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AC13U Antenna Project Report

-Date: 2024.08.16-

CONFIDENTIAL CONDITIONS

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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

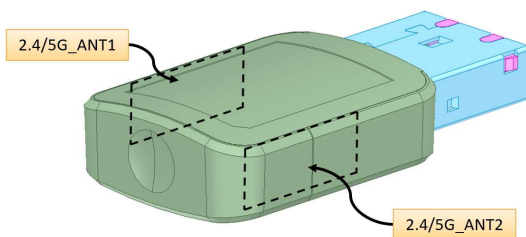
- ETS-Lindgren AMS-8500 Antenna Measurement System
- EM Quest EMQ-100 Software
- Model 3164-04 Diagonal Dual Polarized Horn antenna
- Frequency range: 700 MHz - 6 GHz
- Positioning Systems
- Chamber Room Size: 7.32 m L x 3.66 m W x 3.66 m H



Antenna Placement and Information

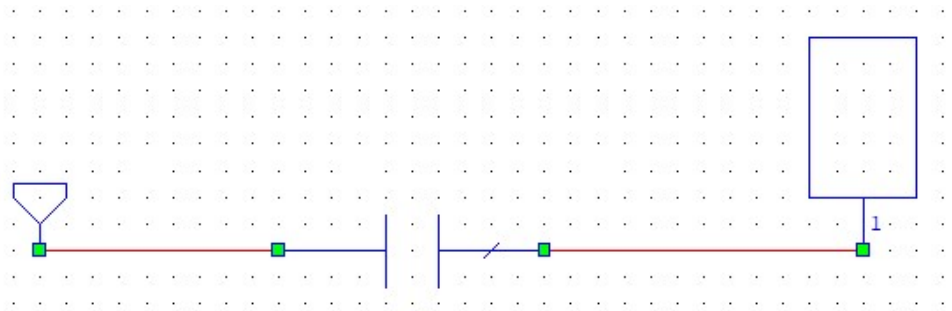
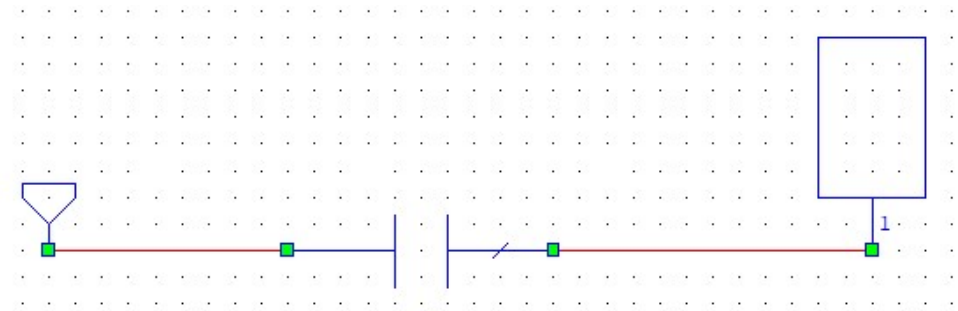


Default Configuration of HW



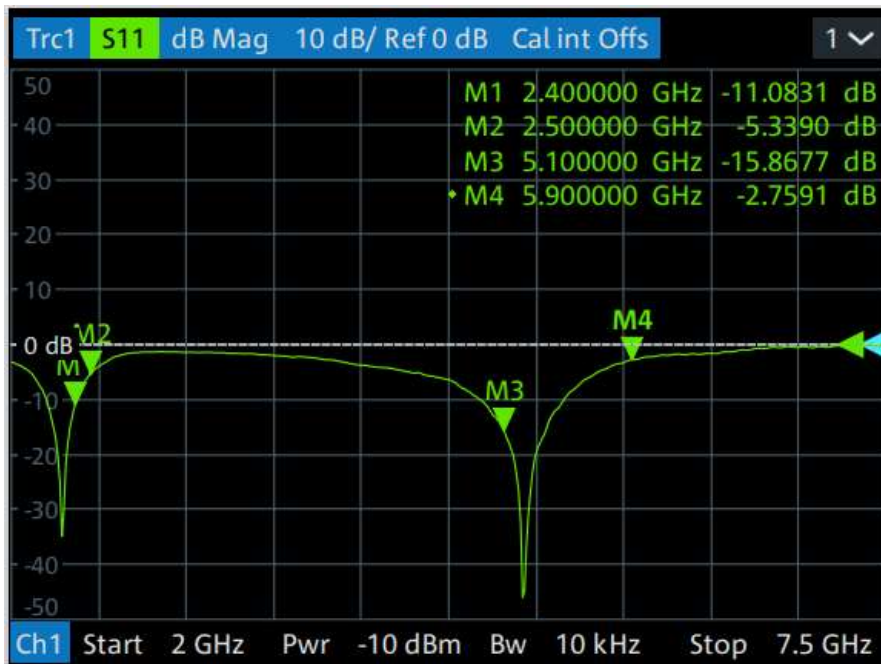
Antenna	PYRAS PN	Frequency Range (MHz)	Antenna Type	Cable Length (mm)
2.4G	/A	2400- 2500	metal	N/A
5G	N/A	5100-5900	metal	N/A

