



MiniGPS User Manual

Rev.A01

MiniGPS v1.4 User Manual

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Rev.A01

History		
Date	Rev.	Description
2009/04/28	A00	First Release
2009/08/11	A01	Add description about modified temporary setting

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1. Overview

MiniGPS is a tool which helps people to view the status of gps receiver more conveniently. MiniGPS is also an interface between people and gps receivers and could change the setting of gps receivers. For example, know the version of firmware, enable SBAS correction, change NMEA sentences, baud rate, fix update rate and so on.

Notice:

When the power of device (module) is removed, this modified setting will be recovered to original setting, if the device (module) has the backup power supply for setting sustaining (VBACKUP or coin battery), like PAX series, it will keep the modified setting until the backup power is exhausted.

2. Interface

MiniGPS has 5 function pages. Each page has its own feature. Now introduce MiniGPS depends on each page in the following.

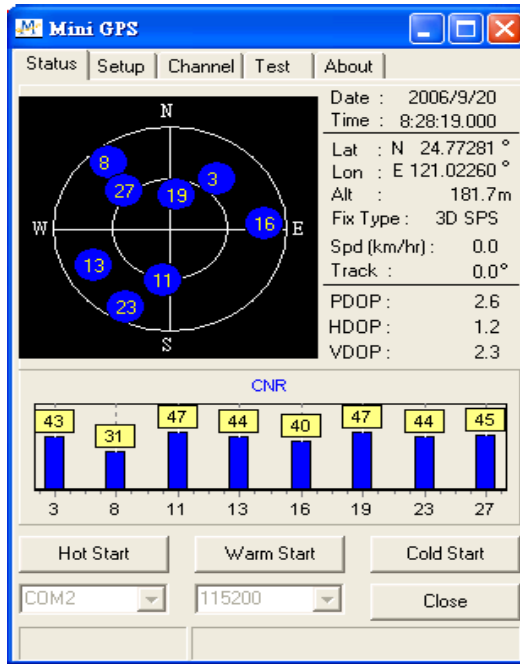
2.1. Status Page

Status Page shows the status of the gps receiver. After set up com port and baudrate, NMEA message would translate into the gps status of MiniGPS. Users could know the time, the position of receiver, the signal level of receiver and so on. Status Page also offers users TTFF commands to use. Users could verify the performance of receiver via these commands.

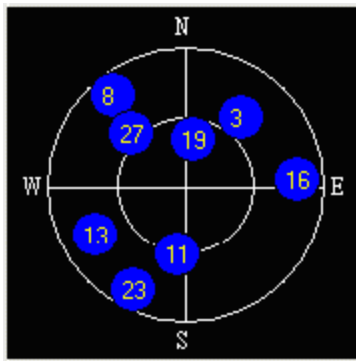


MiniGPS User Manual

Rev.A01



2.1.1. Sky Chart



Sky Chart shows the constellation of SV. stands for the SV with PRN 8. If the position of SV is near the center of sky chart, the elevation angle of SV is closed to 90° . On the other hand, SV is near the horizon. Besides, character 'N' means north direction whose azimuth angle is 0° . The azimuth angle increases clockwise, the range is from 0 to 360. A satellite is spread depends on its azimuth also.

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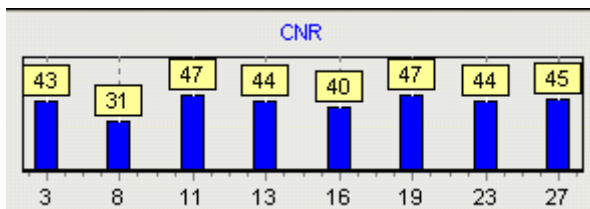


2.1.2. GPS Status

Date :	2006/9/20
Time :	8:28:19.000
Lat :	N 24.77281 °
Lon :	E 121.02260 °
Alt :	181.7m
Fix Type :	3D SPS
Spd (km/hr) :	0.0
Track :	0.0°
PDOP :	2.6
HDOP :	1.2
VDOP :	2.3

The status of receiver which includes time, position and speed of receiver, and so on. Time is UTC time and the unit of latitude and longitude is degree only. Altitude is the height based on WGS84 Datum. PDOP, HDOP and VDOP are the DOP (Dilution Of Precision) based on position, horizontal position, and vertical position separately. DOP is often used to measure user position accuracy. The value of DOP is larger, the accuracy of position is worse.

2.1.3. Signal Level



There are 2 modes here, NMEA mode and Channel mode. Blue bar means it is NMEA mode, Red bar means it is Channel mode. Users could double click CNR chart to change mode. In NMEA mode, CNR means the signal level of SV. The number under CNR chart is the PRN of SV. In channel mode, CNR chart will show the status of internal channels. Since the view of CNR chart is too small, users couldn't view total SV once. Click mouse could view the other channel status.

2.1.4. TTFF Command

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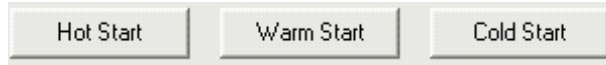
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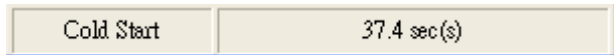
MiniGPS User Manual

Rev.A01



Force gps receiver to do Hot Start, Warm Start, and Cold Start via these command buttons.

