

OEM GNSS Antenna HX-CSX225A



HX-CSX225A is a embedded full frequency GNSS antenna covering GPS, GLONASS, BDS, GALILEO, and QZSS. It is also compatible with the 4G、 WiFi and bluetooth, 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.

HIGHLY INTEGRATED ANTENNA FOR EASY INTEGRATION

HX-CSX225A integrates GNSS antenna and 4G antenna into one compact enclosure, greatly simplifying RTK integration. Deep optimization has been carried out for the isolation between antennas of various systems, systematically addressing the electromagnetic compatibility issues that have long troubled RTK receivers.

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、 BT/WiFi
- 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

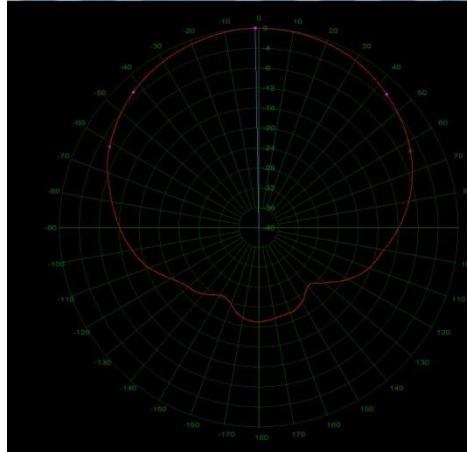
PERFORMANCE		MECHANICAL	
Signal Received	GPS L1/L2/L5 BDS B1/B2/B3 GLONASS L1/L2/L3 GALILEO E1/E5a/E5b/E6 QZSS L1/L2/L5/L6 IRNSS L5 SBAS L1/L5 4G BT/WIFI L-Band	Noise Figure	$\leq 2\text{dB}$
Nominal Impedance	$50\ \Omega$	VSWR	≤ 2.0
Polarization	RHCP	Passband Ripple	$\pm 2\text{dB}$
Axial Ratio	$\leq 3\text{dB}$	Operation Voltage	$+3.3 \sim +12\text{VDC}$
Azimuth Coverage	360°	Operation Current	$\leq 45\text{mA}$
Output VSWR	≤ 2.0	Group Delay Ripple	$\leq 5\text{ns}$
Peak Gain	GNSS: 5.5dBi 4G: 0.5dBi WIFI: 0.5dBi	Dimensions	$\Phi 127.8 \times 20.3\text{ mm}$
Phase Center Deviation	$\pm 2\text{mm}$	Weight	$\leq 220\text{g}$
LOW NOISE AMPLIFIER			
LNA Gain	L2: $34 \pm 2\text{dB}$ L1: $32 \pm 2\text{dB}$	Connector	GNSS: MMCX-JW 4G_1: IPEX-K 4G_2: IPEX-J WIFI: IPEX-J
		Mounting	6*M3 screws mount
ENVIRONMENTAL			
		Operating Temperature	$-40^\circ\text{C} \sim +85^\circ\text{C}$
		Storage Temperature	$-55^\circ\text{C} \sim +85^\circ\text{C}$
		Humidity	95% non-condensing

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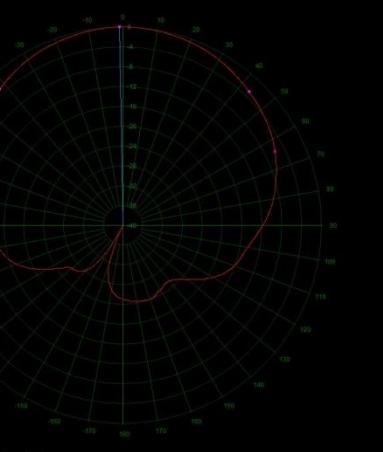
Harxon
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GNSS Antenna Performance

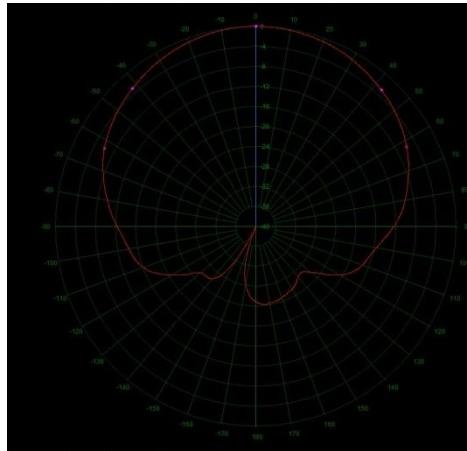
Frequency (MHz)	1176	1205	1227	1268	1542	1559	1575	1606
Gain (dBi)	2.4	4.8	5.9	5.6	4.8	5.7	5.8	5.3



