

# *EB-500 GPS Engine Board* Evaluation Kit User's Manual

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AN-01



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Ver 0.4

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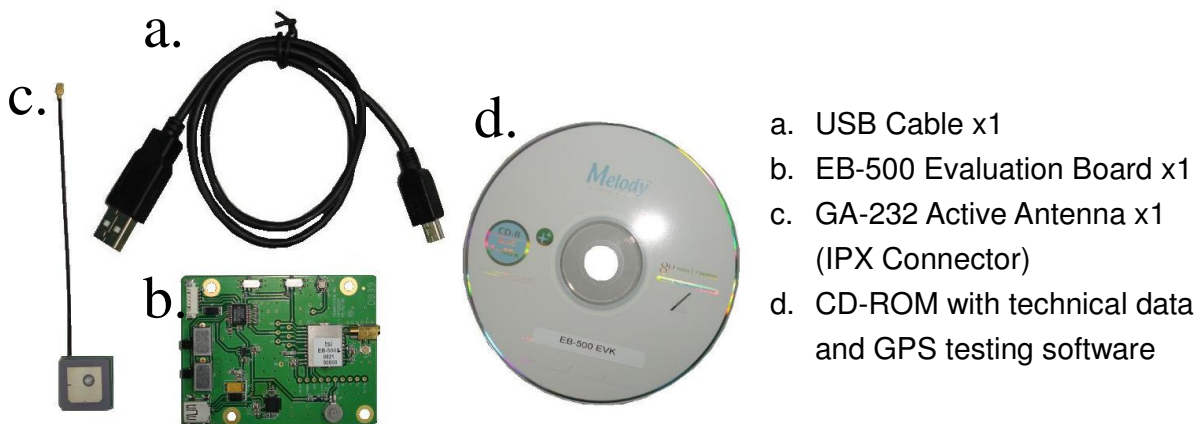
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## 1 Introduction

EB-500 evaluation kit is an user friendly tool for your evaluation of TSI's EB-500 GPS engine board. With its miniature size, low power consumption and superior performance, EB-500 is your ultimate choice for all embedded applications such as :

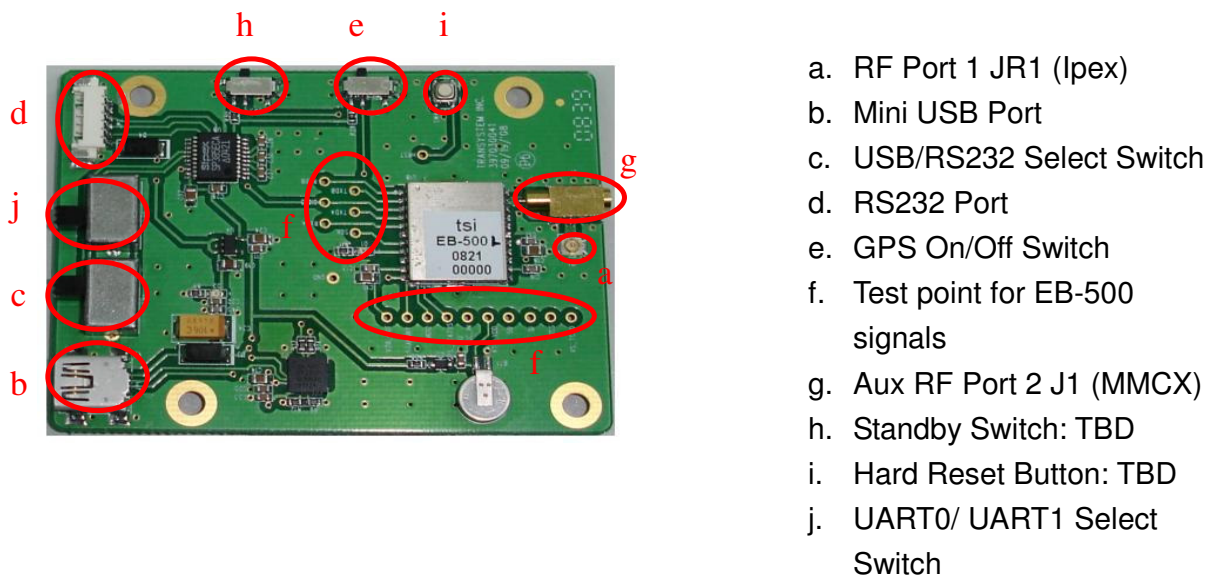
- Handheld devices (PDA, Smart phone...)
- Automotive and Marine Navigation
- Automotive Navigator Tracking
- Emergency Locator
- Geographic Surveying
- Personal Position
- Sporting and Recreation

