



NEO-5 Module Series

u-blox 5 ROM-Based GPS Receivers

Preliminary Data

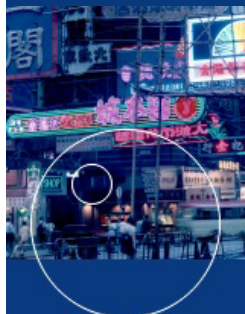
Overview

The NEO-5 module series brings the high performance of the u-blox 5 positioning engine to the miniature NEO form factor. These receivers combine a high level of integration capability with flexible connectivity options in a small package. This makes them perfectly suited for mass-market end products with strict size and cost requirements.



16.0 x 12.2mm

*your position
is our focus*



Highlights

- 50-channel u-blox 5 engine with over 1 million effective correlators
- <1 second Time To First Fix for Hot and Aided Starts
- -160dBm SuperSense® acquisition and tracking sensitivity
- Accelerated startup at weak signals for modules with KickStart feature
- Supports AssistNow Online and AssistNow Offline A-GPS services; OMA SUPL compliant
- High immunity to jamming
- 4 Hz position update rate
- Miniature 16.0 x 12.2mm package

Features

	Power	Size	Memory	Function				Antenna		Input / Output						
	Voltage Range (V)	Thickness (mm)	Programmable (Flash)FW Update	Low Power Modes	KickStart	Dead Reckoning	Raw Data	Precision Timing	Antenna Supply	Antenna Supervisor	UART	USB	SPI	DDC (I ² C compliant)	Reset Input	Configuration Pin
NEO-5M	2.7-3.6	2.4									1	1		1		1
NEO-5Q					•						1	1	•	1		2

Mechanical Data

13	GND	GND	12
14	MOSI/CFG_COM0	RF_IN	11
15	MISO/NC	GND	10
16	CFG_GPS0/SCK/NC	VCC_RF	9
17	SCS1_N/NC	Reserved	8
NEO-5 Top View			
18	SDA2	VDDUSB	7
19	SCL2	USB_DP	6
20	TxD1	USB_DM	5
21	RxD1	EXTINT0	4
22	V_BCKP	TIMEPULSE	3
23	VCC	SS_N/NC	2
24	GND	Reserved	1

Dimensions 16.0mm x 12.2mm

Weight 1.6 g

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

Accuracy¹ Position 2.5 m CEP
SBAS 2.0 m CEP

Acquisition ¹		NEO-5Q	NEO-5M
Cold starts:		29 s	32 s
Warm starts:		29 s	32 s
Aided starts ² :		<1 s	<1 s
Hot starts:		<1 s	<3 s

Sensitivity ³		NEO-5Q	NEO-5M
Tracking:	-160 dBm	-160 dBm	-160 dBm
Reacquisition:	-160 dBm	-160 dBm	-160 dBm
Cold starts:	-144 dBm	-143 dBm	-143 dBm

A-GPS Supports AssistNow Online and AssistNow Offline, OMA SUPL compliant

Operational Limits Velocity: 515 m/s (1000 knots)

Operating Temp. -40°C to 85°C

Storage Temp. -40°C to 85°C

¹ All SV @ -130 dBm

² Dependent on aiding data connection speed and latency

³ Demonstrated with a good active antenna

Interfaces

Serial Interfaces 1 UART
1 USB⁴ V2.0 Full Speed 12 Mbit/s
1 DDC (I²C compliant)
1 SPI (NEO-5Q)

Digital I/O Configurable time pulse
1 EXTINT input

Serial and I/O Voltages 3V levels

Protocols NMEA, UBX binary

⁴ Bus powered mode not supported at this time. Planned availability Q1/09

Electrical Data

Power Supply 2.7 to 3.6 V

Power Consumption 126 mW @ 3.0V Eco Mode
141 mW @ 3.0V Max. Performance Mode

Backup Power 1.4 V to 4.8 V, 25µA

Antenna Type Active and Passive

Support Products

u-blox 5 Evaluation Kits

Evaluation Kit		Suitable for
EVK-5H:	u-blox 5 Evaluation Kit with KickStart	NEO-5Q
EVK-5P:	u-blox 5 Evaluation Kit with SuperSense [®]	NEO-5M

Ordering Information

NEO-5M-0 NEO-5M – u-blox 5 GPS Module

NEO-5Q-0 NEO-5Q – u-blox 5 GPS Module

Available as samples and tape on reel (250 pieces)

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