

# Pulse 3216 2.4GHz Chip Antenna Replacement For BizLink Quartet 2.0 Project

Wireless Components  
LTCC R&D



- **Customer : BizLink**
- **Project Name : Quartet2.0**
- **Product Application : Audio Dock**
- **Antenna size :**  
**3.2 x 1.6 x 1.2 (mm) 2.4GHz chip antenna([ANT3216LL11R2400A](#))**
- **Report date : 2022/08/19**
- **Version : 2 (Chip antenna replacement)**

- Testers : Samson Hsu.
- Test Date : 2022/8/18
- Test Equipment & Calibration Instruments :

Test Equipment	Calibration Instruments
Agilent Network Analyzer (E5071C)	Agilent N4431A
ETS AMS8500 OTA Chamber	

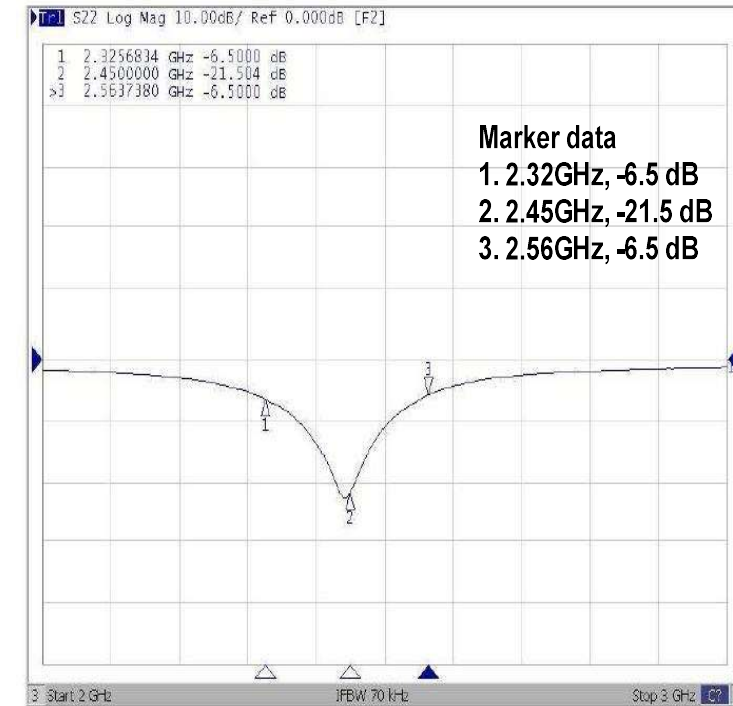
- Test software : EMQuest™ (EMQ-100)

# Detail of antenna specifications & gain description

## Antenna electrical specifications

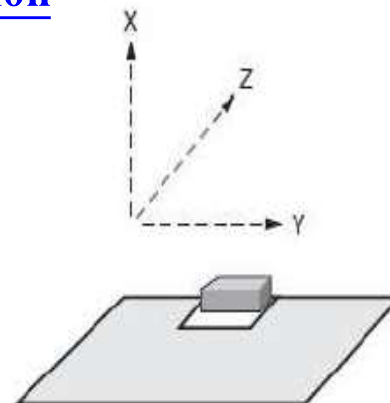
Working Frequency	2.45 GHz
Bandwidth	230 MHz(Typ.)
Return Loss	6.5 dB(Min.)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	3.68 dBi(Typ.)
Impedance	50 Ω
Operating Temperature	- 40~105 °C
Maximum Power	1 W
Termination	Ag (Environmentally-Friendly Leadless)
Resistance to Soldering Heats	260°C , 10sec.