## 2 When you open it



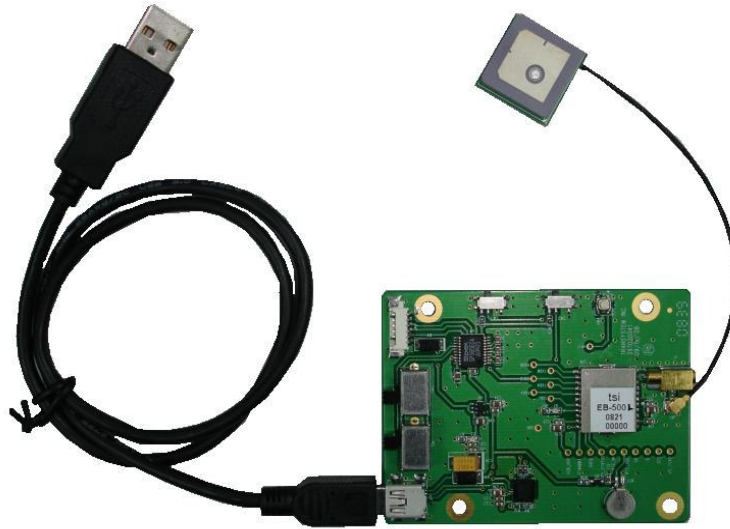
- a. USB Cable x1
- b. EB-500 Evaluation Board x1
- c. GA-232 Active Antenna x1 (IPX Connector)
- d. CD-ROM with technical data and GPS testing software

### 2.1 Evaluation Board Picture



- a. RF Port 1 JR1 (Ipex)
- b. Mini USB Port
- c. USB/RS232 Select Switch
- d. RS232 Port
- e. GPS On/Off Switch
- f. Test point for EB-500 signals
- g. Aux RF Port 2 J1 (MMCX)
- h. Standby Switch: TBD
- i. Hard Reset Button: TBD
- j. UART0/ UART1 Select Switch

## 2.2 USB Setup



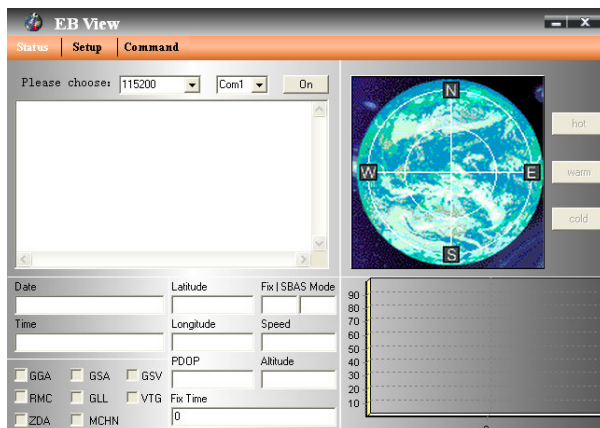
- a. Plug active antenna into the external antenna connector JR1
- b. Connect USB cable between EB-500 Evaluation board and PC
- c. Turn SW1 to " USB " position
- d. Turn SW2 to " GPS On " position

