

# OEM GNSS Antenna HX-CSX180A



Harxon OEM antenna HX-CSX180A is an embedded multi-constellation GNSS antenna that supports full frequency satellite signal tracking, including GPS, GLONASS, BDS, Galileo. It meets the demand for multi-system compatibility in survey devices. It can be widely used in applications such as geodetic surveying, marine surveying, channel surveying, precise leveling, seismic monitoring, bridge deformation monitoring, landslide monitoring, and port container operations.

## HIGHLY INTEGRATED ANTENNA FOR EASY INTEGRATION

HX-CSX280A integrates GNSS antenna and WiFi/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

## Key Features

- Supports GPS, GLONASS, Beidou, Galileo
- Supports BT/4G
- Strong anti-interference performance in complex environments
- Low profile and lightweight
- Powerful system compatibility, easy for integration

## STABLE PHASE CENTER FOR ROBUST POSITIONING PERFORMANCE

It features multi-point feeding capability, guaranteeing a reliable phase center for millimeter positioning accuracy. The 4G antenna array is strategically designed, with 4G antennas evenly distributed around the GNSS antenna in a symmetrical structure. This effectively mitigates the impact of communication antennas on the positioning

## 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,

## 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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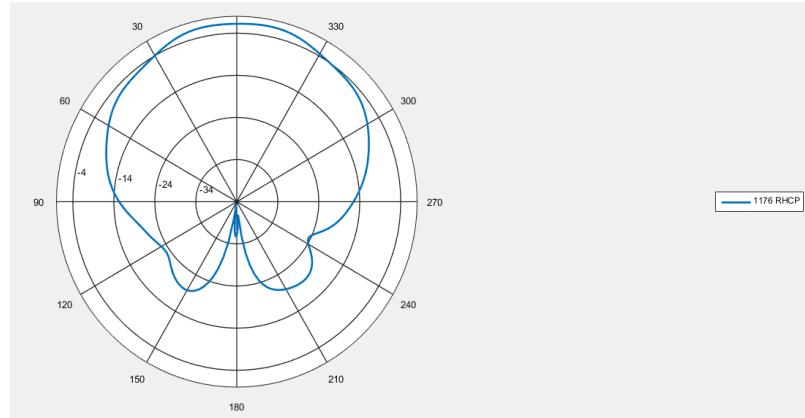
## Specifications

PERFORMANCE		MECHANICAL		ENVIRONMENTAL	
Signal Received	GPS L1/L2/L5 BDS B1I/B2I/B3I/B1C/B2a/B2b GLONASS L1/L2/L3 GALILEO E1/E5a/E5b/E6 QZSS L1/L2/L5/L6 IRNSS L1/L5 L-Band BT、 WiFi、 4G	LNA Gain	L2 : $40 \pm 2$ dB L1 : $38 \pm 2$ dB		
Nominal Impedance	50 $\Omega$	Noise Figure	$\leq 2$ dB		
Polarization	RHCP	VSWR	$\leq 2.0$		
Axial Ratio	$\leq 3$ dB	Passband Ripple	$\pm 2$ dB		
Azimuth Coverage	360°	Passband Ripple	+3.3 ~ +12VDC		
Azimuth Coverage	$\leq 2.0$	Operation Current	$\leq 45$ mA		
Peak Gain	GNSS: 5.5dBi BT/WIFI: 0.5dBi 4G: 0.5dBi	Group Delay Ripple	$\leq 5$ ns		
Phase Center Deviation	$\pm 2$ mm	Dimensions	Dimensions: $\Phi 112.6 * 14.7$ mm Connector: GNSS: IPEX 4G/BT/WIFI: IPEX		
LOW NOISE AMPLIFIER					

