



Product Name: GR-19W GNSS Receiver (RS-422)

Part Number: H2A3GR19000000

Features:

- U-blox 10 engine
- Maximum position availability with concurrent reception of 4 GNSS
- Low profile, Robust, IPX7 Water proof enclosure, Magnetic Mount
- Ultra low power consumption without compromising GNSS performance
- Excellent Tracking Sensitivity, -167dBm
- Advanced spoofing and jamming detection
- Quick Time-to-First-Fix Cold Start
- RoHS & REACH Compliant

Applications:

- Vehicle navigation
- Agriculture Machinery Tracking
- Robotic/Autonomous Application

GR-19W GNSS Receiver (RS-422)

MODEL: GR-19W

I. Specifications:

Items	Specifications
Application Bands	GPS
Frequencies (MHz)	1575.42
Efficiency (%)	84.92
Average Gain (dBi)	-0.71
Peak Gain (dBi)	6.44
Axial Ratio	4.18
V.S.W.R	< 2
Return loss	< -10
Test Condition	With housing
Impedance (Ω)	50
Polarization	R.H.C.P. (Right-Handed Circular Polarization)
Physical Construction	
Dimension (mm)	ϕ 115.00(D) x 75.20(H)
Weight	226 grams without cable
Case Material	High-impact plastics
Environmental Conditions	
Temperature ($^{\circ}$ C)	Operating: -30 ~ +80
	Storage: -40 ~ +80
ESD Protection (IEC 61000-4-2 level 4)	\pm 8 KV (Contact discharge)
	\pm 15 KV (air discharge)
Communication	
Protocol	NMEA 0183
Interface	RS422

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Interface Capability	
Output Sentences (Optional)	RMC (1sec)
Baud Rate	4800bps
Performance	
Built in Antenna element	High-reliability ceramic patch
Receiver type	u-blox M10 receiver GPS L1 C/A, QZSS L1 C/A L1S, SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGA
Sensitivity	Tracking and nav. -167 dBm
TTFF*	Cold start 28 sec. Typical Hot start 1 sec. Typical Aided start 1 sec.
Position accuracy**	1.5 m CEP
Velocity accuracy ***	0.05 m/s
Nav update rate	1Hz
Accuracy of time pulse signal	RMS 30ns 99% 60ns
Input Voltage	8 ~ 35V
Power Consumption	Typical 72mA @ 12V

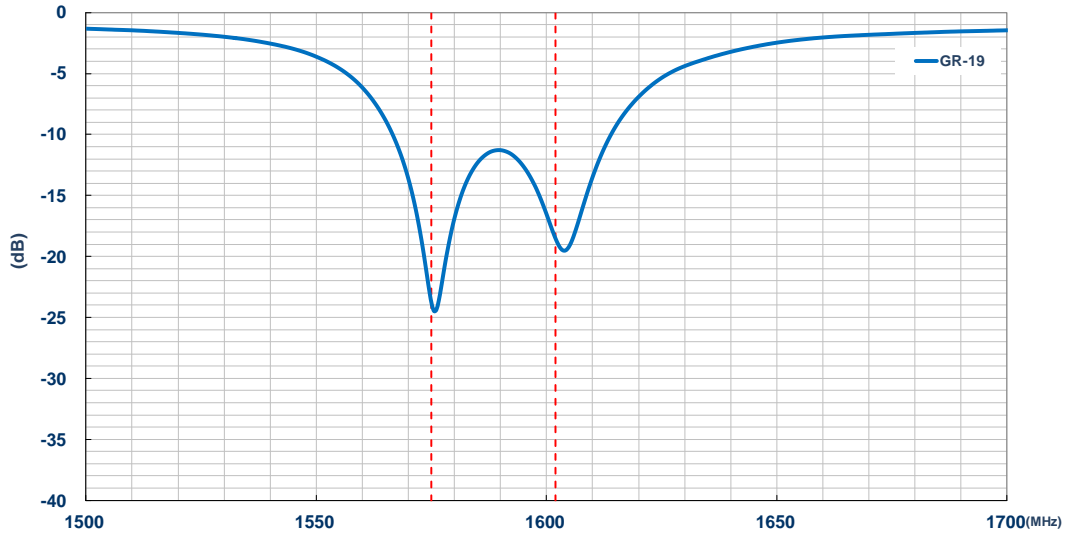
*All satellites at -130 dBm, > 6 SVs · Use u-blox u-center test