## 3 GPS Testing Software

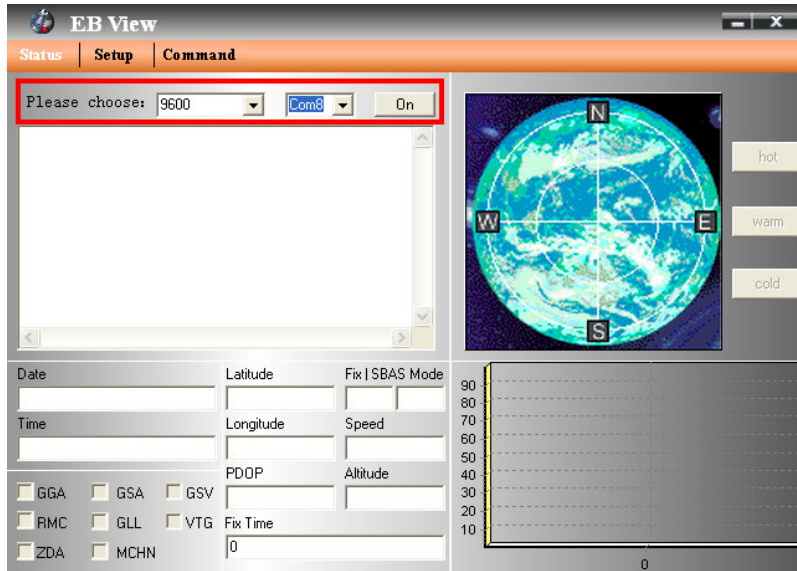
- a. Check the COM port number from Device Manager in your PC first.
- b. Place CD-ROM into your CD drive.
- c. Install CP210X USB driver for USB port from CD-ROM.
- d. Double click GPSView.exe



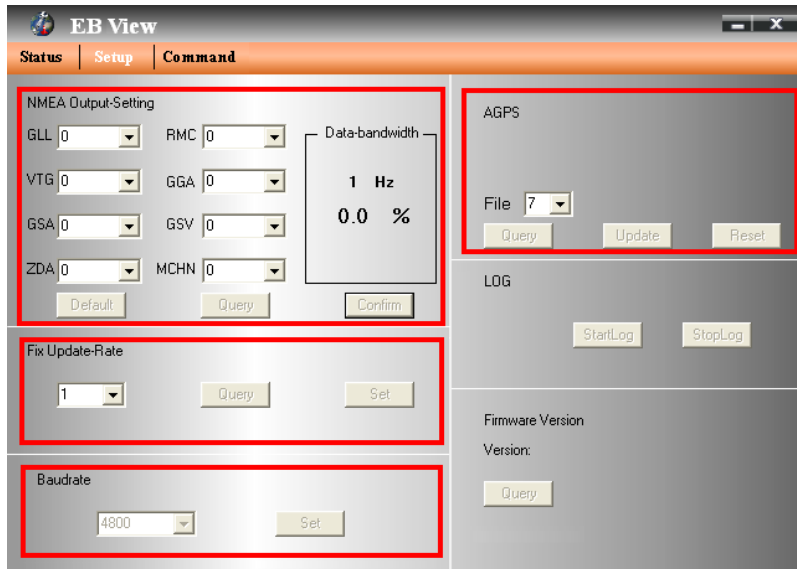
- e. Following main page will show on your screen.



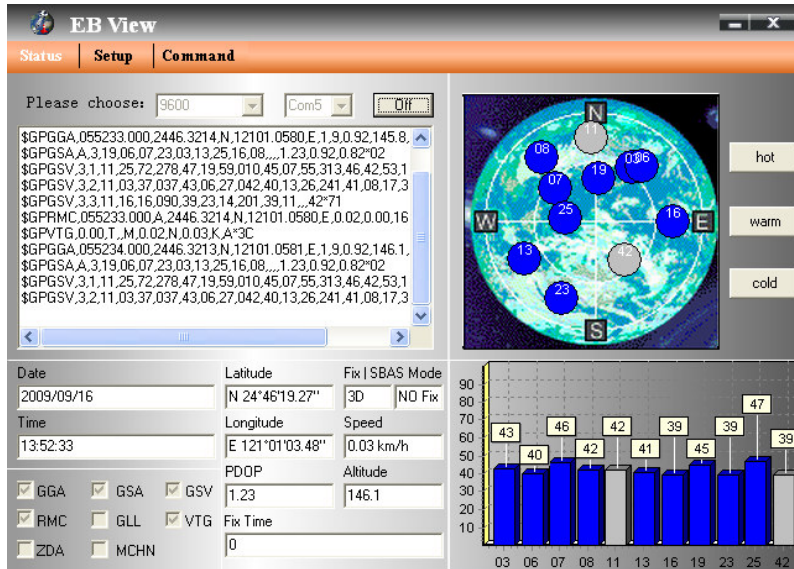
- f. Select baud rate and serial port.  
Default setting for EB-500 is 9600bps and COMX.



