

Regulatory WLAN Antenna Information

Platform information					
Brand	ODM	****End product model name	platform (ex: Yes, No or NA)	Platform type (ex: regular NB, convertible PC, AIO...etc)	*SAR minimum separation (mm)
GETAC		S410, S410G5			
*****Please fill in exact product model name and make sure the model name is visible on product cover or any parts for end users recognize for authority inspection.					
Antenna information					
Vendor	Type		Antenna Part number (Main)	Antenna Part number (Aux)	
PULSE	PIFA		421GB74C0001	421GB74C0002	

Antenna manufacturer: Pulse Electronics (Singapore) Pte Ltd

Address: 3F., No. 2, Aly. 1, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City, Taiwan (R.O.C.)

2.4G Mode Main Antenna Gain Table

Frequency	2400	2410	2430	2442	2450	2470	2500
Tot. Rad. Pwr. (dB)	-3.46	-3.26	-2.91	-2.71	-2.63	-2.52	-2.86
Peak EIRP (dB)	1.16	1.56	2.29	2.69	2.91	3.30	3.45
Efficiency (%)	45.13	47.22	51.20	53.62	54.61	55.93	51.76
Gain (dBi)	1.16	1.56	2.29	2.69	2.91	3.30	3.45

2.4G Mode AUX Antenna Gain Table

Frequency	2400	2410	2430	2442	2450	2470	2500
Tot. Rad. Pwr. (dB)	-4.89	-4.63	-4.12	-3.80	-3.65	-3.30	-3.09
Peak EIRP (dB)	1.80	2.08	2.58	2.90	3.03	3.47	3.48
Efficiency (%)	32.43	34.41	38.75	41.72	43.20	46.78	49.09
Gain (dBi)	1.80	2.08	2.58	2.90	3.03	3.47	3.48

5G Mode Main Antenna Gain Table

Frequency	5150	5180	5190	5240	5250
Tot. Rad. Pwr. (dB)	-3.61	-3.84	-4.03	-3.99	-4.00
Peak EIRP (dB)	1.78	1.73	1.54	1.83	1.92
Efficiency (%)	43.52	41.28	39.56	39.90	39.77
Gain (dBi)	1.78	1.73	1.54	1.83	1.92

Frequency	5250	5260	5290	5320	5340	5350
Tot. Rad. Pwr. (dB)	-4.00	-3.99	-4.12	-4.48	-4.55	-4.58
Peak EIRP (dB)	1.92	1.94	1.78	1.41	1.29	1.18
Efficiency (%)	39.77	39.88	38.70	35.69	35.11	34.85
Gain (dBi)	1.92	1.94	1.78	1.41	1.29	1.18

Frequency	5470	5490	5537	5540	5590	5600	5690	5725
Tot. Rad. Pwr. (dB)	-3.45	-3.37	-2.85	-2.81	-2.53	-2.51	-2.55	-2.64
Peak EIRP (dB)	1.59	1.83	2.40	2.57	2.79	2.76	3.70	3.85
Efficiency (%)	45.19	46.07	51.89	52.40	55.85	56.13	55.59	54.49
Gain (dBi)	1.59	1.83	2.40	2.57	2.79	2.76	3.70	3.85

Frequency	5725	5740	5745	5750	5800	5805	5850
Tot. Rad. Pwr. (dB)	-2.64	-2.75	-2.73	-2.73	-3.13	-3.13	-3.39
Peak EIRP (dB)	3.85	3.71	3.68	3.67	3.34	3.05	2.58
Efficiency (%)	54.49	53.07	53.30	53.31	48.64	48.62	45.79
Gain (dBi)	3.85	3.71	3.68	3.67	3.34	3.05	2.58

5G Mode AUX Antenna Gain Table

Frequency	5150	5180	5190	5240	5250
Tot. Rad. Pwr. (dB)	-2.14	-2.28	-2.36	-2.23	-2.21
Peak EIRP (dB)	4.27	4.07	3.85	3.24	3.26
Efficiency (%)	61.07	59.20	58.03	59.84	60.18
Gain (dBi)	4.27	4.07	3.85	3.24	3.26

Frequency	5250	5260	5290	5320	5340	5350
Tot. Rad. Pwr. (dB)	-2.21	-2.19	-2.23	-2.51	-2.55	-2.60
Peak EIRP (dB)	3.26	3.28	3.63	3.66	3.66	3.61
Efficiency (%)	60.18	60.43	59.79	56.15	55.62	54.94
Gain (dBi)	3.26	3.28	3.63	3.66	3.66	3.61

