

GPS TRACKING UNIT, PROGRAM JTU-II

MODEL 6399-5



SUPPLYING HIGH PERFORMANCE FLIGHT INSTRUMENTATION, RF/MICROWAVE ASSEMBLIES, POWER AMPLIFIERS, IFF AND DATA ACQUISITION SYSTEMS FOR SEVERE ENVIRONMENTS.

DESCRIPTION

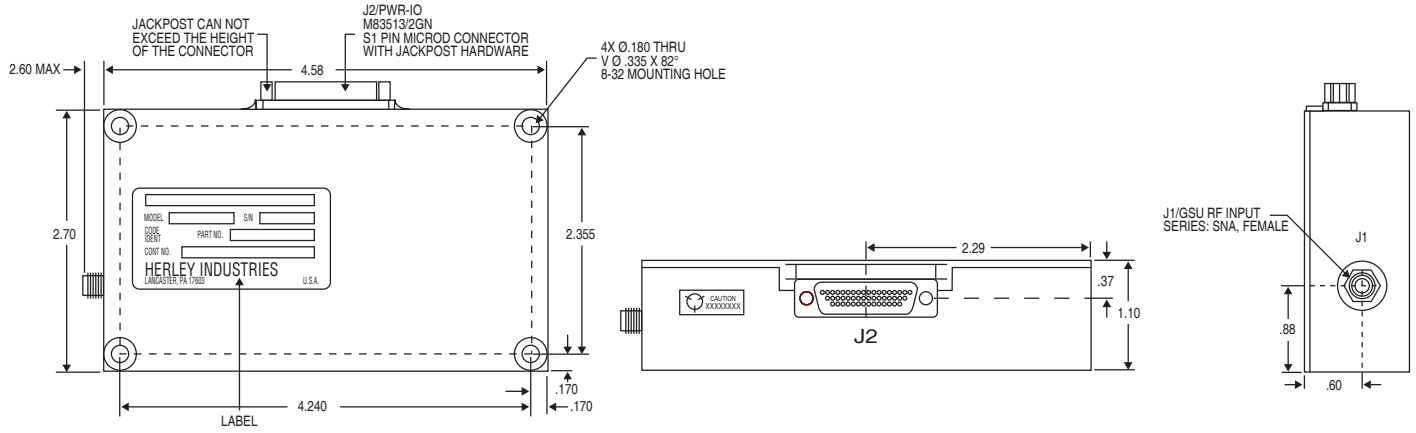
The Ultra Electronics Herley 6399-5 GPS Tracking Unit (GTU) is intended for installation into high-dynamic missiles, weapon systems, and targets. The GTU combines and processes GPS satellite coarse/acquisition (C/A) code and air dynamics from an integral Inertial Measurement Unit (IMU), and outputs the data in a standard format compatible with the host air vehicle telemetry system.

The Ultra Electronics Herley GTU is an integral part of a vehicle tracking, navigation, and/or scoring system, or other applications where accurate, high-dynamic Time-Space-Position-Information (TSPI) is required. The GTU employs a state of the art GPS receiver capable of maintaining GPS lock through the extreme dynamic environments required of today's missile and weapon systems.

FEATURES

- GPS based Time Space Position Indicator (TSPI) Processor Unit
- GPS Tracking for High Dynamic Missile Environments
- Able to compute position solutions under 25g dynamics
- Able to output raw measurements under 50g dynamics
- Integral triaxially mounted accelerometers and rate sensors
- Integral power conditioning
- Output compatible with Kratos-Lancaster PCM encoders
- Serial and parallel data output





ELECTRICAL

- GPS Latency: 125 ms, max
- GPS Accuracy (RMS PDOP<2): Position: <10 m, Velocity: <1 m/s
- IMU Acceleration: ± 50g, each axis
- IMU Input Rate: ± 500 degrees/second
- Time to First Fix (TTFF): < 90 sec Navigational Mode, < 3 sec Sensor Mode
- Input Voltage: +20 VDC to +34 VDC
- Input Current: 250 mA, max
- Power Consumption: ≤5 W
- Over/Under Voltage Protection
- Short Circuit Protection
- Polarity Protection

