

# 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

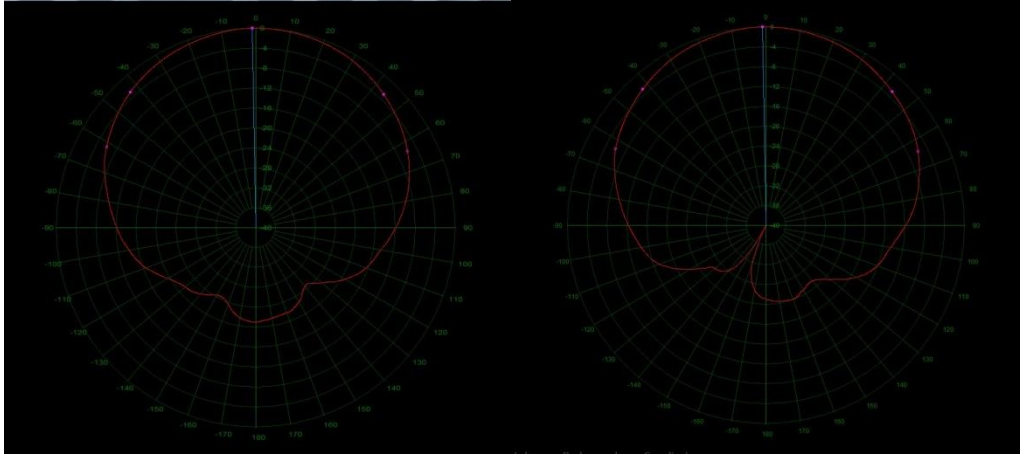
PERFORMANCE	
Signal Received	GPS L1/L2/L5 BDS B1/B2/B3 GLONASS L1/L2/L3 GALILEO E1/E5a/E5b/E6 QZSS L1/L2/L5/L6 IRNSS L5 SBAS L1/L5 4G BT/WIFI L-Band
Nominal Impedance	50 Ω
Polarization	RHCP
Axial Ratio	≤3dB
Azimuth Coverage	360°
Output VSWR	≤2.0
Peak Gain	GNSS:5.5dBi 4G:0.5dBi WIFI: 0.5dBi
Phase Center Deviation	±2mm
LOW NOISE AMPLIFIER	
LNA Gain	L2: 34±2dB L1: 32±2dB

Noise Figure	≤2dB
VSWR	≤2.0
Passband Ripple	±2dB
Operation Voltage	+3.3 ~ +12VDC
Operation Current	≤45mA
Group Delay Ripple	≤5ns
MECHANICAL	
Dimensions	Φ127.8*20.3 mm
Weight	≤220g
Connector	GNSS:MMCX-JW 4G_1:IPEX-K 4G_2: IPEX-J WIFI: IPEX-J
Mounting	6*M3 screws mount
ENVIRONMENTAL	
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +85°C
Humidity	95% non-condensing

