

OEM GNSS Antenna HX-CSX399A

HX-CSX399A is a embedded full frequency GNSS antenna covering GPS, GLONASS, BDS, GALILEO, and QZSS. It is also compatible with the 4G, meeting the demand for multi-system compatibility in current survey devices. It can be widely used in various applications such as geodetic surveying, marine surveying, channel surveying, dredging surveying, seismic monitoring, bridge deformation monitoring, landslide monitoring, and port container operations.

STABLE PHASE CENTER FOR ROBUST POSITIONING PERFORMANCE

It features multi-point feeding capability, guaranteeing a reliable phase center for millimeter positioning accuracy.

Key Features

- Supports GPS, GLONASS, BDS, Galileo, QZSS
- Supports 4G
- Anti-electromagnetic interference, tracking in complex environments
- Powerful system compatibility, easy for machine integration

TRACKING IN COMPLEX ENVIRONMENTS

This antenna exhibits superior high gain performance with ultralow signal loss, ensuring reliable satellite signal tracking. It also delivers wide beam width that covers wide frequencies with high marginal gain. These features guarantee robust signal availability even in low elevation, making the antenna a perfect option for complex environments with blockage, such as forests and buildings.

RELIABLE STRUCTURE FOR STABLE PERFORMANCE

This antenna uses air dielectric and low-loss microwave board materials. The overall weight is reduced, the structure is more robust, and the electrical performance becomes more stable and reliable.

STRONG ANTI-INTERFERENCE PERFORMANCE

The advanced LNA (Low Noise Amplifier) excels in improved signal filtering and out-of-band rejection, perfectly restraining unwanted electromagnetic interferences. With strong multi-path reduction capacity for strong anti-interference performance, consistent and reliable GNSS signals can be achieved even under complicated environments such as power grids, communication base stations and broadcast stations.

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Specifications

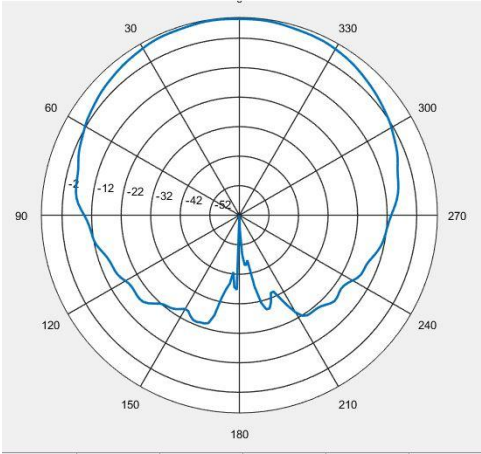
PERFORMANCE	
Signal Received	GPS L1/L2/L5 BDS B1/B2/B3 GLONASS L1/L2/L3 GALILEO E1/E5a/E5b/E6 QZSS L1/L2/L5/L6 IRNSS L5 SBAS L1/L5 L-Band 4G
Nominal Impedance	50 Ω
Polarization	RHCP
Axial Ratio	$\leq 3\text{dB}$
Azimuth Coverage	360°
Output VSWR	≤ 2.0
Peak Gain	GNSS:5.5dBi 4G:0.5dBi
LOW NOISE AMPLIFIER	
LNA Gain	35 $\pm$ 2dB
Noise Figure	L2 $\leq$ 2dB ; L1 $\leq$ 2.5dB

VSWR	≤ 2.0
Passband Ripple	$\pm 2\text{dB}$
Operation Voltage	+3.3 ~ +12VDC
Operation Current	$\leq 45\text{mA}$
Group Delay Ripple	$\leq 5\text{ns}$
MECHANICAL	
Dimensions	170.6*183.5*36.7mm
Weight	$\leq 300\text{g}$
Connector	GNSS:MMCX-JW 4G_1:IPEX1-J 4G_2: IPEX1-J
Mounting	5*M3 screws mount
ENVIRONMENTAL	
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +85°C
Humidity	95% non-condensing