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

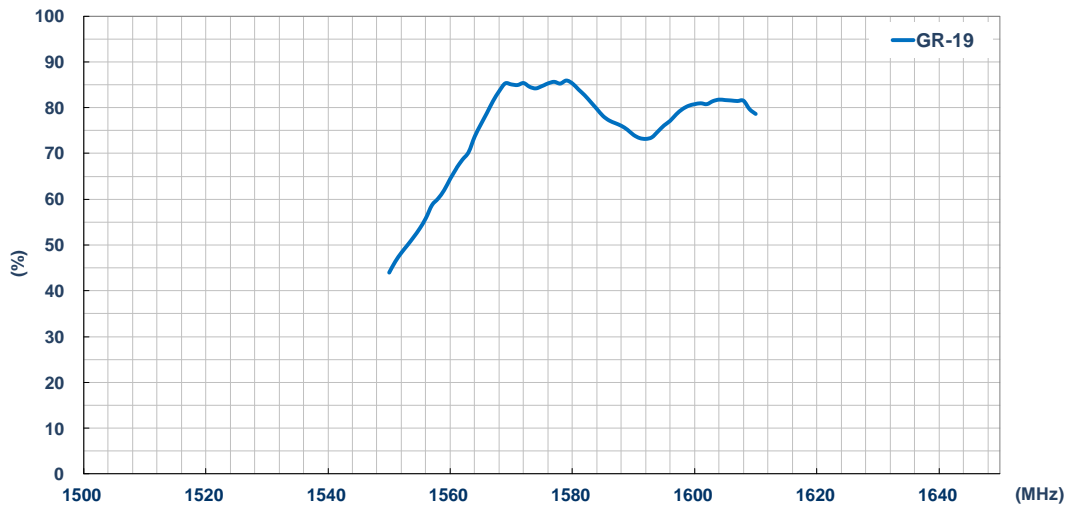
*** 50% @ 30 m/s

II. Antenna Technical Parameters:

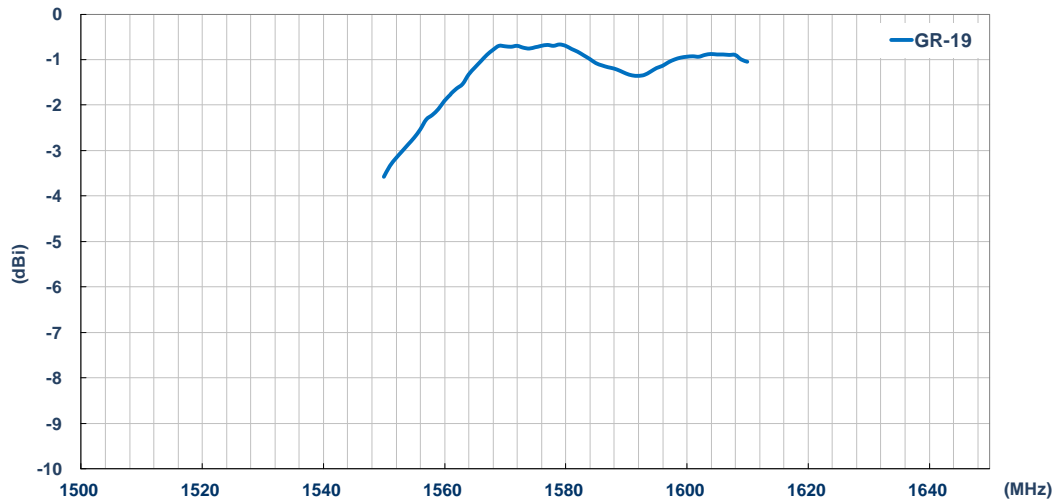
S11 parameters (dB):