## Return loss

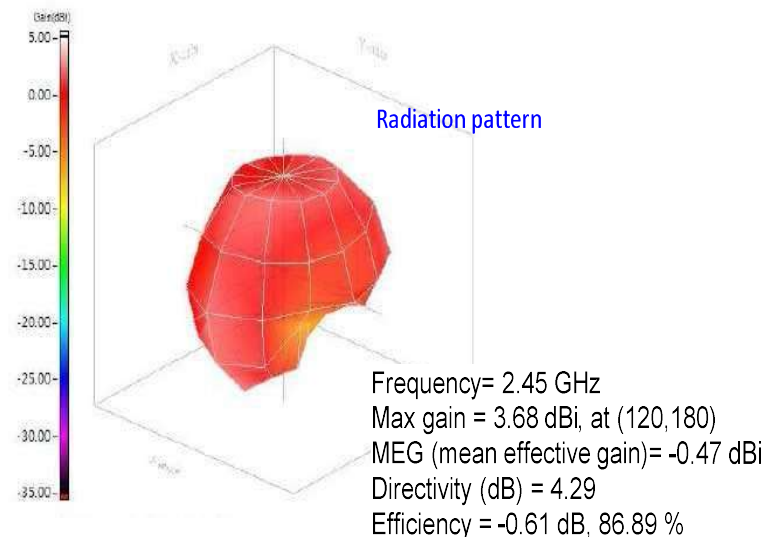


NOTE  
 1. The specification is defined on Pulse evaluation board

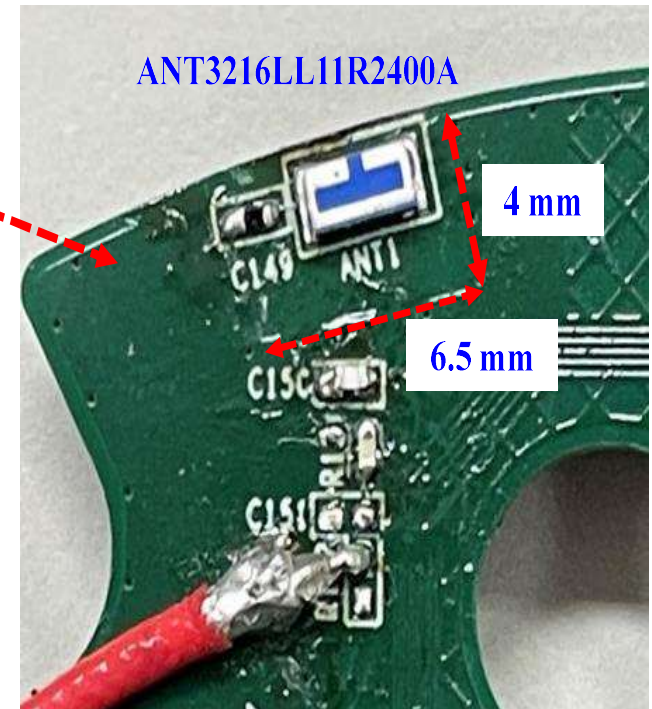
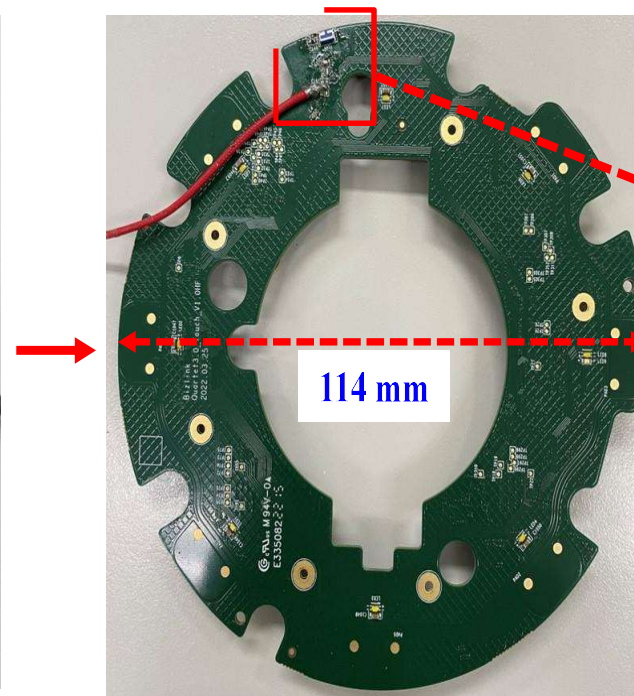
## Gain description



