

High Channel:

06/14/02 FCC Measurement
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Thu Chan
 Project #: 02U1357
 Company: Palm, Inc.
 EUT Descrip.: 2.4GHZ Bluetooth Handheld Unit
 EUT M/N: M550
 Test Target: FCC 15.247

Equipment for 1.26.5 GHz:

HP8593EM Analyzer
 Miteq NSP2600-44 Preamplifier
 EMCO 3115 Horn Antenna
 ARA MWH 1826/B
 Cable: 15.0 feet

Peak Measurements:

1 MHz Resolution Bandwidth
 1MHz Video Bandwidth

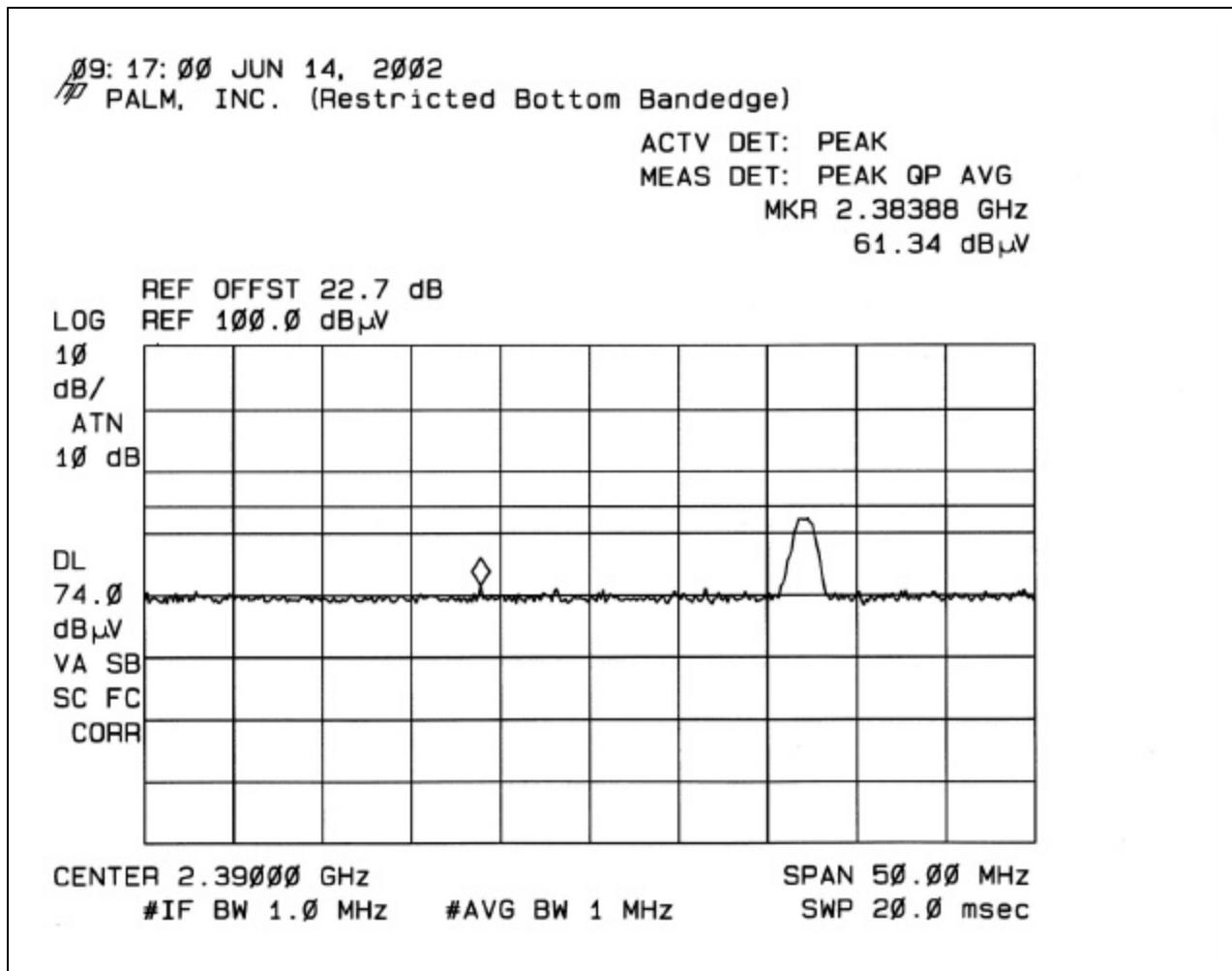
Average Measurements:

1MHz Resolution Bandwidth
 10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
High Channel:															
Fundamental:															
2.480	3.3	52.5	30.0	29.1	3.1	0.0	-9.5	0.0	75.2	52.6	115.0	95.0	-39.8	-42.4	V (Fixed Channel)
2.480	3.3	49.5	29.4	29.1	3.1	0.0	-9.5	0.0	72.2	52.1	115.0	95.0	-42.8	-42.9	H (Fixed Channel)
Top Bandedge:															
2.484	3.3	36.2	24.4	29.1	3.1	0.0	-9.5	0.0	58.9	47.1	74.0	54.0	-15.1	-6.9	V
2.390	3.3	38.5	24.3	28.9	3.1	0.0	-9.5	0.0	61.0	46.8	74.0	54.0	-13.0	-7.2	H
Harmonic & Spurious:															
4.960	3.3	63.7	36.0	34.2	5.8	-36.1	-9.5	1.0	59.2	31.5	74.0	54.0	-14.8	-22.5	V
7.440	3.3	48.5	35.0	37.5	7.4	-36.2	-9.5	1.0	48.6	35.1	74.0	54.0	-25.4	-18.9	V
9.920	3.3	46.2	34.0	40.1	8.7	-35.5	-9.5	1.0	51.0	38.8	74.0	54.0	-23.0	-15.2	V (Noise Floor)
12.400	3.3	47.0	35.0	39.1	9.7	-36.5	-9.5	1.0	50.8	38.8	74.0	54.0	-23.2	-15.2	V (Noise Floor)
14.880	3.3	50.0	37.5	40.6	11.0	-38.4	-9.5	1.0	54.6	42.2	74.0	54.0	-19.4	-11.8	V (Noise Floor)
17.360	3.3	51.0	38.5	44.5	12.5	-38.9	-9.5	1.0	60.7	48.2	74.0	54.0	-13.3	-5.8	V (Noise Floor)
19.840	3.3	51.0	40.5	32.1	13.8	-38.9	-9.5	1.0	49.5	39.0	74.0	54.0	-24.5	-15.0	V (Noise Floor)
22.320	3.3	55.0	42.0	32.4	15.1	-38.9	-9.5	1.0	55.1	42.1	74.0	54.0	-18.9	-11.9	V (Noise Floor)
24.800	3.3	55.0	42.0	32.9	16.9	-39.6	-9.5	1.0	56.6	43.6	74.0	54.0	-17.4	-10.4	V (Noise Floor)
4.960	3.3	62.0	36.0	34.2	5.8	-36.1	-9.5	1.0	57.5	31.5	74.0	54.0	-16.5	-22.5	H
7.440	3.3	48.0	34.5	37.5	7.4	-36.2	-9.5	1.0	48.1	34.6	74.0	54.0	-25.9	-19.4	H
9.920	3.3	46.0	34.0	40.1	8.7	-35.5	-9.5	1.0	50.8	38.8	74.0	54.0	-23.2	-15.2	H (Noise Floor)
12.400	3.3	47.1	35.0	39.1	9.7	-36.5	-9.5	1.0	50.9	38.8	74.0	54.0	-23.1	-15.2	H (Noise Floor)
14.880	3.3	50.0	38.4	40.6	11.0	-38.4	-9.5	1.0	54.6	43.1	74.0	54.0	-19.4	-10.9	H (Noise Floor)
17.360	3.3	51.0	39.0	44.5	12.5	-38.9	-9.5	1.0	60.7	48.7	74.0	54.0	-13.3	-5.3	H (Noise Floor)
19.840	3.3	51.0	40.5	32.1	13.8	-38.9	-9.5	1.0	49.5	39.0	74.0	54.0	-24.5	-15.0	H (Noise Floor)
22.320	3.3	55.0	42.0	32.4	15.1	-38.9	-9.5	1.0	55.1	42.1	74.0	54.0	-18.9	-11.9	H (Noise Floor)
24.800	3.3	55.0	42.0	32.9	16.9	-39.6	-9.5	1.0	56.6	43.6	74.0	54.0	-17.4	-10.4	H (Noise Floor)

