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AC13U Antenna Project Report

-Date: 2024.08.16-

Test Environment& Equipment

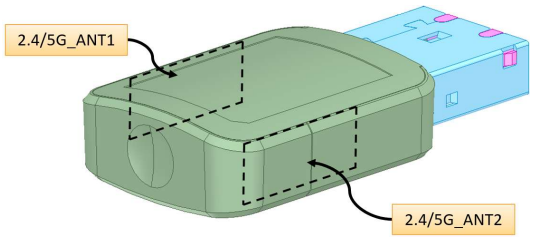
- SATIMO SG 24 Multi-Probe Antenna Measurement System
- Angle between probes: 15°
- Frequency range: 400 MHz – 8.5 GHz
- Chamber Room Size: 4.0 m L x 4.0 m W x 4.0 m H

- Agilent and Keysight Vector Network Analyzer
- Frequency range: 100KHz – 8.5GHz
- Ports numbers: 2 ports

- ETS-Lindgren AMS-8500 Antenna Measurement System
- EM Quest EMQ-100 Software
- Model 3164-04 Diagonal Dual Polarized Horn antenna
- Frequency range: 700 MHz - 6 GHz
- Positioning Systems
- Chamber Room Size: 7.32 m L x 3.66 m W x 3.66 m H

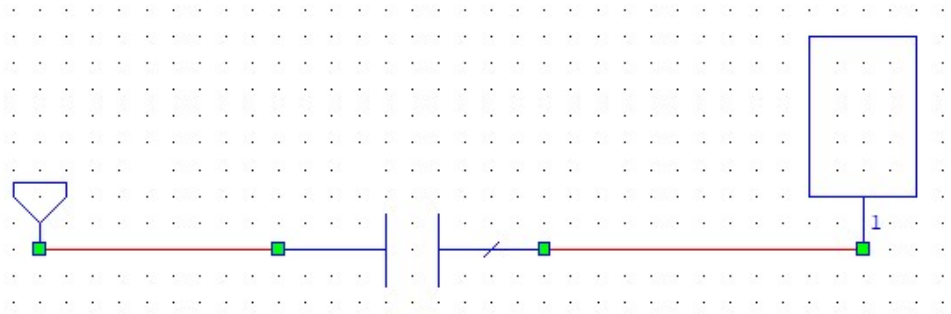
Antenna Placement and Information

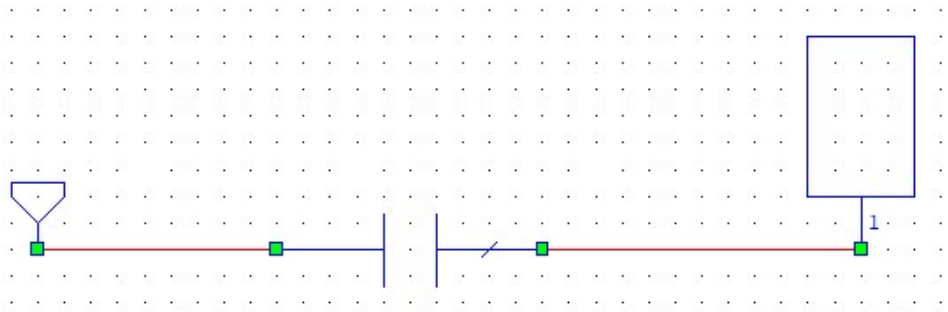
Default Configuration of HW



Antenna	PYRAS PN	Frequency Range (MHz)	Antenna Type	Cable Length (mm)
2.4G	/A	2400- 2500	metal	N/A
5G	N/A	5100-5900	metal	N/A

