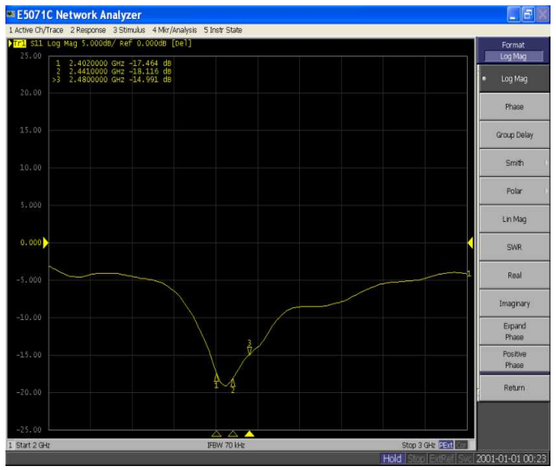
SKULLCANDY, INC.
6301 N Landmark Dr Park City, UT 84098

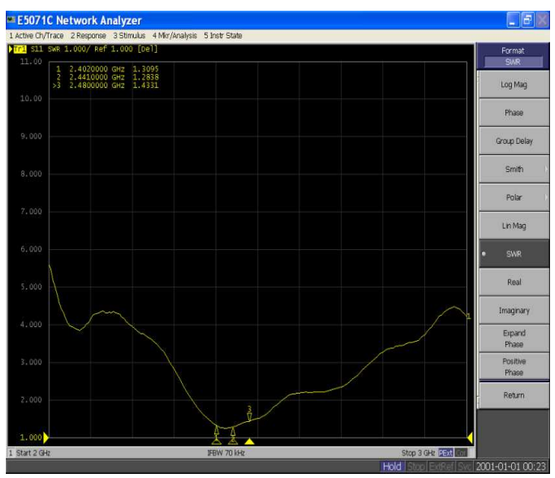
Test item	**RF Passive Performance Test in Free Space AND On SAM HEAD**
Test Equip	**ETS@CMW500 Network analyzer**
Tests Set-u	**Create RF engineering test samples using a rigid cable. Engineering test sample must be tested as a full finished product assembly. Test unit must be tested on SAM (Speci c Anthropomorphic Mannequin). Its geometry must complies to the SAM as de ned by IEEE SCC 34. Over the Air (OTA) testing and report to include all listed below for both Free Space and SAM HEAD. - Antenna E ciency and Gain measurements for 2.35-2.55 GHz**

