FCC ID: QMNRH-108_ATCB005283

Dear Mr. Ward,

Please find below responses,

(1) FYI

(2) Perhaps I missed it, but I cannot find a comparison between the output power of the device during EMC/SAR and HAC testing. Please either show where this data is located or please provide that data. Please note that device power measured during these three tests should be the same (i.e. eirp, conducted etc). Please correlate the output power of the device for each of the tests.

Response: Below power table is maximum RF power from three samples used for each tests. <<< It met the section 4.3.3 of Oct_06-HAC_TCB_Review_Update_Nov_13_2006-MP ", Maximum power is used and agrees with EMC/SAR reports and tune-up procedure. HAC report should be greater than or equal to what's in EMC report, but not exceeding tune-up/tolerance.>>> and from the document of Publication Number: 291699 and Publication Date: 04/17/2007 <<< The output power measured for EMC and SAR may vary due to differences in test procedures and requirements. The measured values may not be directly comparable unless the same identical procedures are applied; for example, peak, average, bandwidth, modulation, operating modes, data rates and frame/bit patterns etc. It is the grantee's responsibility to ensure all test samples are operating within tune-up requirements (accepted for the filing) and test results will support compliance for all production units. >>

Please find the conducted power list HAC (24.61) >= EMC (24.56), and SAR (24.61)>= EMC (24.56) for 850 band. For 1900 band, the conducted power list HAC (23.57) >= EMC (23.54) SAR (23.57)>= EMC (23.54).

Conducted power for FCC test(RC3/S055)			
	MEID	850 Band	1900 Band
SAR	A00000011E6E56	24.61	23.57
EMC	A00000011E6E51	24.56	23.54
HAC	A00000011E6E71	24.61	23.57

(3) Please note that occupied bandwidth measurements are to be made in peak detector mode. Please note that the analyzer data shown on pages 18-23 (pdf pages 21-26) indicates data was taken with the analyzer detector set to average. Please note that the same problem appears to exist in the 1900MHz OBW data as well. Please explain and/or retest using peak detector mode.

Response: From 2.1049 "The occupied bandwidth, that is the frequency such that the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured...". That is the reason we measured the characteristic of occupied bandwidth with average instead of peak detector by referring this 2.1049 section, meanwhile, we also retested it using peak mode, and found that the maximum results slightly grew up to 1.288MHz . Please find below tables and plots.

Occupied Bandwidth(MHz)				
Band	Channel	RC1_SO2	RC3_SO2	RC3_SO55
850	1013	1.288	1.272	1.272
	384	1.272	1.268	1.268
	777	1.284	1.272	1.276
1900	25	1.28	1.272	1.272
	600	1.28	1.272	1.268
	1175	1.284	1.276	1.272

(4) Please note that the conducted power values given in the report state that a power meter was used. While it is assumed that a peak power meter was used, there is no power meter listed in the EMC report equipment list. As such, it is not know what type power is being used to record conducted power levels of the device. Please explain and please provide the calibration dates and type power meter used.

Response: Maximum RF Conducted power measurement was done by using power meter with average detector and agreed with within tune-up procedures klrequirements, and the power meter has 5MHz bandwidth capable of covering the 1.25MHz of CDMA signal.

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Due Date
Power Meter	Agilent	E4416A	GB41292344	Feb. 08, 2007	Feb. 08, 2008
Power Sensor	Agilent	E9327A	US40441548	Feb. 08, 2007	Feb. 08, 2008

(5) Please note that when measuring the 43+10logP for out of band spurious emissions the same power is to be used. If the above item 4 was a peak power meter, then the band edges cannot be done using an average detector as indicated. Please explain and please correct as necessary.

Response: The band edges measurements by using average detector are compliance with spurious emission must be attenuated below the transmitter power by at least 43 +10 log P. For example Power =24.56dBm, then the limit is 24.56dBm – [43 + 10 log (0.28W)] = -13dBm The out of band spurious emission was measured by using peak detector worst than using average detector. If the out of band spurious emission using peak detector meet the limit, then the out of band spurious emission using peak detector will be pass .

