FX4100 Wi-Fi Antenna Specifications

1. Antenna Part Number:
    - Manufacturer: Inseego Corp.
    - Wi-Fi Ant #0 Part Number: ASM-08000004 REV 1
    - Wi-Fi Ant #1 Part Number: ASM-08000005 REV 1

2. Antenna Construction:
    - Material: Printed Circuit FR4 Design consists of Copper and Adhesive
    - Type: Planar Dipole Antenna

3. Antenna Passive Gain Table:

Wi-Fi Ant #0	Frequency Range	Gain
ISM	2440MHz (2412MHz to 2462MHz)	3.5 dBi
UNI-1	5200MHz (5170MHz to 5250MHz)	5.0 dBi
UNI-2	5700MHz (5250MHz to 5730MHz)	5.5 dBi
UNI-3	5700MHz (5735MHz to 5835MHz)	5.8 dBi
Wi-Fi Ant #1	Frequency Range	Gain
ISM	2440MHz (2412MHz to 2462MHz)	3.5 dBi
UNI-1	5200MHz (5170MHz to 5250MHz)	5.5 dBi
UNI-2	5700MHz (5250MHz to 5730MHz)	5.7 dBi
UNI-3	5700MHz (5735MHz to 5835MHz)	5.2 dBi

4. Antenna Passive Gain (dBi) Charts:
    - Antenna Engineer: Chung-Pin Cherng
    - Passive Measurement Date: 04-08-2025

