

Agenda

- Introduction
- Antenna Placement
- Antenna Performance
 - Return Loss
 - Isolation
 - Radiation Efficiency and Peak Gain
 - Radiation Patterns
- Summary

Introduction

- The Somerset-Infra AP contains three antennas, which are two dual-band antennas, one 2.4-GHz band antenna.
- The antenna measurement results are shown as below:

SPEC	Return Loss	Peak Gain	Radiation Efficiency
WIFI_2.4-GHz band ANTs	> 10 dB	< 4 dBi	> 60 %
WIFI_5-GHz band ANTs	> 10 dB	< 6 dBi	> 60 %

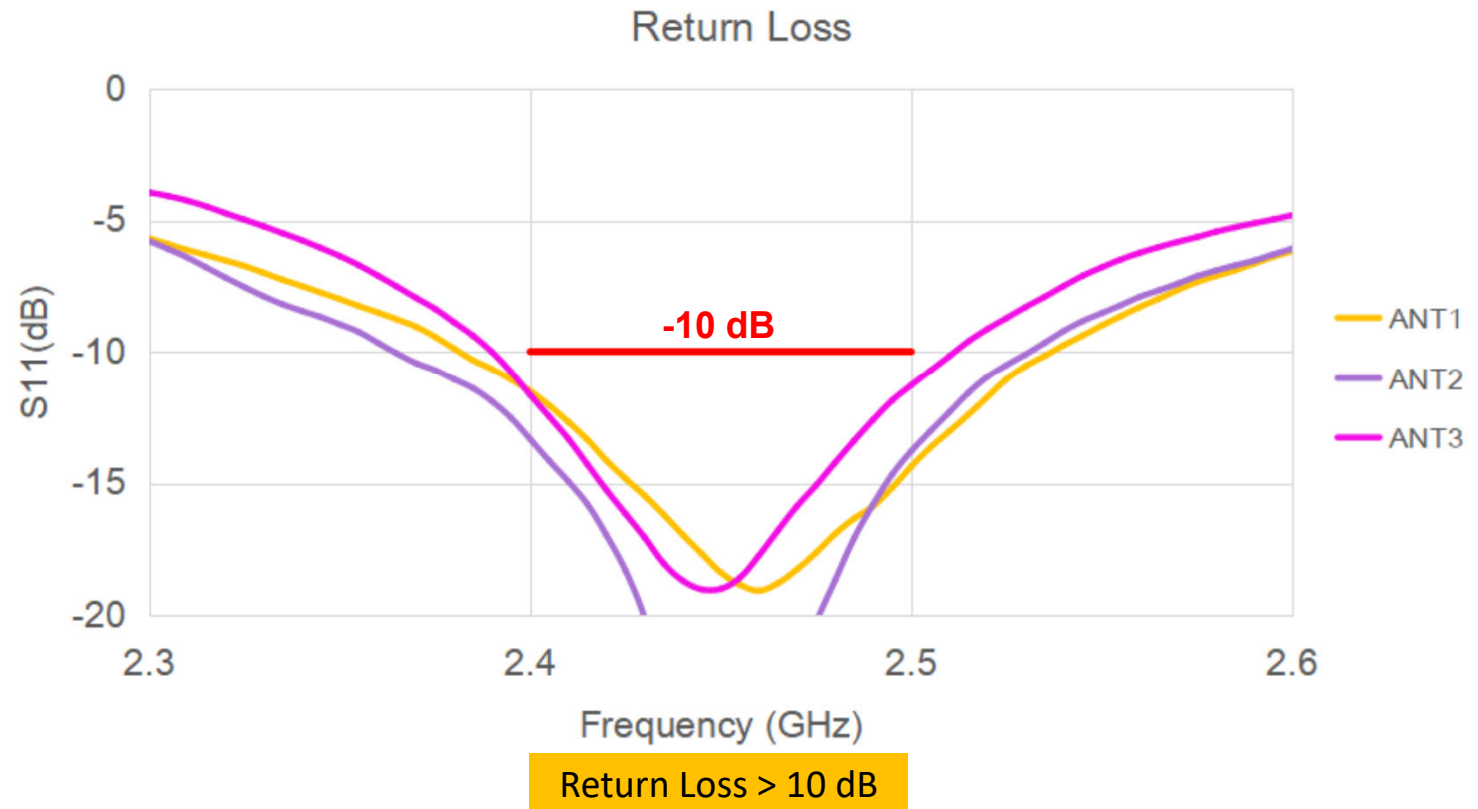
Antenna Information



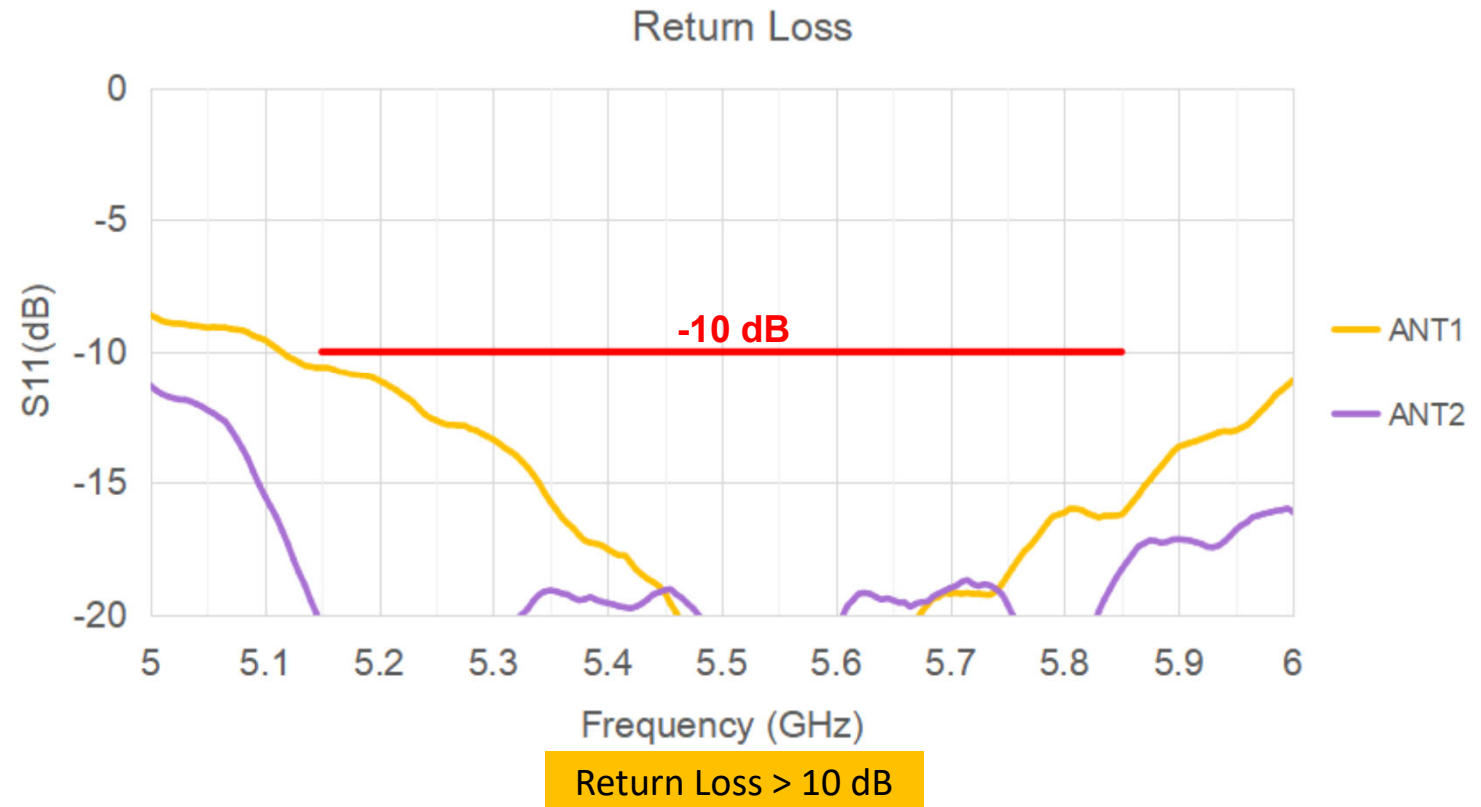
Antennas :

- ◆ 天線廠牌 : PEGATRON
- ◆ 型號 :
 - ◆ ANT 1 : WiFi_1 ANT.
 - ◆ ANT 2 : WiFi_2 ANT.
 - ◆ ANT 3 : BLE ANT.
- ◆ TYPE : IFA (Inverted-F antenna)