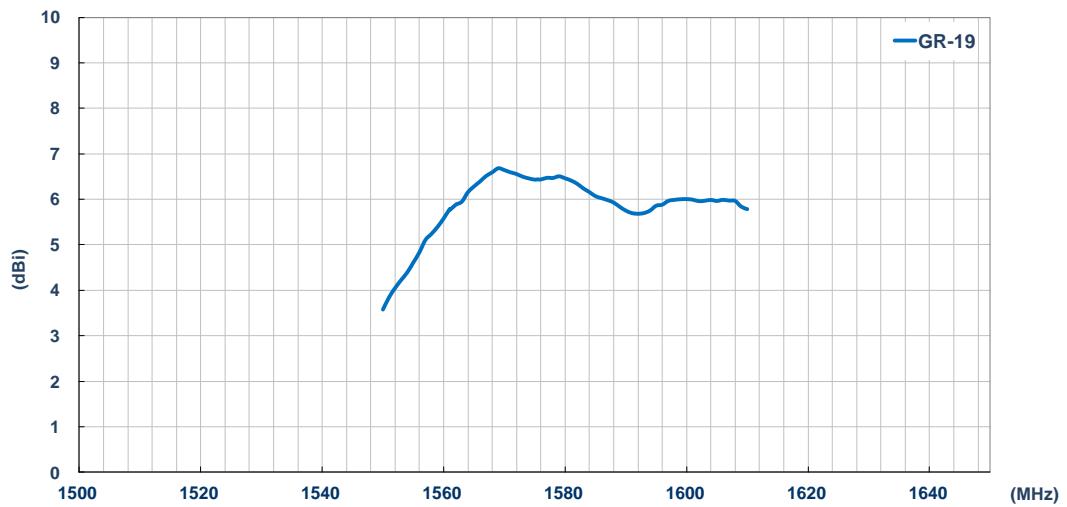
Efficiency (%):



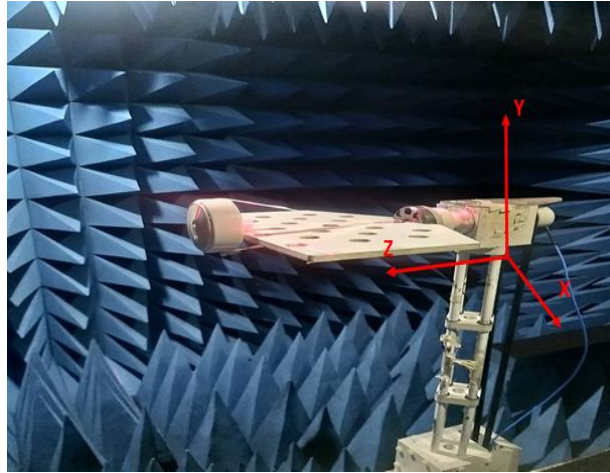
Average Gain (dBi):



Peak Gain (dBi):

