

Embeddable PNT Module

Innovative, Military-Grade, Global SATCOM and A-PNT Solutions

GPS Independent PNT AltNav Based Position & Timing

Embeddable Intended for Third-Party Integration

Alternative Location Timing Module (ALTM)

The second generation of the Alternative Location and Timing Module (ALTM GEN2) is a standardized, small form factor, AltNav receiver that provides Position / Location Information (PLI) and timing, independent of GPS. The ALTM GEN2 is designed to be employed during dismounted, ground-vehicle, and airborne operations. It is capable of tracking personnel, vehicles, and assets.

The ALTM GEN2 leverages a combination of an AltNav receiver, a UART serial port input for high-accuracy GPS, and a UART serial port for data I/O, and a 1 PPS timing signal. For robust operation and ease of integration the ALTM GEN2 receiver has two 40-pin Hirose connectors with power and digital interfaces for PLI signals.

The ALTM GEN2 was designed to be a drop-in replacement for the ALTM GEN1, providing the user with all the AltNav capabilities of the GEN1, as well as containing receiver improvements, power optimization and decision logic.

ALTM GEN2

Performance Improvements

Improved Sensitivity, Power Optimization & Decision Logic



<u>AVAILABLE NOW</u>









Complete Development Kit Includes:

- ALTM GEN2 Receiver Module
- ALTM Development Board
- AC Adapter, Wall Mount, 90-264VAC
- Banana Plug Cables

- Power Cable: USB Micro-B Data Cable (6')
- SAF7352-IF, Dual Iridium/GPS Antenna
- BNC Male: MCX Male Coax Cable, RG-316 (19.69")
- 20-Hours Engineering Support

Device Specifications

Weight:	< 3 oz (< 0.085 kg)
Dimensions:	2.425"L x 2.125"W x 0.070"H (61.60 x 54.0 x 1.8 mm)
Interface Connector:	2x Hirose DF40C-40DP-0.4V(51)
Mating Connector:	DF40C-(4.0)-40DS-0.4V(51)
AltNav Connector:	Surface Mount u.FL
Cooling:	Natural Convection
Mounting:	Screw Standoffs
Oprating Temperature:	-4°F to +158°F (-20°C to +70°C)
Input Voltage Range:	4.0 - 5.5 VDC
Voltage Input:	Hirose I/O Connector
Average Power:	1.15 W
Average Current Consumption:	230 mA @ 5.0 VDC

AltNav Receiver

Recommended Antenna:	NAL SYN7391-A or equivalent
Position Accuracy:	+/- 50m, 1σ with open sky view
Timing Accuracy:	<1 µs, 1σ with open sky view
Startup Time:	Hot Start: < 30sec / Cold Start: 1.5 - 3min.

IS-GPS-153

NAL has implemented twelve (12) messages compliant to the IS-GPS-153 protocol specification.

The messages are a mix of standard IS-GPS-153 messages, as well as-153 messages which were designed to provide AltNav specific Information.

The Interface Control Document (included in the Development Kit) provides a detailed breakdown of fields for the individual messages.

"We integrated the algorithms and decision logic to allow the module to automatically select whether to output external GNSS or AltNav PNT information based on the relative validity states of each solution."