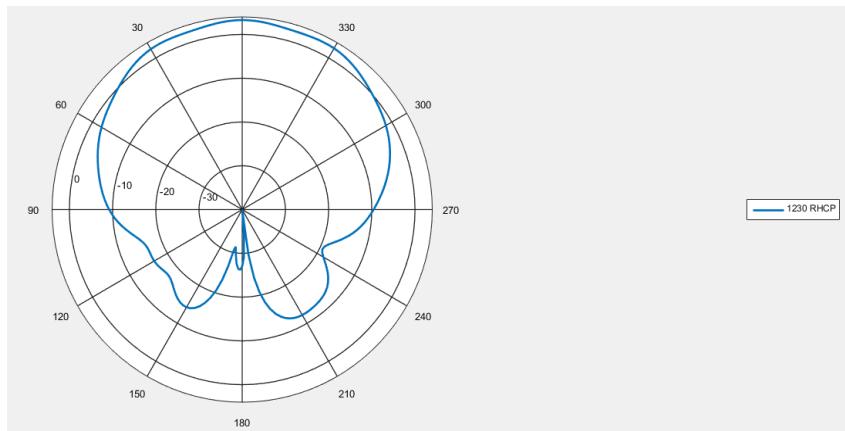
# OEM GNSS Antenna HX-CSX180A

## GNSS Antenna Performance

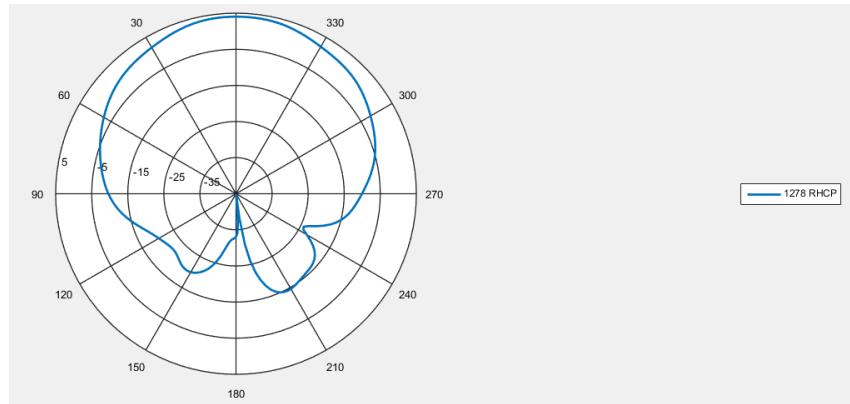
Frequency (MHz)	1176	1206	1227	1268	1559	1561	1575	1606
Gain (dBi)	0.5	2.1	3.8	4.3	4.6	4.8	5.1	4.2



