

**LOCOSYS**



**The Multi-GNSS Generation**

Navigated by innoation and quality excellence,  
LOCOSYS is expanding its GNSS territory  
from land to air.



[www.locosystech.com](http://www.locosystech.com)

## GPS/GNSS Module

Global  
Navigation  
Satellite System

Interface

Input Voltage

Power(mA)

VB(uA)

Operating Temp(°C)

Dimension(mm)

GPS ROM base

## CSR (SiRF IV)

<b>S4-0606</b>	★ ★	UART/I <sup>2</sup> C/SPI	1.71V ~ 1.89V	30mA	8uA	-40 ~ 85	6 x 6 x 1.2 mm
<b>S4-1513-2R</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>S4-1612-2R</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>S4-1613-2R</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm

## HED

<b>HD-1010</b>	★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm
<b>HD-1612</b>	★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	16 x 12.2 x 2.2 mm

## MTK

<b>MC-1010-2RE</b>	★ ★	UART	3.0V ~ 4.3V	17mA	6uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm
<b>MC-1108-2RE</b>	★ ★	UART	3.0V ~ 4.3V	17mA	6uA	-40 ~ 85	11.4 x 8.8 x 2.0 mm
<b>MC-1513-2RE</b>	★ ★	UART	3.0V ~ 4.3V	12mA	6uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>MC-1612-2RE</b>	★ ★	UART	3.0V ~ 4.3V	18mA	6uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>MC-1613-2RE</b>	★ ★	UART	3.0V ~ 4.3V	18mA	6uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm

GPS Flash base

## CSR (SiRF IV)

<b>S4-1513</b>	★ ★	UART	1.71V ~ 1.89V	27.5mA	660uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>S4-1513-2E</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>S4-1612-2E</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>S4-1613-2E</b>	★ ★	UART	3.0V ~ 3.6V	33mA	660uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm

## MTK

<b>MC-1010</b>	★ ★	UART	3.0V ~ 4.3V	17mA	6uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm
<b>MC-1108</b>	★ ★	UART	3.0V ~ 4.3V	17mA	6uA	-40 ~ 85	11.4 x 8.8 x 2.0 mm
<b>MC-1513</b>	★ ★	UART/I <sup>2</sup> C	3.0V ~ 4.3V	12mA	6uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>MC-1612</b>	★ ★	UART	3.0V ~ 4.3V	18mA	6uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>MC-1613</b>	★ ★	UART	3.0V ~ 4.3V	18mA	6uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm
<b>MC-1722</b>	★ ★	UART	3.0V ~ 4.3V	18mA	6uA	-40 ~ 85	17 x 22.4 x 2.2 mm

GNSS  
ROM base

## CSR (SiRF V)

<b>S5-0707-2R</b>	★ ★ ★ ★	UART	3.0V ~ 3.6V	50mA	-	-40 ~ 85	7.15 x 7.15 x 2.0 mm
<b>S5-1010-2R</b>	★ ★ ★ ★	UART	3.0V ~ 3.6V	20mA	35uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm

CSR (SiRF V) *-B: GPS+BeiDou ; -G: GPS+GLONASS*

<b>S5-1612-2E</b>	★ ★ ★ ★	UART	3.0V ~ 3.6V	20mA	35uA	-40 ~ 85	16 x 12.2 x 2.2 mm
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## HED

<b>HD-1010-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm
<b>HD-1108-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	11.4 x 8.8 x 2.0 mm
<b>HD-1513-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>HD-1612-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>HD-1613-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm
<b>HD-1722-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	13uA	-40 ~ 85	17 x 22.4 x 2.2 mm

## MTK

<b>MC-1010-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	20mA	7uA	-40 ~ 85	10.1 x 9.7 x 2.0 mm
<b>MC-1108-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	20mA	7uA	-40 ~ 85	11.4 x 8.8 x 2.0 mm
<b>MC-1513-B/-G</b>	★ ★ ★ ★ ★	UART/I <sup>2</sup> C	3.0V ~ 4.3V	16mA	7uA	-40 ~ 85	15 x 13 x 2.2 mm
<b>MC-1612-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	25mA	7uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>MC-1612-B2/-G2</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	25mA	4uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>MC-1613-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	25mA	7uA	-40 ~ 85	15.9 x 13.1 x 2.2 mm
<b>MC-1722-B/-G</b>	★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	25mA	7uA	-40 ~ 85	17 x 22.4 x 2.2 mm

