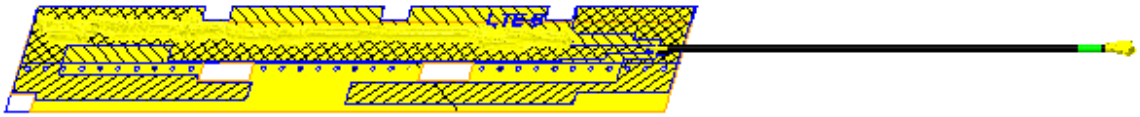
617MHz/2.7GHz Flexible Antenna

Part number: PIOV.0MS.NRB.A

Features:

- 617MHz~960MHZ
  1.71GHz~2.69GHZ
- IPEX MHF connector
- 260mm cable
- Dimension
  145*25*0.2mm
- Ground dependent



1. OVERVIEW

The SAA PIOV.0MS.NRB.A antenna is a PCB based antenna. The operation frequency band is 617MHz~960MHz and 1.71GHz ~ 2.69GHz. In practice, the antenna is usually assembled near to a PCB as the module ground, and the grounding position and winding method of the cable may have a significant impact on antenna performance.

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2. ANTENNA CHARACTERISTICS

parameter	SAA PIOV.0MS.NRB.A antenna	
band (GHz)	0.617~0.96	1.71~2.69
VSWR	<3	<2
Efficiency (dB)	>40%	>55%
Peak Gain (dBi)	>1.5	>3
Impedance	50 ohm	
Polarization	Linear	
Text environment	antenna in specific device environment	
Power handled	5W	
Dimensions	145*25*0.2mm	
Operation temperature	-40℃ ~ +85℃	
Storage temperature	-40℃ ~ +85℃	
Weight	~2 g	
Connector	IPEX MHF	
Cable standard	1.37 coaxial cable, 260mm length	
RoHS compliant	Yes	
Adhesive	3M 468	

3. TEST SET UP

The Keysight E5071C network analyzer can test antenna return loss and VSWR.

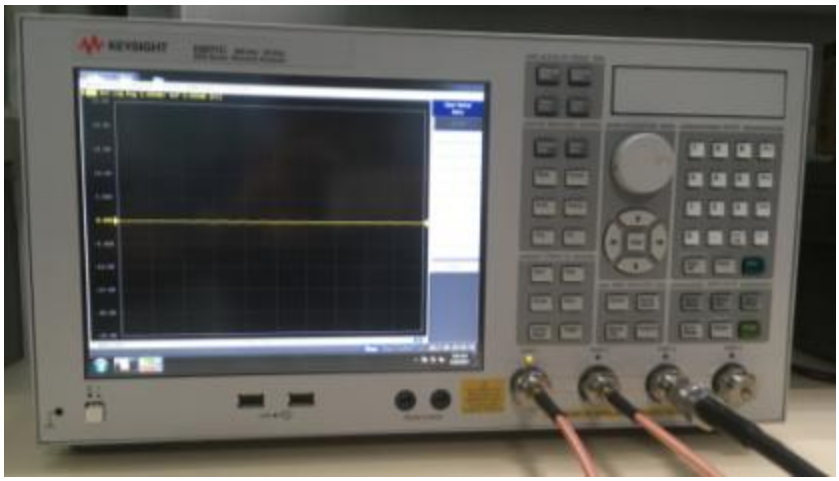


Figure1. Keysight E5071C network analyzer

The Satimo 3D chamber can test the antenna efficiency, gain and radiation pattern.