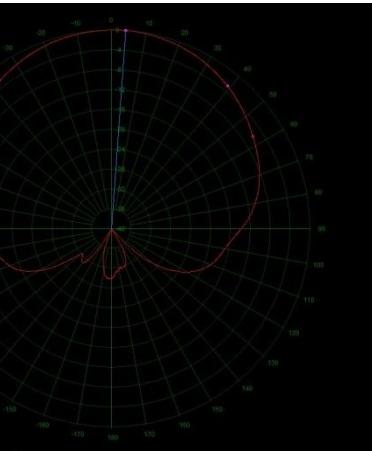
1176MHz



1205MHz



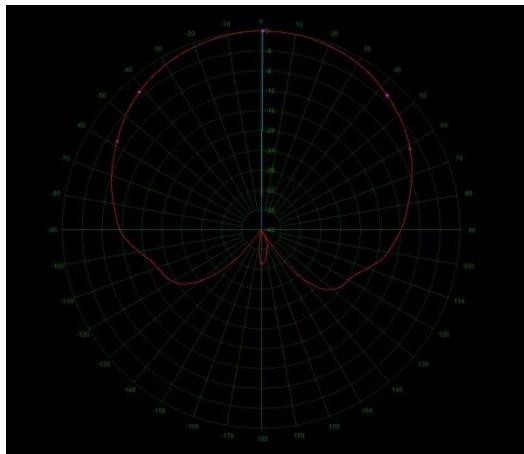
1227MHz



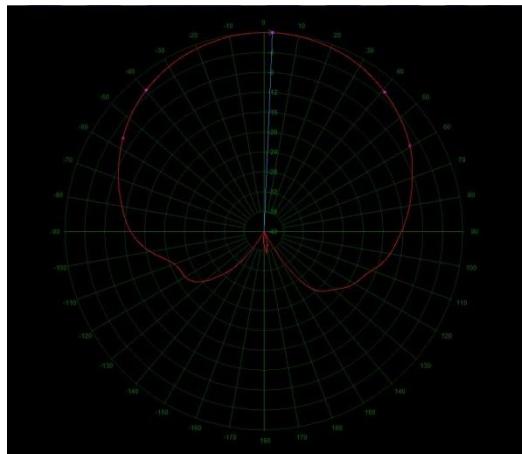
1268MHz

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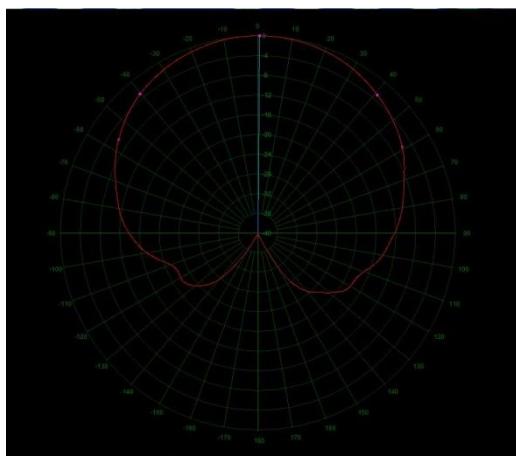
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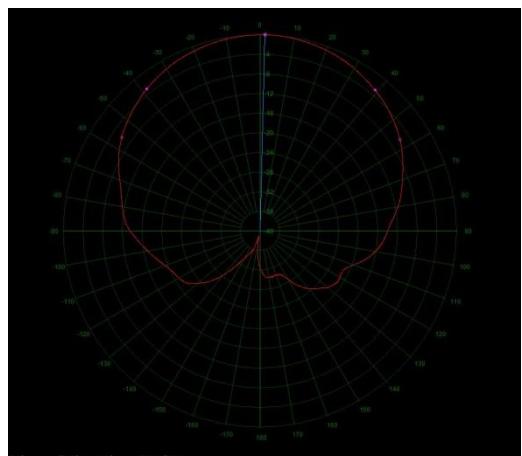
1542MHz