# OEM GNSS Antenna HX-CSX225A

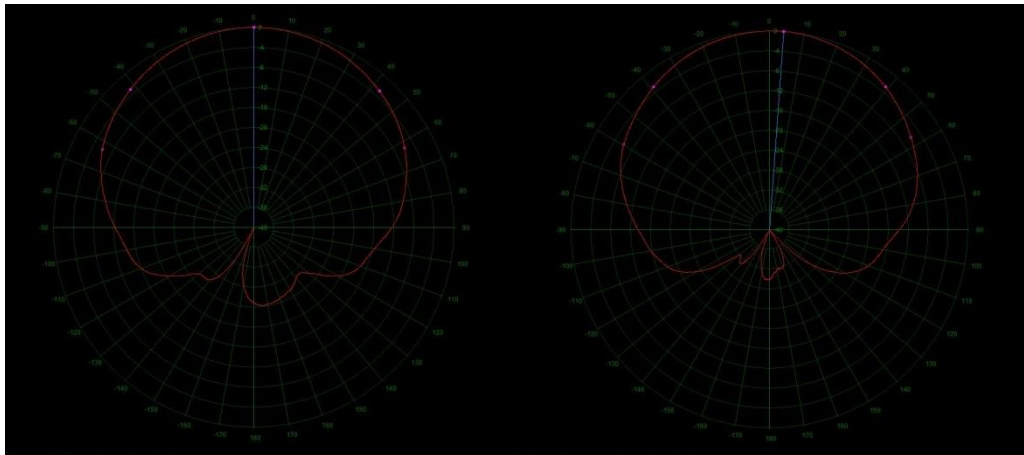
## GNSS Antenna Performance

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

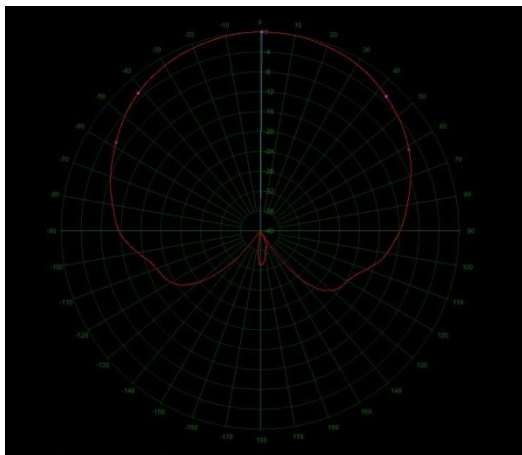
1205MHz



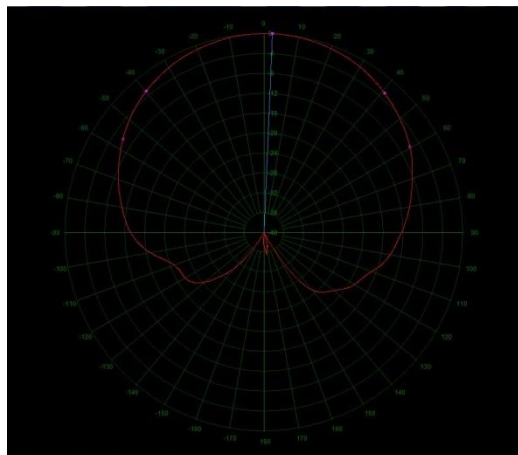
1227MHz

1268MHz

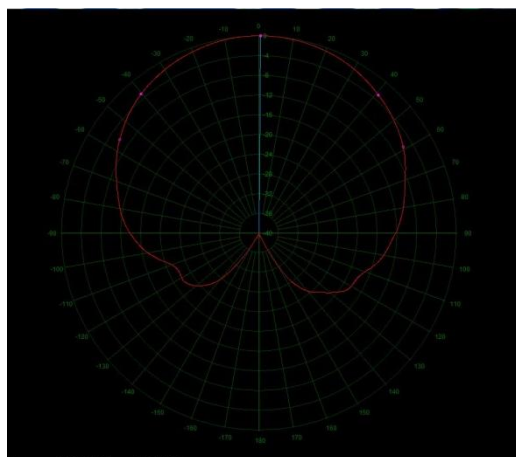
