TRUTRAK™ EVOLUTION TYPE II

Enhancing the Current Force - Enabling the Future Force

L-3 Interstate Electronics Corporation's (L-3 IEC) TruTrak Evolution (TTE) GPS SAASM and M-Code receivers combine high performance with massive configurability in a common core, open architecture sensor fusion platform.

ALL SOURCE NAVIGATION

Both the RF front end and the I/O can be easily reconfigured to adapt to current and forthcoming navigation sensors and guidance control peripherals to enable the "All Source" concept providing high quality navigation even in GPS degraded and GPS denied operating scenarios. The high performance, on-chip processor is able to seamlessly extend the GPS engine to process resources of the All Source platform. This approach allows the same receiver to address a wide variety of operational scenarios, including dismounted soldier, land vehicles, low and high dynamics aircraft, missiles and projectiles. An external clock input allows the use of ovenized oscillators (OCXO) and chip scale atomic clocks (CSAC) to further extend the Type II's reach into real-time kinematic (RTK) and precision coordinated timing applications.

COMMON CORE H/W and S/W

The common core of the TTE Type II drives the cost down and ensures that all configurations reach a high level of tactical readiness quickly. The common core concept in the TTE Type II applies to software as well . The TTE Type II provides multiple host messaging interfaces to best suit the intended use case.

- IS-GPS-153 is provided for GB-GRAM applications (this interface is also configurable for NMEA 0183 output).
- IEC Binary Protocol (IBP) is provided for applications that demand high rate PVT and measurement updates and high rate INS aiding inputs (such as some high precision RTK and missile applications).
- User Host Interface (UHI) to support high rate, sensor fusion applications residing in the on-chip "User" processor with an ultra-low latency shared memory link to the GPS engine (useful for applications supporting potential GPS degraded and GPS denied operating scenarios).

DIRECT PATH TO M-CODE

L-3 IEC's new and innovative TTE Type II is a first to market SAASM/Modernized Receiver pair providing the war fighter capabilities for all applications. These two next generation receivers:

- Eliminate the need for another version of legacy GPS Key Data Processor Technology
- Focus receiver technology on long-term security and information assurance standards today that are next generation backward and forward compatible
- Provide integrators a low risk, low cost path for developmental programs and to upgrade currently fielded systems allowing seamless transition when M-Code is fully operational.

Features

- Front End Configurable from Passive to 40 dB preamp
- Configurable I/O
- Selectable External Clock Input
- Selectable Host Messaging Interface

Benefits

- GB-GRAM drop in retrofit/ forward fit
- Supports ground mobile, UAS and precision munitions
- M-Code Upgrade Path

Applications

- Ground Mobile
- UAS
- Precision Weapons

Specifications

Physical Characteristics

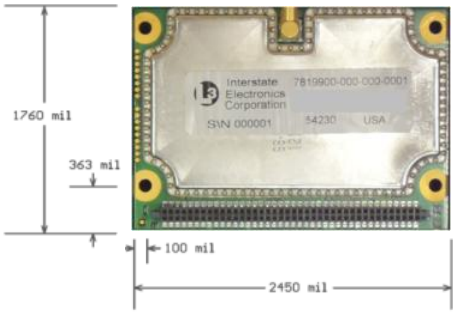
Size	2.45"L x 1.76"W x 0.368"H
Weight	35 grams
Primary Voltage	3.3 V to ±200mv
Auxiliary Voltage	3.3 V to ±200mv
Digital Connector	Samtec SFM-140-L2-S-D-LC
RF Connector	Huber-Shuner 85-MMCX-50-0-1

Power Consumption

Time Maintenance	30 mW
Standby	0.8 W
Track (L1-only Mode)	1.1W
Track (L1/L2 Mode)	1.4 W
Acquisition	1.5 W

Performance

Measurement Error (1σ)	
PR	< 1 m
DR	< 0.03 m/s
CP (zero baseline)	< 3mm
Time (UTC)	< 40 ns
Sensitivity (dBm)	
Cold Start	-135
Warm Start	-138
Hot Start	-140
Tracking	-154
TTFF (seconds)	
Hot Start	< 5
Warm Start	< 60
Cold Start	<120
Reacquisition (10 s outage)	< 5
Reacquisition (15m outage)	<10



Environments

Dynamics	10g, 10g/s
Temperature	-40^{0}C to +85 ^{0}C
Altitude	-400m to 24000Km

Available I/O

UART	8 (921KBps)
GPIO	21
SPI	2 (7 slaves)
SDLC/AMRAA	2 (Data, Sync, Clock)
Time Events	2 in, 3 out

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