- g. Click "Setup" tap, more options for your choice of NMEA output, update rate, baud rate, AGPS setting...etc.



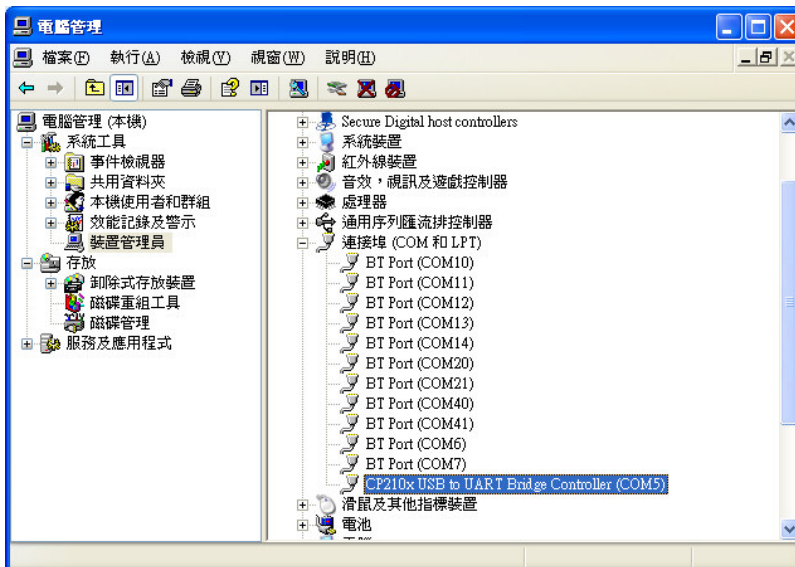
Go back to main page for viewing of life performance information including Date, Time, Latitude, Longitude, Altitude, Speed, Satellite number, SNR...etc.



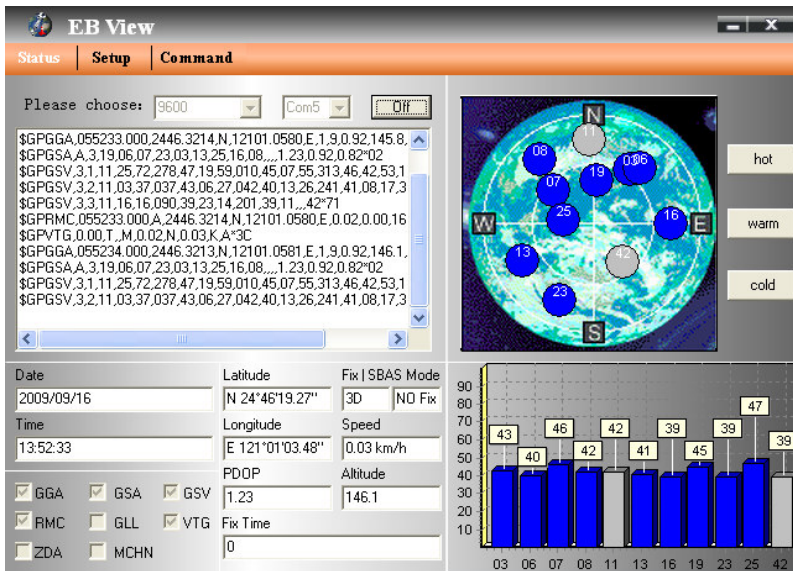
There are still more options for you to click on including: Hot (Hot Start), Warm (Warm Start), Cold (Cold Start).

