

ALTM

Embeddable PNT Module



GPS Independent PNT
RF Based Position & Timing



Dynamic Capability
Optimized for mobile dismounted
& mounted users



Embeddable
Intended for third-party integration

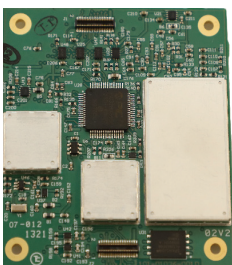
Alternative Location Timing Module (ALTM)

The Alternative Location and Timing Module (ALTM) is a standardized, small form factor, Alternative-RF receiver that provides Position / Location Information (PLI) and timing, independent of GPS. The ALTM is designed to be employed during dismounted, ground-vehicle, and airborne operations.

The ALTM contains an Alternative-RF receiver, an inertial measurement unit (IMU), 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 Receiver has two 40-pin Hirose connectors with power and digital interfaces for PLI signals.

ALTM Roadmap

Gen. 1



AVAILABLE: NOW

- Current Module Design
- GPS Independent
- Alternative-RF PNT
- 1 PPS Timing

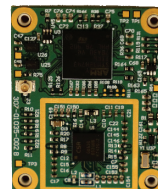
Gen. 2



FALL 2021

- Drop-in Replacement for Gen. 1
- Receiver Improvements
- Power Optimization
- Decision Logic

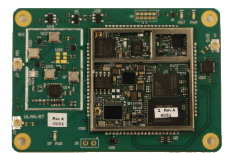
Gen. 3



SUMMER 2022

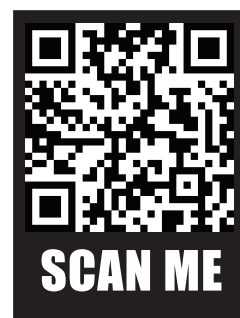
- **Dynamic Capability**
- Inherits Gen. 2 Improvements
- Optimized for Size

Gen. 4

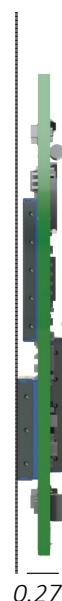
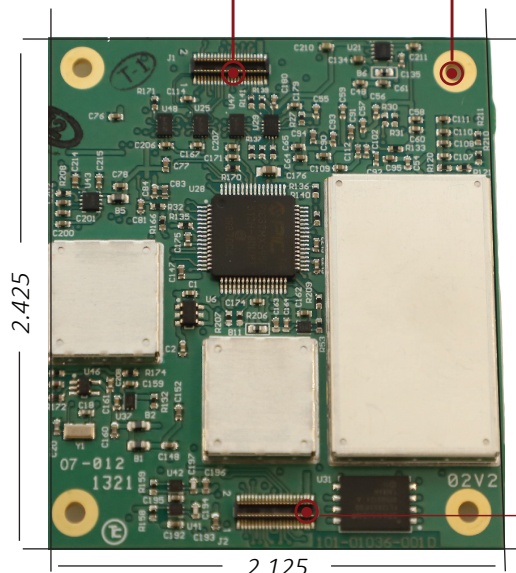


WINTER 2022

- **Dynamic Capability**
- Inherits Gen. 3 Improvements
- IoT Platform
- Flexibility to Add Waveforms



DF40C-40DP-0.4V(51) 4X 0.150



PCB Matting Surface

Mating Component	Stacking Height
DF40C-(4.0)-40DS-0.4V(51)	0.158

Complete Development Kit Includes:

- BNC Male: MCX Male Coaxial Cbl, RG-316, 19.69"
- AC Adapter, Wall Mount, 90-264VAC
- Banana Plug
- 20 Hours of Engineering Support
- Power Cable: USB, Micro B 6'
- SAF7352-IF, Dual Iridium/GPS Antenna
- ALTM Module
- ALTM Development Board

Device Specifications

Weight:	< 1 oz (< 0.028 kg)
Dimensions:	2.425" L x 2.125" W x 0.276" D (61.60 x 53.98 x 7.01 mm)
Interface Connector:	2x Hirose DF40C-40DP-0.4V(51)
Mating Connector:	DF40C-(4.0)-40DS-0.4V(51)
Alternative-RF Connector:	Surface Mount u.FL
Cooling:	Natural Convection 4
Mounting:	Screw Standoffs
Operating 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
Typical Current Draw:	246 mA / 1.3 W
Average Power Consumption:	1.0 W

Alternative-RF Receiver

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

GPS Receiver

Receiver Type:	1575.42 MHz (L1), 72-channel, C/A code
Accuracy:	2.5 m CEP
Start-up Times:	< 1 sec hot start, 1 sec warm start, 27 sec cold start
Sensitivity:	- 160 dBm