Elliott

EMC Test Data

Client:	Handspring	Job Number:	J43177
Model:	Manhattan	T-Log Number:	T43247
		Proj Eng:	Mark Briggs
Contact:	David Waitt		
Spec:	FCC 24E and ETS 300 342-3	Class:	N/A

Radiated Emissions

Test Specifics

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

Date of Test: 7/9/01
Test Engineer: jmartinez
Test Location: SVOATS #3

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

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT. For any Spurious emission more than 20-dB ol the field strenght limit, substitution was performed. If the Spurious emissions are 20-dB below the field strength limit, continuation with the substitution is not required.

Ambient Conditions:

Temperature: 27.2°C
Rel. Humidity: 20%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1a	RE, 1 - 20 GHz - Spurious Emissions	24.238(a)	Pass	-7.04dB @ 13,120 MHz
1b	Output Power	24.232(b)	Pass	29.5 dBm

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

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Run #1a: Radiated Spurious Emissions, 1-20 GHz, Transmit Frequency 1874.82 MHz

	H	V
Fundamental emission level @ 3m in 1MHz RBW:	126.35	127.62
-13 dBm converted to dBuV/m @ 3 Meters [note 1]:	82.2	dBµV/m

Frequency	Level	Pol	Pt. 24		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3749.640	53.1	V	82.2	-29.1	Pk	171	1.3	
5624.000	64.5	V	82.2	-17.7	Pk	233	1.1	
7499.000	68.4	V	82.2	-13.8	Pk	221	1.3	
9373.000	63.2	V	82.2	-19.0	Pk	215	1.2	
11248.00	55.8	V	82.2	-26.5	Pk	45	1.5	
13120.00	68.3	V	82.2	-14.0	Pk	85	1.0	
14998.00	58.7	V	82.2	-23.5	Pk	315	1.0	
3749.640	54.1	H	82.2	-28.1	Pk	70	1.4	
5624.000	65.8	H	82.2	-16.4	Pk	309	1.0	
7499.000	66.7	H	82.2	-15.5	Pk	315	1.0	
9373.000	65.0	H	82.2	-17.2	Pk	315	1.0	
11248.00	60.0	H	82.2	-22.2	Pk	125	1.3	
13120.00	70.1	H	82.2	-12.1	Pk	304	1.3	
14998.00	62.62	H	82.2	-19.6	Pk	312	1.1	

Note 1:	No Spurious emission detected within 20-dB of the limit above the 8th harmonic.
Note 2:	

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Substituion Method for Spurious emission 20-dB from the limit. Taken from Run# 1a

			Substitution Note 1						
Frequency	Level	Pol	Pin	Gain	EIRP	ERP	Limit	Margin	Comment
MHz	dBµV/m	v/h	dBm	dBi	dBm	dBm	dBm	dB	
3749.640	53.1	v	-54.4	8.3	-46.1	-48.2	-13	-35.2	
5624.000	64.5	v	-44.5	8.9	-35.6	-37.7	-13	-24.7	
7499.000	68.4	v	-40.6	9.2	-31.4	-33.5	-13	-20.5	
9373.000	63.2	v	-45.7	9.0	-36.7	-38.8	-13	-25.8	
11248.00	55.8	v	-53.7	10.6	-43.1	-45.2	-13	-32.2	
13120.00	68.3	v	-31.7	11.8	-19.9	-22.0	-13	-9.0	
14998.00	58.7	v	-49.8	11.7	-38.1	-40.2	-13	-27.2	
3749.640	54.1	h	-54.3	8.3	-46.0	-48.1	-13	-35.1	
5624.000	65.8	h	-44.7	8.9	-35.8	-37.9	-13	-24.9	
7499.000	66.7	h	-42.3	9.2	-33.1	-35.2	-13	-22.2	
9373.000	65.0	h	-45.8	9.0	-36.8	-38.9	-13	-25.9	
11248.00	60.0	h	-50.1	10.6	-39.5	-41.6	-13	-28.6	
13120.00	70.1	h	-29.7	11.8	-17.9	-20.0	-13	-7.0	
14998.00	62.62	h	-47.1	11.7	-35.4	-37.5	-13	-24.5	

Note 1:	Pin is the power input (dBm) to the substitution antenna to obtain the field strength recorded from the EUT. G is the gain (dBi) for the substitution antenna.ERP is the effective radiated power (Pin + GdBi - 2.2) from the substitution antenna. EIRP is ca

Run #1b: Output Power (Substitution Method)

			Substitution Note 1				
Frequency	Level	Pol	Pin	Gain	EIRP	ERP	Comment
MHz	dBµV/m	v/h	dBm	dBi	dBm	dBm	
1874.82	127.6	v	24.6	7.0	31.6	29.5	Note 1 and 2
1874.82	126.4	h	19.9	7.0	26.9	24.7	Note 1 and 2

Note 1:	Field Strenght = Measured - reduced by dB = S.A. level that will be measured. The reduced by dB was then added to the signal generators (Pin) level to get the correct output power and then added the Gain (dBi) of the antenna.
Note 2:	Pin is the power input (dBm) to the substitution antenna to obtain the field strength recorded from the EUT. G is the gain (dBi) for the substitution antenna.ERP is the effective radiated power (Pin + GdBi - 2.2) from the substitution antenna. EIRP is ca