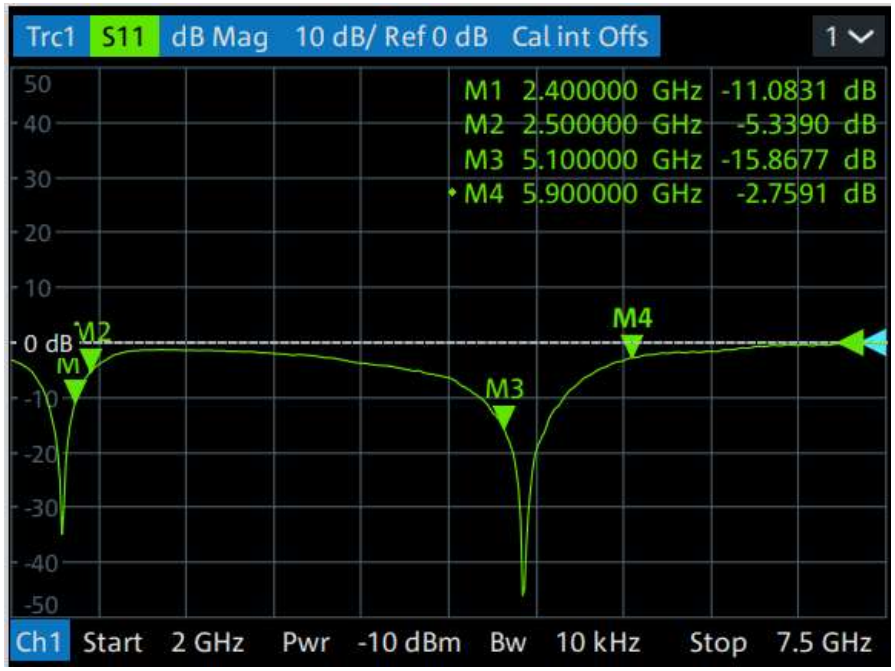
Antenna Overview



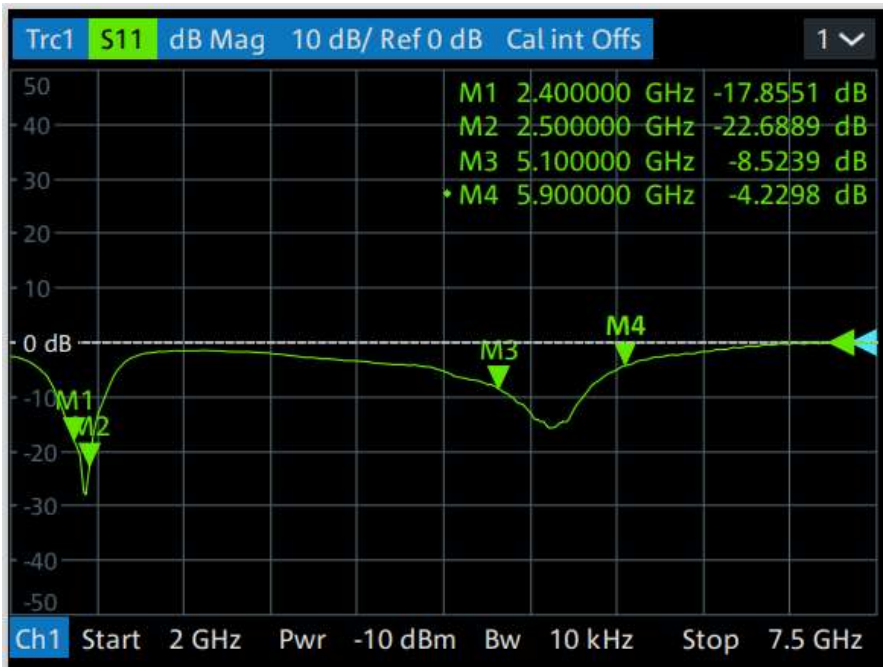


Antenna Return Loss (W/O matching)