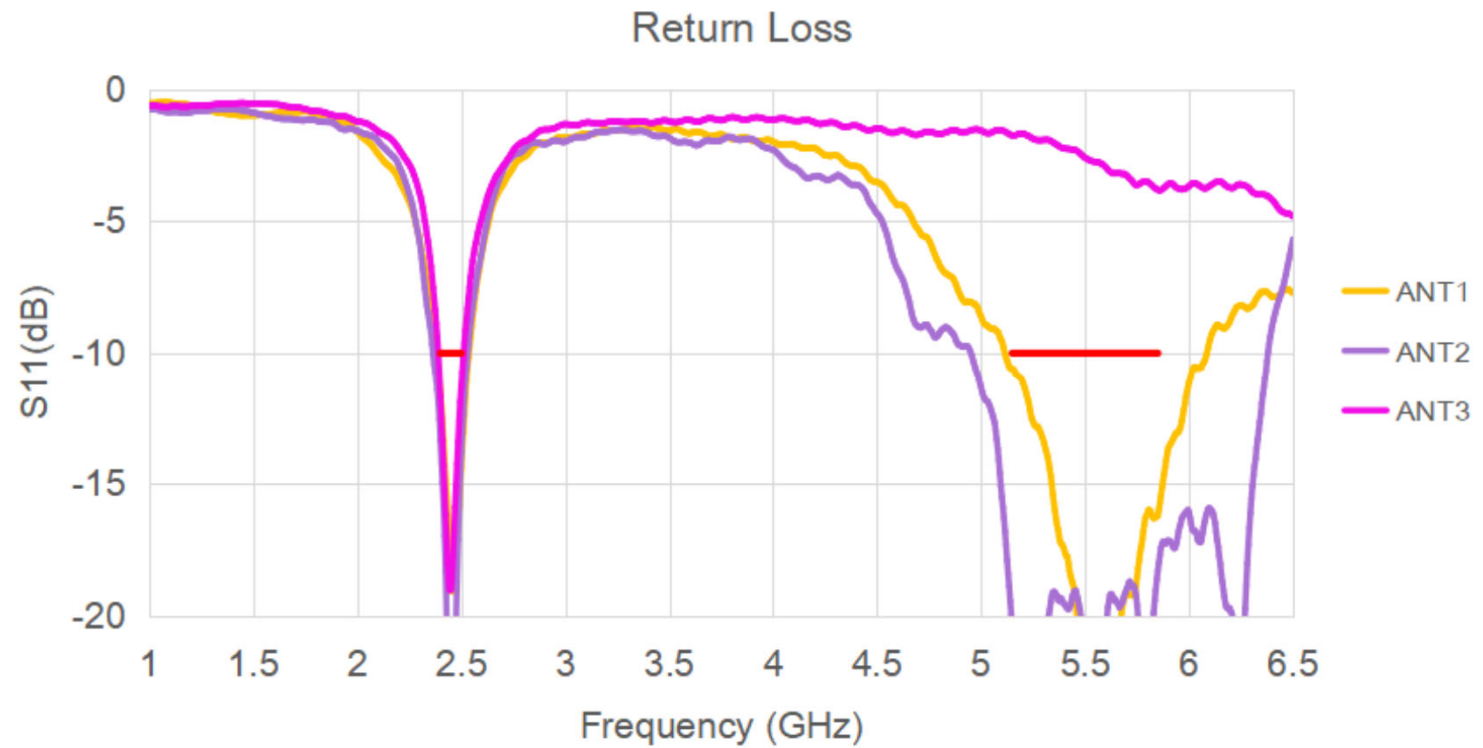
Measured Return Loss @ 2.4-GHz



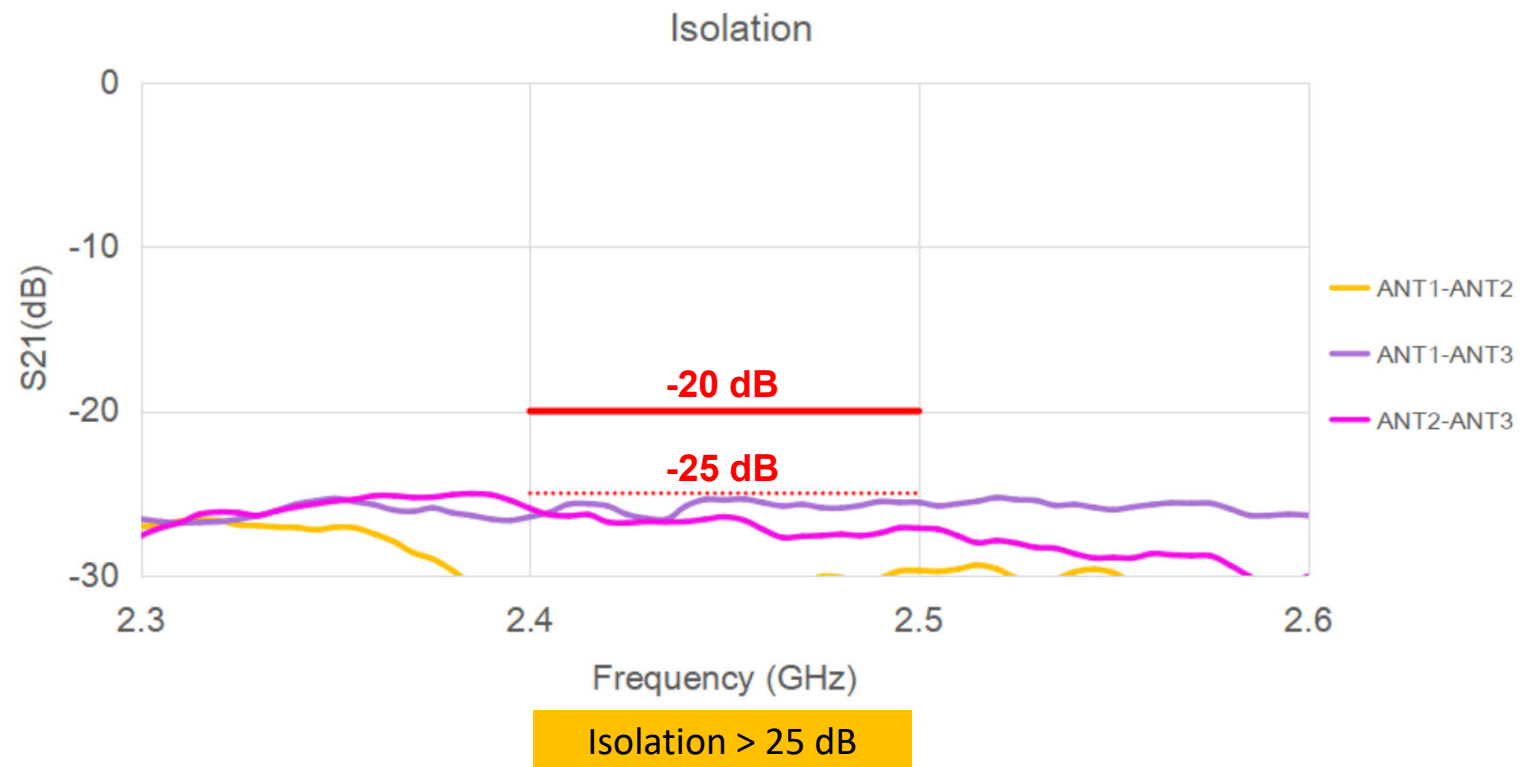
Measured Return Loss @ 5-GHz



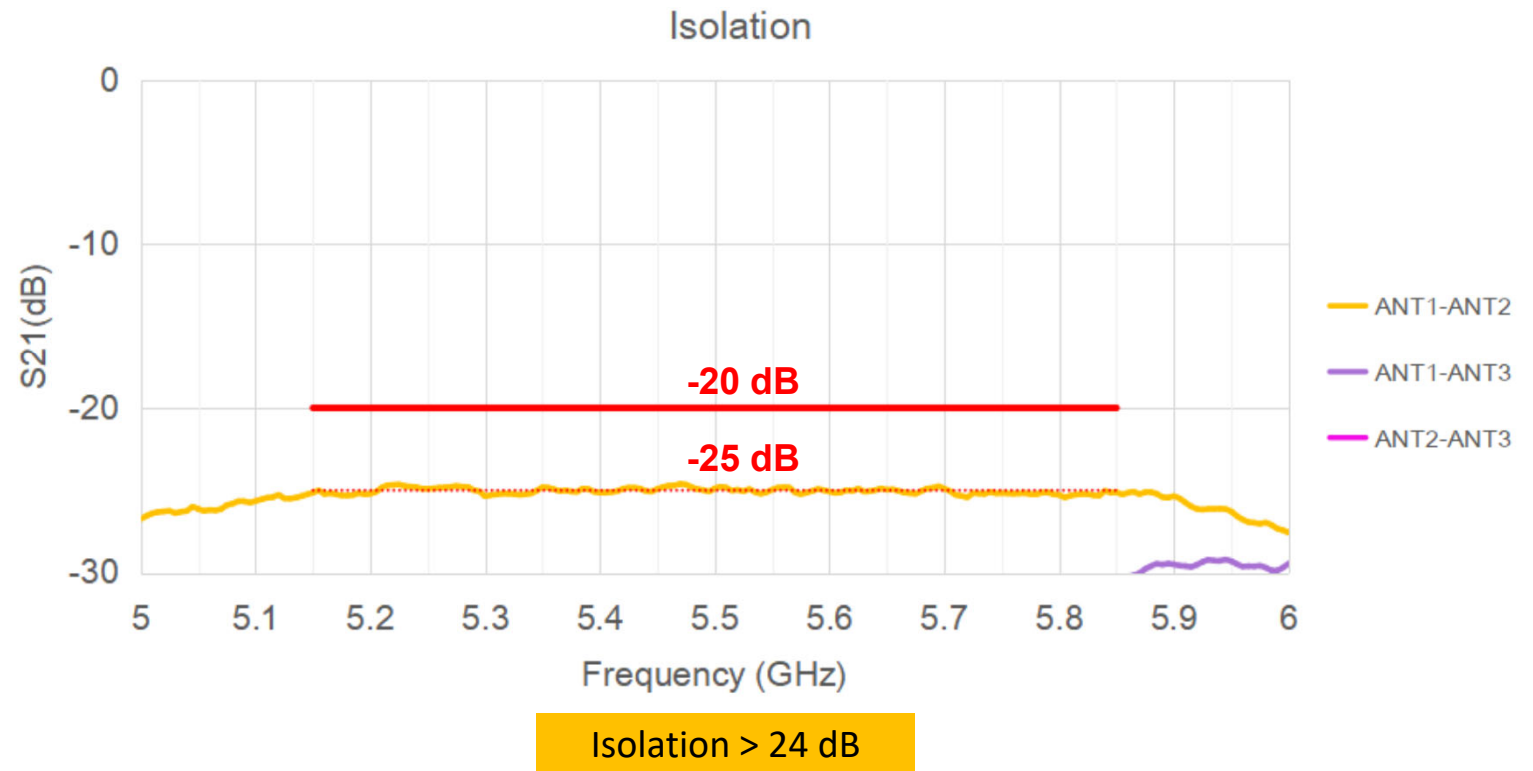