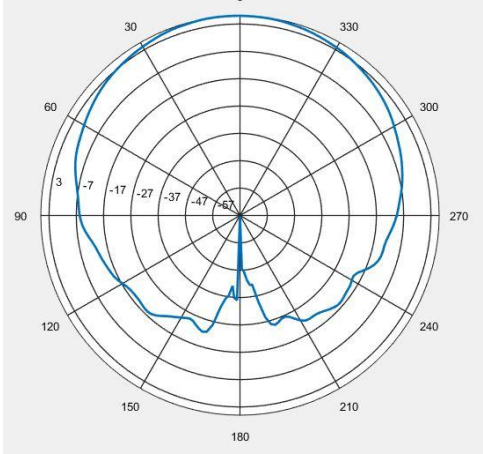
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GNSS Antenna Performance(Only Receive)

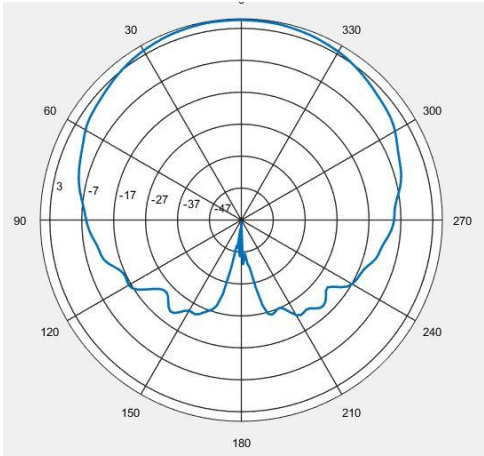
Frequency (MHz)	1165	1175	1205	1230	1270	1540	1560	1575	1610
Gain (dBi)	4.6	4.7	5.4	6.0	5.6	5.5	5.3	5.8	5.8