# OEM GNSS Antenna HX-CSX225A



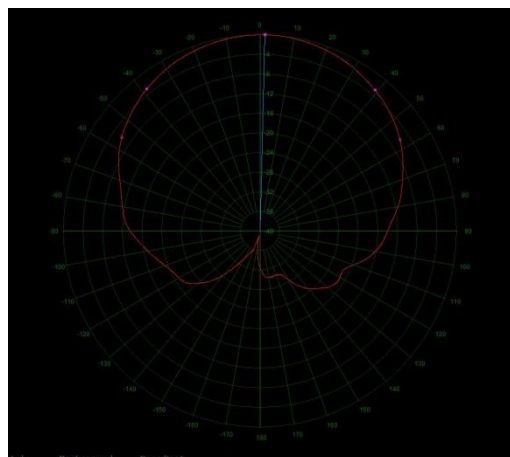
1542MHz



1559MHz



1575MHz



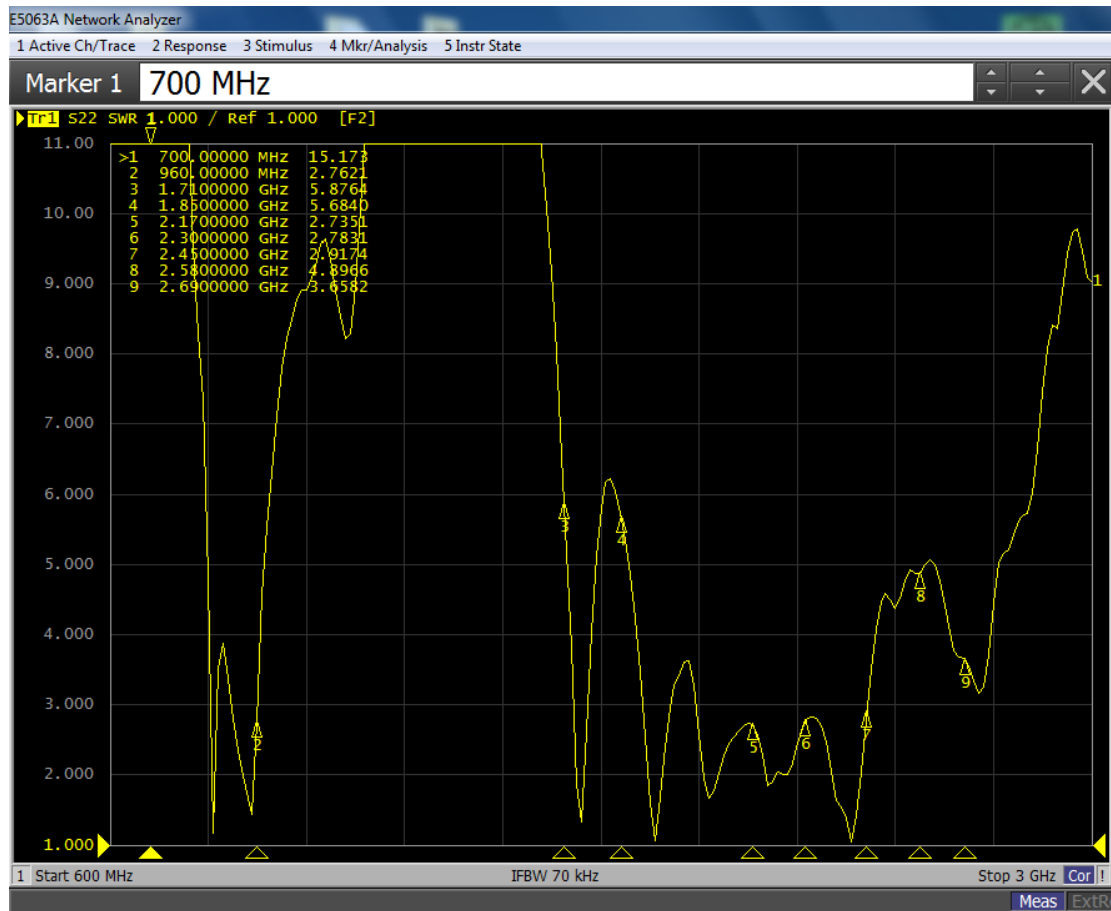
1606MHz

## 4G Antenna Performance

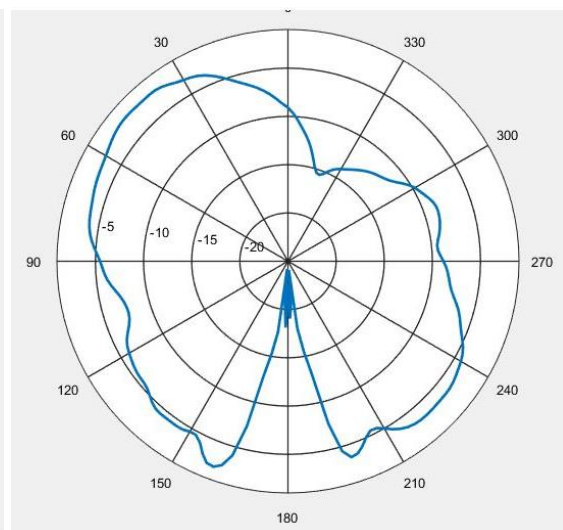
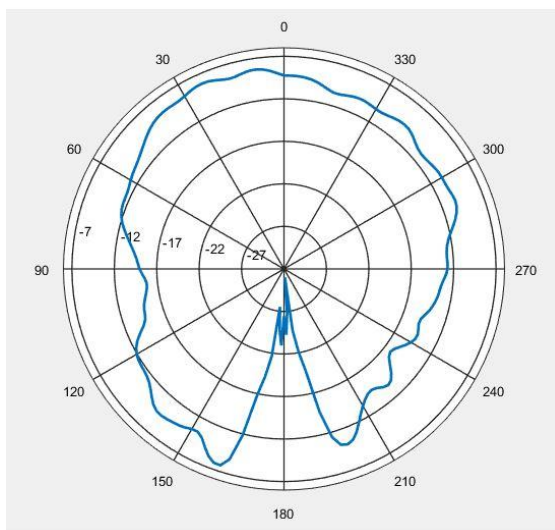
### 4G-1 Antenna Performance

