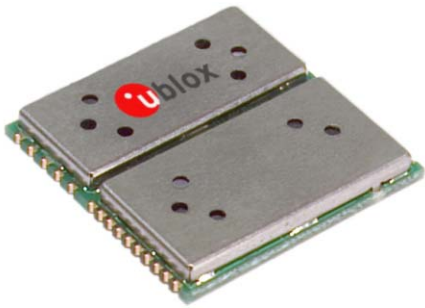




TIM

GPS Receiver Macro Component SiRFstar™ II Positioning Engine

TIM is a fully self-contained low-cost GPS receiver based on the SiRFstar™ II GPS technology. With its innovative packaging technology the TIM GPS receiver is the ideal solution for high volume application with stringent, minimal space requirements. The integrated data logger allows storing GPS data on the receiver.



Overview

The TIM GPS receiver macro component is another milestone in the miniaturization of GPS receiver modules. Innovative packaging technology has opened the door for a thin and compact GPS receiver unique to the market. The TIM macro component is SMT solderable and can be handled by standard pick-and-place equipment. This allows a fully automatic assembly process. The height of 3mm (~120mil) and the size of 25.4 x 25.4 mm (1" x 1") make it the ideal GPS solution for applications with stringent space requirements.

TIM provides two serial ports, which can handle NMEA or SiRF® proprietary data format or accept differential GPS data (RTCM). The integrated data logging function stores up to 100'000 logs on the internal FLASH memory.

Operating at a nominal operating voltage of 3.3 Volts, the module consumes less than 0.5 Watts in continuous operation mode. The implementation of the TricklePower™ mode allows a considerable reduction of power consumption for applications where power consumption is of primary concern.

Benefits

- Fully self-contained GPS receiver (PVT output)
- Low power consumption
- Excellent GPS performance
 - Fast time-to-first-fix
- Macro component
 - Very compact design
 - Automatic pick and place assembly
 - Reflow solderable
- Supports Satellite Based Augmentation Systems (SBAS)
- Integrated data logging
- Fully EMI shielded
- Passive and active antenna support
- Immune to RF interference

Features

- 12 channel GPS receiver
- 1 Hz position update rate
- SiRFstar™ II architecture
 - GRF2i RF front-end IC
 - GSP2e GPS DSP with integrated Real Time Clock
- 8 MBit FLASH memory
- Low noise amplifier
- Power management features
 - TricklePower™ mode
 - Push-to-Fix™ mode
- Operating voltage 2.75 ... 3.45 V
- Battery voltage supply pin for internal backup memory and real time clock
- Industrial operating temperature range -40...85°C
- Small size
 - Size 25.4mm x 25.4mm
 - Height 3mm
 - Weight 3g

Support Products

TIM Evaluation Kit

Use the TIM Evaluation Kit to experience the power of TIM.

*your position
is our focus*



Specifications

Receiver Performance Data

Receiver Type	12 channel, L1 frequency, C/A code	
Max. Update Rate	1 Hz	
Accuracy	Position	4 m CEP
	DGPS	2 m CEP ¹
Start-up Times	Hot start	2-8 s
	Warm start	38 s
	Cold start	45 s
Signal reacquisition	100 ms	
Dynamics	< 4 g	
Operational Limits	COCOM restrictions apply	

¹ Depending on accuracy of correction data

For more detailed information on the GPS performance check the *TIM Data Sheet*.

Electrical Data

Power Supply	2.75 – 3.45 V
Power Consumption	< 160 mA (continuous)
Power Save Modes	10 mA (8s update rate) 50 mA (1s update rate)
Backup Power	1.85 V – 3.6 V, 4.5 μ A
Serial Ports	Two UARTS @ 3.3 V levels (CMOS / TTL compatible)
Digital IOs	1PPS @ 3.3 V (1 Pulse Per Second)

Protocols NMEA, SIRF[®] binary, RTCM

Interface 30 pin leadless chip carrier, reflow solderable

Antenna Power External

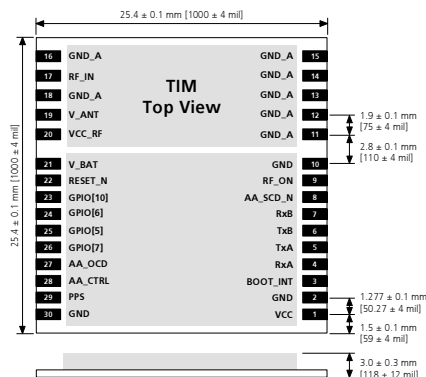
Datalogger

Capacity	Max. 100K position logs
Logged Parameters	Position, velocity, time, GPS status, state of 4 GPIOs
Configuration	Serial protocol messages
Download	Compressed format, serial
Logging Events	Time intervals, distance, external events via GPIOs

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-ST-0-000-0	TIM GPS Receiver Macro Component Single Samples
TIM-ST-0-000-1	TIM GPS Receiver Macro Component Tape on reel 100pcs
TIM-ST-0-000-5	TIM GPS Receiver Macro Component Tape on reel 500pcs
TEK-ST-0-000-0	TIM Evaluation Kit

Parts of this product are patent protected.

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