Measured Return Loss @ WideBand



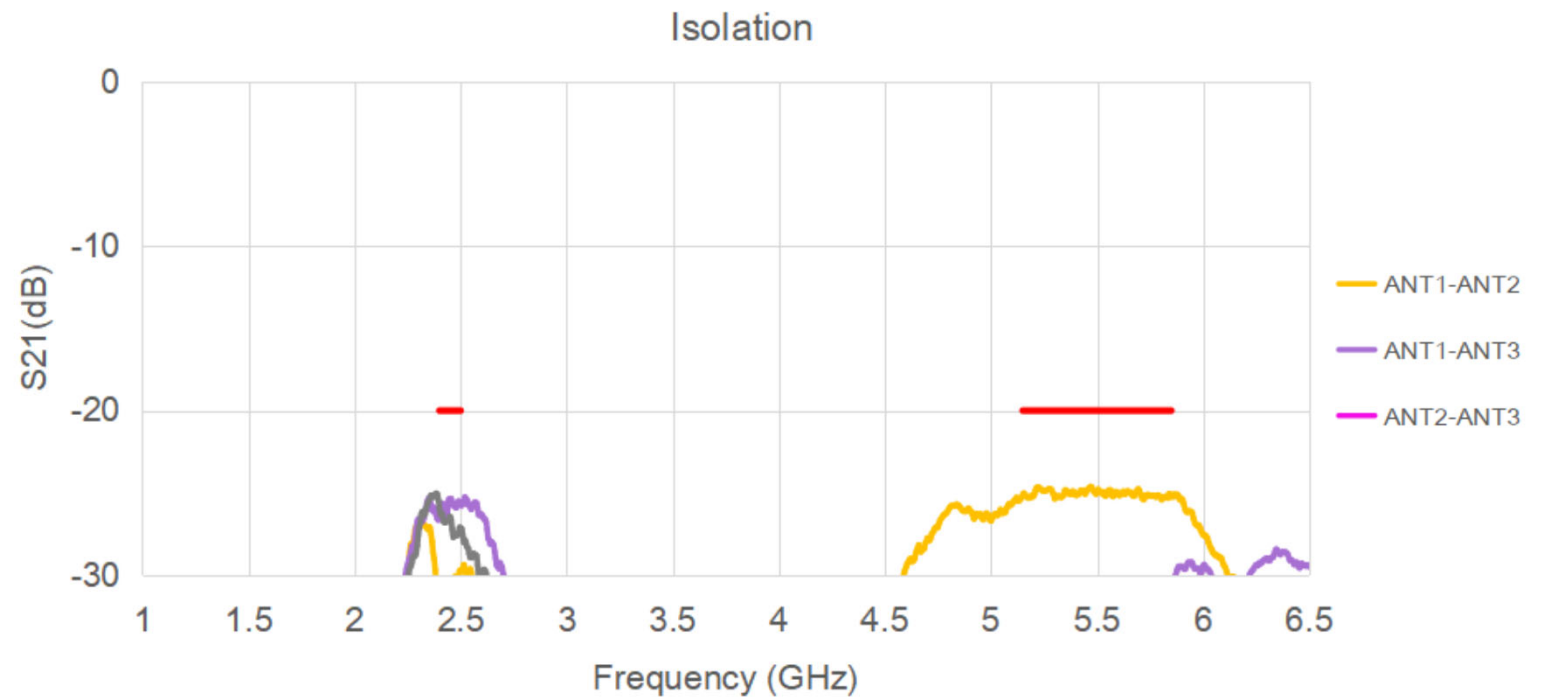
Measured Isolation @ 2.4-GHz



Measured Isolation @ 5-GHz



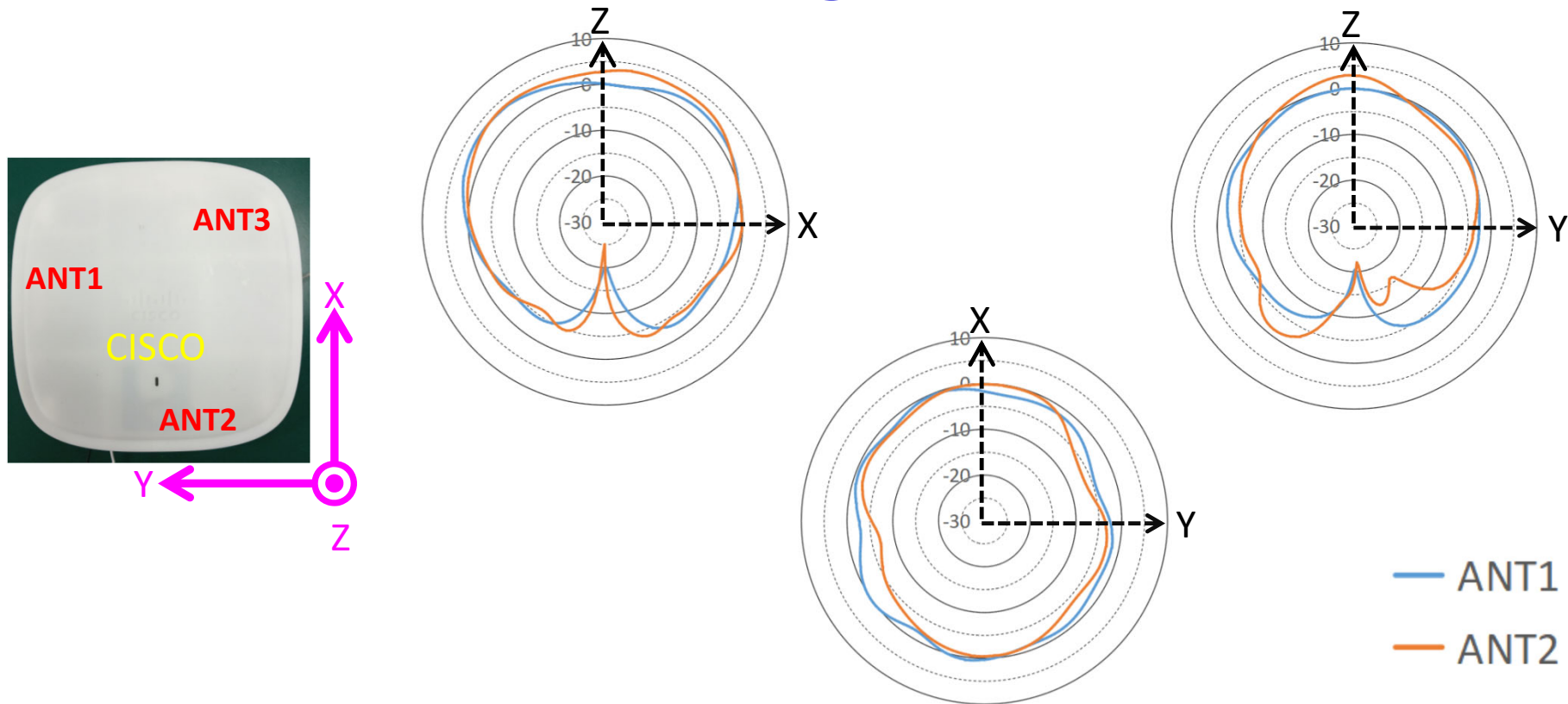
Measured Isolation @ WideBand



