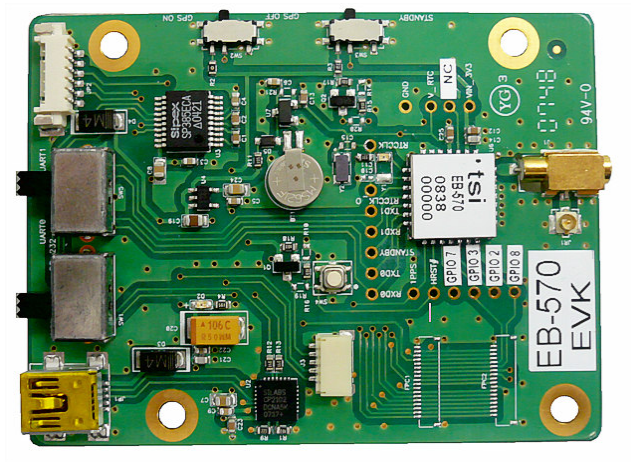


EB-570 GPS Engine Board Evaluation Kit User's Manual

AN-01



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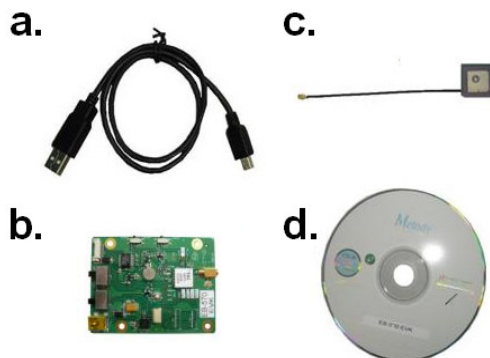
1. Introduction

EB-570 evaluation kit is an user friendly tool for your evaluation of TSI's EB-570 GPS engine board. With its miniature size, low power consumption and superior performance, EB-570 is your ultimate choice for all embedded applications such as:

- Handheld devices
- Automotive and Marine Navigation
- Automotive Navigator Tracking
- Emergency Locator
- Geographic Surveying
- Personal Position
- Sporting and Recreation
- Embedded applications : PDA, DSC, Smart phone, UMPC PND MP4

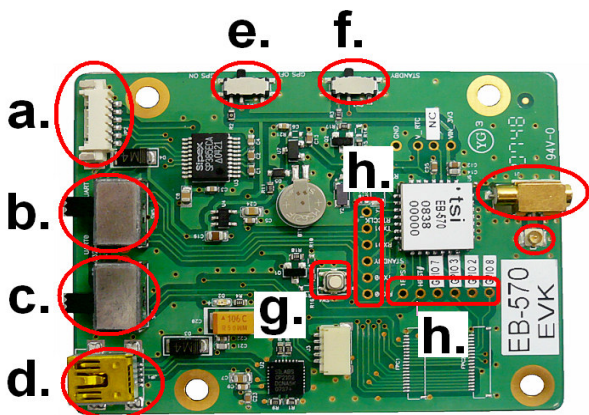
2. When you open it

2.1. Checking the package content



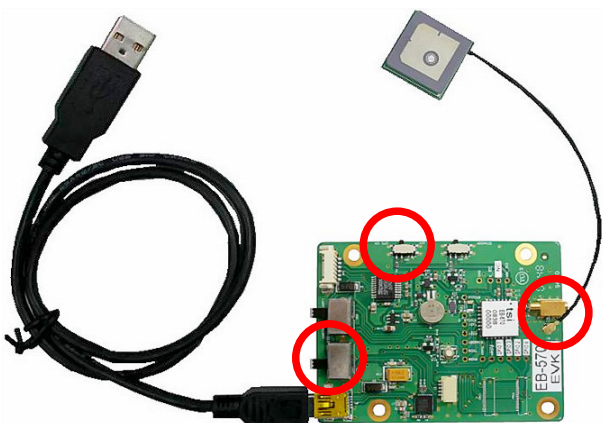
- a. USB cable *1
- b. EB-570 evaluation board *1
- c. GA-110 active antenna *1
- d. CD-ROM *1 (with technical documents and testing software.)

