Model BSM00600U- Antenna Specification

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North Reading, MA 01864, United States of America

Test date: January 14th 2025
Test engineer name: Tadd Scarpelli

Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	last Cal.	Due Date
Network Analyzer	Anritsu	MS46122B	2135304	8/25/2024	8/24/2025
Quad-Ridge Horn Antenna	ETS-Lindgreen	3164-10	217936	8/25/2024	8/24/2025
5 Meter Anechoic Chamber	Braden Shielding Systems	NA	F70331	NA	NA
RF Cable	ENS Microwave	S160-160-MKS-MKS	3042020	8/25/2024	8/24/2025
RF Cable	ENS Microwave	S160-120-MKS-MKS	12042018	8/25/2024	8/24/2025
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002201	8/25/2024	8/24/2025
RF Cable	ENS Microwave	EMC1-K1K1-72	1GVT4 19002202	8/25/2024	8/24/2025
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 001	8/25/2024	8/24/2025
RF Cable	ENS Microwave	EMC1-K1K1-216	1GVT4 19002202 002	8/25/2024	8/24/2025
DUT Positioner	DE LCC	D6025	NA	NA	NA
RF Switch	Mini-Circuits	RC-1SPDT-A18	1810010005	8/25/2024	8/24/2025

Summary

Antenna name	Mechanical	Type	Frequency Response
Sub 1GHz	PCB on-board	Monopole	900 – 930 MHz
Wi-Fi	PCB on-board	Inverted F	2400 – 2500 MHz

Performance

Parameters		Performance				
Frequency (MHz)	900	918	930	2400	2442	2478
Peak Gain (dBi)	-0.53	0	-0.70	2.83	3.0	2.77
Impedance (ohms)	50	50	50	50	50	50
VSWR	≤ 3.5	≤ 2.5	≤ 2.5	≤ 2.0	≤ 2.0	≤ 2.0
Polarization	Linear	Linear	≤ 2.5	Linear	Linear	Linear

Test Software and method

Test Conditions

Results were collected from a passive antenna measurement within a 5-meter fully anechoic antenna chamber equipped with a dual-pol quad-ridged horn receiver antenna and an EL-AZ positioner with laser positioner.

Test Conducted	Passive RF Measurement
DUT SN/PN	US 1: 45903NT521000443; US 2: 45903NT52100057B

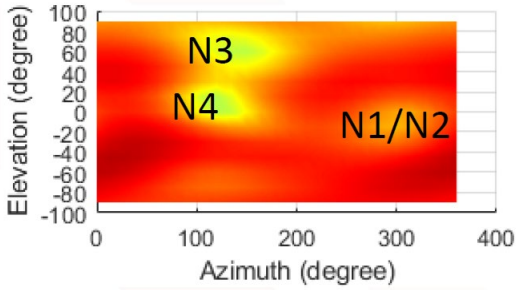
Formula & Calculations

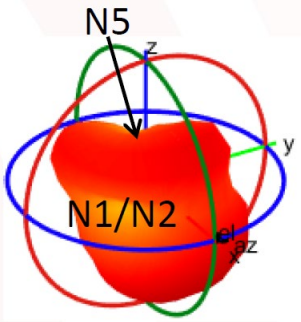
Gain: $$G_{AUT} = \frac{[S_{21}{}^2]}{[G_{REF}]}\left(\frac{\lambda}{4\pi d}\right)^{-2}$$

Efficiency: $$\varepsilon = \frac{\pi}{2NM}\sum_{N}\sum_{M}\frac{S_{21}^2(\theta_M,\phi_N)}{P_L G_T}Cos(\phi_N)$$

2-D / 3-D Plots

Sub 1GHz Antenna





2.4GHz Antenna