

G1000M

GNSS Receiver chip

(GPS L1/L2, Glonass, Beidou, Galileo, SBAS - WAAS, MSAS, SDCM, Beidou SBAS)



High Performance GNSS Navigation

- Adaptive operation for high sensitivity and dynamics
- Adaptive/modifiable tracking loop and filter techniques against multipath environments
- Patented fast acquisition architecture
- 40 tracking channel support at the same time

Multiple GNSS Support

- Support GPS L1/L2, GLONASS, Beidou, Galileo, SBAS L1 frequency (WAAS, MSAS, SDCM, BEIDOU SBAS)
- Support GPS L2C frequency

Multiple Environments Support

- Stationary, land vehicle, high dynamic airborne, LEO, meteorological and military area

Multiple Protocols Support

- Support for NMEA, TGb(Telace GPS Binary Protocol), customer dependent protocol

GNSS-INS integration ready

- Support for navigation with integrated GNSS and INS

High Accuracy

- Support SBAS correction, RTCM, dual frequency ionospheric correction, carrier smoothing

System on Chip

- Low power single chip including RF, baseband, CPU, and memory

AGPS Support

- Fast position fix with aiding information

Flexible Interface

- Support EMI, I2C, UART, SPI, GPIO, HSDLC interface

Automotive Interface

- Support automotive direction, speed interface

PERFORMANCE

Channels	40
Signal Tracking	
· GPS	L1 C/A,L2C
· GLONASS	L1
· Beidou	B1
· Galileo	E1
· SBAS	L1 C/A

Position Accuracy⁽¹⁾

· Single Position	2m
· Dual Position(L1/L2)	TBD
· SBAS	1m
· DGNSS	1m

Velocity Accuracy⁽¹⁾	0.5 m/s
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Acceleration⁽²⁾

Sensitivity	
· Acquisition	-145 dBm
· Tracking	-162 dBm

PPS Accuracy	50 ns
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TTFF

· Hot Start	2s
· Warm Start	12s
· Cold Start	30s

Update Rate⁽³⁾	10Hz
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Features

Differential GPS positioning with SBAS
 Differential GPS positioning with RTCM
 Assist GPS for Fast First Fix
 Fast Error Detection and Exclusion
 INS integrated navigation ready
 Carrier smoothing
 Dual-frequency Ionospheric Correction

INTERFACES

Communication Port	UART	4
	SPI	4
	HSDLC	1
	GPIO	8
	EMI	1
	I2C	1

PPS Protocols	1 Hz Configurable Rate
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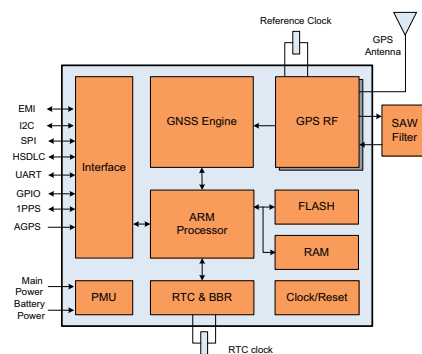
NMEA 0183	
TGb	TelAce GPS Binary Protocol
RTCM	For DGNSS
OEM	CustomerDependent

ELECTRICAL AND PHYSICAL

Dimensions	14mm x 14mm x 1.4mm
Weight	
Supply voltage(BB)	1.65V ~ 3.6V
Supply voltage(RF)	2.7V ~ 3.3V
Power consumption	T.B.D.
Temperature	-40 °C~85 °C

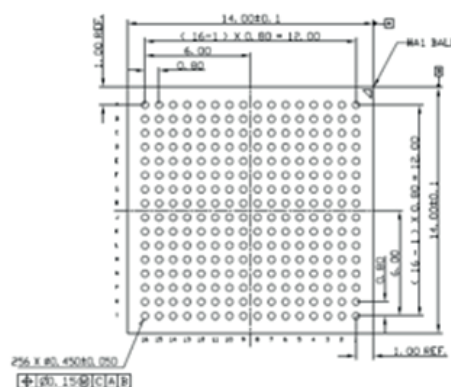
Memory	On Chip FLASH
RF	On Chip and External RF

BLOCK DIAGRAM



PACKAGE

G1000M	Type : FBGA
	Ball : 256 ball
	Size : 14mm X 14mm X 1.4mm
	Pitch : 0.8mm



Contact US

717, 115, Gasan digital 2-ro, Geumcheon-gu, Seoul, Korea
Tel. +82-2-3461-1386 **Fax.** +82-2-3461-1390
 sales@telace.co.kr

(1) It can vary depending on the environment conditions

(2) It depends on platform mode configuration

(3) There may be a limit to the number of channels