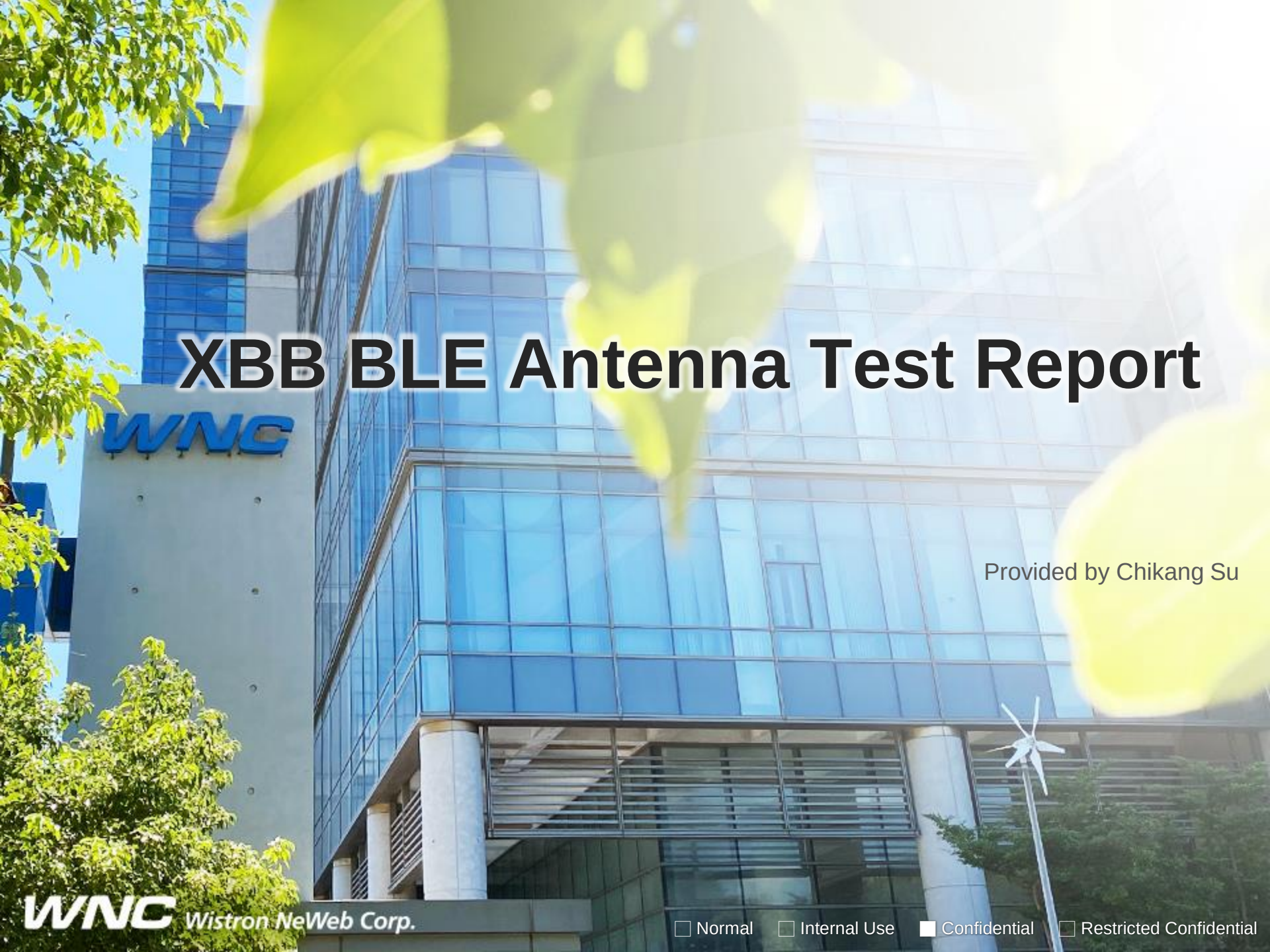


XBB BLE Antenna Test Report

Provided by Chikang Su

Content

- General Information

- Test Setup
  - Diagram
  - Instrument
  - Procedure

- Test Result
  - Summary
  - BLE

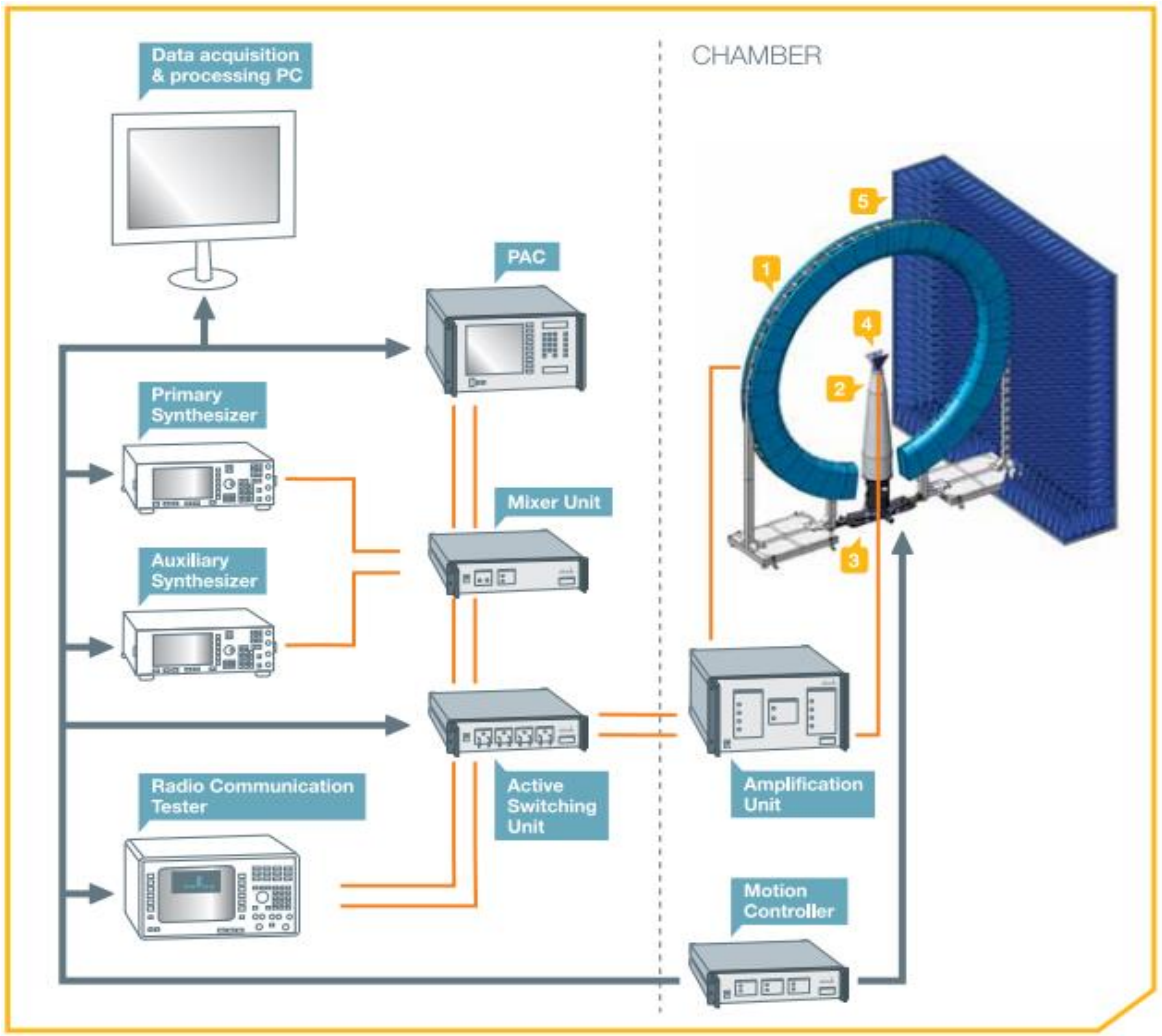
General Information

Model: WNXB11ABR

Antenna Information:

- Brand: WNC
- Antenna Type:
  - BLE Antenna: PIFA, Printed on board
- Test Date/ Member/ Address
  - Date: 2022/10/03
  - Member: Chikang Su
  - 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C.

Test Setup Diagram



SG 64 uses analog RF signal generators to emit EM waves from the probe array to the antenna under test (AUT) or vice versa.

It uses the NPAC as an RF receiver for antenna measurements. The NPAC also drives the electronic scanning of the probe array.