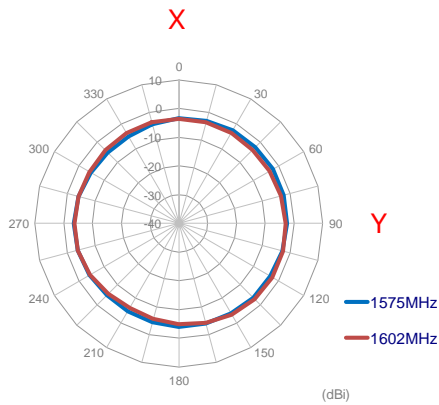


III. Antenna Radiation Pattern Measurement:

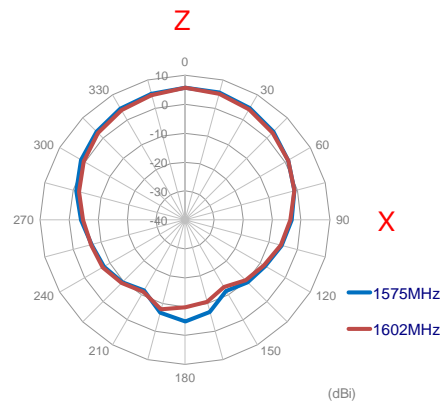


IV. 2D Radiation Pattern

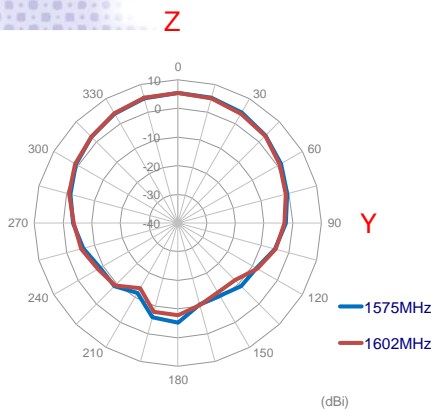
X-Y plane



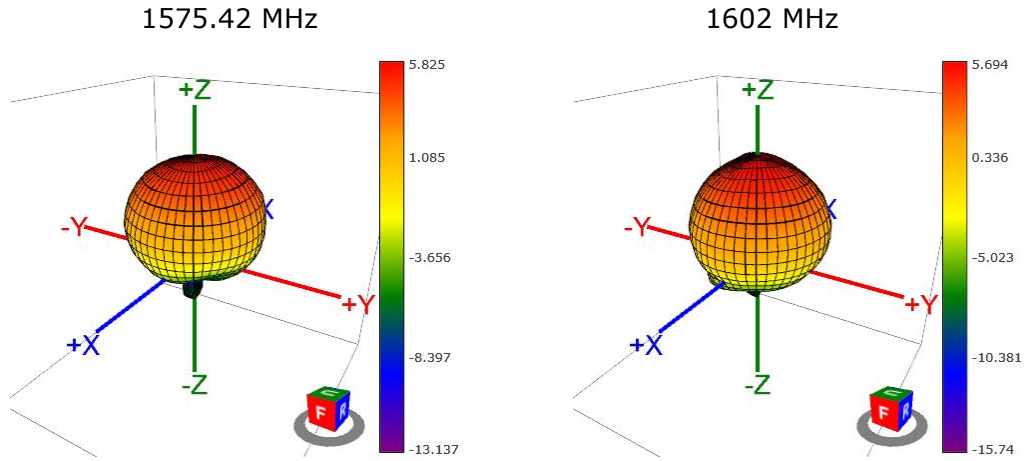
X-Z plane



Y-Z plane

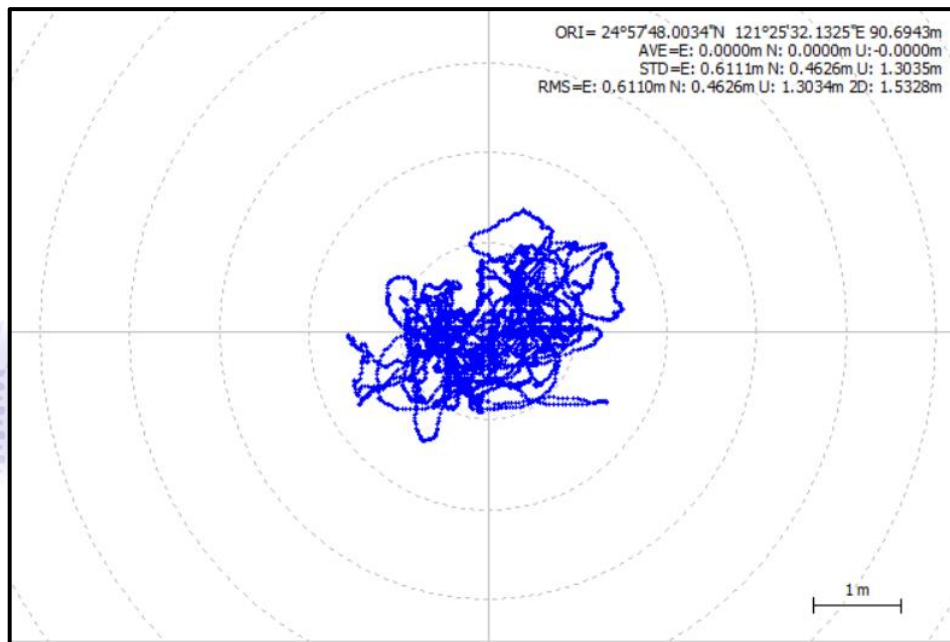


V. 3D Radiation Pattern



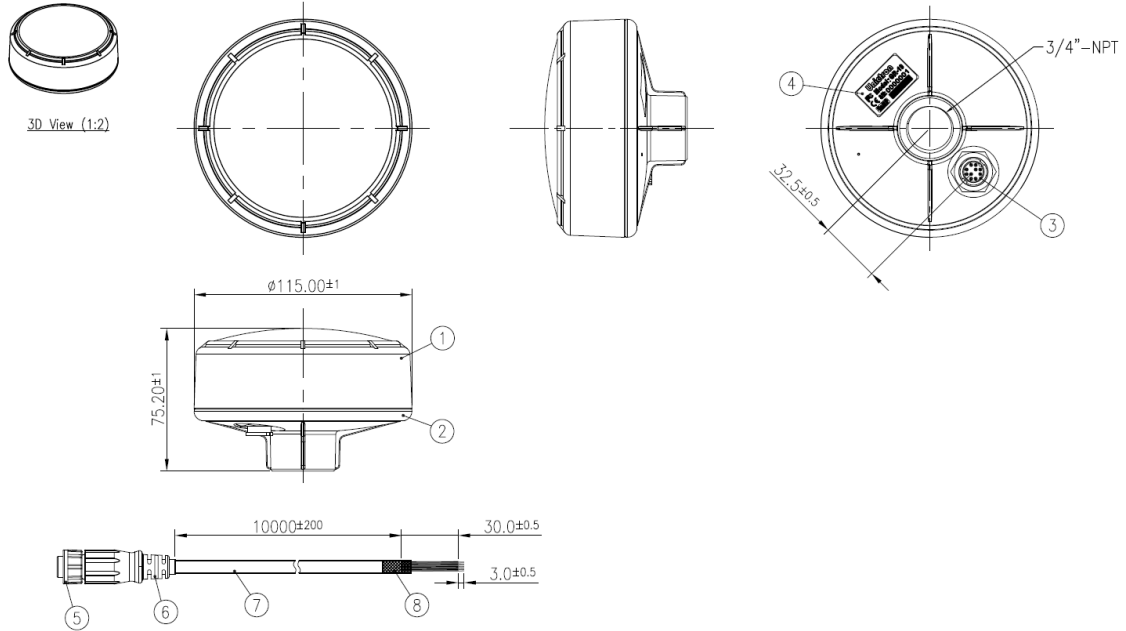
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VI. Horizontal Position Accuracy