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

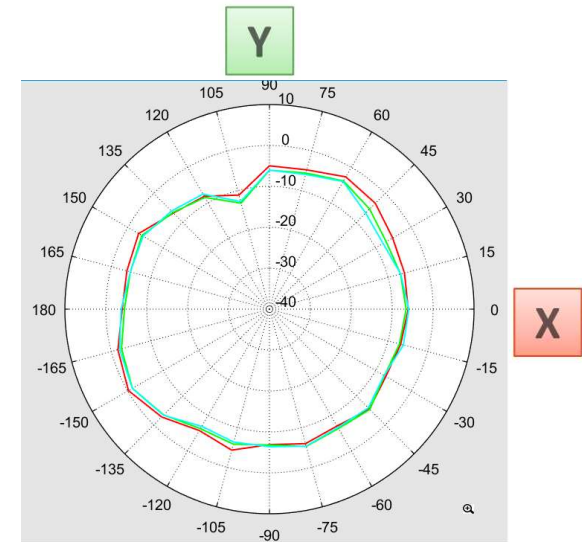
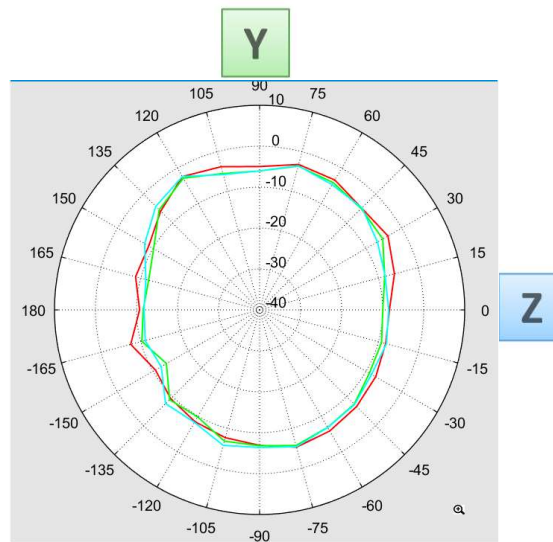
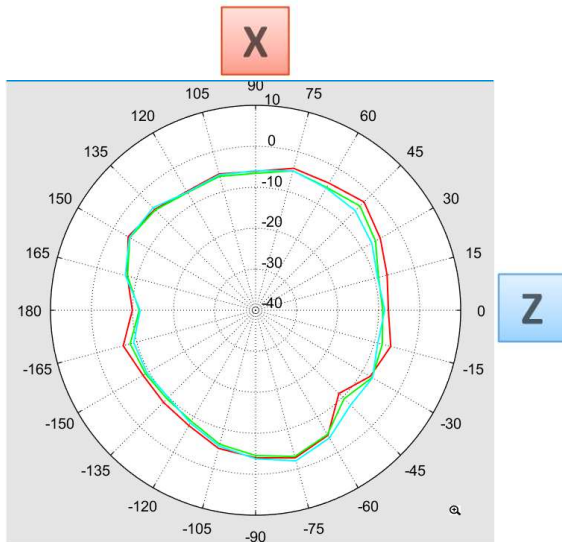