The NPAC includes the fastest and most accurate sources and receivers on the market.

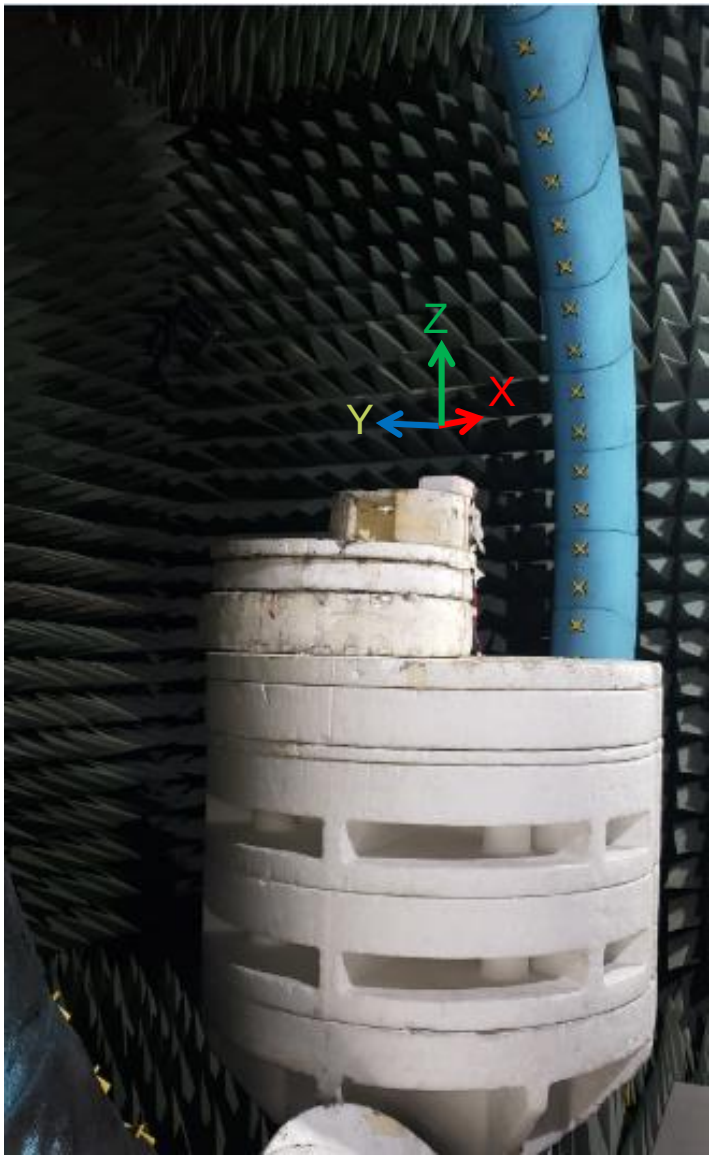
Equipment

Item	Device	Type/Model	Serial#	Manufacturer
1	SG64 Chamber	Standard	SG64	MVG
2	Turn Table	Customization	-	Machinery Dept.
3	New Probe Array Controller	N/A	1102341-4535	MVG
4	Power Supply Unit	N/A	1103211-13204	MVG
5	Activve Switching Unit	N/A	1102347-7214	MVG
6	TX Amplification Unit	N/A	1102527-5909	MVG
7	RX Amplification Unit	N/A	1102536-3823	MVG
8	Transfer Swittching Unit	N/A	1102183-3351	MVG
9	Mixer Unit	N/A	1102545-7208	MVG
10	Power And Control Unit	N/A	1102706-7209	MVG
11	Antenna Probe	DP 400-6000	-	MVG
12	Cable 13.7m - 400MHz to 18GHz	SS402	00100A1F5A1XXS	Woken
13	Temperature & Humidity Meter	HTC-01	-	Metravi