GNSS  
Flash base

## STMicro

<b>ST-1612-G</b>	★ ★ ★ ★	UART/CAN BUS/USB	3.0V ~ 3.6V	50mA	69uA	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>ST-1612-B2/-G2</b>	★ ★ ★ ★ ★	UART/CAN BUS/USB	3.0V ~ 4.3V	TBD	TBD	-40 ~ 85	16 x 12.2 x 2.2 mm
<b>ST-1612-DB/-DG</b>	★ ★ ★ ★ ★	UART/CAN BUS/USB	3.0V ~ 4.3V	TBD	TBD	-40 ~ 85	16 x 12.2 x 2.2 mm

## GPS/GNSS Module

Global  
Navigation  
Satellite System

Interface

Input Voltage

Power(mA)

VB(uA)

Operating Temp(°C)

Dimension(mm)



Sample image

-B: GPS+BeiDou ; -G: GPS+GLONASS

Model	Base	Satellite System	Interface	Input Voltage	Power(mA)	Operating Temp(°C)	Dimension(mm)
<b>CSR</b>							
<b>LS26020/21-2R</b>		★ ★	USB	3.0V ~ 3.6V	42.5mA	-40 ~ 85	
<b>LS26020/21-E</b>		★ ★	USB	3.0V ~ 3.6V	48mA	-40 ~ 85	PCIe Full/Half Mini Card
<b>LS26020/21-G</b>		★ ★ ★ ★	USB	3.0V ~ 3.6V	35mA	-40 ~ 85	
<b>HED</b>							
<b>LS26080/81</b>		★ ★	USB	3.0V ~ 3.6V	45.5mA	-40 ~ 85	
<b>LS26080/81-B/-G</b>		★ ★ ★ ★ ★	USB	3.0V ~ 3.6V	45.5mA	-40 ~ 85	PCIe Full/Half Mini Card
<b>MTK</b>							
<b>LS26030/31-2RE</b>		★ ★	USB	3.0V ~ 3.6V	35mA	-40 ~ 85	
<b>LS26030/31-B/-G</b>		★ ★ ★ ★ ★	USB	3.0V ~ 3.6V	40mA	-40 ~ 85	PCIe Full/Half Mini Card
<b>LS26030/31</b>		★ ★	USB	3.0V ~ 3.6V	35mA	-40 ~ 85	

## Timing Module

<b>ST-1612-T</b>		★ ★ ★ ★	UART/CAN BUS/USB	3.0V ~ 3.6V	38mA	-40 ~ 85	16 x 12.2 x 2.2 mm
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## GPS/GNSS Smart Antenna

Global  
Navigation  
Satellite System

Model

Base

Interface

Input Voltage

Power(mA)

Operating Temp(°C)

Dimension(mm)

Antenna Size(mm)

Connector

CSR (SiRF IV)