Evaluation board and XYZ direction

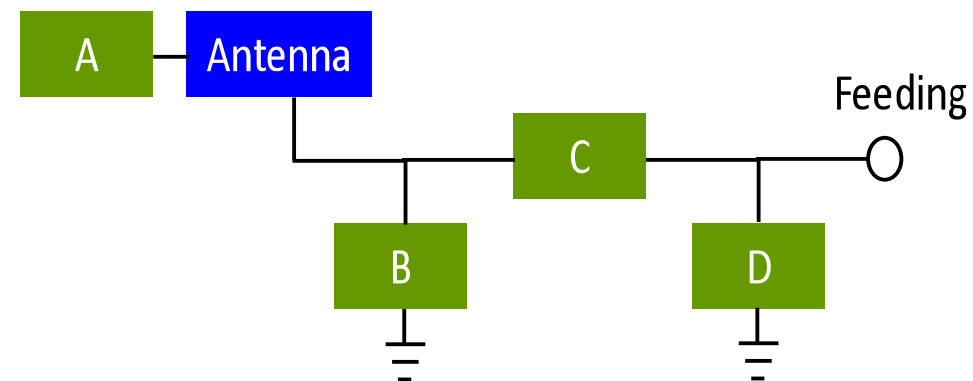
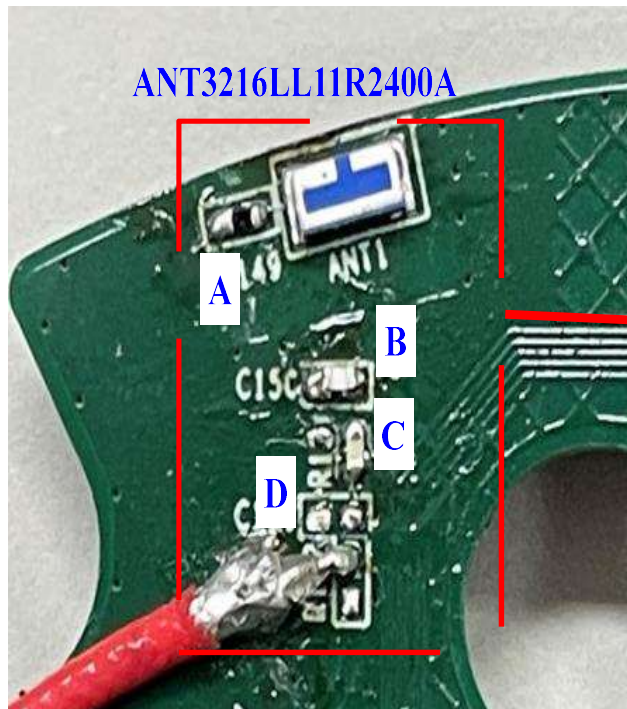