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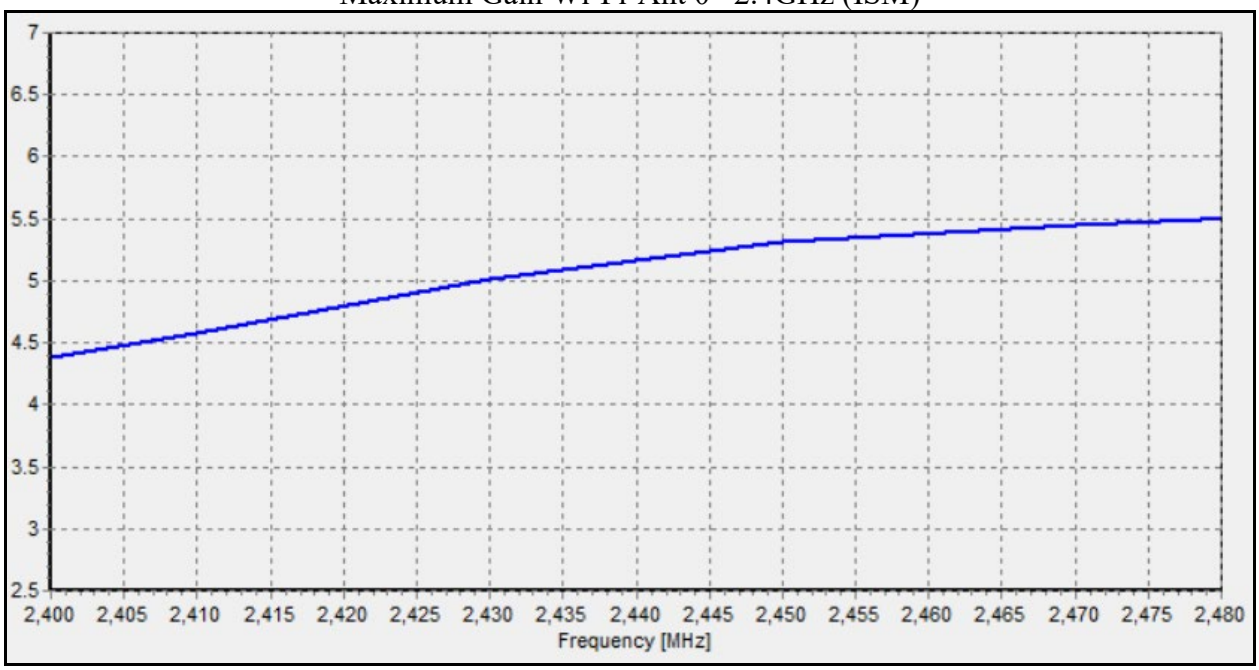
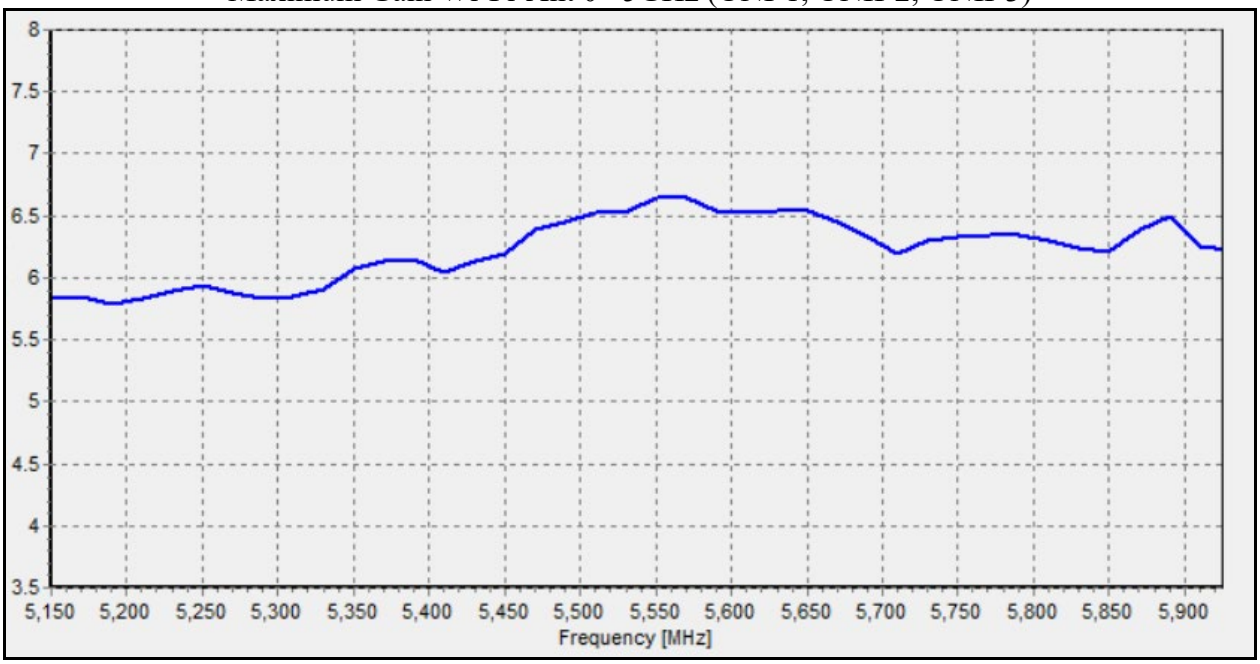
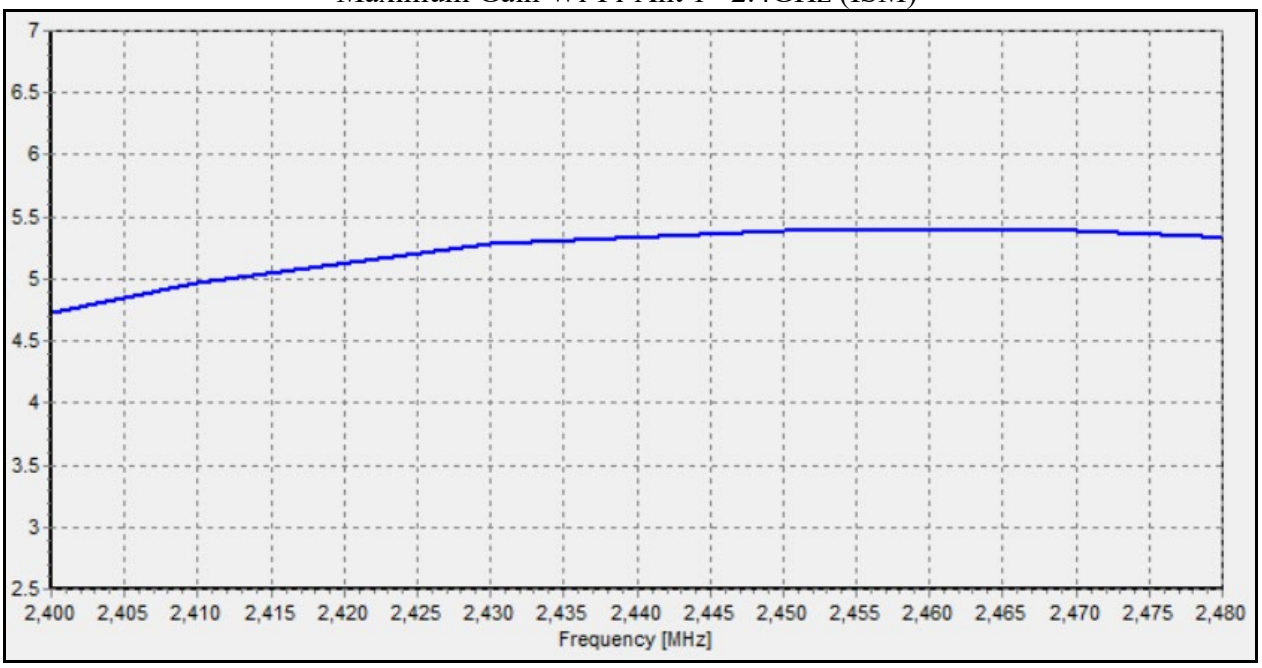
Maximum Gain Wi-Fi-Ant 0 –2.4GHz (ISM)