2.4/5G_ANT1

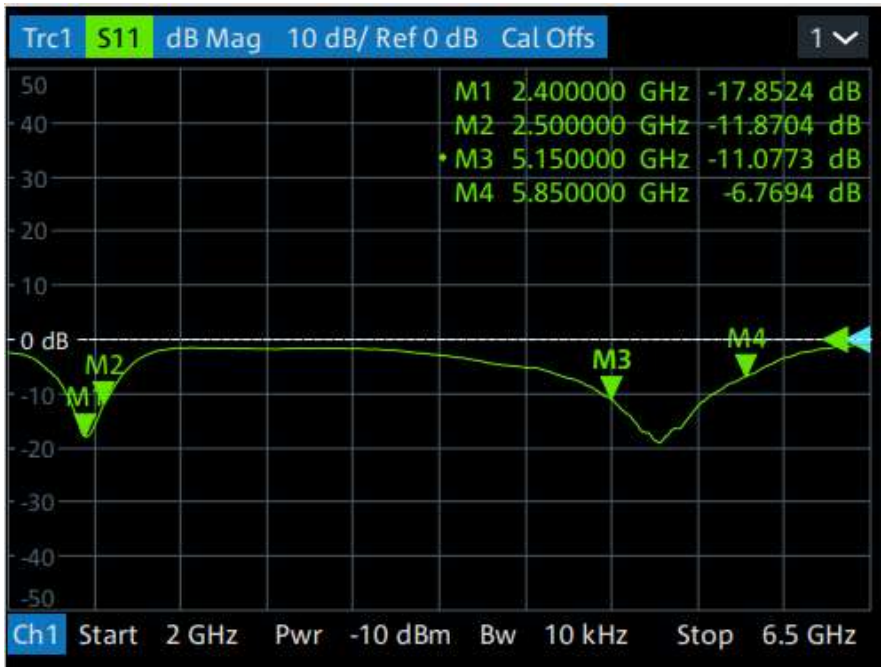


2.4/5G_ANT2

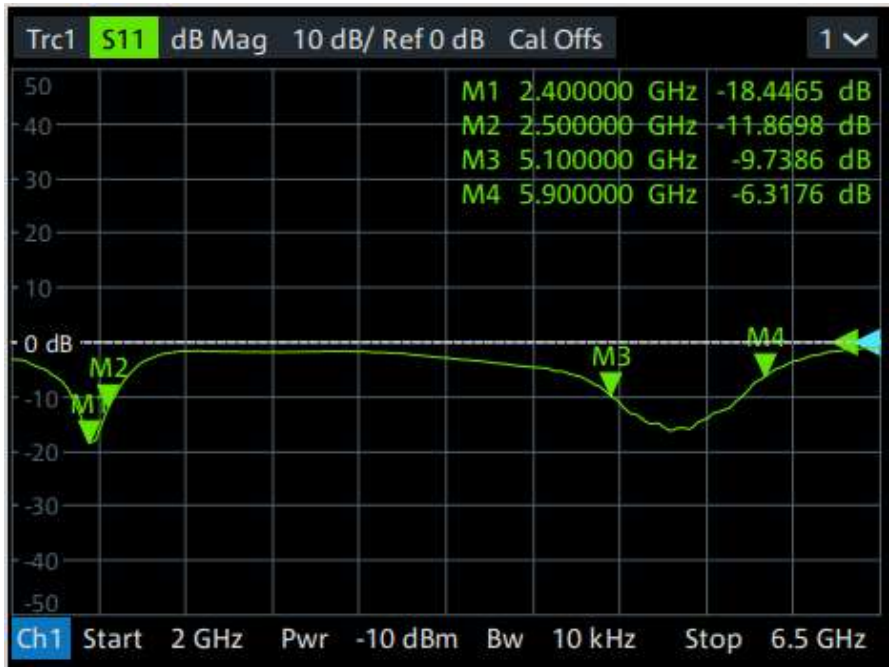


Antenna Return Loss (With matching)

