User Manual

SDIO GPS Receiver SD-501

Version 1.3

SD-501 at a glance







Some wireless device like Bluetooth device or WiFi device may affect the performance of GPS receiver. You may use the booster to improve acquisition sensitivity.

1. Introduction

The SD-501 is a GPS receiver with **SDIO** interface and built-in active antenna for high sensitivity to tracking signal. Based on the SiRF star II e/LP low power chip set and supports all functions (SingleSat updates in reduced visibility, Superior urban canyon performance, FoliageLock for weak signal tracking, etc.).

The SD-501 is well suited to system integration and users who use PDA, Smart phone with WinCE devices. It satisfies a wide variety of applications for car navigation, personal navigation or touring devices, tracking and marine navigation purpose.

1.1 Feature

- SiRF Star II/LP high performance and low power consumption chipset
- Built-in high sensitivity active GPS antenna
- Optional external GPS antenna
- LED to show GPS fix or not fix
- Built-in super capacitor to reserve system data for rapid satellite acquisition
- SDIO interface
- Operating platform: Pocket PC 2002/2003, Win CE, Win CE.Net, WM2003
- Antenna can be folded from 0° ~ 180°
- Base on Bsquare SDIO Now!

1.2 Package

Before you start up, make sure that your package includes the following items. If any items are missing or damaged, contact your dealer immediately.

- SDIO GPS Receiver
- A CD with the User Manual
 Driver and the Testing Program.
- Cover
- Booster

1.3 LED Function

GPS Status LED (Red): Blinking ---- GPS position is fixed Steady light ---- GPS position not fixed

1.4 Compatible Device

Acer n30 Pocket PC Dell Axim X3 Pocket PC Dell Axim X30 Pocket PC

HP iPAQ rz1710 series Pocket PC HP iPAQ h1930 series Pocket PC HP iPAQ h1940 series Pocket PC HP iPAQ h2210 series Pocket PC HP iPAQ h3970 series Pocket PC HP iPAQ h4150 series Pocket PC HP iPAQ h5550 series Pocket PC

O2 XdaII Windows Mobile 2003 for Pocket PC, phone edition

Toshiba E800BT

PS. Devices above have been tested and compatible with SD-501.Basically, if the WinCE Device with SDIO port and adopt the **Bsquare SDIO NOW!** would be compatible.

2. Install Driver

For PDA which built-in SDIO (Example: iPAQ 1940)

Please make sure the ActiveSync has been installed and your PDA is connected to PC

1. Put the CD with driver into CD Rom, the CD would run automatically,

and then you can see the screen as below



2. Select "SD-501 Driver for WinCE" to install the driver



3. You can move to **Remove Programs** under **Settings**, to make sure the driver (GlobISatSDGPS) has been installed.

🎊 Settings 💦 🛛	🗱 ┥ 🗙 7:3	9 🚯
Remove Programs		
Programs in storage memory	:	
GPS Information GPS Inf GlobalSat GlobalSatSDGP TripRecorder BlueTrip D-Media Pocket Book	o S	
Remove		
Total storage memory availab	ole: 23	3836k
Adjust memory allocation.		

3. How to test your SDIO GPS Receiver?

The testing program only supports the Microsoft Windows CE & Pocket PC based PDA platform.

1. Put the CD with driver into CD-Rom, the CD would run automatically,

and then you can see the screen as below



2. Click the "GPS information" to execute the installation procedure of testing program (via PC and ActiveSync).

instationneto wizaro		
Choose Destination Location Select folder where Setup will install files.		
Setup will install GPS Information in the foll	lowing folder.	
To install to this folder, click Next. To insta another folder.	Il to a different folder, cl	ick Browse and select
Destination Folder C:\Program Files_\GPS Information		Browse
Destination Folder C:\Program Files_\GPS Information nstallShield		Browse

2. Run the "GPS Information" program from "Start \rightarrow Program files" of PDA. Here is the description of "GPS Information" testing program as follows: User must select COM port, Baud Rate (4800) and click the [Star GPS] button to start receiving GPS data.