On SAM HEAD

1). Return Loss Plots



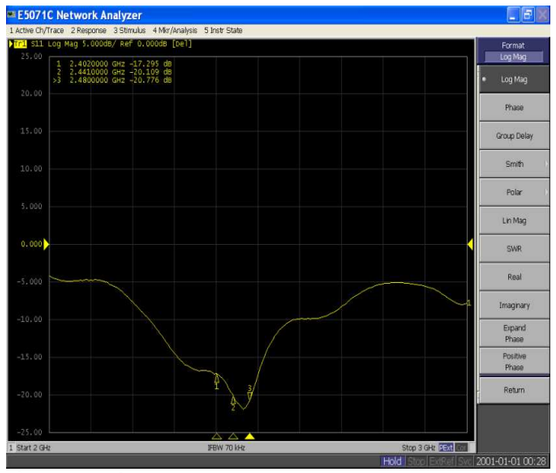
2).VSWR Plots



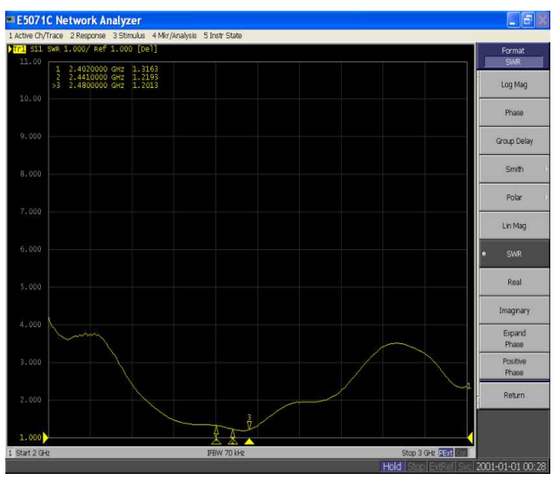
3).Smith Charts Plots

Free Space

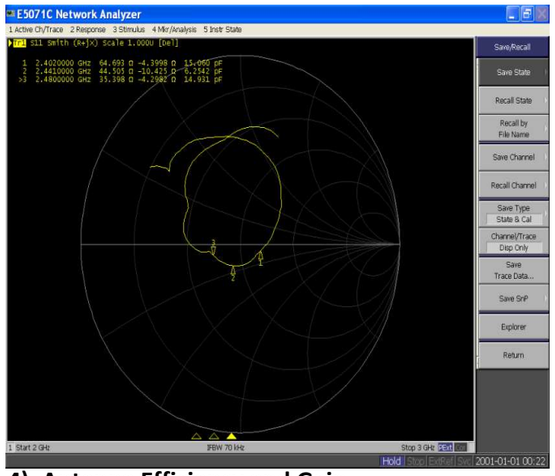
1). Return Loss Plots



2).VSWR Plots



3).Smith Charts Plots

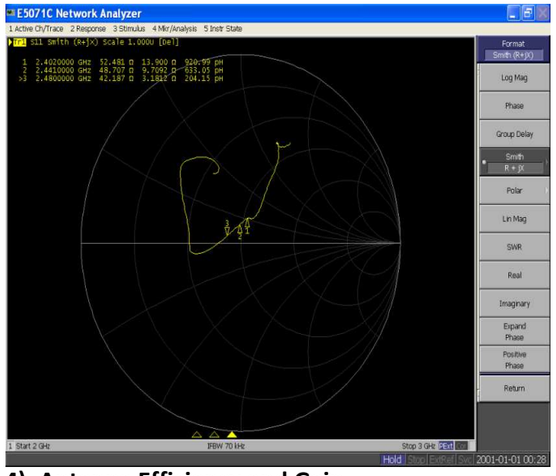


4). Antenna Efficiency and Gain

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-10.4294	-2.35184	8.07752	-10.4294	9.05868	-2.35184
	2360	0	-10.2817	-2.32765	7.9541	-10.2817	9.37185	-2.32765
	2370	0	-10.3309	-2.38819	7.94274	-10.3309	9.26631	-2.38819
	2380	0	-10.5263	-2.56504	7.96131	-10.5263	8.8586	-2.56504
	2390	0	-10.5926	-2.69483	7.89773	-10.5926	8.72455	-2.69483
	2400	0	-10.5517	-2.76752	7.78415	-10.5517	8.8071	-2.76752
	2410	0	-10.4184	-2.56223	7.85618	-10.4184	9.08154	-2.56223
	2420	0	-10.3886	-2.53751	7.85112	-10.3886	9.14401	-2.53751
	2430	0	-10.438	-2.66268	7.7753	-10.438	9.0407	-2.66268
	2440	0	-10.3658	-2.72946	7.63629	-10.3658	9.19231	-2.72946
	2450	0	-10.2841	-2.62979	7.65431	-10.2841	9.36677	-2.62979
	2460	0	-10.2768	-2.60377	7.67306	-10.2768	9.38246	-2.60377
	2470	0	-10.1938	-2.59592	7.5979	-10.1938	9.56352	-2.59592
	2480	0	-10.1771	-2.52323	7.6539	-10.1771	9.60035	-2.52323
	2490	0	-10.075	-2.38912	7.68588	-10.075	9.82879	-2.38912
	2500	0	-10.0226	-2.40919	7.61343	-10.0226	9.94805	-2.40919
	2510	0	-9.94002	-2.38083	7.55919	-9.94002	10.1391	-2.38083
	2520	0	-9.95757	-2.3841	7.57348	-9.95757	10.0982	-2.3841
	2530	0	-9.95747	-2.28121	7.67626	-9.95747	10.0984	-2.28121
	2540	0	-9.94037	-2.28467	7.6557	-9.94037	10.1383	-2.28467
	2550	0	-9.91868	-2.2472	7.67148	-9.91868	10.189	-2.2472