1176MHz



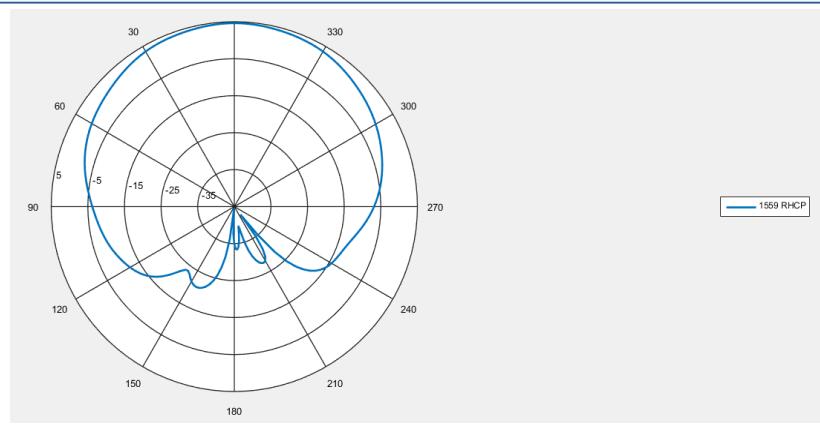
1230MHz



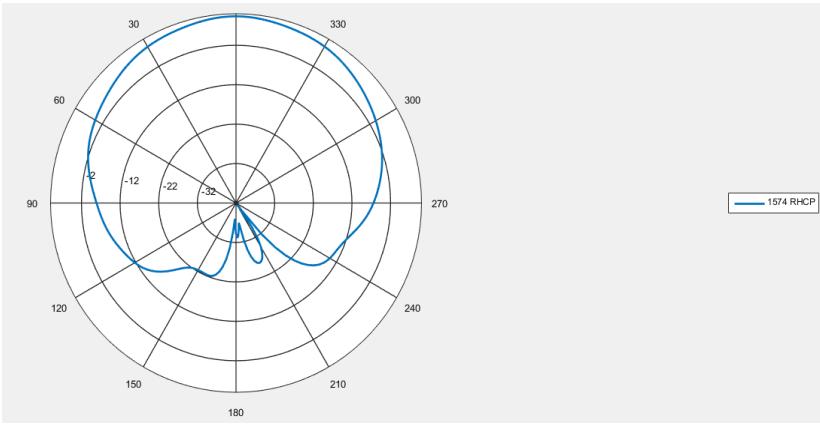
1278MHz

# OEM GNSS Antenna HX-CSX180A

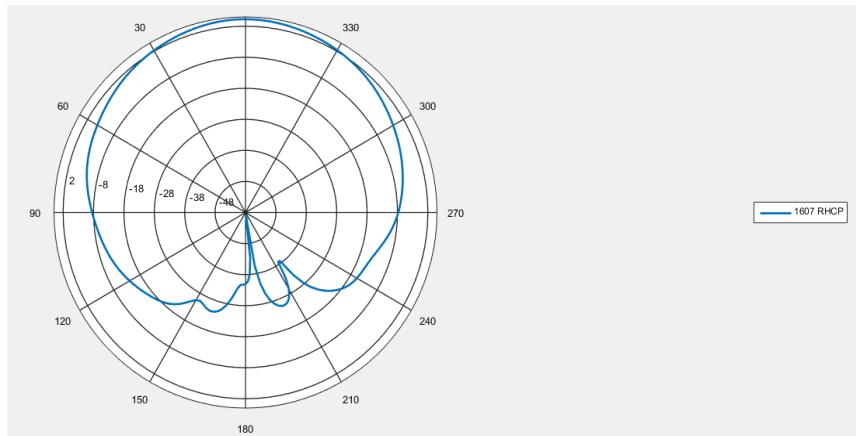
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1559MHz



