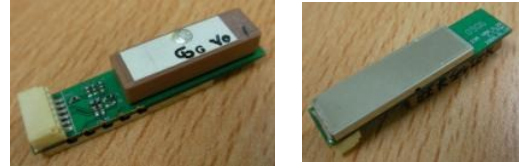


GM-235, Slim, Easy to Use USB

GPS Smart Antenna Module

RoHS
Compliant



Overview

GM-235 is equipped with -159dBm engine and measures just 35x8x6.5 (mm). The slim design allows it to be used in thickness demanding devices. The built-in USB interface makes it very easy to integrate with modern USB-rich devices such as notebook PC etc.

Our experienced design provides not only fast acquisitions and excellent tracking performance but also quality and delivery assurance.

Applications

- Notebook PC / Netbook
- Smart phone, MID, UMPC, PND
- Digital camera
- Personal/pet tracker

Features

- USB interface
- Optional UART interface
- Slim: 35 (L) x 8 (W) x 6.5 (H) (mm)
- Built-in patch antenna
- Module ON/OFF control for power saving
- Backup power pin for fast position fix
- Easy to use 6-pin connector
- High performance: -159dBm tracking sensitivity
- A-GPS support
- Excellent EMI protection

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%, 24-hour static, -130dBm, SEP < 3.5m)
Velocity Accuracy	<0.1 m/s (speed) <0.5° (heading) (50% @ 30 m/s)
Time To First Fix	Autonomous (All at -130dBm)
Hot start	1sec
Warm start	32sec
Cold start	32sec
Sensitivity (Autonomous)	-142dBm (acquisition) -159dBm (tracking & navigation)
Max. Update Rate	4Hz
Max. Altitude	< 18,000 m
Max. Velocity	< 1,852 km/hr
Protocol Support	NMEA 0183 v2.3 UART: 38400bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG, TXT
SBAS Support	WAAS, EGNOS, MSAS, GAGAN
Dynamics	< 4g

⁺ **Note. According to IC Spec**

Electrical Data

Power Supply	3.3 ~ 6 V
Power Consumption	55 mA / average tracking
USB I/O (V)	V _{IH} : 2 ~ VDD_USB V _{IL} : 0 ~ 0.8 V _{OH} : >= 2.8, V _{OL} <= 0.3

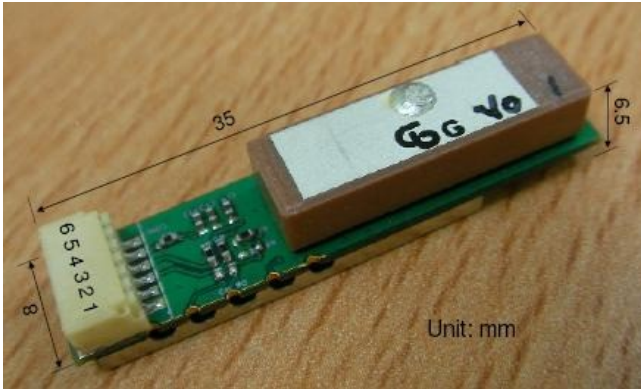
Slim GPS Smart Antenna Module / GM-235

Backup battery	1.4 ~ 3.6 V
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Environmental Data

Operating temperature	-40 ~ 85°C
Storage temperature	-40 ~ 85°C

Mechanical Data – 35 x 8 x 6.5 (mm)



6-pin Interface (USB)

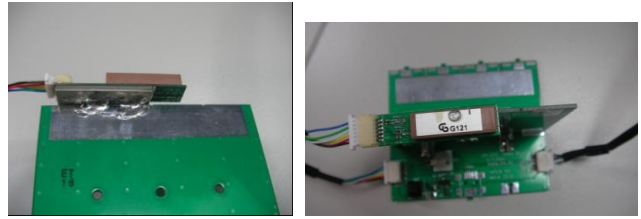
Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	3.3 ~ 6 V power supply	Input
3	DP	USB positive	I/O
4	DM	USB negative	I/O
5	V_BAT	Backup power (1.4 ~ 3.6V)	Input
6	PWR_CTRL	Module power control High: power ON Low: power OFF	Input

TTL UART

Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	3.3 ~ 6 V power supply	Input
3	TXA	Port A serial data output (from GPS)	Output
4	RXA	Port A serial data input (to GPS)	Input
5	V_BAT	Backup power (1.4 ~ 3.6V)	Input
6	PWR_CTRL	Module power control High: power ON Low: power OFF	Input

Handheld Device Application

1. Place the GM-235 body on top side of and vertical to PCB for better signal reception. Following pictures are the example of its EVK:



2. Connect 6-pin interface to main board.
3. To save power, turn off the GPS module via pin 6.

Illustrations on Nokia 6280 Mobile Phone



Ordering Information

GM-235X

U	USB interface, GGA, GLL, GSA, GSV, RMC, VTG, TXT @1Hz
T	TTL UART interface, 38400bps, N-8-1, GGA, GLL, GSA, GSV, RMC, VTG, TXT @1Hz

*This document is subject to change without notice.