

# OEM GNSS Antenna HX-CSX310A



HX-CSX310A is an embedded full frequency GNSS antenna covering GPS, GLONASS, BDS, GALILEO, and QZSS. It is also compatible with 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.

## HIGHLY INTEGRATED ANTENNA FOR EASY INTEGRATION

HX-CSX310A integrates GNSS antenna and 4G, WIFI 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.

## 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.

## Key Features

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

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## Specifications

PERFORMANCE	
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 L5 L-Band 4G:B1/B2/B3/B4/B5/B7/B8/B20/B25 /B26/B38/B40/B41/B66 WIFI/BT:2412-2472MHz
Nominal Impedance	50 $\Omega$
Polarization	RHCP
Axial Ratio	$\leq 3$ dB
Azimuth Coverage	360°
Azimuth Coverage	$\leq 2.0$
Peak Gain	GNSS: 5dBi WIFI:0.5dBi 4G B1:2.52 dBi B2:2.52 dBi B3:2.52 dBi B4:2.52 dBi B5:3.27 dBi B7:1.12 dBi B8:3.27 dBi B20:3.27 dBi B25:2.52 dBi B26:3.27 dBi B38:1.12 dBi B40:2.49 dBi B41:1.12 dBi B66:2.52 dBi

Phase Center Deviation	$\pm 2$ mm
Phase Center	L1:6.9mm L2:8.1mm

### LOW NOISE AMPLIFIER

LNA Gain	L2: 34 $\pm$ 2 dB L1: 32 $\pm$ 2 dB
Noise Figure	$\leq 2$ dB
VSWR	$\leq 2.0$
Passband Ripple	$\pm 2$ dB
Passband Ripple	+3.3 ~ +12VDC
Operation Current	$\leq 45$ mA
Group Delay Ripple	$\leq 5$ ns

### MECHANICAL

Dimensions	$\Phi 110$ .*H16.3mm (Connector height not included)
Connector	GNSS&BT: SMP-J 4G : IPEX1

### ENVIRONMENTAL

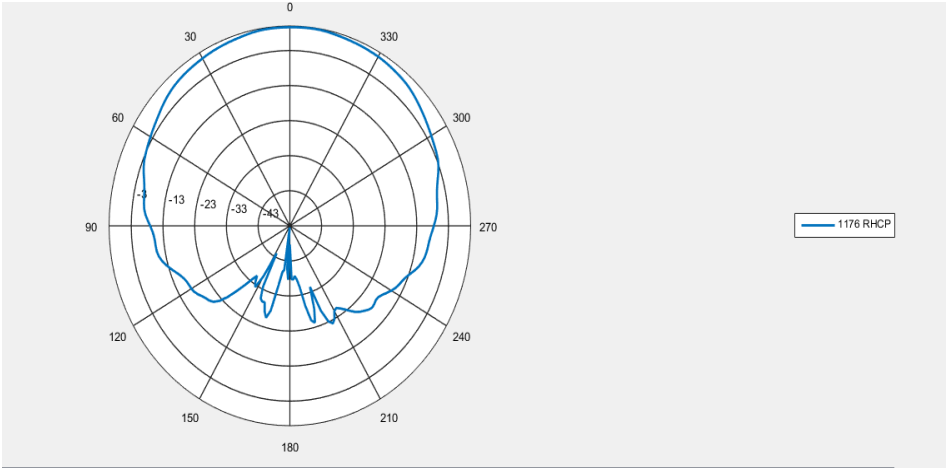
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +85°C
Humidity	95% non-condensing

