



# TRUTRAK™-M

## ASSURED GPS FOR CONTESTED ENVIRONMENTS

### DESCRIPTION

L3Harris' 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

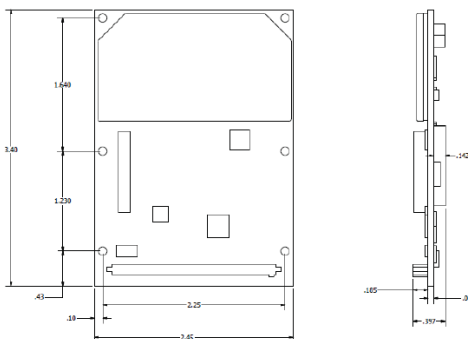
ICD-GPS 200H

IS-GPS 250A (NAVSTAR GPS AVG)

## ACCESSORIES

Antenna

Modernized Interface Card (CIC)



### TRUTRAK-M TYPE I

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L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.



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