2.4/5G_ANT1

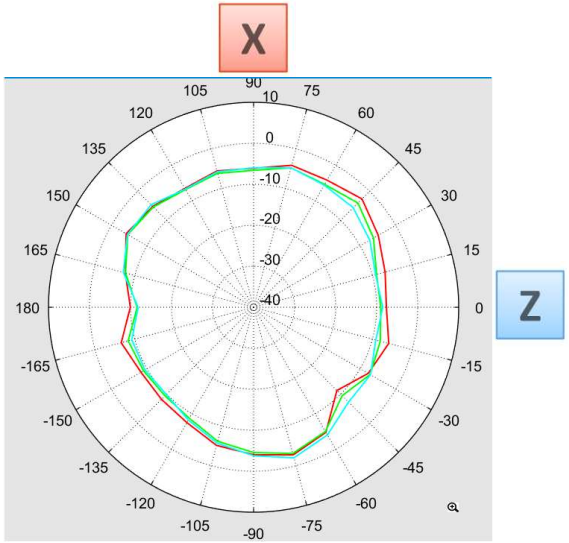


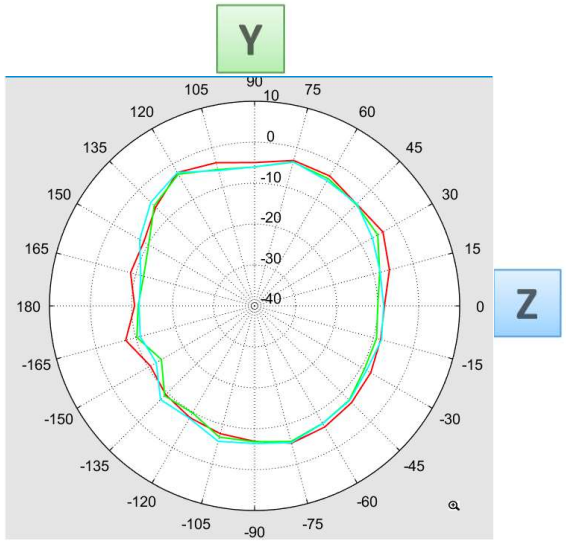
2.4/5G_ANT2

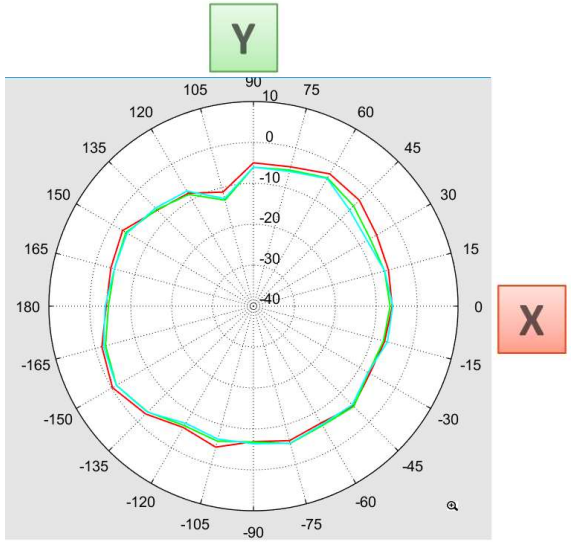


2.4/5G_ANT1 GainTotal (dBi) Pattern @ 2.4G

2400 MHz
2450 MHz
2500 MHz

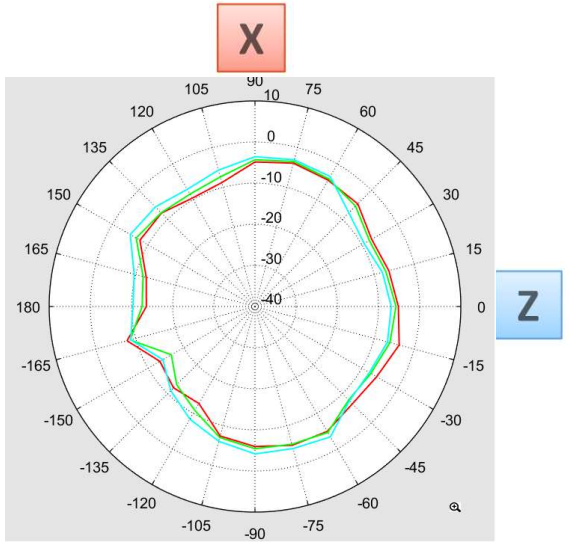


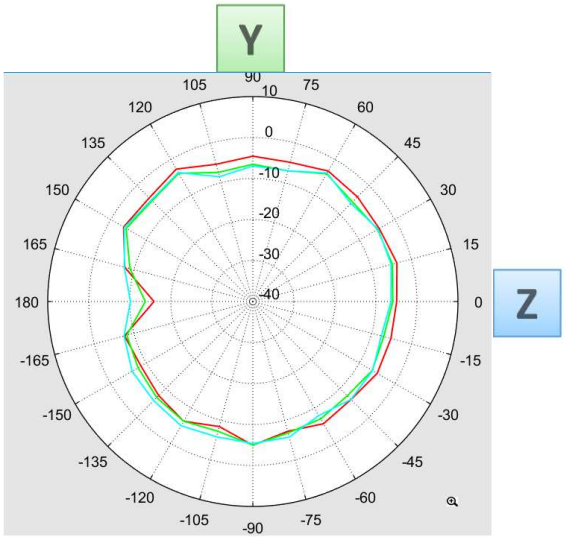


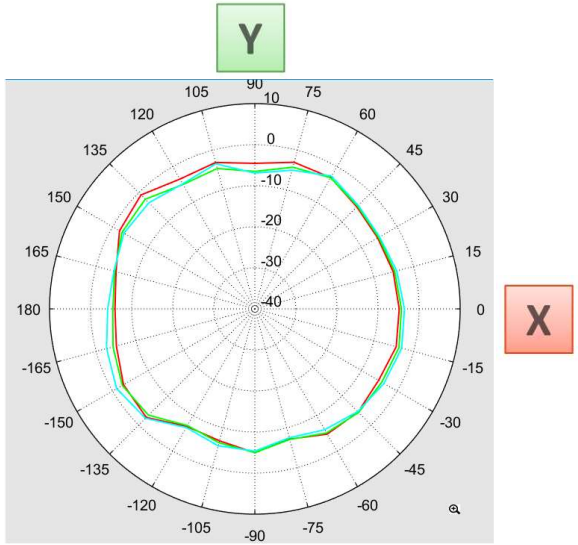


