

MAN1216Q43-960

RTK Antenna For GNSS

MECSINE 兆赫

RTK Antenna

For L1/L2/L5 G1/G2 B1/B2/B3 E1/E5

MAN1216Q43-960

37 x Φ 47.04 mm

All Use For RF & Microwave

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FEATURES

1. Integrated design of RTK positioning module and helical antenna.
2. Light weight less than 30g.
3. Multi-constellation, multi-frequency support.
4. Wide-voltage input.



DESCRIPTION

The MAN1216Q43-960 is an intelligent positioning antenna that integrates an RTK engine, a helical antenna, and a geomagnetic sensor in a single, compact housing. It simultaneously tracks satellite signals from multiple global navigation satellite systems to deliver centimeter-level RTK accuracy. The MAN1216Q43-960 is ideal for high-precision applications such as UAVs, robotic mowers, handheld devices, high-accuracy GIS, precision agriculture, and autonomous driving.

MECHANICAL

Characteristic	Specification	Units
Weight	22	g
Dimensions	37 x Φ 47.04	mm
Connector	GH1.25-8P	
Interface Pin Order	1:GND 2:TX2 3:RX2 4:SDA 5:SCL 6:TX1 7:RX1 8:VCC	

- 2~5 Pin: keep open if not used.

ENVIRONMENTAL

Characteristic	Ratings	Units
Operating Temperature Range	-40~+85	°C
Storage Temperature Range	-40~+85	°C
Humidity	95	%

ANTENNA CHARACTERISTICS

Item	Specification	Units
Signal Received	GPS	L1, L2, L5
	GLONASS	G1, G2
	BDS	B1I, B1C, B2a, B2b, B3I
	Galileo	E1, E5a, E5b
	QZSS	L1, L2C, L5
Characteristics Impedance	50 (Nominal)	Ω
Polarization	RHCP	
Covering Range	360	°
Peak Gain	2.5	dBi
Out Put VSWR	≤ 2	:1
Axial Ratio (dB)	≤ 3	dB

- Ta: +25 $\pm$ 5°C

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AMPLIFIER CHARACTERISTICS

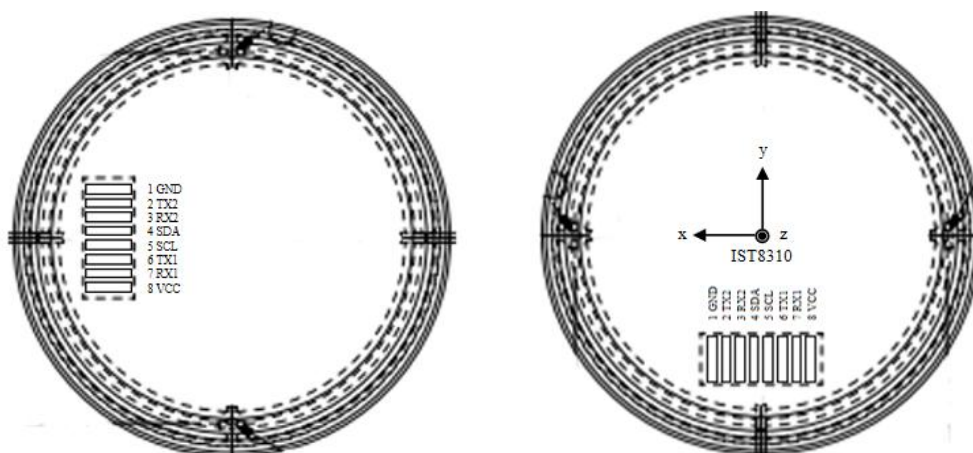
Item	Min.	Typ.	Max.
Gain (dB)		23	
Noise Figure (dB)		1.5	2
Output VSWR (:1)			2

- Ta: +25±5°C

SYSTEM SPECIFICATIONS

Item	Specification	Units
Positioning Module	UM960	
Geomagnetic Sensors	IST8310	
Operation Voltage	5 (3.3-16)	V
Power Consumption	500 (Typical)	mW
Single Point Accuracy (RMS)	Horizontal: 1.5; Vertical: 2.5	m
DGPS Accuracy (RMS)	Horizontal: 0.4; Vertical: 0.8	m
RTK Accuracy (RMS)	Horizontal: 0.8 + 1ppm; Vertical: 1.5 + 1ppm	cm
Time Accuracy (RMS)	20	ns
Velocity Accuracy (RMS)	0.03	m/s
Time To First Fix	Cold Start < 30	s
Initialization Time	< 5 (Typical)	s
Initialize Reliability	> 99.9	%
Data Update Rate	20	Hz
Differential Data	RTCM2.3, RTCM 3.x, CMR	
Data Format	NMEA-0183; Unicore	

SHAPES AND DIMENSIONS

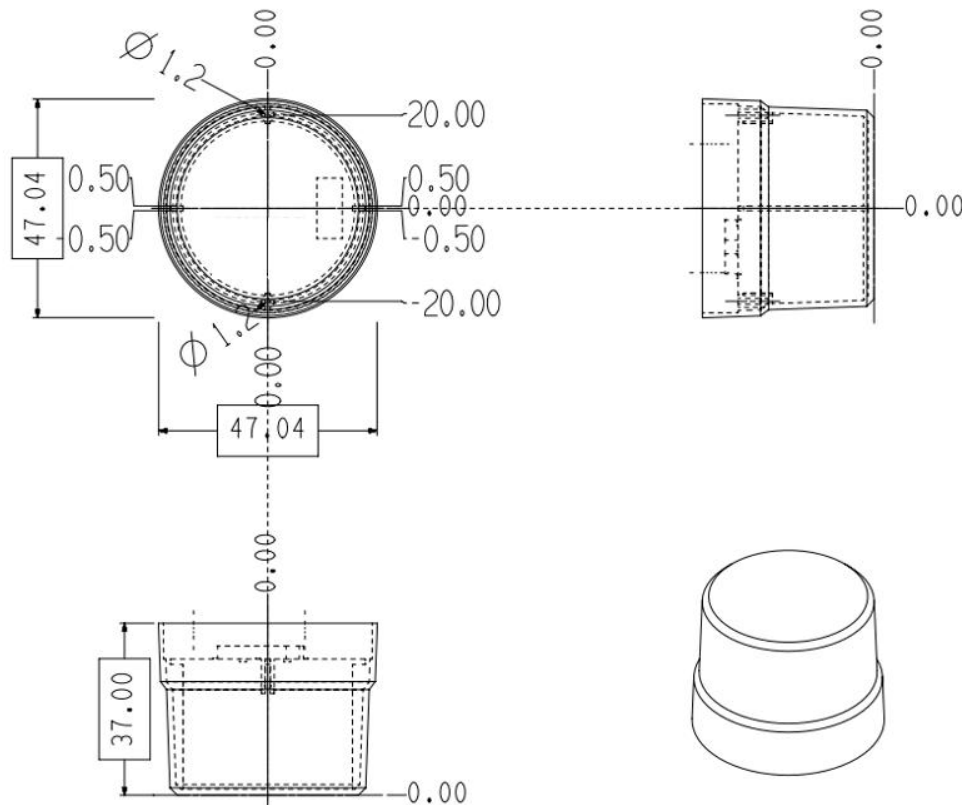


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Units: mm

Revision	Description	Date
Rev0	Preliminary	2025/9/3

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