

WLAN Antenna Test Report

apply for MAP

Test Date: 2023/7/7

Issue Date: 2023/12/27

1. Antenna Description

1.1 Antenna List

Antenna No.	Brand	Part Number	Antenna Type	Connector Type	Cable Length
1	FOXCONN	EA-2RUNMAP-0010	PIFA	I-PEX	1935mm

1.2 Maximum peak gain

Antenna No.	Max. Peak Gain(dBi)				
	2400-2483.5MHz	5150-5250MHz	5250-5350MHz	5470-5725MHz	5725-5850MHz
1	3.08	2.07	1.69	2.86	3.45

Note:

Gain is excluded Cable Loss

Loss=1.63dB @2400MHz

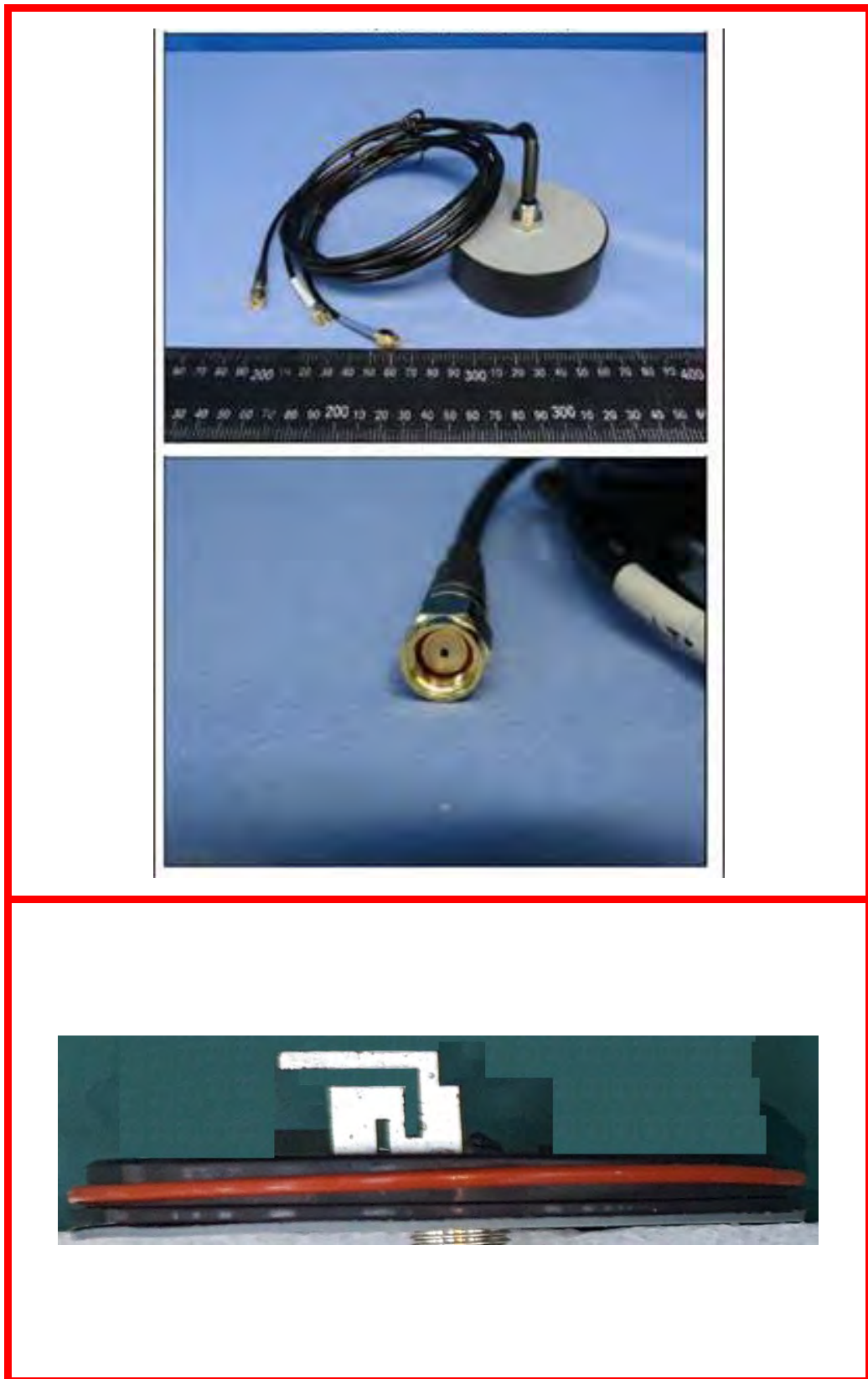
Loss=3.14dB @5200MHz

Loss=3.53dB @5800MHz

1.3 Antenna Location



1.4 Antenna Design Pattern



2. Measurement Channel List

Channel	Frequency
1	2412 MHz
6	2437 MHz
11	2462 MHz
32	5150 MHz
40	5200 MHz
48	5250 MHz
60	5300 MHz
68	5350 MHz
96	5470 MHz
120	5598 MHz