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	FSY High Pass Filter (4.57 GHz S/N: 003)		

RESTRICTED BANDEDGE: 2310 – 2390 MHz and 2483.5 – 2500 MHz



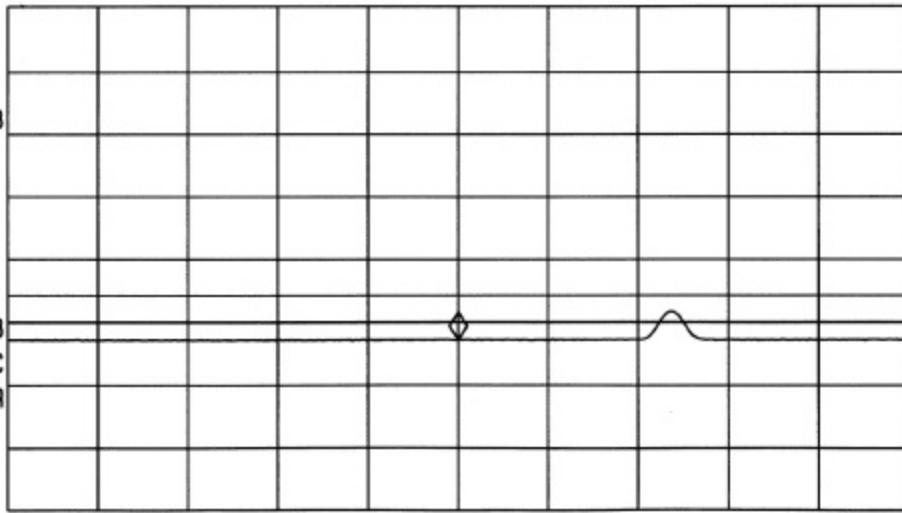
09: 18: 00 JUN 14, 2002
PALM, INC. (Restricted Bottom Bandedge)

