

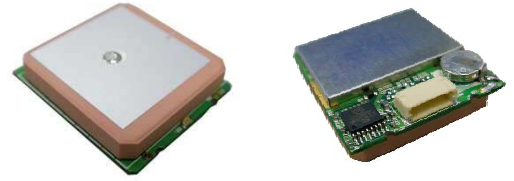


SPK-GPSSM601, u-blox6

Ultra-High Performance

GPS Smart Antenna Module

RoHS
Compliant



Industrial operating temperature range: -40 ~ 85°C

Overview

SPK-GPSSM601 is an easy to use, ultra-high performance, low power GPS smart antenna module with patch antenna for AVL/handheld applications. The built-in u-blox6 chip and our experienced design provide fast acquisitions and excellent tracking performance. SPK-GPSSM601 supports not only RS232/TTL/USB options; the built-in battery could also be omitted if external backup power is preferred.

Applications

- Automatic vehicle location
- Tracking
- Navigation
- Fleet management
- GPS clock and digital camera
- Child/elderly/personal locator and security system

Features

- Based on u-blox6 low power single chip
- High performance: -160dBm⁺ tracking sensitivity
- Low power: 50mA at continuous tracking
- SBAS (WAAS, EGNOS, MSAS, GAGAN) support
- A-GPS support, OMA SUPL/3GPP TS25.171 (GSM/UMTS) compliant
- Easy to use: built-in patch antenna & 6-pin wire to board connector w/ pitch of 1.0mm
- Backup battery support for faster position fix
- LED for position fix indication
- Fully EMI shielded

Technical Specifications

Receiver Performance Data⁺

Receiver Type	50-channel, L1 frequency, C/A code
Horizontal Position Accuracy	< 2.5m (Autonomous) < 2.0m (WAAS) (CEP, 50% 24hr static, -130dBm)
Velocity Accuracy	<0.1 m/s (speed) <0.5° (heading) (50%@30m/s)
Time Pulse	30ns (RMS)
Signal Accuracy	<60ns (99%)
Time To First Fix	Autonomous
Hot start	<1sec
Warm start	<32sec
Cold start	<32sec (50% -130dBm)
Sensitivity (Autonomous)	-146dBm (acquisition) -160dBm (tracking)
Max. Update Rate	5Hz
Max. Altitude	50,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA 0183 v2.3(compatible to 3.0) UART: 9600 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG, TXT
SBAS Support	WAAS, EGNOS, MSAS, GAGAN
Dynamics	<4g



SPK ELECTRONICS CO., LTD.

u-blox6 GPS Smart Antenna Module / SPK-GPSSM601

Signal level is RS232 only for RS232 version.

according to GPS IC spec

Electrical Data

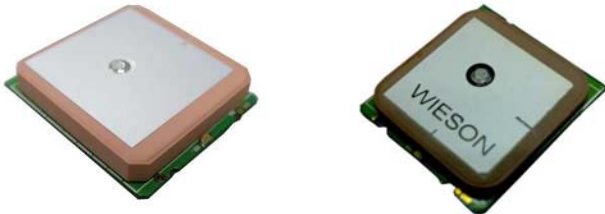
Power Supply	3.3 ~ 5.5 V
Power Consumption	56mA/average tracking
Backup power	1.4 ~ 3.6 V
TTL I/O	V _{IH} : 2.31~3.3V, V _{IL} : 0~0.66V V _{OH} : >2.8V, V _{OL} < 0.4V
USB I/O	V _{IH} : 2.0~3.3V, V _{IL} : 0~0.8V V _{OH} : >2.8V, V _{OL} < 0.3V
Protocols	NMEA, u-blox Binary

Environmental Data

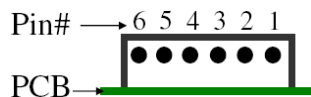
Operating temperature	-40 ~ 85°C except battery: -20~60°C
Storage temperature	-40 ~ 85°C except battery: -40~60°C
Vibration	5Hz to 500Hz, 5g
Shock	Half sine 30g/11ms

Mechanical Data

26*28*7.9 mm or 26*28*5.9 mm



6-pin Interface, pitch 1.0mm



Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply	Input
3	^s TX/D+	Serial data output or USB D+	Output
4	^s RX/D-	Serial data input or USB D-	Input
5	^s TIMEPULSE (VBAT, option)	TIMEPULSE signal (External backup power)	Output (Input)
6	PWR_CTRL	Power control, high/floating: ON, low: OFF	Input

Ordering Information, SPK-GPSSM601

Built-in backup battery

Where X=	R	T	U
RS232	Y	-	-
TTL	-	Y	-
USB	-	-	Y

Optional VBAT pin to support external backup power:

Where X=	Q	S	V
RS232	Y	-	-
TTL	-	Y	-
USB	-	-	Y

* Models other than R/T/U require MOQ.

*This document is subject to change without notice.