(6) Please note that the radiated spurious data only gives the final data and does not show the correction factors involved (i.e. signal generator level, substitution gain, etc). Please also note that the data I checked in the tables do not match the data in the plots (see 1694MHz, 1670MHz and 1646MHz data for example). Please review your data and insure that the data in the tables and the data in the plots agree. Please explain and please provide this missing data as required by the FCC or show how the two data sources coincide.

Response:

From the section 4.6.2 Test Procedure of FCC part 22/24 report, you can see we firstly took the record of maximum spurious emission (SPA. Reading level) from EUT. Then we used an antenna was substituted in place of the EUT and was driven by a signal generator (S.G. Power, dBm) through cable loss (dB) and a Antenna gain (dBi), and then adjusted the power level of signal generator to the same emission level with EUT maximum spurious emission. So that you can see the ERP (dBm) = S.G. Reading (dBm) + Cable Loss(dB)+ Antenna Gain (dBi) -2.15 , for example , at frequency 1646MHz , the S.G. Reading (dBm) = -40.01 dBm, Cable Loss= 1.47 and the Antenna Gain= 6.71dBi ,ERP= -40.01+ (-1.47) + 6.71 -2.15dB = -36.92 dBm. For simplified this report, we used those values in a factor (0.32dB) which come from the S.G. Reading (dBm) + Cable Loss(dB) + Antenna Gain (dBi) – EUT's SPA.Reading level. Then you can see the final result ERP = SPA Reading level + factor - 2.15dB. (ERP=EIRP-2.15)

Test Mode 1: Cellular 850 1XRTT_RC3/SO55_CH1013

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
34.05	-62.32	-13.00	-49.32	-58.10	-45.73	0.26	-14.18	-2.07	H
80.49	-66.84	-13.00	-53.84	-52.38	-64.74	0.43	0.48	-12.31	H
278.13	-72.49	-13.00	-59.49	-59.66	-75.43	0.65	5.74	-10.68	H
366.50	-71.28	-13.00	-58.28	-61.49	-75.03	0.76	6.66	-7.64	H
1646.00	-36.92	-13.00	-23.92	-35.09	-40.01	1.47	6.71	0.32	H
2476.00	-52.03	-13.00	-39.03	-51.03	-55.99	2.10	8.21	1.15	H
3300.00	-56.93	-13.00	-43.93	-59.98	-62.86	2.30	10.38	5.20	H
3476.00	-57.10	-13.00	-44.10	-60.74	-63.71	2.19	10.95	5.79	H
32.70	-64.73	-13.00	-51.73	-52.69	-47.48	0.27	-14.83	-9.89	V
92.37	-65.39	-13.00	-52.39	-54.44	-62.22	0.40	-0.62	-8.80	V
97.77	-61.50	-13.00	-48.50	-51.38	-57.80	0.44	-1.11	-7.97	V
372.10	-71.50	-13.00	-58.50	-64.45	-75.29	0.77	6.71	-4.90	V
1646.00	-47.71	-13.00	-34.71	-45.10	-50.80	1.47	6.71	-0.46	V
2476.00	-53.14	-13.00	-40.14	-53.20	-57.10	2.10	8.21	2.21	V
3300.00	-56.96	-13.00	-43.96	-59.07	-62.89	2.30	10.38	4.26	V
3476.00	-56.91	-13.00	-43.91	-59.61	-63.52	2.19	10.95	4.85	V

Test Mode 2: CDMA2000 Cellular 850 1xRTT_RC3/SO55_CH384 Radiated Spurious ERP

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
30.81	-63.22	-13.00	-50.22	-60.82	-44.67	0.28	-16.12	-0.25	H
81.30	-69.30	-13.00	-56.30	-54.84	-67.11	0.42	0.38	-12.31	H
244.65	-74.93	-13.00	-61.93	-60.93	-77.58	0.64	5.44	-11.85	H
421.80	-69.30	-13.00	-56.30	-60.96	-73.30	0.80	6.95	-6.19	H
1670.00	-51.93	-13.00	-38.93	-50.01	-54.97	1.48	6.67	0.23	H
32.70	-64.13	-13.00	-51.13	-52.08	-46.88	0.27	-14.83	-9.90	V
91.02	-65.25	-13.00	-52.25	-54.15	-62.16	0.40	-0.54	-8.95	V
143.13	-64.46	-13.00	-51.46	-54.23	-63.27	0.48	1.44	-8.08	V
632.50	-67.59	-13.00	-54.59	-63.99	-70.98	0.97	6.51	-1.45	V
1670.00	-60.14	-13.00	-47.14	-57.51	-63.18	1.48	6.67	-0.48	V