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

# OEM GNSS Antenna HX-CSX225A

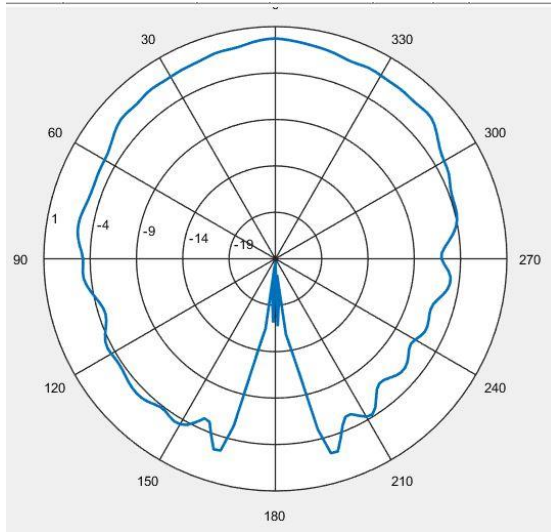


4G-1 Antenna VSWR

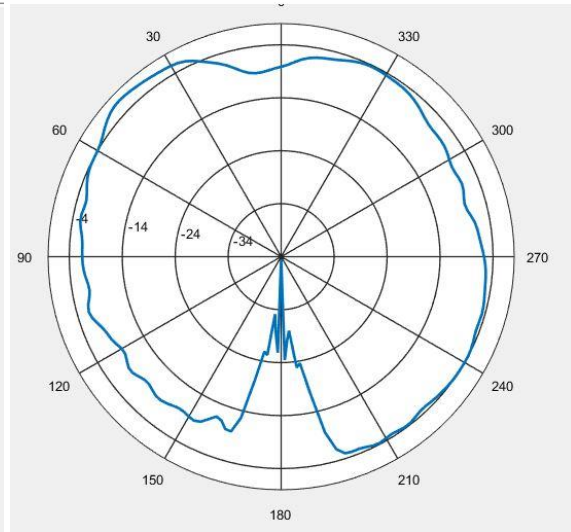




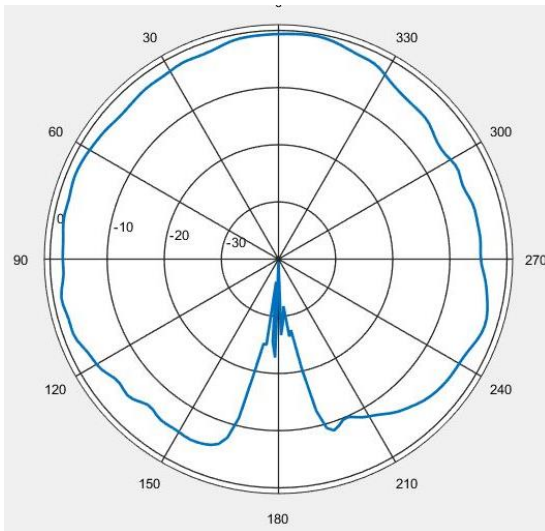
# OEM GNSS Antenna HX-CSX225A



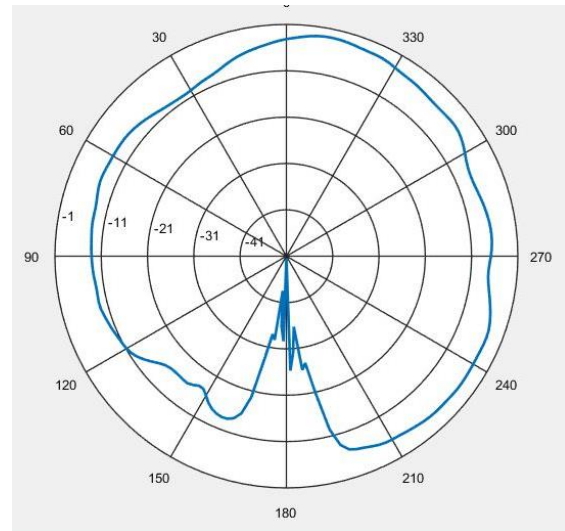
960 MHz



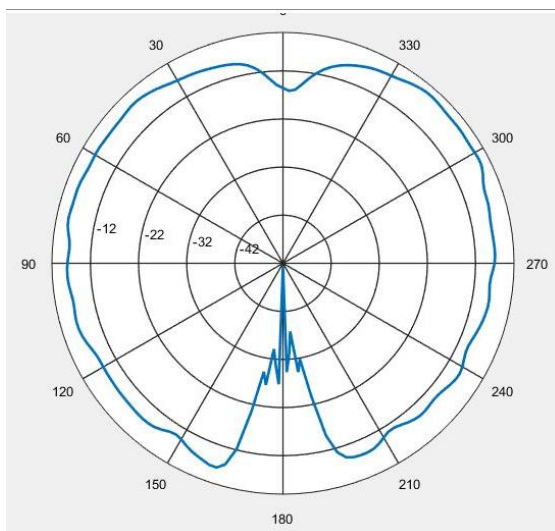
1710 MHz



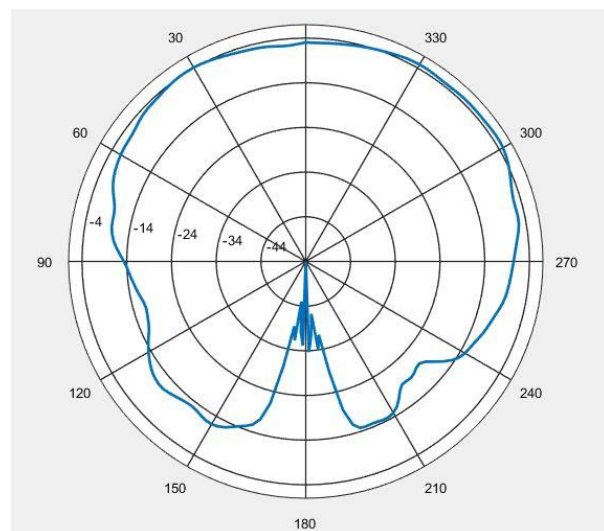