-B: GPS+BeiDou ; -G: GPS+GLONASS






Model	Base	Satellite System	Interface	Input Voltage	Power(mA)	Operating Temp(°C)	Dimension(mm)	Antenna Size(mm)	Connector
<b>CSR (SiRF IV)</b>									
<b>LS20220-2R</b>			USB	4.75V ~ 5.25V	22mA				
<b>LS20221-2R</b>	ROM	★ ★	UART	3.0V ~ 4.3V	13mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS20222-2R</b>			RS232	4.0V ~ 6.0V	19mA				
<b>LS2022G-2R</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	24mA/27mA				
<b>LS20220-2E</b>			USB	4.75V ~ 5.25V	34mA				
<b>LS20221-2E</b>	Flash	★ ★	UART	3.0V ~ 4.3V	16mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS20222-2E</b>			RS232	4.0V ~ 6.0V	22mA				
<b>LS2022G-2E</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	27mA/30mA				
<b>HED</b>									
<b>LS20080</b>			USB	4.75V ~ 5.25V	47.5mA				
<b>LS20081</b>	ROM	★ ★	UART	3.0V ~ 3.6V	30.5mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS20082</b>			RS232	4.0V ~ 6.0V	37.5mA				
<b>LS2008G</b>			UART/RS232	3.0V ~ 3.6V/4.0V ~ 6.0V	35.5mA/38.5mA				
<b>LS2008G-B/-G</b>	Flash	★ ★ ★ ★ ★	UART/RS232	3.0V ~ 3.6V/4.0V ~ 6.0V	35.5mA/38.5mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS2008G-B2/-G2</b>									
<b>MTK-MEMS Integrated</b>									
<b>LS2013I(R)</b>	Flash	★ ★	UART&i <sup>2</sup> C	3.8V ~ 5.5V	28mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS2013I(F)-G</b>			UART	3.8V ~ 5.5V	29mA				
<b>MTK</b>									
<b>LS20030-2RE</b>			USB	4.75V ~ 5.25V	30mA				
<b>LS20031-2RE</b>	ROM	★ ★	UART	3.0V ~ 4.3V	12mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS20032-2RE</b>			RS232	4.0V ~ 6.0V	18mA				
<b>LS2003G-2RE</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	23mA/26mA				
<b>LS20030</b>			USB	4.75V ~ 5.25V	22mA				
<b>LS20031</b>	Flash	★ ★	UART	3.0V ~ 4.3V	13mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS20032</b>			RS232	4.0V ~ 6.0V	19mA				
<b>LS2003G</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	24mA/27mA				
<b>LS20030-B/-G</b>			USB	4.75V ~ 5.25V	34mA				
<b>LS20031-B/-G</b>			UART	3.0V ~ 4.3V	16mA				
<b>LS20032-B/-G</b>	Flash	★ ★ ★ ★ ★	RS232	4.0V ~ 6.0V	22mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS2003G-B/-G</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	27mA/31mA				
<b>LS2003G-B2/-G2</b>			UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	25mA/30mA				
<b>STMicro</b>									
<b>LS2009G-G</b>	Flash	★ ★ ★ ★ ★	UART/RS232	3.0V ~ 4.3V/4.0V ~ 6.0V	52mA/56mA	-40 ~ 85	30 x 30 x 8 mm	25 x 25 x 4 mm	Hand-Soldering Pad
<b>LS2009G-B2/-G2</b>									



Sample image

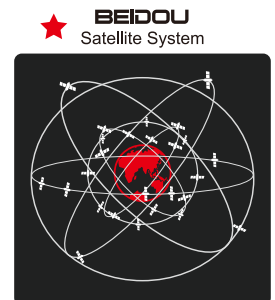
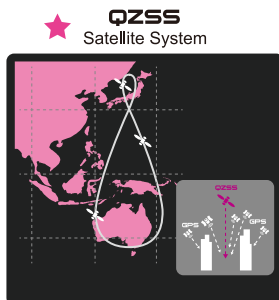
# GPS/GNSS Smart Antenna

