

Antenna

YPCS002BA Datasheet

Antenna Services

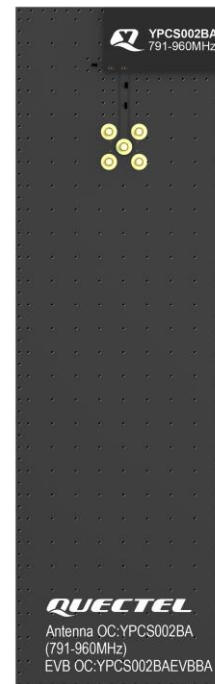
Version: 1.1

OC (Antenna Only): **YPCS002BA**

OC (Antenna + EVB): **YPCS002BA EVB**

Date: 2023-06-26

Status: Released



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About the Document

Revision History

Version	Date	Author	Note
-	2022-09-23	Howard ZHANG/ Toby WANG	Creation of the document
1.0	2023-03-22	Howard ZHANG/ Toby WANG	First official release
1.1	2023-06-26	Toby WANG	Updated the drawing (Chapter 5).

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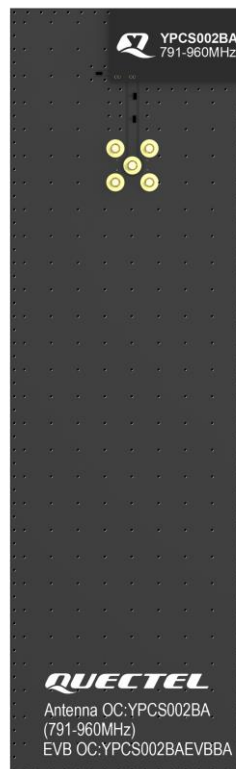
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1 Product Description

This Quectel embedded 4G SMD antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands. Featuring high efficiency and gain, it is an ideal antenna for a smooth and stable connection with high-efficiency data transmission even under the influence of the device's internal structure. Ground plane dependent, it's designed to be mounted directly to the device host PCB using a conventional PCB reflow process. Supplied tape and reel for high volume pick and place assembly, this SMD antenna can be tuned specifically for the final device environment with a simple PI matching circuit.

2 Product Features

- Cellular LTE
- High efficiency
- Excellent performance



3 Product Specifications

Passive Electrical Specifications

Frequency Range	791–960 MHz
Input Impedance	50 Ω
VSWR	≤ 2.86
Gain	≤ -1.28 dBi
Polarization Type	Linear

Mechanical Specifications

Antenna Size (mm)	20 x 11 x 1.6
Material	PCB
Color	Black
Mounting Type	Soldering
Working Temperature	-40 °C to +85 °C

EVB Mechanical Specifications

EVB Size	115 x 35 x 0.8 mm
Material	FR4
Connector Type	SMA Female
Weight	Typical. 11.2 g
Working Temperature	-40 °C to +85 °C
Mounting Type	Screw

4 Overall Performance

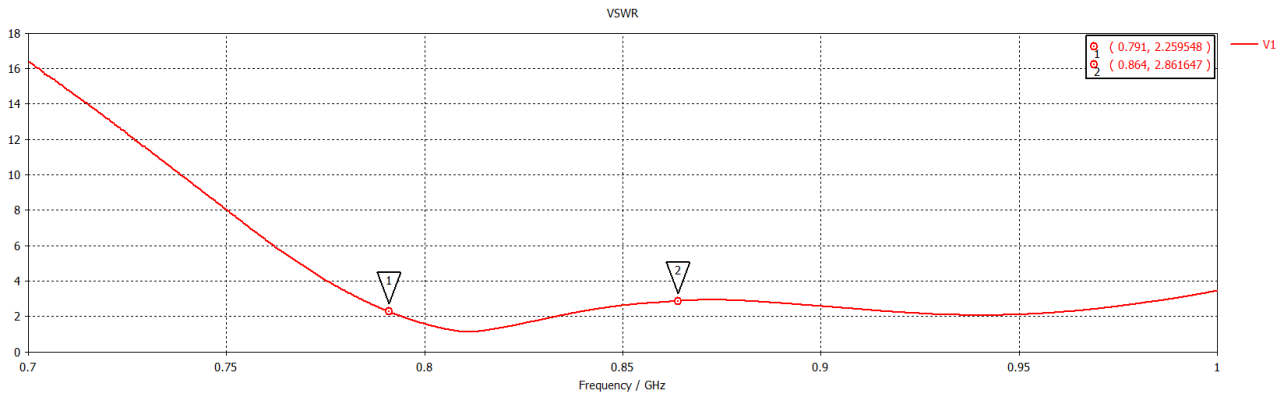
4.1. Test Environment

- KEYSIGHT ENA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 600 MHz – 8.5 GHz



