GM-2 Series

User's Manual

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*Specifications subject to change without prior notice.

GM-2 Series

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GM-2 Series

1. Introduction

GM-2 series is a cabled GPS solution with 55 x 63 x 16 mm in size. Equipped with antenna, backup battery, GPS engine and onboard memory. GM-2 employs powerful GPS solution. It provides marvelous navigation performance under dynamic conditions in areas with limited sky view like urban canyons. High sensitivity upto **-165dBm** for weak signal operation without compromising accuracy. GM-2 is your best choice for cabled GPS applications.

2. Key Feature

- ☐ Receiver / Logger version available
- ☐ Lead-Free - RoHS/WEEE compliant
- ☐ Tracks 66-Channel of satellites
- ☐ Fast Position Fix
- ☐ Low power consumption
- ☐ USB / UART / TTL interface
- ☐ LED indication for GPS status
- ☐ Build-in re-chargeable backup battery
- ☐ Up to 125,000 way points (Logger version)
- ☐ Support Smart log function (Logger version)
- ☐ IPX7 waterproof

3. Application

- ☐ Automotive and Marine Navigation
- ☐ Automotive Navigator Tracking
- ☐ Emergency Locator
- ☐ Geographic Survey

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4. Installation

Step I：Check your GM-2 package

The standard package of GM-2 contains:

- GM-2 Receiver
- CD ROM

Please contact local distributor immediately if any item is missing or damaged.

Step II：Connect GM-2 to PC/Lap top or handheld device

- For PS2 type: No USB Driver Installation is needed.
- For USB type: please follow the instruction as below. Before the USB connector plugs into your PC/Lap top, please have your USB Driver Installed.

Step III：Check if the LED is on.

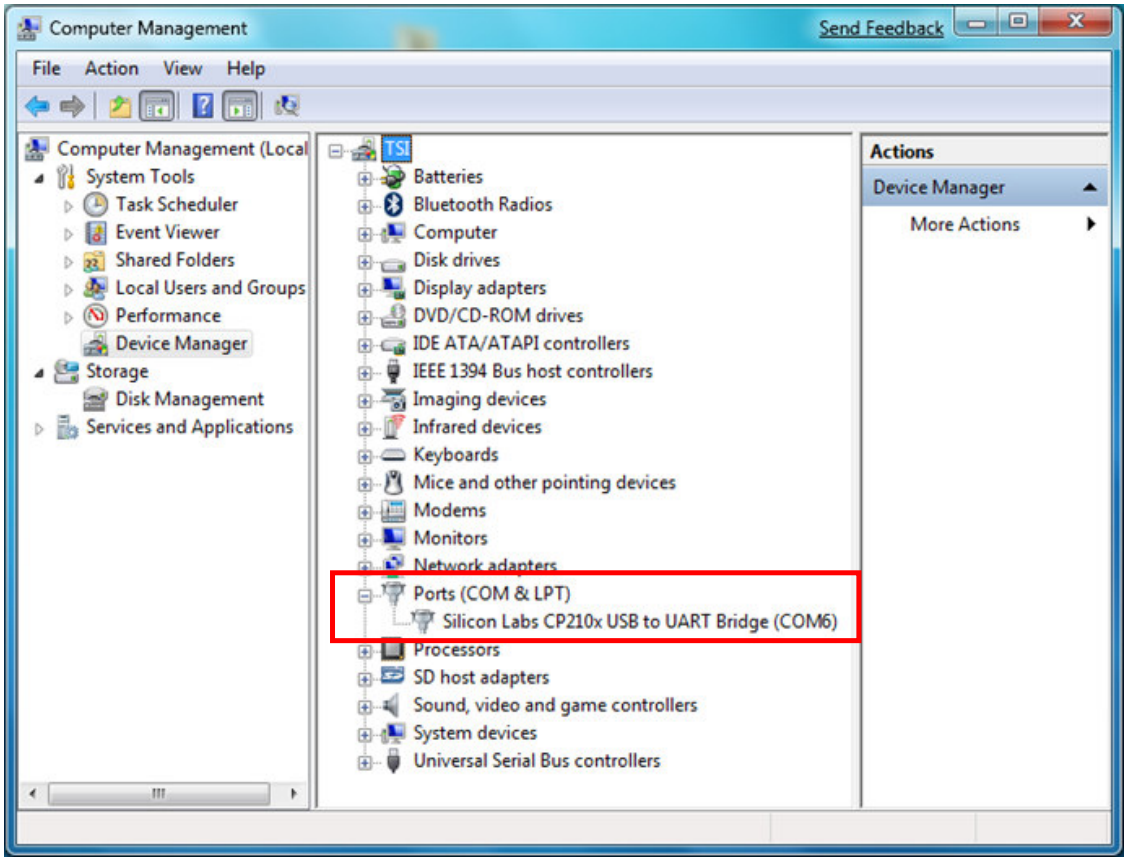
Once connect your GM-2 to PC/Lap top or handheld device, Orange LED will start flashing once power is applied.