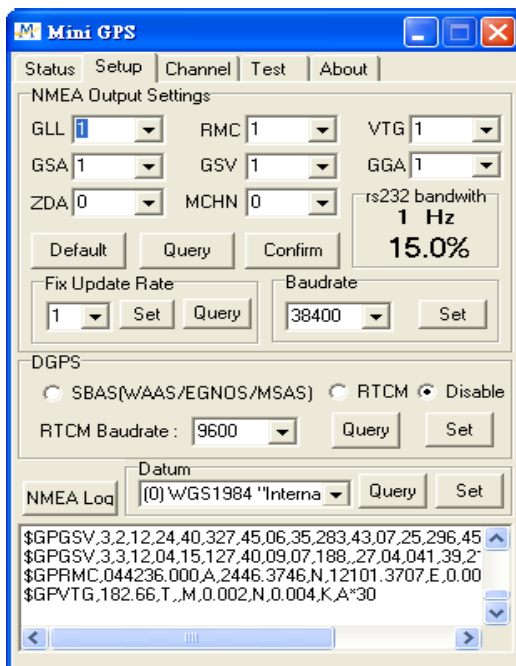
2.1.5. Message Bar



While Hot Start, Warm Start, or Cold Start

2.2. Setup Page

MiniGPS also could change the setting of gps receivers. For example, the type or output frequency of NMEA sentences, Fix Update Rate, NMEA baudrate, and WAAS settings. MiniGPS could log NMEA sentences further.



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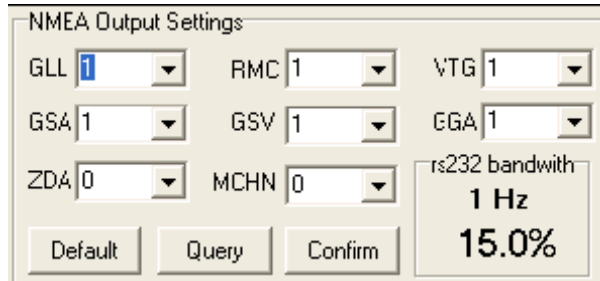
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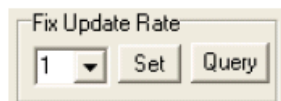


2.2.1. NMEA Message Type



There are 8 NMEA sentences could be set. Besides MCHN sentences, all of them are standard sentences of NMEA 0183. MCHN is a MTK NMEA sentence which shows the internal status of gps channels. If users want to know the status of channels, they have to enable MCHN (Section 2.1.3, Section2.3). The number beside NMEA type is the output frequency. The value is larger, the frequency is slower. For example, under the setting of 1 Hz fix update rate, 1 means output this sentence per second, 5 means output 1 time every 5 seconds. MiniGPS will check the RS232 bandwidth also. If the throughput of NMEA is over the bandwidth, it is prohibited to update NMEA settings.

2.2.2. Fix Update Rate



In general, gps receiver output NMEA sentences once per second. If users want to use gps in special case, ex: racing car. MiniGPS could increase the fix update rate, the maximum value is 5. It means output NMEA sentences every 200 ms. MiniGPS will check the RS232 bandwidth also. If the throughput of NMEA is over the bandwidth, it is prohibited to update the setting of fix update rate.

2.2.3. Baudrate

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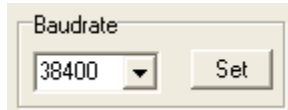
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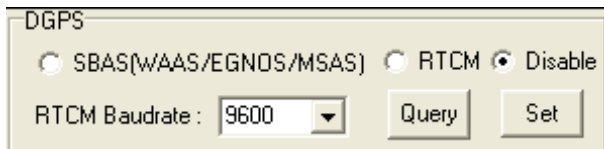
MiniGPS User Manual

Rev.A01



If the throughput of NMEA sentences is over the RS232 bandwidth, users could increase the baudrate speed. Users may want to meet the baudrate setting of GIS tool, it is possible to decrease the speed of baudrate. MiniGPS will check the RS232 bandwidth also. If the throughput of NMEA is over the bandwidth, it is prohibited to change the baudrate.

2.2.4. DGPS Enable / Disable



Gps receiver could collect the correction data from SBAS satellites or some aiding sources. Users could enable DGPS function and then gps receiver will fix more accurately. Take SBAS for example, after enabling SBAS function, users could see a SV whose PRN number is larger than 32 if receiver acquire the signal from SBAS satellite. By the way, GPS receiver will acquire the SBAS satellite after fixing.

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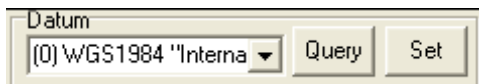


2.2.5. NMEA Log



MiniGPS could record NMEA sentences also.

2.2.6 Datum



The GPS chip of MTK supports more than 200 Datum. Users could choice their-own coordinate system.



2.3. About Page

Users could know the version of MiniGPS and firmware here.



2.3.1. Firmware Version

After pressing the Query button, MiniGPS will show the version of firmware.

Mcore_X.X is the version which MTK make. The other number is made from factory.

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