Baud Rat	te : [4800) –
Scan C	om Port	Close GPS
Cold	Start	VTG
Po'	wer Save	WAAS/EGNOS
\$GPGSA \$GPGSV \$GPRMC \$GPGGA	,A,1,,,,,, /,1,1,01,2 ,000141. A,000142.	,,,,,,,50.0,50.0,50.0* ▲ 25,00,000,00*4F .993,V,0000.0000,N, .993,0000.0000,N,00 ≡ ▼
4	Ш	
Setup	GPS Info	
About		

ह GPS Inf	D	- #	∢x 4:20	8
COM Port :	COM7:	MANE-0	501-CARD	
Baud Rate :	COM3: COM4:	IrCOMM BlueToo	th	-
Scan Com	COM5: COM6:	Serial5 CIRUart		
Cold St	COM7:	MANE-0	501-CARD	Π_
Power	COM8; COM9;	Serial8 SerialUS	в	-
Setup GP	6 Info		•	
🎊 GPS Info	D	#	∢x 4:22	8
			Date: 2004/04	127
1/10		11	Time:	,_,
	a17	P	23:45:07 Direction: 251.64	

Speed:

0 Km/hr

Status: 3D HDOP: 2.8

PDOP: 4.1

60

ng

Setup GPS Info

About

24

04)

Lat: N 24'59.8091' Lon: E 121'29.3269'

29 26 17 24 10 06 08 04 09

4. System Specification

Electrical Characteristics (Receiver)	
Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	12 channel all-in-view tracking
Accuracy Position Horizontal	10 meters 2D RMS
1 Osition Honzontai	1-5 meters 2D RMS. WAAS corrected
Velocity	0.1m/sec
Time	1 micro-second synchronized to GPS time
Datum	
Datum	Default: WGS-84
Acquisition Rate	
Hot start Warm start	a sec. average
Cold start	45 sec., average
Reacquisition	0.1 sec. average
Protocol	
GPS Protocol	Default: NMEA 0183 (Secondary: SiRF binary)
GPS Protocol GPS Output format	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec),
GPS Protocol GPS Output format	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max.
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max.
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature Operating	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature Operating Humidity	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3 -20°~ 70°C 5 to 95% non-condensing
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature Operating Humidity Power Voltage	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3 -20°~ 70°C 5 to 95% non-condensing
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature Operating Humidity Power Voltage Power Consumption	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3 -20°~ 70°C 5 to 95% non-condensing 3.3V 90mA
GPS Protocol GPS Output format Dynamic Condition Acceleration Limit Altitude Limit Velocity Limit Jerk Limit Temperature Operating Humidity Power Voltage Power Consumption Physical Characteristics	Default: NMEA 0183 (Secondary: SiRF binary) GGA(1sec), GSA(1sec), GSV(5sec), RMC(1sec), GLL, VTG is optional Less than 4g 18,000 meters (60,000 feet) max. 515 meters/sec. (1,000 knots) max. 20 m/sec**3 -20°~ 70°C 5 to 95% non-condensing 3.3V 90mA

4.1 SDIO Specification

- Compliant with SDIO Card Specification Ver.1.00
- Base on Bsquare SDIO Now!

4.2 Set up the format and COM port

1. TomTom Navigator

Plug in SD-501 first, and then select the format "NMEA 0183v2 4800" and the COM port "SDGPS"

🎊 GPS	#	∢ € 02:03	@
NDE.	A 0183v2 4800		•
	PS		•
🗌 d° m'	s" 🖲 d° m. m'	() d. d*	
🛞 Kmh	() Mph	⊖ Kts	
ZZX)— 📢	0 -	
-	Nº an		7
1		A CAL	
	P P	-	11
	· · · · · · · · · · · · · · · · · · ·	V2.06 284/	364
Status GPS	Log		