5).Peak EIRP

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-10.4294	-2.35184	8.07752	-10.4294	9.05868	-2.35184
	2360	0	-10.2817	-2.32765	7.9541	-10.2817	9.37185	-2.32765
	2370	0	-10.3309	-2.38819	7.94274	-10.3309	9.26631	-2.38819
	2380	0	-10.5263	-2.56504	7.96131	-10.5263	8.8586	-2.56504
	2390	0	-10.5926	-2.69483	7.89773	-10.5926	8.72455	-2.69483
	2400	0	-10.5517	-2.76752	7.78415	-10.5517	8.8071	-2.76752
	2410	0	-10.4184	-2.56223	7.85618	-10.4184	9.08154	-2.56223
	2420	0	-10.3886	-2.53751	7.85112	-10.3886	9.14401	-2.53751



4). Antenna Efficiency and Gain

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-6.74326	-2.65452	4.08874	-6.74326	21.1677	-2.65452
	2360	0	-6.50994	-2.40734	4.1026	-6.50994	22.336	-2.40734
	2370	0	-6.37362	-2.05801	4.31561	-6.37362	23.0483	-2.05801
	2380	0	-6.35514	-1.95271	4.40243	-6.35514	23.1465	-1.95271
	2390	0	-6.29556	-2.06834	4.22722	-6.29556	23.4663	-2.06834
	2400	0	-6.22858	-1.98317	4.2454	-6.22858	23.831	-1.98317
	2410	0	-6.05987	-1.72227	4.3376	-6.05987	24.775	-1.72227
	2420	0	-5.97012	-1.5849	4.38522	-5.97012	25.2923	-1.5849
	2430	0	-6.03569	-1.60585	4.42985	-6.03569	24.9133	-1.60585
	2440	0	-5.98531	-1.57485	4.41046	-5.98531	25.204	-1.57485
	2450	0	-5.86882	-1.18469	4.68413	-5.86882	25.8892	-1.18469
	2460	0	-5.91682	-1.15297	4.76385	-5.91682	25.6046	-1.15297
	2470	0	-5.91483	-1.05635	4.85848	-5.91483	25.6164	-1.05635
	2480	0	-5.92586	-1.10949	4.81636	-5.92586	25.5514	-1.10949
	2490	0	-5.83757	-0.882361	4.95521	-5.83757	26.0761	-0.882361
	2500	0	-5.87611	-0.753422	5.12269	-5.87611	25.8458	-0.753422
	2510	0	-5.86264	-0.635351	5.22729	-5.86264	25.926	-0.635351
	2520	0	-5.90175	-0.523922	5.37783	-5.90175	25.6936	-0.523922
	2530	0	-5.95529	-0.433622	5.52167	-5.95529	25.3788	-0.433622
	2540	0	-6.07019	-0.52352	5.54667	-6.07019	24.7161	-0.52352
	2550	0	-6.20546	-0.758006	5.44746	-6.20546	23.9582	-0.758006

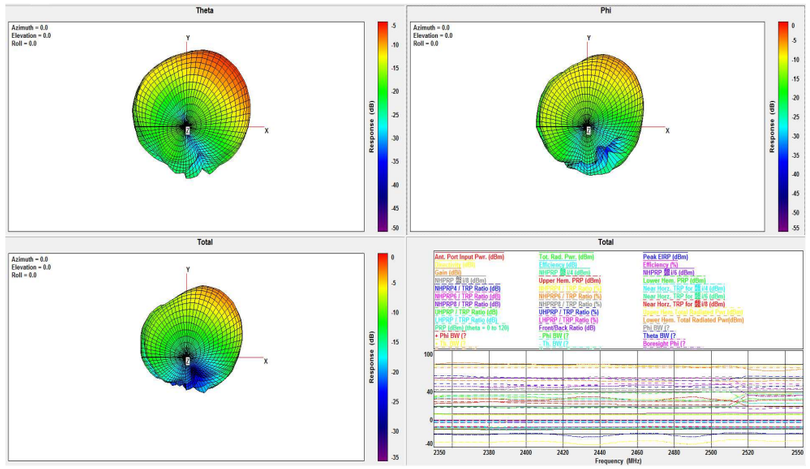
5).Peak EIRP

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-6.74326	-2.65452	4.08874	-6.74326	21.1677	-2.65452
	2360	0	-6.50994	-2.40734	4.1026	-6.50994	22.336	-2.40734
	2370	0	-6.37362	-2.05801	4.31561	-6.37362	23.0483	-2.05801
	2380	0	-6.35514	-1.95271	4.40243	-6.35514	23.1465	-1.95271
	2390	0	-6.29556	-2.06834	4.22722	-6.29556	23.4663	-2.06834
	2400	0	-6.22858	-1.98317	4.2454	-6.22858	23.831	-1.98317
	2410	0	-6.05987	-1.72227	4.3376	-6.05987	24.775	-1.72227
	2420	0	-5.97012	-1.5849	4.38522	-5.97012	25.2923	-1.5849