2.4/5G_ANT2 GainTotal (dBi) Pattern @ 2.4G

2400 MHz
2450 MHz
2500 MHz

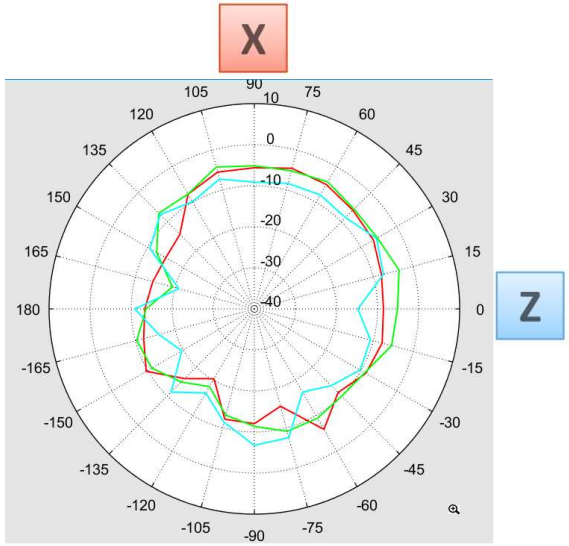


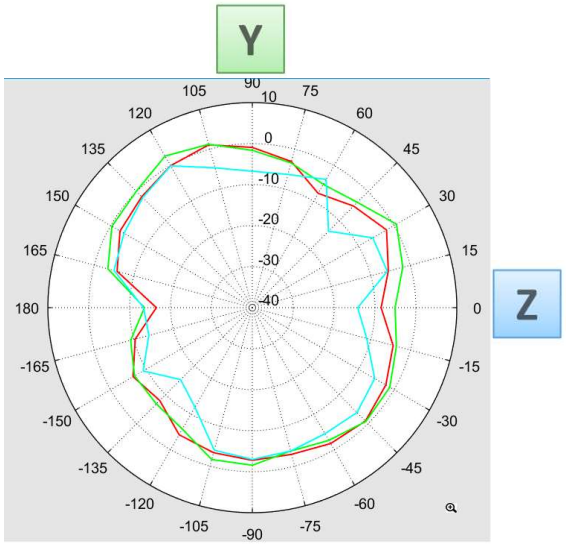


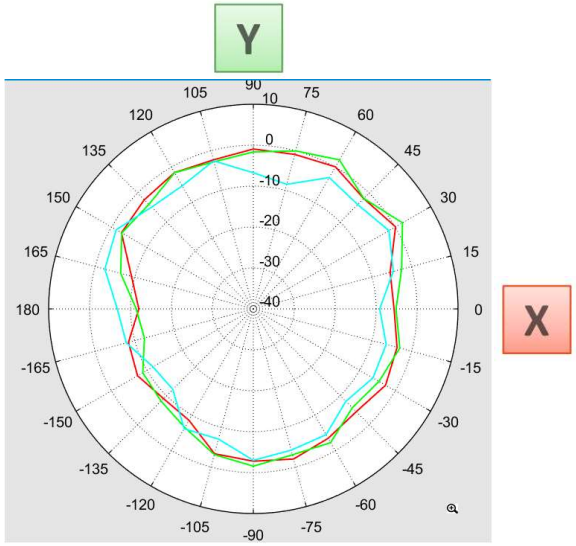


2.4/5G_ANT1 GainTotal (dBi) Pattern @ 5G

5100 MHz
5500 MHz
5900 MHz

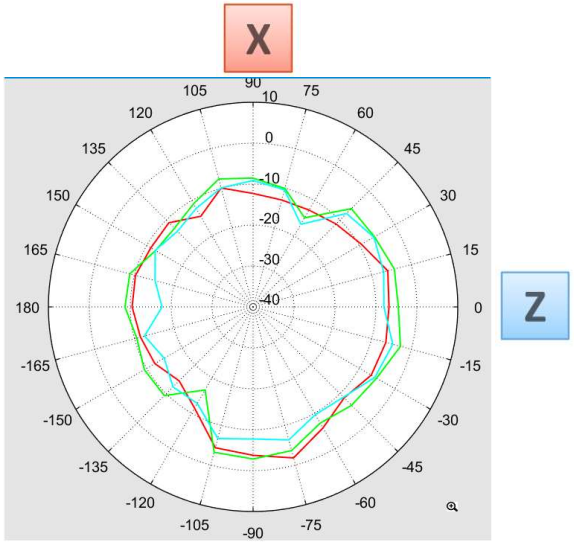


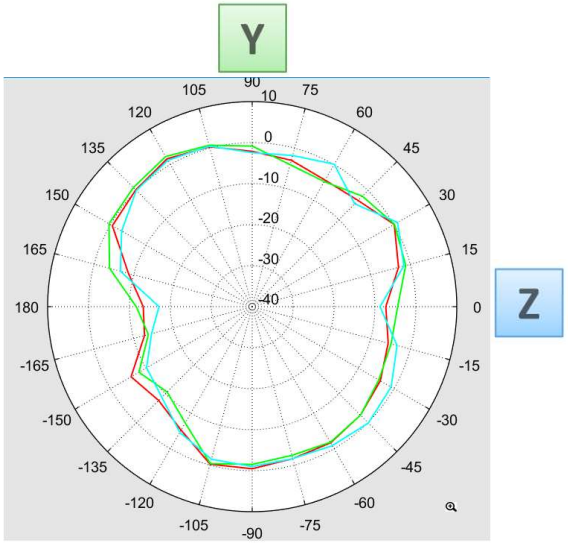