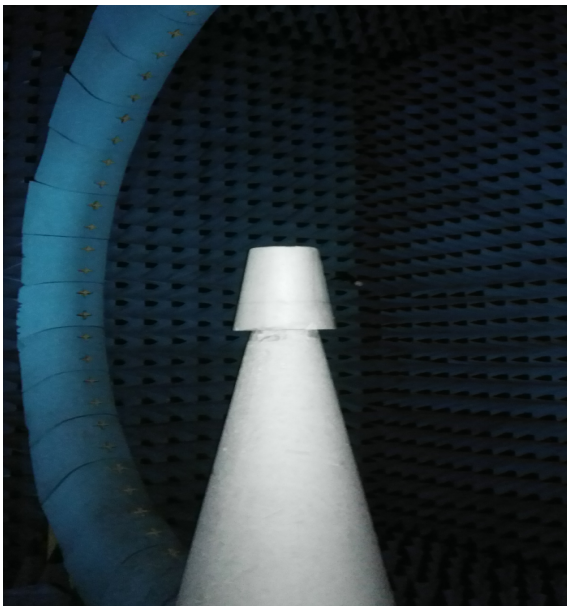


Figure2. Satimo 3D chamber

4. ANTENNA PARAMETERS

This antenna is designed for indoor distribution and is used in specific environments. It is usually designed on a plastic bracket with a lot of metal surrounding it, and finally covered with a plastic cover. Therefore, the test setup diagram is shown below.

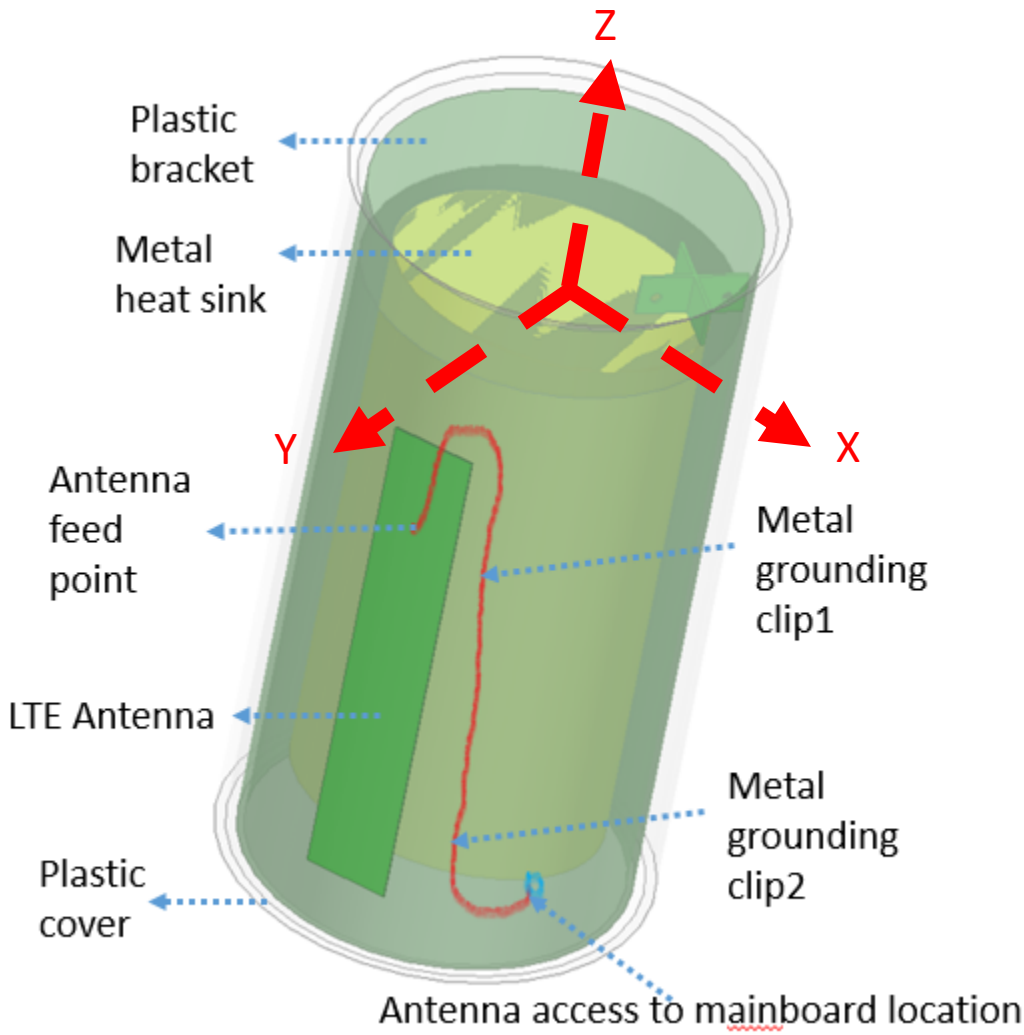


Figure3. Antenna test set up (free space and on PCB)

