, however, the microSD card had only device firmware data on it. There was no data pertinent to the accident recovered from this device.



**Figure 1.** Front and top views of the Aspen Avionics EFD1000 as received.

## 2.0 Garmin GTN 750 - Description

The Garmin GTN 750 is a panel-mounted GPS receiver featuring an 800 x 600 pixel, 6.9 inch color liquid crystal (LCD) display. It has a GPS/SBAS engine and is TSO C146c certified for primary domestic, oceanic, and remote navigation including en route, terminal, and non-precision approaches, and approaches with vertical guidance, such as LPV and LNA/VNAV. The unit can simultaneously give aviators approach information and weather and traffic data in relation to their position on a large, color moving map display. Its color moving map features a built-in database that shows cities, highways, railroads, rivers, lakes, and coastlines. The unit has a slot on the front for a Jeppesen database containing all airports, VORs, NDBs, intersections, FSSs, approaches, DPs/STARs and SUA information. A flight plan composed of multiple waypoints, including user-defined waypoints, can be programmed in the unit. The GTN 750 also includes a TSO'd airborne VHF communications transceiver and TSO'd airborne VOR/Localizer and Glideslope receivers. The unit contains an internal SD card, and it stores flight log data if the unit is installed with software version 6.50 or higher. This internal SD card can be accessed through the slot in the right side of the unit.

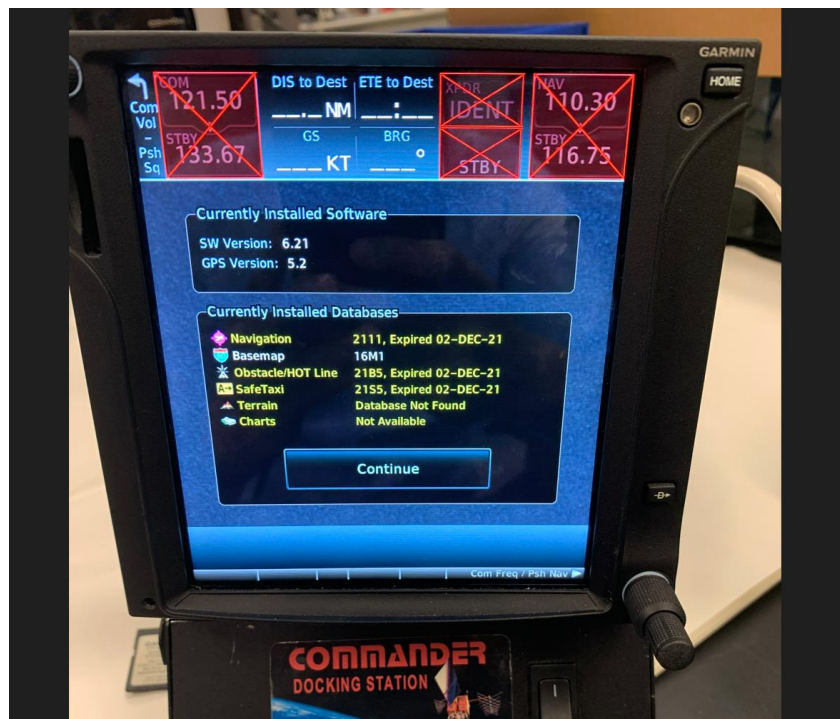
### 2.1 Garmin GTN 750 - Condition and Data Recovery

The Garmin GTN 750 was in good condition upon arrival at the Vehicle Recorder Division, as shown in figure 2. Upon powering on, the display showed the device was installed with software version 6.21, as shown in figure 3. According to the manufacturer, flight data recording function was only added to GTN units with software version 6.50 or higher. As such, this GTN 750 was incapable of recording flight data. The internal SD card was accessed, and it did not contain any flight data.

Another SD card was recovered from the front card slot of the unit, and it only contained device firmware data. There were no data pertinent to the accident recovered from this device.



**Figure 2.** Top and side views of the Garmin GTN 750 as received.



**Figure 3.** The Garmin GTN 750 showed it was installed with software version 6.21 upon powering on.

Submitted by:

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