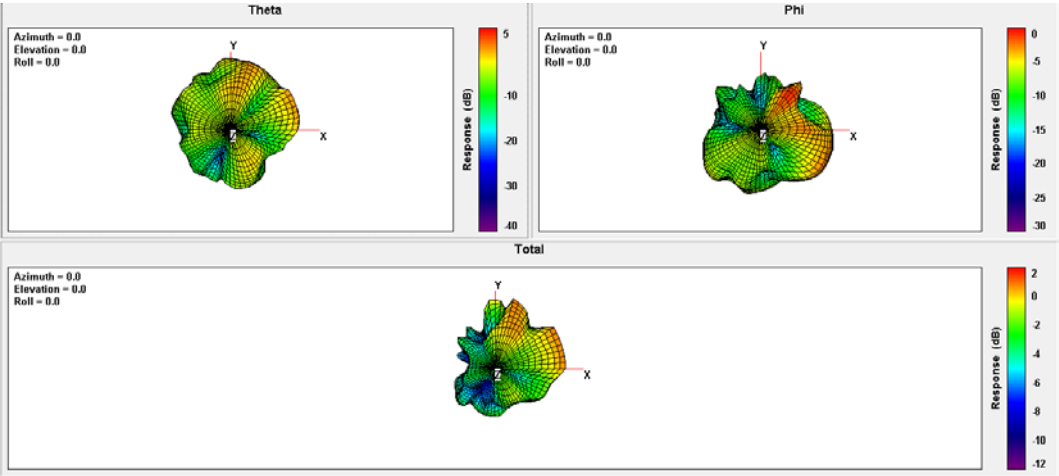
Frequency	5470	5490	5537	5540	5590	5600	5690	5725
Tot. Rad. Pwr. (dB)	-2.15	-2.24	-2.15	-2.13	-2.20	-2.27	-2.69	-2.71
Peak EIRP (dB)	4.24	4.24	4.20	4.19	4.09	4.03	3.82	4.30
Efficiency (%)	61.02	59.68	61.00	61.18	60.24	59.35	53.81	53.64
Gain (dBi)	4.24	4.24	4.20	4.19	4.09	4.03	3.82	4.30

Frequency	5725	5740	5745	5750	5800	5805	5850
Tot. Rad. Pwr. (dB)	-2.71	-2.77	-2.72	-2.72	-2.70	-2.69	-2.45
Peak EIRP (dB)	4.30	4.26	4.21	4.12	3.75	3.64	3.57
Efficiency (%)	53.64	52.84	53.44	53.41	53.66	53.84	56.95
Gain (dBi)	4.30	4.26	4.21	4.12	3.75	3.64	3.57