144	5725 MHz
157	5788 MHz
169	5850 MHz

3. Test Program Used

- 1) EMQuest 1.08

4. Test Instruments

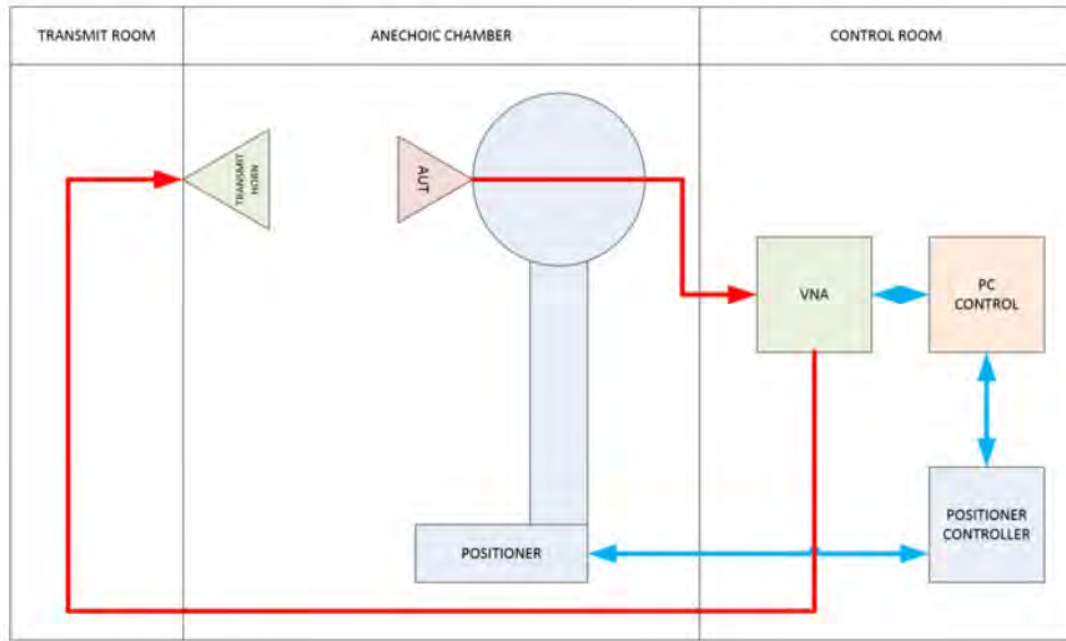
Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
ETS	AMS-8500	N/A	2023/3/17	2024/3/16
Keysight	5071B	N/A	2023/3/15	2024/3/14
Keysight	3499B	N/A	2021/10/30	N/A

Note:

1. The test was performed in AMS-8500 anechoic chamber
2. Tested Date: 2023/07/07

5. Test Arrangements

5.1 Test setup



5.2 Test Procedure

- Setup DUT into the antenna chamber and place the DUT in the center of table, and
- Connect it to the test equipment through the SMA connector;
- Open the EMQuest software, set the test frequency band, and start the test;
- In EMQuest Perform data post-processing, generate the required data, and export the data

