

## GPS Engine Board

### EB-800A / EB-800AL

EB-800A is a miniature 13 x15 mm<sup>2</sup> **GPS / Glonass** engine that is capable of receiving both GPS and Glonass signal with single RF input and high receiving sensitivity.

With up to **-165dBm** superior tracking sensitivity, the GPS + Glonass dual system EB-800A enables better satellite coverage and superior position accuracy for your navigation need under dynamic conditions in areas with limited sky view like urban canyons.

EB-800A is pin compatible with TSI's popular EB-500, it provides best migration path for your embedded applications.

#### Key Features :

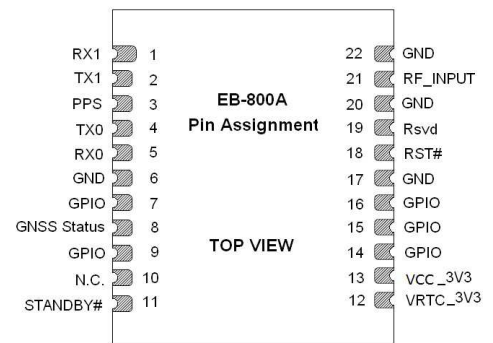
- Small form factor: 13 x 15 x 2.2 mm
- Support GPS + Glonass dual system
- Lead-Free – RoHS/WEEE compliant
- High sensitivity -165dBm
- Tracks 99-Channel of satellites
- Support multi-GNSS including. QZSS, SBAS
- WAAS/EGNOS/MSAS/GAGAN supported
- RTCM ready
- AlwaysLocate™ location awareness technology
- EPO™ / HotStill™ orbit prediction
- EASY™ self-generated orbit prediction
- Fast Position Fix
- Ultra low power consumption
- FCC E911 compliance and A-GPS support
- Backward compatible with EB-500
- EB-800A w/ LNA, EB-800AL w/o LNA
- EB-800A can match w/ passive antenna
- EB-800AL recommend match w/ active antenna.



#### 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 0.7

## Specifications

<b>Item</b>	<b>Description</b>
<b>General</b>	L1 frequency, C/A code (SPS) 99 independent tracking channels
<b>Sensitivity</b>	-165dBm /Tracking; -148dBm /Acquisition
<b>Update Rate</b>	Up to 10Hz
<b>Accuracy</b>	<3m CEP (50%) without SA (horizontal) DGPS (WAAS, EGNOS, MSAS, RTCM): 2.5m
<b>Acquisition (open sky)</b>	Cold Start: <35sec Warm Start: <34sec Hot Start: <1.5sec
<b>Reacquisition</b>	< 1sec
<b>Dynamics</b>	Altitude : 18000m ( max. ) Velocity : 515m/sec ( max. ) Vibration : 4G ( max. )
<b>Supply Voltage</b>	DC 2.8~4.3 V
<b>Power Consumption</b>	EB-800A: < 22 mA @ 3.3V (w/o Active ANT) / Tracking EB-800AL: < 20 mA @ 3.3V (w/o Active ANT) / Tracking
<b>Backup Battery</b>	DC 2.0~4.3V, 20 uA@3.3V typical
<b>NMEA Message</b>	NMEA0183 v3.1 baud rate 4800/9600/.../115200, default 9600 Selectable Output: GGA, GLL, GSA, GSV, RMC, and VTG
<b>Datum</b>	Default WGS-84
<b>Antenna</b>	External Active Antenna Output Voltage: 2.8 VDC or Passive Antenna
<b>Serial Interface</b>	UART
<b>Operating Temp.</b>	-40°C to 85°C
<b>Storage Temp.</b>	-40°C to 85°C
<b>Operating Humidity</b>	≤ 95%, non condensing
<b>Mounting</b>	SMT Type, 22 Pin
<b>Dimension</b>	13 x 15 x 2.2(H) mm

\* Refer to chip specification.

\*\* Specifications subject to change without prior notice.

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# EB-800A Series Catalog

## Pin Definition

Pin#	Signal Name	Type	Description
1	RX1	I	UART port 1 input
2	TX1	O	UART port 1 output
3	PPS	O	Pulse per second output when GPS has position fix, 10% duty cycle
4	TX0	O	GPS TX0
5	RX0	I	GPS RX0
6	GND	P	Ground
7	GPIO	I/O*	General input/ output, leave open if not used
8	GNSS status	O	When GNSS is position fix, pin 8 alternates between High/Low. When no fix, pin8 always goes low.
9	GPIO	I/O*	General input/ output, leave open if not used
10	NC	I	NC
11	Standby	I	Falling edge trigger. Back to High for normal operation. Leave open if not used
12	VRTC_3V3	P	RTC power 2.0~4.3V Quiescent current 2.0uA max
13	VCC_3V3	P	Power Supply 2.8~4.3V DC
14	GPIO	I/O*	General input/ output, leave open if not used
15	GPIO	I/O*	General input/ output, leave open if not used
16	GPIO	I/O*	General input/ output, leave open if not used
17	GND	P	Ground
18	HRST	I	Module reset, active low. Internal pull high leave open if not used
19	Rsvd	I/O*	Reserve for future use, leave open if not used
20	GND	P	Ground
21	RF Input	I	Antenna port, L1, 1575.42MHz, 50 ohm
22	GND	P	Ground

- Note : 1) P: Power, I: Input, O: Output, I/O\*: Input or Output, leave open if not used  
 2) GPIO current output default : 4mA, Max : 16mA  
 3) Please supply VRTC\_3V3 / VCC\_3V3 voltage simultaneously or supply VRTC\_3V3 voltage first when powering on the module.



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