

# PCM-5S

## u-blox 5 GPS module

### Product description

The PCM-5S enables simple integration of GPS functionality into MIDs, UMPCs, laptops and similar applications. The PCM-5S is a ready-to-use solution, composed of a GPS chipset incorporated into the PCI Express Half Mini Card platform. It features the high performance u-blox-5 positioning engine and includes a USB 2.0 interface.

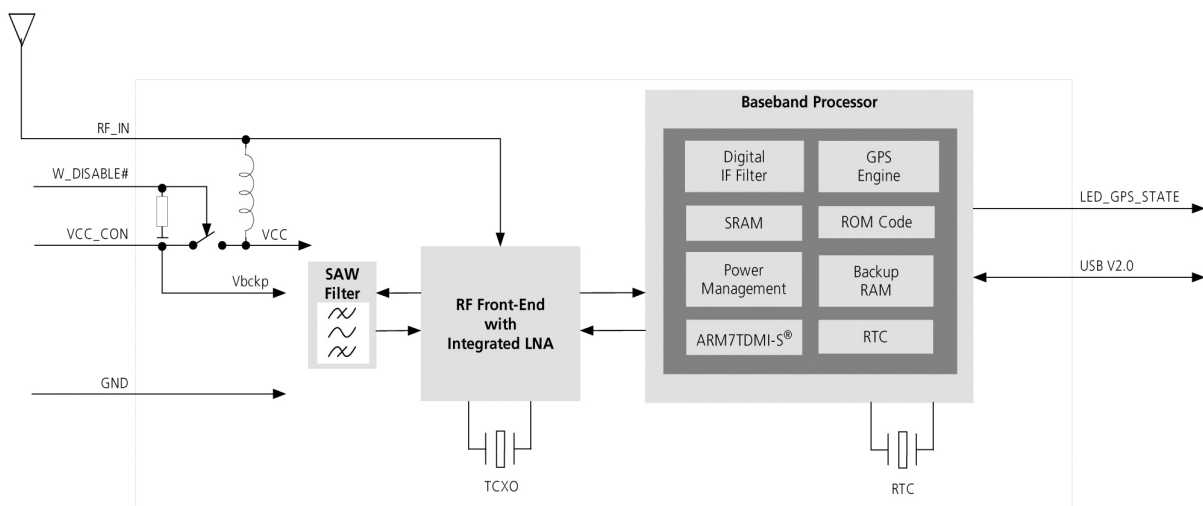


26.8 x 30 x 3.0 mm

### Highlights

- 50-channel u-blox5 engine with over 1 million effective correlators
- < 1 second Time-To-First-Fix for hot and aided starts
- -160 dBm SuperSense® indoor GPS acquisition and tracking sensitivity
- Accelerated startup at weak signals with KickStart feature
- A-GPS: AssistNow Online and AssistNow Offline; OMA SUPL compliant
- High immunity to jamming
- SBAS (WAAS, EGNOS, MSAS, GAGAN)
- 1 USB V2.0
- Mini PCI Card form factor

### Block Diagram



PCI-5S and PCM-5S Hardware Block Schematic

## Electrical data

Power supply	3.3V supply rail: 2.7 to 3.6V 1.5V supply rail: Not used
Power consumption	123 mW @ 3.0V Eco mode
Backup power	1.5V to 3.6V, typ. 5 $\mu$ A
Antenna	Active and passive

## Environmental data

Operating Temp.	-40°C to 85°C
Storage Temp.	-40°C to 85°C
	RoHS compliant (lead-free)

## Support products

u-blox 5 Evaluation Kits

EVK-5H	u-blox 5 Evaluation Kit
suitable for:	PCM-5S

An easy-to-use kit to get familiar with the u-blox 5 positioning technology, and to evaluate functionality and to visualize GPS performance.

## Ordering information

PCI-5S-1	ROM-based u-blox 5 PCI Express Half MiniCard
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Available as samples and tape on reel (250 pieces)

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## Interfaces

Antenna Conn.	Hirose U.FL-R-SMT
Serial interfaces	1 USB V2.0 full speed 12 Mbit/s (Through PCI connector)
Digital I/O	LED_GPS_STATE Radio state indicator

## Receiver performance data

Receiver type	50-channel u-blox 5 engine GPS L1 C/A code SBAS: WAAS, EGNOS, MSAS, GAGAN
Max. update rate	4 Hz
Accuracy <sup>1</sup>	Position 2.5 m CEP SBAS 2.0 m CEP
Acquisition <sup>1</sup>	Cold start: 29 s Warm start: 29 s Aided starts <sup>2</sup> : < 1 s Hot starts: < 1 s
Sensitivity	Acquisition: -160 dBm Tracking: -160 dBm Cold starts <sup>3</sup> : -144 dBm
Multipath suppression	Intelligent multipath detection and suppression
GPS protocols	NMEA, UBX Binary
A-GPS	Supports AssistNow Online and AssistNow Offline, OMA SUPL compliant
Operational limits <sup>4</sup>	Velocity: 500 m/s (972 knots) Altitude: 50,000 m

<sup>1</sup> All SV @ -130 dBm

<sup>2</sup> Dependent on aiding data connection speed and latency

<sup>3</sup> Demonstrated with a good active antenna

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