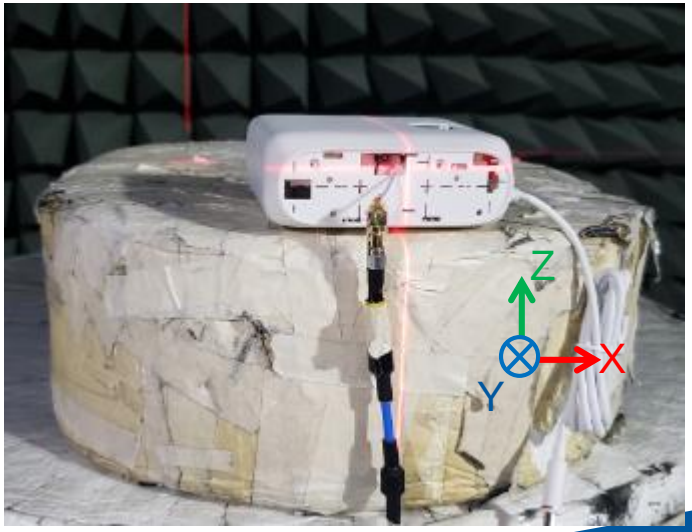
Note:

1. Satimo runs annual maintenance on the WNC's SG64 Chamber, including all equipment on the list, and completed this round of maintenance in June.
2. There are 63 set ANT probes in WNC’s SG64 Chamber.

Test Setup and Procedure

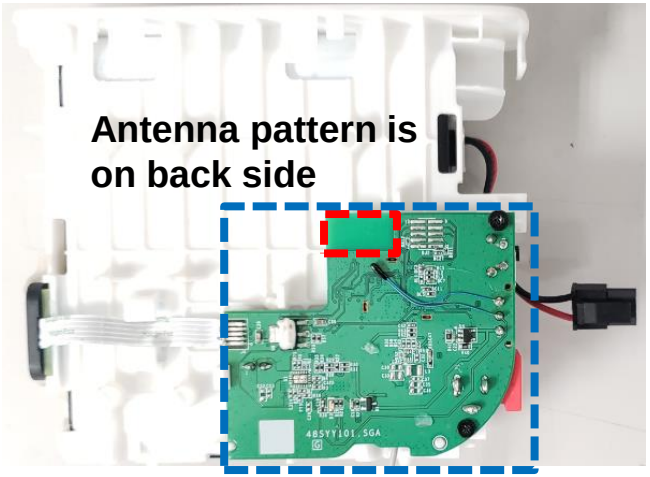


- Place the device at the center of the chamber.
- Connect the antenna cable to RF cable of the chamber
- Run Satimo test SW (**NPAC Spherical Measurement, v1.5.4 (GIT-E6965664))**
- Get 3D data in 2.8125 degree step from phi 0°~360°and theta -90°~ +90°, including efficiency, peak gain, 2D & 3D radiation pattern.
- This is far field test for XBB BLE antenna verification.
- This is passive measurement, which means the device is off and not in any operating mode.



Summary

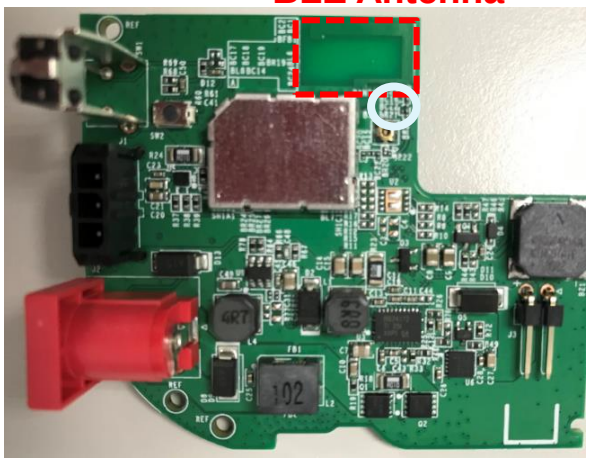
BLE Antenna	Efficiency	Peak Gain (dBi)
2400 MHz	36%	0.9
2450 MHz	49%	1.5
2480 MHz	47%	1.6