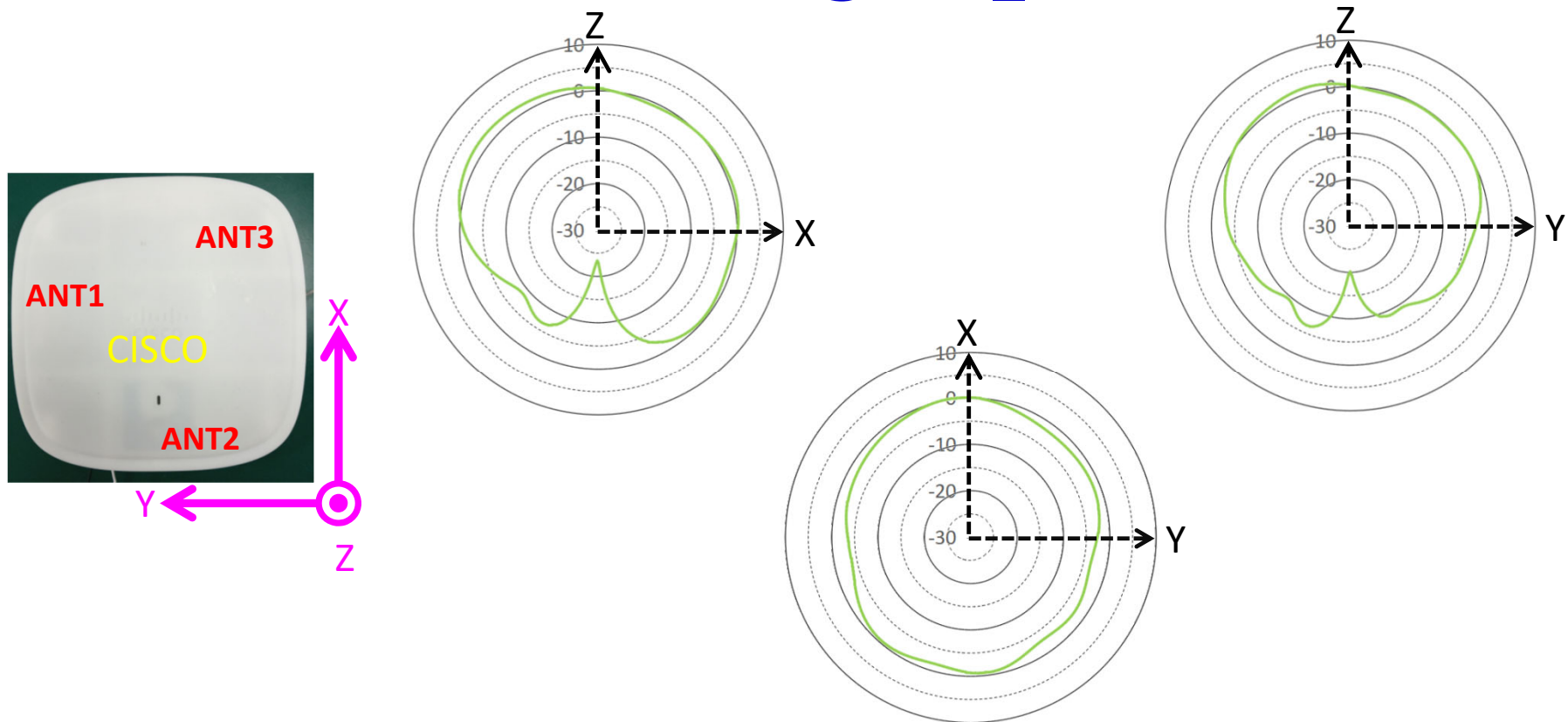
Measured Radiation Efficiency and Peak Gain

	Frequency	2400	2450	2500	Avg.	5150	5300	5500	5700	5850	Avg.
ANT1	Efficiency	63.89%	72.20%	66.08%	67.39%	68.63%	72.71%	70.23%	71.83%	72.10%	71.10%
	Peak Gain	3.03 dBi	3.43 dBi	3.02 dBi		4.28 dBi	4.48 dBi	4.63 dBi	4.89 dBi	4.52 dBi	
ANT2	Efficiency	61.55%	70.17%	65.63%	65.78%	71.78%	72.72%	69.61%	72.71%	71.08%	71.58%
	Peak Gain	2.92 dBi	3.41 dBi	3.11 dBi		4.68 dBi	4.52 dBi	4.49 dBi	4.66 dBi	4.72 dBi	
ANT3	Efficiency	62.85%	71.56%	67.64%	67.35%						
	Peak Gain	2.08 dBi	2.30 dBi	2.18 dBi							