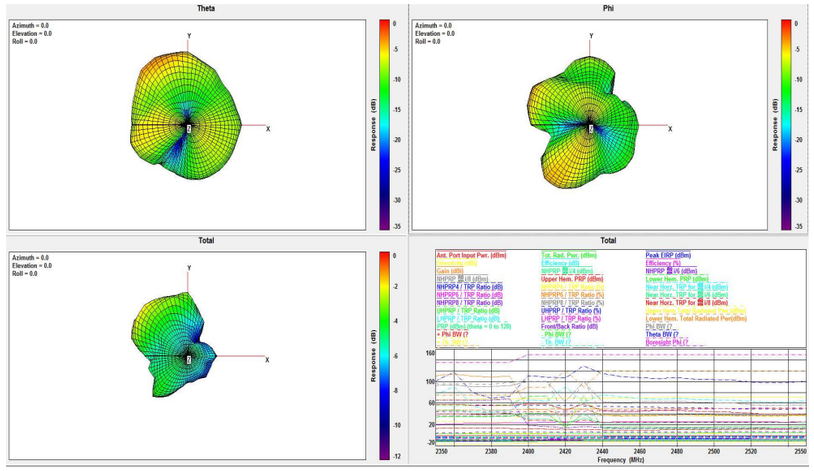
	2430	0	-10.438	-2.66268	7.7753	-10.438	9.0407	-2.66268
	2440	0	-10.3658	-2.72946	7.63629	-10.3658	9.19231	-2.72946
	2450	0	-10.2841	-2.62979	7.65431	-10.2841	9.36677	-2.62979
	2460	0	-10.2768	-2.60377	7.67306	-10.2768	9.38246	-2.60377
	2470	0	-10.1938	-2.59592	7.5979	-10.1938	9.56352	-2.59592
	2480	0	-10.1771	-2.52323	7.6539	-10.1771	9.60035	-2.52323
	2490	0	-10.075	-2.38912	7.68588	-10.075	9.82879	-2.38912
	2500	0	-10.0226	-2.40919	7.61343	-10.0226	9.94805	-2.40919
	2510	0	-9.94002	-2.38083	7.55919	-9.94002	10.1391	-2.38083
	2520	0	-9.95757	-2.3841	7.57348	-9.95757	10.0982	-2.3841
	2530	0	-9.95747	-2.28121	7.67626	-9.95747	10.0984	-2.28121
	2540	0	-9.94037	-2.28467	7.6557	-9.94037	10.1383	-2.28467
	2550	0	-9.91868	-2.2472	7.67148	-9.91868	10.189	-2.2472

	2430	0	-6.03563	-1.60585	4.42363	-6.03563	24.3133	-1.60585
	2440	0	-5.98531	-1.57485	4.41046	-5.98531	25.204	-1.57485
	2450	0	-5.86882	-1.18469	4.68413	-5.86882	25.8892	-1.18469
	2460	0	-5.91682	-1.15297	4.76385	-5.91682	25.6046	-1.15297
	2470	0	-5.91483	-1.05635	4.85848	-5.91483	25.6164	-1.05635
	2480	0	-5.92586	-1.10949	4.81636	-5.92586	25.5514	-1.10949
	2490	0	-5.83757	-0.882361	4.95521	-5.83757	26.0761	-0.882361
	2500	0	-5.87611	-0.753422	5.12269	-5.87611	25.8458	-0.753422
	2510	0	-5.86264	-0.635351	5.22729	-5.86264	25.926	-0.635351
	2520	0	-5.90175	-0.523922	5.37783	-5.90175	25.6936	-0.523922
	2530	0	-5.95529	-0.433622	5.52167	-5.95529	25.3788	-0.433622
	2540	0	-6.07019	-0.52352	5.54667	-6.07019	24.7161	-0.52352
	2550	0	-6.20546	-0.758006	5.44746	-6.20546	23.9582	-0.758006