# OEM GNSS Antenna HX-CSX310A

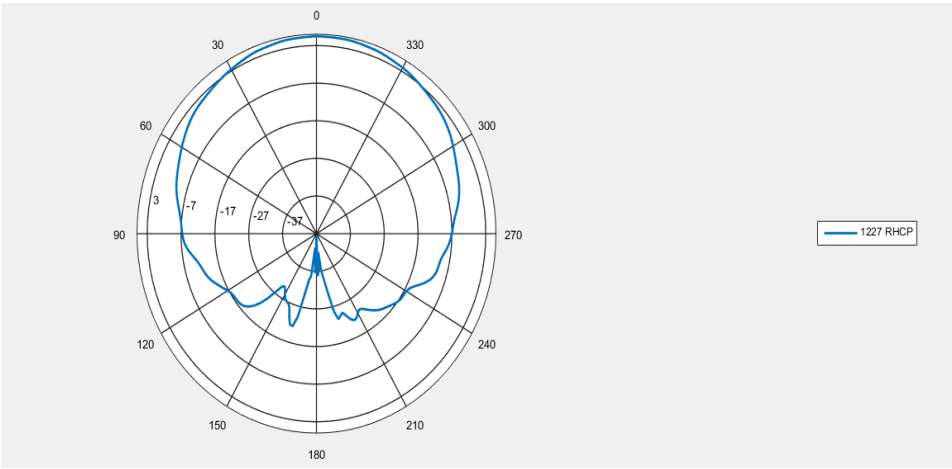


## GNSS Antenna Performance

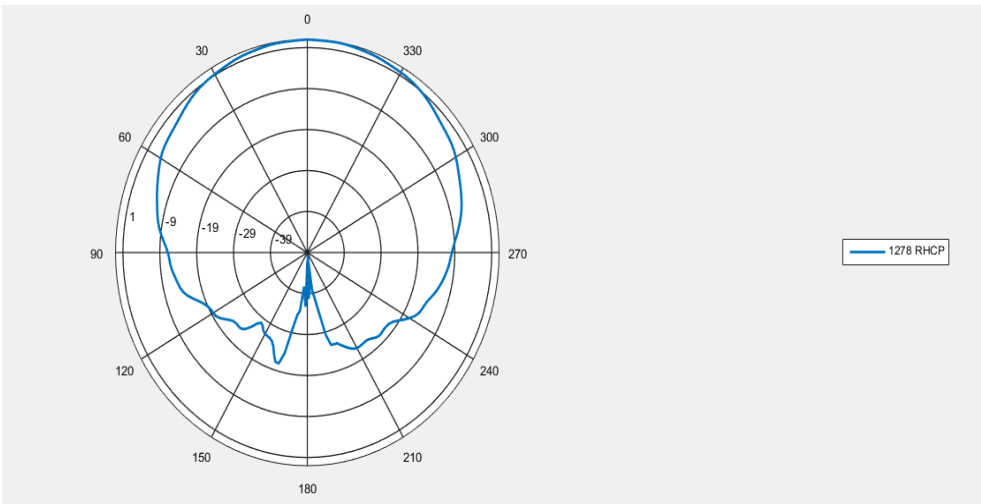
Frequency (MHz)	1176	1206	1227	1268	1559	1561	1575	1606
Gain (dBi)	3.1	4.2	5.3	4.8	4.3	4.6	5.3	5.1



