GNSS 3D Dead-Reckoning Receiver

Model: GM-44DR

WI-RD-D-066 V1.0

GNSS 3D Automotive Dead-Reckoning (ADR) receiver for road vehicle application.

Overview:

The GM-44DR Receiver combines new generation of concurrent GNSS solution and 3D automotive Dead Reckoning (ADR) technology. With 3D accelerometer, gyroscope sensor, and speed pulse input, GM-44DR deliver continuous positioning for road vehicles during periods of signal loss such as in tunnels and parking garages.

The GM-44DR GNSS Receiver/ Smart Antenna has low profile, robust and waterproof enclosure with metallic bottom. It interfaces to a RS-232 serial comm. port of your computing device that utilizes NMEA 0183 data output sentences.

The GM-44DR Locator is with high sensitivity and fast GNSS signal acquisition. In combination with speed information from the vehicle, the inertial navigation solution provides 100% coverage indoor/outdoor vehicle positioning during large multi-path related environments.

Features:

- 100% indoor/outdoor vehicle positioning
- 3-axis accelerometer and gyroscope sensor included
- Metallic base to enhance the grounding

Applications:

- GNSS navigation for 3D positioning
- AVL applications
- Inertial navigation

Specification:

PHYSICAL CONSTRUCTION			
Dimension	56mm (Diameter) x 21.8 mm (Height)		
Weight	<87 gram		
Receiving frequency	1575.42MHZ & 1602MHZ ; C/A code		
Enclosure	Highly impact; corrosion-proof		
Mounting	Roof mount		
Construction	Full EMI shielding		
ENVIRONMENTAL CONDITIONS			
Temperature	Operating: -20 ~ +60 ℃		
	Storage: -20 ~ +60 ℃		
COMMUNICATION			
Protocol	NMEA 0183 V4.0, UBX Binary		
Interface	RS-232		
INTERFACE CAPABILITY			
Standard Output Sentences	GSV,GGA,RMC		
PERFORMANCE			
Built-in Antenna	Highly-reliable ceramic patch		
Sensitivity		GPS & GLONASS	GPS
	Tracking & Navigation	-160 dBm	-160 dBm
	Cold starts	-147 dBm	-147dBm
	Hot starts	-156 dBm	-156 dBm
SBAS	WAAS, EGNOS, MSAS		
Receiver architecture	72 parallel channels GPS L1C/A, SBAS L1C/A, QZSS L1C/A GLONASS L1OF, Galileo E1B/C		
Start-up time *		GPS & GLONASS	GPS
	hot start	1.5 s	1.5 s
	cold start	27 s	30 s
	Aided start	4 s	3 s
Position accuracy*	Without aid: 2.5 CEP	SBAS: 2.0 m	

Velocity Velocity accurac	500 m/s 0.05 m/s
Altitude	50,000m (Maximum)
Update Rate	1 Hz
Power Supply	8~35V
Power Consumption	55 mA @ 12V
Baud Rate	115200 bps
POWER CABLE	
Length	7m

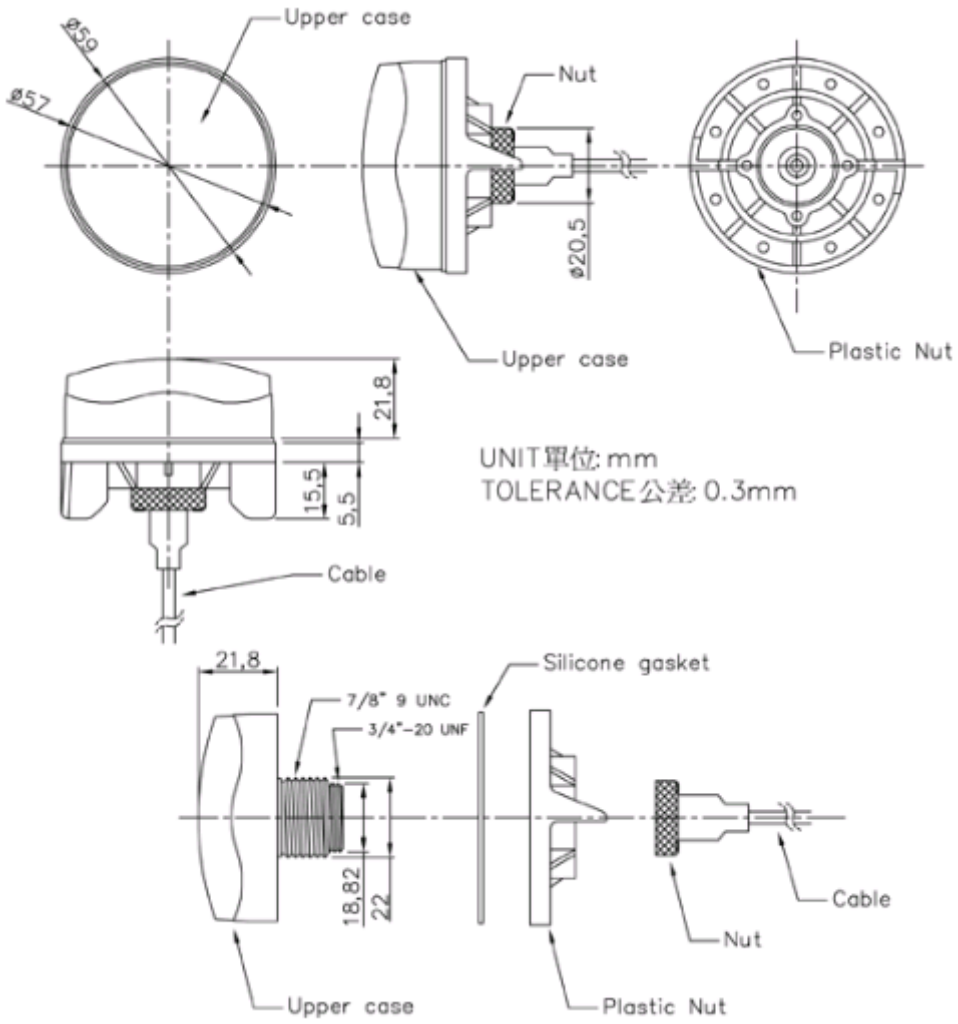
*GNSS fix available, CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

Speed pulse inputs wheel (speed) tick resolution : ≦40 cm/tick

Wheel tick specification : Accepts 3.3V or 12V logic.

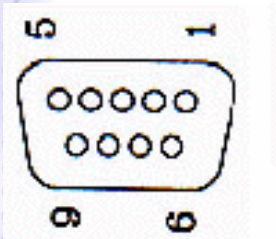
Transition threshold will be 0.8V to 2.0V

Mechanical Diagram:



Pin Assignment:

DB-9 Female



Pin1=n/c
Pin2=RXD
Pin3=TXD
Pin4=n/c
Pin5=GND
Pin6=n/c
Pin7=WHEELTICK
Pin8=Forward
Pin9=12V