6).3D Antenna Pattern Plot
showing gain and directionality



6).3D Antenna Pattern Plot
showing gain and directionality



7). Peak Gain

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-10.4294	-2.35184	8.07752	-10.4294	9.05868	-2.35184
	2360	0	-10.2817	-2.32765	7.9541	-10.2817	9.37185	-2.32765
	2370	0	-10.3309	-2.38819	7.94274	-10.3309	9.26631	-2.38819
	2380	0	-10.5263	-2.56504	7.96131	-10.5263	8.8586	-2.56504
	2390	0	-10.5926	-2.69483	7.89773	-10.5926	8.72455	-2.69483
	2400	0	-10.5517	-2.76752	7.78415	-10.5517	8.8071	-2.76752
	2410	0	-10.4184	-2.56223	7.85618	-10.4184	9.08154	-2.56223
	2420	0	-10.3886	-2.53751	7.85112	-10.3886	9.14401	-2.53751
	2430	0	-10.438	-2.66268	7.7753	-10.438	9.0407	-2.66268
	2440	0	-10.3658	-2.72946	7.63629	-10.3658	9.19231	-2.72946
	2450	0	-10.2841	-2.62979	7.65431	-10.2841	9.36677	-2.62979
	2460	0	-10.2768	-2.60377	7.67306	-10.2768	9.38246	-2.60377
	2470	0	-10.1938	-2.59592	7.5979	-10.1938	9.56352	-2.59592
	2480	0	-10.1771	-2.52323	7.6539	-10.1771	9.60035	-2.52323
	2490	0	-10.075	-2.38912	7.68588	-10.075	9.82879	-2.38912
	2500	0	-10.0226	-2.40919	7.61343	-10.0226	9.94805	-2.40919
	2510	0	-9.94002	-2.38083	7.55919	-9.94002	10.1391	-2.38083
	2520	0	-9.95757	-2.3841	7.57348	-9.95757	10.0982	-2.3841
	2530	0	-9.95747	-2.28121	7.67626	-9.95747	10.0984	-2.28121
	2540	0	-9.94037	-2.28467	7.6557	-9.94037	10.1383	-2.28467

7). Peak Gain

Total	Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
	Frequency (MHz)							
	2350	0	-6.74326	-2.65452	4.08874	-6.74326	21.1677	-2.65452
	2360	0	-6.50994	-2.40734	4.1026	-6.50994	22.336	-2.40734
	2370	0	-6.37362	-2.05801	4.31561	-6.37362	23.0483	-2.05801
	2380	0	-6.35514	-1.95271	4.40243	-6.35514	23.1465	-1.95271
	2390	0	-6.29556	-2.06834	4.22722	-6.29556	23.4663	-2.06834
	2400	0	-6.22858	-1.98317	4.2454	-6.22858	23.831	-1.98317
	2410	0	-6.05987	-1.72227	4.3376	-6.05987	24.775	-1.72227
	2420	0	-5.97012	-1.5849	4.38522	-5.97012	25.2923	-1.5849
	2430	0	-6.03569	-1.60585	4.42985	-6.03569	24.9133	-1.60585
	2440	0	-5.98531	-1.57485	4.41046	-5.98531	25.204	-1.57485
	2450	0	-5.86882	-1.18469	4.68413	-5.86882	25.8892	-1.18469
	2460	0	-5.91682	-1.15297	4.76385	-5.91682	25.6046	-1.15297
	2470	0	-5.91483	-1.05635	4.85848	-5.91483	25.6164	-1.05635
	2480	0	-5.92586	-1.10949	4.81636	-5.92586	25.5514	-1.10949
	2490	0	-5.83757	-0.882361	4.95521	-5.83757	26.0761	-0.882361
	2500	0	-5.87611	-0.753422	5.12269	-5.87611	25.8458	-0.753422
	2510	0	-5.86264	-0.635351	5.22729	-5.86264	25.926	-0.635351
	2520	0	-5.90175	-0.523922	5.37783	-5.90175	25.6936	-0.523922
	2530	0	-5.95529	-0.433622	5.52167	-5.95529	25.3788	-0.433622
	2540	0	-6.07019	-0.52352	5.54667	-6.07019	24.7161	-0.52352

0.758006	23.9582	-6.20546	5.44746	-0.758006	-6.20546	0	2550

-2.2472	10.189	-9.91868	7.67148	-2.2472	-9.91868	0	2550