4.1 VSWR

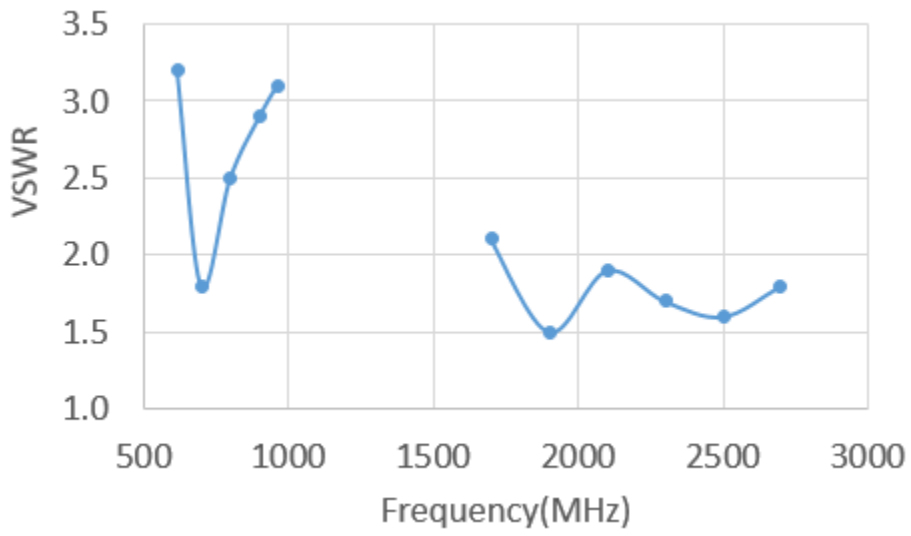


Figure4.1 VSWR of the antenna

4.2 Efficiency

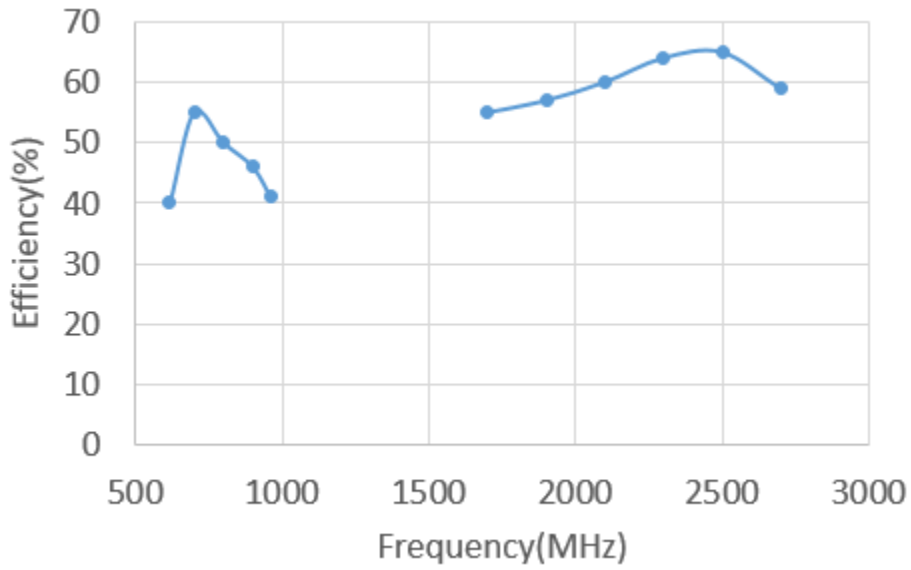