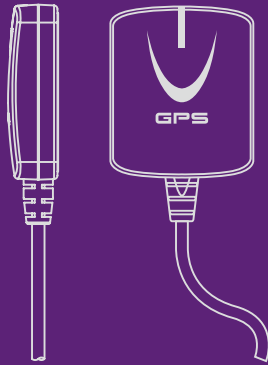
Global  
Navigation  
Satellite System

Model	Base	Satellite System	Interface	Input Voltage	Power(mA)	Operating Temp(°C)	Dimension(mm)	Antenna Size(mm)	Connector
<b>-B: GPS+BeiDou ; -G: GPS+GLONASS</b>									
 Sample image	<b>HED</b> <b>LS2008C</b>	ROM	★ ★	UART	3.0V ~ 3.6V	29.5mA	-40 ~ 85	15.5 x 15.5 x 6.6 mm	15 x 15 x 4 mm SMT Pad
	<b>LS2008C-B/-G</b>	Flash	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	-40 ~ 85	15.5 x 15.5 x 6.6 mm	15 x 15 x 4 mm SMT Pad
	<b>MTK</b> <b>LS2003C-2RE</b>	ROM	★ ★	UART	3.0V ~ 4.3V	17mA	-40 ~ 85 -40 ~ 85	15.5 x 15.5 x 6.6 mm 15.5 x 15.5 x 6.6 mm	15 x 15 x 4 mm 15 x 15 x 4 mm SMT Pad SMT Pad
	<b>LS2003C-B/-G</b>	Flash	★ ★ ★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	20mA			
 Sample image	<b>HED</b> <b>LS2008D</b>	ROM	★ ★	UART	3.0V ~ 3.6V	29.5mA	-40 ~ 85	21 x 17 x 7.2 mm	15 x 15 x 4 mm 1.0mm Pitch Connector
	<b>LS2008D-B/-G</b>	Flash	★ ★ ★ ★ ★	UART	3.0V ~ 3.6V	29.5mA	-40 ~ 85	21 x 17 x 7.2 mm	15 x 15 x 4 mm 1.0mm Pitch Connector
	<b>MTK</b> <b>LS2003D-2RE</b>	ROM	★ ★	UART	3.0V ~ 4.3V	17mA	-40 ~ 85	21 x 17 x 7.2 mm	15 x 15 x 4 mm 1.0mm Pitch Connector
	<b>LS2003D</b> <b>LS2003D-B/-G</b>	Flash	★ ★ ★ ★ ★ ★ ★	UART	3.0V ~ 4.3V 3.0V ~ 4.3V	17mA 20mA	-40 ~ 85	21 x 17 x 7.2 mm	15 x 15 x 4 mm 1.0mm Pitch Connector
 Sample image	<b>MTK</b> <b>LS2003E-2RE</b>	ROM	★ ★	UART	3.0V ~ 4.3V	17mA	-40 ~ 85	22 x 22 x 7.5mm	18 x 18 x 4 mm 1.0mm Pitch Connector
	<b>LS2003E</b>	Flash	★ ★	UART	3.0V ~ 4.3V	17mA	-40 ~ 85	22 x 22 x 7.5mm	18 x 18 x 4 mm 1.0mm Pitch Connector
	<b>LS2003E-B/-G</b>		★ ★ ★ ★ ★	UART	3.0V ~ 4.3V	20mA			
 Sample image	<b>MTK</b> <b>LS2003H-2RE</b>	ROM	★ ★	UART	3.0V ~ 4.3V	21mA	-40 ~ 85	14 x 9.6 x 1.7mm	3.23 x 1.66 x 0.45 mm SMT Pad
	<b>LS2003H</b>	Flash	★ ★	UART	3.0V ~ 4.3V	21mA	-40 ~ 85	14 x 9.6 x 1.7mm	3.23 x 1.66 x 0.45 mm SMT Pad
	<b>LS2003H-G</b>		★ ★ ★ ★	UART	3.0V ~ 4.3V	28mA			
 Sample image	<b>CSR (SIRF V)</b> <b>LS2022A</b>	Flash	★ ★	UART	1.71V ~ 1.89V	34mA	-40 ~ 85	17 x 6 x 5.85 mm	16 x 6 x 4 mm 0.5mm Pitch FPC
	<b>CSR (SIRF V)</b> <b>LS20229-A</b>	Flash	★ ★	UART	1.71V ~ 1.89V	34mA	-40 ~ 85	12x 12 x 5.4 mm	12 x 12 x 3.5 mm 0.5mm Pitch FPC

Specifications are subject to change without notice.

## The GNSS Generation >>> ★ ★ ★ ★ ★





### CSR

LS2302x-2R/-2E/-G

### HED

LS2308x/-B/-G  
LS2308x-B2/-G2

### MTK

LS2303x/-2R/-B/-G  
LS2303x-B2/-G2

### STMicro

LS2309x-G  
LS2309x-B2/-G2

### LOCOSYS GNSS Mouse Series

LS230x series products are complete GNSS receivers based on the proven technology found in LOCOSYS GNSS module with CSR/HED/MTK/STMicro different chip solutions. The GNSS mouse will acquire a lot of satellites at a time while providing fast Time-To-First-Fix, one-second navigation update and low power consumption. It can provide you with superior sensitivity and performance even in urban canyon and dense foliage environment.



