

PULSE ANT8010LL04R2400A Chip Antenna Measurement For Ampak [WL72917_8M] Project

Wireless Components
LTCC R&D

December 4, 2024



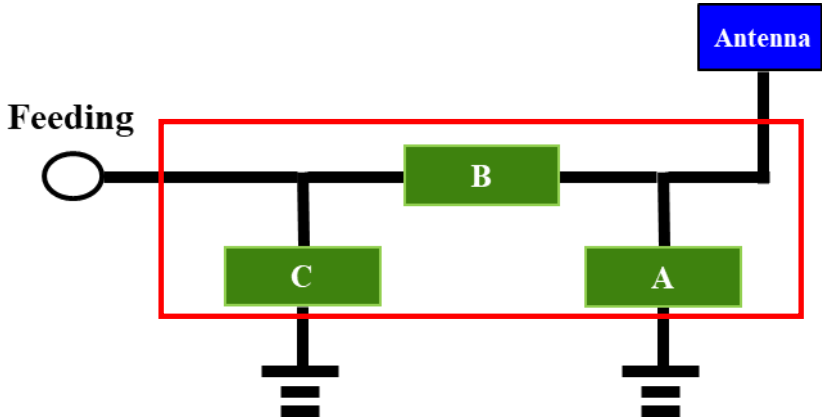
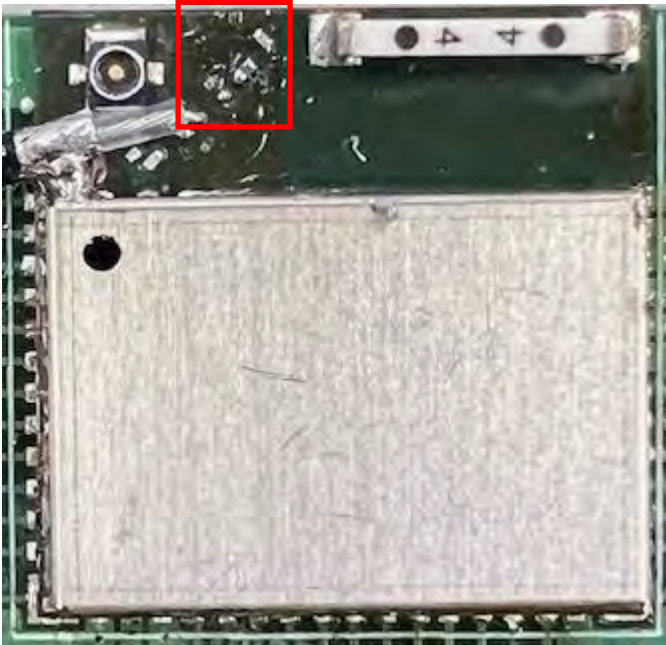
- **Customer : Ampak**
- **Project Name : WL72917_8M**
- **Application: WIFI+BT+IoT module test board**
- **Antenna size :**
8x1x1(mm) 2.4GHz chip antenna([ANT8010LL04R2400A](#))
- **Report date : 2024/12/04**
- **Version : 1**
- **Manufacturer: Pulse Electronics**

Address: No.179 Changjiang Road, Suzhou New District Jiangsu Province, China 215009

ANT8010LL04R2400A



Matching Circuit



Component		Supplier	Value	PN
A	Cap._0201	YAGEO	1 pF	CC0201BRNPO9BN1R0
B	Cap._0201	YAGEO	3.3 pF	CC0201BRNPO9BN3R3
C			Open	

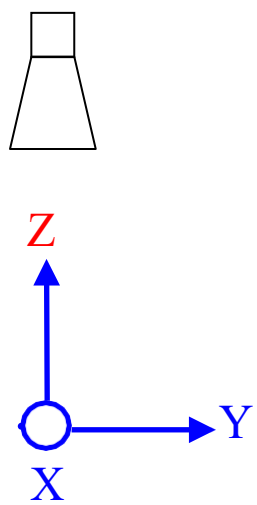
Return Loss

Condition	WL72917_8M		
Antenna	PULSE 8010 2.4GHz Chip antenna (ANT8010LL04R2400A)		
Frequency (MHz)	2400	2442	2484
R.L. (dB)	-10.5	-20.5	-9.3
Max. Gain (dBi)	0.6	0.7	0.1
Avg. Gain (dB)	-2.9	-2.8	-3.8
Efficiency (%)	51.1	52.1	42.1