## Antenna position



Clearance dimension

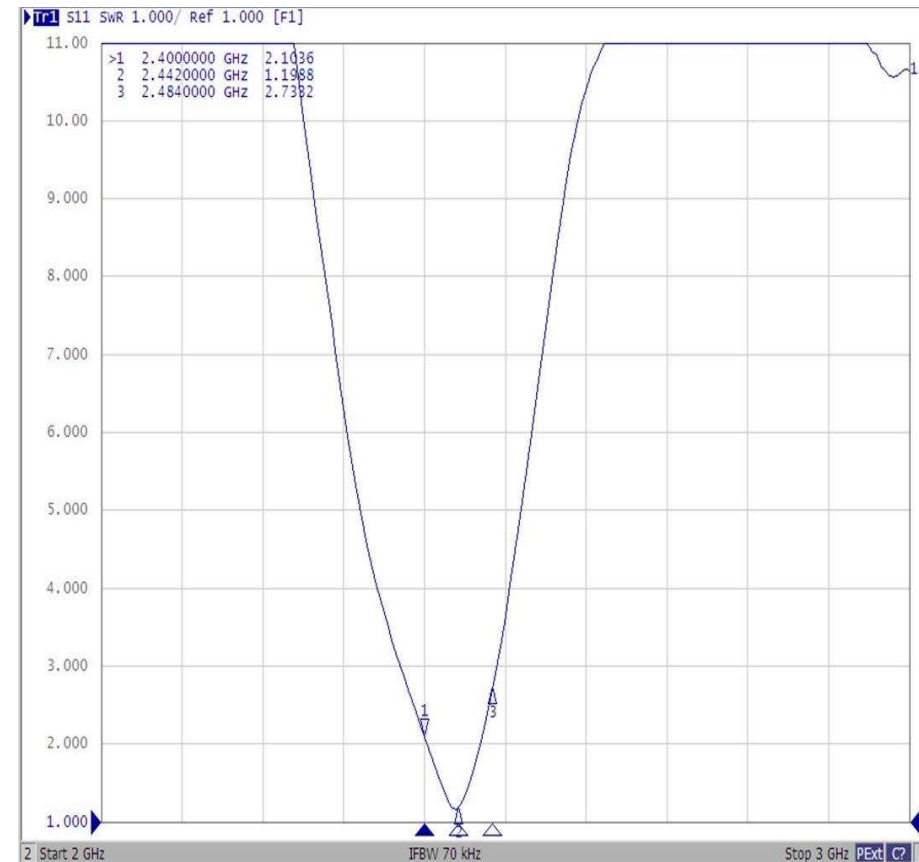
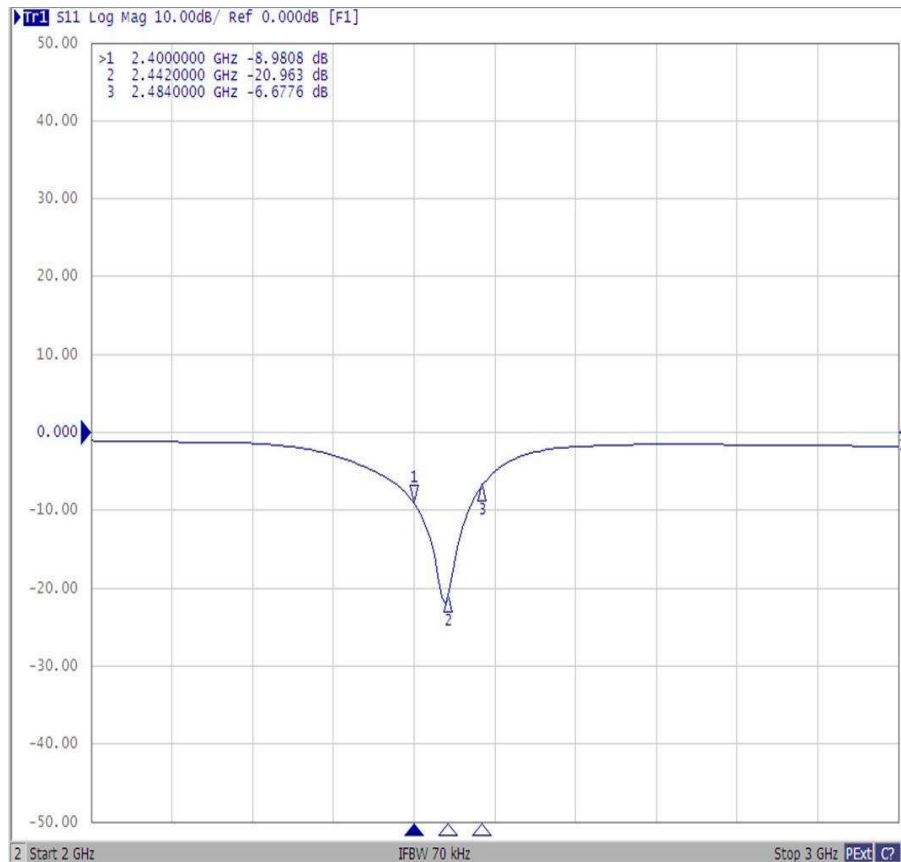
# Project Matching Circuit



Component		Supplier	Value	PN
A	Res. _0402		0 ohm	
Shunt B	Ind. _0402	TDK	3.3 nH	MLK1005S3N3ST000
Series C	Cap. _0402	YAGEO	0.8 pF	CQ0402BRNPO9BNR80
Shunt D	Open			