### LOCOSYS GNSS Mouse Series



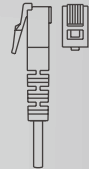
■ USB



■ PS2



■ RJ-11



47344



**LOCOSYS**

20F.-13, No.79, Sec. 1, Xintai 5th Rd.  
Xizhi Dist., New Taipei City 22101  
Taiwan R.O.C.  
[www.locosystech.com](http://www.locosystech.com)

**Tel** : 886-2-8698-3698

**Fax** : 886-2-8698-3699

**Mail** : [info@locosystech.com](mailto:info@locosystech.com)





**LOCOSYS**



**Tracking every step you make & knowing how fast you are**

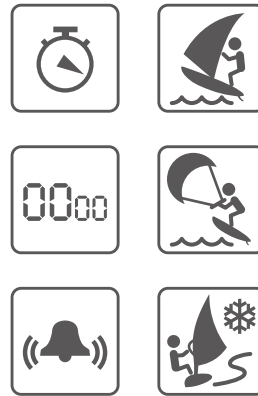
**GW-60**

# GW-60



## SPECIFICATIONS

• Size	49(Φ) * 14.5 (H) mm
• Weight	57 g
• Display	LCM 128X128 FSTN Black/White
• MCU	STM32 Cortex®-M3
• GPS	LOCOSYS GPS
• BLE	Optional
• Battery type	Rechargeable lithium-ion battery 250 mAh
• Waterproof	50 m/ 5 ATM
• Memory	Flash memory for 1,000,000 GPS points
• Language	English
• Connection	USB charging clip



## FEATURES

- ◆ Top 10 speed smart record
- ◆ Intelligent session speed report
- ◆ 10-seconds average speed display
- ◆ Multi-functional push button operation
- ◆ High sensitivity GPS performance
- ◆ Rechargeable lithium-ion battery
- ◆ Time mode (Alarm, Timer, Stopwatch)
- ◆ Google Earth KML/GPX format support
- ◆ Built in flash memory to store 1,000,000 GPS logged points
- ◆ Waterproof 50 m/ 5 ATM

## SOFTWARE

- Clock
- Alarm
- Stopwatch
- Kitchen timer
- Data logger
- Speed

Auto sync with GPS time
Buzzer and vibrator
Yes
Buzzer and vibrator
Data logging rate: 1Hz, 5Hz, or "smart" rate
Log record includes: UTC time, position, altitude, Doppler Speed over ground, <b>Doppler vertical speed</b> , satellites used, Standard Deviation of Speed (SDOS)
Speed sample resolution: 1 cm/s
SDOS resolution: 1 cm/s
Measured speed range 0-1000 km/h
Typical accuracy of 10s average speed measurement: ~3 cm/s, 99.7% certainty
Accuracy of specific measurement can be determined from SDOS of speed samples used to compute average speed.

**LOCOSYS**

20F.-13, No.79, Sec. 1, Xintai 5th Rd.  
Xizhi Dist., New Taipei City 22101  
Taiwan R.O.C.

**Tel:** 886-2-8698-3698  
**Fax:** 886-2-8698-3699  
**Mail:** info@locosystech.com



47344



**LOCOSYS**



GNSS

ALL IN ONE SOLUTION



Saving Cost

Saving Space

Saving Effort



GSM / GPRS



Bluetooth

**The World's Smallest GNSS, GSM/GPRS, Bluetooth Module**

**GGB-1916**

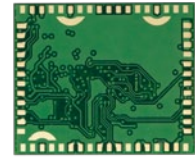
**LOCOSYS**

[www.locosystem.com](http://www.locosystem.com)

ALL IN ONE SOLUTION

# GGB-1916

The World's Smallest GNSS, GSM/GPRS, Bluetooth Module



19 x 16 x 1.9 mm

- > GGB-1916 module is a versatile module that integrates GNSS, 2.5G GSM/GPRS and classic Bluetooth in a miniature QFN (Quad Flat No leads) form factor. Its built-in highly integrated power management units and efficient DC/DC converters make not only switch individual features of the power by software commands but also perform brilliant low power consumption.

All parts of RF functions are included, such as the transceiver and power amplifier of GSM, band pass filter of Bluetooth as well as SAW filter and LNA of GNSS. No abstruse RF knowledge is required. Just connect antennas to it. Besides, all functions of GNSS, A-GNSS, GSM and Bluetooth are software controlled via single UART port. These ease the use, shorten the development time and make the fast time to market.

## > Product Features

GNSS Feature Specifications are subject to change without notice.

