



Venus638LPx 20Hz -165dBm GPS Receiver Module

FEATURES

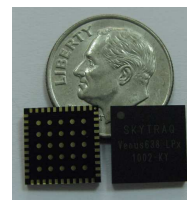
- Maximum update rate 20Hz
- -148dBm cold start sensitivity
- -165dBm tracking sensitivity
- 29 second cold start TTFF
- 3.5 second TTFF with AGPS
- 1 second hot start
- 2.5m accuracy
- Multipath detection and suppression
- Jamming detection and mitigation
- SBAS (WAAS / EGNOS) support
- 7-day extended ephemeris AGPS
- 60mW full power navigation
- Works directly with active or passive antenna
- Complete receiver in 10mm x 10mm x 1.3mm size
- Contains LNA, SAW Filter, TCXO, RTC Xtal, LDO
- Requires only antenna and power to work
- Pb-free RoHS compliant

The Venus638LPx is a high performance, low cost, single chip GPS module targeting camera, handset, MID, gaming, fitness, and asset tracking applications. It offers very low power consumption, high sensitivity, and best in class signal acquisition and time-to-first-fix performance.

Venus638LPx contains all the necessary components of a complete GPS receiver, includes GPS RF front-end, GPS baseband signal processor, 0.5ppm TCXO, 32.768kHz RTC crystal, RTC LDO regulator, and passive components. It takes up only 100mm² 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.

Venus638LPx is very easy to use, minimizes RF layout design issues and offers very fast time to market.

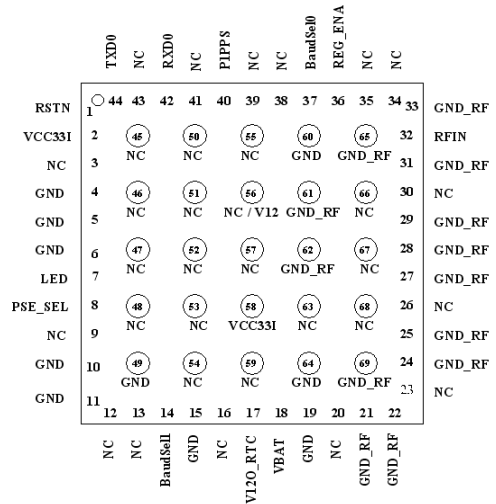


actual size

TECHNICAL SPECIFICATIONS

Receiver Type	L1 frequency GPS C/A code, SBAS capable 65-channel architecture 8-million time-freq search / sec
Accuracy	Position 2.5m CEP Velocity 0.1m/sec Time 60nsec
Open Sky TTFF	29 second cold start 3.5 second with AGPS 1 second hot start
Reacquisition	< 1s
Sensitivity	-165dBm tracking -148dBm cold start
AGPS	7-day extended ephemeris
Update Rate	1 / 2 / 4 / 5 / 8 / 10 / 20 Hz Default 1Hz
Dynamics	4G
Operational Limits	Altitude < 18,000m ^{*1} Velocity < 515m/s ^{*1}
Serial Interface	LVTTL level
Protocol	NMEA-0183 V3.01 SkyTraQ Binary
Power Consumption	60mW full power tracking 80mW low power acquisition 100mW max perf. acquisition
Package	LGA69 10 x 10 x1.3 mm
Compliance	RoHS
Weight	0.3g

*1: COCOM limit



ORDERING INFORMATION

Part Number	Description
Venus638LPx-D	single chip GPS module, ROM type 1.2V + 3.3V dual supply
Venus638LPx-L	single chip GPS module, ROM type 3.3V single supply

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