

ARES Wireless Test Report

Hardware Vision: MBT-9138, V3R1 ,6 layers

Software Vision: FLK_ARES_ENG_REL_V0.13

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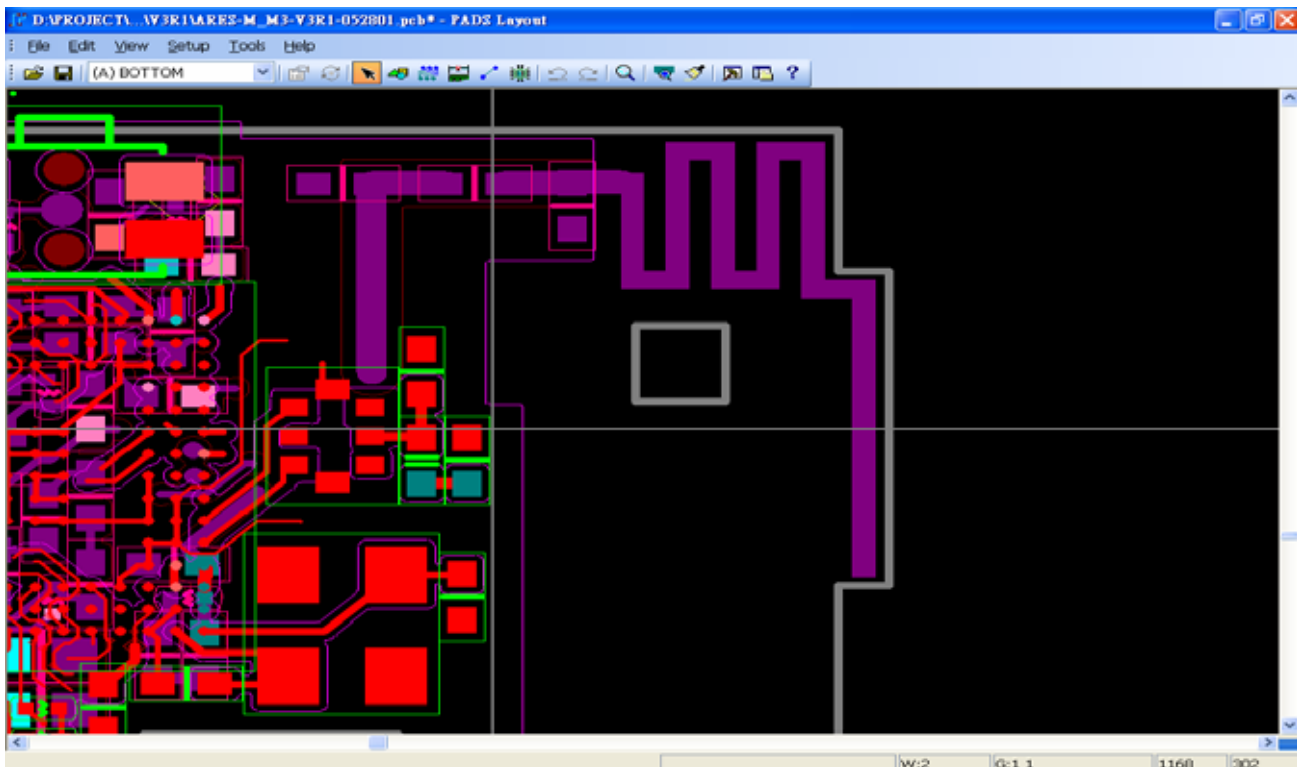
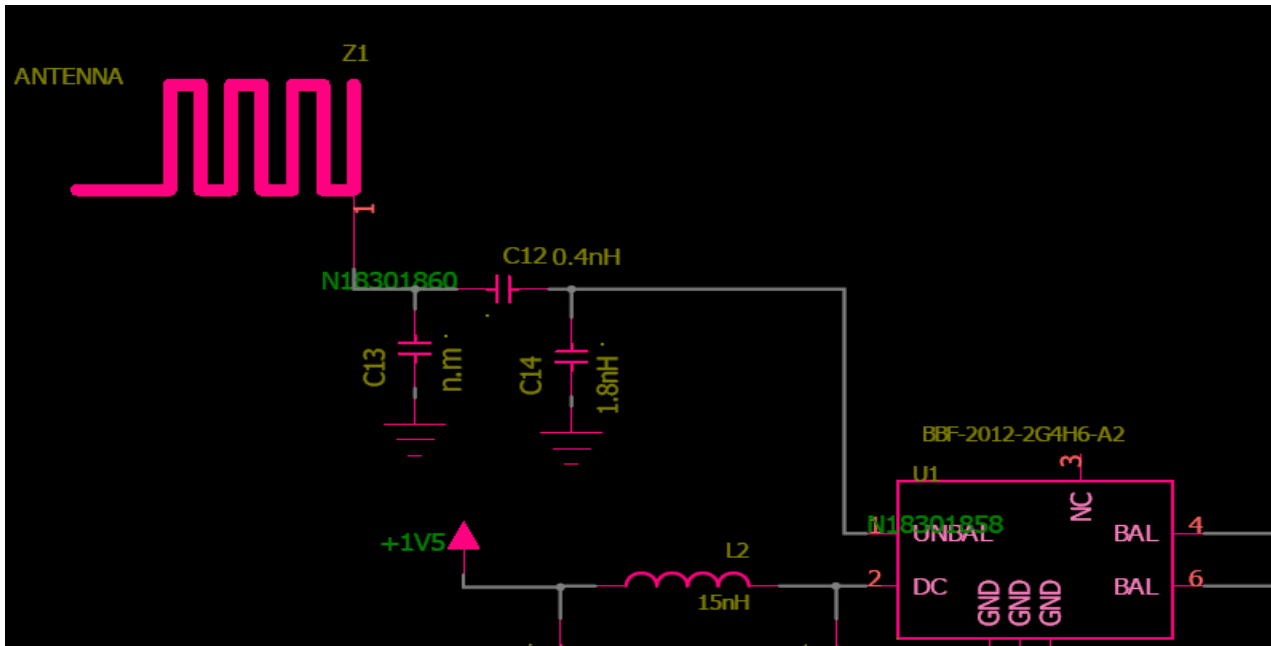
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1. Purpose