1176MHz

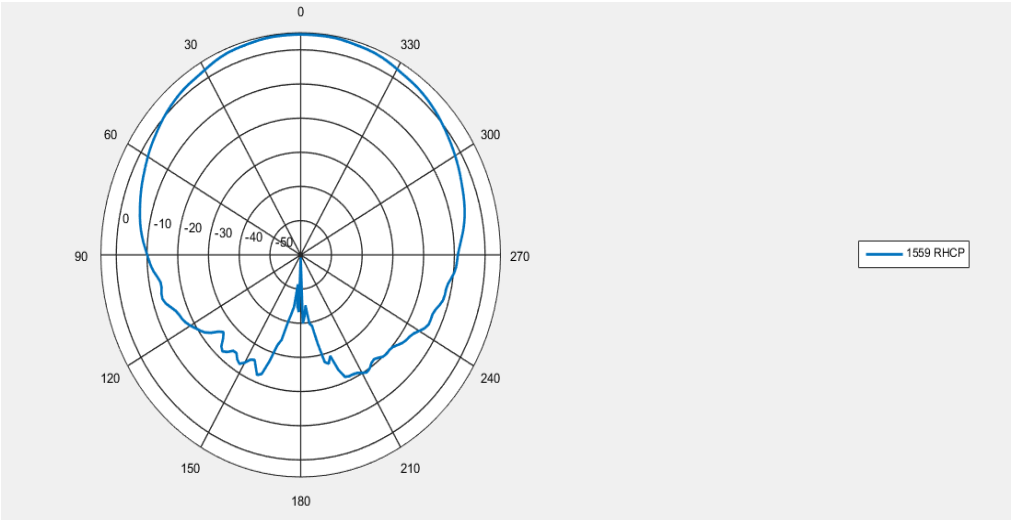


1227MHz

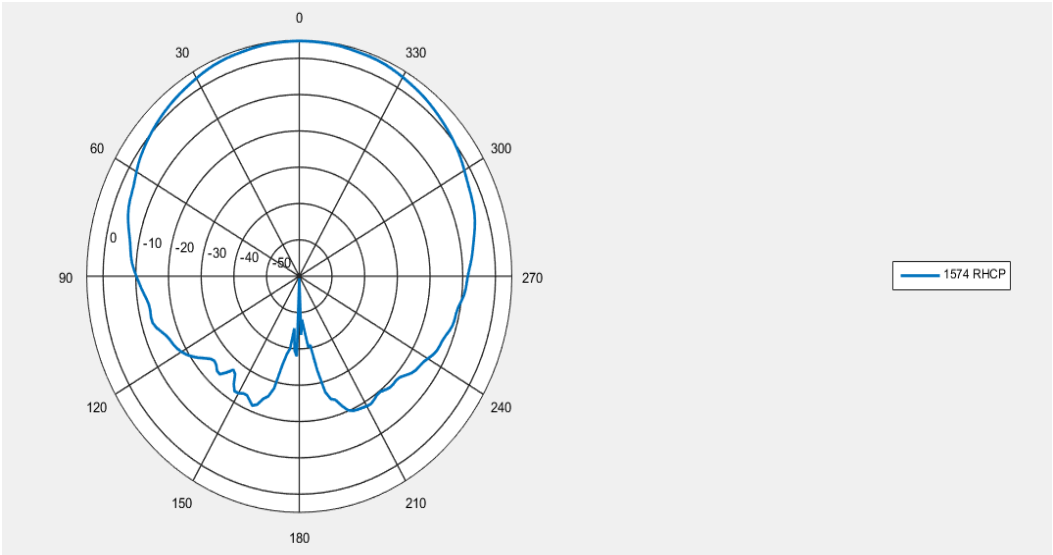


1278MHz

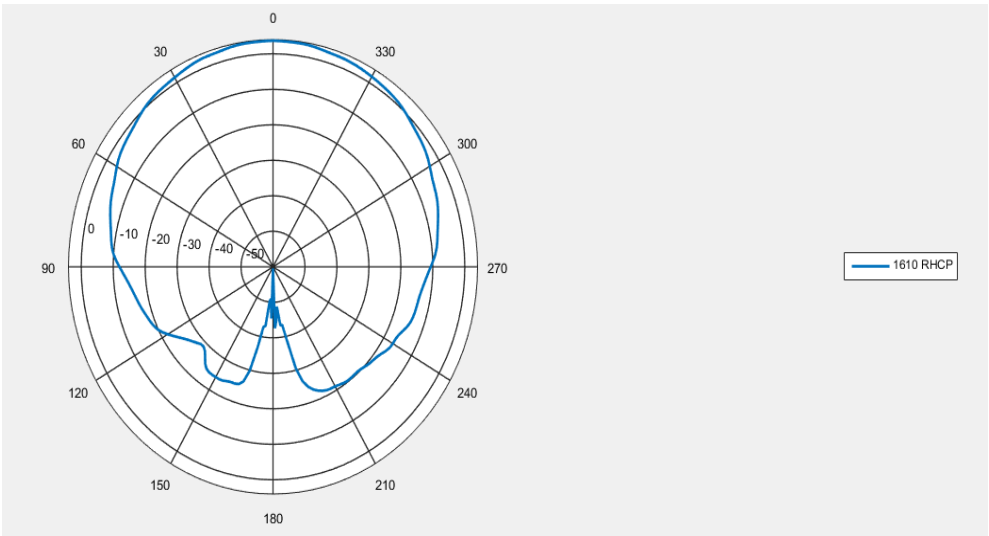
# OEM GNSS Antenna HX-CSX310A



1559MHz



1574MHz

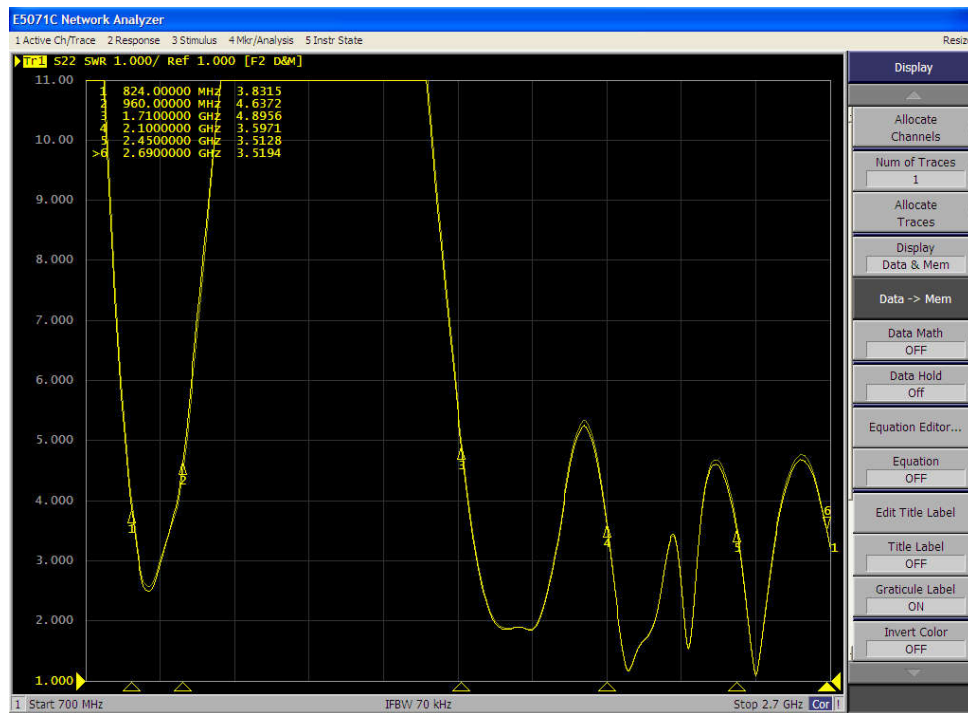