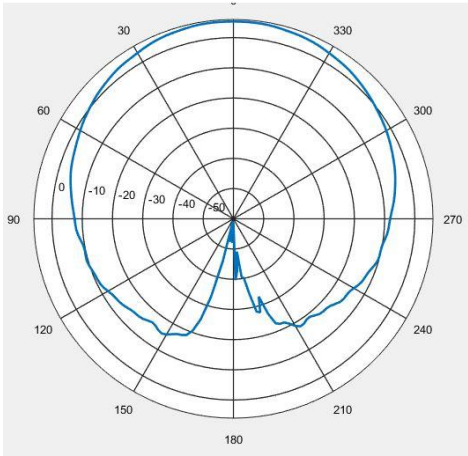
1165MHz



1230MHz

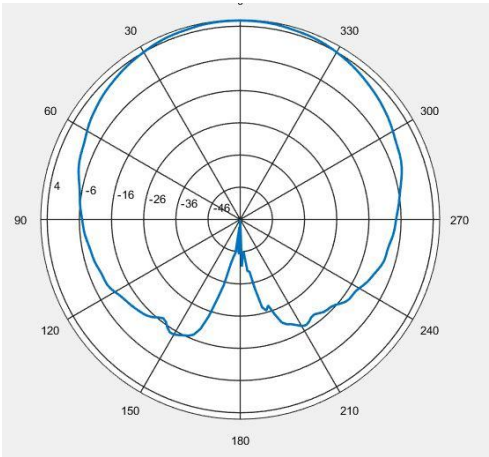


1270MHz

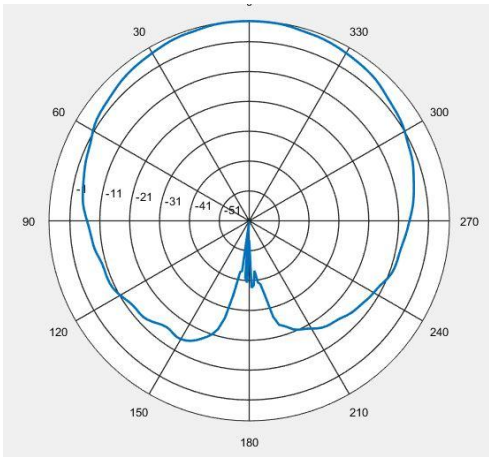


1560MHz

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1575MHz

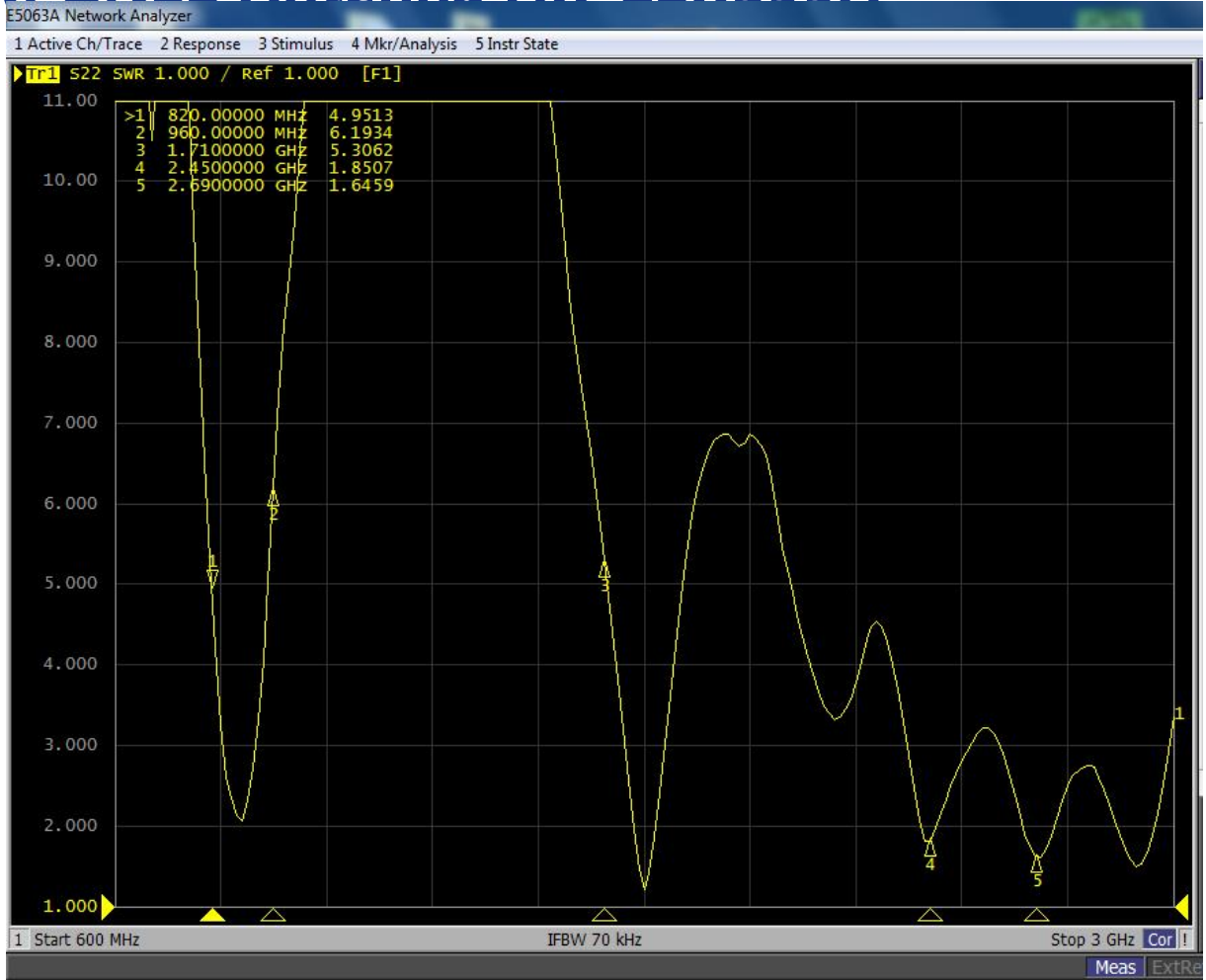


1610MHz

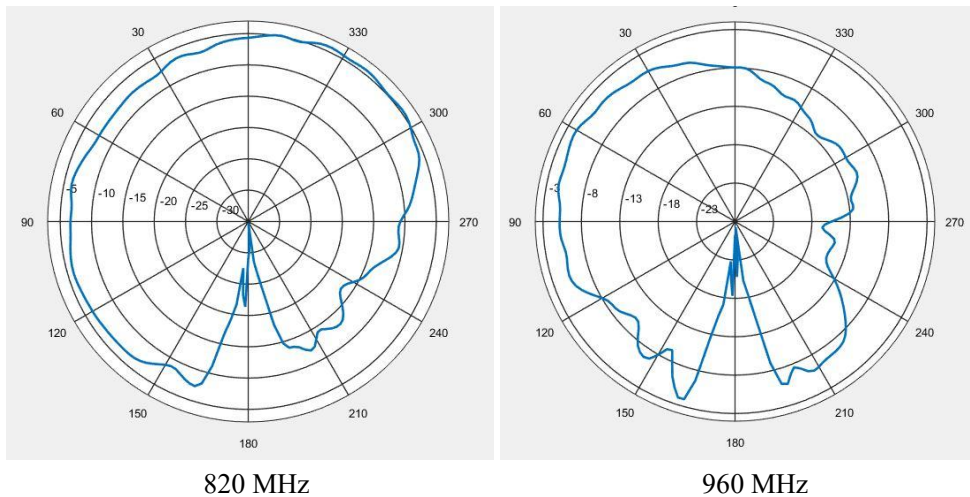