1190 MHz



2110 MHz



2450 MHz

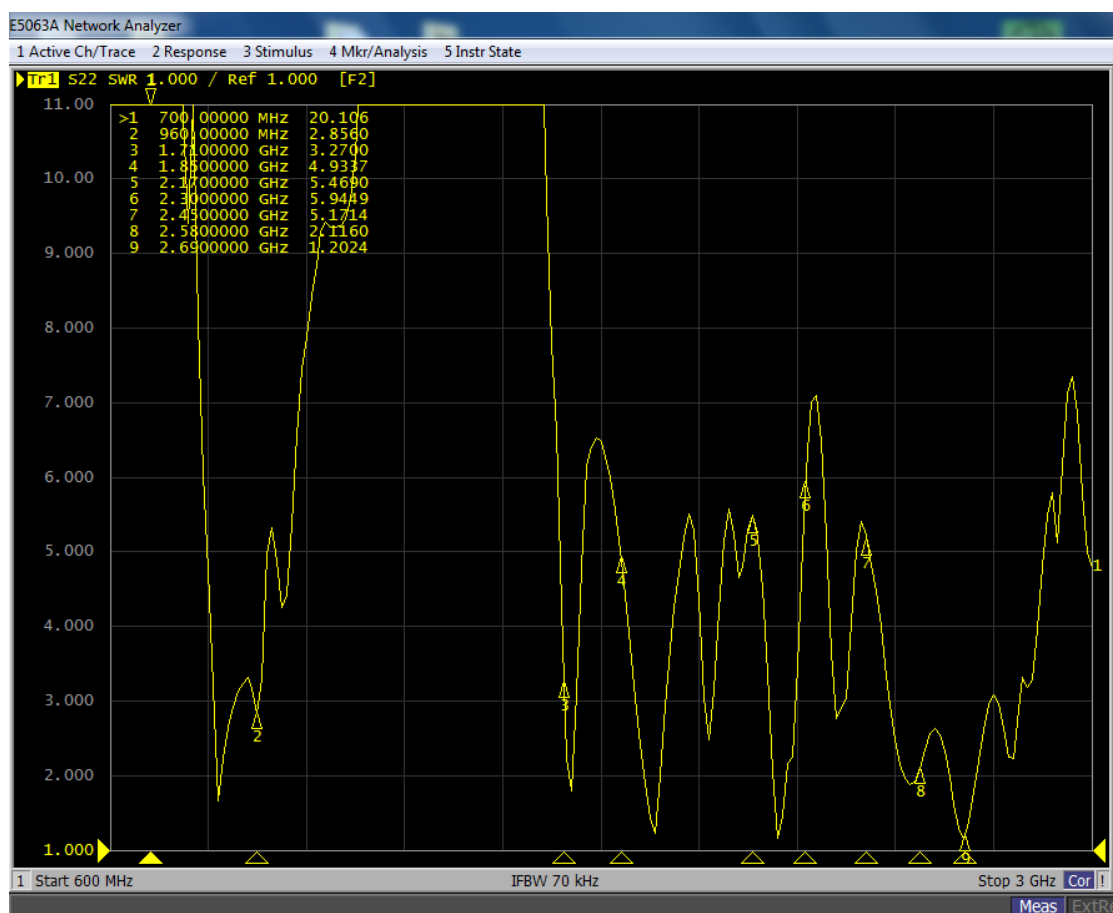


2690 MHz

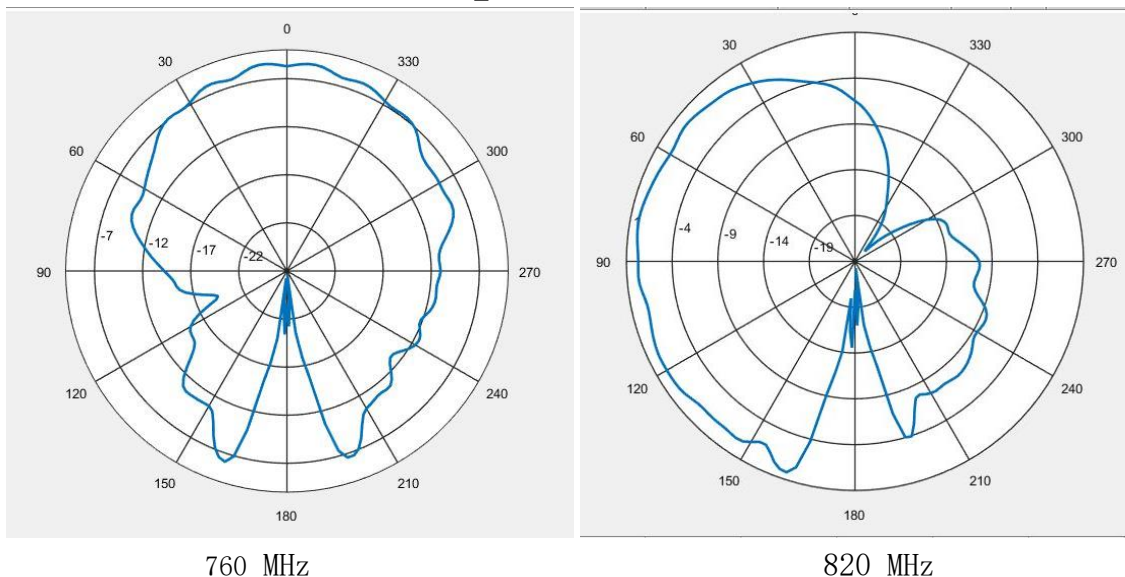
# OEM GNSS Antenna HX-CSX225A

## 4G-2 Antenna Performance

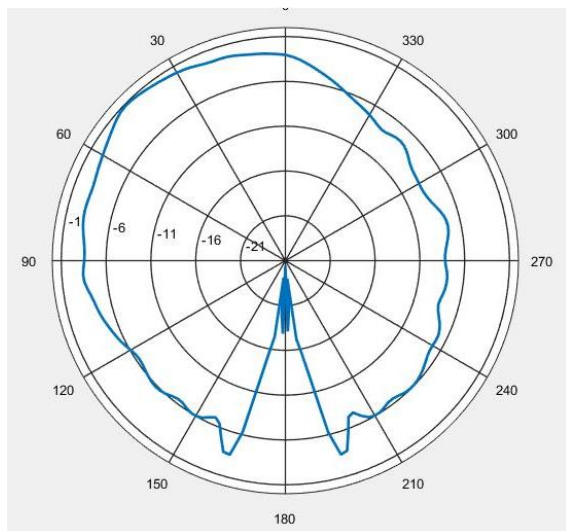
Frequency (MHz)	700	760	820	890	960	1710	1810	1910	2010	2110	2210	2310	2410	2510	2610	2690
Gain (dBi)	-8.3	-7.8	0.3	1.2	-1.1	-4	-1.1	2.8	-0.8	-0.3	0.4	-1.5	-0.7	1.5	2.5	2