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKA 2.39000 GHz
46.99 dB μ V

REF OFFST 22.7 dB
LOG REF 100.0 dB μ V

10
dB/
ATN
10 dB

DL
54.0
dB μ V
VA SB
SC FC
CORR



CENTER 2.39000 GHz

#IF BW 1.0 MHz #AVG BW 10 Hz

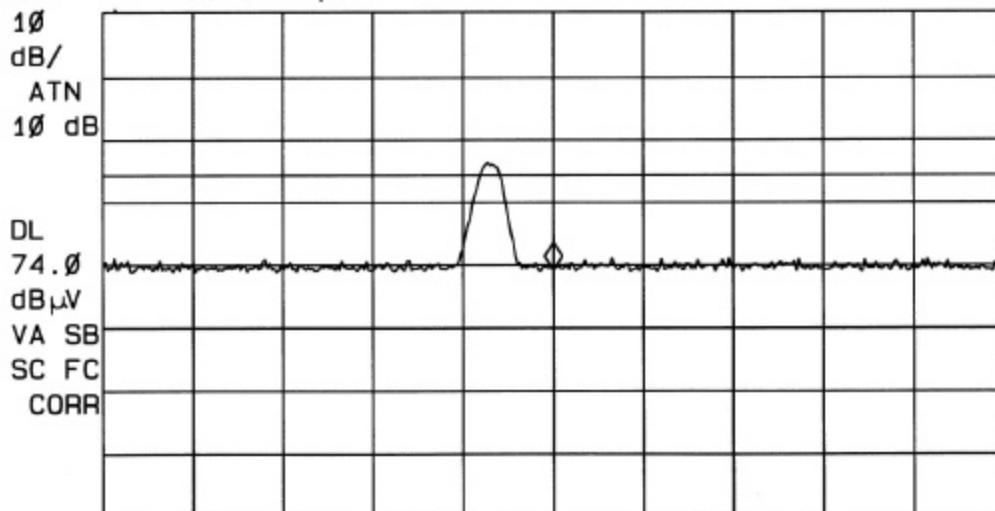
SPAN 50.00 MHz

SWP 15.0 sec

10:35:05 JUN 14, 2002
PALM, INC. (Restricted Top Bandedge)

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.48350 GHz
58.91 dB μ V

REF OFFST 22.7 dB
LOG REF 100.0 dB μ V

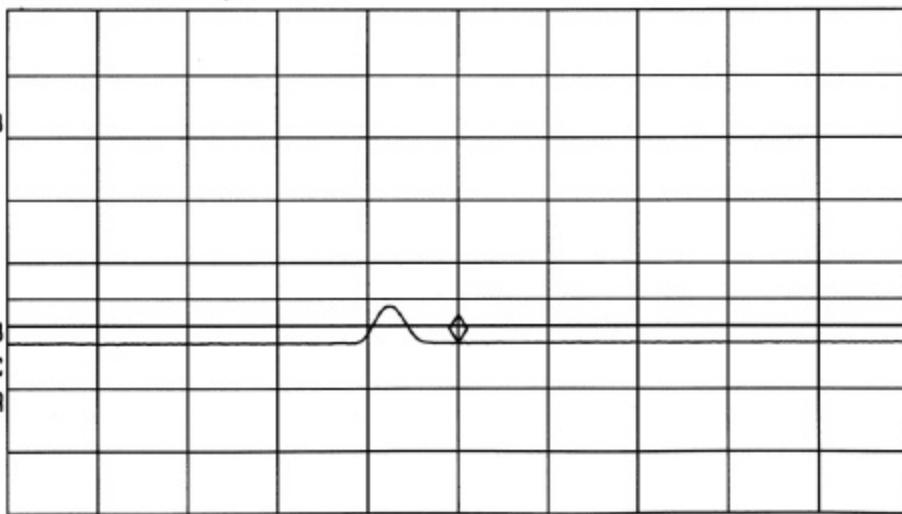


10:37:27 JUN 14, 2002
 PALM, INC. (Restricted Top Bandedge)

ACTV DET: PEAK
 MEAS DET: PEAK QP AVG
 MKR 2.48350 GHz
 47.13 dB μ V

REF OFFST 22.7 dB
 LOG REF 100.0 dB μ V

10
 dB/
 ATN
 10 dB
 DL
 54.0
 dB μ V
 VA SB
 SC FC
 CORR



CENTER 2.48350 GHz

#IF BW 1.0 MHz

SPAN 50.00 MHz

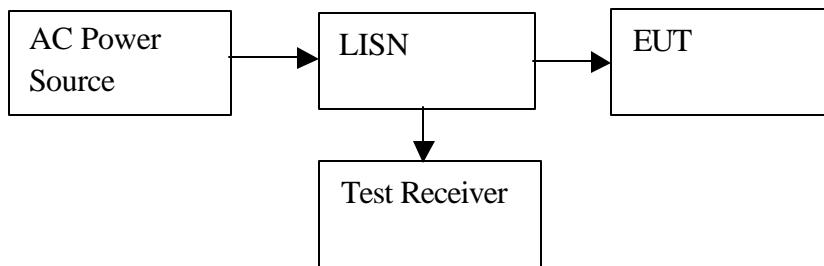
SWP 15.0 sec

9.9 POWER LINE CONDUCTED EMISSION

TEST SETUP

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
450 KHz to 30 MHz	<input type="checkbox"/> Peak <input checked="" type="checkbox"/> Quasi Peak	<input checked="" type="checkbox"/> 10 KHz	<input checked="" type="checkbox"/> 10 KHz