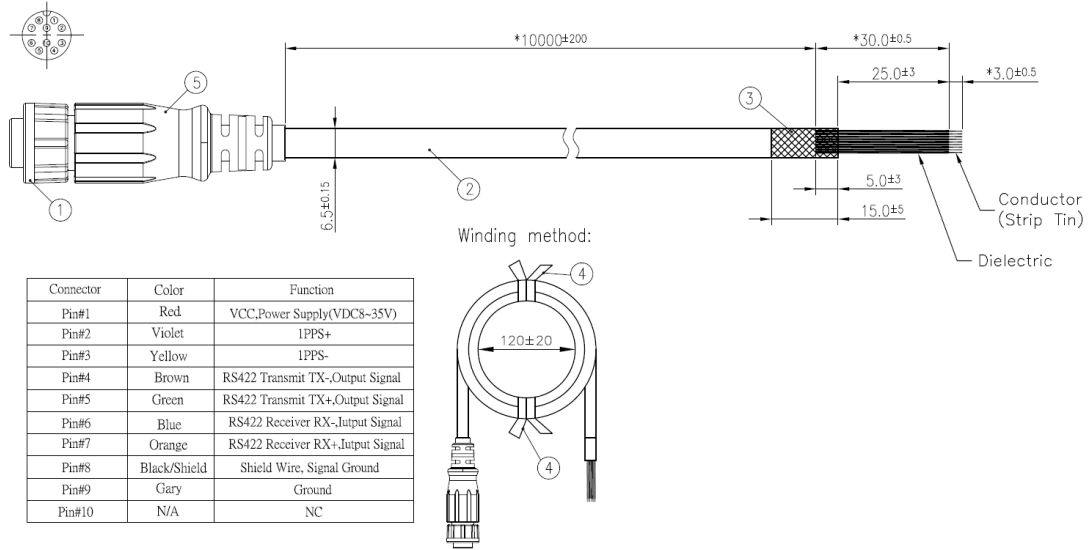
*CEP=0.6386 m

VII. Mechanical Drawing (Unit:mm):



8	Heat Shrink Tube	EVA	Black	1
7	UL2464 24AWGx9C	PVC	Black	1
6	Molding	PVC	Black	1
5	10-Pin Connector (F)	PA66	Black	1
4	Label	PET	Silver	1
3	10-Pin Connector (M)	PA66	Black	1
2	Bottom Housing	PBT+PC	White	1
1	Top Housing	PBT+PC	White	1
No	NAME	MATERIAL	FINISH	Q'TY

Cable



Connector	Color	Function
Pin#1	Red	VCC,Power Supply(VDCS-35V)
Pin#2	Violet	1PPS+
Pin#3	Yellow	1PPS-
Pin#4	Brown	RS422 Transmit TX-,Output Signal
Pin#5	Green	RS422 Transmit TX+,Output Signal
Pin#6	Blue	RS422 Receiver RX-,Input Signal
Pin#7	Orange	RS422 Receiver RX+,Input Signal
Pin#8	Black/Shield	Shield Wire, Signal Ground
Pin#9	Gray	Ground
Pin#10	N/A	NC

5	Molding	PVC	Black	1
4	Twist Tie	PVC	Black	2
3	Heat Shrink Tube	EVA	Black	1
2	UL2464 24AWG9C Double isolation	PVC	Black	1
1	Connector 10 pin	PA-66	Black	1
No	NAME	MATERIAL	FINISH	Q'TY

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