Figure4.2 Efficiency of the antenna

4.3 Peak gain

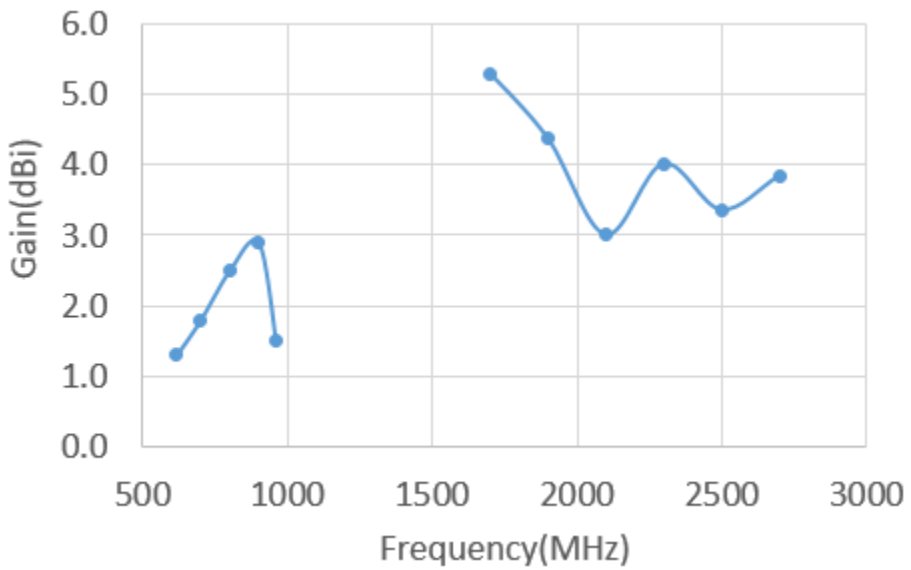
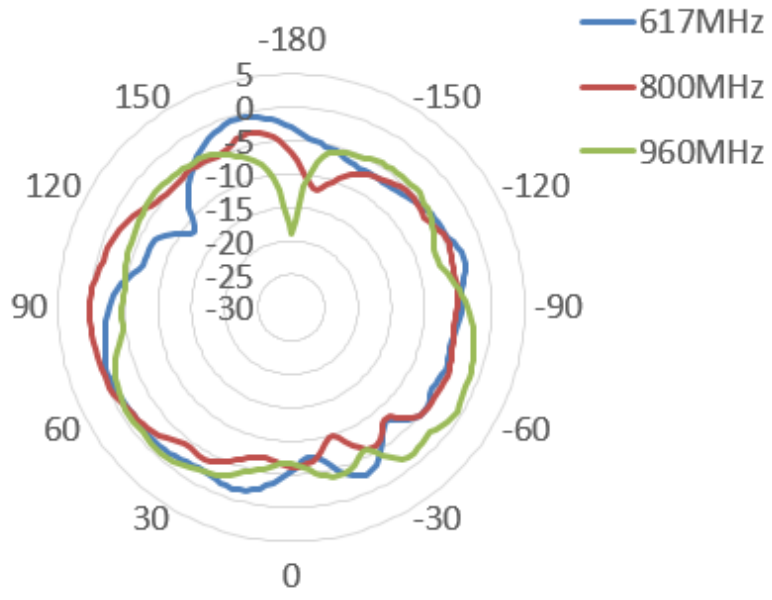


