



Assured GPS for Contested Environments

L3 Interstate Electronics Corporation's (L3 IEC) TruTrak-M™ Type I Modernized GPS receiver delivers assured position, velocity, and time solutions under current and emerging threat conditions.

LATEST GENERATION ADVANCEMENTS

Provides Electronic Warfare Success: Uses spectrally isolated signals for operation during Blue Force Electronic Attack (BFEA)

Mitigates Cyber Threats: Improves cryptography and enhances protection of critical technology

Reduces Product Costs: Eliminates expensive tamper resistance coating. Unclassified manufacturing

BACKWARD COMPATIBLE

TruTrak-M is fully backward compatible with legacy Selective Availability Anti-Spoofing Module (SAASM) receivers, providing the capability to obtain Precise Positioning Service (PPS) using

- Y-Code Only
- M-Code Only
- Mixed Y- & M-Code Operation

When supplied with M-code keys, the modernized receiver uses the 19 M-code satellites in orbit today.

SECURITY CERTIFIED AND APPROVED

TruTrak-M is the only Modernized GPS receiver to be security certified and approved, a milestone achieved in October 2016. Units are available today for integration and testing. TruTrak-M satisfies the public law (reference PL 111-383) mandate to transition to Military code (M-Code) GPS after fiscal year 2017



FEATURES

- L1/L2 C/A, Y-, and M-Code signal operation
- GB-GRAM Type I form factor
- Modernized Anti-Spoof, Anti-Tamper & Jamming
- Field Re-programmable
- Inputs for IMU and/or Precision Clock
- Security Certified and Approved in 2016

BENEFITS

- Backward Compatibility with upgrade path to M-Code
- Assured solutions in advanced threat environments
- Enables Blue Force Electronic Attack (BFEA)
- Satisfies Public Law Mandate

APPLICATIONS

- Assured PNT
- Precision Guided Munitions
- Launchers & Guns
- Unmanned Aircraft Systems



PHYSICAL CHARACTERISTICS

Size	2.45"L x 1.76"W x 0.368"H
Weight	35 grams
Primary Voltage	3.3V ±200mV
Auxiliary Voltage	3.3V ±200mV
Digital Connector	Samtec SFM-*140-L2-S-D-LC
RF Connector	Huber-Shuner 85-MMCX-50-0-1

PERFORMANCE

Measurement Error	
PR	< 2.59 m
DRR	< 0.03 m/s
CP (zero baseline)	< 3 mm
Time (UTC)	< 52 ns
Sensitivity (dBm)	
Cold Start	-140 dBm
Warm Start	-140 dBm
Hot Start	-143 dBm (Y)
	-140 dBm (M)
Tracking	-154 dBm
TTFF (seconds)	
Hot Start	< 10
Warm Start	< 15
Cold Start	< 60
Reacquisition (10s outage)	< 5
Reacquisition (15m outage)	< 15

ENVIRONMENTAL (MIL STD-461E)

Temperature	-40°C to +85°C
Altitude	-400 m to 24000 km

POWER CONSUMPTION

Time Maintenance	8 mW
Standby	0.9 W
Track (L1-only Mode)	1.2 W
Track (L1/L2 Mode)	1.4 W
Acquisition	5 W

AVAILABLE I/O

UART	4 (921KBps)
GPIO	4 (Available as an option)
SPI	2 (7 slaves)
SDLC/AMRAA	(Available as an option)
Time Events	1 in, 1 out/ COM Port

COMMUNICATION PORTS

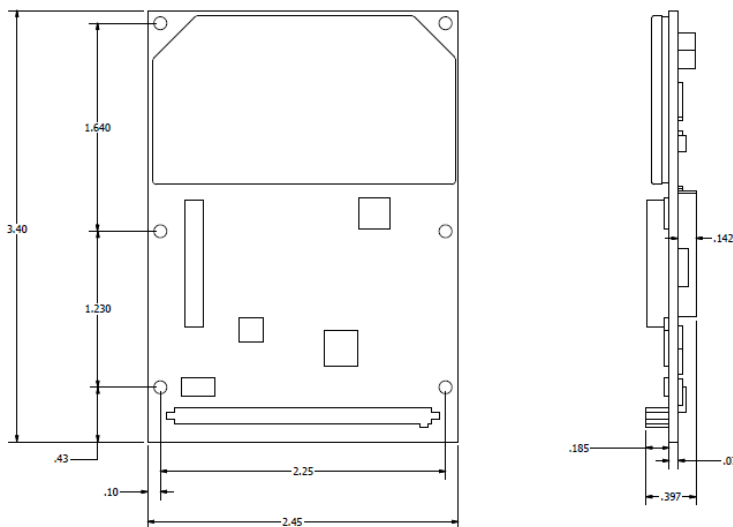
RS-232	(up to 230 KBps)
Keying	(EKMS)
80-Pin	GB-GRAM Std.

SPECIFICATIONS

- 153D/ MSID-001A
- NMEA-0183 ver. 3.01
- EKMS-308 ON481180 REVE
- ICD-GPS 700D
- ICD-GPS 200H
- IS-GPS 250A (NAVSTAR GPS AVG)

ACCESSORIES

- Antenna
- Modernized Interface Card (CIC)



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