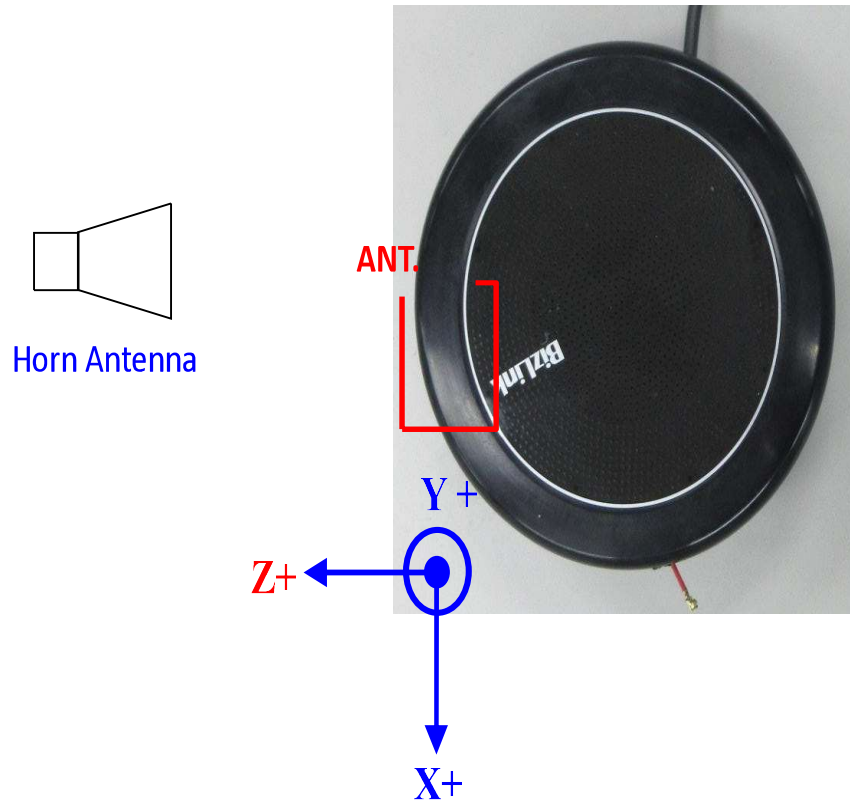
# Network analyzer measurement data

Antenna	PULSE 3216 2.4GHz Chip antenna (ANT3216LL11R2400A)		
Frequency (MHz)	2400	2442	2484
R.L. (dB)	-8.9	-20.9	-6.6
VSWR	2.10	1.19	2.73
Max. Gain (dBi)	1.39	2.54	1.66
Avg. Gain (dB)	-4.38	-3.62	-3.70
Efficiency (%)	36.39	43.43	35.76

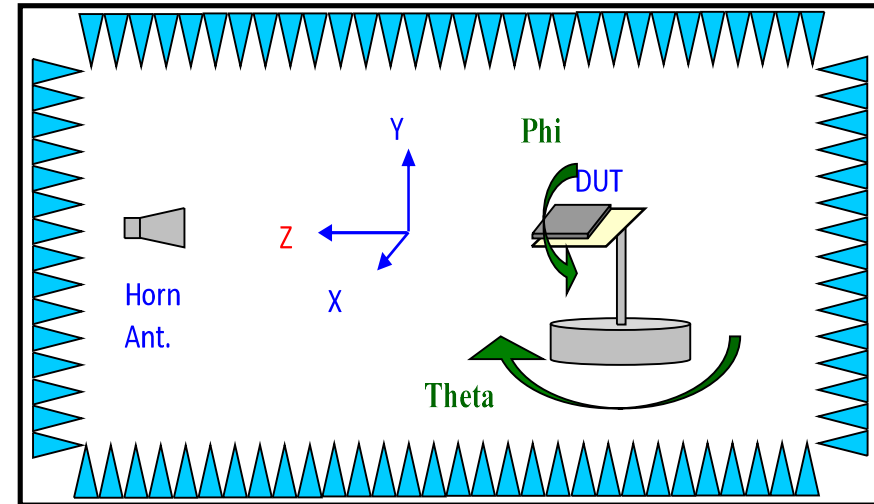


# OTA Chamber measurement configuration

## [ Direction Definition ]



## [ Anechoic Chamber ]





2400 MHz

2442 MHz

2484 MHz

