



## Venus828F 7mm x 7mm GNSS Receiver Module

### FEATURES

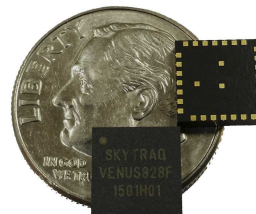
- Support GPS / Beidou / QZSS / SBAS signals
- Maximum 20Hz update rate
- -148dBm cold start sensitivity
- -165dBm tracking sensitivity
- 29 second cold start TTFF
- 3.5 second TTFF with AGPS
- 1 second hot start
- 2.5m accuracy
- Multipath detection and suppression
- Jamming detection and mitigation
- 3-day self-aided ephemeris estimation
- Supports external SPI flash memory data logging
- Complete GPS/Beidou module in 7mm x 7mm size
- Minimally requires only antenna and power to work
- Pb-free RoHS compliant

The Venus828F is a high performance, low cost, single chip GNSS receiver module targeting mobile consumer and industrial applications. It offers low power consumption, high sensitivity, and best in class signal acquisition and time-to-first-fix performance.

Venus828F contains all the necessary components of a complete GNSS receiver, including GNSS RF front-end, GNSS baseband signal processor, 0.5ppm TCXO, LDO regulator, DC/DC switching regulator and passive components. It takes up only 49mm<sup>2</sup> PCB footprint.

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.

Venus828F is very easy to use and offers very fast time to market.



## TECHNICAL SPECIFICATIONS

|                    |   |
|--------------------|---|
| Receiver Type      | L1/B1 frequency<br>GPS, Beidou, QZSS, SBAS<br>167-channel architecture<br>16-million time-freq search / sec |
| Accuracy           | Position 2.5m CEP<br>Velocity 0.1m/sec<br>Time 10nsec   |
| Open Sky TTFF      | 29 second cold start<br>3.5 second with AGPS<br>1 second hot start  |
| Reacquisition      | < 1s  |
| Sensitivity        | -165dBm tracking<br>-148dBm cold start  |
| AGPS               | 3-day ephemeris estimation  |
| Update Rate        | 1 / 2 / 4 / 5 / 8 / 10 / 20 Hz<br>Default 1Hz   |
| Dynamics           | 4G  |
| Operational Limits | Altitude < 18,000m <sup>*1</sup><br>Velocity < 515m/s <sup>*1</sup>   |
| Serial Interface   | LVTTTL level  |
| Protocol           | NMEA-0183 V3.01<br>SkyTraQ Binary   |
| Package            | LGA31 7 x 7 x1.4 mm   |
| Compliance         | RoHS  |
| Weight             | 0.2g  |

\*1: COCOM limit

## ORDERING INFORMATION

| Part Number | Description                      |
|-------------|----------------------------------|
| Venus828F   | Single Chip GNSS Receiver Module |

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