

MAN1216Q43-1020

RTK Antenna For GNSS

MECSINE 兆讯

RTK Antenna

For L1/L5 G1 B1/B2a/B2b E1/E5a/E5b

MAN1216Q43-1020

37 x Φ 47.04 mm

All Use For RF & Microwave

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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 MAN1216Q43-1020 is a smart positioning antenna that integrates an RTK engine, helical antenna and geomagnetic sensor in one compact unit. Delivering dual-frequency RTK performance for all constellations, it is tailored for consumer applications such as handheld devices, in-car navigation and personal tracking.

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, B2b
	Galileo	E1, E5a, E5b
	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

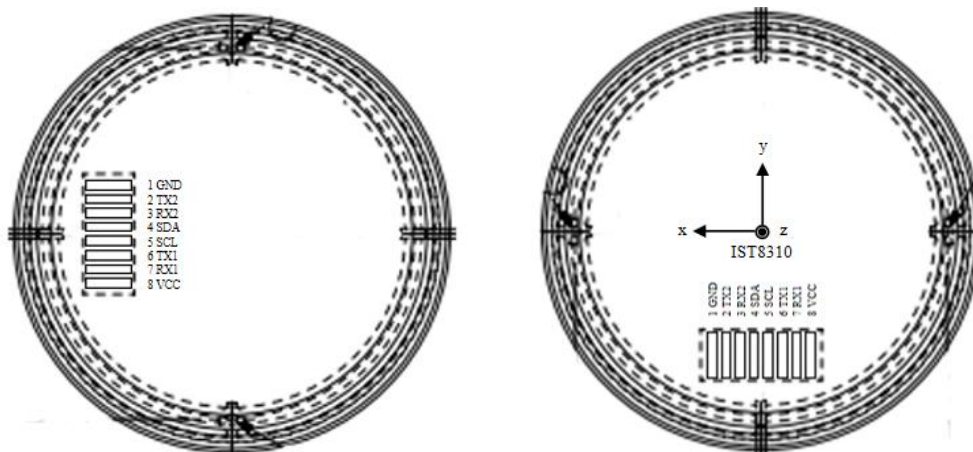
Item	Min.	Typ.	Max.
Gain (dB)		23	
Noise Figure (dB)		1.5	2
Output VSWR (:1)			2

- Ta: +25±5°C

SYSTEM SPECIFICATIONS

Item	Specification	Units
Positioning Module	LB1020	
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
Time To First Fix	26 (Typical)	s
Initialization Time	6 (Typical)	s
Initialize Reliability	> 99.9	%
Data Update Rate	10	Hz
Data Format	RTCM 3.3; NMEA-0183	

SHAPES AND DIMENSIONS

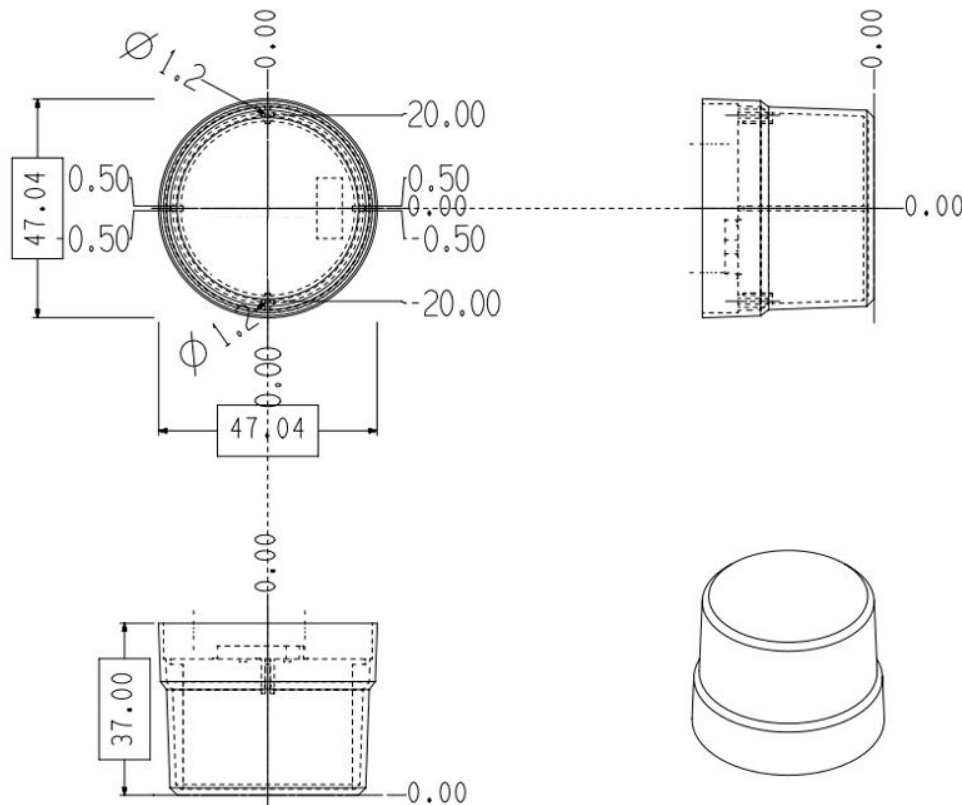


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Units: mm

Revision	Description	Date
Rev0	Preliminary	2025/9/18

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