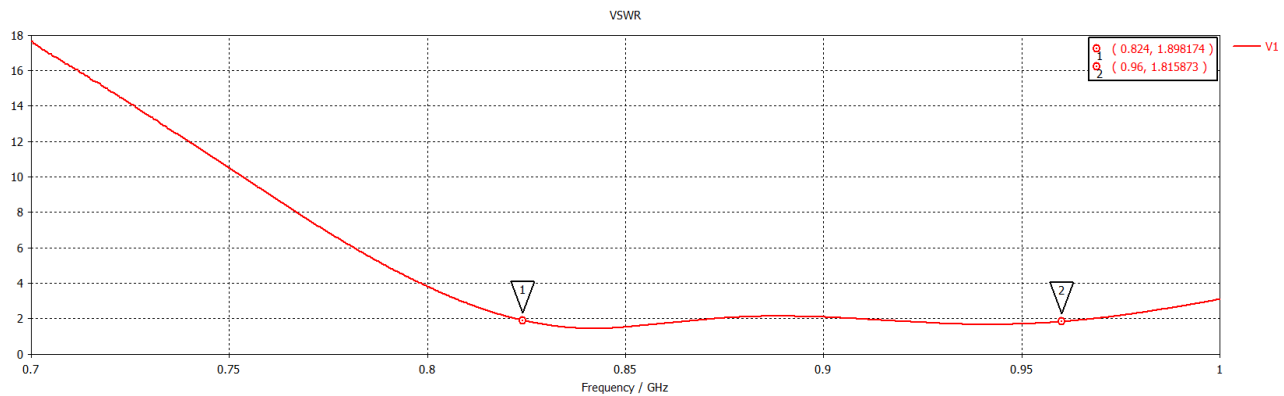
4.2. VSWR

Band 20



Frequency (MHz)	791	864
VSWR	2.26	2.86

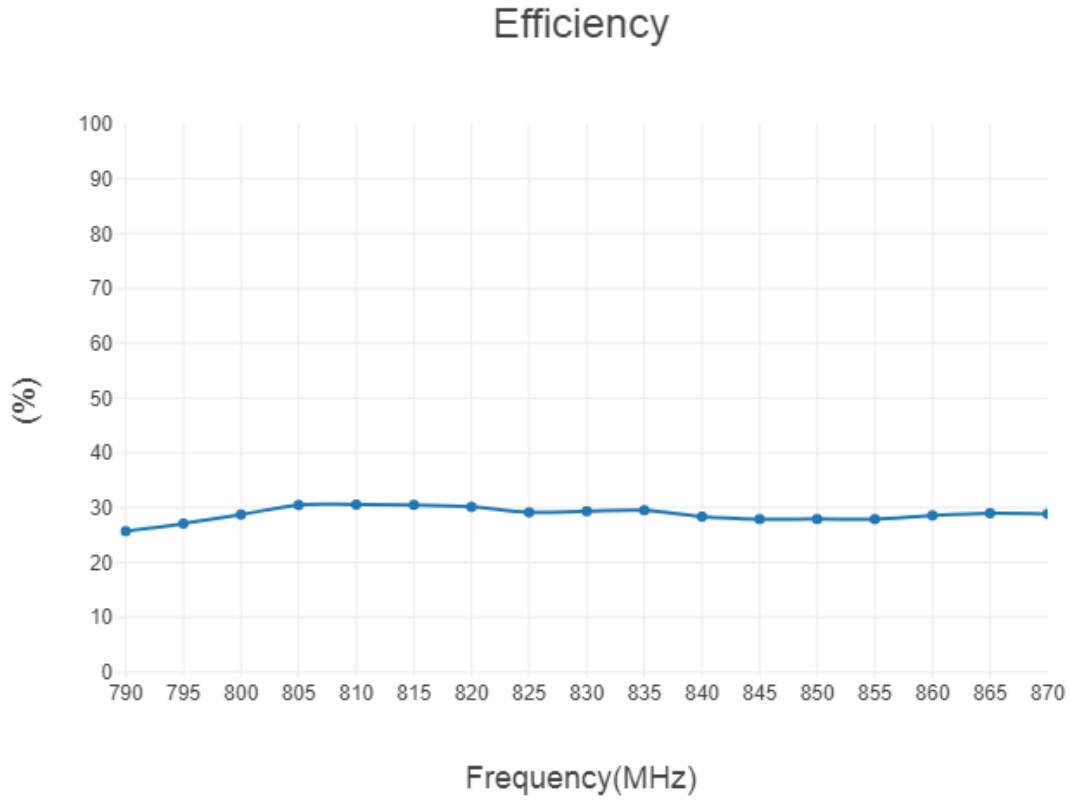
Band 5/8



Frequency (MHz)	824	960
VSWR	1.90	1.82

4.3. Efficiency

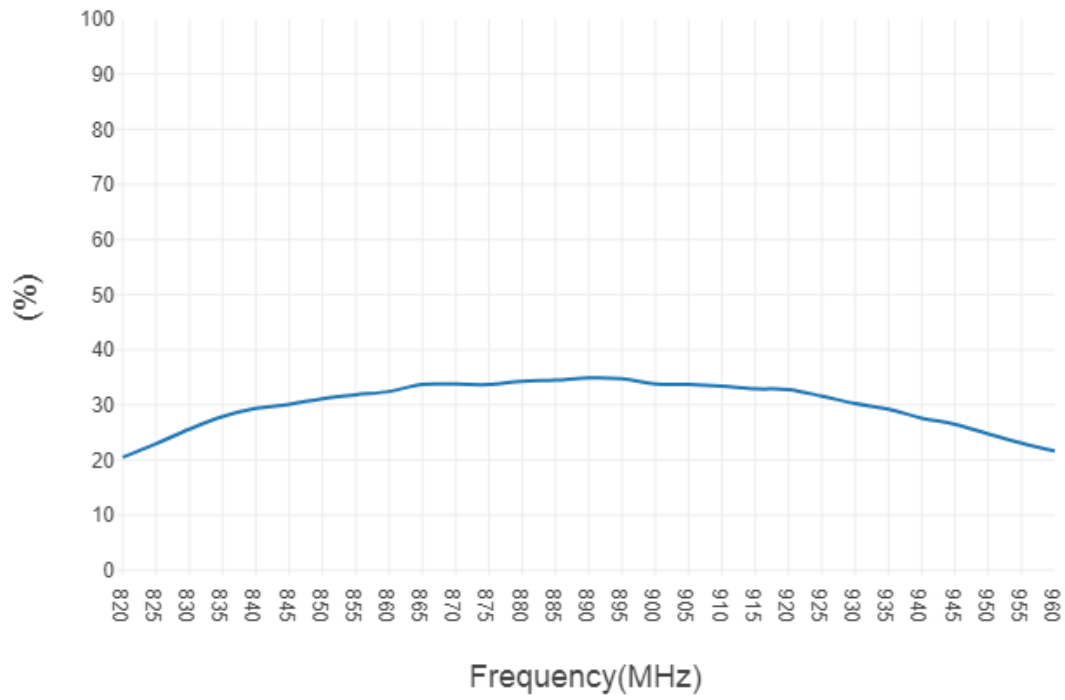
Band 20



