

MAN1216Q43-1612F5RK

RTK Antenna For GNSS

MECSINE 兆赫

RTK Antenna

For L1/L5 G1 B1/B2a E1/E5a

MAN1216Q43-1612F5RK

37 x Φ 47.04 mm

All Use For RF & Microwave

Shenzhen Megsine technology co., ltd www.megsine.com sales@megsine.com may contain us for future information
Feb. 03, 2024

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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 MAN1216Q43-1612F5RK is an intelligent positioning antenna that integrates an RTK positioning module, a helical antenna, and a geomagnetic sensor into a single, compact design. Supporting multi-constellation, dual-frequency RTK positioning, it delivers centimeter-level accuracy for a wide range of applications—including LBS, PND, in-vehicle navigation systems, and mobile communication devices.

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 (NC) 3:RX2 (NC) 4:SDA 5:SCL 6:TX1 7:RX1 8:VCC	

- 2-3 Pin: No Connection; 4~5 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, L5
	GLONASS	G1
	BDS	B1I, B1C, B2a
	Galileo	E1, E5a
	QZSS	L1, 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

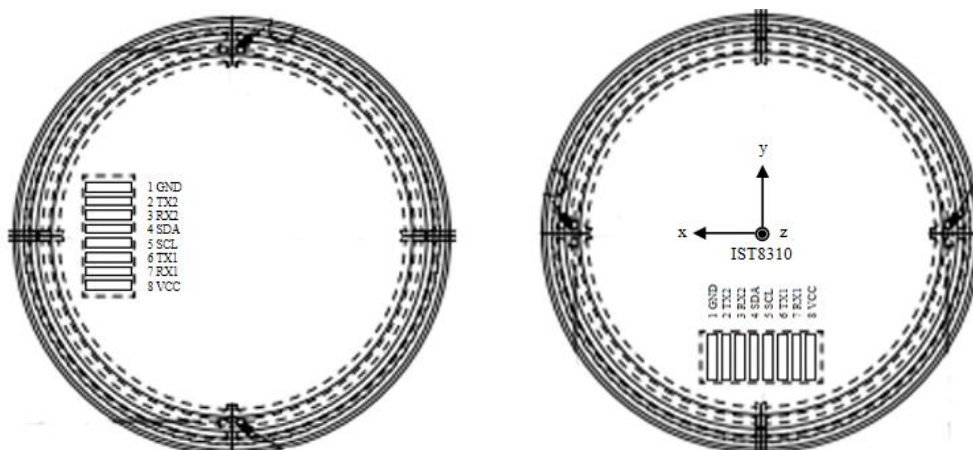
Item	Min.	Typ.	Max.
Gain (dB)		23	
Noise Figure (dB)		1.5	2
Output VSWR (:1)			2

- Ta: +25±5°C

SYSTEM SPECIFICATIONS

Item	Specification	Units
Positioning Module	SY-1612F5RK-BKGB	
Geomagnetic Sensors	IST8310	
Operation Voltage	5 (3.3-16)	V
Power Consumption	150 (Typical)	mW
Sensitivity (GNSS)	Cold Start: -148; Re-acquisition: -159; Tracking: -165	dBm
RTK Accuracy (RMS)	Horizontal: 1 + 1ppm; Vertical: 2 + 1ppm	cm
Time Accuracy (RMS)	20	ns
Velocity Accuracy	0.05	m/s
Time To First Fix	28 (Typical)	s
GNSS Operating limit	Velocity: 515m/s; Altitude: 18000m	
Data Update Rate	10 (Maximum)	Hz
Data Format	NMEA 0183 Protocol Ver. 4.00/4.10 Supports batch data report mode	

SHAPES AND DIMENSIONS

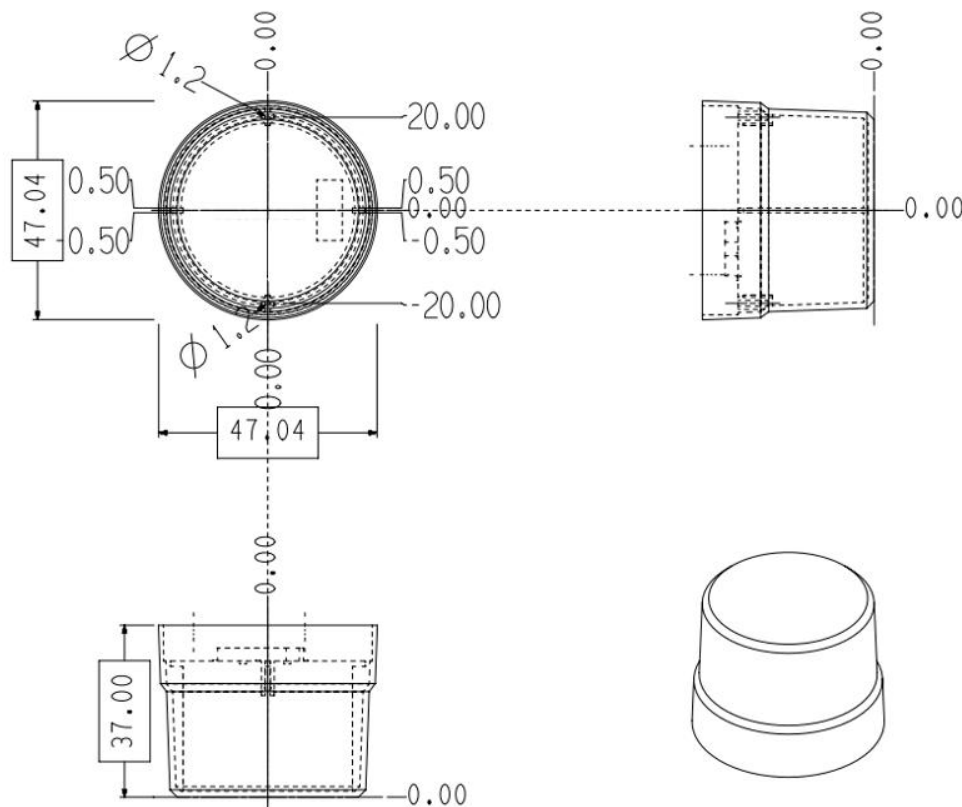


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Units: mm

Revision	Description	Date
Rev0	Preliminary	2025/10/13

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