TEST PROCEDURE

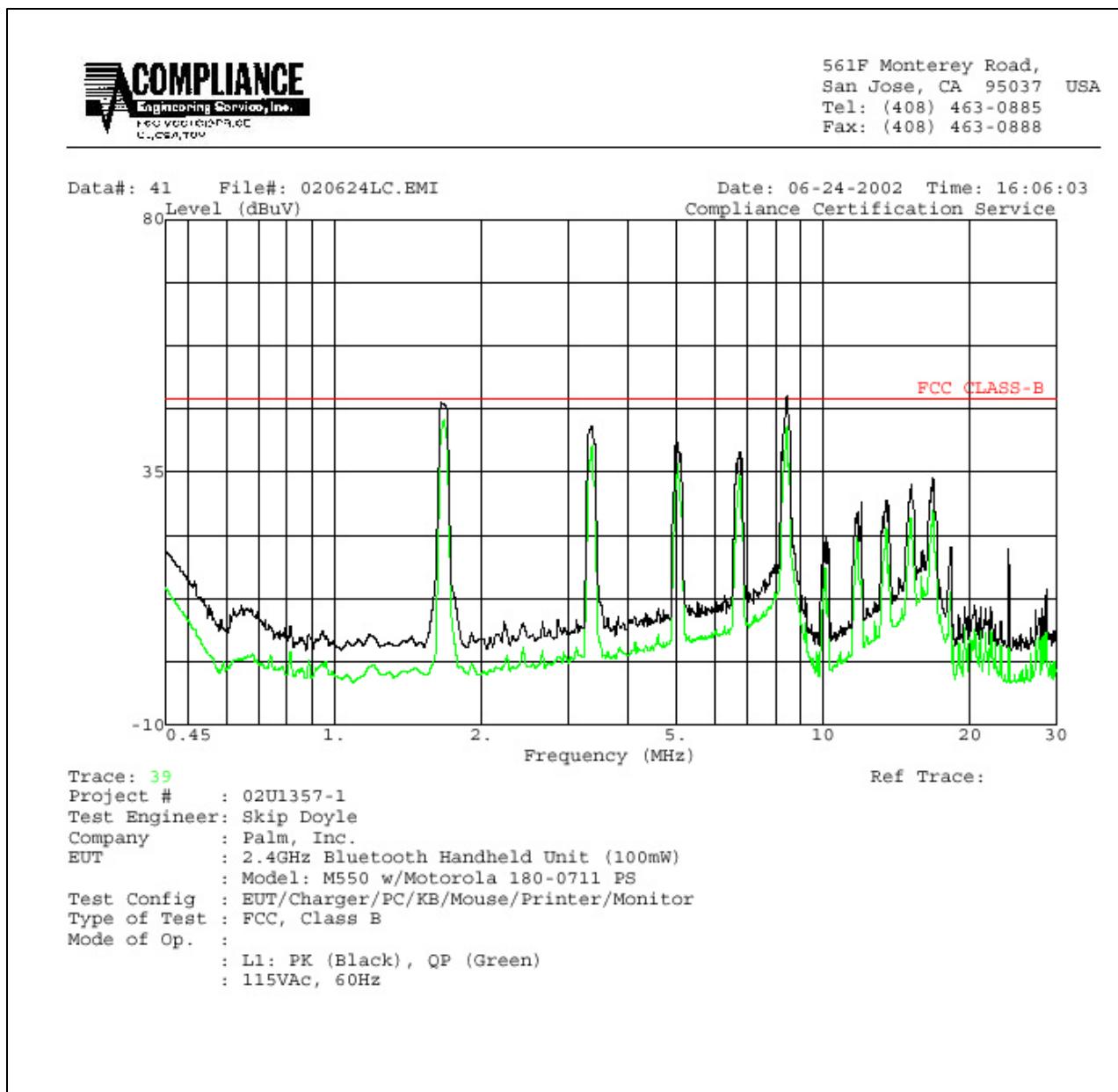
1. The EUT was placed on a wooden table 80 cm above the horizontal ground plane and 40 cm away from the vertical ground plane. The EUT was set to transmit / receive in a continuous mode.
2. Conducted disturbance was measured between the phase lead and the ground, and between the neutral lead and the ground. The frequency 0.450 - 30 MHz was investigated.

