



# GPS/GLONASS/QZSS Receiver

## Model: GM-22

WI-RD-D-039 V1.0

UBX-G7020 Single-Chip GPS Receiver Series



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### Introduction:

SanJose's GM-22 module delivers multi-GNSS location capability (GPS, GLONASS, Galileo, QZSS and SBAS) together with high performance u-blox 7 positioning technology. The GM-22 provides exceptional performance with low system power, and is optimized for active antennas.

The GM-22 features the lowest power GLONASS functionality in the industry and is designed for ERA-GLONASS. Sophisticated RF-architecture and interference suppression ensure maximum performance even in GPS-hostile environments.

### Features:

- Multi-GNSS engine for GPS, GLONASS, Galileo and QZSS
- Combines low power consumption and high sensitivity
- UART, USB interfaces
- up to 10Hz Navigation Update rate
- Timepulse configurable
- Wide working Voltage range 1.8 ~ 3.3V
- Excellent sensitivity for urban canyon and foliage environments.
- DGPS (WAAS, EGNOS, RTCM) support

### Applications:

- Automotive navigation / Personal positioning and navigation
- Marine navigation / Timing application

[www.sanav.com](http://www.sanav.com)



**Specification:**

PHYSICAL CONSTRUCTION		
GPS Board Dimension	L15.4mm*W13.4mm*H2.95mm	
Weight	<4 gram	
Receiving frequency	1575.42MHZ & 1602MHZ ; C/A code	
Construction	Full EMI shielding	
ENVIRONMENTAL CONDITIONS		
Temperature	Operating: -40 ~ +85 °C	
	Storage: -40 ~ +85 °C	
COMMUNICATION		
Protocol	NMEA, UBX binary	
Signal level	UART/USB	
INTERFACE CAPABILITY		
Standard Output Sentences	GGA, RMC, GSV, GSA, VTG, GLL	
PERFORMANCE		
	GPS	GLONASS
Sensitivity	-162dBm (Tracking)	-158 dBm (Tracking)
Acquisition	1 sec. typical (hot start)	3 sec. typical (hot start)
	5 sec. typical (aided start)	n.a.
	29 sec. typical (cold start)	30 sec. typical (cold start)
Position accuracy	2.5 m <sup>1</sup> CEP	4.0m
Receiver architecture	56-channel u-blox 7 engine GPS L1C/A SBAS L1C/A QZSS L1C/A Galileo E1B/C <sup>2</sup>	
Accuracy of time pulse signal	RMS	30ns
	99%	60ns
Velocity	500 m/s	
Altitude	50,000m (Maximum)	
Update Rate	1Hz(Default) max up to 10Hz	
Power Supply	1.8V~3.3V	
Power Consumption	48 mA @ 3.3 V (Continuous)	
Baud Rate	9600 bps (default)	
	Optional: 4800/19200/38400/115200 bps are adjustable	

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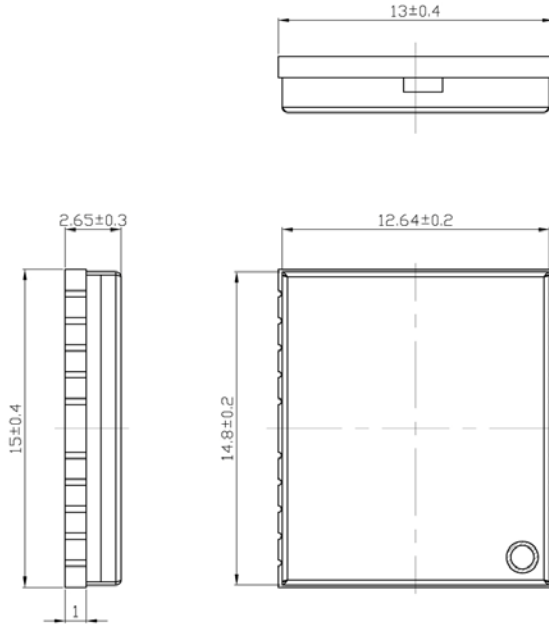
\*<sup>1</sup> CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

\*<sup>2</sup> Ready to support GALILEO E1B/C when available



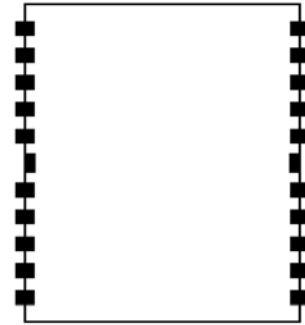


**Dimension:**



**PCB outline**

PCB外框焊點位置



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