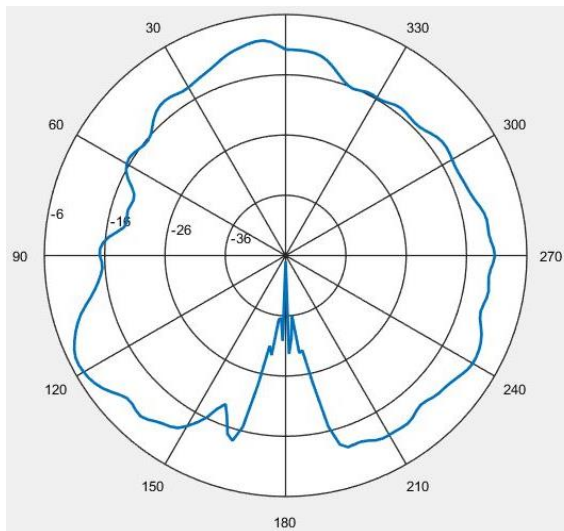
## 4G\_2 Antenna VSWR



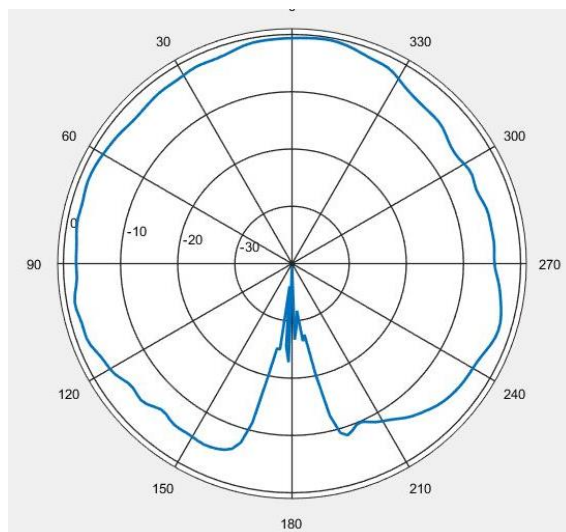
# OEM GNSS Antenna HX-CSX225A



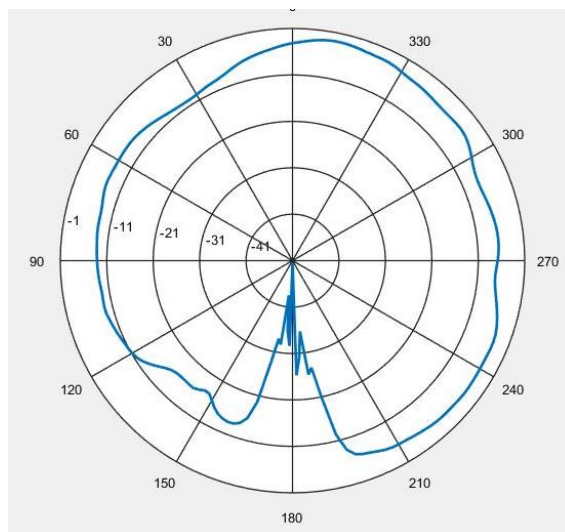
960 MHz



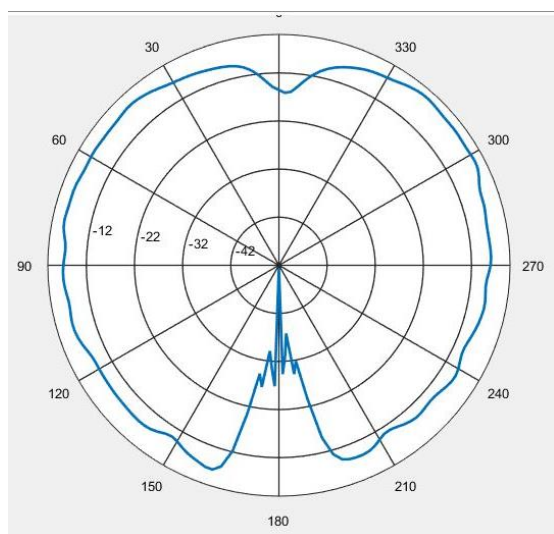
1710 MHz



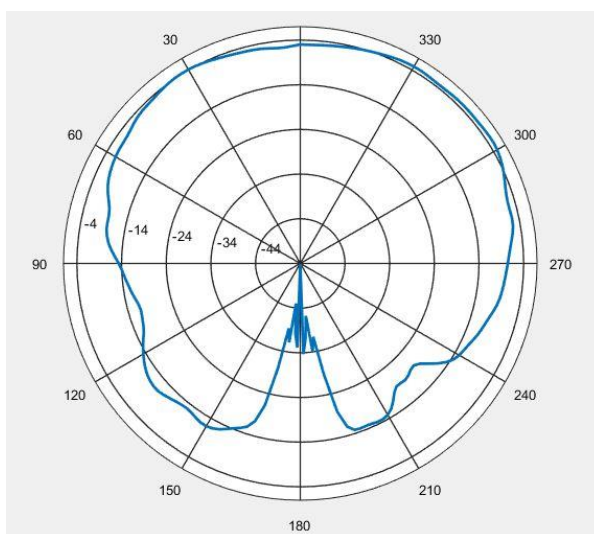
1190 MHz