RESULT

No non-compliance noted. See Line Conduction plot

FCC 115Vac, 60Hz (Motorola 180-0711 Power Supply):

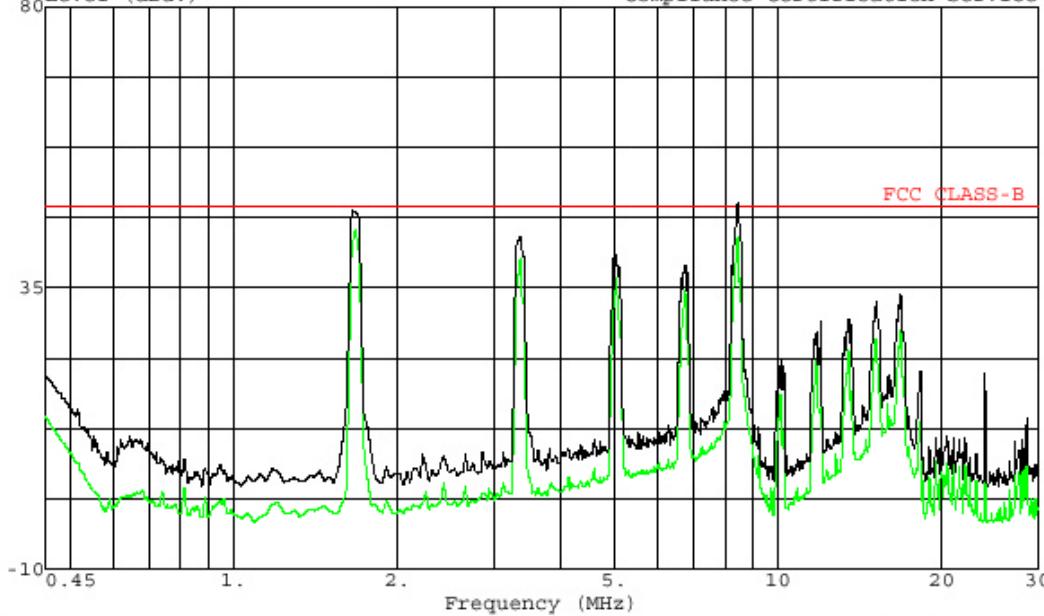
CONDUCTED EMISSIONS DATA (115VAC 60Hz) Motorola 180-0711									
Freq. (MHz)	Reading			Closs (dB)	Limit QP	EN A AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
8.67	47.52	43.19	--	0.00	48.00	--	-4.81	--	L1
1.74	47.35	44.29	--	0.00	48.00	--	-3.71	--	L1
3.36	43.27	39.85	--	0.00	48.00	--	-8.15	--	L1
8.44	48.74	43.32	--	0.00	48.00	--	-4.68	--	L2
1.65	47.57	44.39	--	0.00	48.00	--	-3.61	--	L2
3.36	43.27	39.85	--	0.00	48.00	--	-8.15	--	L2
6 Worst Data									





561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 41 File#: 020624LC.EMI Date: 06-24-2002 Time: 16:06:03
Level (dBuV) Compliance Certification Service



Trace: 39 Ref Trace:
Project #: 02U1357-1
Test Engineer: Skip Doyle
Company: Palm, Inc.
EUT: 2.4GHz Bluetooth Handheld Unit (100mW)
: Model: M550 w/Motorola 180-0711 PS
Test Config: EUT/Charger/PC/KB/Mouse/Printer/Monitor
Type of Test: FCC, Class B
Mode of Op.:
: L2: PK (Black), QP (Green)
: 115VAC, 60Hz

