

Antenna report

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## 1.objective:

Debugging and measuring field type using AT3216-A2R4PAA

## 2.result:

### 2.1 antenna gain:

**Gain Table**

Unit in dBi	XY-plane		XZ-plane		YZ-plane		Efficiency
	Peak	Avg.	Peak	Avg.	Peak	Avg.	
<b>@2400MHz</b>	0.59	-2.84	0.59	-5.76	-1.01	-5.18	37.47%
<b>@2440MHz</b>	0.68	-2.79	0.68	-5.75	-0.98	-5.10	37.88%
<b>@2480MHz</b>	-0.81	-3.80	-0.81	-6.71	-1.94	-5.93	31.06%

### 2.2 Conclusion

Due to the customer's failure to clear the BOT floor clearance area, it was manually removed and debugged. After field measurement, the antenna gain was shown in the table above. It is recommended that the customer conduct actual measurements according to the matching values in Attachment 2.

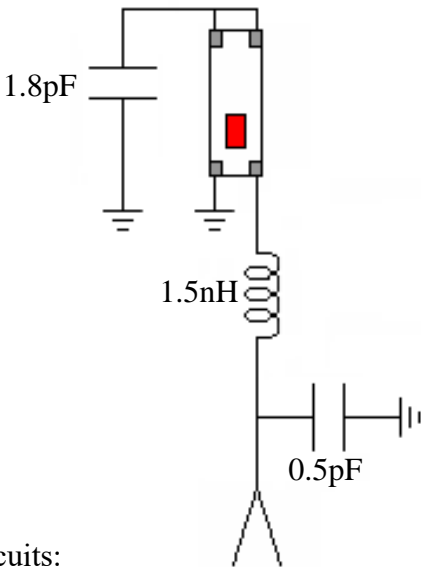
**3.Matching** value : Refer to Attachment 2 for details

**4.Fieldshapeandvariousmeasurementmethods,results:**Refer to Attachment 3 for details

**1. PCB and shell structure diagram:**

2.Schematic diagram of antenna matching circuit:

AT3216-A2R4PAA



Components used in matching circuits:

AT3216-A2R4PAA	1.8pF	1.5nH	0.5pF
	500R07S1R8BV4S	HI1005-1C1N5SMT	500R07S0R5BV4S

### 3. Field type and various measurement methods, results

#### A. Instrument setup

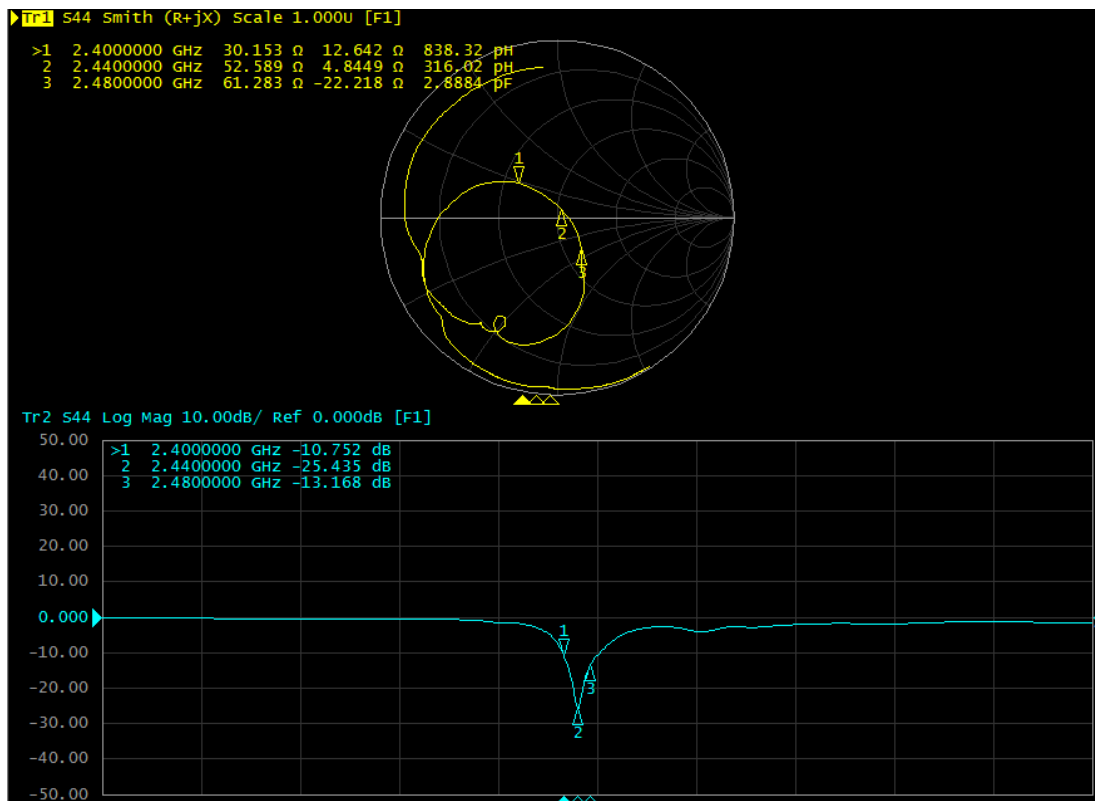
##### ▲ Return Loss / VSWR:

- ◆ Instrument : Keysight ENA series network analyzer-E5071C
- ◆ Calibration method: Auto Port extension – Ecal

##### ▲ 3D Radiation Pattern:

- ◆ BWant MS10 far field antenna measurement system

##### ▲ AT3216-A2R4PAA Return Loss



## C. Radiation field pattern diagram

### ◆ Measurement coordinate chart

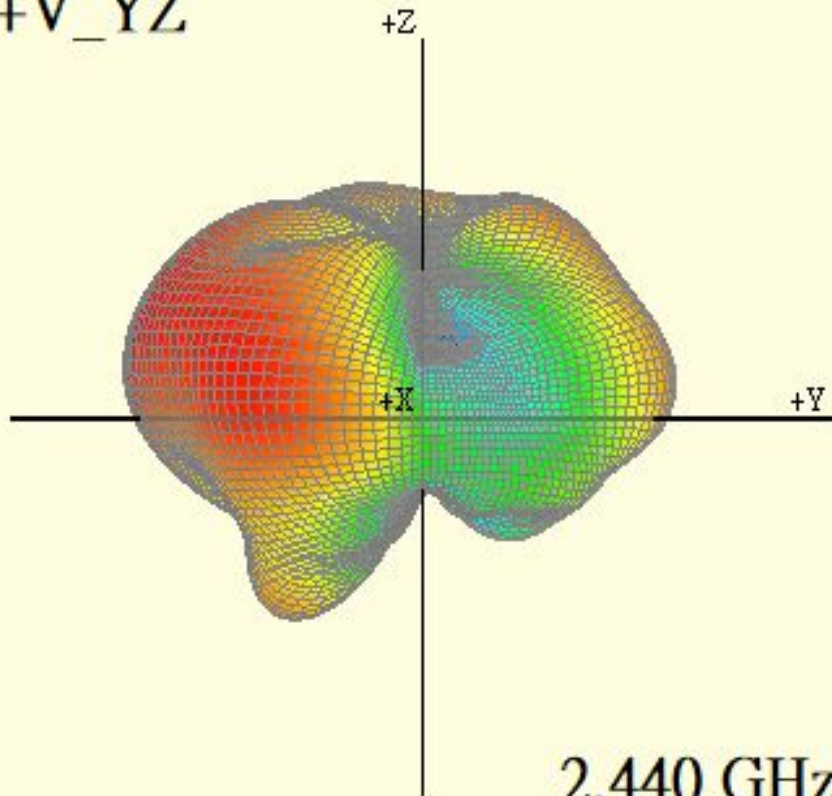
### ◆ Definition of each plane

<b>XY-plane</b>	<b>Theta=90°</b>
<b>XZ-plane</b>	<b>Phi=0°</b>
<b>YZ-plane</b>	<b>Phi=90°</b>