5. How to configure your GM-2?

The GpsView program only supports the Microsoft Windows XP, Vista and Win 7 OS.

5.1. Driver Installation

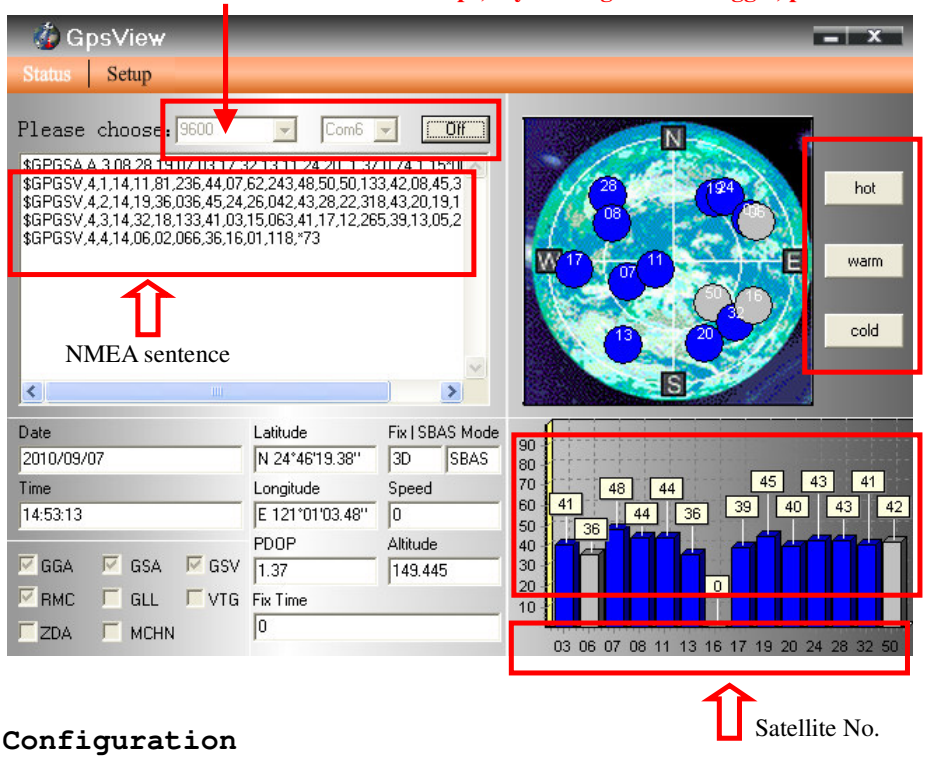
Connect GM-2 to PC and then click “CP210xVCPInstaller.exe” to start the installation process. The device manager will assign a COM port for GM-2 after USB driver has been successfully installed.