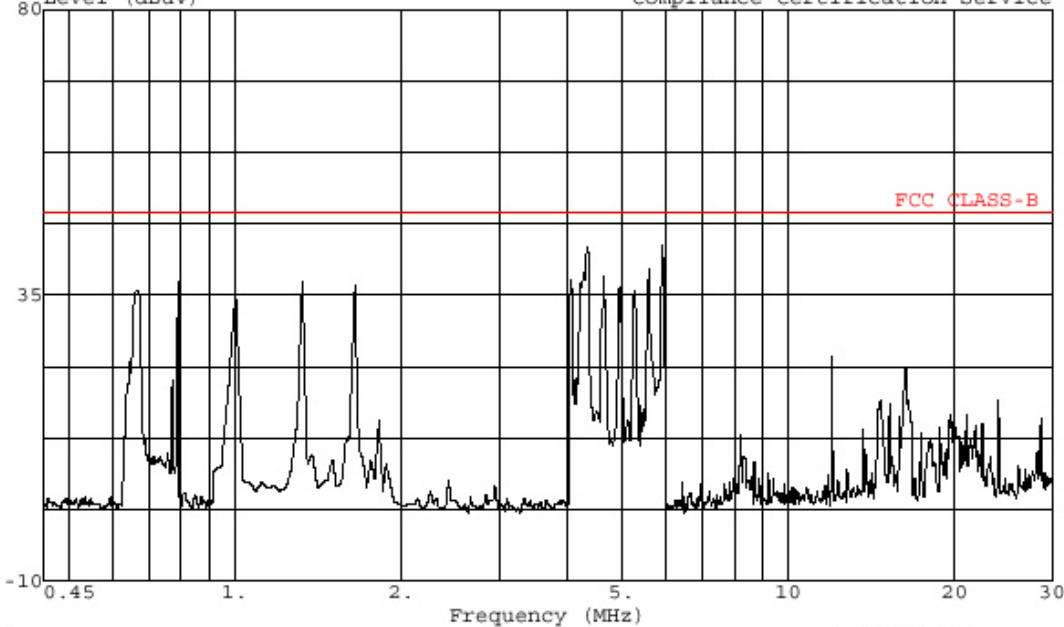
FCC 115Vac, 60Hz (MEIMADA Power Supply):

CONDUCTED EMISSIONS DATA (115VAC 60Hz) MEI MADA-3025-PS									
Freq. (MHz)	Reading			Closs	Limit	FCC_B	Margin		Remark
	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	
5.93	42.77		--	0.00	48.00	--	-5.23	--	L1
4.33	42.49		--	0.00	48.00	--	-5.51	--	L1
5.62	39.15		--	0.00	48.00	--	-8.85	--	L1
3.48	37.58		--	0.00	48.00	--	-10.42	--	L2
1.73	35.39		--	0.00	48.00	--	-12.61	--	L2
5.21	34.82		--	0.00	48.00	--	-13.18	--	L2
6 Worst Data									



561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 47 File#: 020624LC.BMI Date: 06-24-2002 Time: 16:27:44
Level (dBuV) Compliance Certification Service