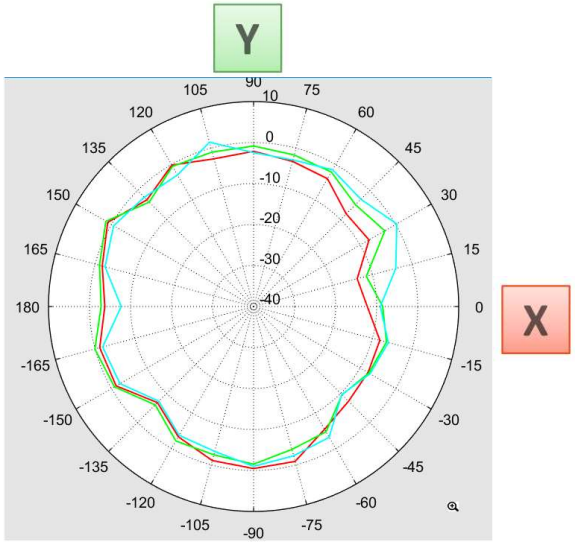


2.4/5G_ANT2 GainTotal (dBi) Pattern @ 5G

5100 MHz
5500 MHz
5900 MHz







Antenna Efficiency

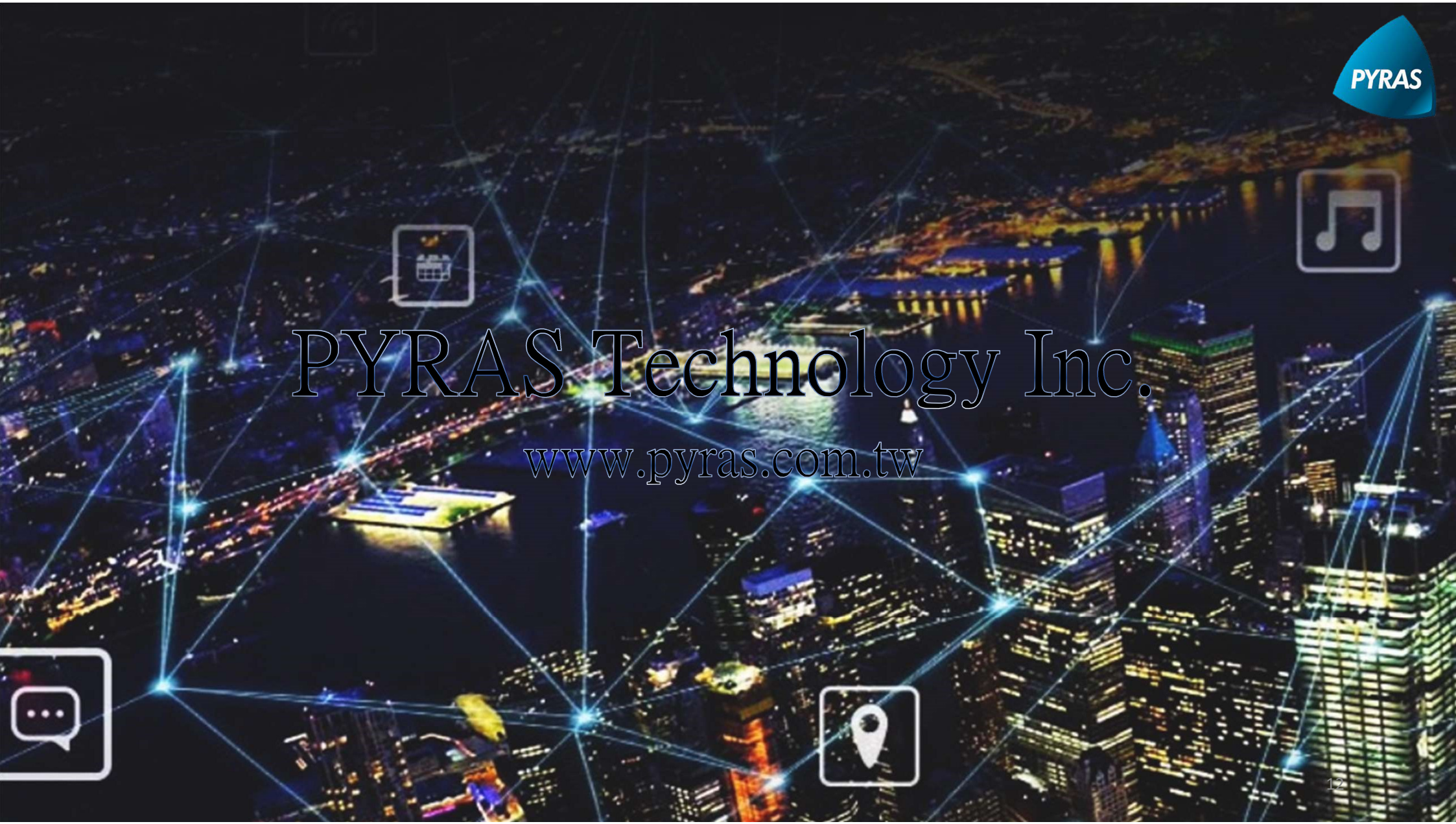
2.4/5G Antenna Efficiency (%) @ 2.4G			
Frequency (MHz)	2400	2450	2500
2.4/5G_ANT1	40.2	41.8	41.2
2.4/5G_ANT2	42.2	43.4	43.3

2.4/5G Antenna Efficiency (%) @ 5G			
Frequency (MHz)	5100	5500	5900
2.4/5G_ANT1	61.8	59.4	56.2
2.4/5G_ANT2	60.5	58.1	56.6

Antenna Peak Gain

2.4/5G Antenna Peak Gain (dBi) @ 2.4G			
Frequency (MHz)	2400	2450	2500
2.4/5G_ANT1	1.3	1.4	1.5
2.4/5G_ANT2	1.4	1.6	1.6

2.4/5G Antenna Peak Gain (dBi) @ 5G			
Frequency (MHz)	5100	5500	5900
2.4/5G_ANT1	3.6	3.2	2.8
2.4/5G_ANT2	3.5	3.2	2.9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