GPS, GALILEO, QZSS	L1 1575.42MHz, C/A code
GLONASS	L1 1598.0625MHz ~ 1605.375MHz, C/A code
SBAS	WAAS, EGNOS, MSAS, SDCM, GAGAN <ul style="list-style-type: none"><li>● EPO (Extended Prediction Orbit) data service</li></ul>
A-GNSS	<ul style="list-style-type: none"><li>● EASY: Embedded Assist System which accelerates TTFF by predicting satellite navigation messages from received ephemeris.</li></ul>
Channels	Support 99 channels (33 tracking, 99 acquisition)
Update rate	1 Hz default, up to 10 Hz
Sensitivity	<ul style="list-style-type: none"><li>● Tracking: up to -165 dBm</li><li>● Acquisition: up to -148 dBm</li></ul>
Antenna	Passive or active antenna support



GSM/GPRS Feature	
Frequency bands	Quad-band GSM 850/E-GSM 900/DCS 1800/PCS 1900
Output power	<ul style="list-style-type: none"><li>● Class 4 (2 W) for GSM 850 and E-GSM 900</li><li>● Class 1 (1 W) for DCS 1800 and PCS 1900</li></ul>
GPRS connectivity	GPRS multi-slot class 12
Audio	Analog interface. Integrated maximum 0.8W high power class AB speaker amplifier.
SIM interface	Support SIM card: 1.8V, 3.0V
SMS	Text and PDU mode



Bluetooth Feature	
Output power	Class 1 (1 W)
version	Bluetooth specification 3.0



## About

### LOCOSYS

Founded in 2006, LOCOSYS is a R&D focused company with a very strong technical team as its backbone constantly propelling it forward as a leader in the GPS/GNSS market. All team members are highly experienced and have been engaged in the field of electronics, navigational communications and GPS related applications for many years. Our design capabilities and technical expertise in developing superior GPS products/modules keep us at the forefront of the GPS/GNSS market. LOCOSYS also provides GPS/GNSS related end-products and all are manufactured by ISO/TS 16949 certificated production line in Taiwan. Our numerous years of experience in the GPS market, outstanding product design capabilities, high-quality products, skillful technical service and worldwide network are our biggest assets.





**LOCOSYS**

**Complete, Innovative , High-Performance GNSS Solutions**

**HD Series**



# HD-1612-GA/BA

GNSS Module



16 x 12.2 x 2.2 mm

# HD-1010-GA/BA

GNSS Module



10.1 x 9.7 x 2.2 mm

## FEATURES

- ◆ HED high sensitivity solution
- ◆ Support GPS, GLONASS, GALILEO ,QZSS and BEIDOU
- ◆ Capable of SBAS (WAAS, EGNOS, MSAS, GAGAN, SDCM)
- ◆ Support 72-channel GNSS
- ◆ Fast TTFF at low signal level
- ◆ Support 1PPS synchronize with NMEA output
- ◆ Built-in DC/DC converter to save power
- ◆ Built-in LNA and SAW filter
- ◆ Up to 20 Hz update rate
- ◆ Supported antenna short circuit detection
- ◆ Support AGPS
- ◆ SMD type; RoHS compliant
- ◆ ISO/TS 16949 quality control

## SPECIFICATIONS

- Chip
- Frequency
- Channels
- Update rate
- Sensitivity
- Acquisition Time
- Position Accuracy
- Max. Altitude
- Max. Velocity
- Protocol Support

HD8020

GPS, GALILEO, QZSS: L1 1575.42MHz, C/A code

GLONASS : L1 1598.0625MHz, C/A code

HD-1612-GA / HD-1010-GA

BEIDOU: B1 1561.098MHz, C/A code

HD-1612-BA / HD-1010-BA

Support 72 channels

1Hz default, up to 20Hz.

Tracking

-160 dBm up to -161dBm (with external LNA)

Cold start

-146.5 dBm up to -148 dBm (with external LNA)

Hot start (Open Sky)

< 1s (typical)

Cold Start (Open Sky)

28s (typical)

Autonomous

2.5m CEP

< 18,000 m

< 515 m/s

NMEA 0183 ver 4.0

9600bps, 8 data bits, no parity, 1 stop bits (default)

1Hz: GGA, GLL, GSA, GSV, RMC, and VTG

**LOCOSYS**

20F.-13, No.79, Sec. 1, Xintai 5th Rd.  
Xizhi Dist., New Taipei City 22101  
Taiwan R.O.C.