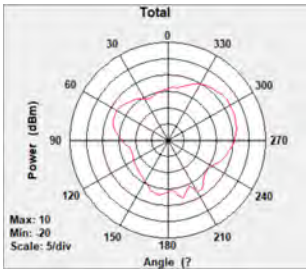
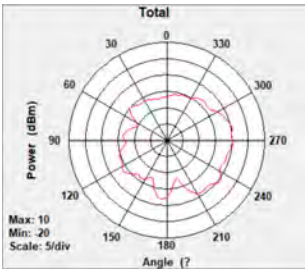
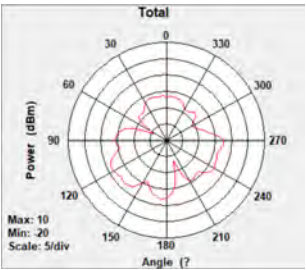
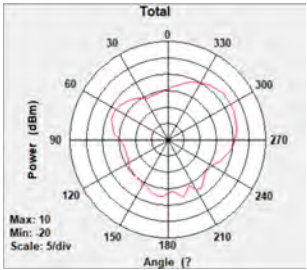
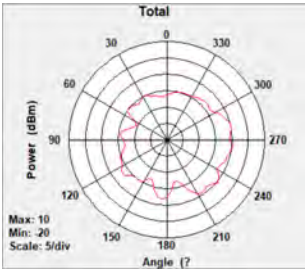
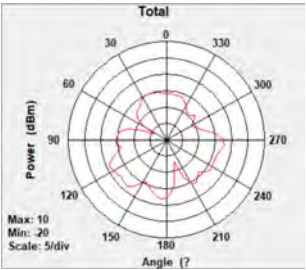
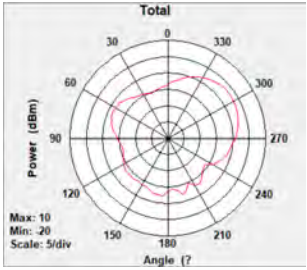
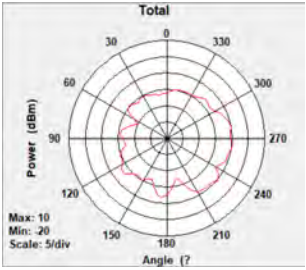
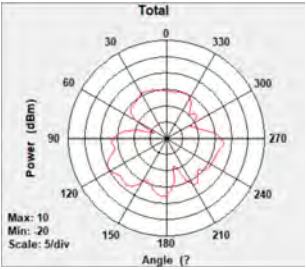
6. Test Results