2.2. Evaluation Board Picture



- a. RS-232 port
- b. UART0 & UART1 select switch
- c. USB & RS232 select switch
- d. Mini USB port
- e. GPS on/off switch
- f. Standby switch
- g. Hardware reset button
- h. Test point
- i. Aux RF port1 (MMCX)
- j. RF port2 (IPEX)

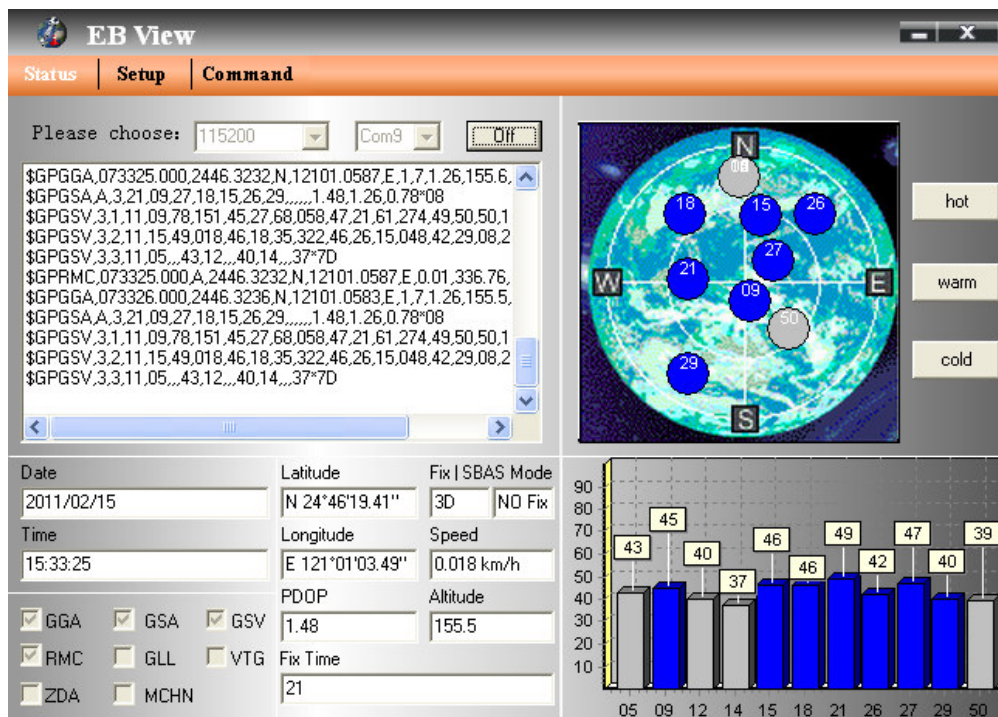
2.3. USB Setup



- Plug active antenna into the RF port2 (IPEX)
- Connect USB cable between EB-570 evaluation board and PC
- Turn USB & RS232 select switch to “USB” position
- Turn GPS on/off switch to “GPS on” position

3. EB View Software

Open EB View software and select correct COM port and Baud Rate and then click “On” button to establish the communication between EB-570 evaluation board and PC. If the connection is successful, the NMEA stream will keep showing.



3.1. Configuration

In Setup and Command 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.

The image displays two screenshots of the EB View software interface, which is used for configuring and managing the EB-570 device. The interface is divided into two main sections: Setup and Command.

Top Screenshot (Setup Page):

- Navigation:** Status | **Setup** | Command
- NMEA Output-Setting:**
 - GLL: 0, RMC: 1, VTG: 0, GGA: 1, GSA: 1, GSV: 1, ZDA: 0, MCHN: 0
 - Data-bandwidth: 1 Hz, 4.2 %
 - Buttons: Default, Query, Confirm
- Fix Update-Rate:**
 - Rate: 1
 - Buttons: Query, Set
- Baudrate:**
 - Rate: 4800
 - Button: Set
- AGPS:**
 - File: 7
 - Buttons: Query, Update, Reset
- LOG:**
 - Buttons: StartLog, StopLog
- Firmware Version:**
 - Version: AXN_1.30-B_1.3_C01.000D
 - Button: Query

Bottom Screenshot (Command Page):

- Navigation:** Status | **Setup** | **Command**
- Datum:**
 - Dropdown: [0]wGS1984"International"
 - Buttons: Query, Set
- DGPS:**
 - Current Status: ☒ Enable ☐ Disable
 - Setting: ☐ Enable ☒ Disable
 - Buttons: Query, Set
- Device Name:**
 - Text input field
 - Buttons: Read, Write
- Send Command:**
 - Text input field: \$PMTK
 - Button: Send
- Satellite Channel:**

Channel	SVID	SNR	Status
1	05	34	
2	09	38	
3	12	34	
4	14	29	
5	15	37	
6	18	38	
7	21	41	
8	26	34	
9	27	40	
10	29	36	
11	50	32	
- Footer:**
 - EB View
 - Version 1.0.3 Oct. 05th 2010
 - (C) 2008 Transystem Inc. all right reserved

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.				