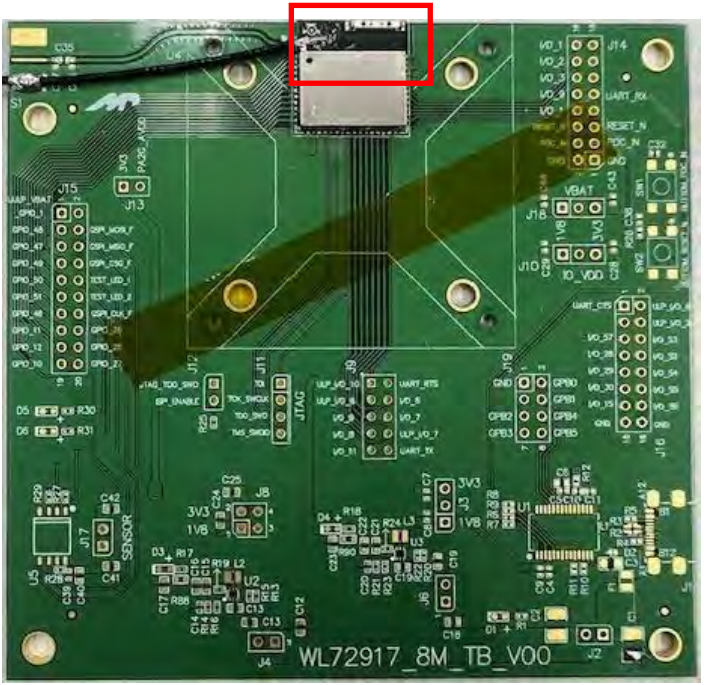


[Direction Definition]

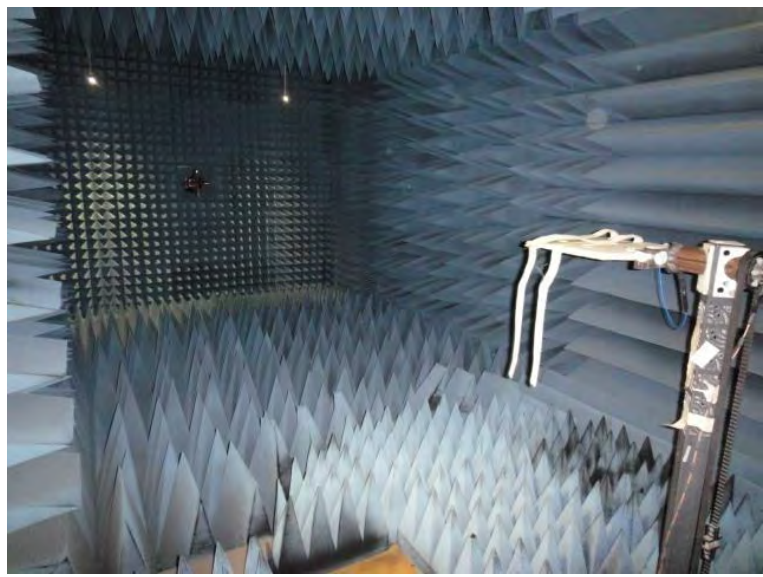
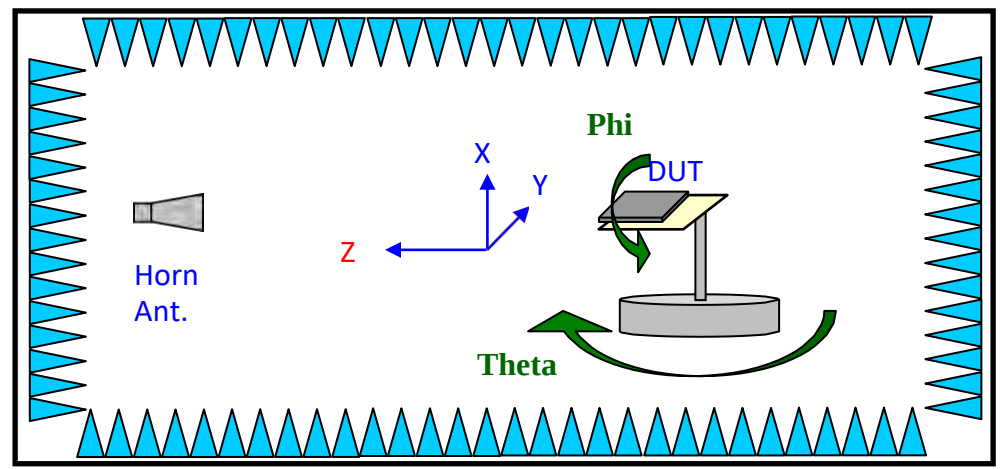
Horn Antenna



