GPS TRACKING UNIT, PROGRAM JTU-II

MODEL 6399-4

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

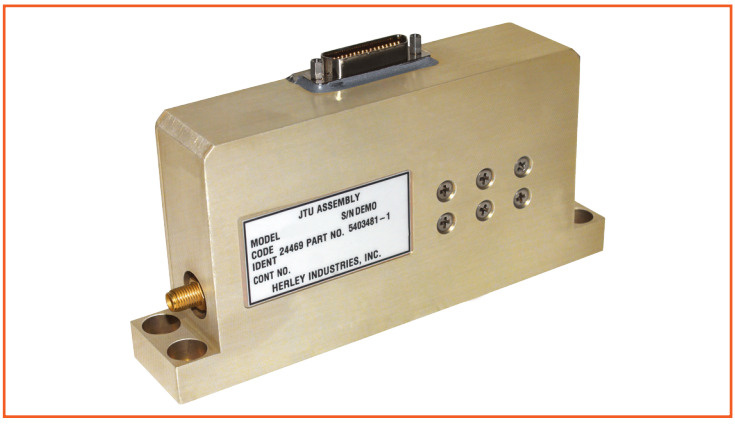
DESCRIPTION

The Ultra Electronics Herley 6399-4 GPS Tracking Unit (GTU) is intended for installation into high-dynamic missiles, weapon systems, and targets. The GTU combines and processes GPS satellite coarse/acquistion (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 PCM encoders
- Serial and parallel data output



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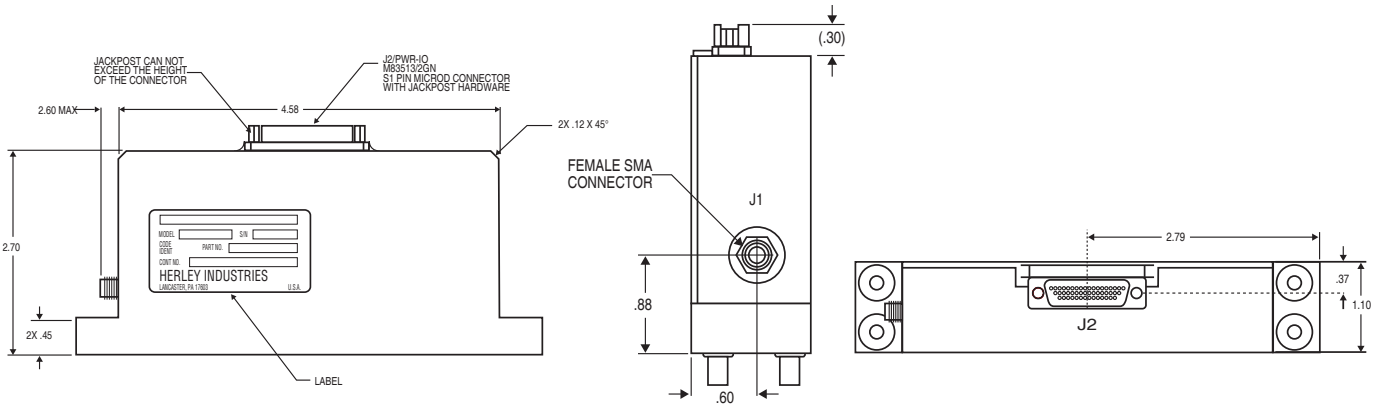

SIDE VIEW FRONT VIEW TOP VIEW

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 Navigal Mode , < 3 sec Sensor Mode
- Input Voltage: +20 VDC to +34 VDC
- Input Current: 250 mA, max @ 20V
- 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
- Inputs: Discrete Event Markers, RS232 Serial +28VDC

ENVIRONMENTAL

- 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 5410496-1* - Vertical mount (Model 6399-4)
- *P/N 5410500-1* - 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 LVTTL output (LSB)
J2-12	D01	Tri-state LVTTL output
J2-13	D02	Tri-state LVTTL output
J2-14	D03	Tri-state LVTTL output
J2-15	D04	Tri-state LVTTL output
J2-16	D05	Tri-state LVTTL output
J2-17	D06	Tri-state LVTTL output
J2-18	DAT_STB-	LVTTL 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 LVTTL output
J2-29	Signal GND	
J2-30	D08	Tri-state LVTTL output
J2-31	Signal GND	
J2-32	D09	Tri-state LVTTL output
J2-33	Signal GND	
J2-34	CHIP_SEL-	LVTTL 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	LVTTL 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 LVTTL output
J2-46	D11	Tri-state LVTTL output
J2-47	D12	Tri-state LVTTL output
J2-48	D13	Tri-state LVTTL output
J2-49	D14	Tri-state LVTTL output
J2-50	D15	Tri-state LVTTL output
J2-51	BLK_XFER-	LVTTL output

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making a difference

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