5.2. GpsView software

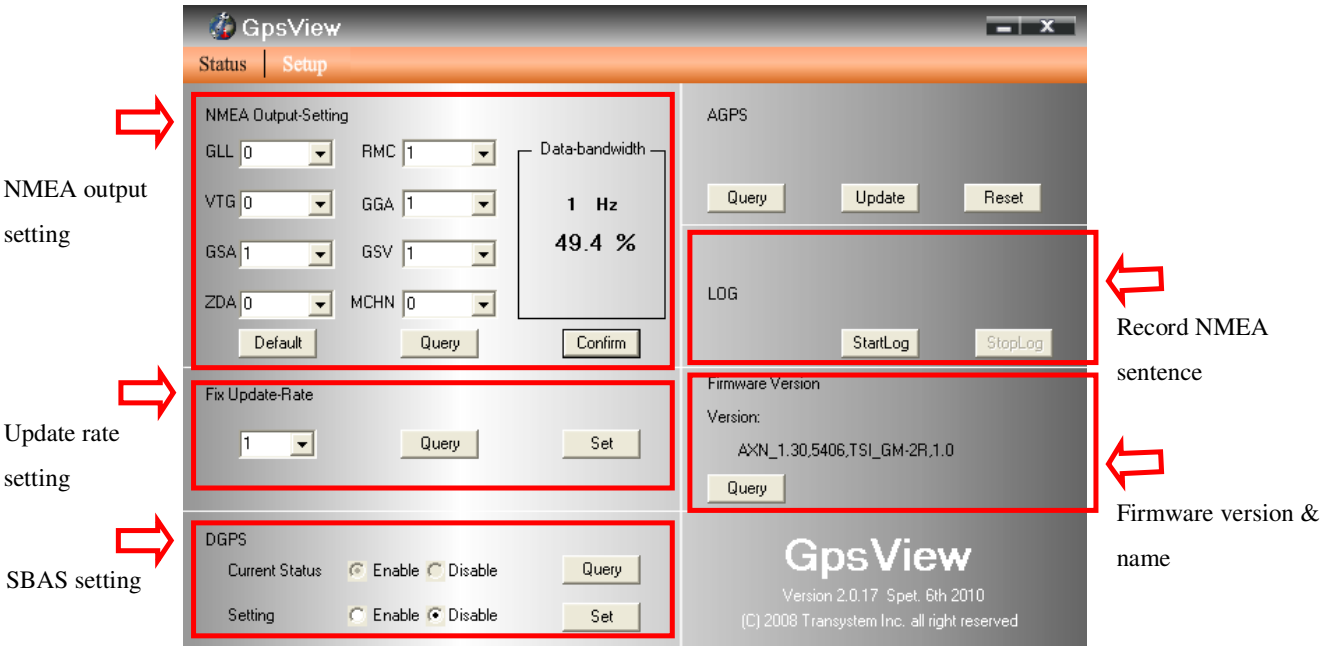
Open GpsView software and select correct COM port and Baud Rate and then click “On” button to establish the communication between GM-2 and PC. If the connection is successful, the NMEA stream will keep showing.

Default baud rate of GM-2 receiver is 9600bps, if you bought GM-2 logger, please choose 115200bps



5.3. Configuration

In Setup Page, Output frequency of each NMEA can be changed from 1second to 5 seconds and Fix update–Rate can be changed from 1 time to 5 times per second. DGPS like WASS, EGNOS, MSAS can be enable or disable. Here also allow users to update the AGPS and record the NMEA sentence.



For example:

NMEA output setting	+	Fix update-rate	=	Real NMEA output
GGA(1), GSA(1), GSV(1), RMC(1)	+	1	=	GGA(1), GSA(1), GSV(1), RMC(1)
GGA(1), GSA(1), GSV(1), RMC(1)	+	2	=	GGA(1/2), GSA(1/2), GSV(1/2), RMC(1/2)
GGA(1), GSA(1), GSV(1), RMC(1)	+	3	=	GGA(1/3), GSA(1/3), GSV(1/3), RMC(1/3)
GGA(1), GSA(1), GSV(1), RMC(1)	+	4	=	GGA(1/3), GSA(1/3), GSV(1/3), RMC(1/3)
GGA(1), GSA(1), GSV(1), RMC(1)	+	5	=	GGA(1/5), GSA(1/5), GSV(1/5), RMC(1/5)
Note:	1. GGA(1) means GGA sentence output every 1 second, GGA(2) output every 2 seconds. 2. GGA(1/2) means GGA sentence output 2 times per second, (1/5) output 5 times per second.			