1610MHz

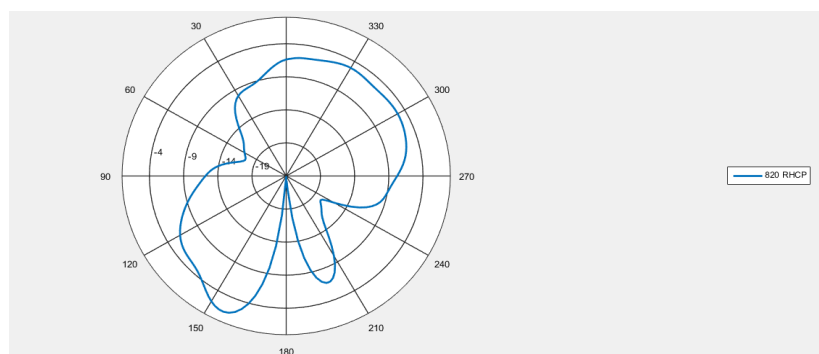
# OEM GNSS Antenna HX-CSX310A

## 4G Antenna Performance

Frequency (MHz)	820	890	960	1710	1910	2110	2410	2450	2480	2690
Gain (dBi)	-1.37	3.27	-1.33	-2.57	2.52	2.49	1.44	2.30	1.12	-3.84