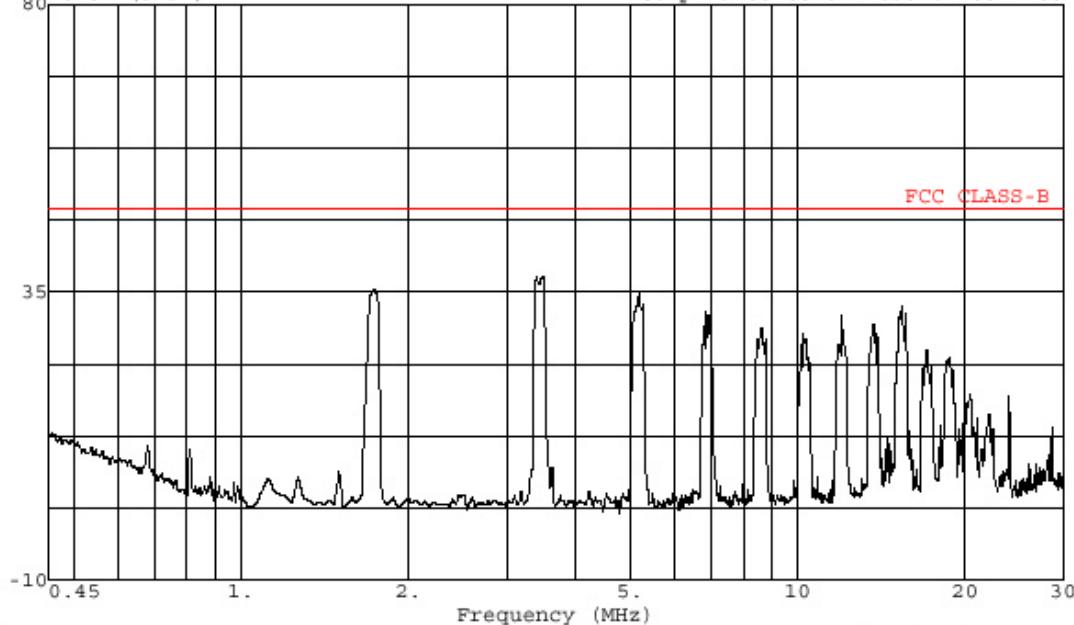
Trace:
 Project # : 02U1357-1
 Test Engineer: Skip Doyle
 Company : Palm, Inc.
 EUT : 2.4GHz Bluetooth Handheld Unit (100mW)
 : Model: M550 w/MEI MADA-3025 PS
 Test Config : EUT/Charger/PC/KB/Mouse/Printer/Monitor
 Type of Test : FCC, Class B
 Mode of Op. :
 : L1: PK (Black)
 : 115VAC, 60Hz

Ref Trace:



561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 54 File#: 020624LC.EMI Date: 06-24-2002 Time: 16:47:54
Level (dBuV) Compliance Certification Service



Trace:
Project # : 02U1357-1
Test Engineer: Skip Doyle
Company : Palm, Inc.
EUT : 2.4GHz Bluetooth Handheld Unit (100mW)
: Model: M550 w/MEI MADA-3025 PS
Test Config : EUT/Charger/PC/KB/Mouse/Printer/Monitor
Type of Test : FCC, Class B
Mode of Op. :
: L2: PK (Black)
: 115VAC, 60Hz

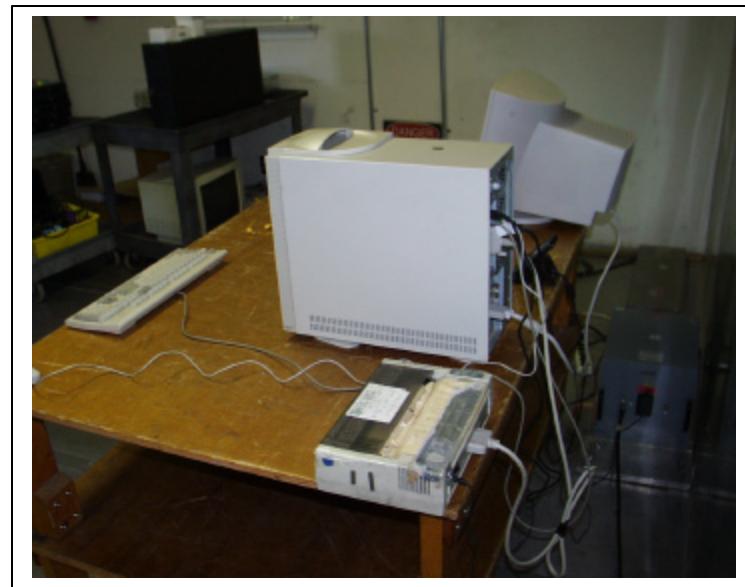
Ref Trace:

9.10 SETUP PHOTOS

Radiated Emission below 1 GHz measurement (15.209)



Conducted Emission measurement (15.207)



Radiated Harmonic & Spurious Emissions measurement



Antenna Port Terminal measurement



END OF REPORT

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