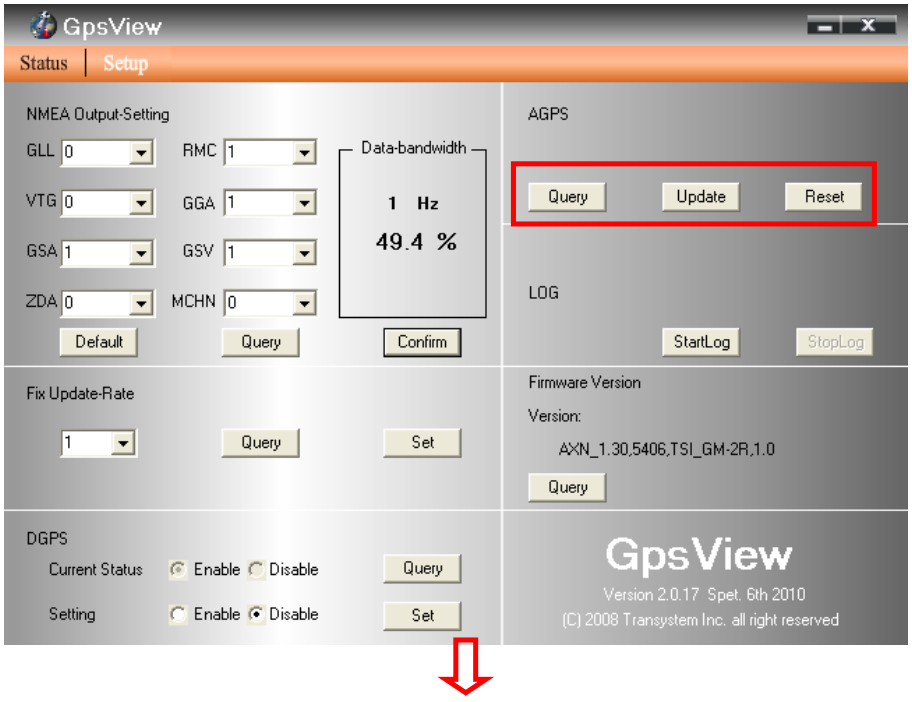
5.4. Update AGPS

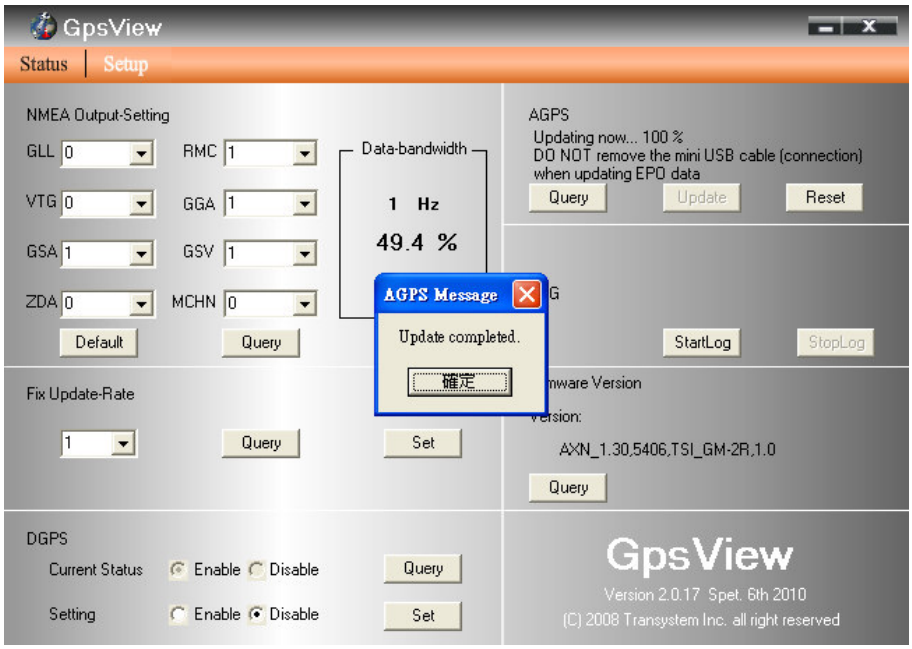
Step1. Make sure you have network available for accessing the internet.

Step2. Connect GM-2 to PC and then open GpsView to establish the communication.