◆ 3D radiation field pattern diagram

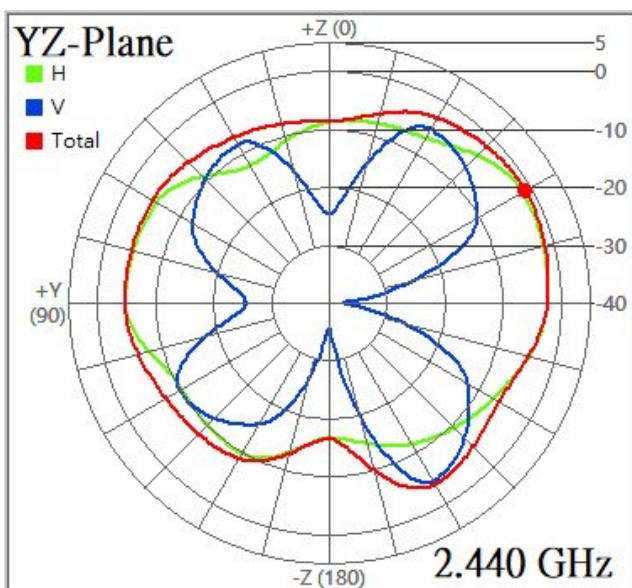
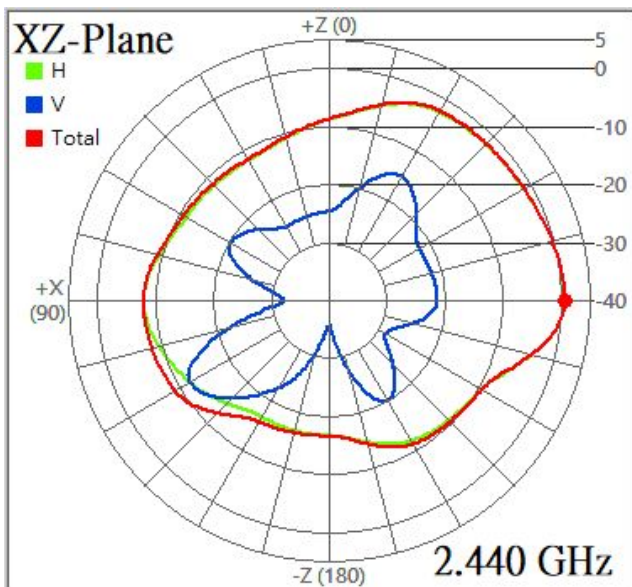
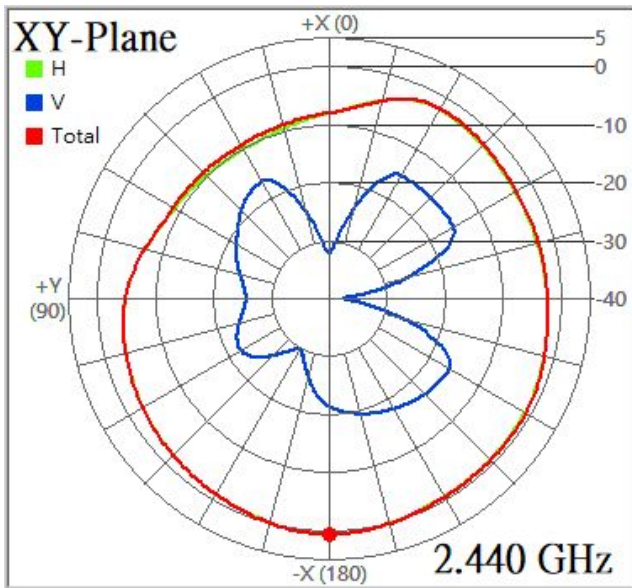
◆ AT3216-A2R4PAA

H+V\_YZ



2.440 GHz

# AT3216-A2R4PAA





## 4. Test method

Name	Parameter	Method	Standard no.
Mobile communication antenna	VSWR	Generic specification for antennas used in the mobile communications	GB/T 9410-2008
	Antenna gain		
	Radiation pattern		
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

## 5. Equipment list

Equipment	Manufacturer	Model No.	Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	2024.01.20	2025.01.19