Elliott

EMC Test Data

Client:	Metricom	Job Number:	J36230
Model:	Wedgy Wireless Modem	T-Log Number:	T36263
		Proj Eng:	Chris Byleckie
Contact:	Dave Waitt		
Spec:	FCC Part 15 & 15.247	Class:	-

Radiated Emissions

Test Specifics

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT relative to the specification(s) defined above. The objective of this test session is to perform final qualification testing the EUT relative to the specification(s) defined above.

Date of Test: 4/26/00
Test Engineer: Chris Byleckie
Test Location: SVOATS #3

Config. Used: 1
Config Change:
EUT Voltage: 120V / 60 Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

For radiated emissions testing between 30 and 1000 MHz, the measurement antenna was located at 10 meters distance from the EUT, unless otherwise noted. For testing above 1 GHz, the measurement antenna was located 3 meters from the

Ambient Conditions:

Temperature: 22.8°C
Rel. Humidity: 58%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	RE, 1000 - 10000 MHz Maximized Emissions	FCC 15.247	Pass	-0.3 dB @ 4639.15 MHz
2	RE, 30 - 1000MHz - Maximized Emissions	FCC B	Pass	-5.0 dB @ 400 MHz

Modifications Made During Testing: None

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Run #1: Restricted Bands for operation in 902 - 928 MHz

Measurements made at 3m per FCC requirements.

Frequency	Level	Pol	FCC B	FCC B	Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
902.240								
4511.200	49.9	v	54.0	-4.1	Avg	295	1.3	
9022.400	46.7	v	54.0	-7.3	Avg	7	1.2	
2706.720	46.4	v	54.0	-7.6	Avg	51	1.7	
9022.400	43.8	h	54.0	-10.2	Avg	0	1.0	
4511.200	43.4	h	54.0	-10.6	Avg	0	1.6	
8120.160	41.7	h	54.0	-12.3	Avg	0	1.0	
8120.160	41.6	v	54.0	-12.4	Avg	0	1.0	
5413.440	41.6	v	54.0	-12.4	Avg	327	1.2	
9022.400	59.1	v	74.0	-14.9	Pk	7	1.2	
9022.400	56.7	h	74.0	-17.3	Pk	0	1.0	
2706.720	36.3	h	54.0	-17.7	Avg	351	1.2	
8120.160	55.2	v	74.0	-18.8	Pk	0	1.0	
3608.790	34.7	h	54.0	-19.3	Avg	9	1.0	
4511.200	54.4	v	74.0	-19.6	Pk	295	1.3	
8120.160	54.2	h	74.0	-19.8	Pk	0	1.0	
5413.440	33.9	h	54.0	-20.1	Avg	0	1.0	
3608.790	32.7	v	54.0	-21.3	Avg	0	1.0	
2706.720	50.7	v	74.0	-23.3	Pk	51	1.7	
5413.440	50.5	v	74.0	-23.5	Pk	327	1.2	
4511.200	50.3	h	74.0	-23.7	Pk	0	1.6	
3608.790	47.7	h	74.0	-26.3	Pk	9	1.1	
5413.440	46.2	h	74.0	-27.8	Pk	0	1.0	
2706.720	45.8	h	74.0	-28.2	Pk	351	1.2	
3608.790	45.1	v	74.0	-28.9	Pk	0	1.0	

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Spec:	FCC Part 15 & 15.247	Class:	-