Step3. Go to "**Setup**" page

Step4. Click "**Update**" button under AGPS to update the AGPS data. The program will connect to the AGPS server and download the data automatically. You can also check the valid time of AGPS by clicking **Query**. Clear AGPS data by clicking **Reset**.





Note: AGPS has 6 day time limited.

6. Interface

6.1. USB interface

The pin assignment for USB interface is shown in Fig-1.

6.2. PS2 interface

There are two possible interface signal level with PS2 connector, RS-232 or TTL.

The pin assignment for RS-232 and TTL are shown respectively in Fig-1.

6.3. LED

There are two LED's with GM-2.

Orange LED will stays on when searching GPS signal. It will start flashing once GPS has position fix.

Optional yellow LED will start blinking once GM-2 start logging position.

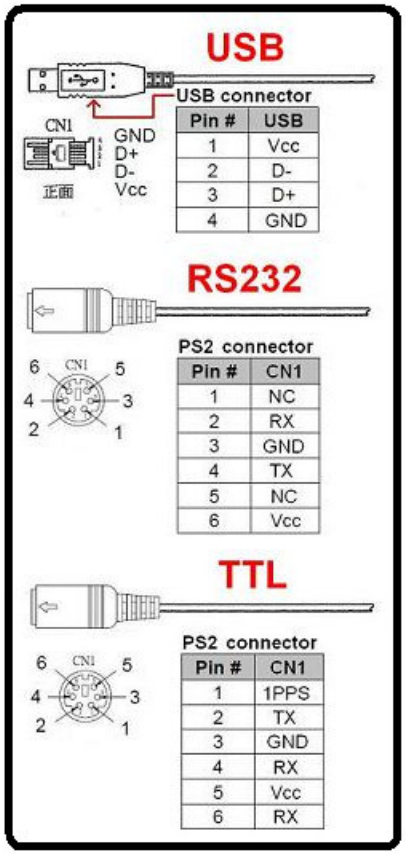


Fig-1

7. Specifications

Specification	***Description***
General	L1 frequency, C/A code (SPS) 66 independent tracking channels
Sensitivity	-165dBm /Tracking
Update Rate	Up to 5Hz
Accuracy	<3m CEP, without aid DGPS (WAAS, EGNOS, MSAS, RTCM): 2.5m
Acquisition (open sky)	Cold Start: 35sec Warm Start: 34sec Hot Start: 1.5sec
Reacquisition	< 1sec
Dynamics	Altitude: 18000m (max.) Velocity: 515m/sec (max.) Vibration: 4G (max.)
Supply Voltage	DC 5V ± 5%
Power Consumption	40mA max. @ 5.0V / Tracking
Backup Battery	Build-in
NMEA Message	NMEA0183 v3.1 baud rate 4800/9600/…/57600, Default: 9600 (GM-2 RU, GM-2 RP, GM-2 RT), 115200 (GM-2 LU, GM-2 LP, GM-2 LT) Selectable Output: GGA, GLL, GSA, GSV, RMC, and VTG Default Output: GGA、GSA、GSV、RMC
Datum	Default WGS-84
Antenna	Build-in patch antenna, right hand circular polarization, 50ohm
Log capability	Up to 125,000 way points, logger model only Default: Date/Time、Latitude、Longitude、Height、Speed
Smart log capability	Yes, logger model only
Mac support	Yes
Signal Level	USB, RS-232 or Low Voltage TTL
Connector	USB type A male or PS2 female
Operating Temperature	-30℃ to 85℃
Waterproof	IPX7

8. Troubleshooting

When your GM-2 could not operate, please follow below instructions for troubleshooting.

1. No LED light after plugged in

   It means no power is applied to GM-2. Please check if the connector plugs in properly.

2. GM-2's LED is flashing, but the connection between GM-2 and the E-map can not be established. Please make sure the settings of COM Port Number and Baud rate are correct.

   - Most of E-map provides scan function to search COM Port. Please scan it for the correct COM Port number that GM-2 is utilizing.
   - The default Baud rate is 9600 (Receiver type only). Logger type is set at 115200bps. For COM port, please go to the MS Windows' device manager to check the correct COM port first.
   - If a USB cable is used to connect to PC/Lap top, please make sure the UBS driver is installed successfully.