Frequency (MHz)	791	864
Efficiency (%)	25.71	29.00

Band 5/8

Efficiency

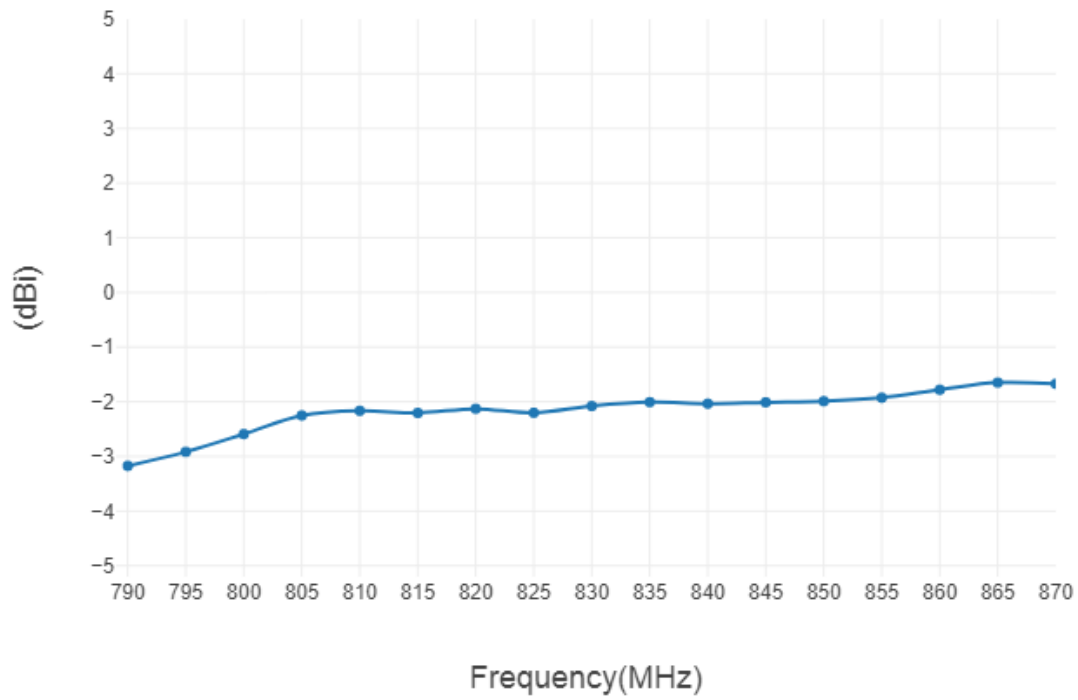


Frequency (MHz)	824	960
Efficiency (%)	22.97	21.60

4.4. Gain

Band 20

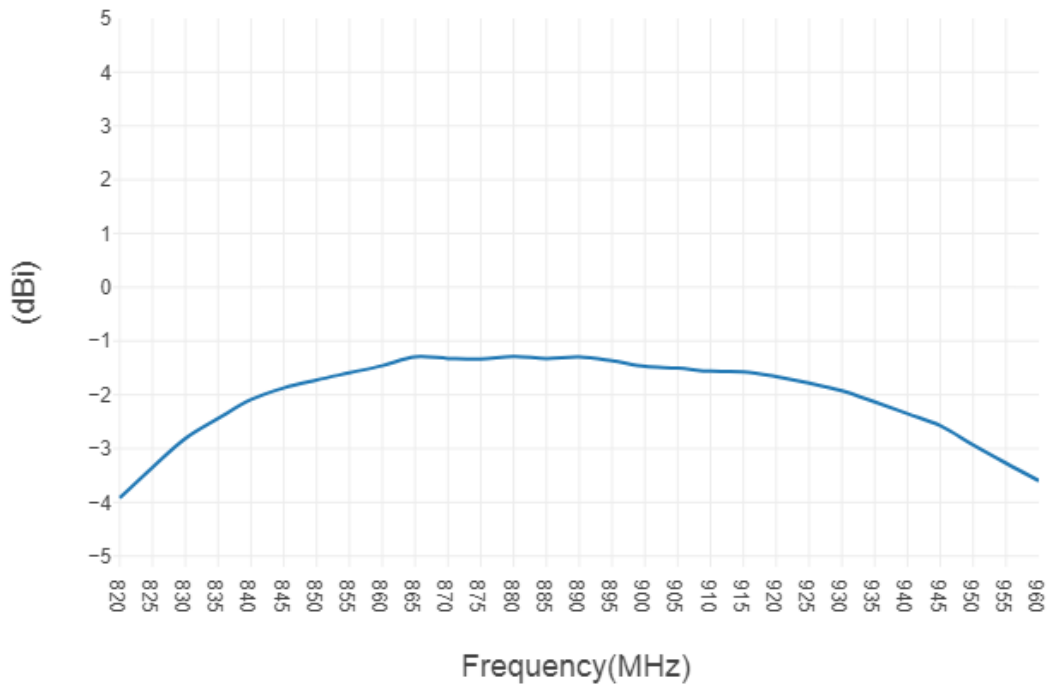
Peak Gain