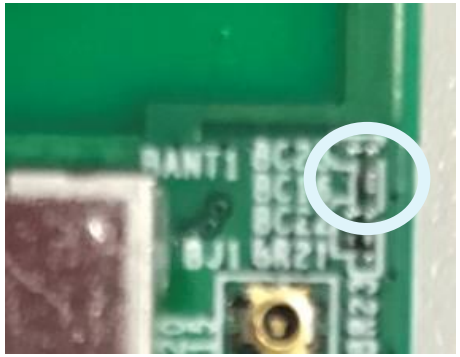
PCBA

For Gain/ Efficiency Measurement

BLE Antenna



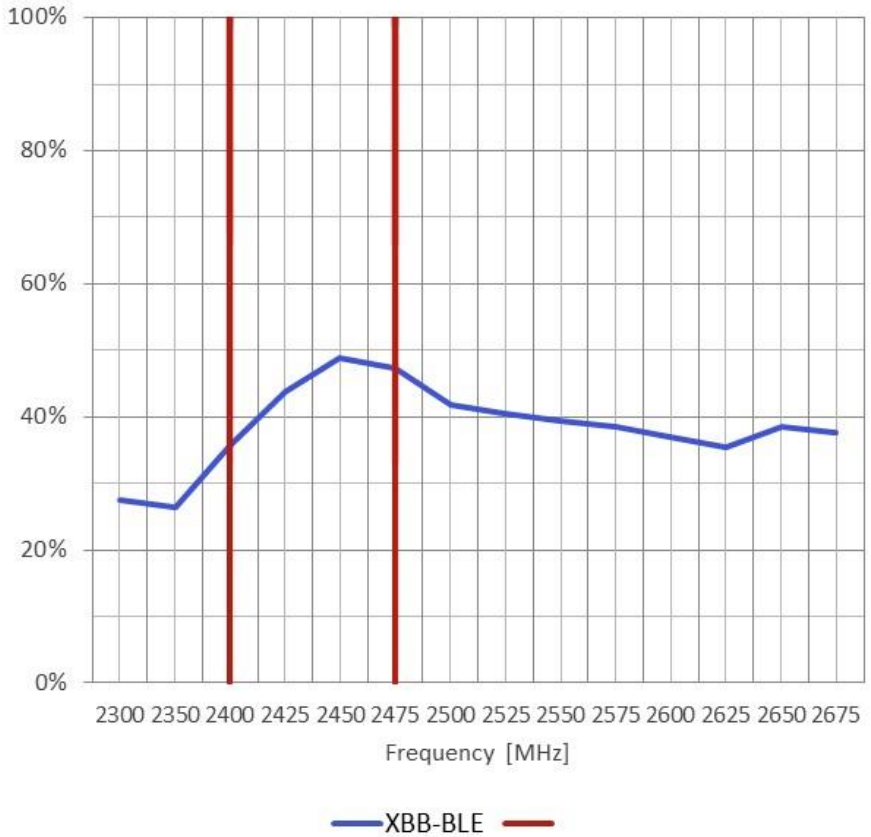
Step1
Remove Components



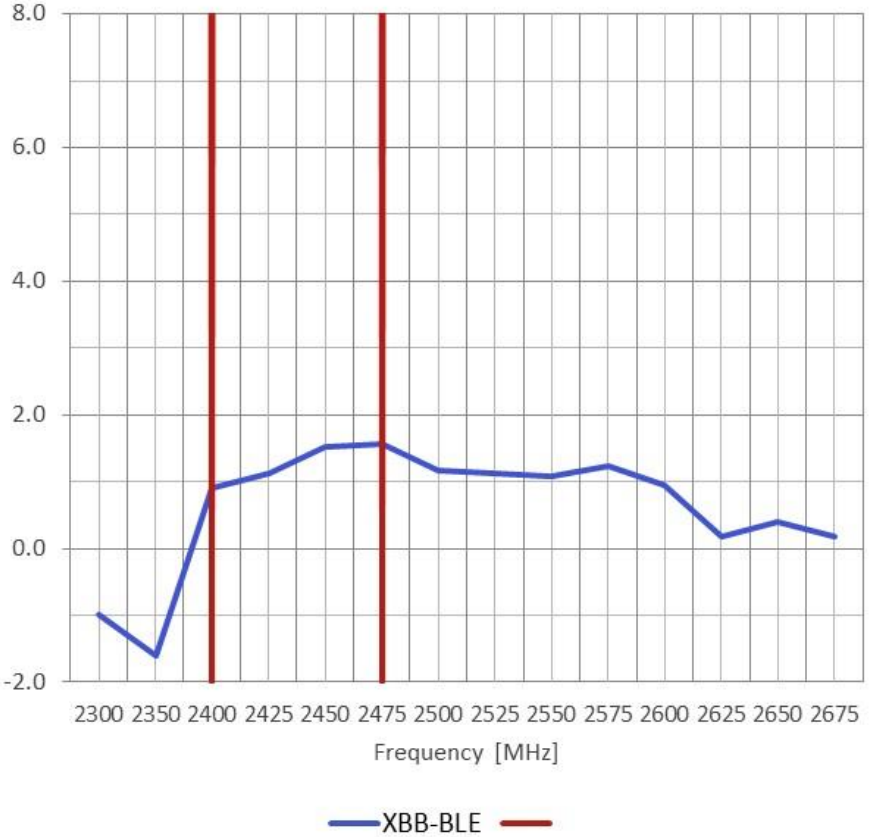
