

MAN1176C103

GNSS Chip Antenna

MECSINE 兆讯

GNSS Chip Antenna

For L5/B2a/E5a

MAN1176C103

10.2x3.1x4 mm

All Use For RF & Microwave

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Feb. 03, 2024

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Applications

1. Satellite communication
2. Navigation and position
3. For L5, B2a, E5a

Features

1. Compact size
2. Omni-directional radiation
3. Tape & reel automatic mounting
4. RoHS compliance (Pb-Free)

Description

The MAN1176C103 is designed for GNSS Antenna. We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

Electrical Specification

Table 1. MAN1176C103 Electrical Specification

Item	Min.	Type	Max.	Unit
Frequency Range	1164		1189	MHz
VSWR	1.1		3	
Efficiency	30		46	%
Peak Gain		0.2		dBi
Polarization		Linear		
Nominal Impedance		50		Ω

• Ta: +25±5°C

Mechanical Specifications

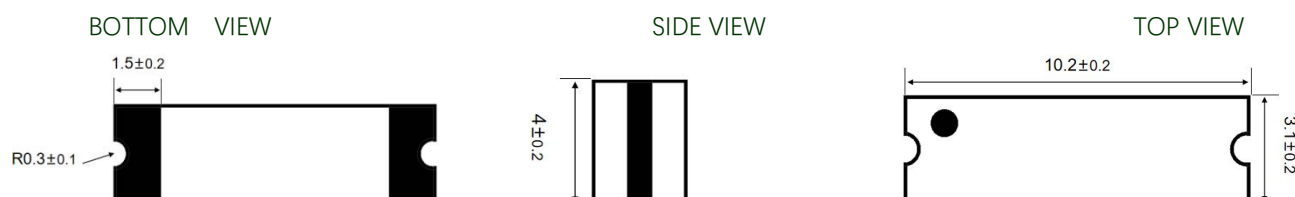
Table 2. MAN1176C103 Mechanical Specification

Item	Min.	Type	Max.	Unit
Antenna Size		10.2*3.1* 4		Mm
Temperature	-40		+85	°C
Operating temperature	-40		+85	°C

• Ta: +25±5°C

Outline Drawing

Figure 1. MAN1176C103 View (Unit: mm)



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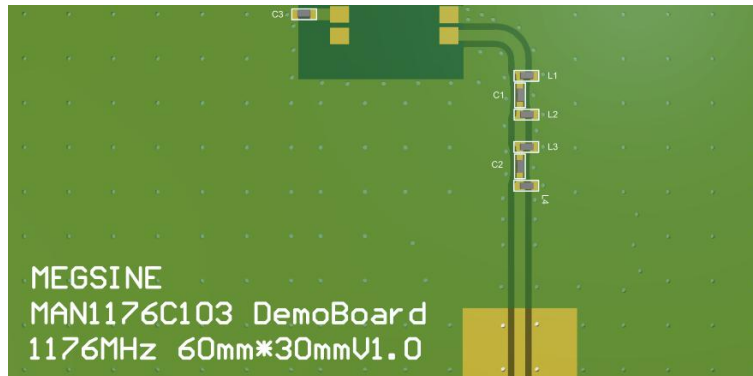
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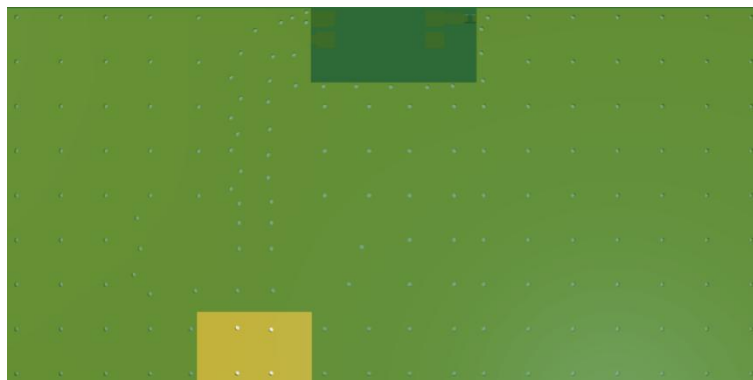
Recommend PCB Layout

Figure 2. MAN1176C103 PCB Layout (Unit: mm) TOP VIEW:



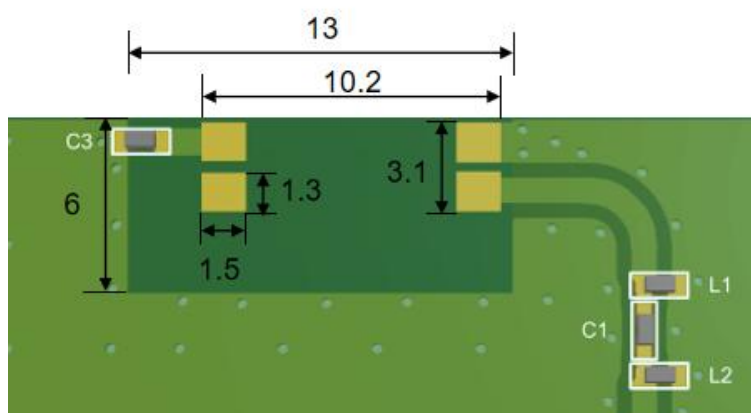
Size 60*30mm

Figure 3. MAN1176C103 PCB Layout (Unit: mm) BOTTOM VIEW:



Size 60*30mm

Figure 4. MAN1176C103 PCB Antenna Layout (Unit: mm)



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Figure 5. MAN1176C103 Matching Circuit (Unit: mm)

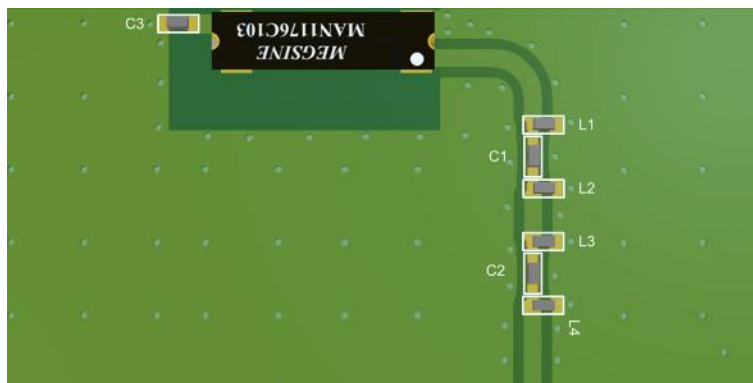
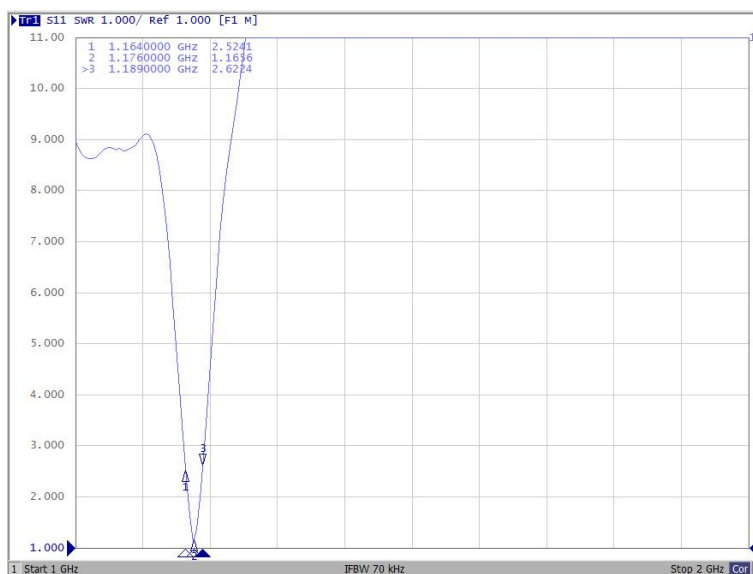


Table 3. MAN1176C103 Matching

Location	Description	Vendor
C1	5pf	MURATA
C2	0Ω	MURATA
C3	6.2pf	MURATA
L1	6pf	MURATA
L2	N/C	N/C
L3	N/C	N/C
L4	N/C	N/C