4G Antenna Performance

4G-1 Antenna Performance(Unused)														
Frequency (MHz)	820	890	960	1710	1810	1910	2010	2110	2210	2310	2410	2510	2610	2690
Gain (dBi)	-1.3	1.5	-1.3	1.8	2.8	-0.2	2.4	6.1	-0.3	1.1	0.3	0.3	0.9	2.4

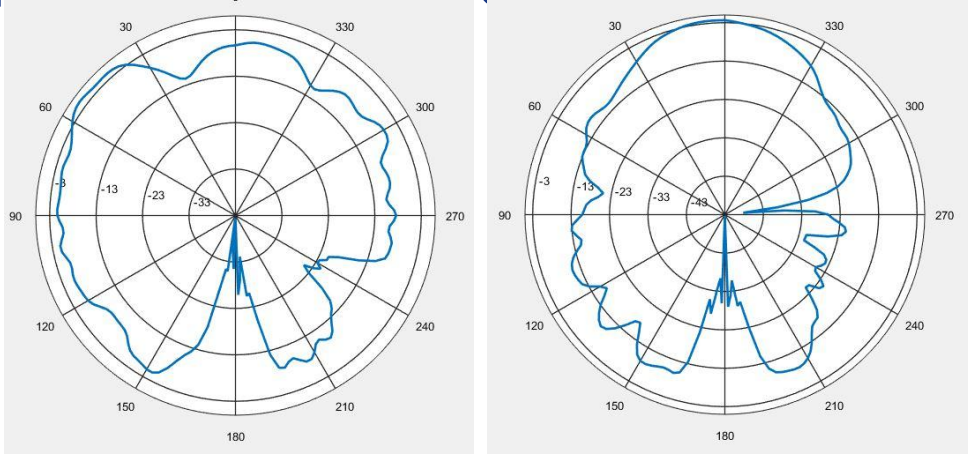
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4G-1 Antenna VSWR