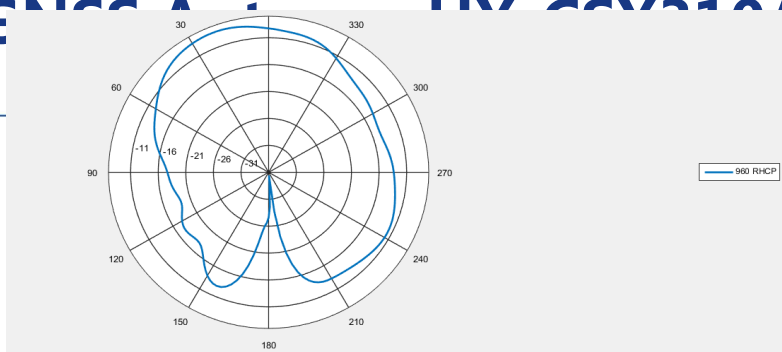


4G Antenna VSWR

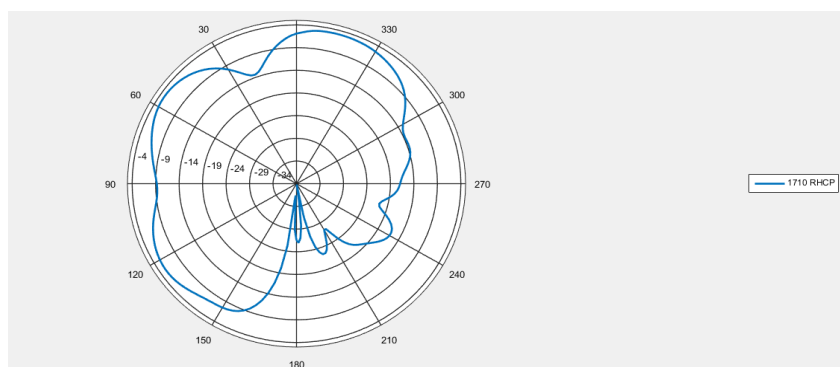


820MHz

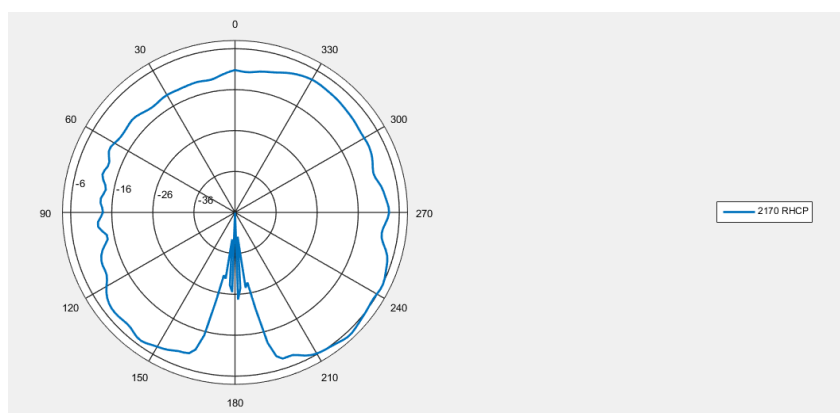
# OEM GNSS Antenna Directivity Coverage



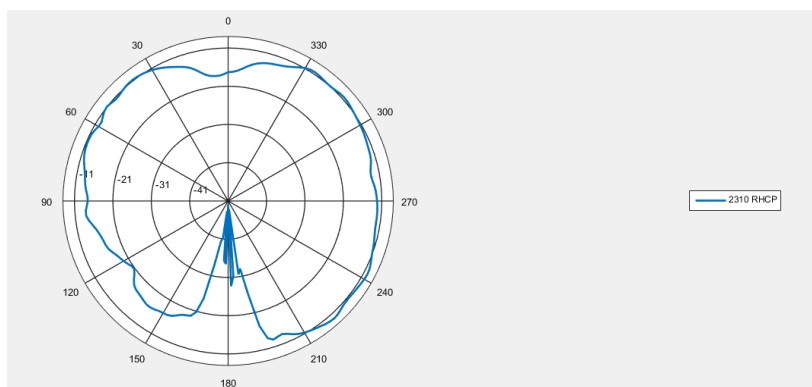
960MHz