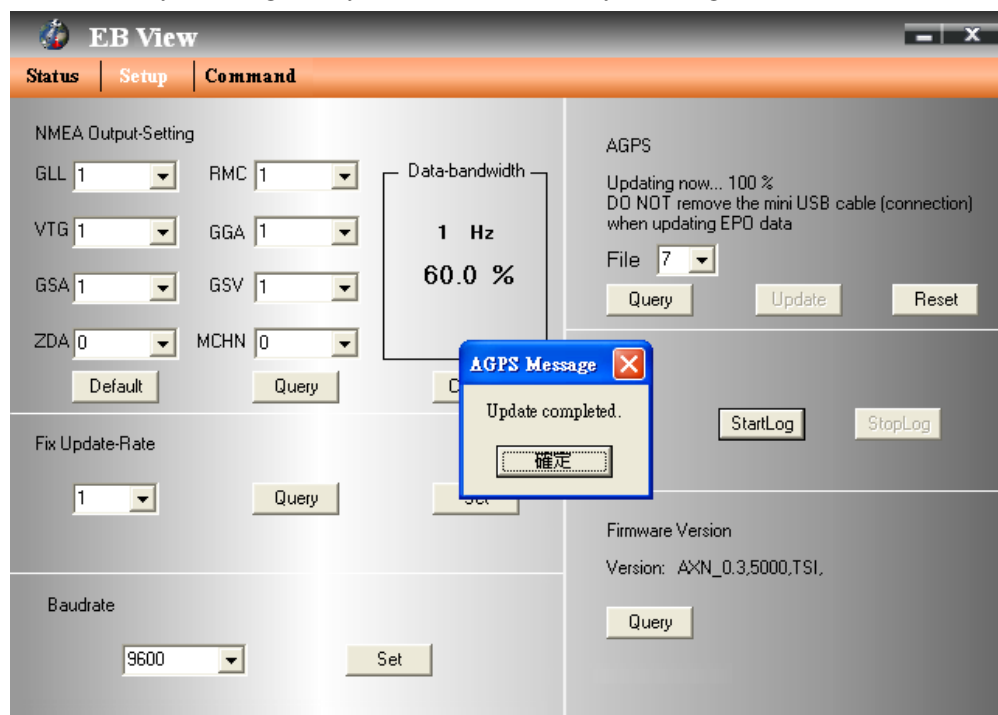
3.2. Update AGPS

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

Step2. Connect EB-500 evaluation board to PC and then open EB View 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 7 or 14 days time limited it was depend by your select file.

4. Connector Definition

Pin#	Signal Name	Type	Description
1	GND	P	Ground
2	VIN_3V3	P	Power Supply 3.0~4.2V DC
3	NC	NC	NC
4	V_RTC_3V3	P	RTC power 3.0~4.2V Quiescent current 1.5uA max
5	GND	P	Ground
6	GND	P	Ground
7	GND	P	Ground
8	GPS Status	O	GPS status, blink when GPS has position fix
9	RTCCLK_O	O	(Analog / Output) RTC clock output
10	TX1	O	GPS TX1
11	RX1	I	GPS RX1
12	STANDBY	X	Falling edge trigger
13	TX0	O	GPS TX0
14	RX0	I	GPS RX0
15	PPS	I	PPS
16	HRST#	I	GPS reset, active low. Internal pull high
17	GPIO[7]	I/O*	General input / output
18	GPIO[3]	I/O*	General input / output
19	GPIO[2]	I/O*	General input / output
20	GPIO[8]	I/O*	General input / output
21	GND	P	Ground
22	GND	P	Ground
23	GND	P	Ground
24	GND	P	Ground
25	GND	P	Ground
26	GND	P	Ground
27	GND	P	Ground
28	RF_IN	I	Antenna port, L1, 1575.42MHz, 50 ohm DC O/P : 2.8V Current $\leq$ 25mA