We want to measure Ares antenna performance and make sure the wireless performance.

2. Schematic and Layout



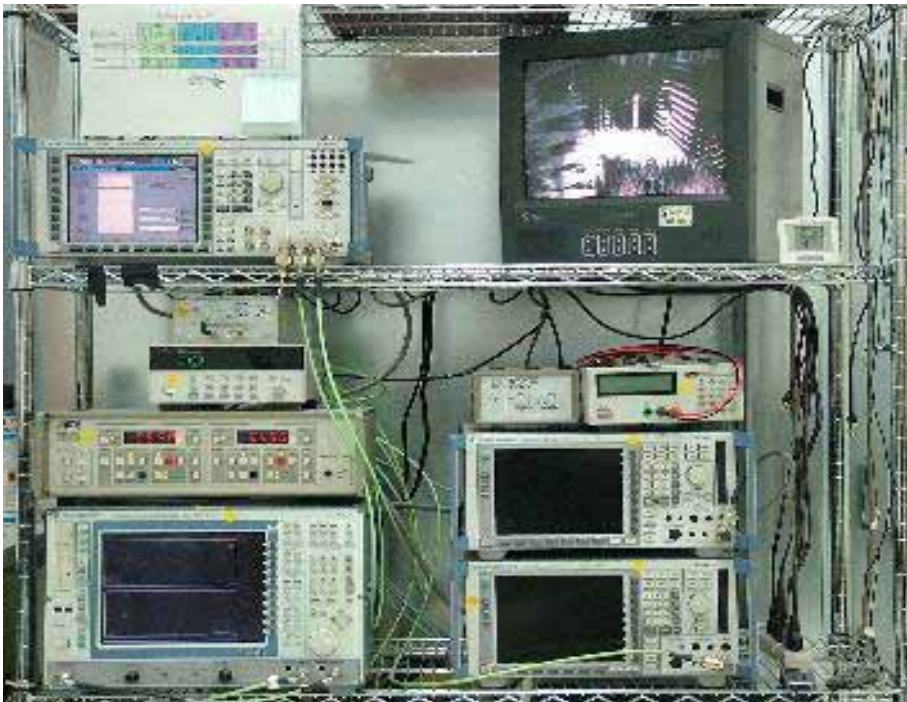
3. Test setting:

a. Return Loss



1. Test Equipment: HP Agilent Network Analyzer E5071B

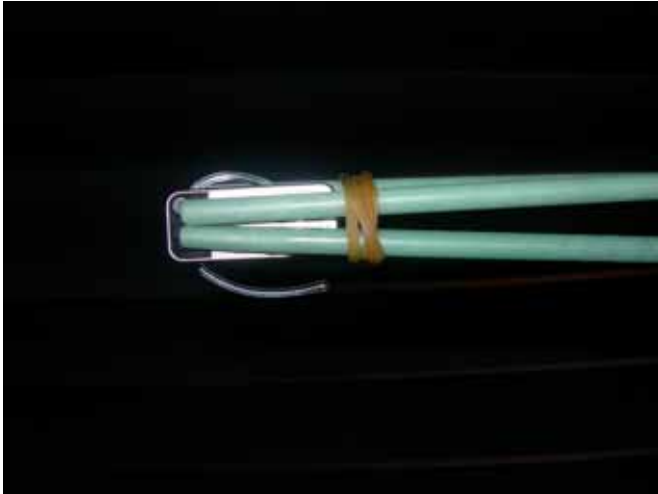
b. Antenna Radiation Pattern



1. Lab standard: 3D Chamber for CTIA standard
2. Chamber: 7.2 * 3.6 * 3.6(meter) Fully anechoic
3. Signal generator
4. Spectrum Analyzer R&S FSP
5. Measurement Software: EMQuest 3D OTA (ETS-Lindgren)

c. OTA test

Free space:



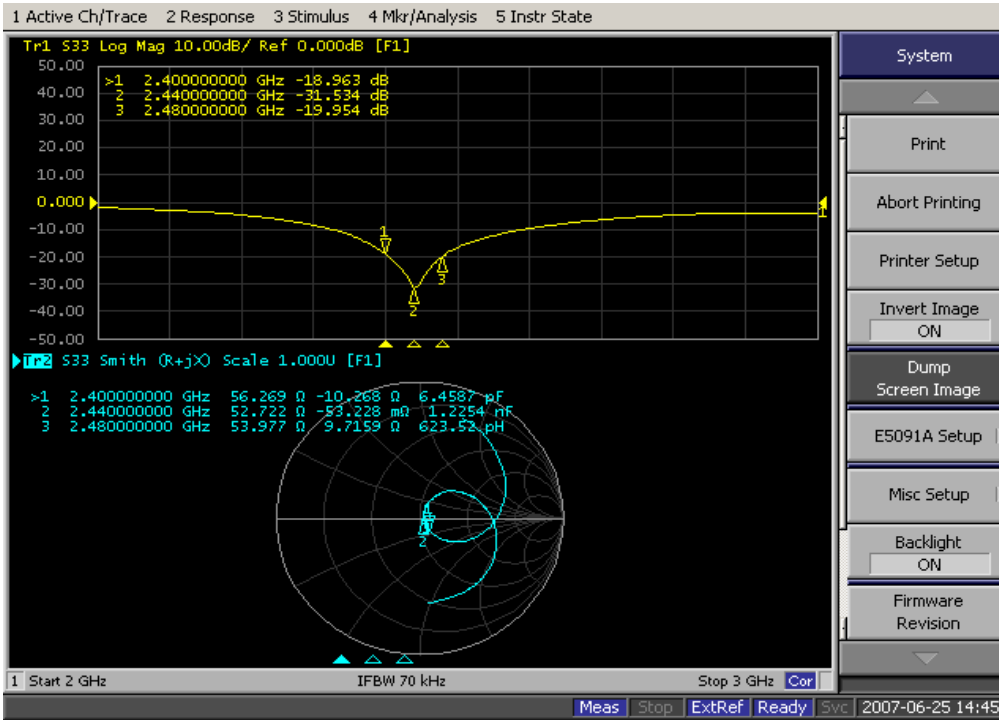
Phantom:



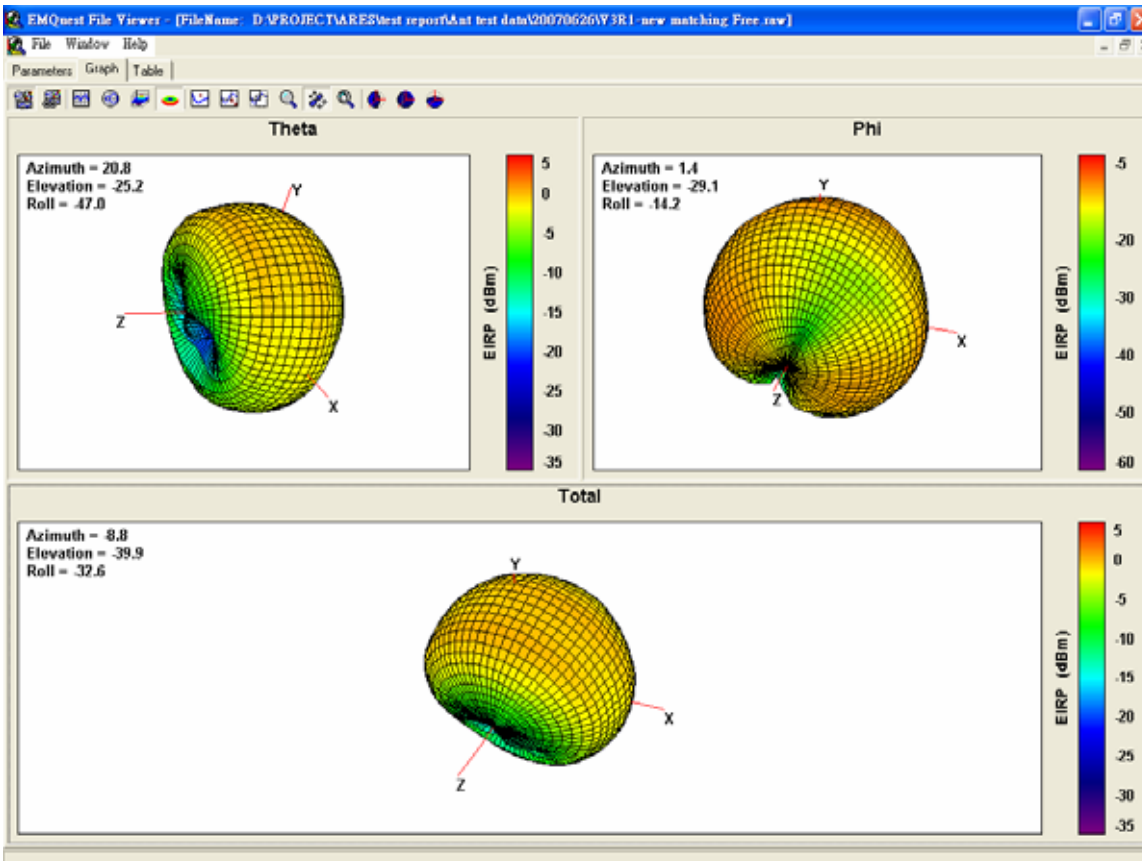
1. R&S CBT Bluetooth test system.
2. Turn Table DS2000
3. Double Ridge Horn Antenna AH118
4. Controller CO2000
5. HF Cable SF104
6. Antenna Mast MM3000
7. Lab standard: 3D Chamber for CTIA standard