6.1 Antenna Gain Summary Table

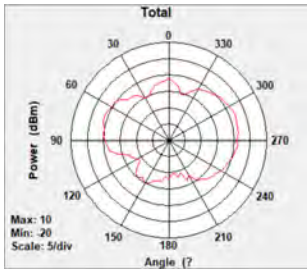
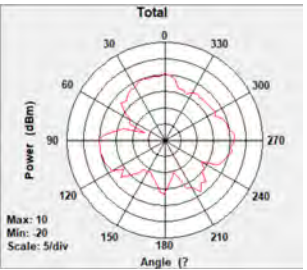
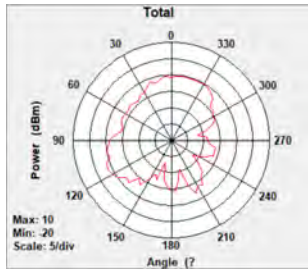
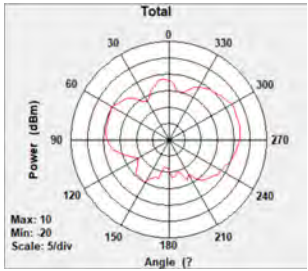
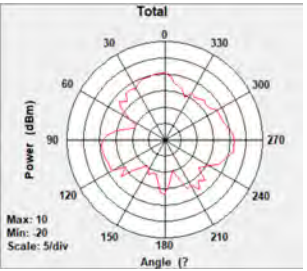
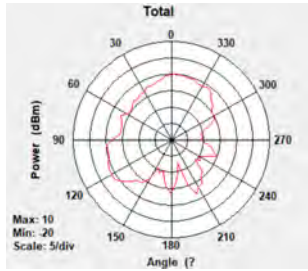
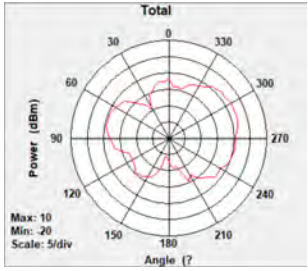
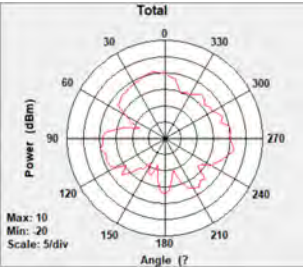
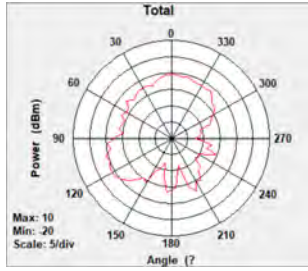
Frequency [MHz]	XY plane		ZY plane		ZX plane	
	Peak Gain [dBi]	Average Gain [dBi]	Peak Gain [dBi]	Average Gain [dBi]	Peak Gain [dBi]	Average Gain [dBi]
2412	1.64	-2.57	-1.49	-5.36	0.17	-3.76
2437	1.91	-2.28	-0.99	-5.18	0.17	-3.67
2462	3.08	-1.66	-0.32	-4.78	0.21	-3.32
5150	1.52	-2.19	1.18	-3.29	1.17	-2.55
5200	2.07	-2.19	0.85	-3.38	1.29	-2.75
5250	1.69	-2.48	0.69	-3.49	1.12	-2.68
5300	1.63	-2.76	0.11	-4.21	0.86	-3.16
5350	1.31	-2.87	0.35	-4.22	1.34	-2.82
5470	0.14	-3.67	0.45	-4.69	1.08	-2.99
5598	1.13	-3.91	-0.25	-5.29	1.26	-3.55
5725	2.86	-2.47	1.14	-4.65	2.36	-2.46
5788	3.45	-2.70	0.13	-5.02	1.11	-3.11
5850	2.48	-3.04	0.10	-5.04	0.53	-3.88