Test Mode 3: CDMA2000 Cellular 850 1xRTT_RC3/SO55_CH777 Radiated Spurious ERP

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
30.54	-63.07	-13.00	-50.07	-60.67	-44.52	0.28	-16.12	-0.25	H
37.29	-68.55	-13.00	-55.55	-61.89	-53.87	0.28	-12.25	-4.51	H
80.22	-64.08	-13.00	-51.08	-49.61	-61.98	0.43	0.48	-12.32	H
365.80	-71.51	-13.00	-58.51	-61.69	-75.26	0.76	6.66	-7.67	H
1694.00	-46.84	-13.00	-33.84	-44.82	-49.77	1.50	6.58	0.13	H
2544.00	-50.06	-13.00	-37.06	-49.52	-54.17	2.16	8.42	1.61	H
3390.00	-56.33	-13.00	-43.33	-59.79	-62.63	2.24	10.69	5.61	H
32.70	-63.93	-13.00	-50.93	-51.89	-46.68	0.27	-14.83	-9.89	V
80.22	-66.56	-13.00	-53.56	-53.92	-64.13	0.76	0.48	-10.49	V
91.29	-65.84	-13.00	-52.84	-54.75	-62.75	0.40	-0.54	-8.94	V
505.80	-58.25	-13.00	-45.25	-53.04	-62.01	0.87	6.78	-3.06	V
1694.00	-53.62	-13.00	-40.62	-50.97	-56.55	1.50	6.58	-0.50	V
2542.00	-49.14	-13.00	-36.14	-49.33	-53.25	2.16	8.42	2.34	V
3390.00	-57.88	-13.00	-44.88	-60.40	-64.18	2.24	10.69	4.67	V

Mode 4: CDMA2000 PCS 1900 1xRTT_RC3/SO55_CH25 Radiated Spurious EIRP

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
31.89	-61.00	-13.00	-48.00	-60.14	-45.26	0.27	-15.47	-0.86	H
38.10	-66.94	-13.00	-53.94	-62.43	-54.41	0.28	-12.25	-4.51	H
80.22	-62.03	-13.00	-49.03	-49.71	-62.08	0.43	0.48	-12.32	H
743.80	-69.06	-13.00	-56.06	-66.80	-76.19	1.04	8.17	-2.26	H
892.20	-68.08	-13.00	-55.08	-67.28	-76.25	1.14	9.31	-0.80	H
968.50	-67.32	-13.00	-54.32	-67.26	-74.36	1.20	8.24	-0.06	H
3702.00	-44.21	-13.00	-31.21	-51.63	-53.10	2.23	11.12	7.42	H
5550.00	-42.02	-13.00	-29.02	-51.89	-49.43	3.84	11.25	9.87	H
31.89	-62.03	-13.00	-49.03	-52.41	-46.29	0.27	-15.47	-9.62	V
80.22	-64.26	-13.00	-51.26	-53.77	-64.31	0.43	0.48	-10.49	V
92.37	-61.69	-13.00	-48.69	-52.88	-60.67	0.40	-0.62	-8.81	V
332.90	-67.09	-13.00	-54.09	-61.33	-72.73	0.71	6.35	-5.76	V
397.30	-66.76	-13.00	-53.76	-62.39	-72.89	0.78	6.91	-4.37	V
547.80	-67.37	-13.00	-54.37	-64.82	-72.79	0.92	6.34	-2.55	V
3700.00	-42.70	-13.00	-29.70	-48.90	-51.59	2.23	11.12	6.20	V
5550.00	-40.00	-13.00	-27.00	-48.60	-47.41	3.84	11.25	8.60	V
7404.00	-49.01	-13.00	-36.01	-61.30	-53.67	3.49	8.15	12.29	V