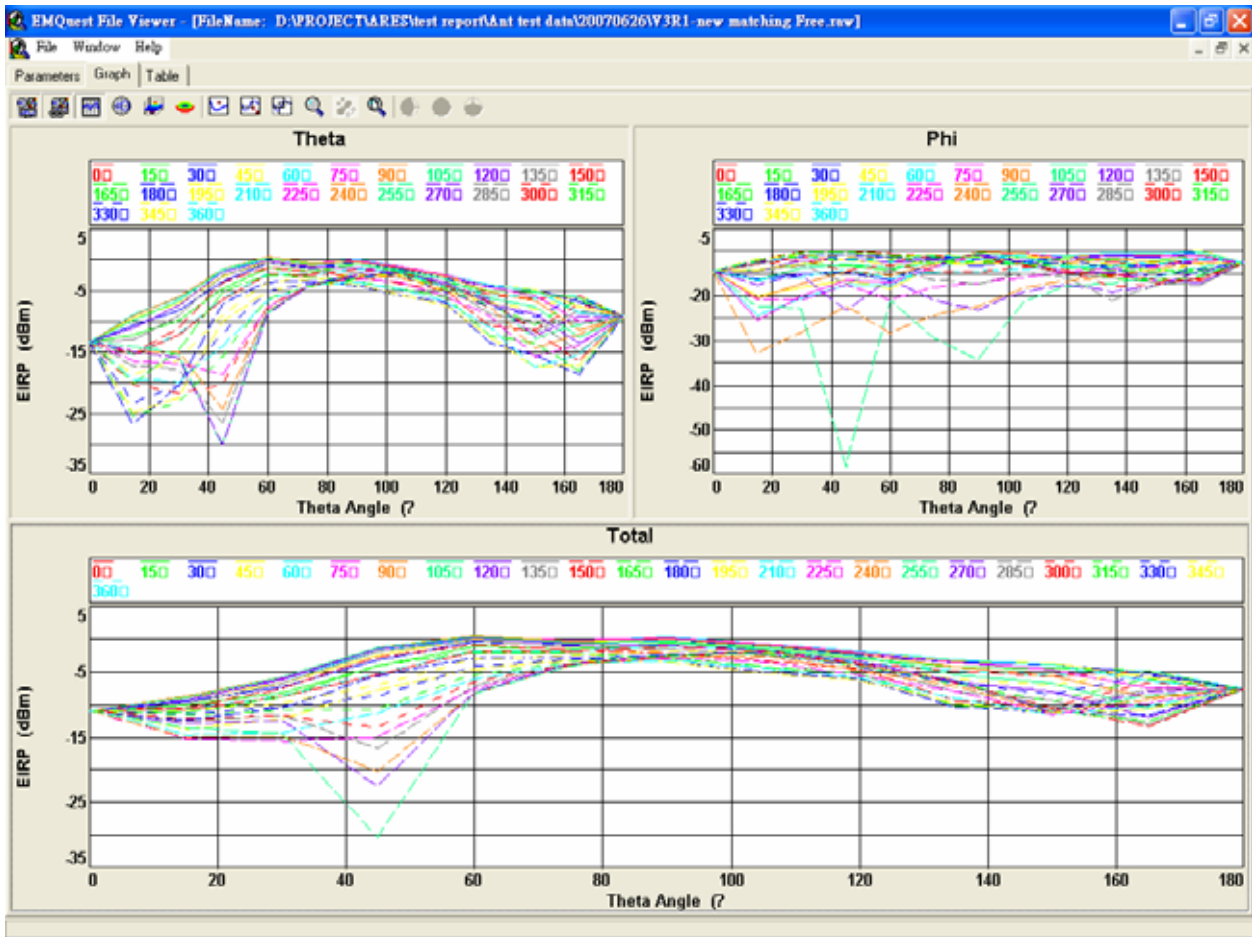
4. Test Data

a. Return Loss

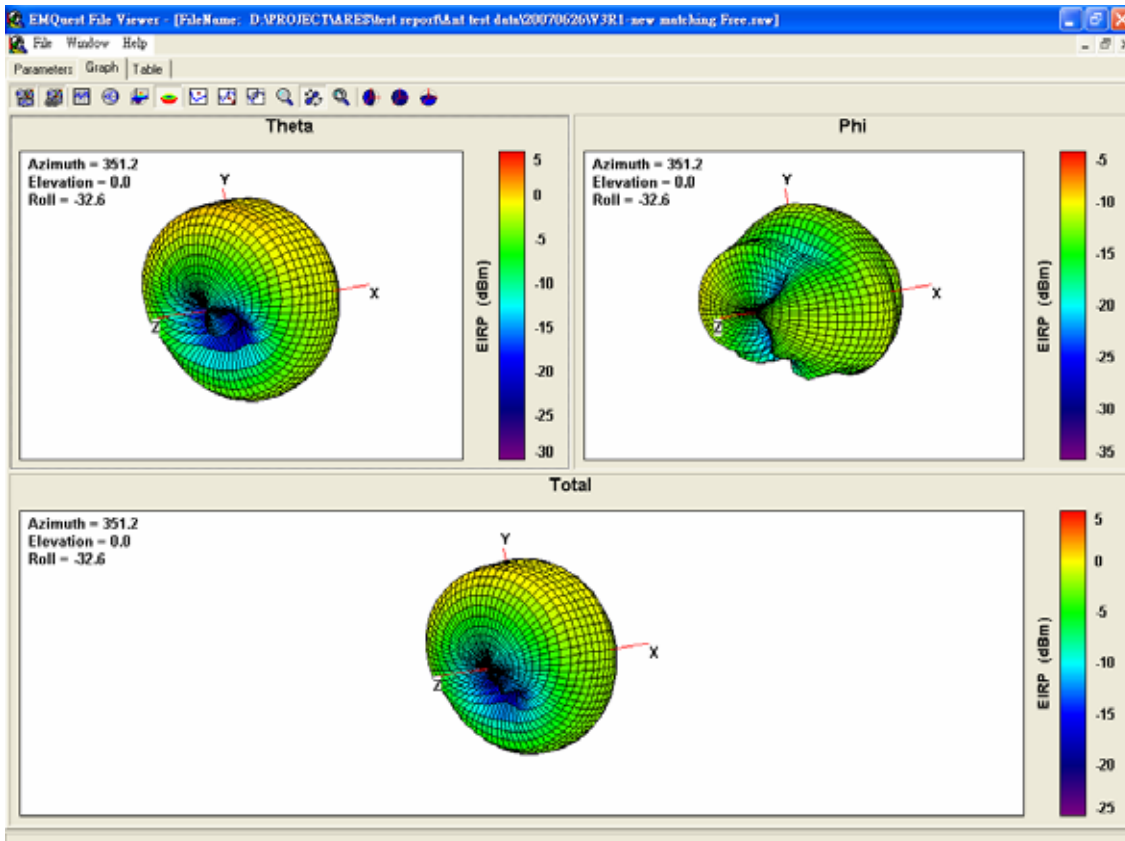


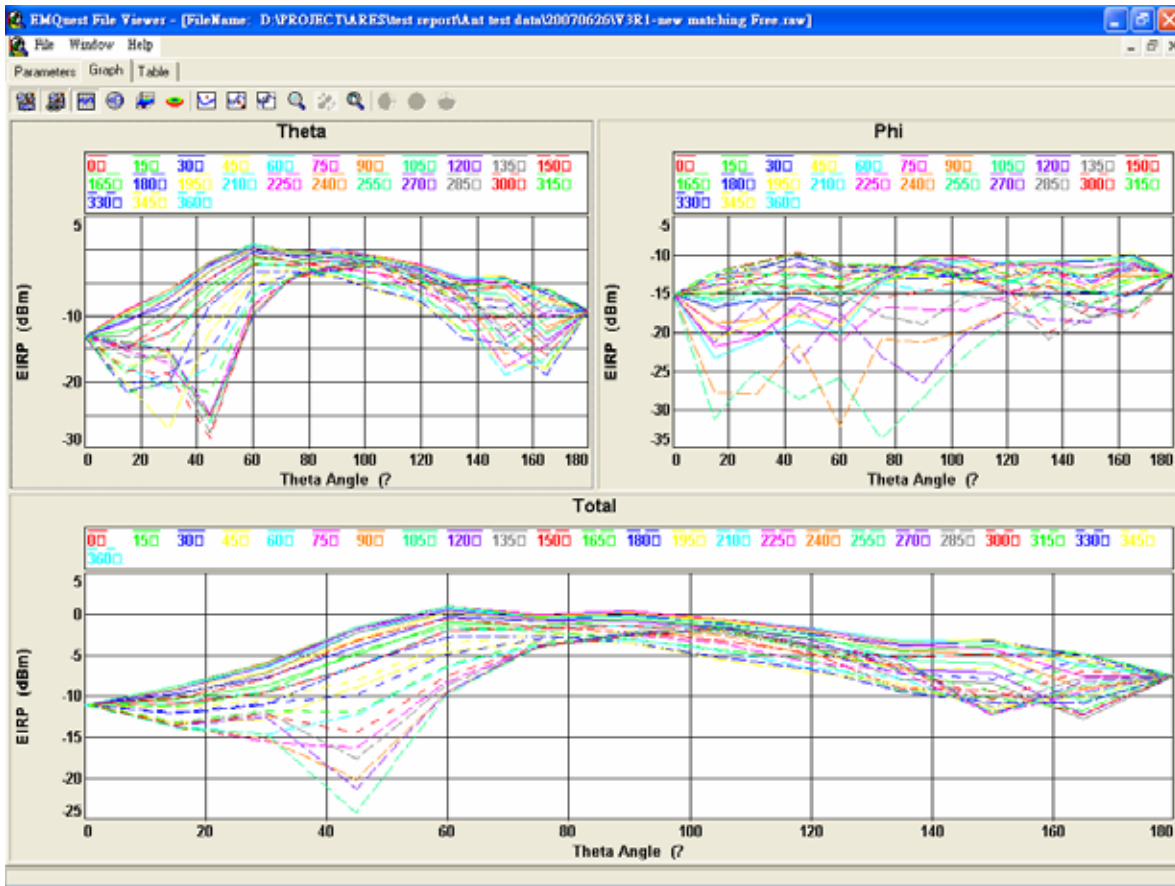
b. Antenna Radiation Pattern 2402MHz



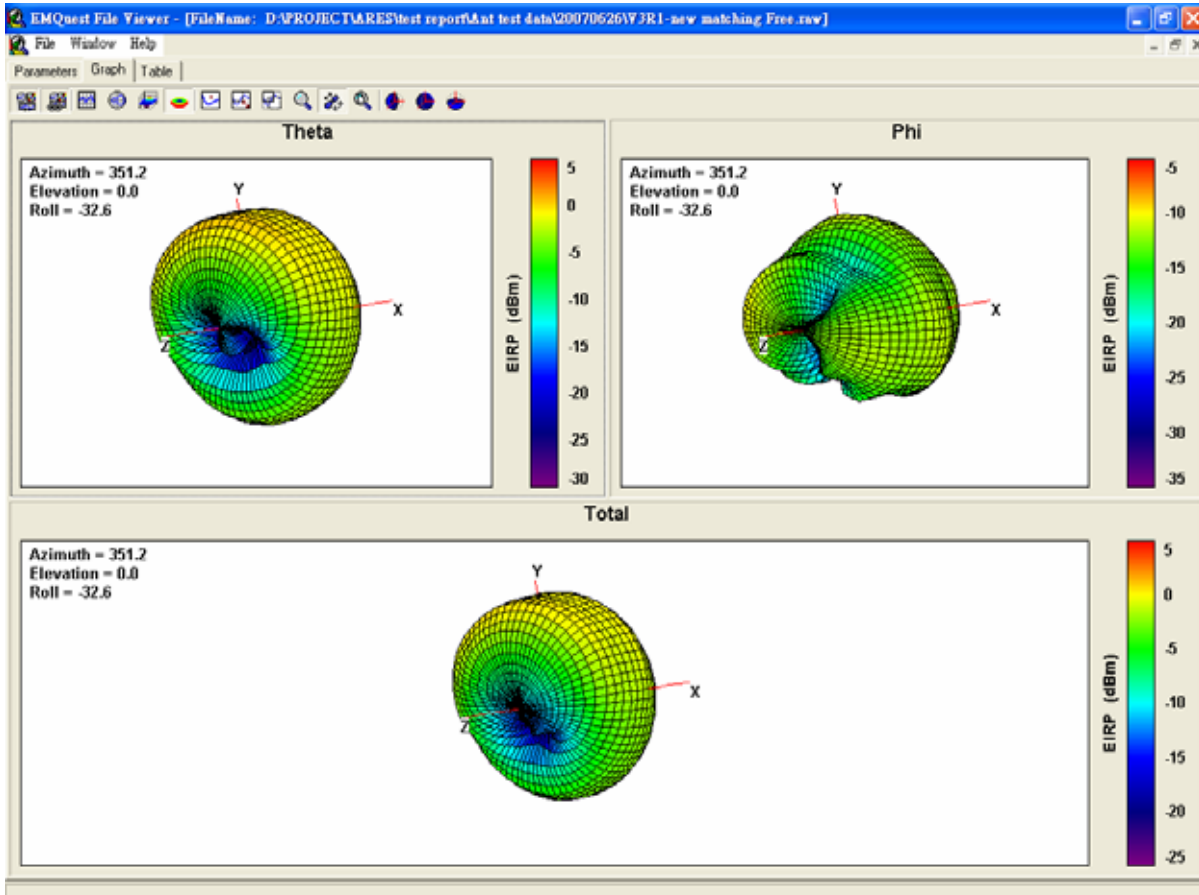


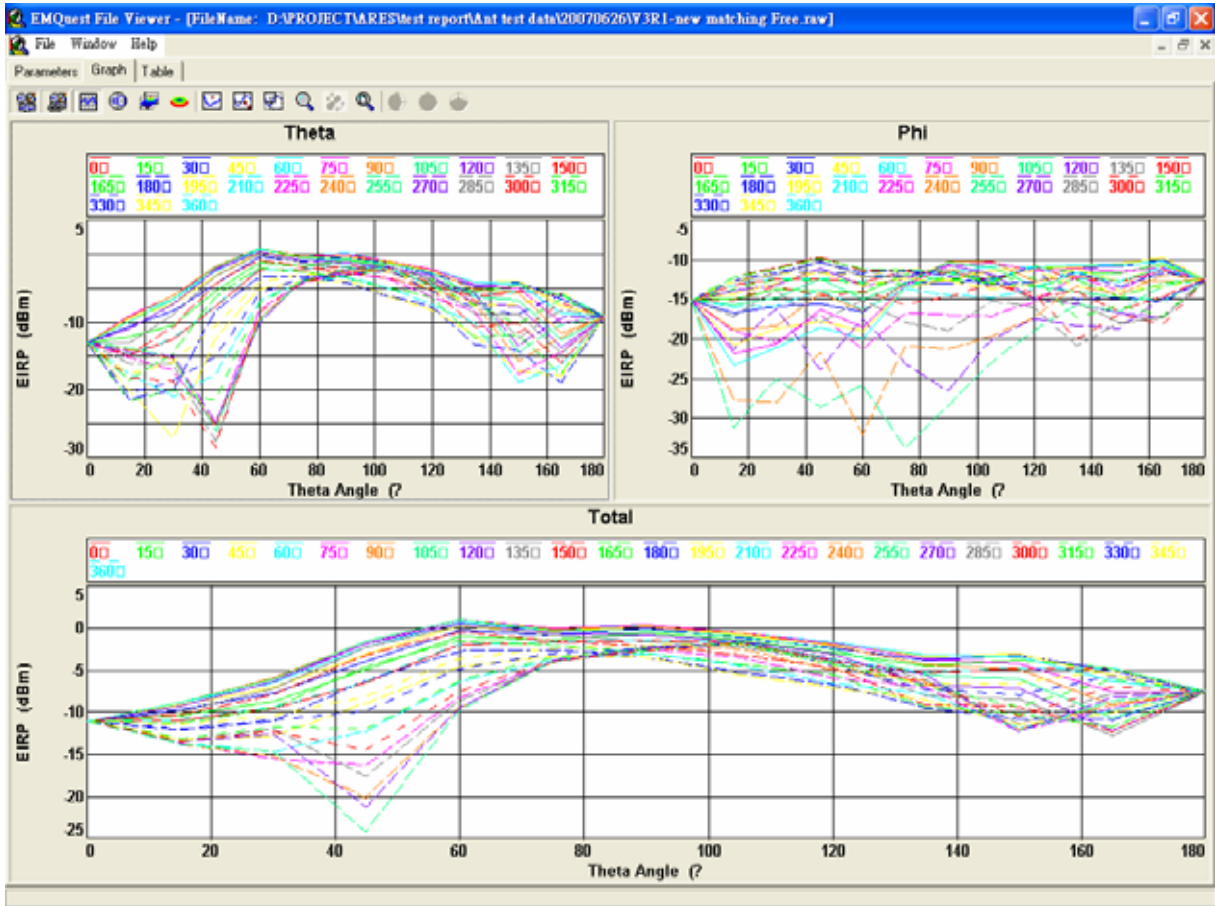
2441 MHz





2482MHz





c. OTA test



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test report\Ant test data



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5. Test result Summary

5.1 Antenna returns loss test result:

Frequency (MHz)	2400	2440	2480
S11 (dB)	-18.9	-31.5	-19.9



5.2 Radiation pattern test result:

Frequency	2402	2441	2482
Total Radiation power (dBm)	-3.5	-3.5	-3.3
Peak EIRP(dBm)	0.48	1.0	1.1

