

# VK16E

## GPS OEM Module

### Data Sheet

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Revision: V1.0

Date: 2013-4-13



### **Product highlights.**

- Industry standard 25 \* 25 \* 4MM high sensitivity GPS antenna.
- UART / TTL, interfaces, aside BOOT switch that supports the update process.
- Using KDS 0.5PPM precision TCXO.
- Built-in RTC crystal and picofarads capacitance faster hot start.

- built Flash, rich SIRF free program updates.
- built-in LNA, low noise amplifier

## **Summary**

main chip: SiRF III chip  
 C / A code, 1.023 MHz stream  
 receive frequency: L1 [1575.42 MHz]  
 Receive Channel: 20 CH

## **positioning performance**

<10 m (independent positioning)  
 <5 m (WAAS)  
 rate: <0.1 m / s  
 direction: <0.5 Degrees  
 timing accuracy: 30 us  
 the reference coordinate system: WGS - 84

maximum altitude: 50,000 m  
 Maximum speed: 500 m / s  
 acceleration: <4g

## **Electrical performance:,other parameters**

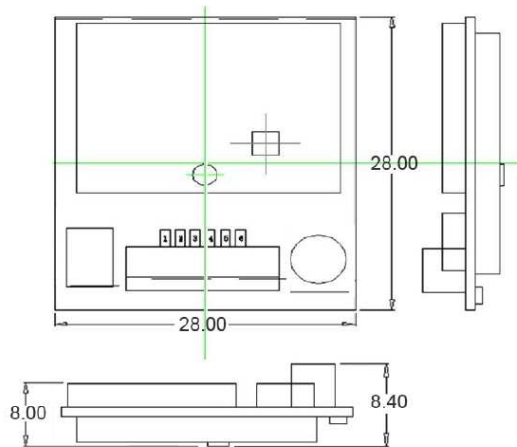
tracking Sensitivity: -159 dBm  
 standard clock pulse: 0.25 Hz ~ 1 KHz  
 acquisition sensitivity: -153 dBm  
 positioning update rate: 1 Hz  
 start time : 39 s [average]  
 UART / TTL, port interface  
 warm Start time: 37 s [average]  
 hot start time: 1 s [average]  
 data Rate: 9600bps (default) [optional: 1200,2400,4800, 19200, 38400, 57600, 115200, 230400, 460800,921600]  
 output statements: NMEA 0183 V3.0 (GGA, GSA, GSV, RMC, VTG, GLL) protocol data, customizable combinations of output statements  
 operating temperature: -40 °C to +85 °C  
 Package size: 28.0 \* 28.0 \* 8.4 mm

## **Electrical properties of the interface:**

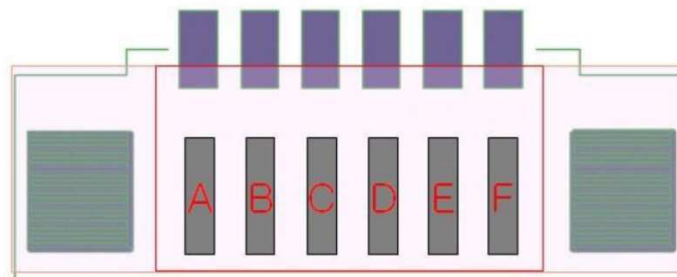
Wide voltage range: Mains is +3.3 V ~ +5 V, power supply

built-in self-RT C 2 5 \* 2 5 \* 4 mm passive ceramic antenna

**Outline Drawing (Unit: mm):**



Serial number	name	description
A	PPS	Time Standard pulse output
B	VCC	System main power supply voltage is +3.3 V ~ +5 V, Current consumption about 55mA
C	TXDA	UART / TTL Interface
D	RXDA	UART / TTL Interface
E	GND	ground
F	BOOT	BOOT switch, the default floating



### **Extreme operating conditions:**

parameter	min	standard	max	unit
Power voltage	-0.3	--	5	V
Output voltage	-0.3	--	3.6	V
Operating temperature	-40	--	85	°C
Store temperature	-55	--	100	°C

### **Normal operating conditions:**

parameter	min	standard	max	unit
Power voltage	3.3	5	5	V
Operating temperature	-40	--	+85	°C
Operating current (including antenna about 10mA current)		55	70	mA

**RTC Power qualified [RTC power supply module self, life time of about 2.5Hour]**

parameter	min	standard	max	unit
RTC power voltage	1.8	2.8	6	V
Current consumption (work)	--	150	--	uA
Current consumption (sleep)	--	30	--	uA

### **Digital Interface level condition:**

Parameter	min	standard	max	unit
Input high	2.0	--	--	V
Input low	--	--	0.8	V
Output high	2.4	--	--	V
Output low	--	--	0.4	V

### **Closing star performance**

parameter	min	standard	max	unit
Tracking sensitivity	--	-159	--	dBm
Signal strength (SG: -1 25dBm)	43	45	47	dB/Hz
Cold start time	--	39	--	s
Warm start time	--	37	--	s
hot start time	--	1	--	s

### **Product packaging**

- Tray Dimensions: 40cm (length) × 23cm (width) × 2cm (height)
- 1 layer tray 50PCS