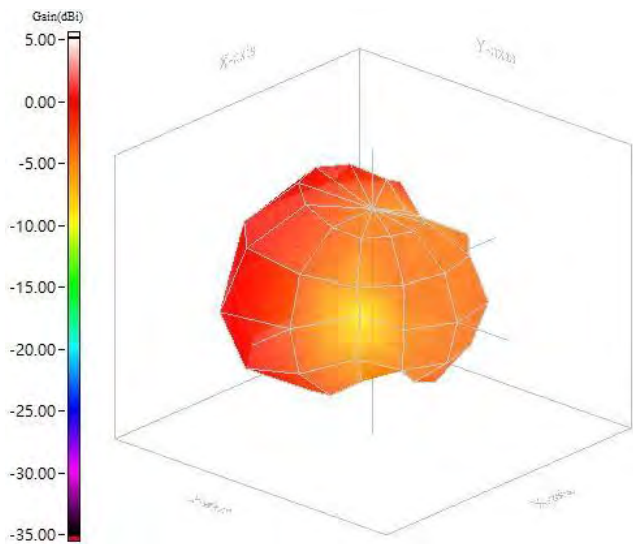
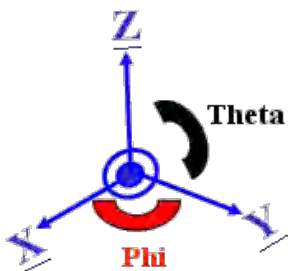
ANT8010LL04R2400A



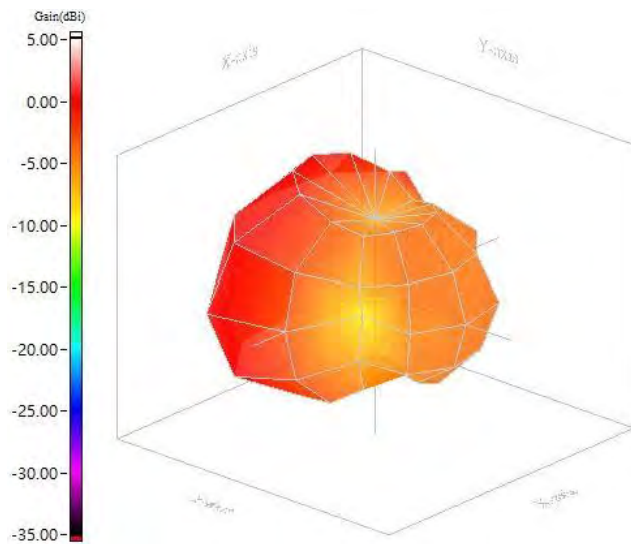
[Anechoic Chamber]



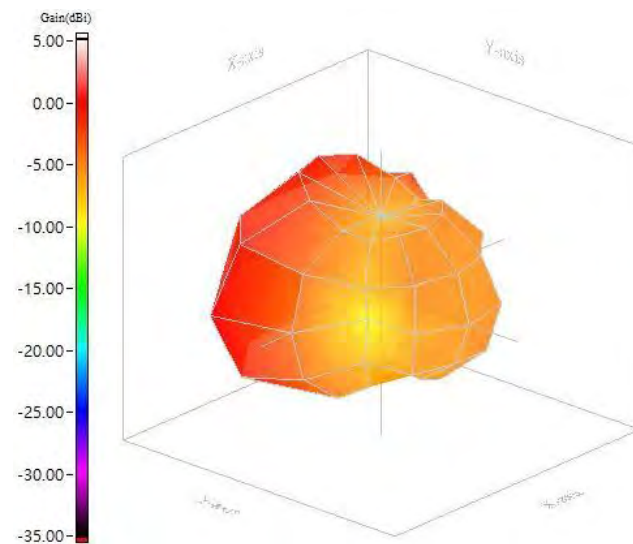
Radiation Pattern (3D)



