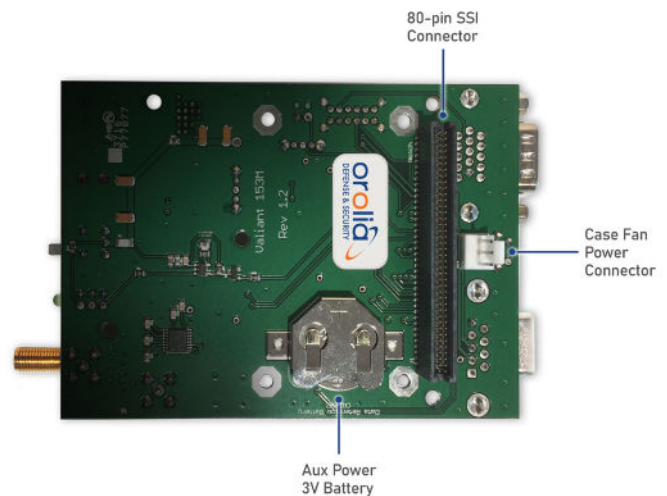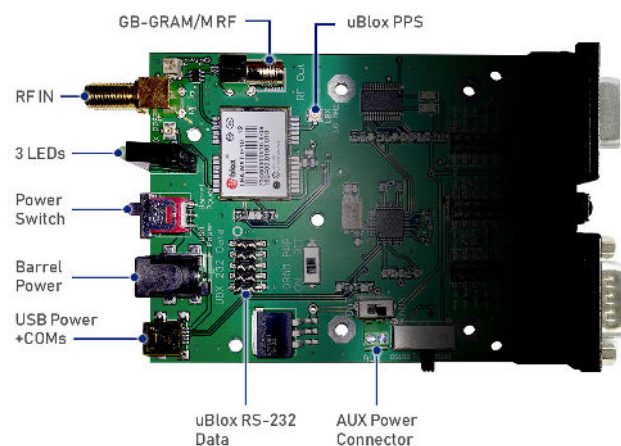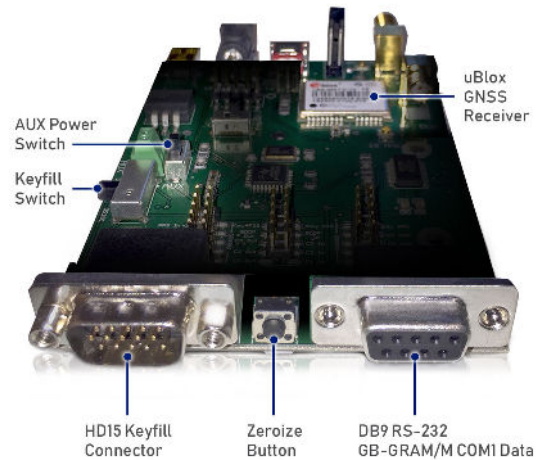# Valiant 153M
GB-GRAM/-M Interface Card

What is Valiant 153M?

Valiant 153M is a GB-GRAM/GB-GRAM-M (GB-GRAM/M) interface card that allows the simultaneous operation and testing of a commercial- off-the- shelf (COTS) receiver and a GB-GRAM/M. Both receivers can be powered and communicate using a single USB mini cable. By integrating a COTS receiver onto the Valiant 153M, users can perform cross checks to determine if the military receiver is connected and communicating data properly. Both receivers communicate via the onboard USB mini or RS-232 serial connectors. The proper operation of the two receivers can be examined using Orolia's software suite, RxStudio. This software suite allows a user to communicate to the receivers simultaneously and visually examine their performance (C/No, SVs tracked, SVs used, LLA, time, code types, assurance, frequency, etc).

AUX Power Switch
Keyfill Switch
uBlox GNSS Receiver
HD15 Keyfill Connector
Zeroize Button
DB9 RS-232 GB-GRAM/M COM1 Data

GB-GRAM/M RF
uBlox PPS
RF IN
3 LEDs
Power Switch
Barrel Power
USB Power +COMs
uBlox RS-232 Data
AUX Power Connector

USB   5V   5V (High) Power SB (Low)   RF IN
PWR
UBX   PPS
153   PPS

80-pin SSI Connector
Valiant 153M Rev 1.2
Case Fan Power Connector
Aux Power 3V Battery

Specifications

Compatibility

- GB-GRAM Type I
- GB-GRAM Type II
- GB-GRAM-M Type I
- GB-GRAM-M Type II

RF In

GNSS RF Input, 3.3V Output

Three High LEDs

Bottom: GB-GRAM/M PPS

Middle: Ublox PPS

Top: Power

uBlox GNSS Receiver

Ublox Zed-F9P

GNSS: BeiDou, Galileo, GLONASS, GPS / QZSS

Bands: L2OF, L2C, E1B/C, B2I, E5b, L1C/A, L1OF, B1I

184-channel Navigation Engine

1 Pulse Per Second Output

Auxillary UART Ublox Data Output (10-pin Header)

Barrel Power

5V 4A Power Input: 2.1mm I.D x 5.5mm O.D

Size, Weight, Power and Temp

Size: 4.1" x 2.9" (LxW)

Weight: Approximately 60 grams

Power: < 0.5W (w/out GB-GRAM/M)

Operating Temp: -20° C to +65° C

USB Power and Communication

5V 500mA Power Input: USB Mini

Provides USB comms to uBlox

Provides USB comms to GB-GRAM-M COM2

Keyfill Connector

DS101 Keyfill Protocol

DS102 Keyfill Protocol

Power Switch

Low Power Mode: 2.5W Max, USB

High Power Mode: 20W Max, 5V Barrel

GB-GRAM/M RF

GPS Signals Passed Through

Connects to Input of GB-GRAM/M

3dB Load On-board

DC-Blocked

GB-GRAM/M Data with Logic Level (Interface)

COM1: RS-232 (DB9)

COM1: CMOS (10-pin Header)

COM2: USB (USB Mini)

COM2: CMOS (10-pin Header)

COM3: CMOS (10-pin Header)

BDDP: CMOS (10-pin Header)

GB-GRAM/M Pulse Per Second Outputs

COM1, COM2, COM3, and BDDP

GB-GRAM/M Auxiliary Power with Switch

On-board 3V CR2032 Backup Battery

Auxiliary Power Connector for Higher Power

GB-GRAM/M Power Switch (POF)

On/Off Switch for the GB-GRAM/M

Auxiliary GB-GRAM/M Interfaces

Keying Pins

PPS Input

TOD Output

Successful Keyfill