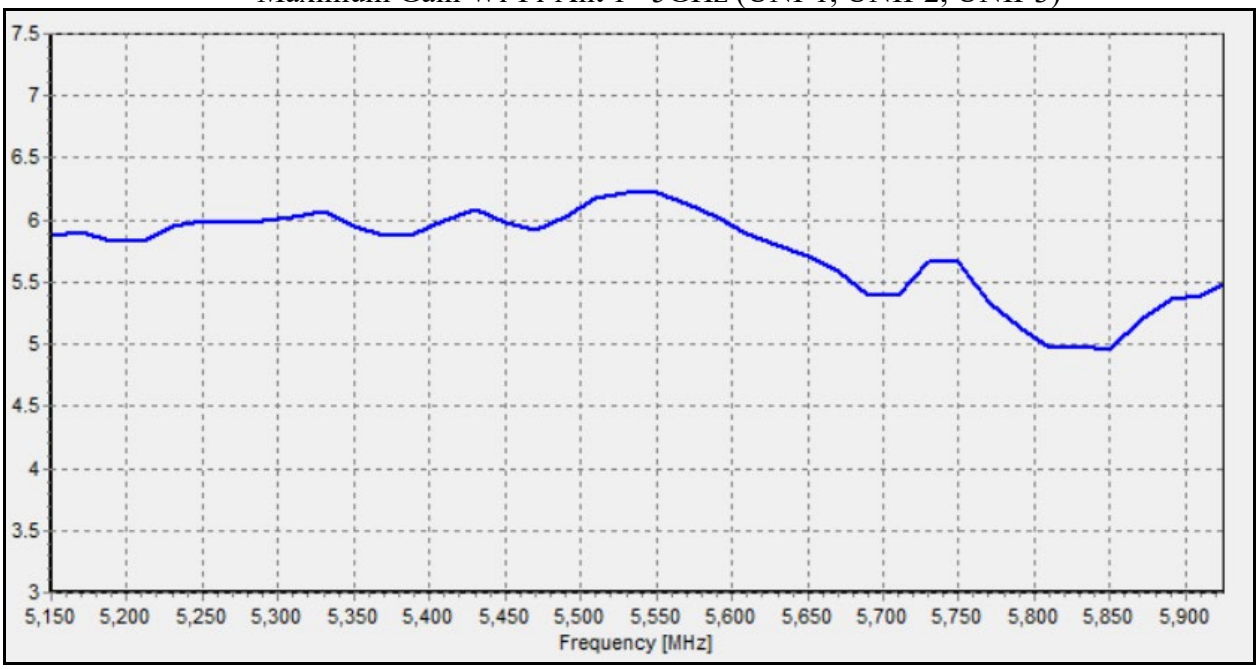
Maximum Gain Wi-Fi-Ant 0 –5GHz (UNI-1, UNII-2, UNII-3)



Maximum Gain Wi-Fi-Ant 1 –2.4GHz (ISM)