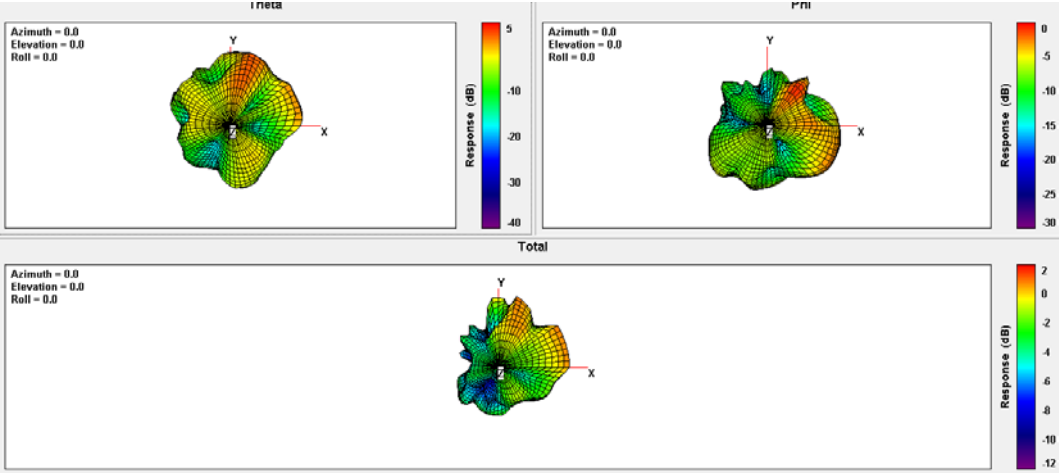
Radiation Pattern

Main Antenna

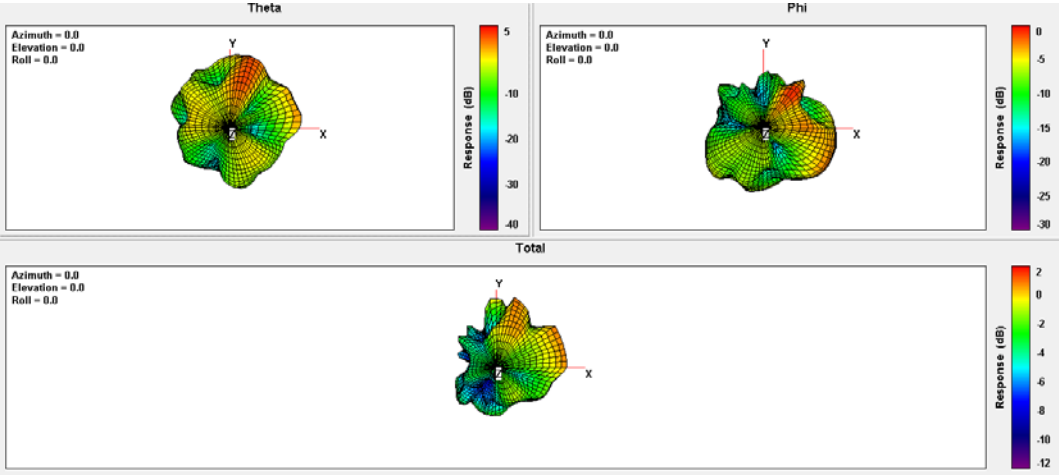
2.4G Mode Main Antenna 2.4GHz



2.4G Mode Main Antenna 2.470GHz



2.4G Mode Main Antenna 2.500GHz



5G Mode Main Antenna 5.150GHz

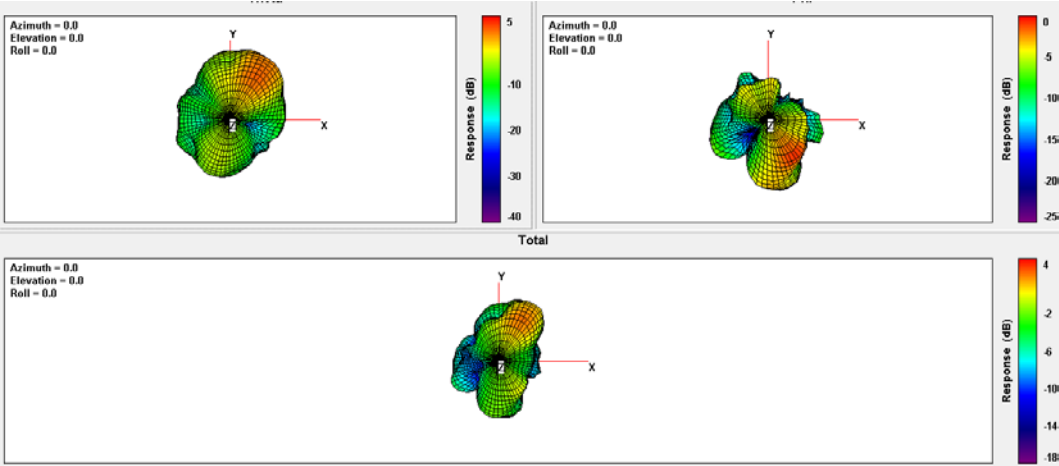
Figure 10 displays three radiation pattern plots comparing the antenna performance with and without the metasurface. The plots show the Response (dB) as a function of the radiation angle (X, Y, Z axes).

- Top Left Plot (meta):** Shows the radiation pattern with the metasurface. The color bar indicates Response (dB) ranging from 0 to -40.
- Top Right Plot (no meta):** Shows the radiation pattern without the metasurface. The color bar indicates Response (dB) ranging from 0 to -30.
- Bottom Plot (Total):** Shows the combined radiation pattern. The color bar indicates Response (dB) ranging from 0 to -12.