1559MHz



1575MHz



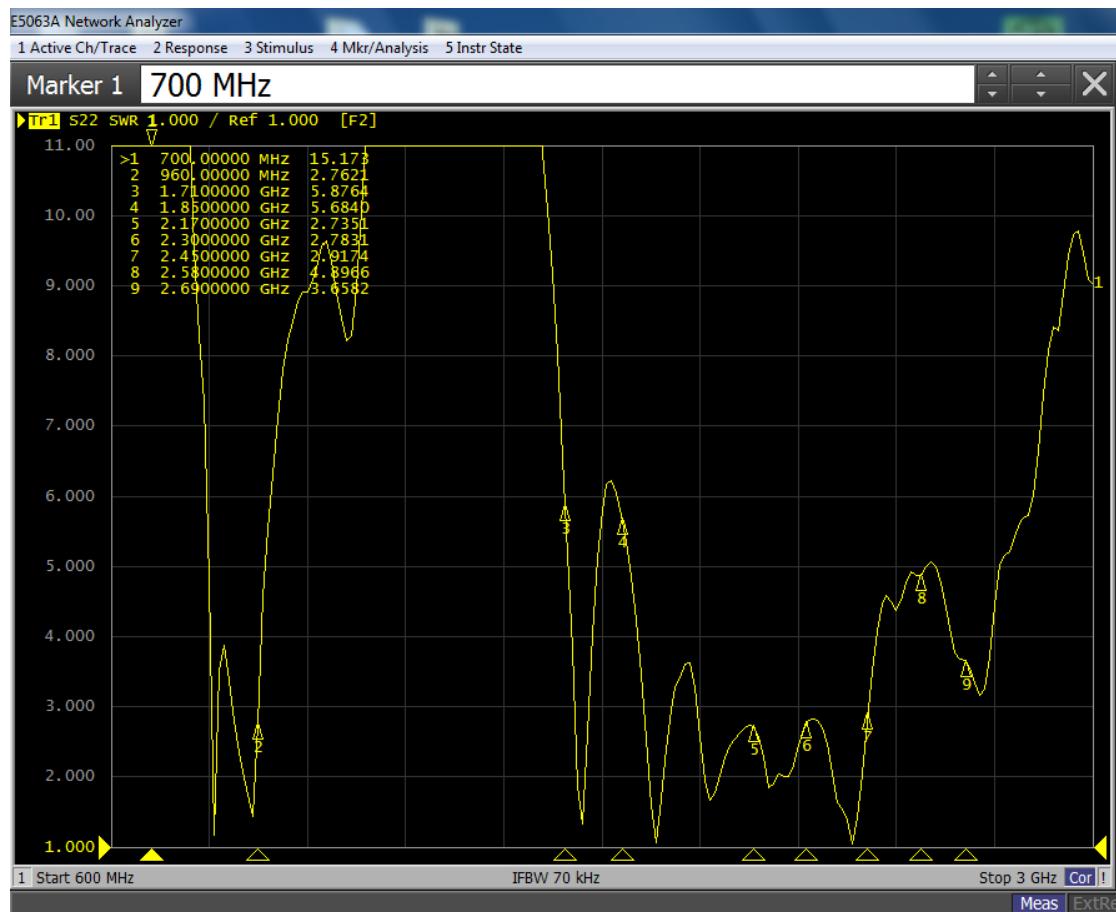
1606MHz

4G Antenna Performance

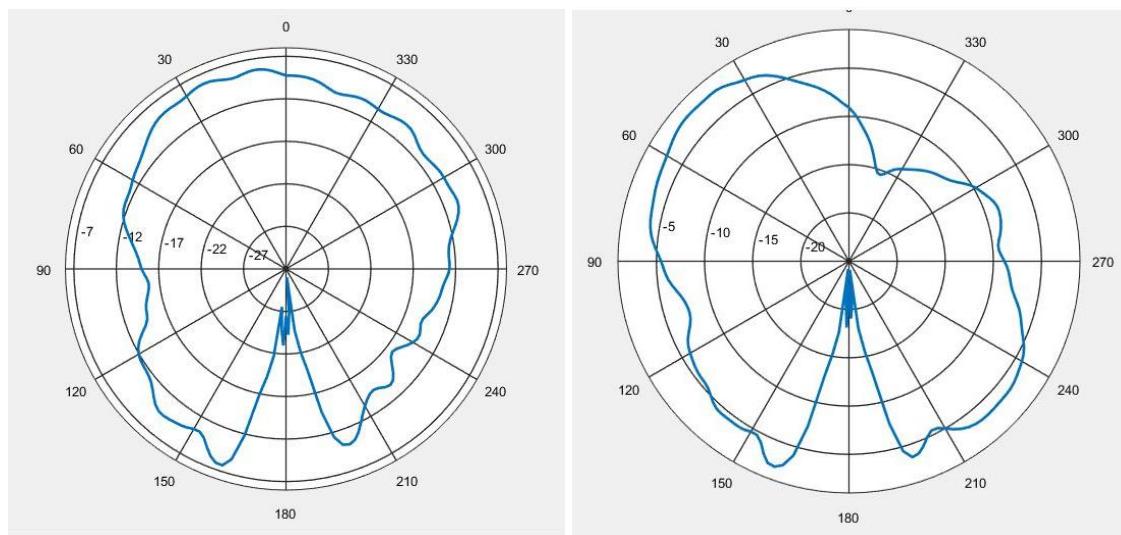
4G-1 Antenna Performance

Frequency (MHz)	700	760	820	890	960	1710	1810	1910	2010	2110	2210	2310	2410	2510	2610	2690
Gain (dBi)	-11.7	-7.5	0.1	1.1	-0.2	-0.7	0.5	2.3	1.8	-0.5	1.7	2.8	-1	1.7	1.5	-2.4