Frequency (MHz)	791	864
Gain (dBi)	-3.17	-1.65

Band 5/8

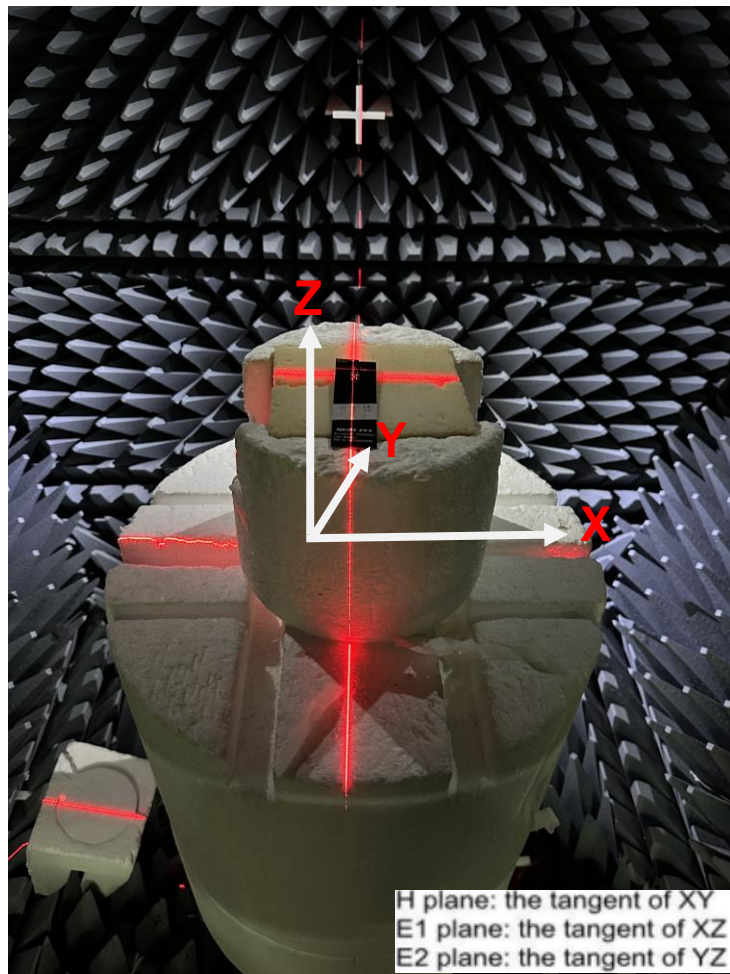
Peak Gain



Frequency (MHz)	824	960
Gain (dBi)	-3.35	-3.60

4.5. Radiation Pattern

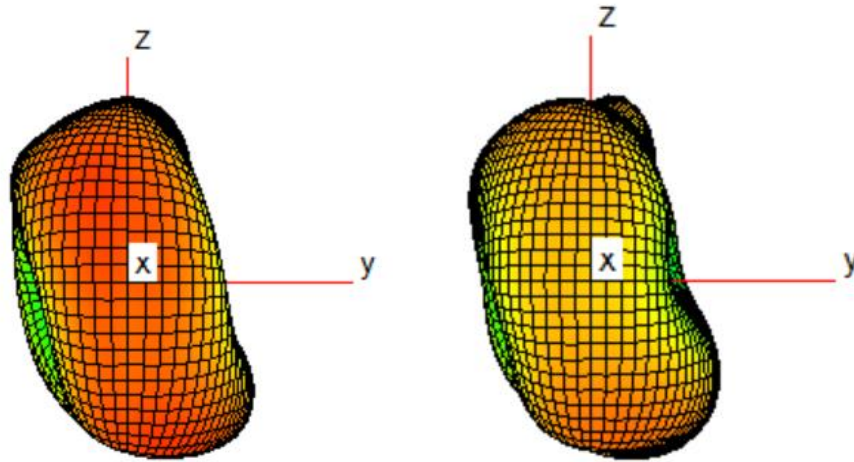
- Test condition: assembled on EVB



