

Universal Signal Processor - Vehicle Interface (USPVI)

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Features

- Field Proven Hardware
- Modular Design
- 16 Available Frequency Channels in the range of 380 MHz to 400 MHz
- GPS Receiver
- GMSK Modulation
- 4 Watt RF Output Power
- Ruggedized Aluminum Chassis
- Qualified to MIL-STD-461D (EMI), MIL-STD-810 (Env)

Applications

- Autopilot Interface
- Command and Telemetry
- Vehicle Payload Interface

Description

The Model 99-2 Universal Signal Processor - Vehicle Interface (USPVI) provides the interface between a UHF Target Tracking Control Station and an on-board vehicle autopilot.

The USPVI receives a command message from a ground control station, evaluates the message for proper addressing and error detection, then passes the validated commands to the vehicle autopilot. The USPVI also responds to the ground control station with vehicle performance telemetry. The USPVI is fully self contained including RF transceiver, high performance GPS receiver, and processing electronics.

The USPVI is currently used on the MQM-107 D/E sub scale aerial target, BQM-34 sub scale aerial target, and the QUH-1 full scale rotary wing target. It can be adapted to other vehicles.

Technical Specifications

AS9100C and ISO 9001:2008 Certified

Characteristics

- **Frequency:** 380 MHz to 400 MHz
- **Channels:** 16
- **Channel Bandwidth:** 25 kHz
- **Occupied Bandwidth:** 20 kHz
- **Modulation:** GMSK
- **Burst Data Rate:** 14.4 kbps
- **Power Output:** 4 Watts
- **Maximum PRF:** 10 Hz

UHF Receiver

- **Sensitivity:** -100 dBm @ 1×10^{-4} BER
- **Selectivity:** -60 dBm @ 12.5 kHz
- **Spurious Rejection:** -70 dB

GPS Receiver

- **Position Update Rate:** 10 Hz
- **Accuracy:** 5m CEP
- **Differential Corrections:** RTCM V2.3
- **Time to First Fix:** 90 seconds
- **Tracking:** Up to 20 G

Environmental (MIL-STD-810) / EMI (MIL-STD-461D)

- **Temperature:** Operating: -40°C to +71°C
- **Cooling:** Passive Conductive (no moving parts)
- **Vibration:** Random, 15 to 2000 Hz, 9.3 G 30 minutes per orthogonal axis
- **Altitude:** 50,000 ft
- **Shock:** Sawtooth, 20 G for 11ms, 18 shocks total
- **Humidity:** Up to 95% @ 40°C (all boards are conformal coated)
- **EMI/RFI:** Certified to MIL-STD-461D, Class A1

Power Requirements

- **DC Power:** 22 VDC to 32 VDC (28 VDC Nominal)
- **Reverse Polarity:** Series diode protection
- **Power Consumption:** 55 Watts maximum (1.8 amps @ 28 VDC)

Physical

- **Size:** 6.50" W x 4.25" T x 11.5" D
- **Weight:** 8 pounds
- **Connectors:** D-Subminiature
- **Finish:** Black Paint
- **Installation:** Flange Mount Base Plate

Contact us for custom modifications

For additional information contact:

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