Typical Performance

Figure 6. MAN1176C103 VSWR



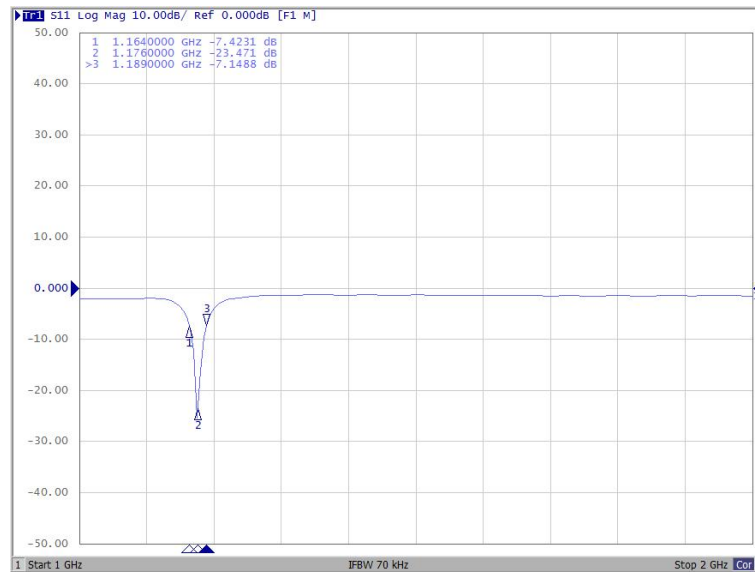
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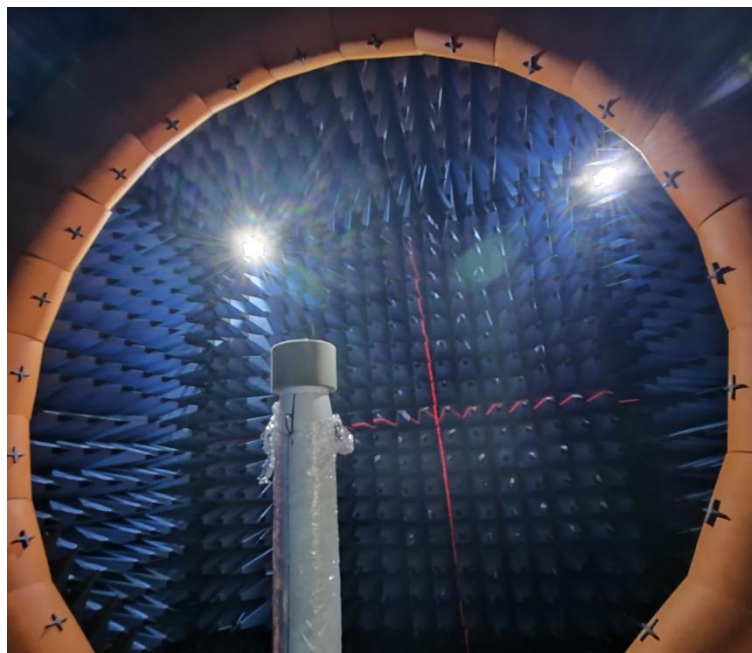
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Figure 7. MAN1176C103 Return Loss



Radiation Pattern & Efficiency & Peak Gain

Figure 8. The Gain pattern is measured in FAR-field chamber



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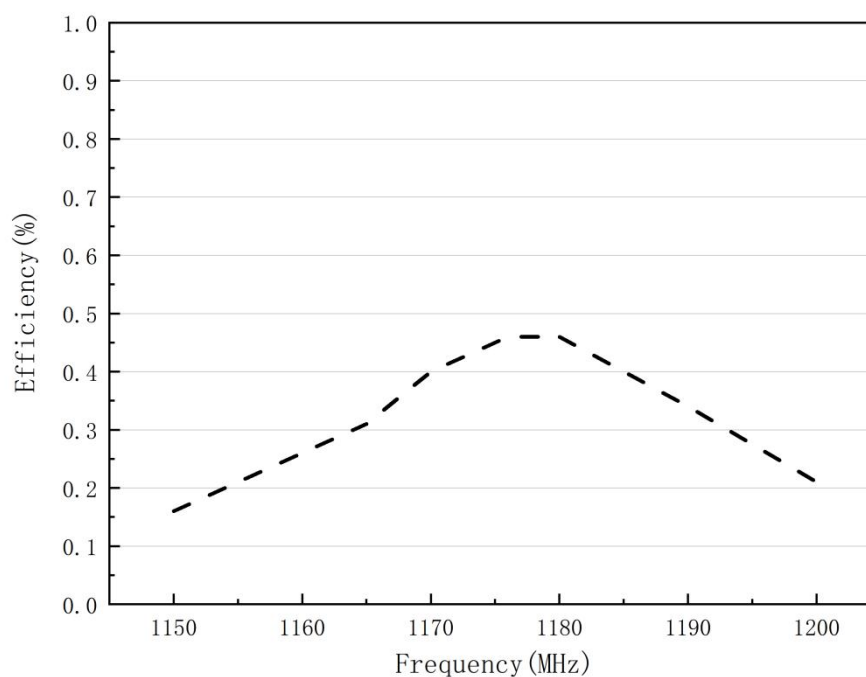
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Table 4. MAN1176C103 Total Efficiency&Peak Gain

