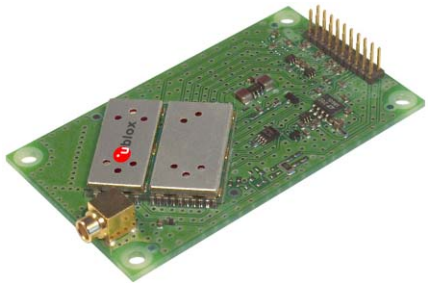
RCB-LJ

Programmable GPS Receiver Board

ANTARIS® Positioning Engine

The RCB-LJ is an ultra-low power GPS receiver board equipped with right-angle MCX/OSX connector and is suitable for active antennas. It contains the TIM-LF module, provides two 3V (5V TTL input compatible) serial ports, wide supply voltage range from 3.15 to 5.25 V and active antenna supervision. The interfaces and board dimensions are compatible to the predecessor TIM-CJ. The combination of high performance and flexibility fulfill the requirements for cost efficiency and fast and straightforward plug-in system integration.



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 low power consumption and FixNOW™ power saving mode make this product suitable for handheld and battery-operated devices.

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)
- Industry-standard form factor for easy plug-in integration
- Maximum flexibility
  - Extensively configurable
- Fully EMI shielded
- Active antenna support
- Active antenna supervisor for short and open circuit detection

Features

- 16 channel GPS receiver
- 8192 simultaneous time-frequency search bins
- 4 Hz position update rate
- Based on the ANTARIS GPS Technology
  - ATR0600 RF front-end IC
  - ATR0620 Baseband IC with ARM7TDMI inside
- FLASH memory
- DGPS and SBAS (WAAS, EGNOS) support
- FixNOW™ power saving mode
- Operating voltage 3.15 to 5.25V
- Battery voltage supply pin for internal backup memory and real time clock
- Industrial operating temperature range –40 to 85°C
- Small size: 71 x 41 x 11 mm, weight: 17g

Support Products

ANTARIS EvalKit

Use the ANTARIS EvalKit to experience the power of RCB-LJ.

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 DGPS / SBAS	2.5 m CEP 2.0 m CEP [1]
Start-up Times	Hot start Warm start Cold start	<3.5 sec 33 sec 34 sec
Signal reacquisition	< 1 s	
Sensitivity	Acquisition Tracking	-140 dBm -149 dBm
Timing Accuracy	RMS: 99%:	50 ns <100 ns
Dynamics	< 4 g	
Operational Limits	COCOM restrictions apply	

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

Electrical Data

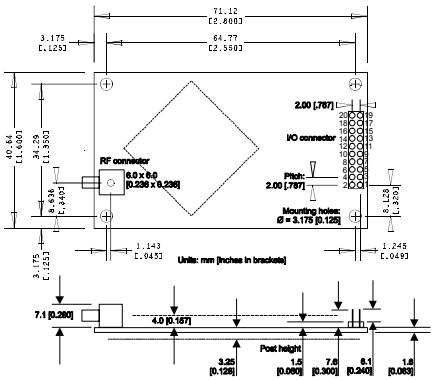
Power Supply	3.15 - 5.25 V
Power Consumption	typ. 175 mW @ 3.3 V typ. 265 mW @ 5.0 V Sleep mode: typ. 190 µA
Backup Power	1.95 V – 3.6 V
Serial Ports	2 UARTs @ 3 V levels 5V TTL compatible inputs
Digital IOs	TIMEPULSE @ 3 V
Protocols	NMEA, UBX binary, RTCM Interleaving multiple protocols via same serial interface is supported
RF Interface	MCX / OSX, right angle
I/O Interface	20 pin 2mm pitch header
Antenna Power	External
Active Antenna Recommendations	Gain ≥ 25 dB Noise figure ≤ 1.5 dB
Antenna Supervision	Integrated open and short-circuit detection and antenna shutdown

Environmental Data

Operating Temperature	-40°C to 85°C
Storage Temperature	-40°C to 125°C

For electrical specifications of the serial interface and I/O signals, check the *RCB-LJ Data Sheet*.

Mechanical Data



Ordering Information

RCB-LJ-0-000-0	RCB-LJ – Programmable GPS Receiver Board
	Delivery Packing **0** = Single samples **1** = Packing unit (100 pieces)
	RF Connectors **0** = Right-angle OSX/MCX **1** = Straight OSX/MCX
	Allowed combinations: RCB-LJ-0-000-0, RCB-LJ-0-000-1, RCB-LJ-1-000-1
AEK-LS-0-000-0	ANTARIS EvalKit - Evaluation Kit

Parts of this product are patent protected.

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