Venus827 Single Chip GNSS Receiver

FEATURES

- Supports GPS/GLONASS/SBAS/QZSS or GPS/BDS/SBAS/QZSS signal reception
- 167 acquisition/tracking channels
- 16 million time-frequency hypothesis testing per second
- 1 second hot start TTFF
- 3.5 second TTFF with AGPS
- 29 second cold start TTFF
- 2.5m CEP position accuracy
- Multipath detection and suppression
- Jamming detection and mitigation
- Stand-alone solution, no host needed
- RoHS compliant
- Support 26MHz 0.5ppm TCXO

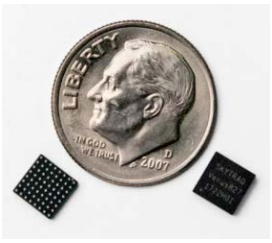
The Venus827 is a single-chip GNSS receiver containing RF and baseband in a 5mm x 5mm BGA64 package. Featuring high performance SkyTraq Venus 8 positioning engine, the Venus827 provides good sensitivity and very short TTFF with no host interaction needed. Venus827 is intended for high-volume GNSS dead-reckoning or precision timing applications.

For dead-reckoning application using 6-axis IMU such as BMI160, Venus827 can support Automotive Dead Reckoning (**ADR**) mode if the vehicle wheel-tick odometer signal is available; or operate in Odometer-less Dead Reckoning (**ODR**) mode if the odometer signal is unavailable.

For precision timing application, the Venus827 supports TRAIM and precise 1PPS generation down to using a single satellite.

Dedicated massive-correlator signal parameter search engine within the baseband enables rapid search of all the available satellites and acquisition of very weak signal. An advanced track engine allows weak signal tracking and positioning in harsh environments such as urban canyons and under deep foliage.

The Venus827 is suitable for next generation of very high performance GNSS applications requiring 100% positioning availability, or precision timing synchronization applications.



TECHNICAL SPECIFICATIONS

Receiver Type	L1 GPS/GLONASS/SBAS/QZSS or GPS/BDS/SBAS/QZSS C/A code	
Accuracy	Position	2.5m CEP
	Velocity	0.1m/sec
	Timing	12ns
Open Sky TTFF	29 seconds cold start 1 second hot start	
Reacquisition	< 1s	
Sensitivity	-156dBm tracking -146dBm cold start	
Update Rate	1 / 2 / 4 / 5 / 8 / 10 Hz	
Dynamics	4G	
Operational Limit	Altitude < 18,000m or Velocity < 515m/s	
Datum	Default WGS-84	
Interface	UART LVTTL level	
Baud Rate	4800 / 9600 / 38400 / 115200	
Protocol	NMEA-0183 V3.01, GGA, GLL, GSA, GSV, RMC, VTG, ZDA and SkyTraq Binary	
Supply Voltage	3.3V+/-10%, 1.2V+/-10%	
Operating Temp	-40 ~ +85 deg-C	
Package	5mm x 5mm BGA64	

ORDERING INFORMATION

Part Number	Description
Venus827-DR	GNSS/Dead-Reckoning Receiver Chipset
Venus827-T	GNSS Timing Mode Receiver Chipset

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