Item (MHz)	Efficiency (%)	Peak Gain (dBi)	Avg gain (dB)
1150	16	-4.75	-8.06
1165	31	-1.59	-5.09
1170	40	-0.48	-3.92
1176	46	0.01	-3.39
1180	46	0.22	-3.32
1190	34	-1.49	-4.67
1200	21	-4.03	-6.80

Figure 9. MAN1176C103 Total Efficiency



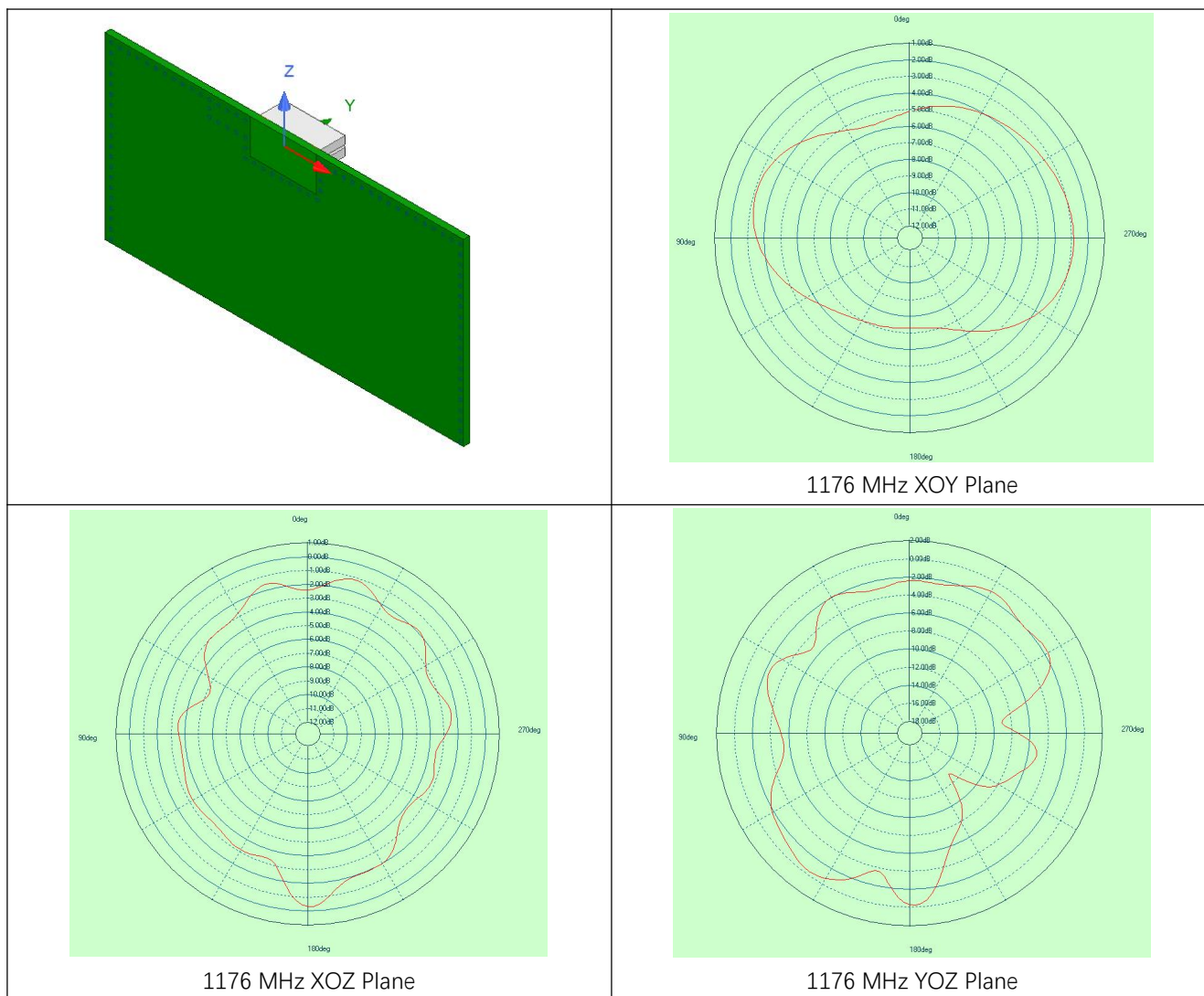
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Figure 10. Radiation Pattern



Packaging and Ordering Information

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Figure 11. Packaging Information