2.4/5G_ANT2



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

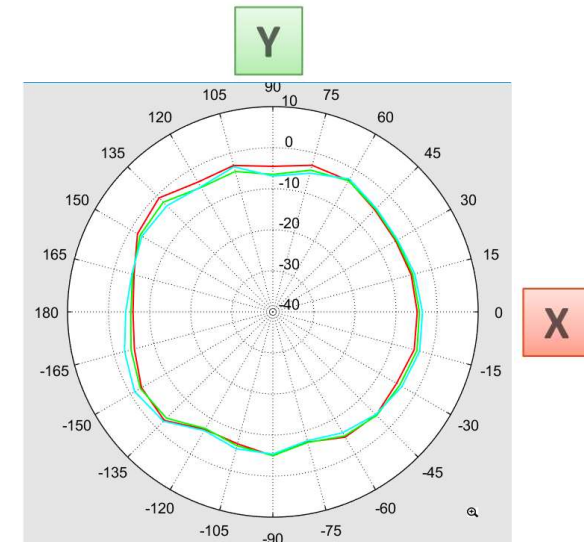
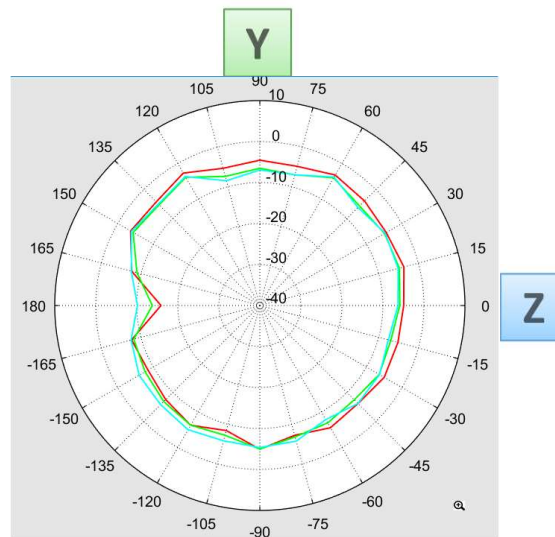
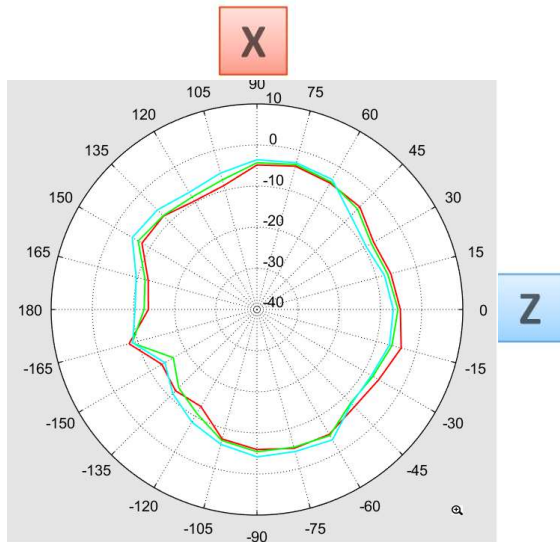
2400 MHz ————
 2450 MHz ————
 2500 MHz ————



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



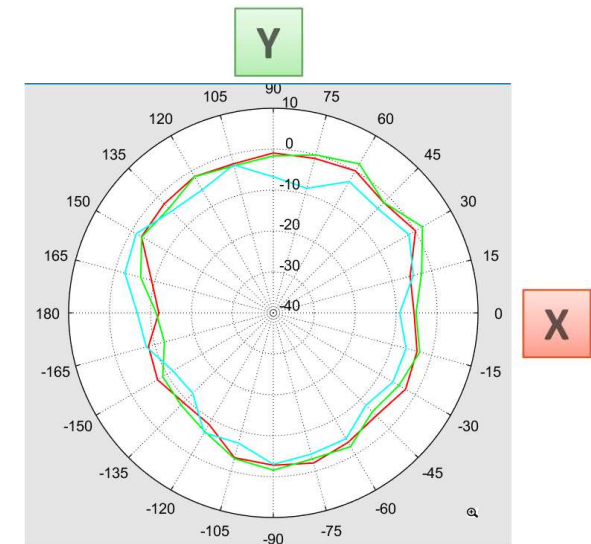
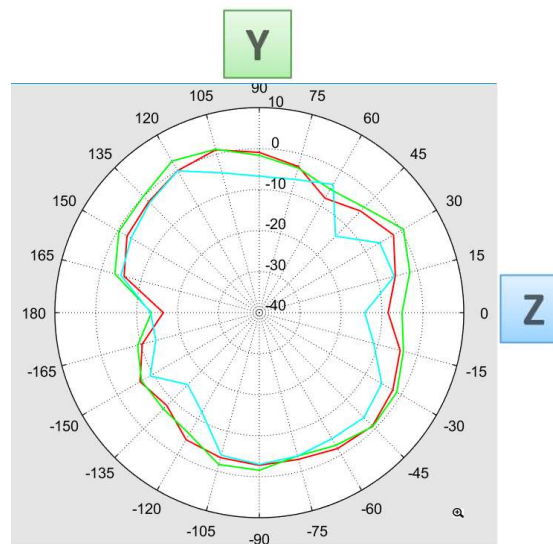
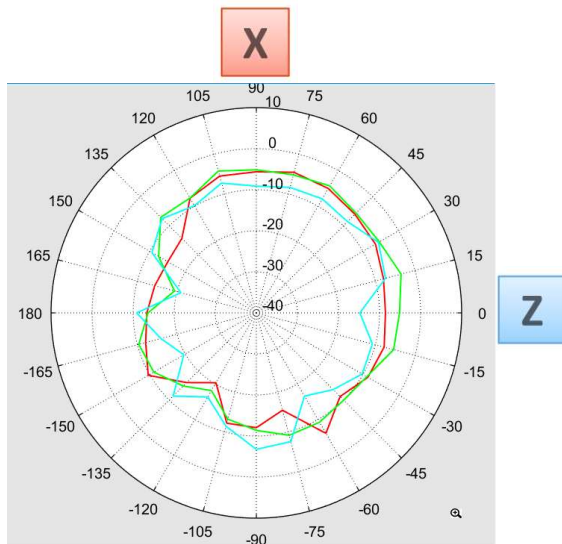
2400 MHz ———
2450 MHz ———
2500 MHz ———