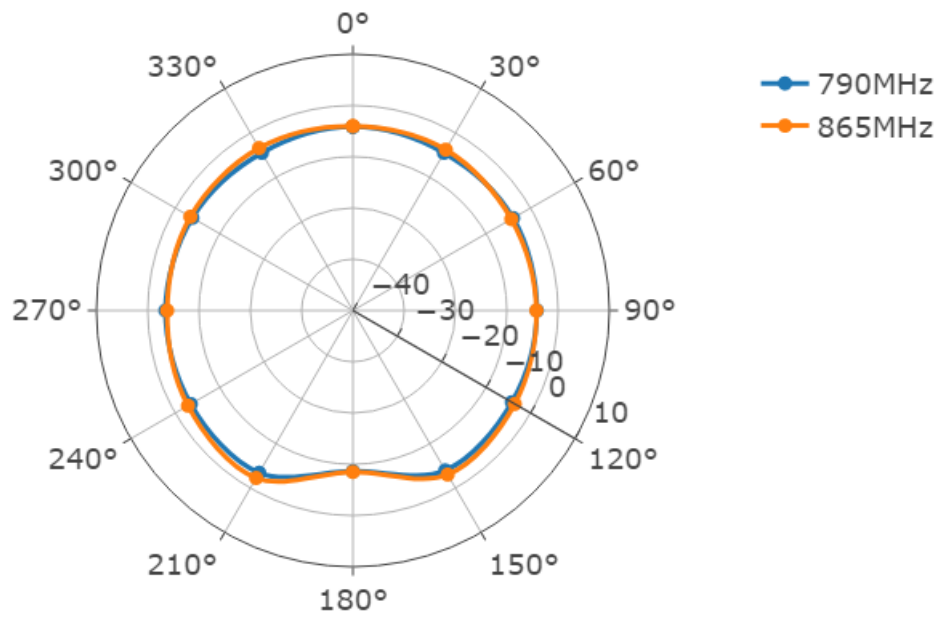
Band 20

790 MHz

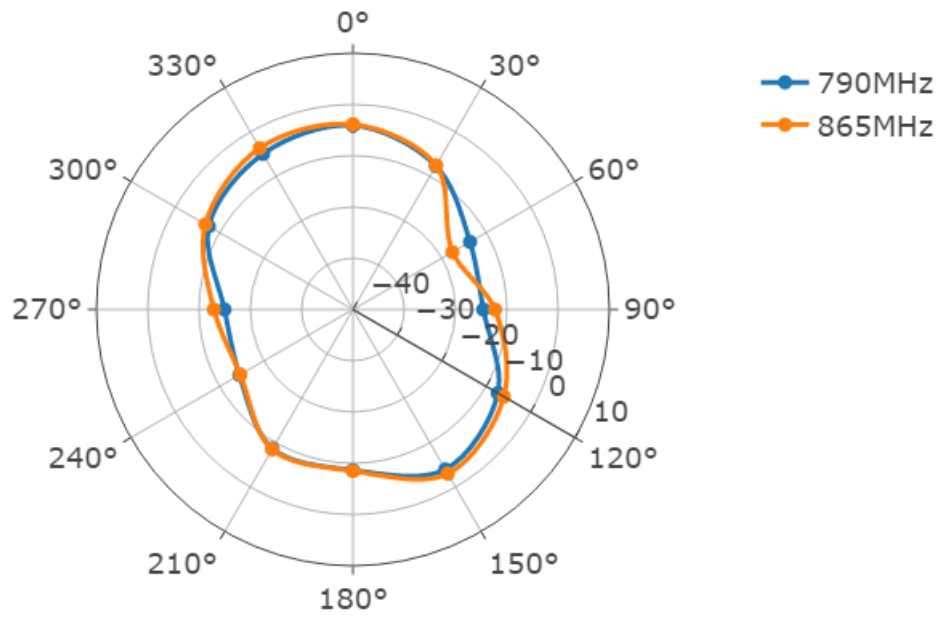
865 MHz



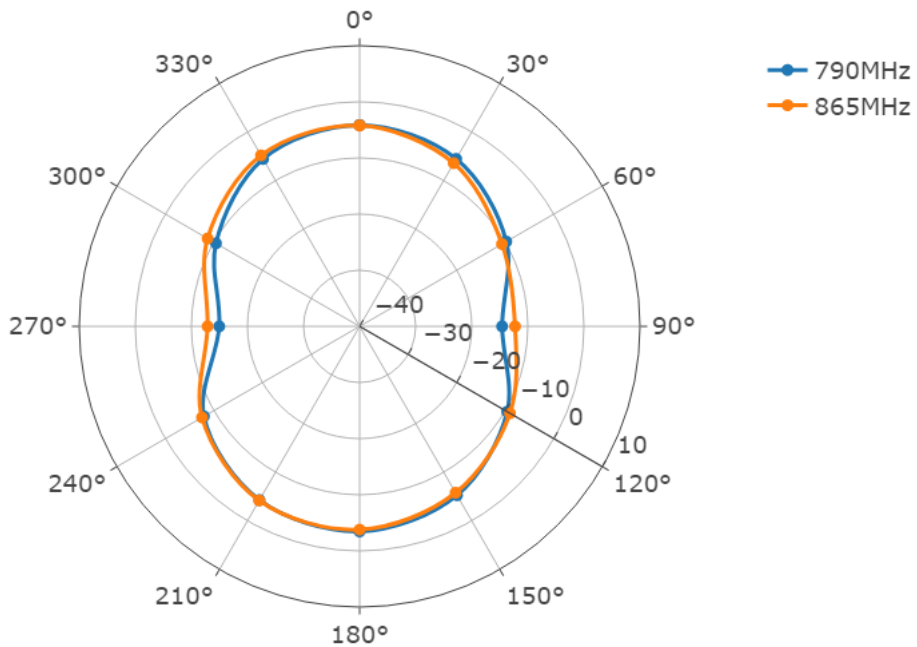
E1 Plane: XZ



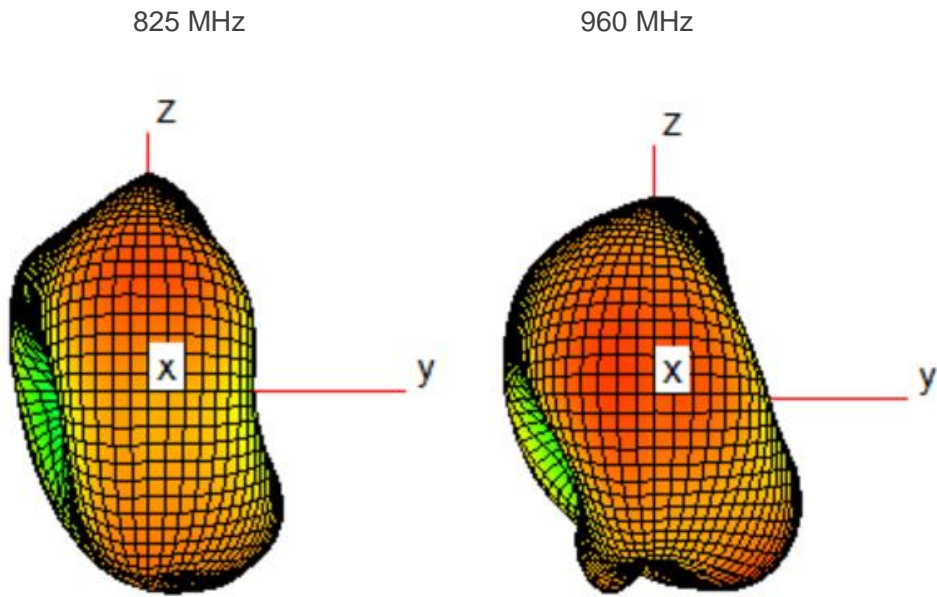
E2 Plane:YZ



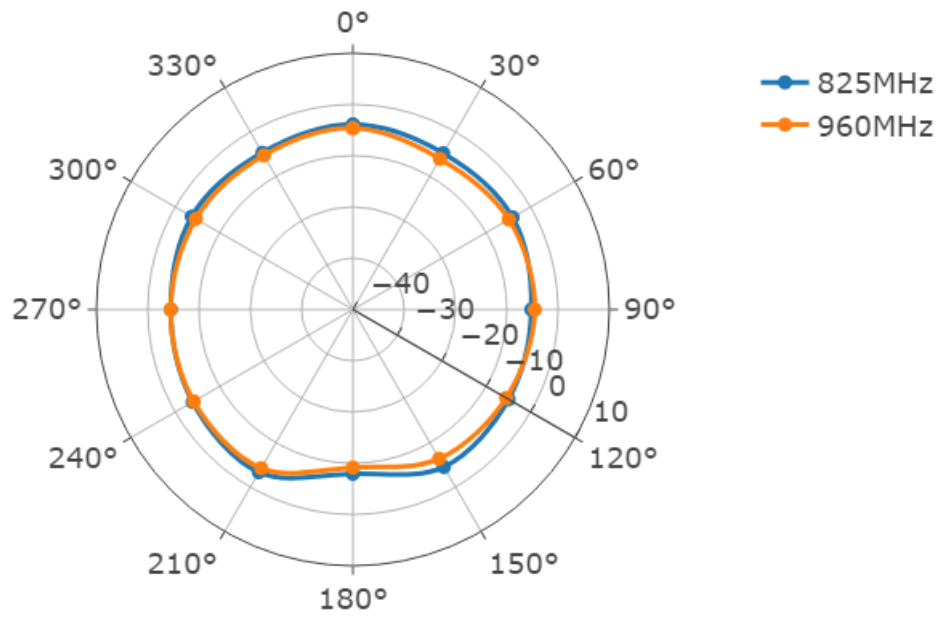
