

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

April 10, 2019

Electronic Devices

Specialist's Factual Report
by Gerald Kawamoto

1. EVENT

Location: Cascade, Idaho
Date: May 13, 2018
Aircraft: Cessna 182G
Registration: N2377R
Operator: Private
NTSB Number: WPR18FA141

On May 13, 2018, about 1230 mountain daylight time, a Cessna 182G airplane, N2377R, was destroyed after it collided with mountainous terrain near Cascade, Idaho. The private pilot was fatally injured. The airplane was registered to and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed. The flight originated from Boise Air Terminal/Gowen Field (BOI), Boise, Idaho about 1215 and was destined for McCall Municipal Airport (MYL), McCall, Idaho.

2. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following devices:

Device 1: Apple iPad 2
Device 1 Serial Number: DMPGY9X6DFHY
Device 2: Dual Electronics Corp XGPS160
Device 2 Serial Number: 0013236

2.1. Apple iPad 2 Device Description

Personal Electronic Devices (PEDs) are a category of devices comprised primarily of portable computing devices and mobile phones. Portable computing devices are typically capable of internet access, email, messaging services, and can run user-installed applications to perform specific tasks. PED user and system data is typically stored on non-volatile memory (NVM)¹ and can be accessed through manufacturer-provided interfaces.

¹ Non-volatile memory is semiconductor memory that does not require external power for data retention.

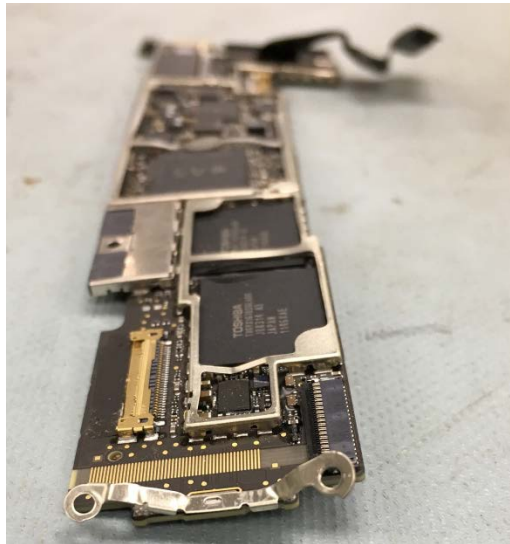
2.1.1. Apple iPad 2 Data Recovery

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed the unit had sustained impact damage, as shown in Figure 1. The main board was removed and examined, as shown in Figure 2. The extent of the damage precluded normal recovery procedures, therefore, no data pertinent to the event were recovered.

Figure 1. Apple iPad 2 as received.



Figure 2. Damaged Apple iPad 2 board.



2.2. Dual Electronics Corp XGPS160 Device Description

The Dual Electronics Corp XGPS160 is a GPS Receiver featuring fast signal acquisition and 10Hz positioning updates. The receiver works with signals from various satellite systems to determine location and can transmit information to devices such as phones and tablets via Bluetooth. The device can record up to 20 hours of GPS position data when the logging feature has been turned on by the user. Recorded data can be exported using the Dual Electronics Status Tool app on the connected device.

2.2.1. Dual Electronics Corp XGPS160 Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the unit had sustained impact damage, as shown in Figure 3. The internal board was examined and was in good condition. The board was powered on and connected to the Dual Electronics Status Tool app using laboratory equipment. The application revealed that the data logging feature of the device was turned off, therefore, no data pertinent to the event were recorded.

Figure 3. Dual Electronics Corp XGPS160 as received.