1574MHz



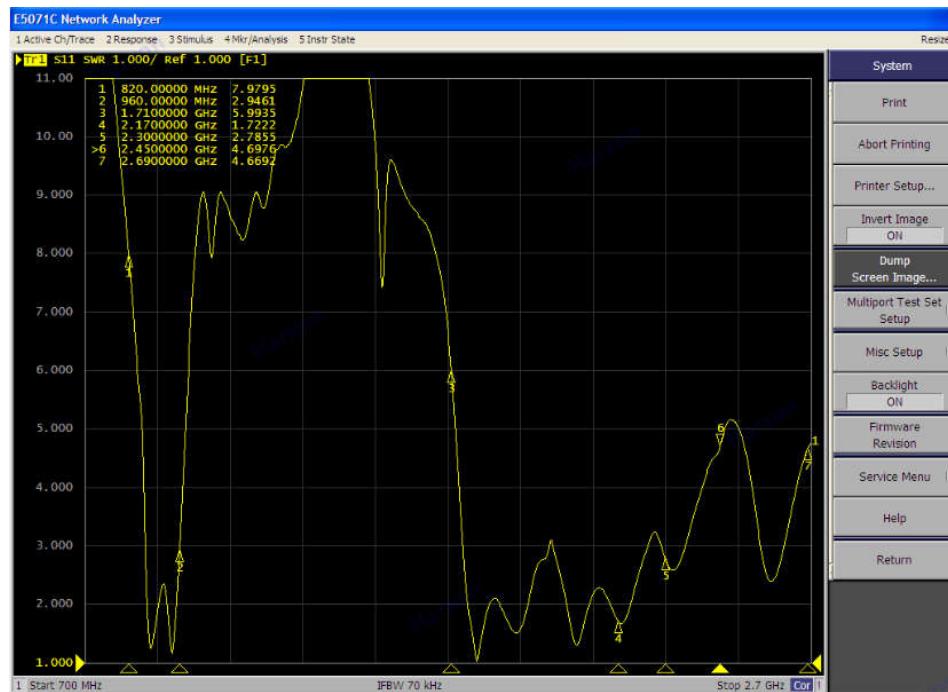
1607MHz

# OEM GNSS Antenna HX-CSX180A

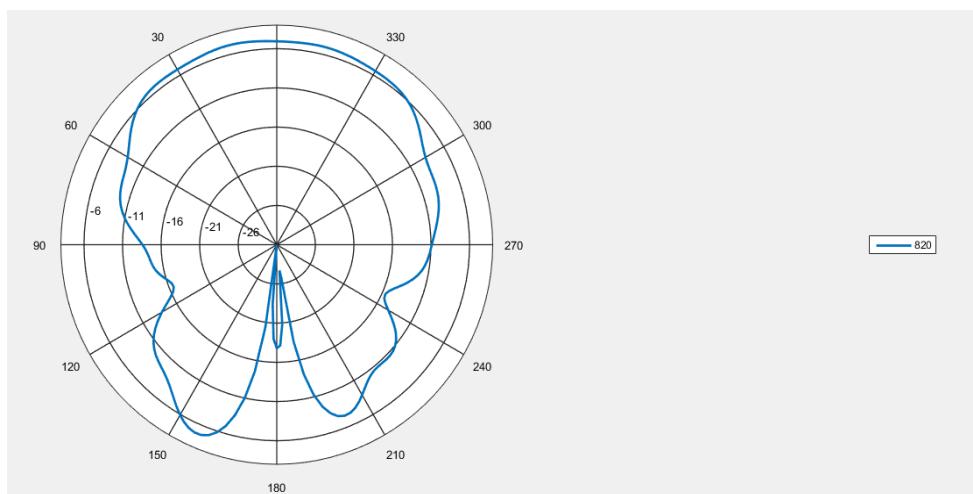
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## 4G Antenna Performance

Frequency (MHz)	820	880	960	1700	1920	2100	2160	2550	2650	2700
Gain (dBi)	-3.73	-2.23	-4.15	-1.56	-1.63	1.38	-0.81	-1.17	1.44	-0.75