H Plane:XY



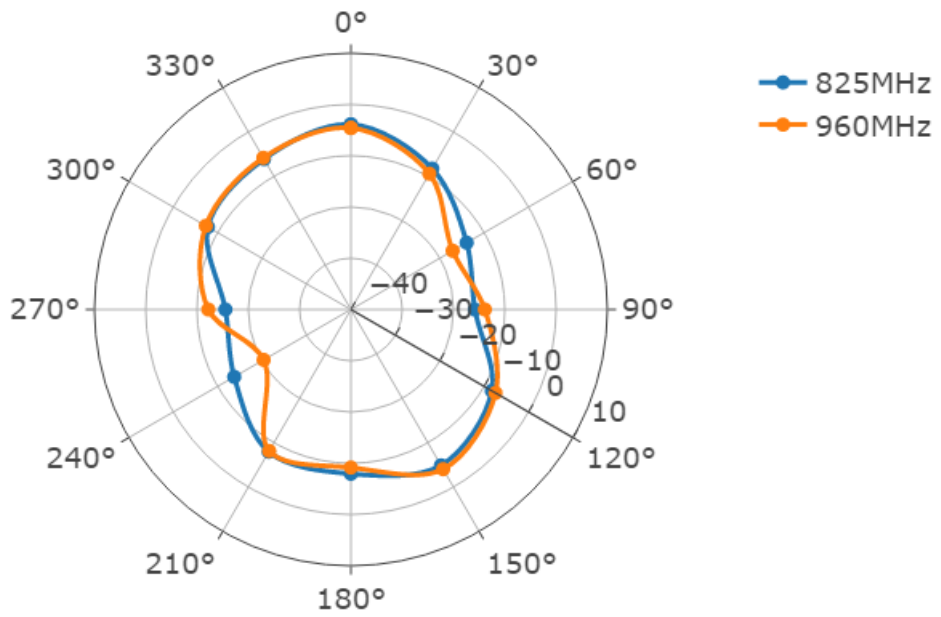
Band 5/8



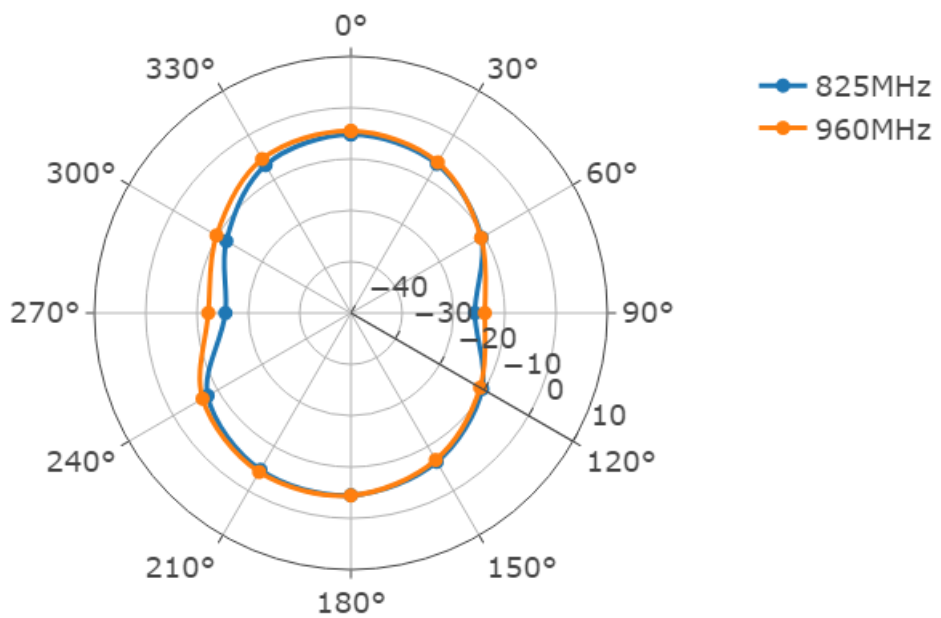
E1 Plane: XZ



E2 Plane:YZ



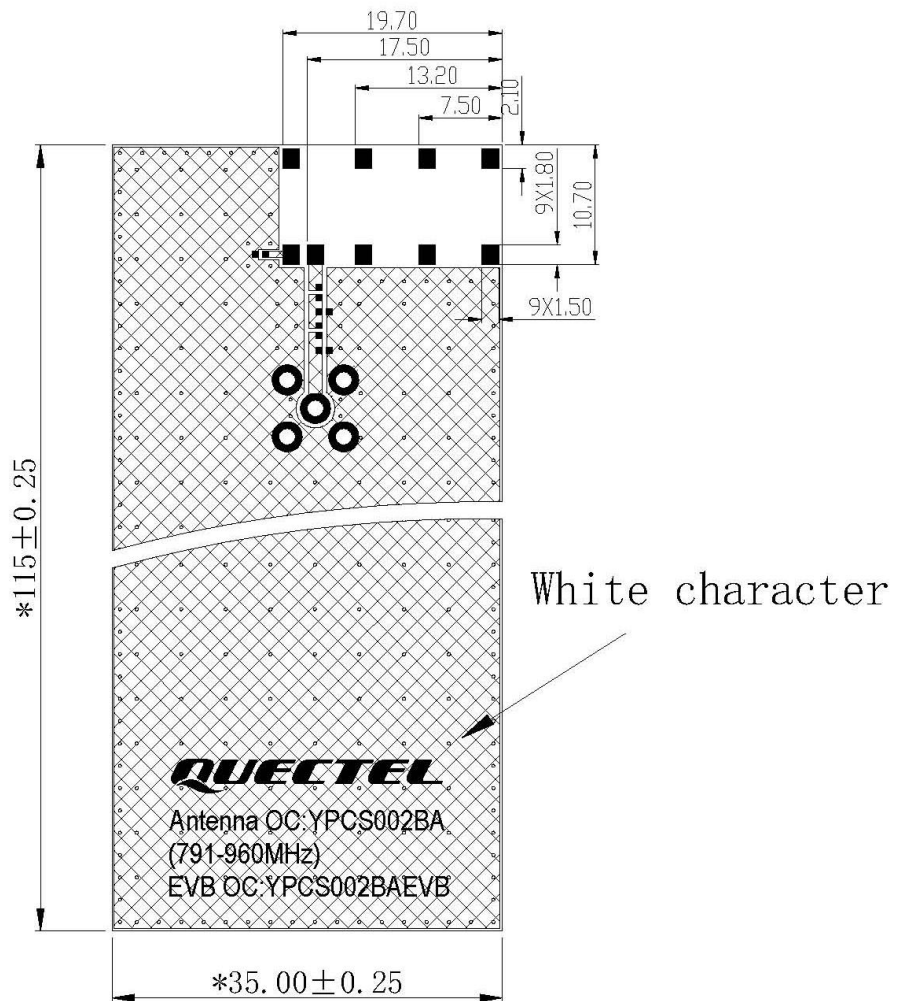
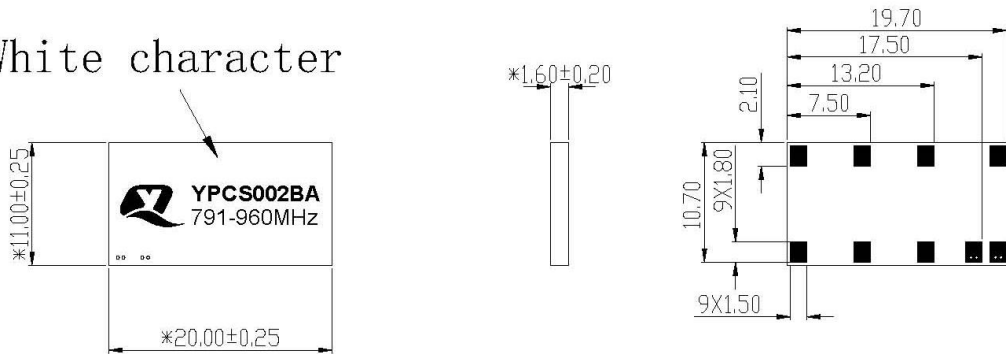
H Plane:XY



5 Product Size

ROHS

White character



6 EVB Size

BAND 5/8

	Name	Material	Finish	QTY
1	Antenna	FR4 3.0t	BLACK	1
2	PCBA	FR4 0.8t	Green	1
3	SMA-K	Brass	Gold Plated	1
4	2.4nH(0402)	Ceramics	N/A	LQG15HS2M4S02D
5	0.75 pF(0402)	Ceramics	N/A	GRM1555C1HR75CZ01D
6	27 nH(0402)	Ceramics	N/A	LQG15HS27N02D

BAND 20

	Name	Material	Finish	QTY
1	Antenna	FR4 3.0t	BLACK	1
2	PCBA	FR4 0.8t	Green	1
3	SMA-K	Brass	Gold Plated	1
4	4.3nH(0402)	Ceramics	N/A	LQG15HS4N3S02D
5	0.75 pF(0402)	Ceramics	N/A	GRM1555C1HR75CZ01D
6	27 nH(0402)	Ceramics	N/A	LQG15HS27N02D