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4G-1 Antenna VSWR

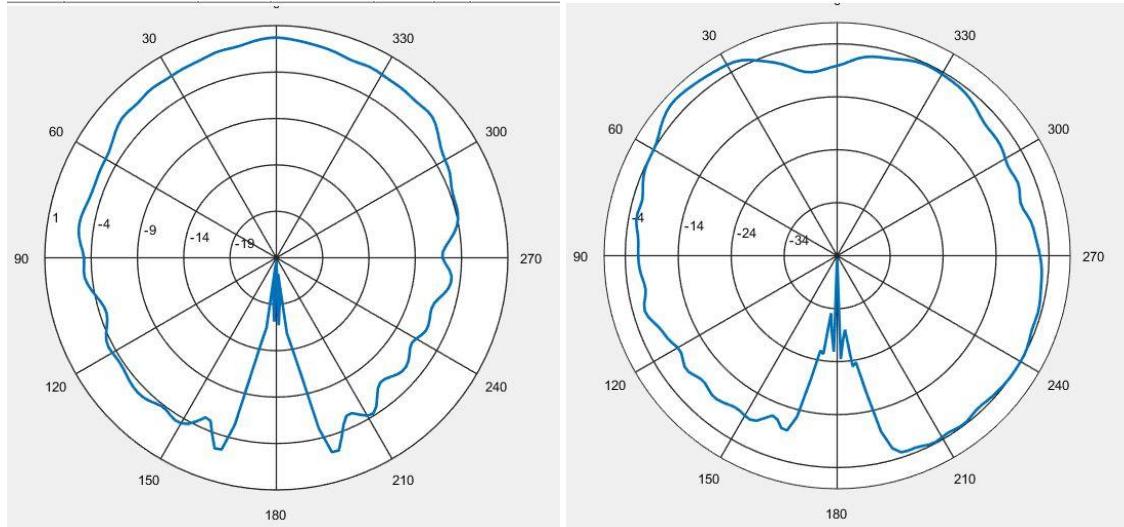


760 MHz

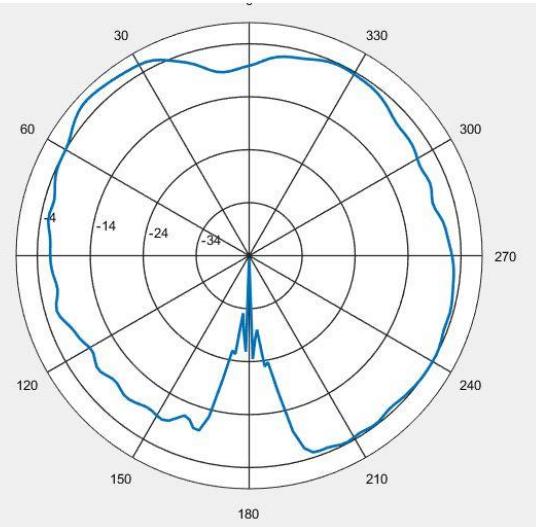
820 MHz

OEM GNSS Antenna HX-CSX225A

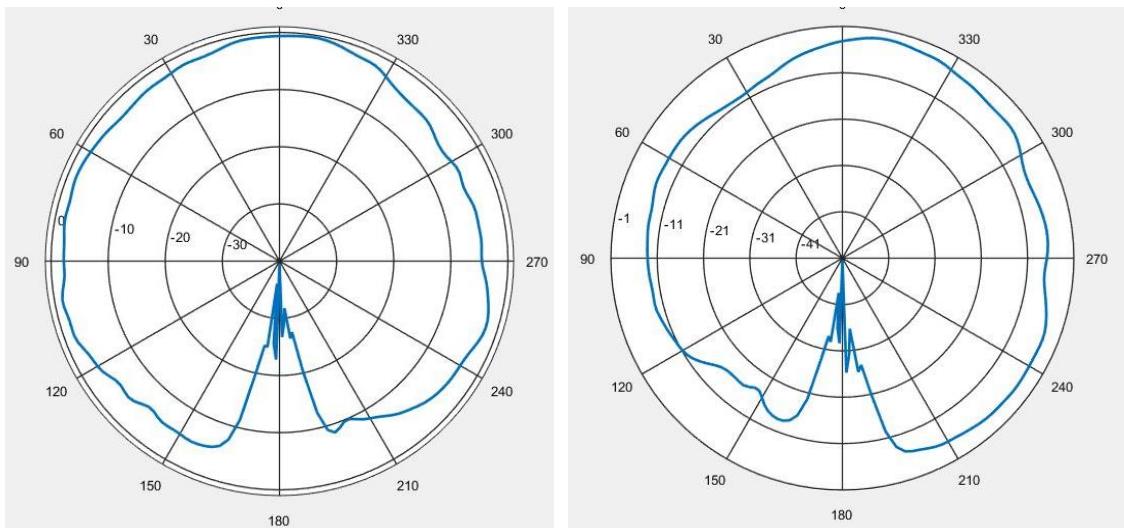
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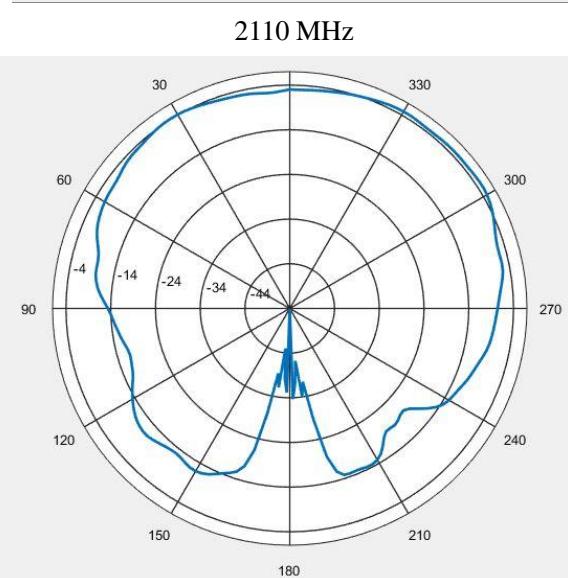
960 MHz