Maximum Gain Wi-Fi-Ant 1 –5GHz (UNI-1, UNII-2, UNII-3)

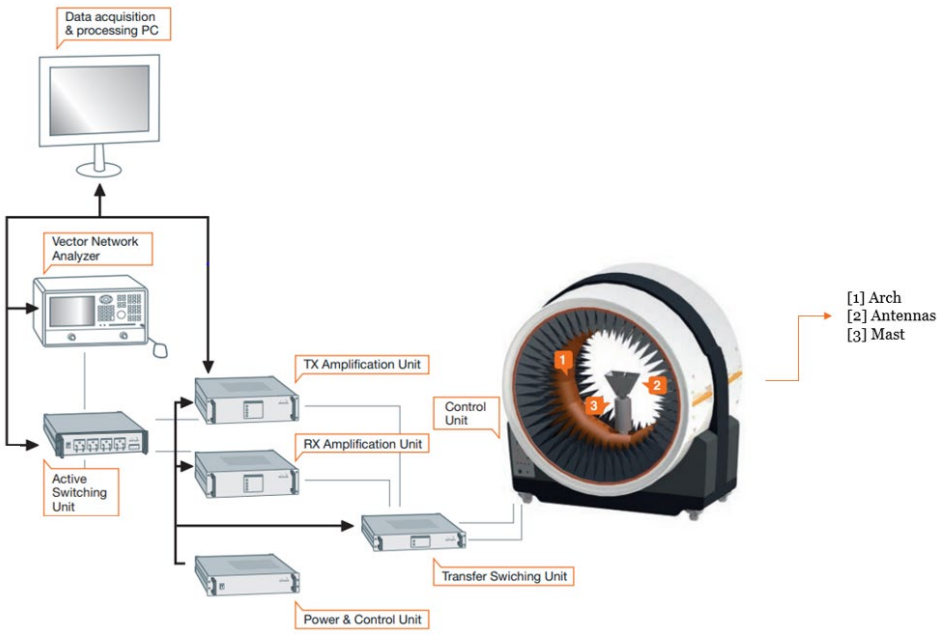


5. Antenna Passive Measurement Setup:

Passive Performance Test System components and diagram:

Frequency Bands: 600 MHz to 6 GHz
Max. Size of DUT: 450mm for spherical set-up
Max. Weight of DUT: 10 kgs
The system is capable of the following measurements:

- Gain
- Directivity
- Beamwidth
- Cross polar discrimination
- Sidelobe levels
- 3D radiation pattern
- Radiation pattern in any polarization (linear or circular)
- Antenna efficiency test



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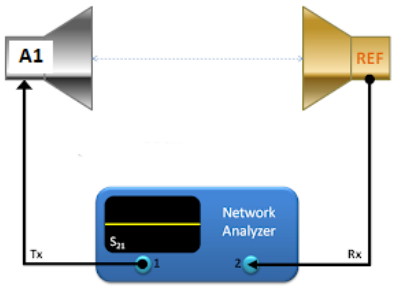
Gain Measurement Method Explained:

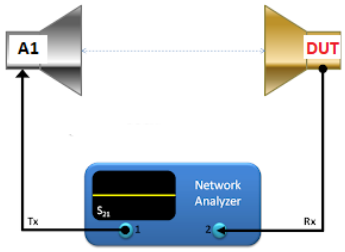
a) **Calibration**: Use Two Antennas (one has to have a known gain [In this case Ref]) to measure and record the S parameter S(21) which is the input/output relationship between the ports on the Network analyzer
   a. Normalize the calibration to produce 0 DB reference on the network Analyzer.
   b. All cable loss factors are accounted for in the system.

Notes: A1 represents Arch antennas in system
The software instructs the VNA to produce a sweep signal over the frequency range specified. The it will generate the signal is a swept CW between the start and end frequency and pausing at predetermined points long enough to collect measurement.



Calibration diagram

b) **DUT Measurements**: Replace reference Antenna with DUT Antenna (maintaining the same conditions) distance etc.



DUT Measurement diagram

c) Remeasure S(21) response which now represents the gain relative to reference antenna. Collect G(Rel).
d) Calculate G(Dut)=G(ref)+ G(rel)

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