Figure4.3 Peak gain of the antenna

4.4 Radiation pattern

4.4.1 Phi=0°, in figure 3 environment as reference (dBi)



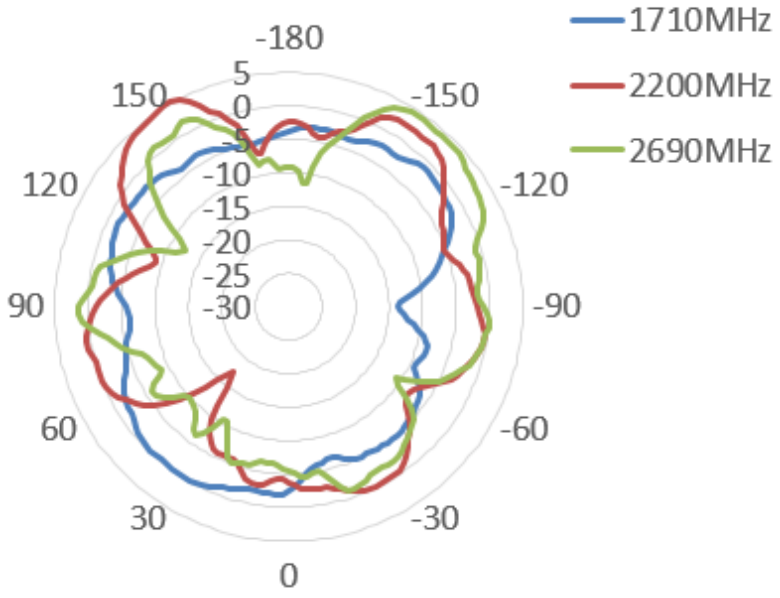
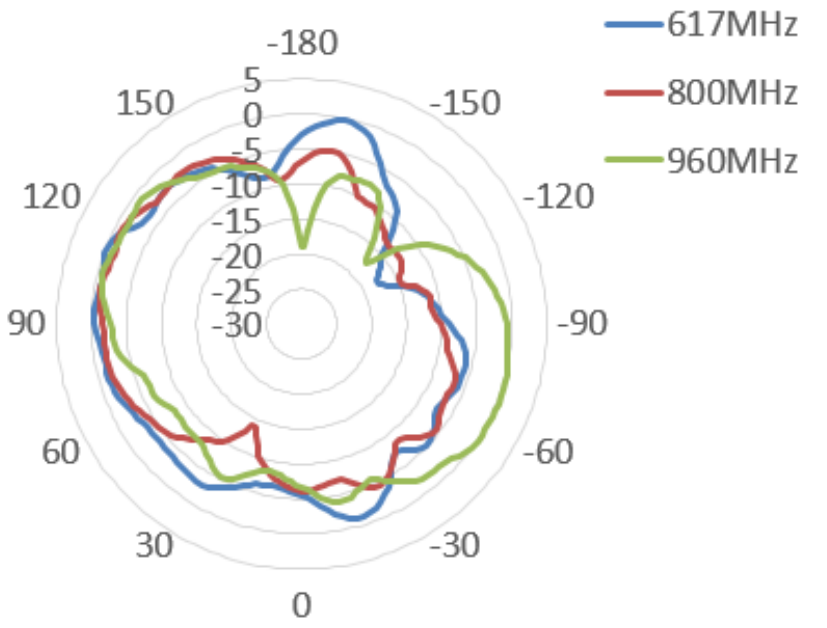