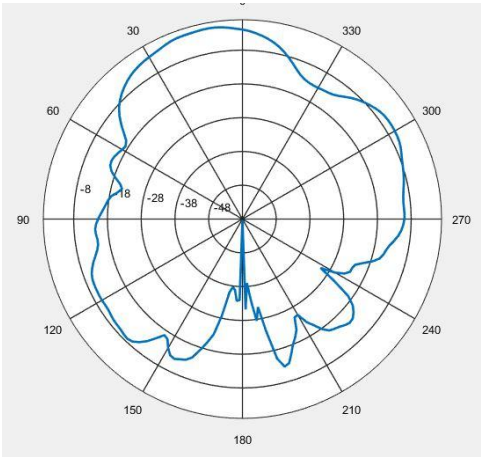


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1710 MHz

2170 MHz

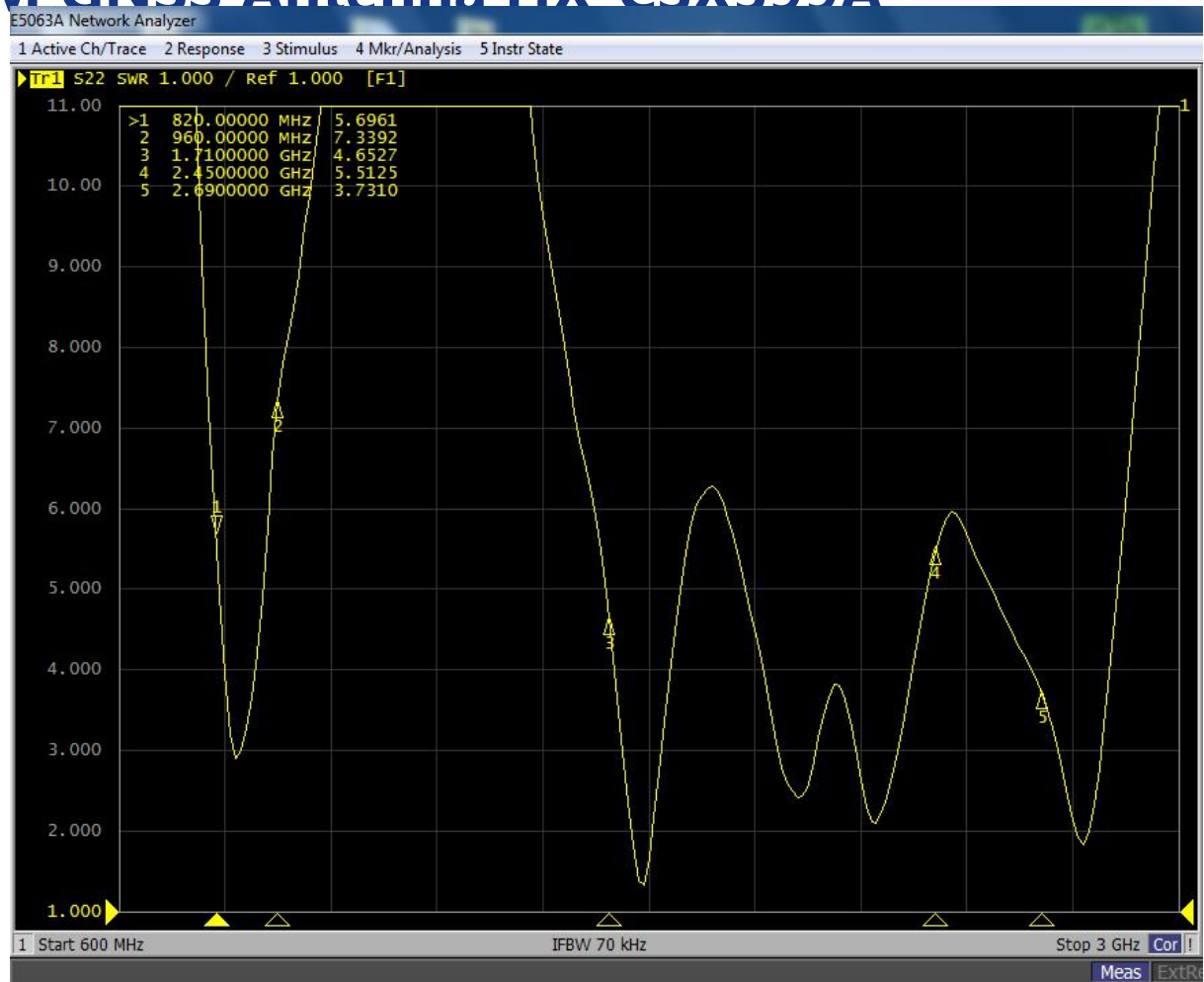


2690MHz

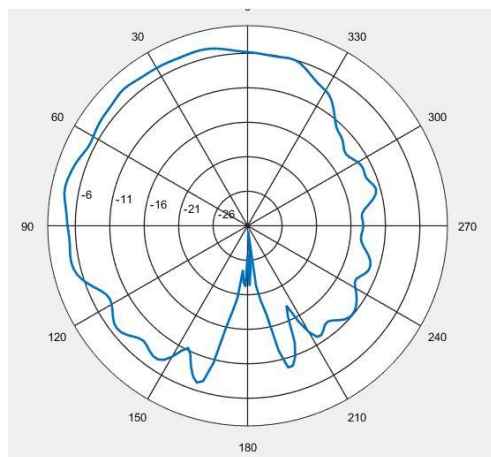
4G-2 Antenna Performance

Frequency (MHz)	820	890	960	1710	1810	1910	2010	2110	2210	2310	2410	2510	2610	2690
Gain (dBi)	-1.7	2.2	-0.6	2.0	3.1	0.7	2.0	3.8	-0.5	0.2	1.2	3.2	4.2	4.6

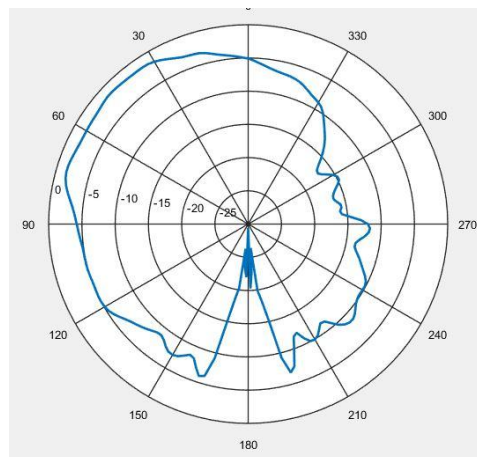
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4G-2 Antenna VSWR

