

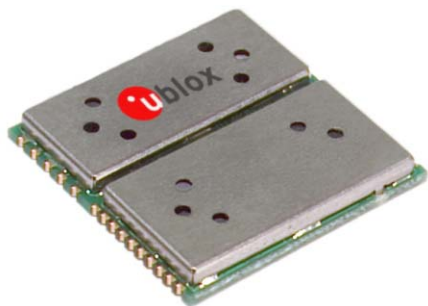


TIM-LA

GPS Receiver Module

ANTARIS® Positioning Engine

The TIM-LA is an ultra-low power OEM GPS module with built-in low noise amplifier suitable for passive and active antennas. It provides two 3V (5V TTL input compatible) serial ports and easy-to-use boot time configuration pins. The combination of low power consumption, cost-optimized architecture (no Flash EPROM inside) and applicability for passive antennas makes the TIM-LA suitable for high-volume applications where small size, low cost and simplicity are key issues.



Overview

The leading ANTARIS® GPS Engine provides excellent navigation performance under dynamic conditions in areas with limited sky view like urban canyons, high sensitivity for weak signal operation without compromising accuracy, and support of DGPS and multiple SBAS systems like WAAS and EGNOS. The 16 parallel channels and 8192 search bins provide fast start-up times. The aiding functionality accelerates start-up times even further. The low power consumption and FixNOW™ power saving mode make this product suitable for handheld and battery-operated devices.

Small Form Factor

Innovative packaging technologies enable high integration of a GPS receiver in a small module measuring just 25.4 x 25.4 mm and allowing straightforward integration in particularly small end products and opportunities in new application fields. The small form factor and the SMT pads allow a fully automatic assembly process with standard pick-and-place equipment and reflow soldering, enabling cost-efficient high-volume production.

Benefits

- High acquisition and tracking sensitivity
- Ultra-low power consumption
- Excellent GPS performance
 - Excellent navigation accuracy, even at low signal levels
 - Active multipath detection and removal
 - Fast Time-To-First-Fix (TTFF)
 - Accelerated TTFF with aiding functionality
- No Flash EPROM inside
 - Independence from memory market and price fluctuations
- Highly integrated module
 - Automatic pick-and-place assembly
 - Reflow solderable
- Maximum flexibility
 - Extensively configurable
 - Boot-time configuration pins (like TIM-LC)
- Fully EMI shielded
- Passive and active antenna support

Features

- 16 channel GPS receiver
- 8192 simultaneous time-frequency search bins
- 4 Hz position update rate
- ANTARIS Positioning Engine
 - ATR0600 RF front-end IC
 - ATR0620 Baseband IC with ARM7TDMI inside
 - ATR0610 Low noise amplifier IC
- DGPS and SBAS (WAAS, EGNOS) support
- FixNOW™ power saving mode
- Operating voltage 2.7 to 3.3 V
- Battery supply pin for internal backup memory and real time clock
- Industrial operating temperature range -40 to 85°C
- Small size: 25.4 x 25.4 x 3 mm, weight: 3g

Support Products

ANTARIS EvalKit

Use the ANTARIS EvalKit to experience the power of TIM-LA.

*your position
is our focus*



Specifications

Receiver Performance Data

Receiver Type	16 channel, L1 frequency, C/A code
Max. Update Rate	4 Hz
Accuracy	Position 2.5 m CEP DGPS / SBAS 2.0 m CEP ¹
Start-up Times	Hot start <3.5 sec Warm start 33 sec Cold start 34 sec Aided start 5 sec

Signal reacquisition < 1 s

Sensitivity Acquisition -140 dBm
Tracking -149 dBm

Timing Accuracy RMS 50 ns
99% <100 ns

Dynamics < 4 g

Operational Limits COCOM restrictions apply

¹ Depends on accuracy of correction data of DGPS or SBAS service

Electrical Data

Power Supply 2.7 – 3.3 V

Power Consumption typ. 150 mW @ 3.0 V
typ. 135 mW @ 2.7 V

Sleep mode: typ. 100 µA

Backup Power 1.95 V – 3.6 V

Serial Ports 2 UARTs @ 3 V levels
5V TTL compatible input

Digital IOs TIMEPULSE @ 1.8 V

Protocols NMEA, UBX binary, RTCM

Interleaving multiple protocols via same serial interface is supported

Interface 30 pin leadless chip carrier, reflow solderable

Antenna Power External or Internal VCC_RF

Antenna Supervision Integrated short-circuit detection and antenna shutdown

Open circuit detection is supported with little external circuitry

Environmental Data

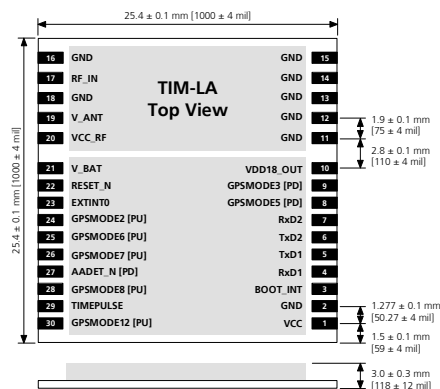
Operating Temperature -40°C to 85°C

Storage Temperature -40°C to 125°C

Vibration 5 Hz to 500 Hz, 5g (IEC 68-2-6)

Shock Half sine 30g / 11ms (DIN 40046-7)

Mechanical Data



Ordering Information

TIM-LA-0-000-0 TIM-LA- GPS Receiver Module

Delivery Packing
 0 = Single samples
 1 = Tape on reel (100 pieces)
 5 = Tape on reel (500 pieces)

AEK-LS-0-000-0 ANTARIS EvalKit - Evaluation Kit

Parts of this product are patent protected.

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