Note1: (P→Power), (I→Input), (O→Output), (I/O*→Input or Output, Open if not used)

Note2:

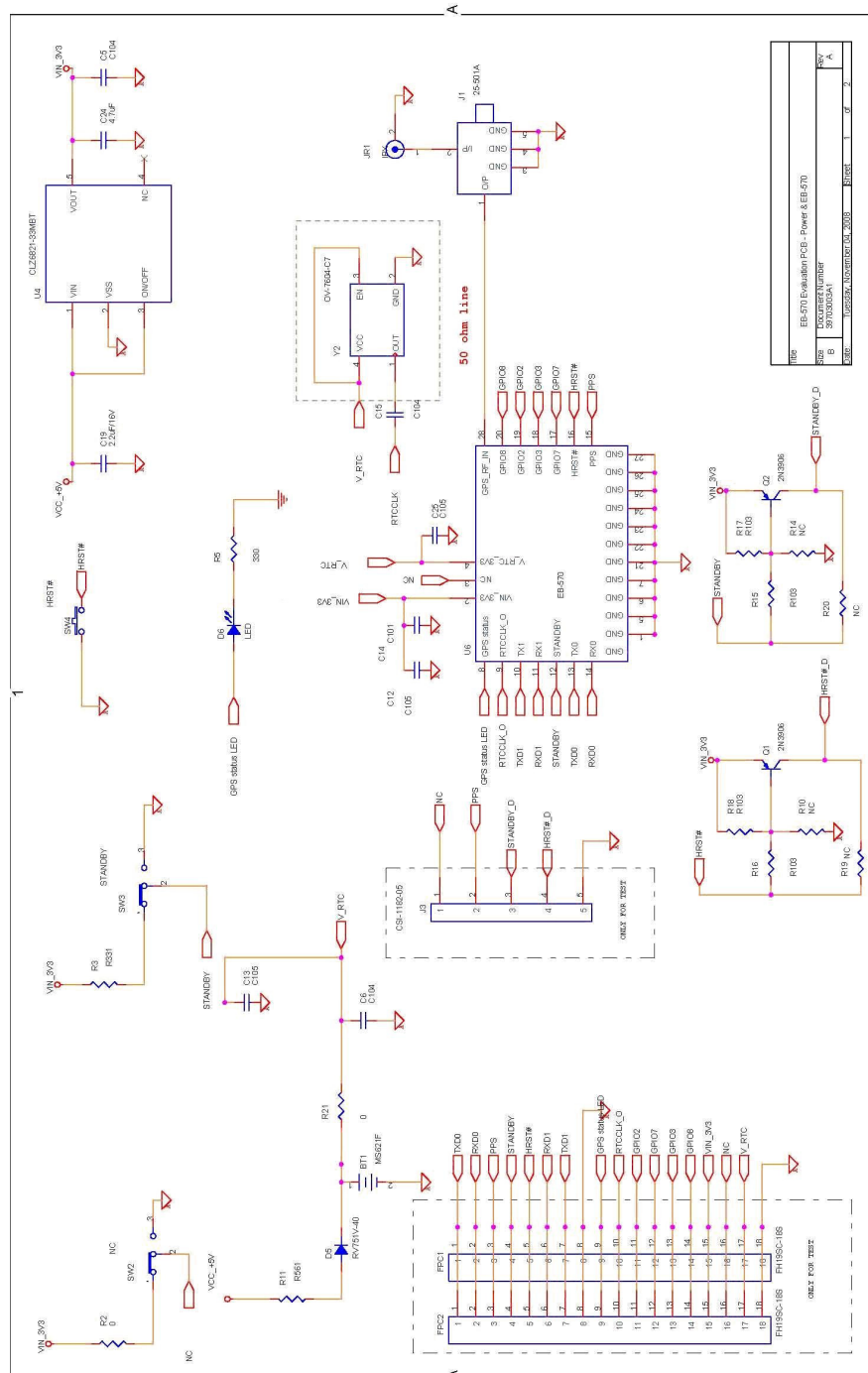
1. GIO current output

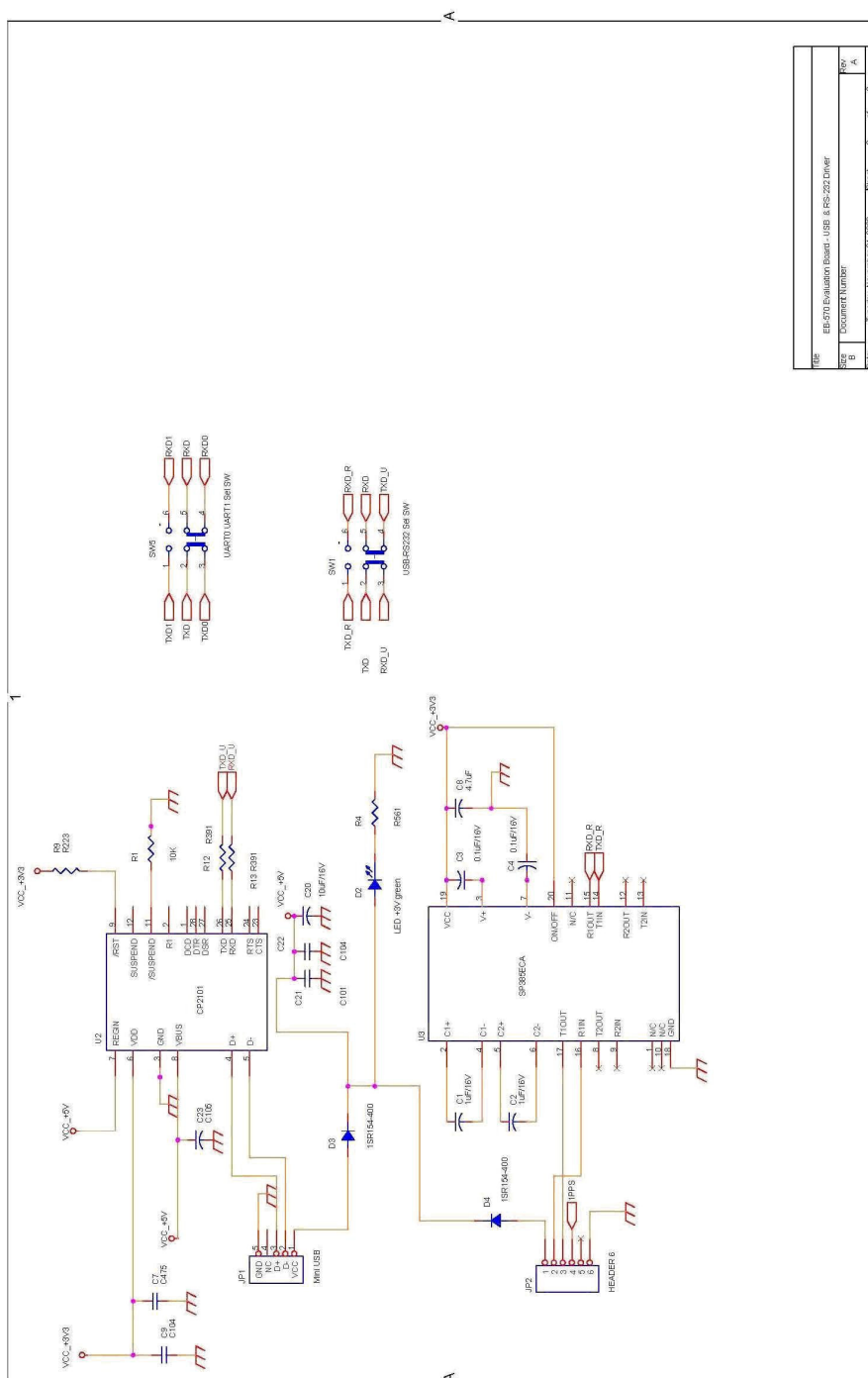
Default	4mA
Max	16mA

2. GIO voltage

V_{IL}	-0.3~0.8V
V_{IH}	2.0~3.6V
V_{OL}	-0.3~0.4V
V_{OH}	-2.4~0.7VDD

5. Evaluation Board Schematics





Size	8	9	REV	A
Document Number				
EB-570 Evaluation Board - USB & RS-232 Driver				
Title				

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