915.000

Frequency	Level	Pol	FCC B	FCC B	Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4575.000	52.2	v	54.0	-1.8	Avg	282	1.1	
8235.000	47.3	v	54.0	-6.7	Avg	162	1.7	
2745.000	46.3	v	54.0	-7.7	Avg	266	1.0	
4575.000	44.8	h	54.0	-9.2	Avg	0	1.7	
9150.000	43.4	h	54.0	-10.6	Avg	0	1.0	
8235.000	43.3	h	54.0	-10.7	Avg	115	1.2	
9150.000	43.1	v	54.0	-10.9	Avg	0	1.0	
7320.000	42.0	v	54.0	-12.0	Avg	25	1.0	
7320.000	40.1	h	54.0	-13.9	Avg	102	1.0	
5490.000	40.0	v	54.0	-14.0	Avg	54	1.3	
2745.000	39.6	h	54.0	-14.4	Avg	116	1.4	
8235.000	57.5	v	74.0	-16.5	Pk	162	1.7	
5490.000	37.4	h	54.0	-16.6	Avg	316	1.4	
9150.000	56.6	h	74.0	-17.4	Pk	0	1.0	
2745.000	56.0	v	74.0	-18.0	Pk	266	1.0	
8235.000	55.9	h	74.0	-18.1	Pk	115	1.2	
4575.000	55.8	v	74.0	-18.2	Pk	282	1.1	
9150.000	55.5	v	74.0	-18.5	Pk	0	1.0	
7320.000	52.3	v	74.0	-21.7	Pk	25	1.0	
3660.000	32.2	v	54.0	-21.8	Avg	0	1.0	
3660.000	31.8	h	54.0	-22.2	Avg	0	1.0	
4575.000	51.6	h	74.0	-22.4	Pk	0	1.7	
5490.000	50.1	v	74.0	-23.9	Pk	54	1.3	
7320.000	49.6	h	74.0	-24.4	Pk	102	1.0	
5490.000	48.7	h	74.0	-25.3	Pk	316	1.4	
3660.000	45.0	v	74.0	-29.0	Pk	0	1.0	
2745.000	44.7	h	74.0	-29.3	Pk	116	1.4	
3660.000	44.6	h	74.0	-29.4	Pk	0	1.0	

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Spec:	FCC Part 15 & 15.247	Class:	-

927.830

Frequency	Level	Pol	FCC B	FCC B	Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4639.150	53.7	v	54.0	-0.3	Avg	330	1.4	
2783.490	47.3	v	54.0	-6.7	Avg	91	1.2	
4639.150	44.8	h	54.0	-9.2	Avg	327	2.1	
9278.300	42.7	v	54.0	-11.3	Avg	0	1.0	
9278.300	42.6	h	54.0	-11.4	Avg	0	1.0	
2783.490	42.5	h	54.0	-11.5	Avg	136	1.3	
8350.470	42.0	h	54.0	-12.0	Avg	0	1.0	
8350.470	41.8	v	54.0	-12.2	Avg	0	1.0	
7422.640	38.1	v	54.0	-15.9	Avg	318	1.1	
4639.150	56.7	v	74.0	-17.3	Pk	330	1.4	
9278.300	55.2	v	74.0	-18.8	Pk	0	1.0	
9278.300	55.0	h	74.0	-19.0	Pk	0	1.0	
7422.640	34.7	h	54.0	-19.3	Avg	0	1.0	
8350.470	54.3	h	74.0	-19.7	Pk	0	1.0	
8350.470	54.2	v	74.0	-19.8	Pk	0	1.0	
3711.320	32.3	h	54.0	-21.7	Avg	0	1.0	
3711.320	32.2	v	54.0	-21.8	Avg	0	1.0	
2783.490	51.3	v	74.0	-22.7	Pk	91	1.2	
4639.150	51.1	h	74.0	-22.9	Pk	327	2.1	
7422.640	49.1	v	74.0	-24.9	Pk	318	1.1	
2783.490	49.1	h	74.0	-24.9	Pk	136	1.3	
7422.640	47.1	h	74.0	-26.9	Pk	0	1.0	
3711.320	45.8	h	74.0	-28.2	Pk	0	1.0	
3711.320	45.1	v	74.0	-28.9	Pk	0	1.0	

Run #2: Spot check of maximized frequencies from 3-7-00. Sorted by margin

Measurements made at 3m per FCC requirements.

Frequency	Level	Pol	Spec	Spec	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
400.000	41.0	v	46.0	-5.0	QP	141	1.0	
160.000	37.1	v	43.5	-6.4	QP	0	1.0	
240.000	37.2	v	46.0	-8.8	QP	166	1.0	
640.000	36.0	h	46.0	-10.0	QP	131	1.0	
360.000	33.9	h	46.0	-12.1	QP	215	1.0	
360.000	33.8	v	46.0	-12.2	QP	160	1.0	

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Spec:	FCC Part 15 & 15.247	Class:	-

Reprint of the data from 3-7-00

Run #2: Maximized readings from run #1. Sorted by margin

Measurements made at 3m per FCC requirements.

Frequency	Level	Pol	spec	spec	Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
360.000	39.6	v	46.0	-6.4	QP	206	1.5	
400.000	39.4	v	46.0	-6.6	QP	216	1.3	
640.000	38.5	h	46.0	-7.5	QP	198	1.6	
360.000	37.8	h	46.0	-8.2	QP	104	1.0	
160.000	35.2	v	43.5	-8.3	QP	157	1.0	
240.000	37.7	v	46.0	-8.3	QP	205	1.0	