Mode 5: CDMA2000 PCS 1900 1xRTT_RC3/SO55_CH600 Radiated Spurious EIRP

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
30.81	-61.27	-13.00	-48.27	-61.02	-44.87	0.28	-16.12	-0.25	H
49.17	-62.65	-13.00	-49.65	-50.83	-56.01	0.35	-6.29	-11.82	H
80.49	-63.61	-13.00	-50.61	-51.30	-63.66	0.43	0.48	-12.31	H
363.70	-68.51	-13.00	-55.51	-60.77	-74.39	0.76	6.64	-7.74	H
393.80	-66.28	-13.00	-53.28	-59.58	-72.38	0.78	6.88	-6.70	H
913.20	-67.03	-13.00	-54.03	-66.44	-75.06	1.15	9.18	-0.59	H
3758.00	-45.41	-13.00	-32.41	-53.33	-54.33	2.24	11.16	7.92	H
5638.00	-42.22	-13.00	-29.22	-52.18	-49.81	3.75	11.34	9.96	H
7516.00	-46.16	-13.00	-33.16	-61.97	-50.67	3.49	8.00	15.81	H
31.62	-62.66	-13.00	-49.66	-53.04	-46.92	0.27	-15.47	-9.62	V
80.22	-66.73	-13.00	-53.73	-56.25	-66.78	0.43	0.48	-10.48	V
91.02	-62.07	-13.00	-49.07	-53.13	-61.13	0.40	-0.54	-8.94	V
365.80	-67.42	-13.00	-54.42	-62.37	-73.32	0.76	6.66	-5.05	V
397.30	-66.54	-13.00	-53.54	-62.17	-72.67	0.78	6.91	-4.37	V
976.90	-64.32	-13.00	-51.32	-66.80	-71.21	1.21	8.10	2.48	V
3758.00	-37.63	-13.00	-24.63	-44.27	-46.55	2.24	11.16	6.64	V
5638.00	-42.59	-13.00	-29.59	-51.24	-50.18	3.75	11.34	8.65	V
7516.00	-47.30	-13.00	-34.30	-60.67	-51.81	3.49	8.00	13.37	V

Mode 6: CDMA2000 PCS 1900 1xRTT_RC3/SO55_CH1175 Radiated Spurious EIRP

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA. Reading (dBm)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Factor (dB)	Polarization (H/V)
31.62	-61.93	-13.00	-48.93	-61.07	-46.19	0.27	-15.47	-0.86	H
39.45	-66.53	-13.00	-53.53	-60.80	-54.83	0.30	-11.40	-5.73	H
80.49	-61.86	-13.00	-48.86	-49.55	-61.91	0.43	0.48	-12.31	H
763.40	-68.56	-13.00	-55.56	-66.49	-75.65	1.06	8.15	-2.07	H
831.30	-68.56	-13.00	-55.56	-67.17	-75.95	1.13	8.52	-1.39	H
946.10	-67.63	-13.00	-54.63	-67.34	-75.10	1.16	8.63	-0.29	H
3814.00	-35.05	-13.00	-22.05	-43.34	-43.99	2.26	11.20	8.29	H
5724.00	-39.84	-13.00	-26.84	-49.96	-47.60	3.66	11.42	10.12	H
32.70	-61.80	-13.00	-48.80	-51.91	-46.70	0.27	-14.83	-9.89	V
79.14	-64.44	-13.00	-51.44	-53.82	-64.58	0.43	0.57	-10.62	V
91.02	-61.91	-13.00	-48.91	-52.97	-60.97	0.40	-0.54	-8.94	V
651.40	-67.98	-13.00	-54.98	-66.82	-73.98	0.98	6.98	-1.16	V
816.60	-66.34	-13.00	-53.34	-67.54	-73.55	1.11	8.32	1.20	V
909.00	-64.74	-13.00	-51.74	-66.68	-72.85	1.14	9.25	1.94	V
3814.00	-31.10	-13.00	-18.10	-38.02	-40.04	2.26	11.20	6.92	V
5724.00	-39.73	-13.00	-26.73	-48.50	-47.49	3.66	11.42	8.77	V
9542.00	-44.59	-13.00	-31.59	61.49	-50.95	4.50	10.86	-106.08	V