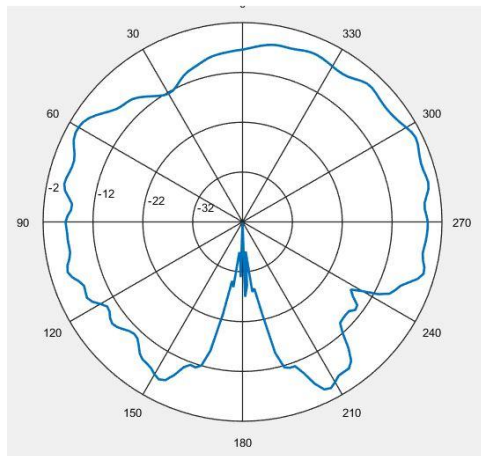


820 MHz

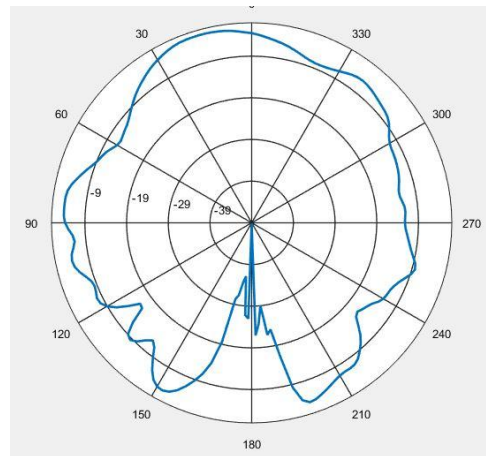


960 MHz

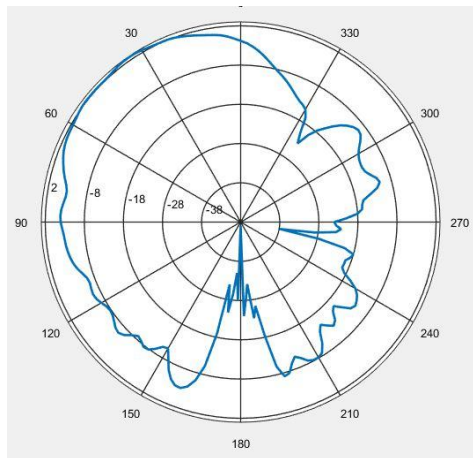
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1710 MHz



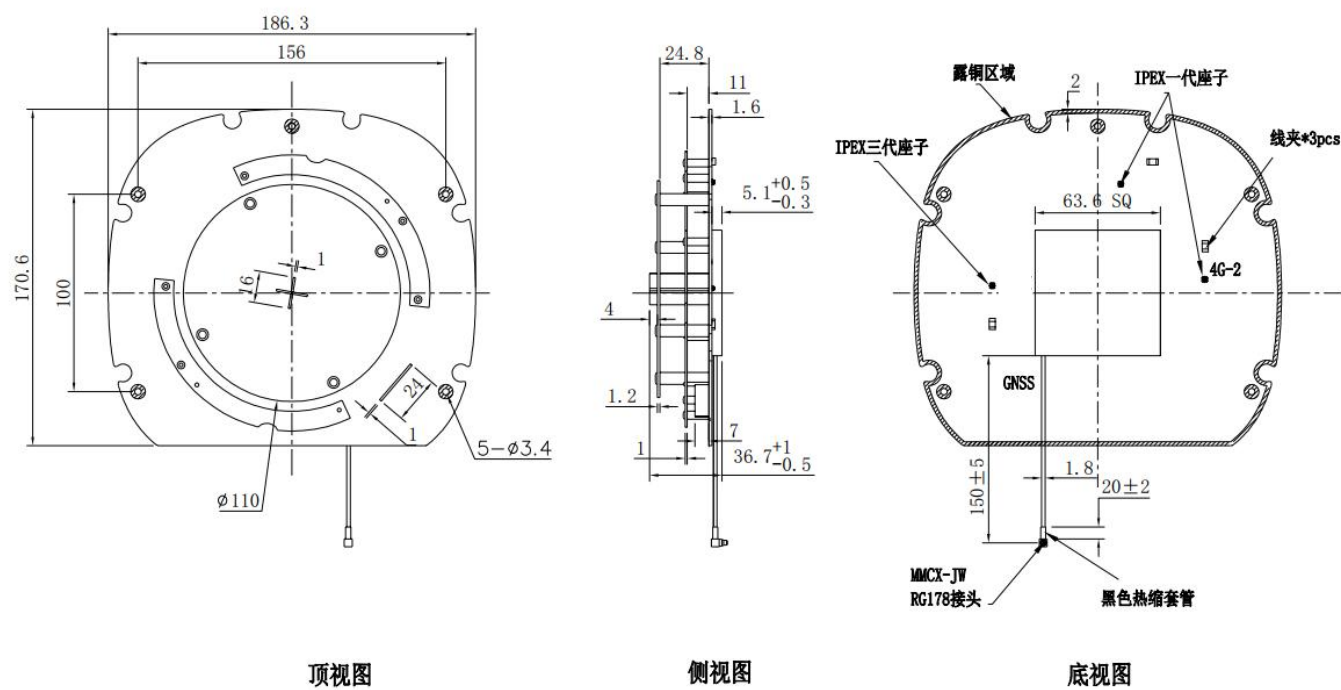
2170 MHz



2690MHz

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Structure& Phase Center Drawing (mm) (Undeclared Tolerance:±0.3mm)



Label

Label size: 15*30mm, the content of the label is shown as below.

Survey Antenna Products
Model:HX-CSX399A
S/N:C22019000168
Harxon Corporation