2110 MHz



2450 MHz



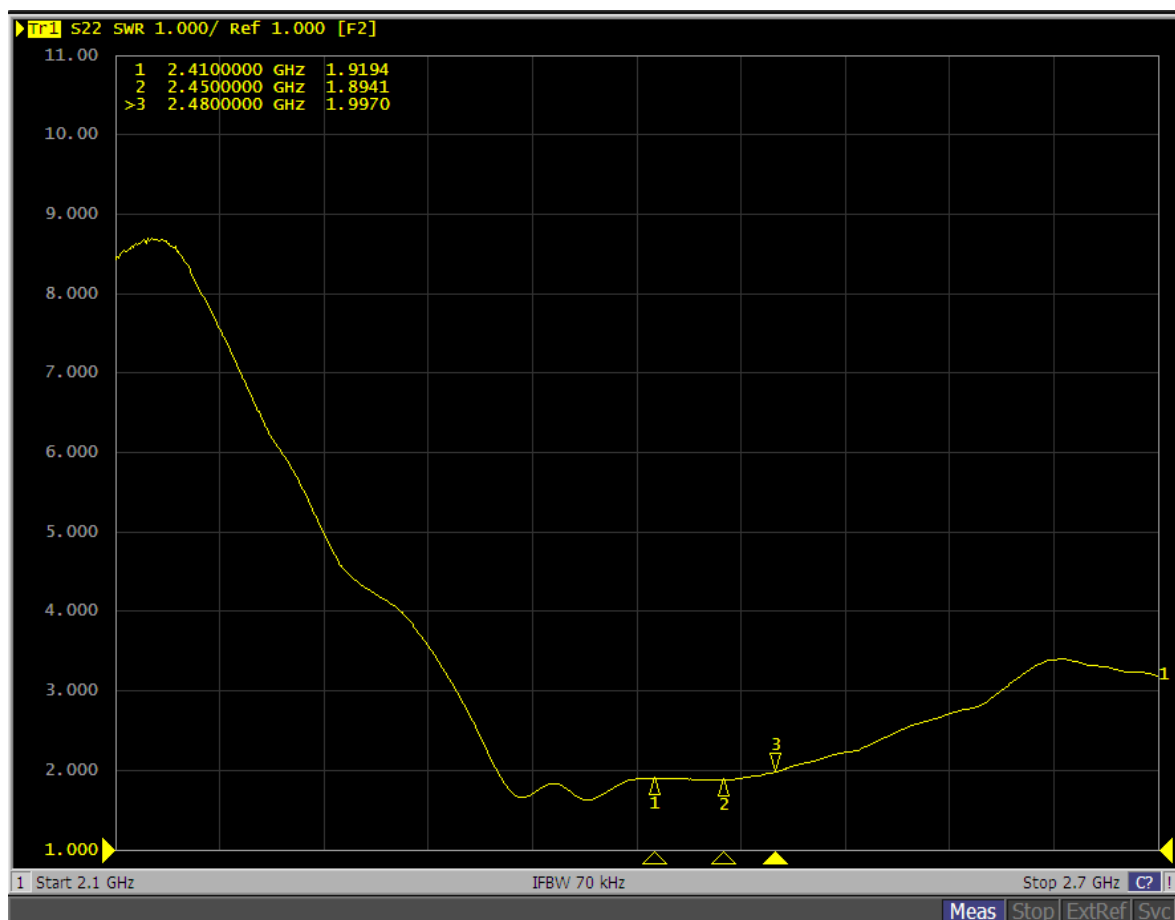
2690 MHz



# OEM GNSS Antenna HX-CSX225A

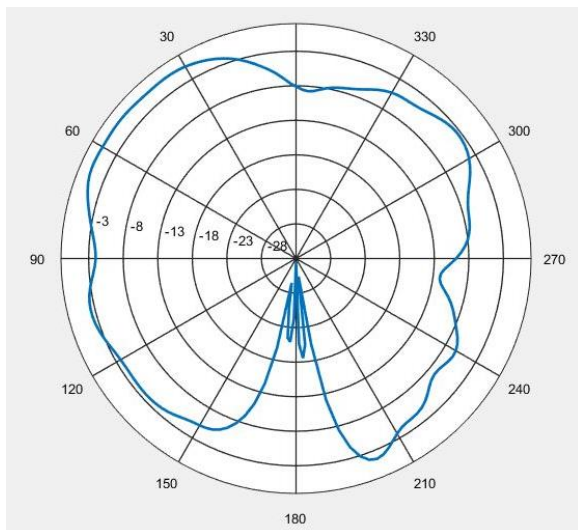
## BT/WIFI Antenna Performance

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

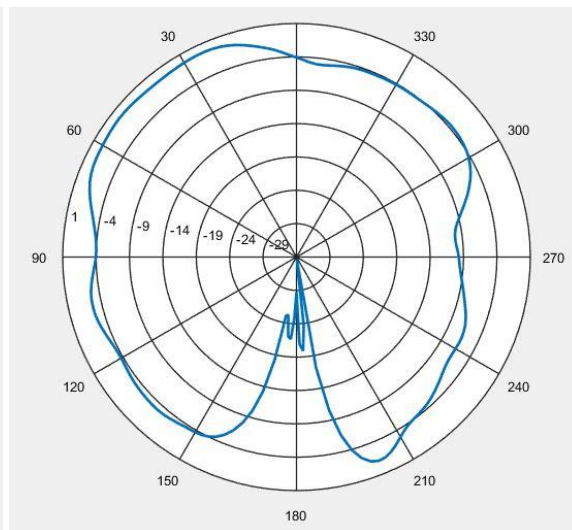


BT/WIFI Antenna VSWR

