GPS Engine Board

EB-500A/AL

EB-500A/AL is an ultra miniature 13 x15 mm^2 GPS engine board. It provides superior navigation performance under dynamic conditions in areas with limited sky view like urban canyons. High sensitivity up to **-165dBm** for weak signal operation without compromising accuracy.
EB-500A/AL series is your best choice for embedded applications.

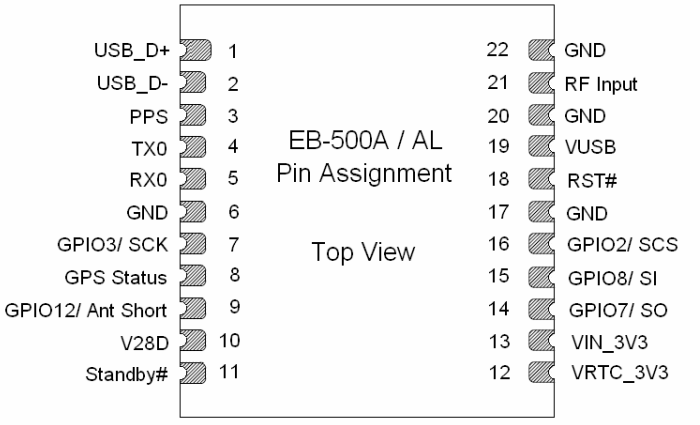
Key Features :

- Small form factor: 13 x 15 x 2.2 mm
- Lead-Free – RoHS/WEEE compliant
- High sensitivity -165dBm
- Tracks 66-Channel of satellites
- Fast Position Fix
- Low power consumption
- Ultra low power standby mode
- Support A-GPS
- Antenna sensing capability
- USB / 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 :



RoHS Compilant

ELECTROSTATIC SENSITIVE DEVICES

Ultimate EB

TRANSYSTEM INC.

An A+ supplier of RF microwave & GPS products

Specifications

Item	Description
General	L1 frequency, C/A code (SPS) 66 independent tracking channels
Sensitivity*	-165dBm /Tracking; -148dBm /Acquisition
Update Rate	Up to 5Hz
Accuracy	Without aid: 3.0m 2D-RMS <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 3.0~4.2 V
Power Consumption	35mA @ 3.3V (w/o Active ANT) / Tracking
Backup Battery	DC 2.0~4.2V Quiescent current 5uA max
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 / USB
Operating Temp.	-40℃ to 85℃
Storage Temp.	-40℃ to 85℃
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.

Pin Definition

Pin#	Signal Name	Type	Description
1	USB_D+	I/O*	USB Data Plus, leave open if not used
2	USB_D-	I/O*	USB Data Minus, leave open if not used
3	PPS	O	PPS
4	TX0	O	GPS TX0
5	RX0	I	GPS RX0
6	GND	P	Ground
7	GPIO3 / SCK	I/O*	General input/ output, SPI clock, leave open if not used
8	GPS Status	O	GPS status, blink when GPS has position fix
9	GPIO12 / Antenna short	I/O*	General input/ output, Antenna short indicator (active high)
10	V28D	P	Digital power output, 2.8V±2%
11	STANDBY#	I	To put GPS into standby mode, falling edge trigger, leave open if not used.
12	VRTC_3V3	P	RTC power 2.0~4.3VDC. Quiescent current 1.5uA max
13	VIN_3V3	P	Power supply 3.0~4.2VDC
14	GPIO7 / SO	I/O*	General input/ output, SPI data output, leave open if not used
15	GPIO8 / SI	I/O*	General input/ output, SPI data input, leave open if not used
16	GPIO2 / SCS	I/O*	General input/ output, SPI chip select, 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	VUSB	P	USB voltage input 3.3V±5%
20	GND	P	Ground
21	RF_Input	I	RF input port, L1, 1575.42MHz, 50 ohm
22	GND	P	Ground

Note : 1) P: Power, I: Input, O: Output, I/O*: Input or Output, Open if not used
2) GPIO current output default：4mA, Max ：16mA

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