1710 MHz



1190 MHz



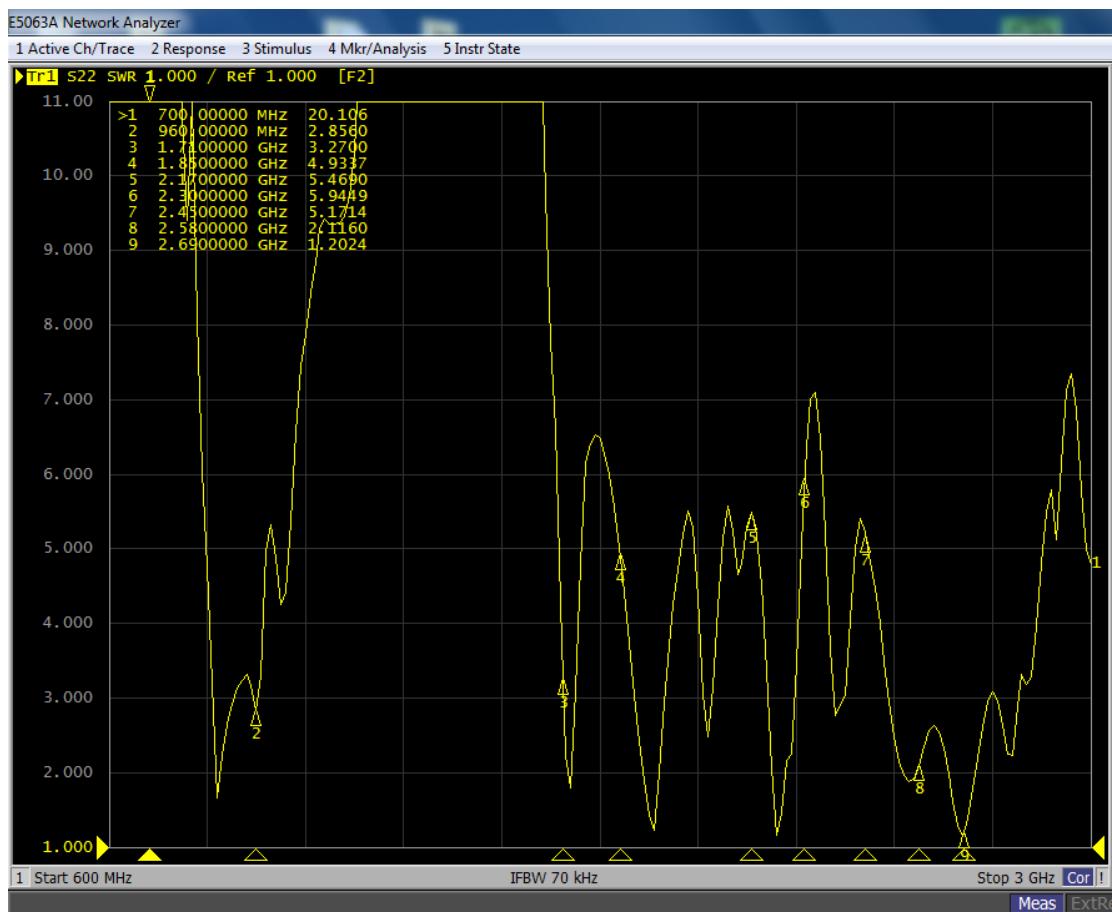
2450 MHz

2110 MHz

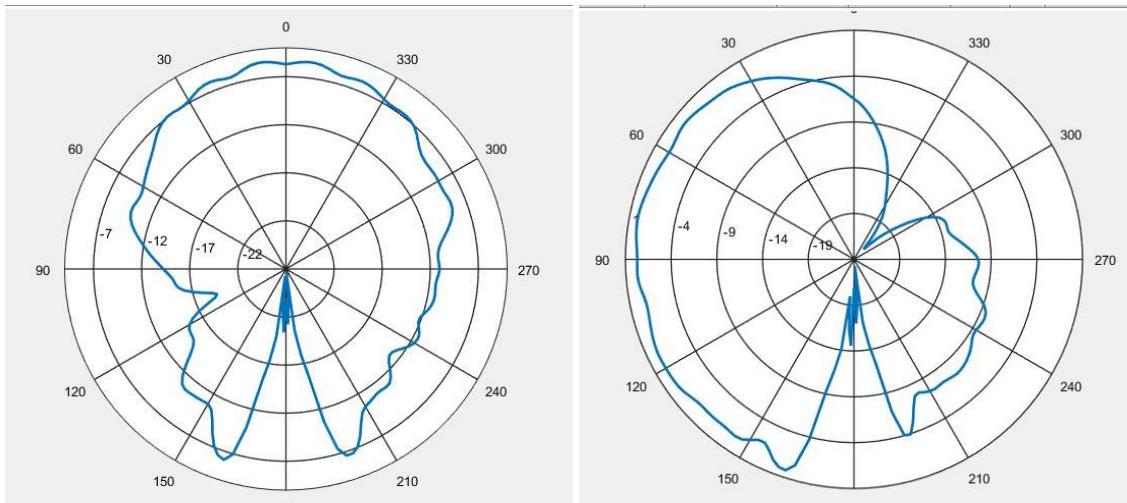
OEM GNSS Antenna HX-CSX225A

4G-2 Antenna Performance

Frequency (MHz)	700	760	820	890	960	1710	1810	1910	2010	2110	2210	2310	2410	2510	2610	2690
Gain (dBi)	-8.3	-7.8	0.3	1.2	-1.1	-4	-1.1	2.8	-0.8	-0.3	0.4	-1.5	-0.7	1.5	2.5	2