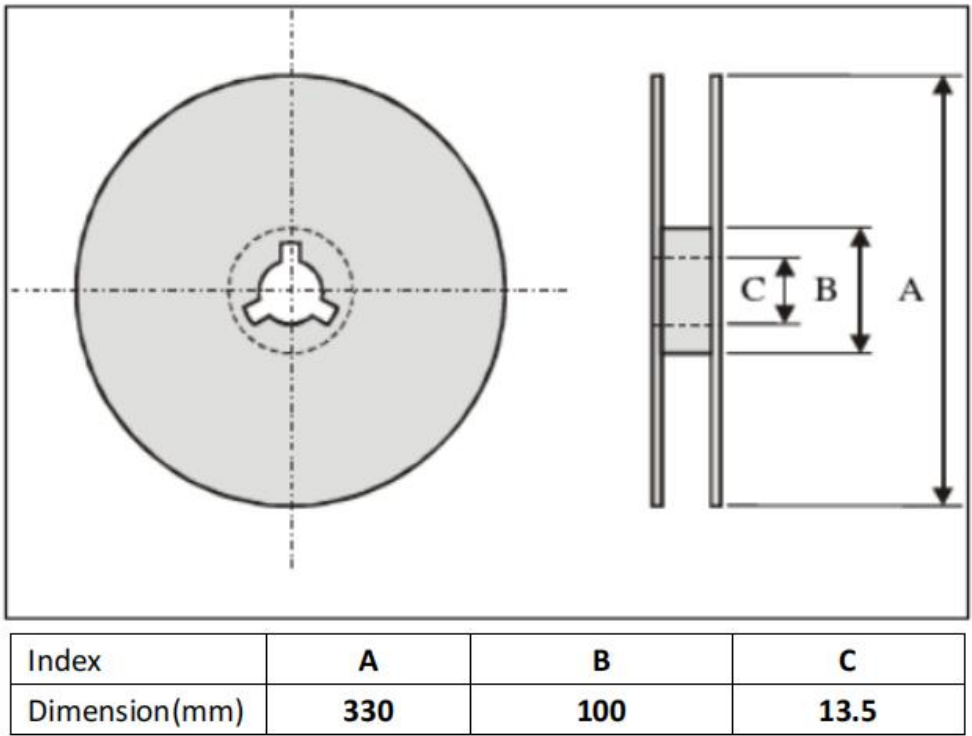
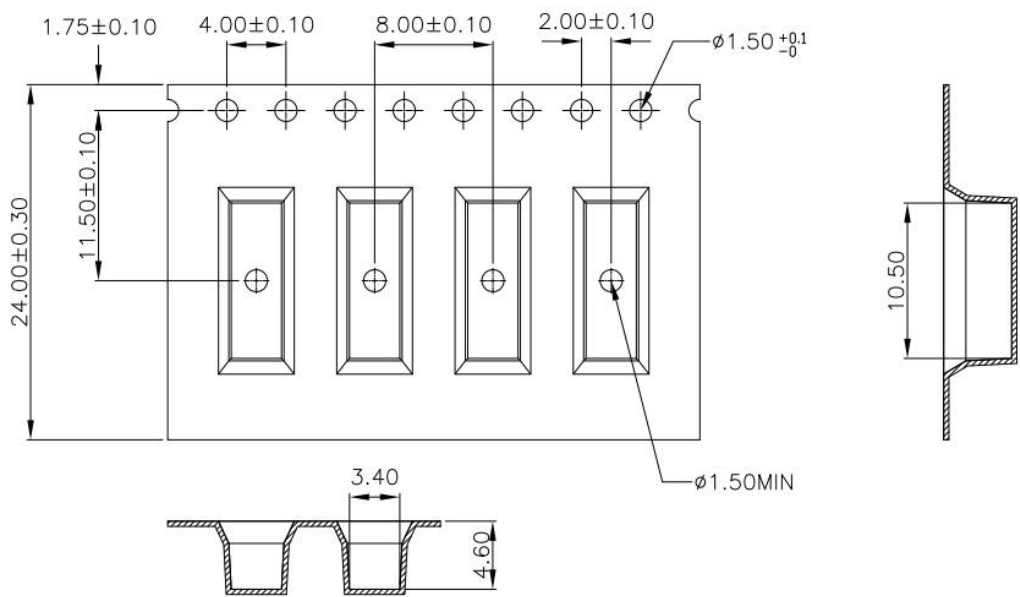


Table 5. Packaging and Shipping

Device	Packaging	Reel	Shipping
MAN1567C103	SMD	13"	1000/Reel

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Revision	Description	Date
Rev0	Preliminary	2024/12/25

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