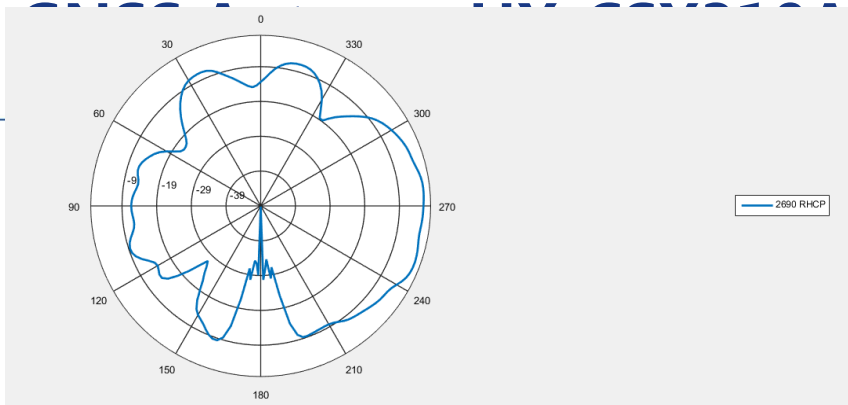
1710MHz



2170MHz



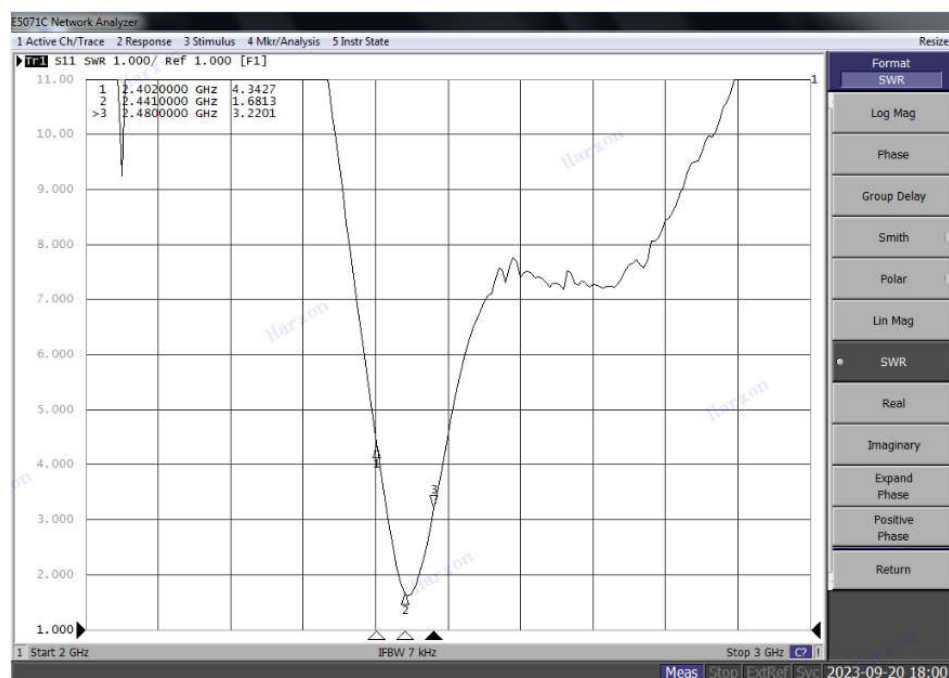
2310MHz



2690MHz

## BT Antenna Performance

Frequency (MHz)	2410	2450	2480
Gain (dBi)	0.45	2.07	1.69



BT Antenna VSWR

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