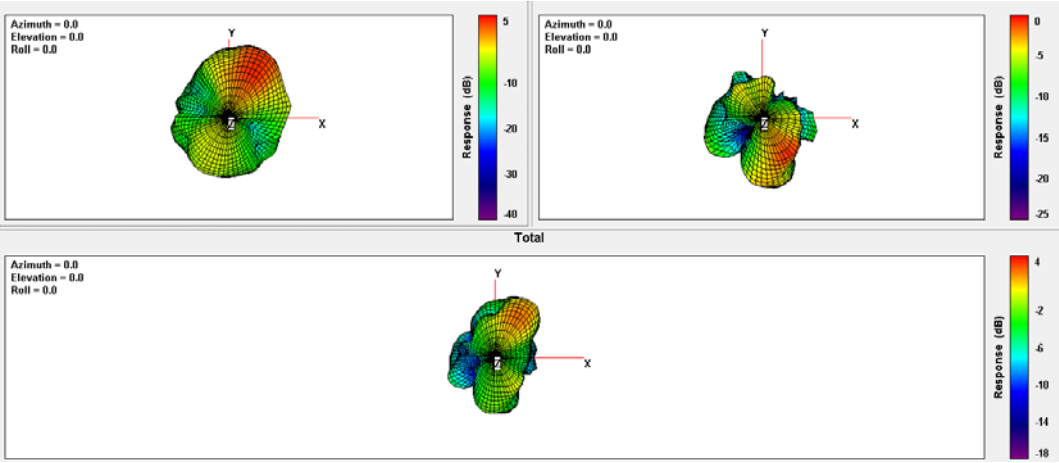
Figure 10 displays three 3D surface plots showing the radiation pattern of a 16-element linear array. The plots are arranged in a 2x2 grid, with the bottom-right cell empty. The top-left plot shows the radiation pattern for the 'x' polarization, the top-right for the 'y' polarization, and the bottom for the 'Total' pattern. Each plot includes a color bar on the right indicating the response in dB, ranging from -40 dB (dark blue) to 0 dB (red). The plots show a main lobe and side lobes, with the 'Total' pattern being the sum of the two polarizations.