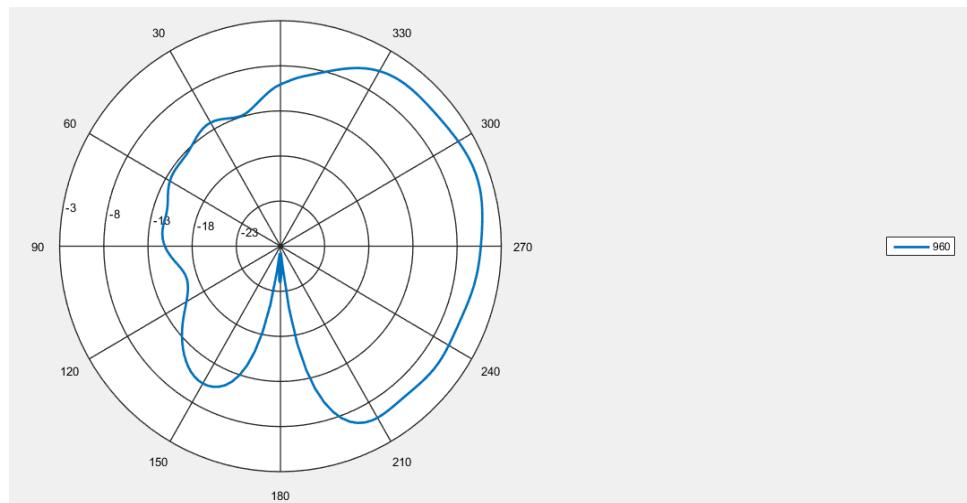


4G Antenna VSWR

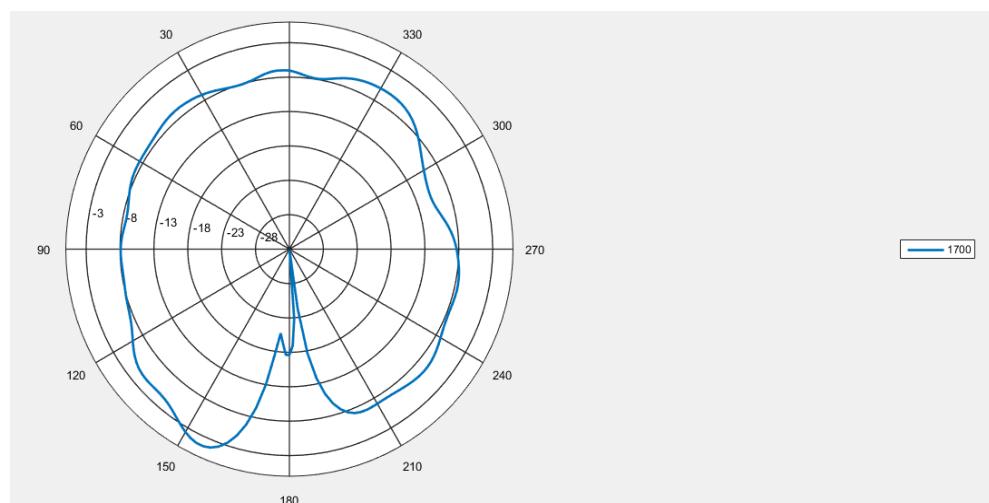


820MHz

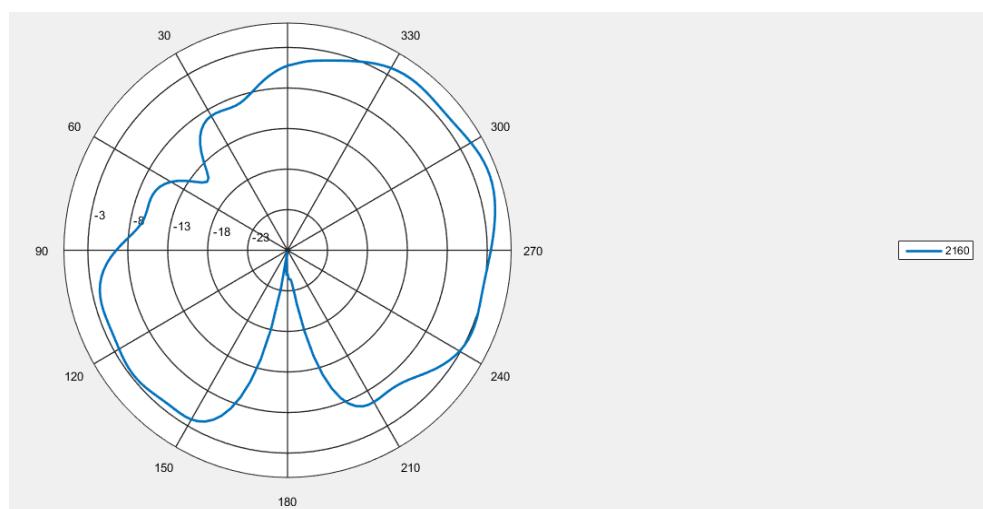
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960MHz