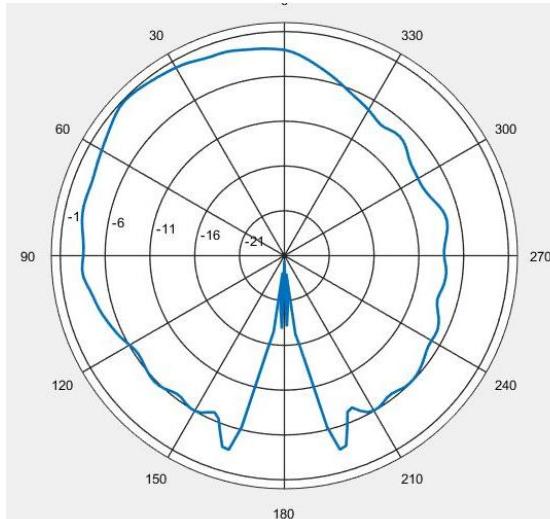
4G_2 Antenna VSWR



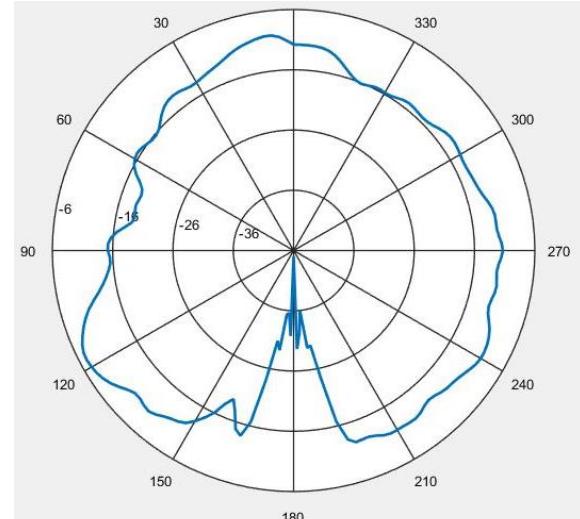
760 MHz

820 MHz

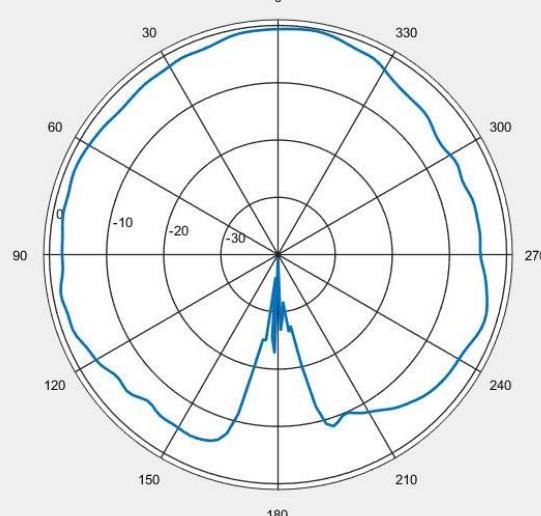
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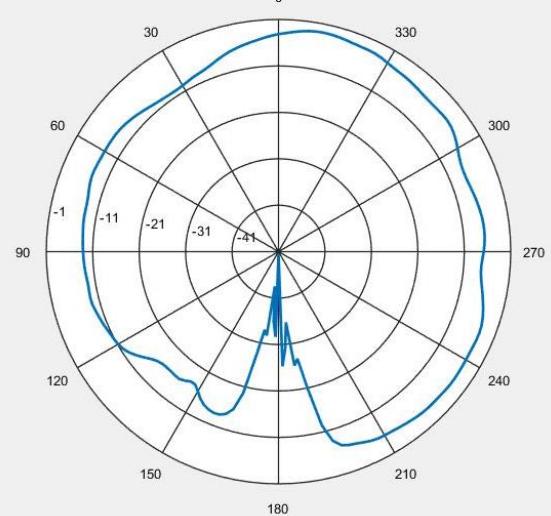
960 MHz