Figure4.4 Radiation pattern XZ plane

4.4.2 Phi=90°, in figure 3 environment as reference (dBi)



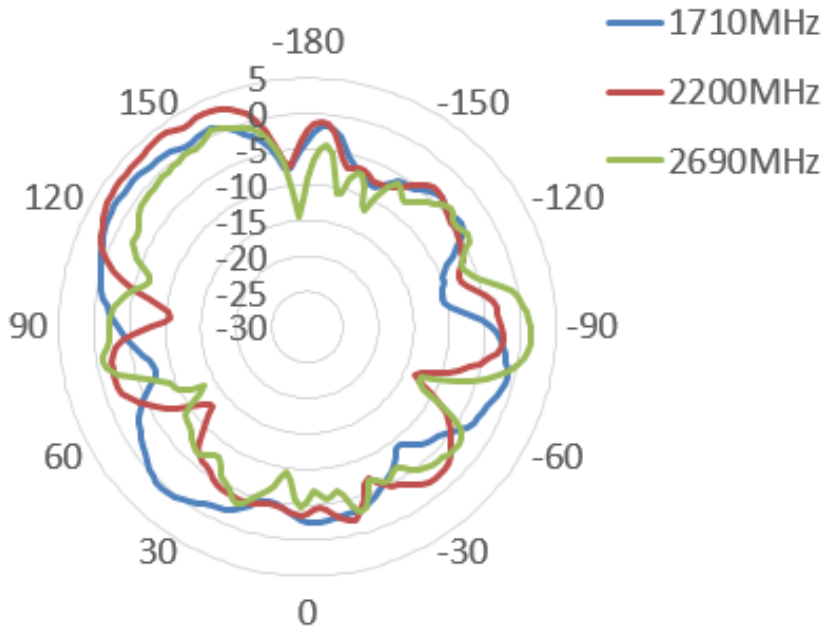
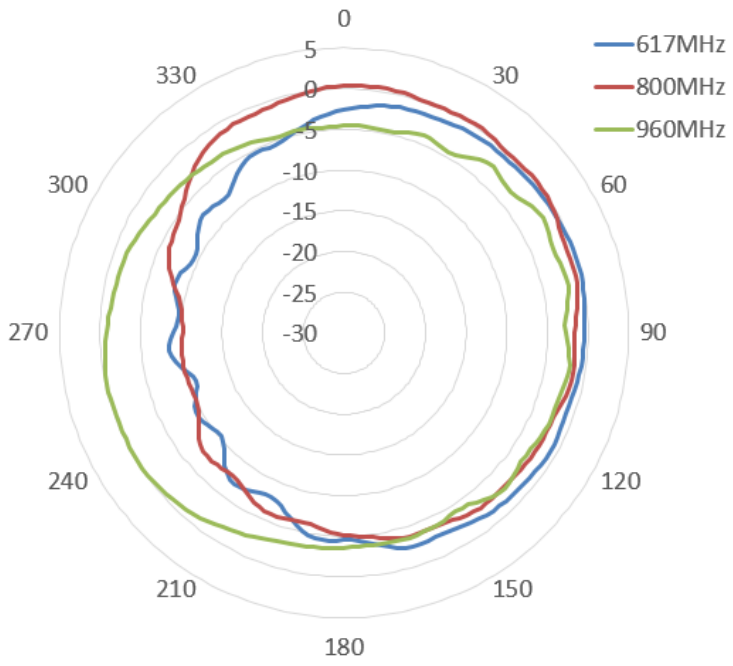


Figure4.5 Radiation pattern YZ plane

4.4.3 Theta=90°, in figure 3 environment as reference (dBi)



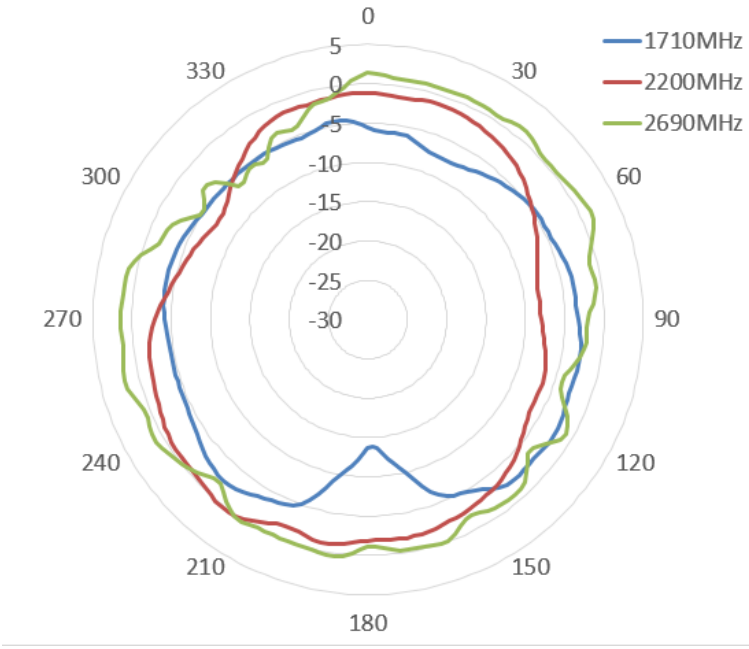


Figure4.6 Radiation pattern XY plane