2400MHz



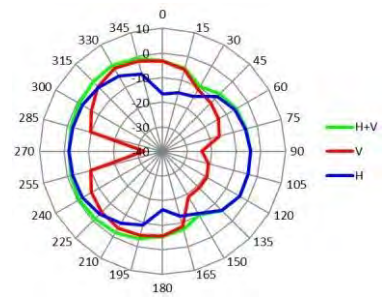
2442MHz



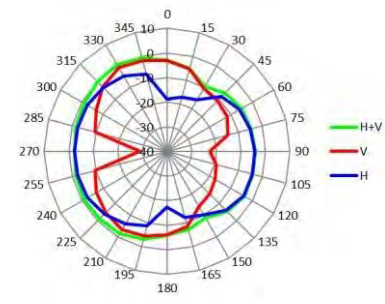
2484MHz

Radiation Pattern (2D)

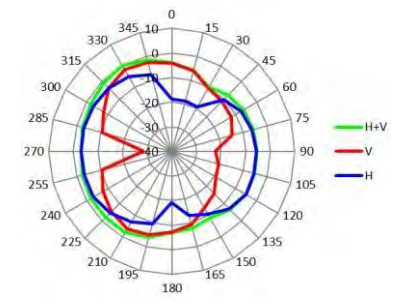
XY-Plane



2400MHz

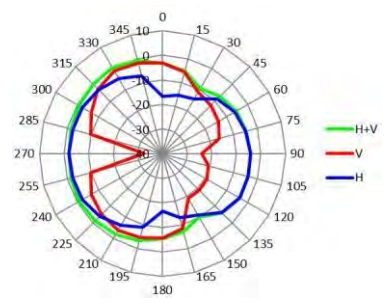


2442MHz

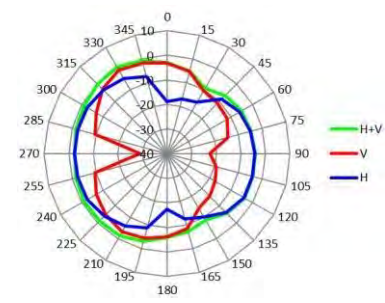


2484MHz

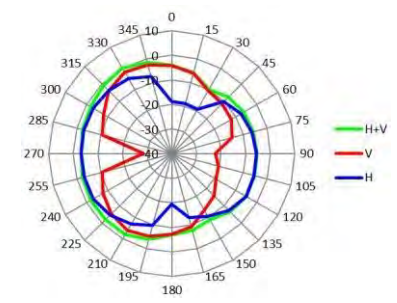
XZ-Plane



2400MHz

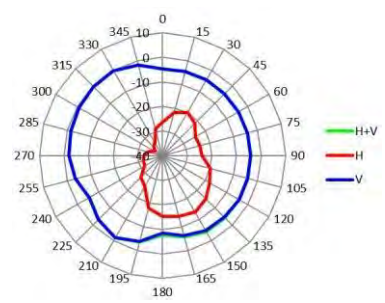


2442MHz

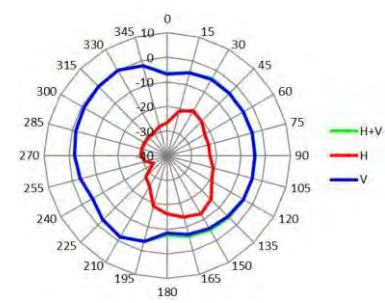


2484MHz

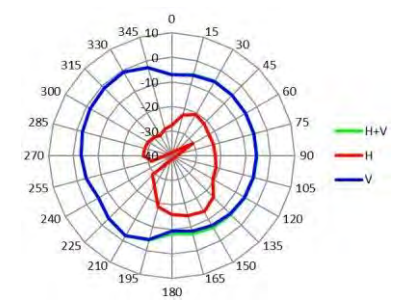
YZ-Plane



2400MHz



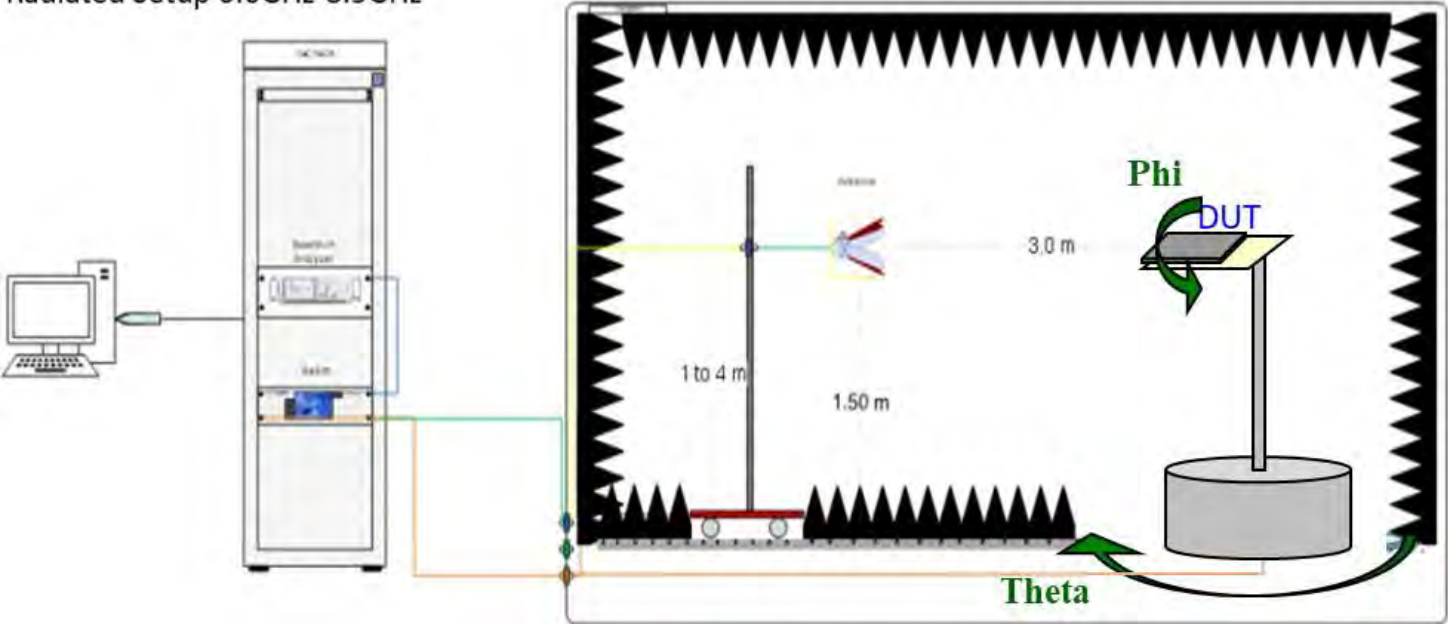
2442MHz



2484MHz

Antenna Vendor Info & Measurement Setup

Radiated Setup 0.6GHz-8.5GHz



ID#	Device	Type/Model	Serial#	Manufactuter	Cal. Date	Estimated Next Cal. Date
1	Anechoic Chamber	AMS8500	-	ETS-Lindgren	2023-07-13	2024-07-13
2	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
3	Switch & Positioning system	2090	-	ETS-Lindgren	N/A	N/A
4	Horn Antenna	3164-08	99210	ETS-Lindgren	N/A	N/A
5	Network Analyzer	E5071C	MY46103999	Agilent	2023-07-13	2024-07-13
6	Commercial test software	EMQuest	Version 1.14 Build 10265 SN:1156	ETS-Lindgren	2023-07-13	2024-07-13
7	Test Operator	Matthew Kung		YAGEO		

N/A: Not Applicable

ETS-Lindgren AMS-8500 system is 3D fully anechoic chamber, it is applied to the “Conical Cut test method”, the detail description is described as below :

- The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, thirteen conical cuts are required to capture data at every 15 degrees from the EUT.
- Typically, the EUT will remain affixed to a turntable during the entire measurement process.
- The Measurement Antenna will be positioned at a starting theta angle.
- The EUT will then be rotated around the full 360 degrees of phi rotation.
- The Measurement Antenna will then be positioned at the next theta angle, and the process repeated.
- Finally, the measurement data of all angles are calculated through the EMQuest software to obtain the Peak gain, Average gain, Efficiency... and other data we need.

Thank You