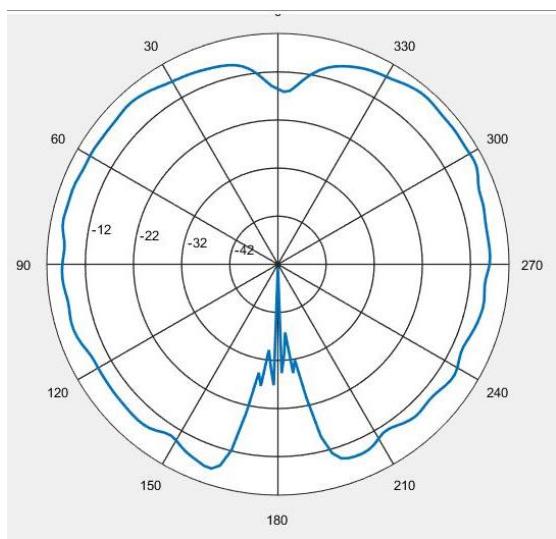
1710 MHz



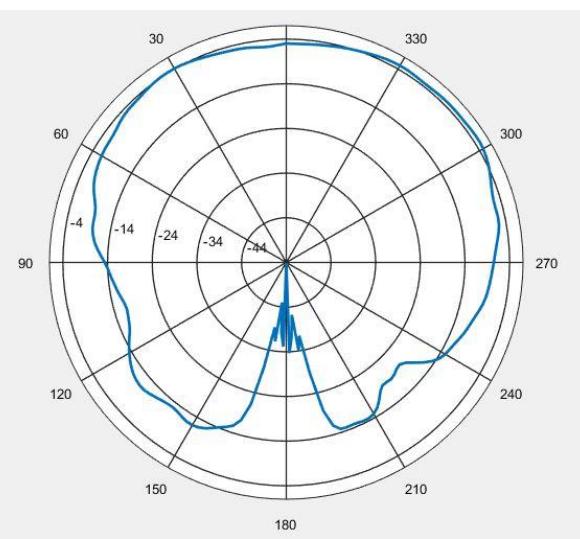
1190 MHz



2110 MHz



2450 MHz

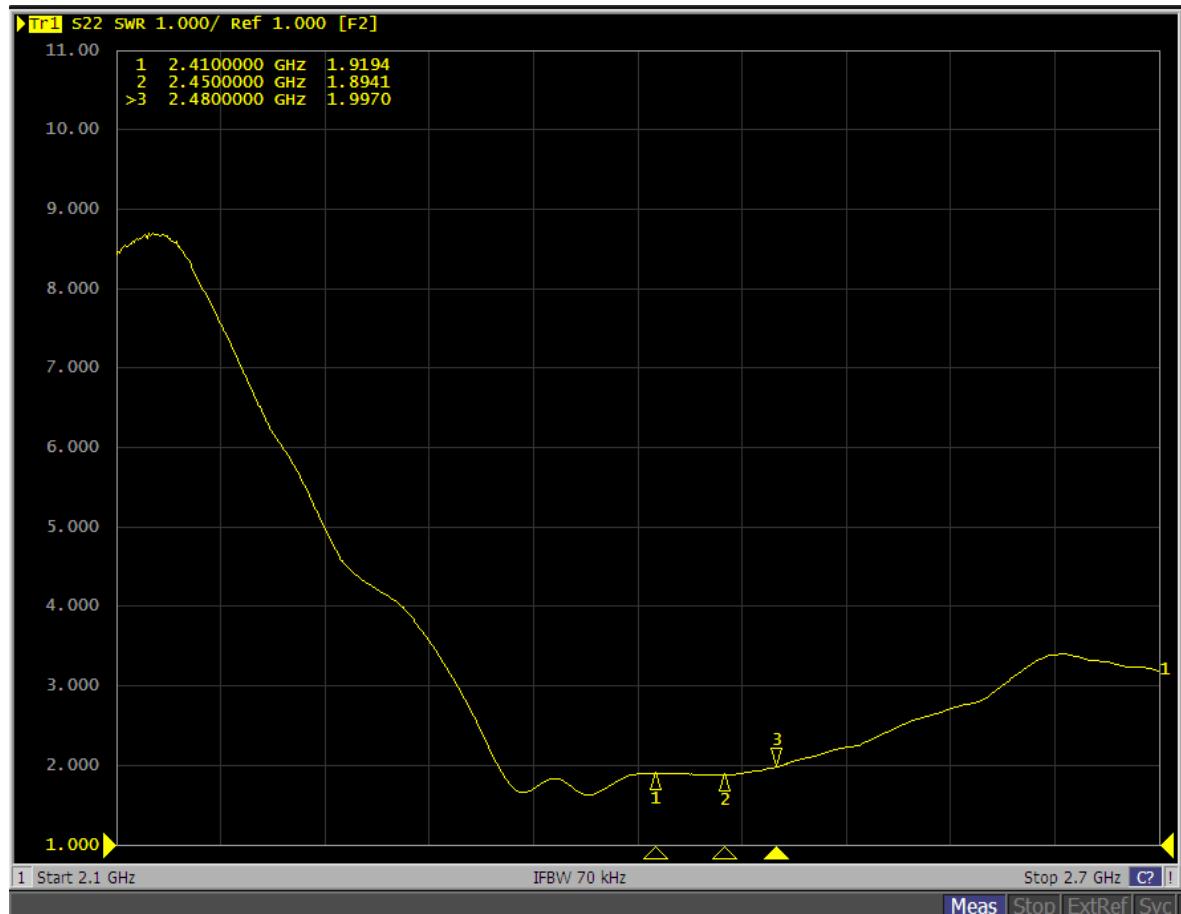


2690 MHz

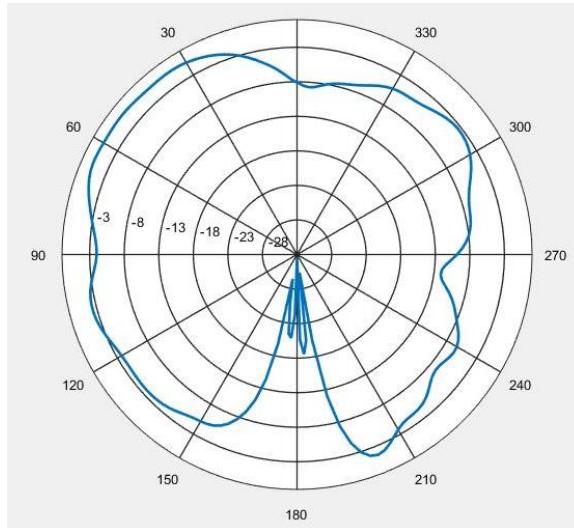
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BT/WIFI Antenna Performance

