

# Preliminary Product Specifications

# ALTM Gen4



## Ultra small Iridium STL and GNSS Receiver

- Low SWAP SOM (System-on-Module) 26.4 x 31.5 x 2.7 mm
- Fully integrated solution for Iridium STL, GNSS (L1), and 1-PPS reducing total design effort
- Ideal for passive antenna due to its built-in SAW and LNA
- Support for optional external reference clock for improved 1-PPS holdover and accuracy



**\*\*Image to Scale\*\***  
26.4 x 31.5 x 2.7 mm

## Product description

The ALTM Gen4 is NAL Research's latest, highly integrated System-on-Module (SoM) provides both Iridium STL and GNSS positioning and timing solution. The ultra-miniature form factor integrates a complete GNSS and STL solution including SAW Filter, LNA, TCXO, and Bias tee for active antennas on SoM.

The ALTM Gen4 is targeted for applications that require a small size without compromising performance. For RF optimization, the ALTM Gen4 SoM integrates a front-end SAW filter and an additional front-end LNA for increased jamming immunity and easier antenna integration. A passive antenna can be used to provide a highly integrated system solution with minimal extra BOM items. Incorporating the ALTM Gen4 into customer designs is simple and straightforward thanks to the fully integrated design, single voltage supply, low power consumption, and simple interface will maximize performance even in harsh RF environments. With its dual-band RF front-end, the ALTM Gen4 SoM can utilize concurrent reception of both STL and GNSS L1. The ALTM Gen4's castellated packaging technology makes integration easy in manufacturing compared to a standard LGA or BGA packages.

## ALTM Gen4 Features:

### Positioning

Iridium STL  
Onboard GNSS

### Timing

1-PPS Out (STL and GNSS)  
Reference Clock input  
\*10MHz Clock output

### Interfaces

USB 2.0  
UART  
1.8V Logic Levels

### Power Supply

3.3 V - 4 V Power in  
\* = Not available if external clock Input used

# ALTM Gen 4



## Iridium STL

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Start-up Time	4-6 Min. (Warm) 8-12Min. (Cold)
Static Accuracy	+/- 25m with open sky
Dynamic Accuracy	<200m with open sky
Acquisition	Cold starts: ~26 s Aided starts: ~3 s Reacquisition: ~1 s

Internal Oscillator	TCXO
External Oscillator	19.2 MHz, 1.8V <sub>p-p</sub>
Supported Antennas	Active and passive

## Electrical data

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Supply Voltage	3 V to 4 V
I/O Voltage	1.8V
Power Consumption	0.6W (typ.)

## Package

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70 Pin castellated SoM:	26.4 x 31.5 x 2.7 mm 0.8g
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## Environmental data, quality & reliability

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Operating temp	-40°C to +85°C
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RoHS compliant (lead-free)

Moisture sensitivity level 3

## Interfaces

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Serial interfaces	1 UART 1 SPI 1 I2C 1 USB 1GPIO
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Protocols	NMEA-0183
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