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



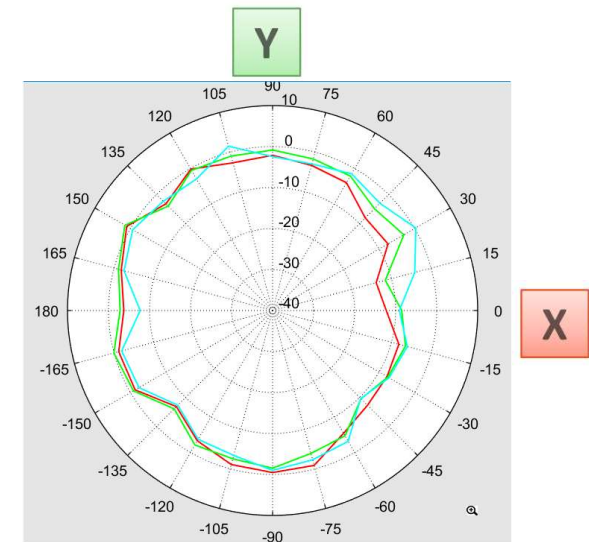
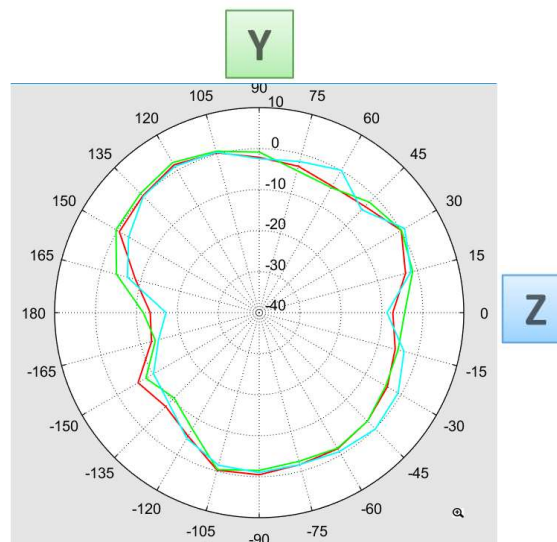
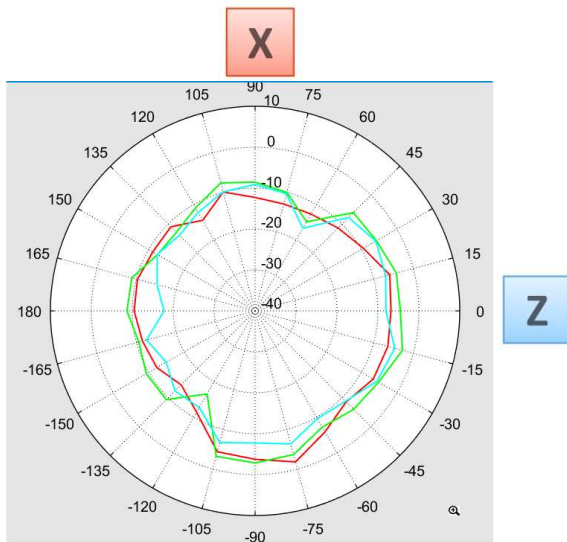
5100 MHz ———
5500 MHz ———
5900 MHz ———