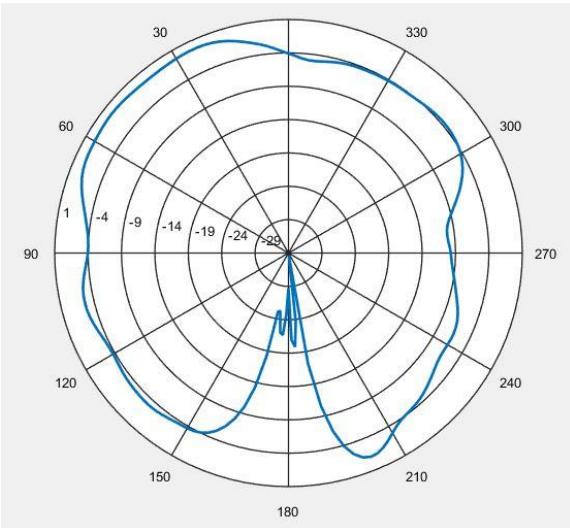
Frequency (MHz)	2410	2450	2480
Gain (dBi)	2.2	2.6	2.7



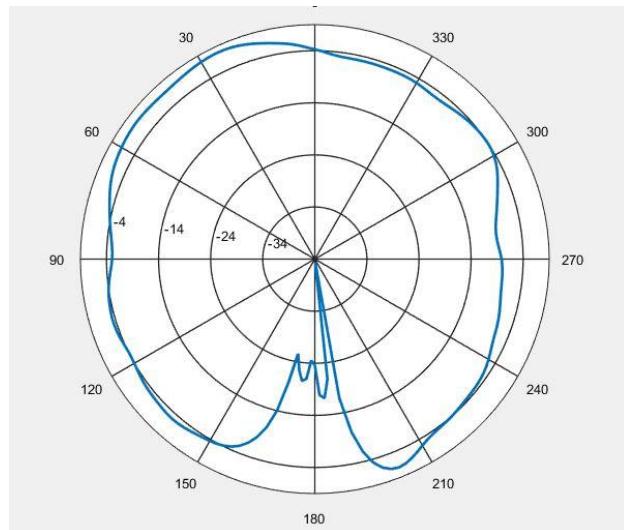
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2410MHz



2450MHz

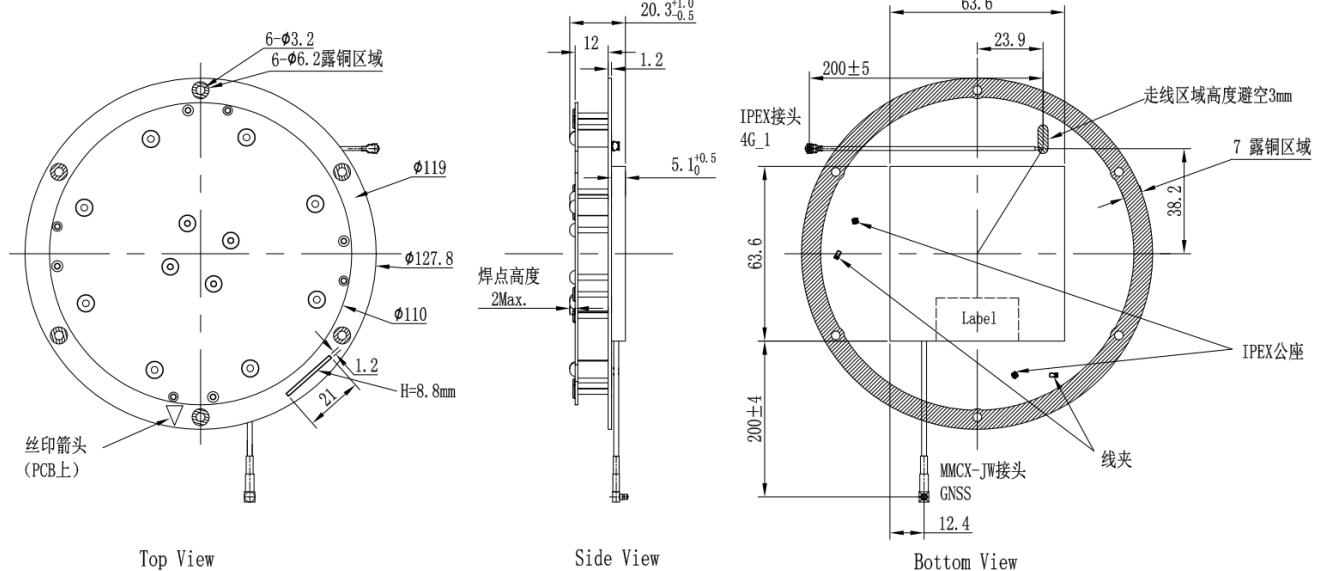


2480MHz

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Structure& Phase Center Drawing (mm) (Undeclared Tolerance: $\pm 0.3\text{mm}$)



Label

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