Step2
Soldering RF Cable

Efficiency and Peak Gain for BLE Antenna

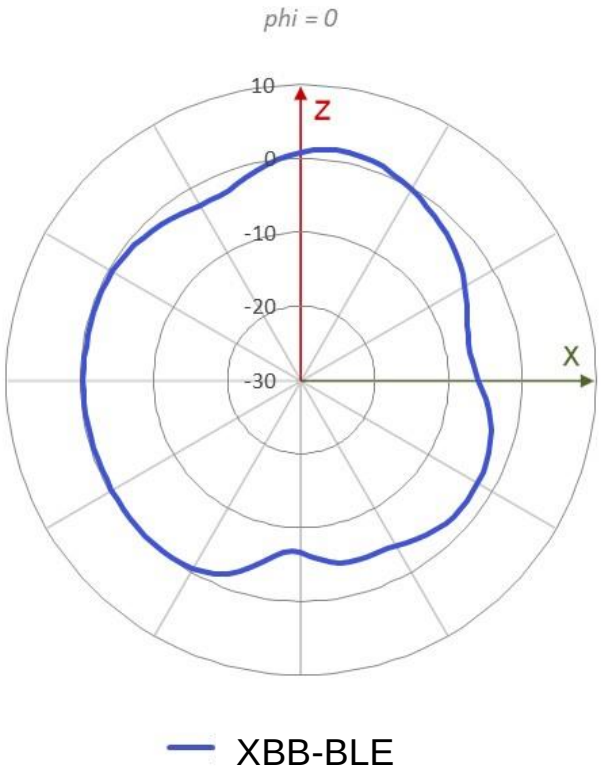
Efficiency

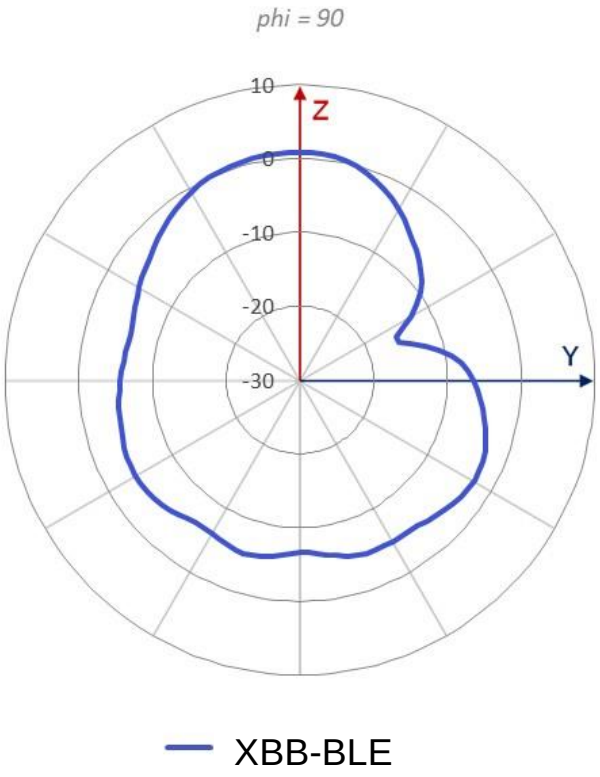