PHYSICAL

- Size: 4.6 x 1.1 x 2.7 inches (excluding connectors)
- Weight: ≤ 13 ounces
- Antenna Connector: SMA Jack (J1)
- Interface Connector: 51-pin female MDM connector (J2)
- Outputs: 1 Pulse-Per-Second Epoch (PPE) Sample rate of IMU data 16-bit parallel TSPI data NRZ-L Serial TSPI Data, 230 Kbps RS232 Serial TSPI Data, 230 Kbaud Status bits

PHYSICAL (CONTINUED)

- Inputs: Discrete Event Markers, RS232 Serial +28VDC
- Velocity: ≤5000 ft/sec
- Acceleration: ≤50g
- Jerk: ≤500g/sec, 0.1 sec duration
- Temperature, Operating: -40°C to +85°C
- Temperature, Storage: -54°C to +85°C
- Altitude: 100,000 ft
- Humidity: Up to 100%, MIL-STD-810F Method 507.3 Procedure 3
- Vibration: Up to 20 grms
- EMI/EMC: MIL-STD-461E, CE102, CE106, CS101, CS103, CS104, CS114, CS115, RE102, RS103
- Pyrotechnic Shock: 4750 g's peak

OPTIONS

- GPS Sensor Unit Mode Selection: Navigation or Sensor
- GPS Data Format: TUMS Type I or Type II

PRODUCT NUMBERS

- P/N 5403481-1 - Vertical mount (Model 6399-4)
- P/N 5403541-1 - Horizontal mount (Model 6399-5)

J2 Pin Connections

| Connector Pin | Signal | Remarks |
|---------------|-------------------|-------------------------------|
| J2-01 | Chassis GND | Connected to JTU Case |
| J2-02 | +28 VDC RTN | Return line for System Power |
| J2-03 | Chassis GND | Not for Use |
| J2-04 | None | Spare |
| J2-05 | Receive Data | RS-232 |
| J2-06 | EVENT1+ | RS-422 input |
| J2-07 | EVENT1- | RS-422 input |
| J2-08 | Signal GND | |
| J2-09 | VARF | TTL output |
| J2-10 | NRZ-L Data Stream | TTL Serial data |
| J2-11 | D00 | Tri-state LVTTTL output (LSB) |
| J2-12 | D01 | Tri-state LVTTTL output |
| J2-13 | D02 | Tri-state LVTTTL output |
| J2-14 | D03 | Tri-state LVTTTL output |
| J2-15 | D04 | Tri-state LVTTTL output |
| J2-16 | D05 | Tri-state LVTTTL output |
| J2-17 | D06 | Tri-state LVTTTL output |
| J2-18 | DAT_STB- | LVTTTL output |
| J2-19 | +28 VDC | System Power |
| J2-20 | +28 VDC | System Power |
| J2-21 | Chassis GND | Not for Use |
| J2-22 | Signal GND | Signal Ground for RS-232 |
| J2-23 | Transmit Data | RS-232 |
| J2-24 | EVENT2- | RS-422 input |
| J2-25 | EVENT3- | RS-422 input |
| J2-26 | 1 PPE (EPS) | TTL output |
| J2-27 | GPS BIT | Output to drive LED |
| J2-28 | D07 | Tri-state LVTTTL output |
| J2-29 | Signal GND | |
| J2-30 | D08 | Tri-state LVTTTL output |
| J2-31 | Signal GND | |
| J2-32 | D09 | Tri-state LVTTTL output |
| J2-33 | Signal GND | |
| J2-34 | CHIP_SEL- | LVTTTL input |
| J2-35 | Signal GND | |
| J2-36 | +28 VDC RTN | Return for System Power |
| J2-37 | Chassis GND | Not for Use |
| J2-38 | MODE_SEL | LVTTTL input |
| J2-39 | None | Spare |
| J2-40 | EVENT2+ | RS-422 input |
| J2-41 | EVENT3+ | RS-422 input |
| J2-42 | Static BIT | Output to drive LED |
| J2-43 | Dynamic BIT | Output to drive LED |
| J2-44 | FAIL BIT | Output to drive LED |
| J2-45 | D10 | Tri-state LVTTTL output |
| J2-46 | D11 | Tri-state LVTTTL output |
| J2-47 | D12 | Tri-state LVTTTL output |
| J2-48 | D13 | Tri-state LVTTTL output |
| J2-49 | D14 | Tri-state LVTTTL output |
| J2-50 | D15 | Tri-state LVTTTL output |
| J2-51 | BLK_XFER- | LVTTTL output |



making a difference

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