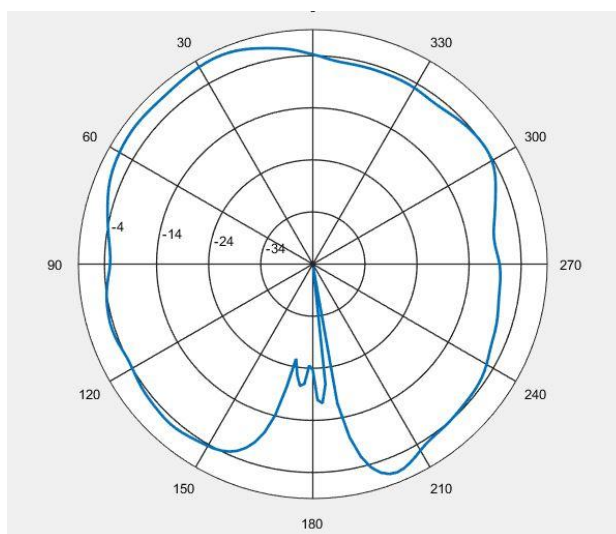
# OEM GNSS Antenna HX-CSX225A



2410MHz



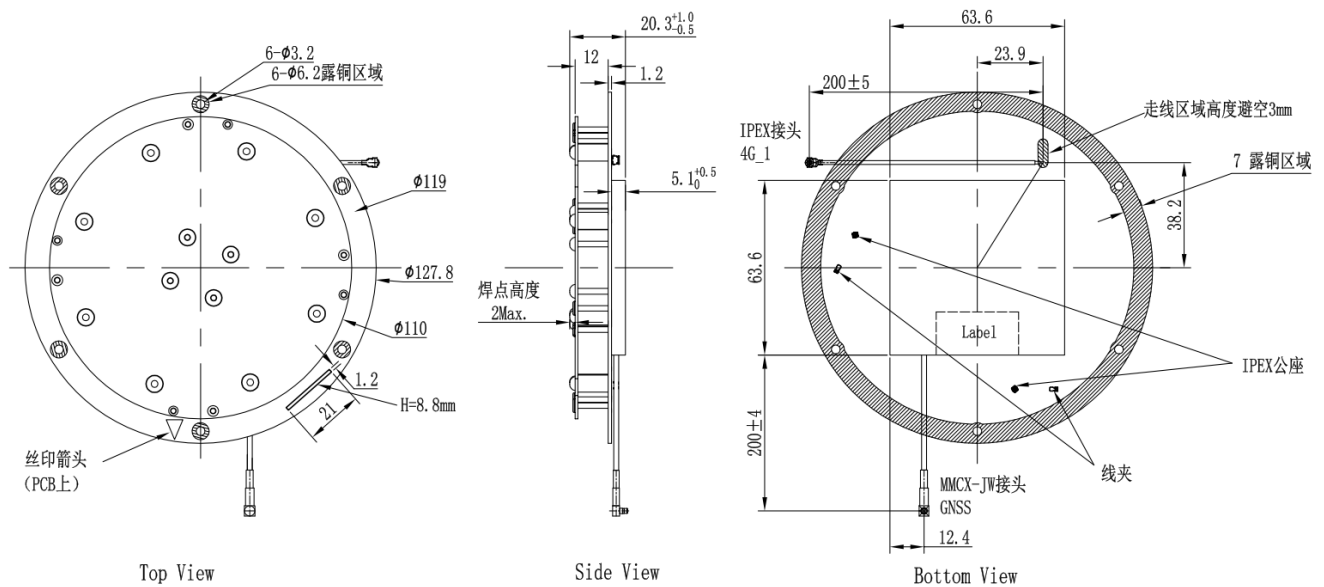
2450MHz



2480MHz

# OEM GNSS Antenna HX-CSX225A

## 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-CSX225A

R51(双4G&WIFI&GNSS)

S/N:C22019000168

P/N:101030290

