

GPS Engine Board

EB-800 / EB-800L / EB-800S

EB-800 series is a miniature 13 x15 mm² **GPS** engine that is capable of receiving GPS signal with single RF input and high receiving sensitivity.

With up to **-165dBm** superior tracking sensitivity, EB-800 series 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-800 series is pin compatible with TSI's popular EB-500, it provides best migration path for your embedded applications.

Key Features :

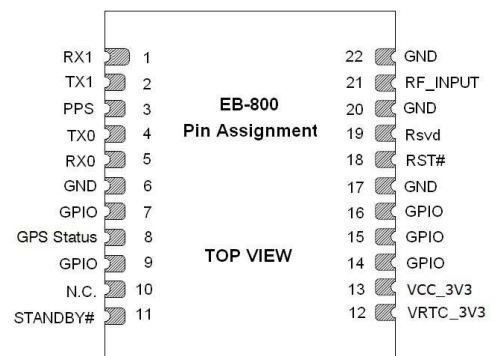
- Small form factor: 13 x 15 x 2.2 mm
- Support GPS system
- Lead-Free – RoHS/WEEE compliant
- High sensitivity -165dBm
- Tracks 66-Channel of satellites
- Support QZSS and SBAS
- WAAS/EGNOS/MSAS/GAGAN supported
- RTCM ready
- AlwaysLocate™ location awareness technology
- EPO™ / HotStill™ orbit prediction (Not for EB-800S)
- EASY™ self-generated orbit prediction (Not for EB-800S)
- Fast Position Fix
- Ultra low power consumption
- FCC E911 compliance and A-GPS support
- EB-800 w/ LNA, EB-800L w/o LNA
- EB-800 can match w/ passive antenna
- EB-800L recommend match w/ active antenna
- EB-800S is ROM FW
- Backward compatible with EB-500



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 0.4

Specifications

Item	Description
General	L1 frequency, C/A code (SPS) 66 independent tracking channels
Sensitivity	-165dBm /Tracking; -148dBm /Acquisition
Update Rate	Up to 10Hz
Accuracy	<3m CEP (50%) without SA (horizontal) DGPS (WAAS, EGNOS, MSAS, RTCM): 2.5m
Acquisition (open sky)	Cold Start: <35sec Warm Start: <34sec Hot Start: <1.5sec
Reacquisition	< 1sec
Dynamics	Altitude : 18000m (max.) Velocity : 515m/sec (max.) Vibration : 4G (max.)
Supply Voltage	DC 2.8~4.3 V
Power Consumption	EB-800 / EB-800S: < 18 mA @ 3.3V (w/o Active ANT) / Tracking EB-800L: < 16mA @ 3.3V (w/o Active ANT) / Tracking
Backup Battery	DC 2.0~4.3V, 20 uA@3.3V typical
NMEA Message	NMEA0183 v3.1 baud rate 4800/9600/.../115200, default 9600 Selectable Output: GGA, GLL, GSA, GSV, RMC, and VTG
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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EB-800 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	UART port 0 output for NMEA
5	RX0	I	UART port 0 input
6	GND	P	Ground
7	GPIO	I/O*	General input/ output, leave open if not used
8	GPS status	O	When GPS 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 to enter standby mode. Raising-edge to enter normal mode. 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 2.8~4.2V 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	RST#	I	GPS 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

- Note :
- 1) P: Power, I: Input, O: Output, I/O: Input or Output
 - 2) GPIO current output default : 4mA, Max : 16mA
 - 3) Please supply VRTC_3V3 / VCC_3V3 voltage simultaneously or supply VRTC voltage first when powering on the module.



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