AUX Antenna

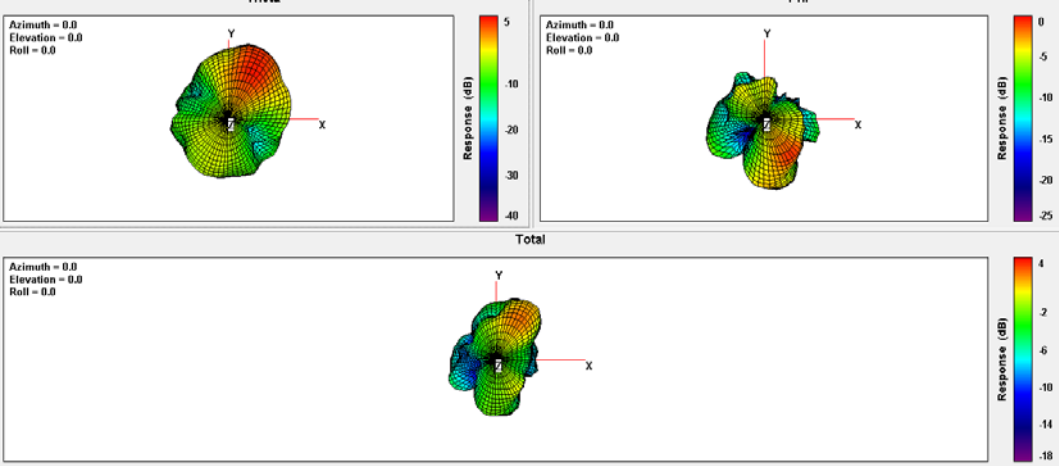
2.4G Mode AUX Antenna 2.4GHz



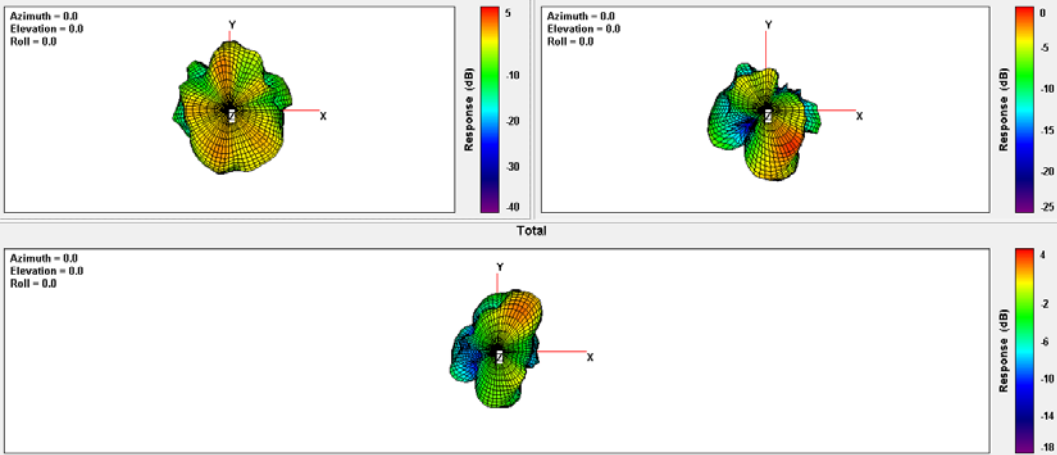
2.4G Mode AUX Antenna 2.470GHz



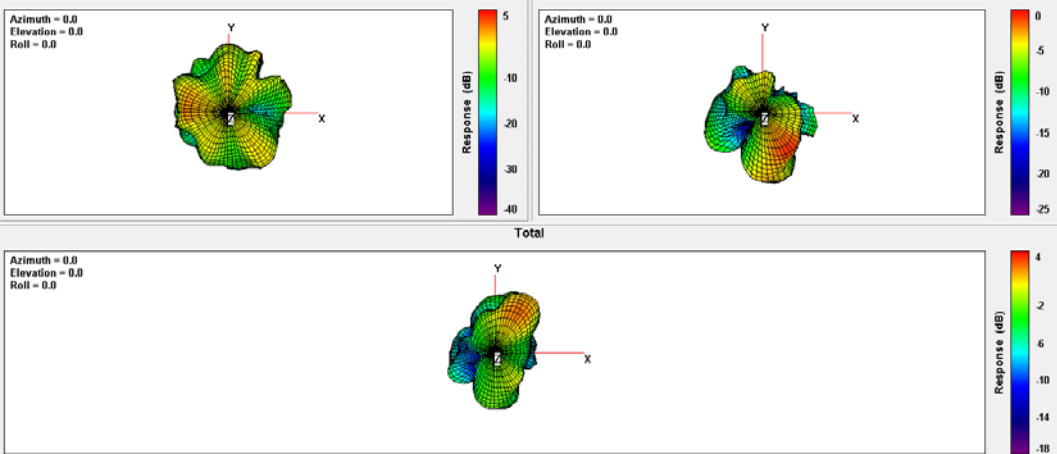
2.4G Mode AUX Antenna 2.500GHz



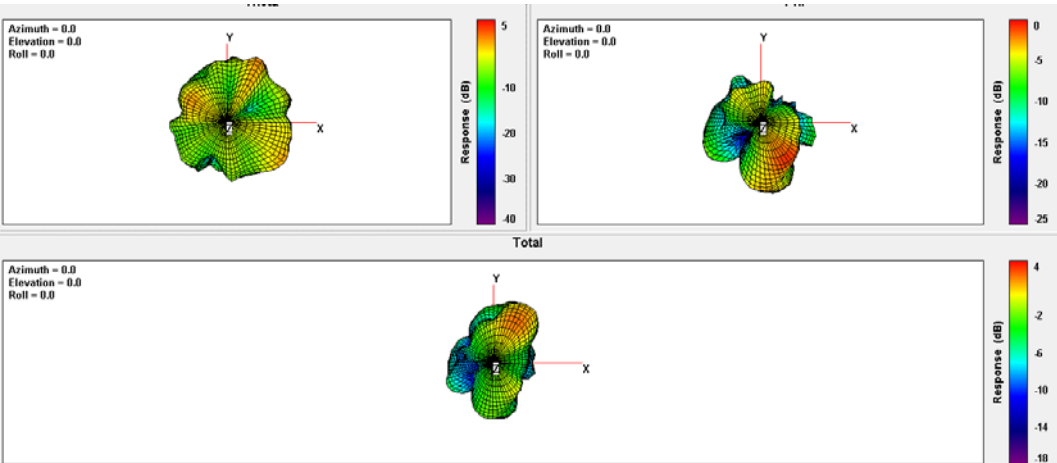
5G Mode Main Antenna 5.150GHz



5G Mode AUX Antenna 5.440GHz



5G Mode AUX Antenna 5.875GHz

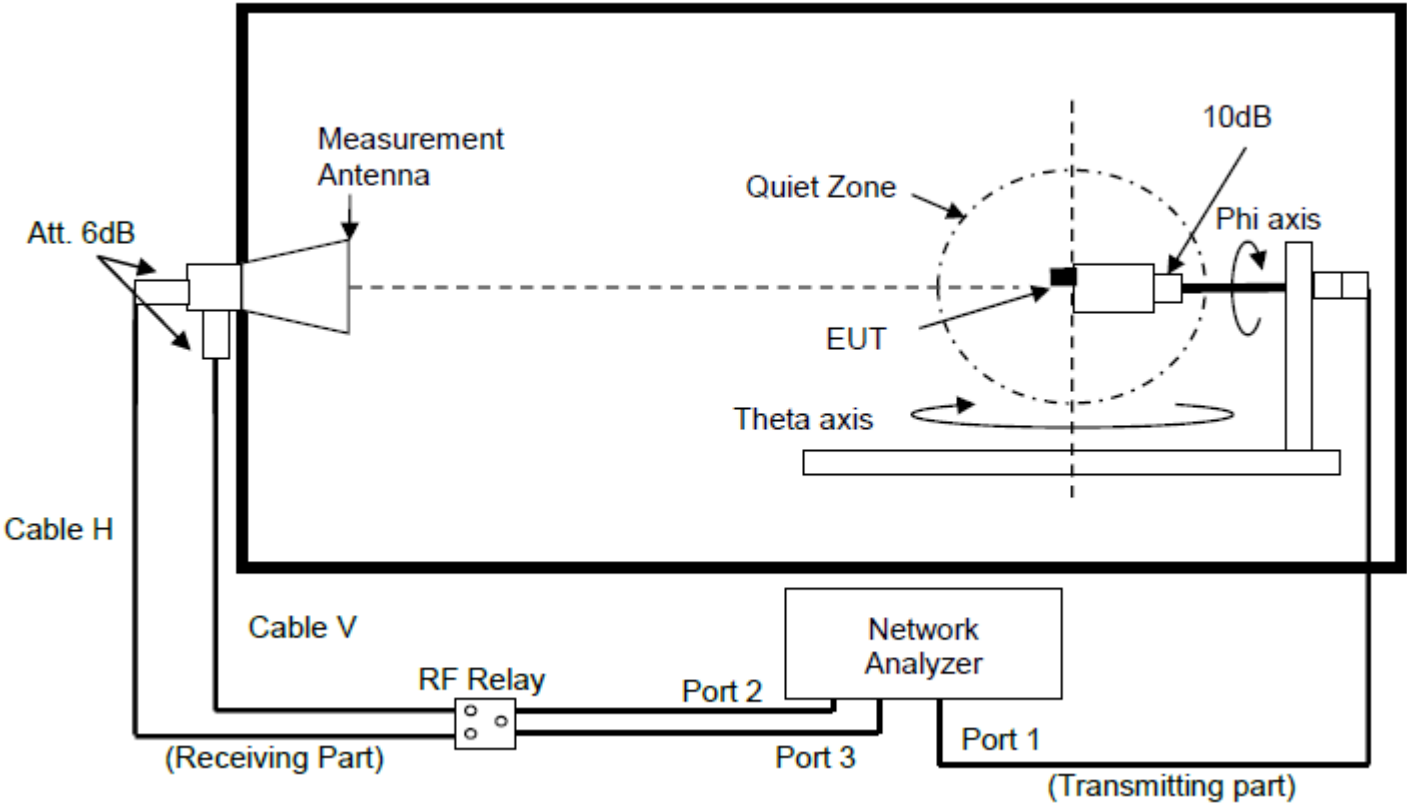


1. Applicable test methods

This test report is prepared for S410 antenna testing under a Full Anechoic Chamber on 8/25.

2. Test & System Description

a. Test setup



b. Equipment list

Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
ENA Series Network Analyzer	Keysight	E5071C	MY46106276	2022/9/27	2023/9/26
RF Switch	Keysight	3499A	N/A	NCR	NCR
Multi-Axis Positioner Controller	ETS-Lindgren	2090	N/A	NCR	NCR
Medium-Duty Positioner	ETS-Lindgren	2015	N/A	NCR	NCR
Measurement Horn Antenna	EMCO	3164-10	00239261	NCR	NCR

3. Setup photo