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



5100 MHz ———
5500 MHz ———
5900 MHz ———



Antenna Efficiency

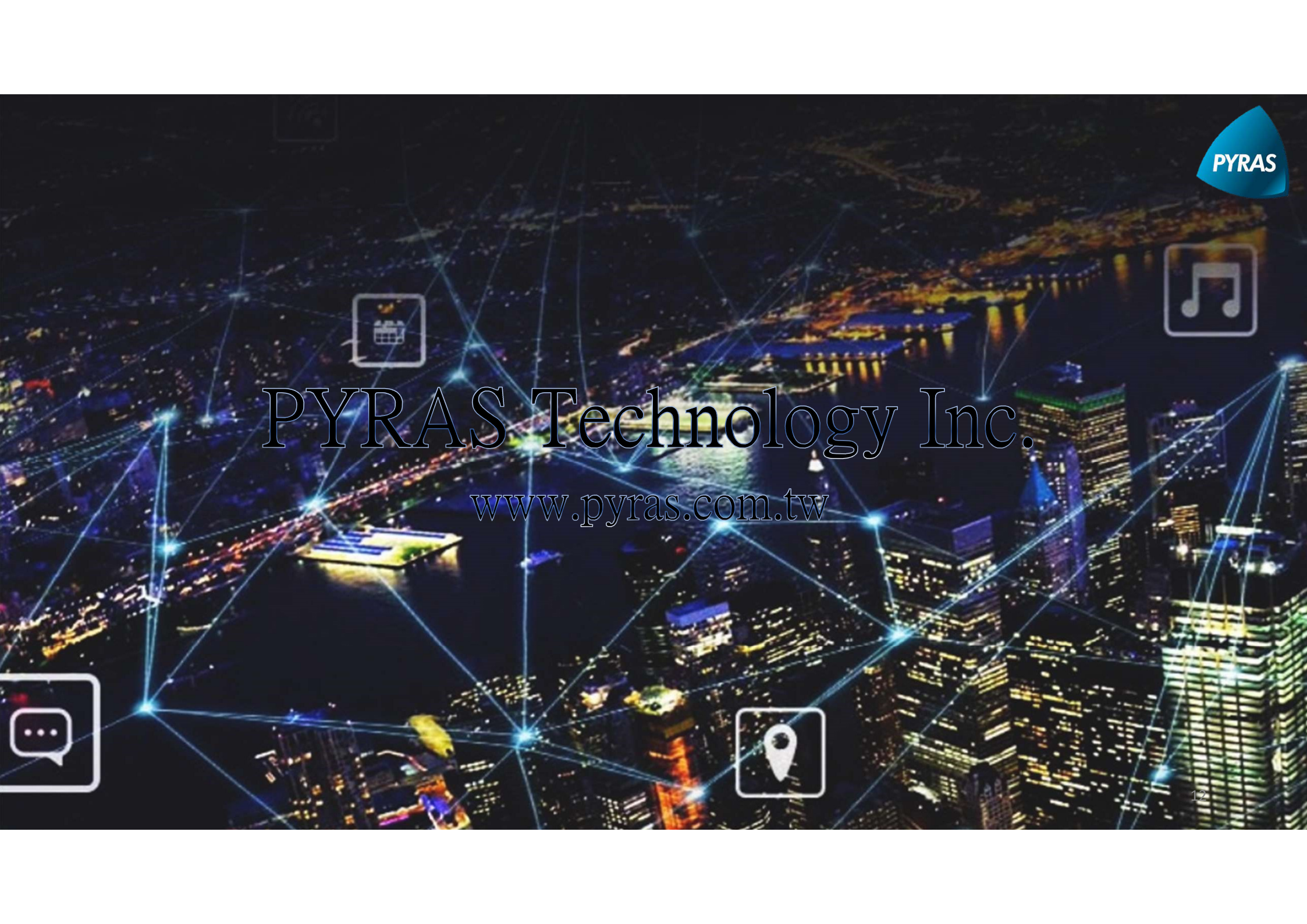
2.4/5G Antenna Efficiency (%) @ 2.4G			
Frequency (MHz)	2400	2450	2500
2.4/5G_ANT1	40.2	41.8	41.2
2.4/5G_ANT2	42.2	43.4	43.3

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

The background is a night-time aerial view of a city with a network of glowing blue lines connecting various points, symbolizing a global network or data flow. Several icons are overlaid on the image: a calendar icon in the top left, a music note icon in the top right, a speech bubble icon in the bottom left, and a location pin icon in the bottom center.

PYRAS Technology Inc.

www.pyras.com.tw