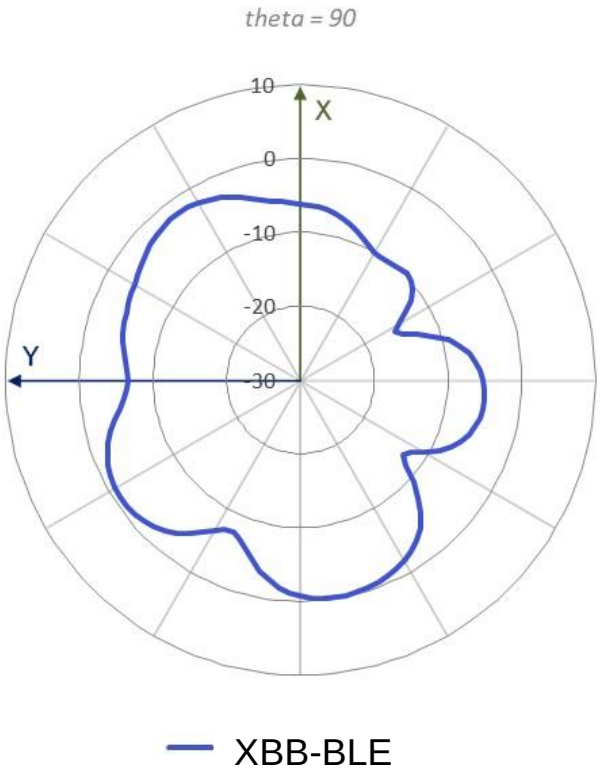
Peak Gain



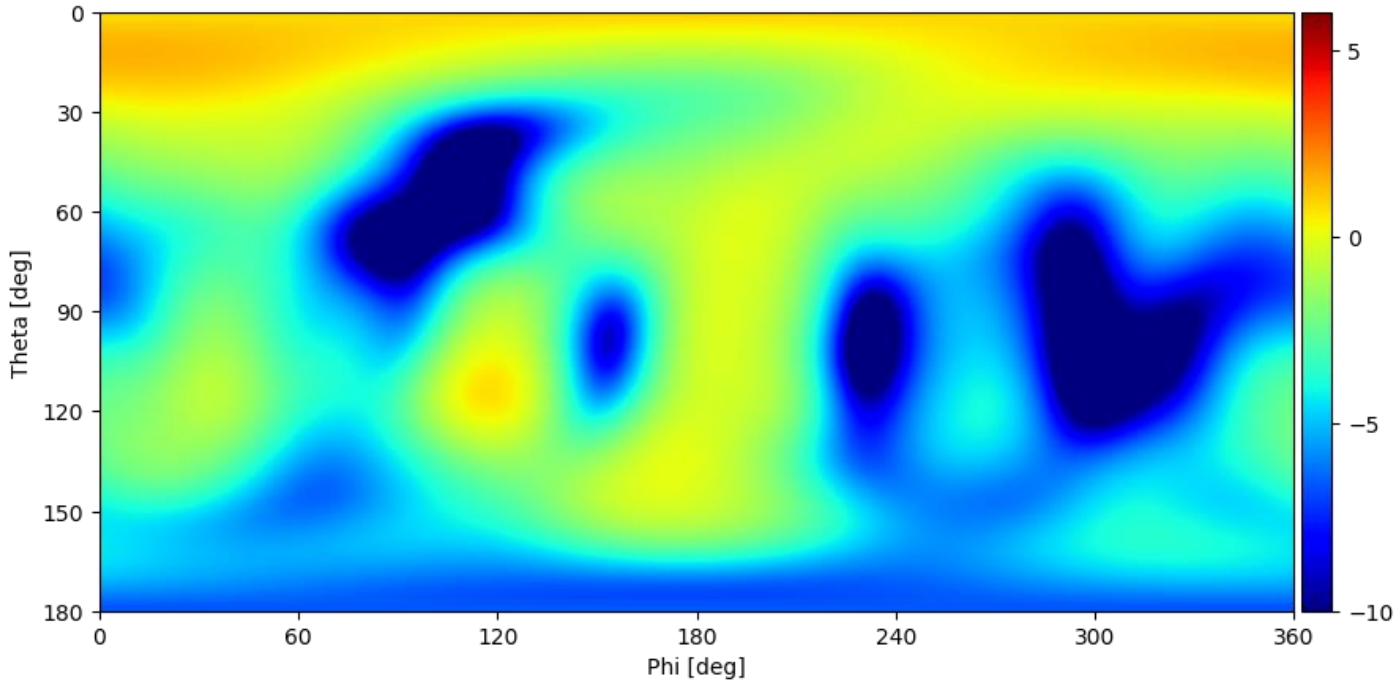
Radiation Pattern for BLE Antenna @ 2450MHz







Heat Map for BLE Antenna @ 2450MHz



WNC
Wistron NeWeb Corp.
WNC