### 3.1 Download AGPS

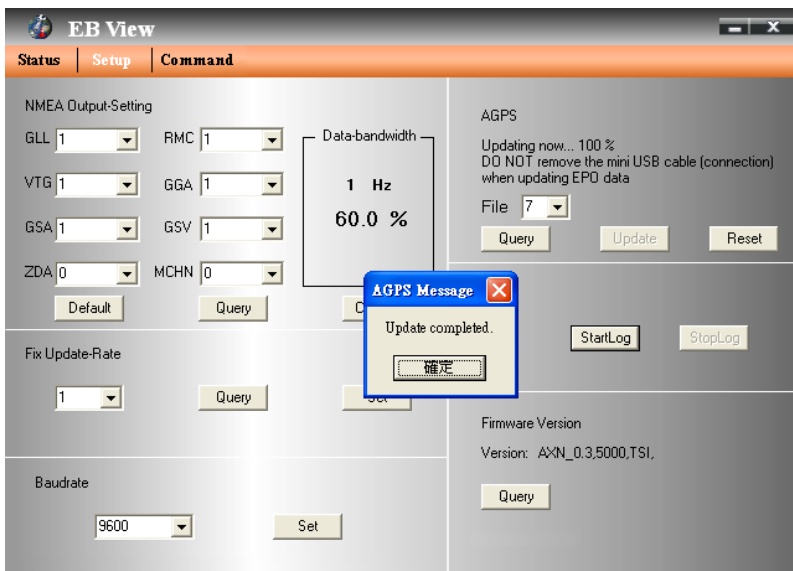
- a. Start > Control Panel > System > Hardware > Device Manager > ports (COM and LPT)  
Check Com port position .



b. Open EB View v1.0.2.exe > Check Baud Rate and Com port > Click On

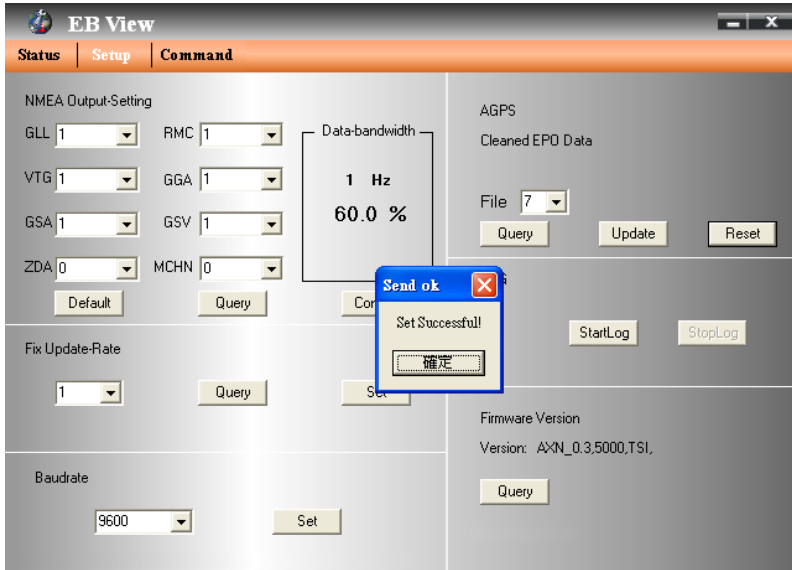


c. Choice "Update" will automatically update to 100%.



### 3.2 Clean AGPS

- a. Choice "Reset"
- b. After got send back message, choice "Yes". It will clean all AGPS data.





**4. Connector Definition**

Pin#	Signal Name	Type	Description
1	RX1	I	GPS RX1
2	TX1	O	PPS TX1
3	PPS	O	PPS
4	TX0	O	GPS TX0
5	RX0	I	GPS RX0
6	GND	P	Ground
7	GPIO[3]	I/O*	General input / output
8	GPS status	O	GPS status, blink when GPS has position fix
9	GPIO[12]	I/O*	General input / output
10	V28D	P	Digital power indicator, 2.8V±2% test point
11	NC	I	NC
12	V_RTC_3V3	P	RTC power 3.0~4.2V Quiescent current 1.5uA max
13	VIN_3V3	P	Power Supply 3.0~4.2V DC
14	GPIO[7]	I/O*	General input / output
15	GPIO[8]	I/O*	General input / output
16	GPIO[2]	I/O*	General input / output
17	GND	P	Ground
18	NC	NC	NC
19	V28A	P	Analog power indicator, 2.8V±2% test point
20	GND	P	Ground
21	RF Input	I	Antenna port, L1, 1575.42MHz, 50ohm DC O/P: 2.8V Current ≤ 25mA
22	GND	P	Ground

P: Power      I: Input      O: Output      I/O\*: Input or Output, Open if not used

Note:

1. GIO current output

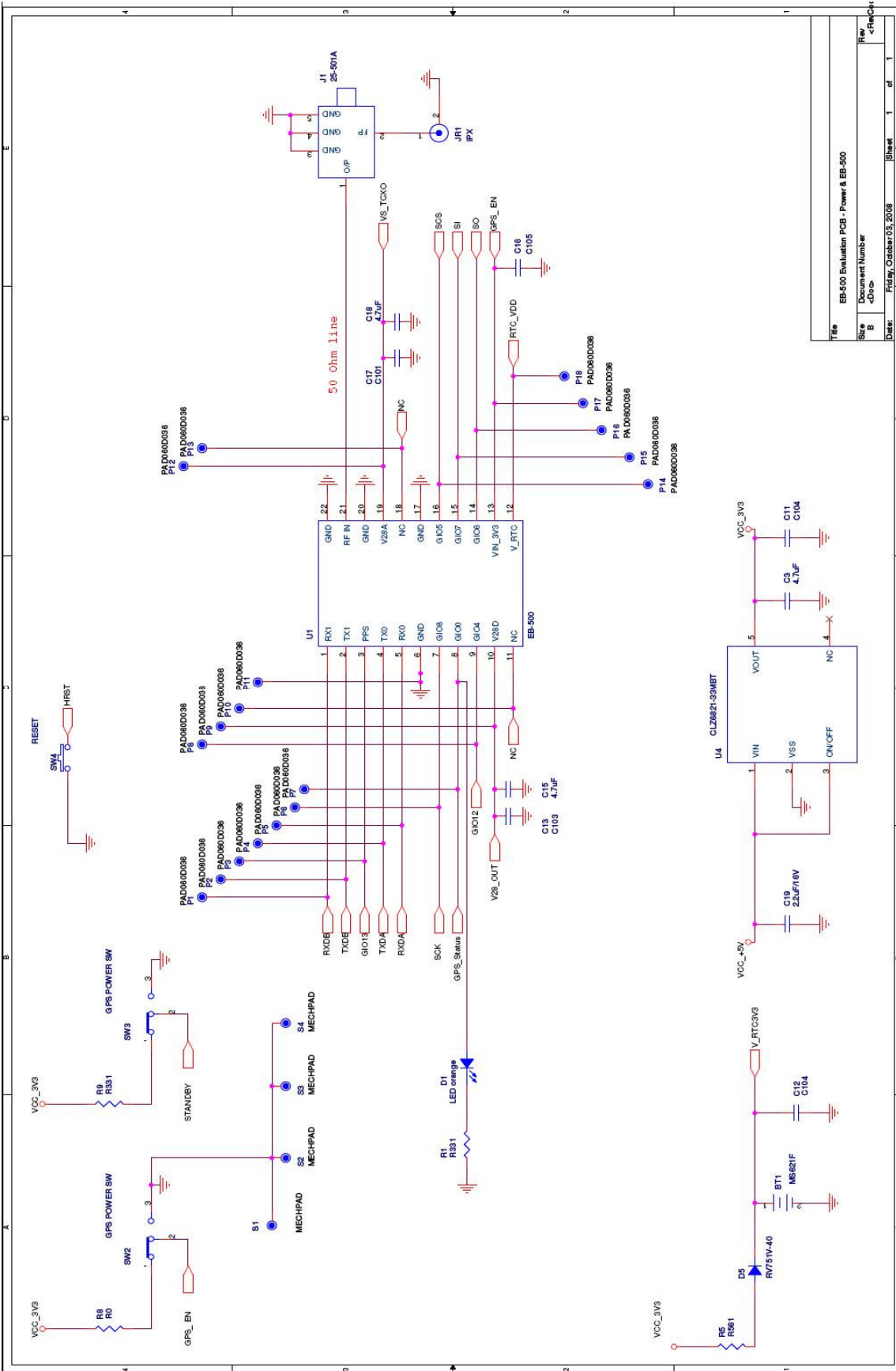
Default	4mA
Max	16mA

2. If active antenna supply voltage > 2.8V. Please refer to EB-500 Series Data Sheet 4.2.

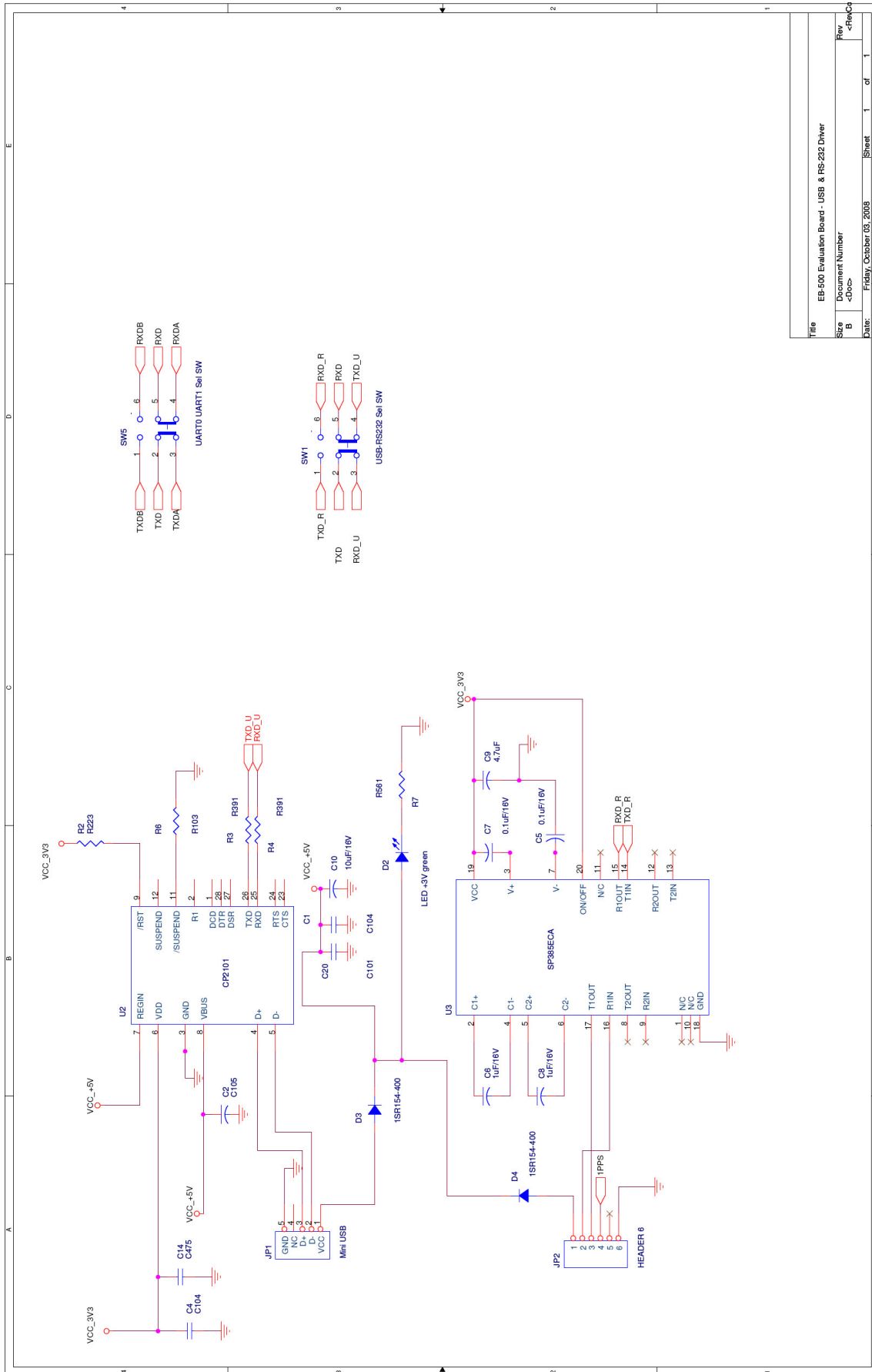
3. GIO voltage

V <sub>IL</sub>	-0.3~0.8V
V <sub>IH</sub>	2.0~3.6V
V <sub>OL</sub>	-0.3~0.4V
V <sub>OH</sub>	-2.4~0.7VDD

### 5. Evaluation Board Schematics



File	EB-500 Evaluation PCB - Power & EB-500
Size	Document Number
B	Doc#
Date	Friday, October 05, 2006
Sheet	1
of	1
Rev	<Rev>
<Rev>	<Rev>



Title	EB-500 Evaluation Board - USB & RS-232 Driver
Size	Document Number
B	<Doc>
Rev	
Sheet	1 of 1
Date:	Friday, October 05, 2009

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