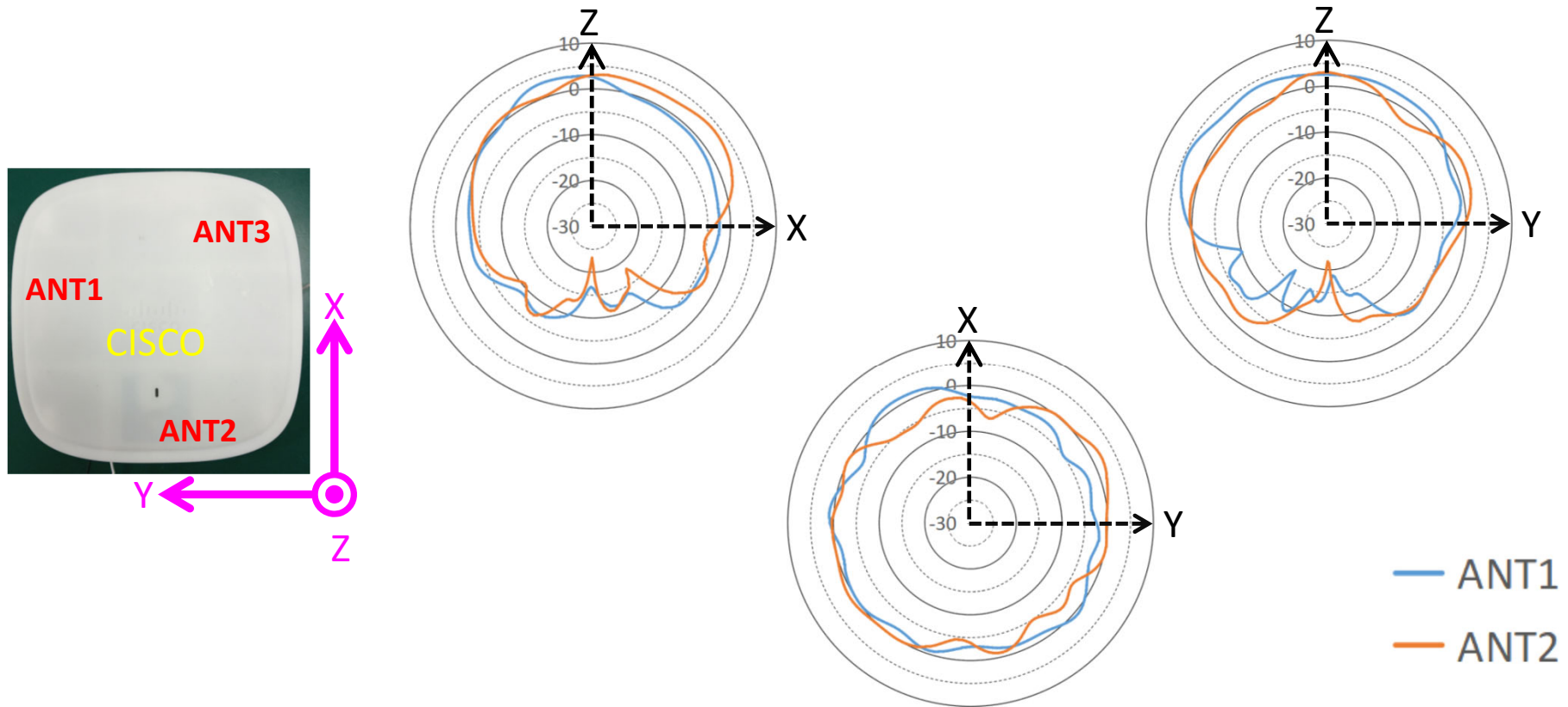
Measured Radiation Patterns @ WiFi_2.45 GHz



Measured Radiation Patterns @ BLE_2.45 GHz



Measured Radiation Patterns @ WiFi_5.5 GHz



Summary

- According to measured results, the summary of the results is below:

	Radiation Efficiency (%)	Peak Gain (dBi)
WIFI_2.4-GHz band	$\cong 61.55\%$	$\cong 3.43$
BLE_2.4-GHz Band	$\cong 62.85\%$	$\cong 2.30$
WIFI_5-GHz band	$\cong 68.63\%$	$\cong 4.89$