**Tel:** 886-2-8698-3698

**Fax:** 886-2-8698-3699

**Mail:** info@locosystech.com



47344

**LOCOSYS**

# RTK High Precision GNSS Module for Automotive/Industrial applications



**MC-1612A-B2/G2**



# MC-1612A-B2/G2

GNSS Module



16 x 12.2 x 2.2 mm

## HIGHLIGHTS

- ◆ Base on MediaTek AEC-Q100 certified chipset for Automotive Grade
- ◆ Capable of SBAS (WAAS, EGNOS, MSAS, GAGAN)
- ◆ Low power consumption
- ◆ Fast TTFF at low signal level
- ◆ Built-in 12 multi-tone active interference canceller
- ◆ Up to 10 Hz update rate
- ◆ ±10ns high accuracy time pulse (1PPS)
- ◆ Indoor and outdoor multi-path detection and compensation
- ◆ IATF 16949 quality control
- ◆ Superior smart power management for different application
- ◆ Advanced jamming and spoofing detection
- ◆ Support Qianxun SI Network (支持千寻地面增强系统)



## SPECIFICATIONS

- Chip
- Frequency
- Update rate
- Sensitivity
- Acquisition Time
- Position Accuracy
- Max. Altitude
- Max. Velocity
- Protocol Support

MediaTek MT3303

GPS, GALILEO, QZSS: L1 1575.42MHz, C/A code

BEIDOU: B1 1561.098MHz, C code

MC-1612A-B2

GLONASS : L1 1598.0625MHz, C/A code

MC-1612A-G2

1Hz default, up to 10Hz.

Tracking up to -165dBm

Cold start up to -148dBm

Hot start (Open Sky) < 2s

Hot start (Indoor) < 30s (typical)

Cold Start (Open Sky) 31s (typical) without AGPS

< 15s (typical) with AGPS (hybrid ephemeris prediction)

Autonomous / SBAS 2.5m CEP / 2.5m (depends on accuracy of correction data)

< 18,000 m, up to 50,000m by request

< 515 m/s

NMEA 0183 ver 4.10 9600 bps<sup>(1)</sup>, 8 data bits, no parity, 1 stop bits (default)

1Hz: GGA, GLL, GSA, GSV, RMC, VTG

Real-time Differential Correction RTCM SC-104 v2.x message types 1,2,3, and 9

**LOCOSYS**

20F.-13, No.79, Sec. 1, Xintai 5th Rd.  
Xizhi Dist., New Taipei City 22101  
Taiwan R.O.C.

**Tel:** 886-2-8698-3698

**Fax:** 886-2-8698-3699

**Mail:** info@locosystech.com



47344



**LOCOSYS**

# **Automotive Dead Reckoning Technology**

**ST-1612-DB/DG**

GNSS Module

**LOCOSYS**

# ST-1612-DB/DG

GNSS Module



16 x 12.2 x 2.2 mm

## HIGHLIGHTS

- ◆ Base on ST TESEO III Engine Chip
- ◆ Fully Automotive Dead Reckoning
- ◆ Supported Odometer and CAN bus input
- ◆ Integrated 3D Gyro and 3D accelerometer
- ◆ Multi- GNSS with triple constellation tracking
- ◆ Operating Temperature ranges from -40 to 85°C
- ◆ LOCOSYS ISO/TS16949 certificated production line



## SPECIFICATIONS

- Chip
- Frequency
- Channels
- Update rate
- Sensitivity
- Acquisition Time
- Position Accuracy
- Max. Altitude
- Max. Velocity
- Protocol Support

STA8090 series

GPS, GALILEO, QZSS: L1 1575.42MHz, C/A code

BeiDou: B1 1561.098MHz, C code

ST-1612-DB

GLONASS : L1 1598.0625MHz, C/A code

ST-1612-DG

Support 48 channels

1Hz default, up to 10Hz.

Tracking

up to -161dBm (with external LNA)

Cold start

up to -147dBm (with external LNA)

Cold Start (Open Sky)

37s (typical)

Autonomous

2m CEP

SBAS

1.8m (depends on accuracy of correction data).

< 18,000 m

< 515 m/s

NMEA 0183 ver 3.01

115200 bps(1), 8 data bits, no parity, 1 stop bits (default)

1Hz: GGA, GLL, GSA, GSV, RMC, VTG

Real-time Differential Correction

RTCM SC-104 v2.x message types 1 and 9