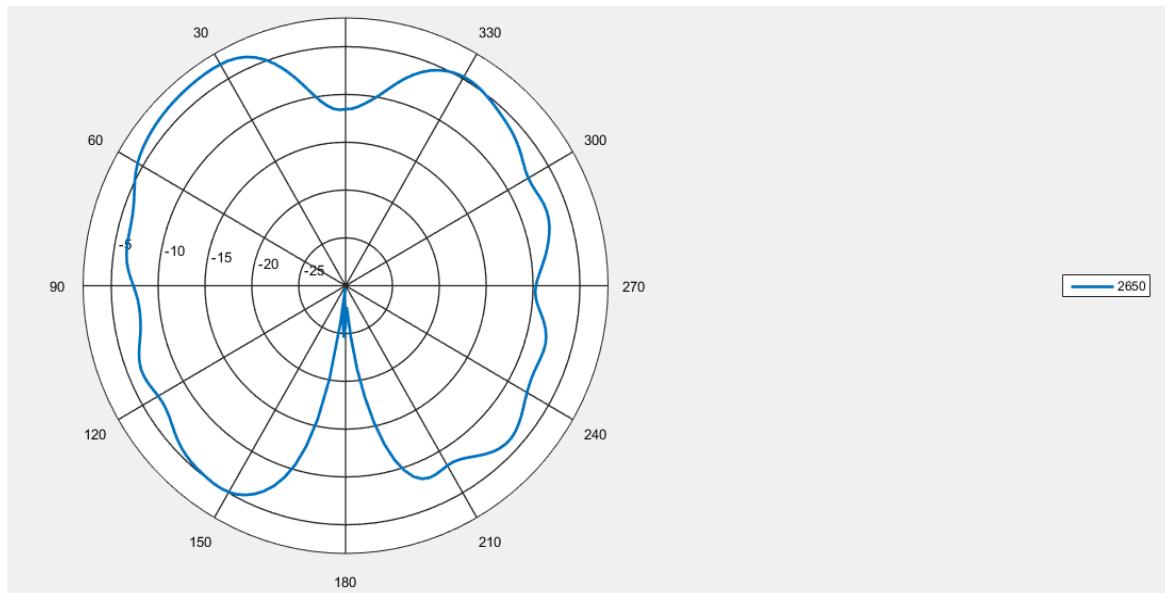


1700MHz

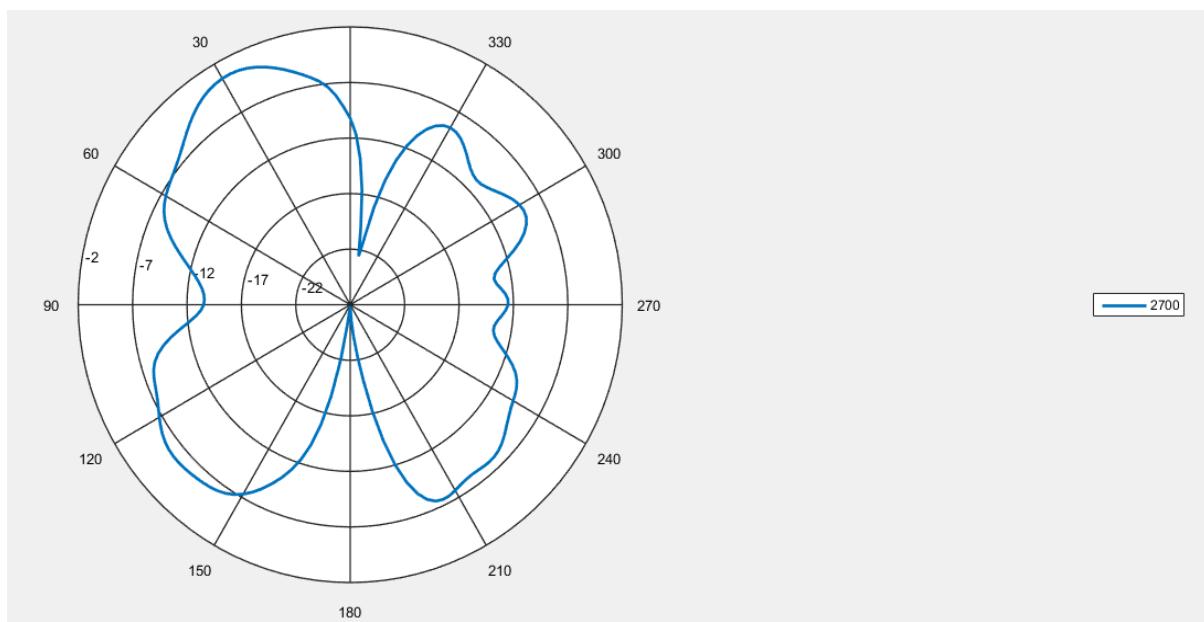


2160MHz

# OEM GNSS Antenna HX-CSX180A



2650MHz

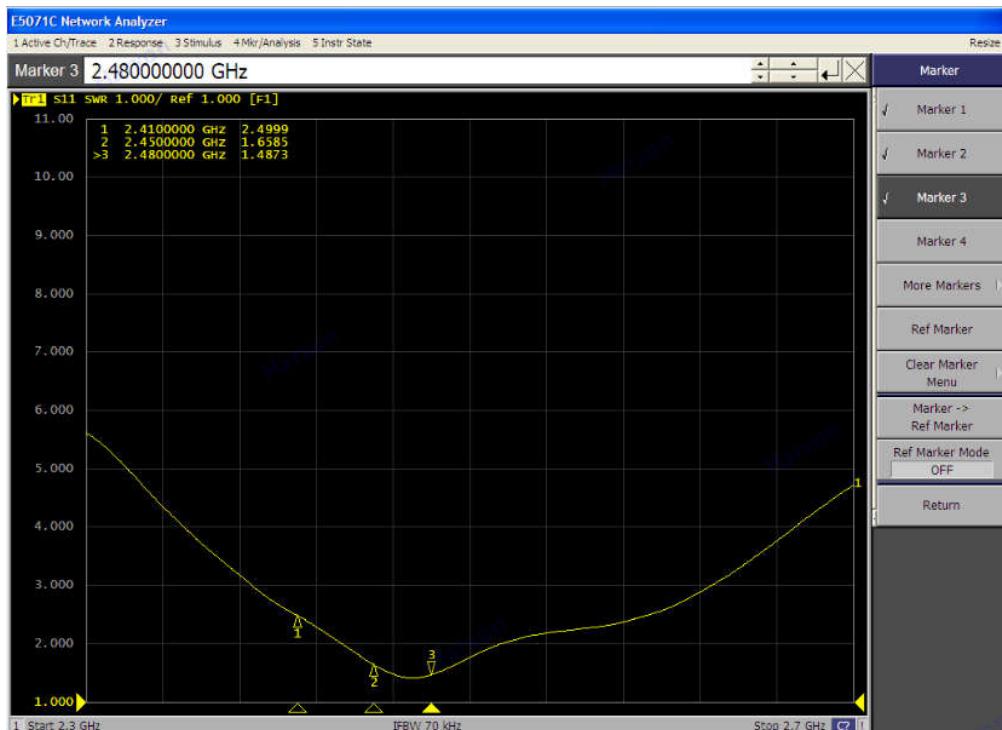


2700MHz

# OEM GNSS Antenna HX-CSX180A

## BT Antenna Performance

Frequency (MHz)	2410	2450	2480
Gain (dBi)	1.25	0.01	-0.1

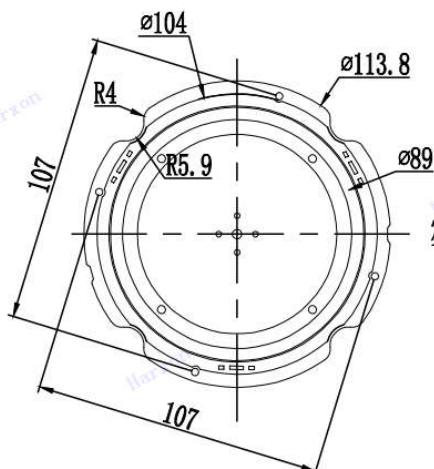


BT Antenna VSWR

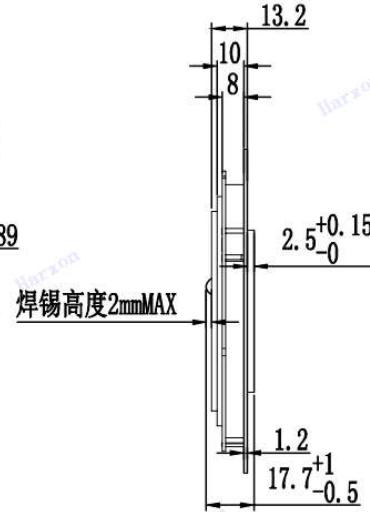
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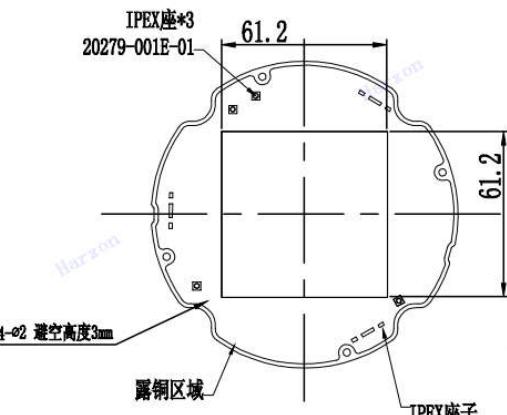
**Structure & Phase Center Drawing (mm)** ( Undeclared tolerance:  $\pm 0.3\text{mm}$  )



顶视图



侧视图



底视图

TOP VIEW

SIDE VIEW

BOTTOM VIEW

## LABEL

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

Survey Antenna Products  
Model: HX-CSX180A  
S/N: C20119000162  
Harxon Corporation



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