6.2 Measurement Pattern

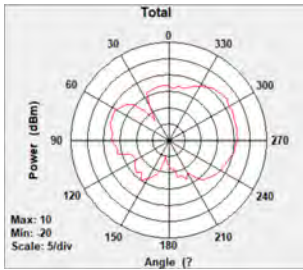
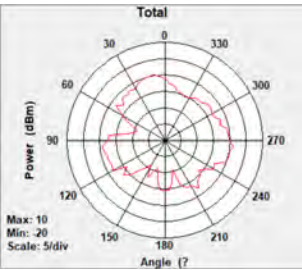
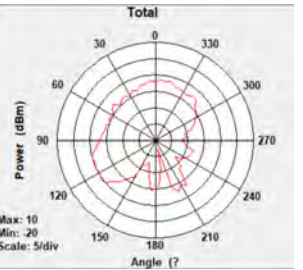
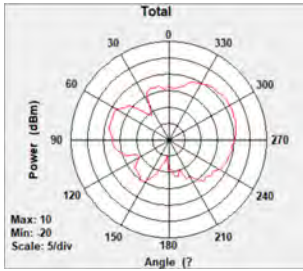
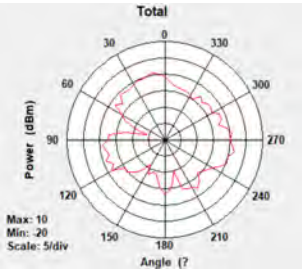
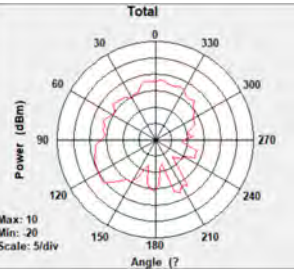
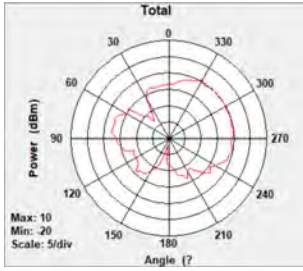
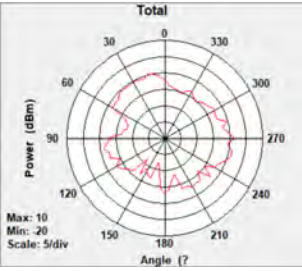
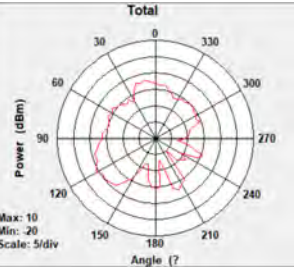
Environmental Conditions:	23 °C, 55%RH	Brand P/N	FOXCONN/ EA-2RUNMAP-0000	Tested By:	Randy Liao
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Plane	XY	Plane	ZY	Plane	ZX
Frequency	2412MHz	Frequency	2412MHz	Frequency	2412MHz
Peak Gain(dBi)	1.64	Peak Gain(dBi)	-1.49	Peak Gain(dBi)	0.17
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	2437MHz	Frequency	2437MHz	Frequency	2437MHz
Peak Gain(dBi)	1.91	Peak Gain(dBi)	-0.99	Peak Gain(dBi)	0.17
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	2462MHz	Frequency	2462MHz	Frequency	2462MHz
Peak Gain(dBi)	3.08	Peak Gain(dBi)	-0.32	Peak Gain(dBi)	0.21

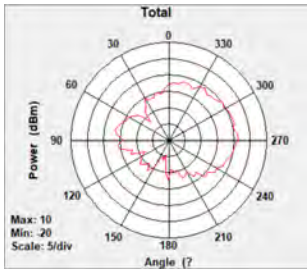
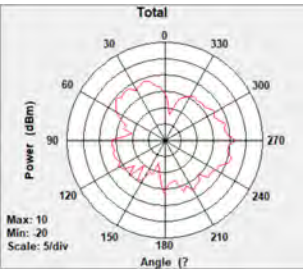
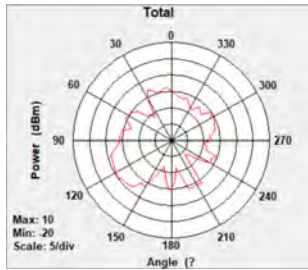
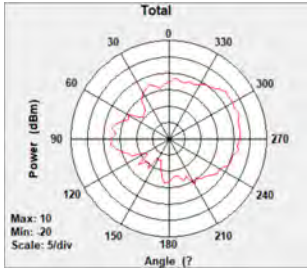
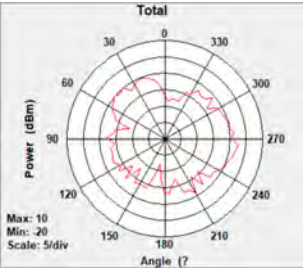
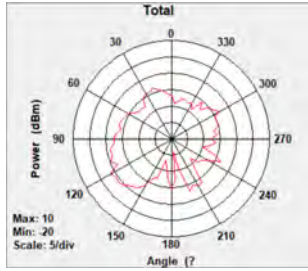
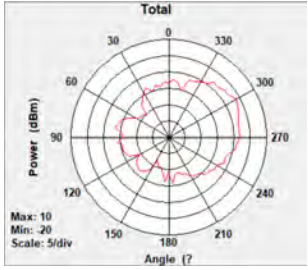
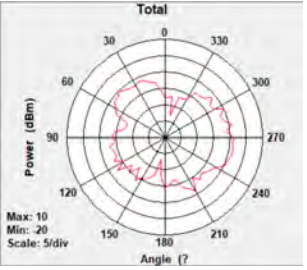
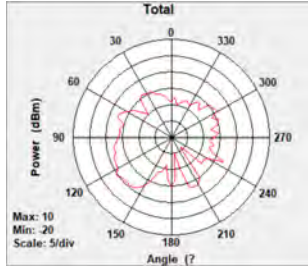
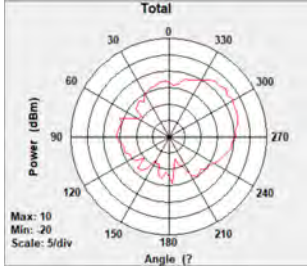
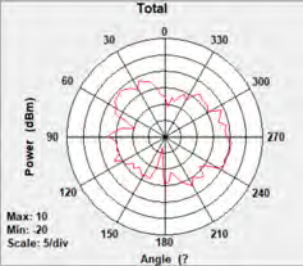
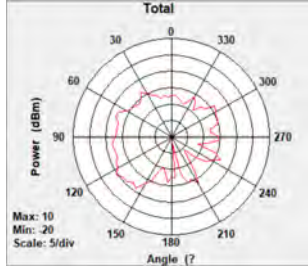
Environmental Conditions:	23 °C, 55%RH	Brand P/N	FOXCONN/EA-2RUNMAP-0000	Tested By:	Randy Liao
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Plane	XY	Plane	ZY	Plane	ZX
Frequency	5150MHz	Frequency	5150MHz	Frequency	5150MHz
Peak Gain(dBi)	1.52	Peak Gain(dBi)	1.18	Peak Gain(dBi)	1.17
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5200MHz	Frequency	5200MHz	Frequency	5200MHz
Peak Gain(dBi)	2.07	Peak Gain(dBi)	0.85	Peak Gain(dBi)	1.29
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5250MHz	Frequency	5250MHz	Frequency	5250MHz
Peak Gain(dBi)	1.69	Peak Gain(dBi)	0.69	Peak Gain(dBi)	1.12