5.3 OTA test result:

TRP

Model	AE840			AE841			AE83B			AE83D			AE83E		
Test / Position	Free Space			Free Space			Free Space			Free Space			Free Space		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
Tot. Rad. Pwr. (dBm)	-1.59	-1.64	-1.39	-2.06	-1.91	-1.79	-2.04	-2.30	-2.47	-1.40	-1.57	-1.76	-0.95	-1.08	-1.11
Peak EIRP (dBm)	0.98	1.13	1.82	0.45	0.81	1.18	0.45	0.34	0.42	1.14	1.25	1.32	1.60	1.71	1.92
Test / Position	Talking Position_LC			Talking Position_RC			Talking Position_LC			Talking Position_RC			Talking Position_LC		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
Tot. Rad. Pwr. (dBm)	-4.51	-4.14	-4.45	-4.89	-4.43	-4.56	-5.12	-4.77	-5.07	-5.01	-4.77	-5.06	-4.08	-3.64	-3.74
Peak EIRP (dBm)	1.73	2.19	2.26	1.20	1.75	2.00	0.98	1.40	1.47	0.91	1.28	1.34	2.30	2.87	3.15
Test / Position	Talking Position_RC			Talking Position_LC			Talking Position_RC			Talking Position_LC			Talking Position_RC		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
Tot. Rad. Pwr. (dBm)	-4.63	-4.27	-4.51	-4.85	-4.41	-4.53	-5.06	-4.33	-4.94	-5.08	-4.74	-5.03	-4.28	-3.95	-4.13
Peak EIRP (dBm)	1.94	2.44	2.66	1.64	2.30	2.64	1.36	2.35	2.13	1.28	1.83	1.99	2.25	2.79	3.08

TIS

Model	AE840			AE841			AE83B			AE83D			AE83E		
Test / Position	Free Space			Free Space			Free Space			Free Space			Free Space		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
TIS (dBm)	-84.1	-83.4	-84.3	-81.2	-84.8	-84.0	-83.3	-84.3	-83.5	-84.2	-84.8	-83.8	-85.0	-85.7	-84.0
Test / Position	Talking Position_LC			Talking Position_LC			Talking Position_LC			Talking Position_LC			Talking Position_LC		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
TIS (dBm)	-82.5	-81.7	-81.6	-81.8	-82.3	-82.0	-80.5	-81.7	-81.7	-80.4	-81.8	-80.0	-81.8	-82.0	-82.8
Test / Position	Talking Position_RC			Talking Position_RC			Talking Position_RC			Talking Position_RC			Talking Position_RC		
Channel	0	39	78	0	39	78	0	39	78	0	39	78	0	39	78
TIS (dBm)	-79.8	-82.5	-82.4	-81.2	-82.5	-82.0	-80.3	-82.1	-81.3	-80.5	-82.1	-81.5	-81.6	-83.1	-82.5

6. Conclusion:

Some DUT are margin fail in TRP test and all DUT are passed the TIS test SPEC. We will keep investigating the root cause.