

GPS Engine Board

EB-500S

EB-500S is an ultra miniature low cost 13 x 15 mm² GPS engine board. It provides superior navigation performance under dynamic conditions in areas with limited sky view like urban canyons. High sensitivity up to **-163dBm** for weak signal operation without compromising accuracy.

EB-500S is your best choice for embedded applications.



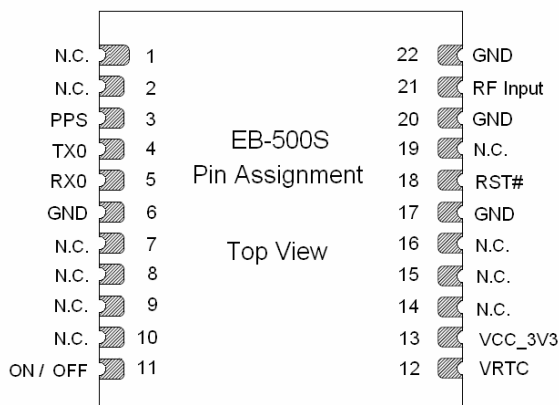
Key Features :

- Small form factor: 13 x 15 x 2.2 mm
- Lead-Free – RoHS/WEEE compliant
- High sensitivity -163dBm
- Tracks 48-Channel of satellites
- Fast Position Fix
- Low power consumption
- Ultra low power standby mode
- Support A-GPS (optional)
- UART interface

Applications :

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

PIN Definition :



Ultimate



TRANSYSTEM INC.

An A+ supplier of RF microwave & GPS products

EB

Ver 1.1

Specifications

Item	Description
General	L1 frequency, C/A code 48 independent tracking channels
Sensitivity*	-163dBm /Tracking; -147dBm /Acquisition
Update Rate	1Hz
Accuracy*	<2.5m CEP (50%) 24Hr static without SA (horizontal)
Acquisition* (open sky)	Cold Start: <35sec Warm Start: <35sec Hot Start: <1sec
Reacquisition	< 1sec
Dynamics*	Altitude : 18000m (max.) Velocity : 515m/sec (max.) Vibration : 4G (max.)
Supply Voltage	DC 3.0~4.2 V
Power Consumption	27 mA @ 3.3V (w/o Active ANT) / Tracking
Backup Battery	DC 2.2~3.0V
NMEA Message	NMEA0183 v3.1 baud rate 9600 GGA, GSA, RMC, GSV
Datum	Default WGS-84
Antenna	External Active Antenna Output Voltage: 2.8 VDC or Passive Antenna
Serial Interface	UART
Operating Temp.	-40°C to 85°C
Storage Temp.	-40°C to 85°C
Operating Humidity	≦ 95%, non condensing
Mounting	SMT Type, 22 Pin
Dimension	13 x 15 x 2.2(H) mm

* Refer to chip specification.

** Specifications subject to change without prior notice.

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Pin Definition

Pin#	Signal Name	Type	Description
1	N.C.	-	No connection
2	N.C.	-	No connection
3	PPS	O	Pulse per second output
4	TX0	O	UART port 0 output for NMEA
5	RX0	I	UART port 0 input
6	GND	P	Ground
7	N.C.	-	No connection
8	N.C.	-	No connection
9	N.C.	-	No connection
10	N.C.	-	No connection
11	ON / OFF	I	External 10K ohm pull down resistor required. 100ms wide pulse is required to turn on GPS and to put GPS into hibernation mode.
12	VRTC	P	RTC power 2.2~3.0VDC
13	VCC_3V3	P	Power supply 3.0~4.2VDC
14	N.C.	-	No connection
15	N.C.	-	No connection
16	N.C.	-	No connection
17	GND	P	Ground
18	RST#	I	Reset input, active low with Schmitt-Trigger, leave open if not used.
19	N.C.	-	No connection
20	GND	P	Ground
21	RF_Input	I	RF input port, L1 band, 50 ohm Active antenna DC power feed, same as VCC_3V3 (pin #13)
22	GND	P	Ground

Note : 1) P: Power, I: Input, O: Output, I/O*: Input or Output, Open if not used
2) All input / output signals, except power and RF_Input are 1.8V voltage level.



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