Environmental Conditions:	23 °C, 55%RH	Brand P/N	FOXCONN/ EA-2RUNMAP-0000	Tested By:	Randy Liao
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Plane	XY	Plane	ZY	Plane	ZX
Frequency	5300MHz	Frequency	5300MHz	Frequency	5300MHz
Peak Gain(dBi)	1.63	Peak Gain(dBi)	0.11	Peak Gain(dBi)	0.86
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5350MHz	Frequency	5350MHz	Frequency	5350MHz
Peak Gain(dBi)	1.31	Peak Gain(dBi)	0.35	Peak Gain(dBi)	1.34
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5470MHz	Frequency	5470MHz	Frequency	5470MHz
Peak Gain(dBi)	0.14	Peak Gain(dBi)	0.45	Peak Gain(dBi)	1.08

Environmental Conditions:	23 °C, 55%RH	Brand P/N	FOXCONN/ EA-2RUNMAP-0000	Tested By:	Randy Liao
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Plane	XY	Plane	ZY	Plane	ZX
Frequency	5598MHz	Frequency	5598MHz	Frequency	5598MHz
Peak Gain(dBi)	1.13	Peak Gain(dBi)	-0.25	Peak Gain(dBi)	1.26
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5725MHz	Frequency	5725MHz	Frequency	5350MHz
Peak Gain(dBi)	2.86	Peak Gain(dBi)	1.14	Peak Gain(dBi)	2.36
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5788MHz	Frequency	5788MHz	Frequency	5788MHz
Peak Gain(dBi)	3.45	Peak Gain(dBi)	0.13	Peak Gain(dBi)	1.11
					
Plane	XY	Plane	ZY	Plane	ZX
Frequency	5850MHz	Frequency	5850MHz	Frequency	5850MHz
Peak Gain(dBi)	2.48	Peak Gain(dBi)	0.10	Peak Gain(dBi)	0.53

7. Test Setup Photo

