Intentional Radiator Test Report

Test Standards:
FCC Part 15 (Subpart C – Intentional Radiators)
Industry Canada RSS-210, Issue 7

Prepared For:

Socket Mobile, Inc.
39700 Eureka Drive
Newark, CA 94560

Equipment Under Test:
Cordless Hand Scanner

Model:
CORDLESS HAND SCANNER
CHS 7C

Prepared by:

44366 S. Grimmer Blvd.
Fremont, CA 94538
USA

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1.0 CUSTOMER INFORMATION

Test Laboratory: **FCC registration number**	EMCE Engineering 44366 S. Grimmer Blvd. Fremont, CA 94538 USA Tel: 510-490-4307 Fax: 510-490-3441 bob@universalcompliance.com 743299
Customer:	Socket Communications, Inc. 39700 Eureka Drive Newark, CA 94560 Tel: 510-744-2700 Fax:510-744-2701
Contact Person:	Tim Miller
Receipt of EUT:	11/20/09
Test plan reference:	FCC Part 2, 15 (15.247) / IC RSS-210
FCC ID:	**LUBCHS2 Permissive Change II**
IC #:	**2529A-CHS2**
Date of testing:	8/28/11 – 9/05/11
Date of Report:	11/08/11

The tests listed in this report have been completed to demonstrate compliance to the CFR 47 Section 15.247, as well as Industry Canada Radio Standard RSS-210, Issue 7.

Contents approved:


Name: Bob Cole Title: President

2.0 EUT AND ACCESSORY INFORMATION

EUT description

The EUT is a Socket Communications, Inc. **Cordless Hand Scanner, M/N: CORDLESS HAND SCANNER 7Xi / 7XRxi.**

Model Numbers Represented

8550-00036 / 8550-00047

EUT and accessories

The table below lists all EUTs and accessories used in the tests. Later in this report, only numbers in the last column are used to refer to the devices in each test.

Software

The computers were equipped with test software provided by the customer. The software was used to control the EUT in the tests.

	Name	Type	S/N	Number
EUT	**CHS**	**CORDLESS RING SCANNER 7Xi / 7XRxi**	N/A	E0001
Accessories	Laptop Computer	HP M/N: dv4000	3882A744	S0001
Software	CRS	BlueTest 3.0	N/A	N/A

EUT Information

Product Specification	Description
Model Name	CORDLESS HAND SCANNER 7Xi / 7XRxi
Type of Modulation	FHSS
Number of Channels	79
Operating Frequency Range	2480 – 2483.5 MHz
Type of Equipment	Portable
Extreme Operating Temperature Range	-20 C – 55 C
Extreme Operating Voltage Range	N/A
Type of Antenna	Integral
Antenna Gain (dBi)	-3.0
Transmitter Method of Frequency Generation	Synthesized
Transmitter Aggregate Data Rate	>250kbps
Transmitter Duty Type	Intermittant
Continuous Operation for Testing Purposes?	Yes
Transmit Emissions Designator	1M0G1D

3.0 SUMMARY OF TEST RESULTS

CFR 47, 15.247:2007 Section	RSS 210 Issue 7:2007 Section	Description	Results
15.203		Antenna Requirement	N/A
15.205	RSS 210(A8.5)	Restricted Band of Operation	N/A
15.207a	RSS Gen 7.2.2	Conducted Emission Voltage	N/A
15.247a(1)	RSS 210(A8.1)	Channel Separation	N/A
15.247a(1)	RSS 210(A8.1)	Occupied Bandwidth	N/A
15.247a(2)	RSS 210(A8.2)	Bandwidth	N/A
15.247a(1)	RSS 210(A8.1)	Number of Hopping Channels	N/A
15.247a(1)	RSS 210(A8.1)	Time of Occupancy	N/A
15.247b	RSS 210(A8.4)	Output Power	N/A
15.247c	RSS 210(A8.4)	Antenna Gain >6 dB	N/A
15.247d	RSS 210(A8.5)	Conducted Spurious Emissions	N/A
15.247d: 15.209	RSS 210(A8.5)	Radiated Spurious Emissions	PASSED
15.247e	RSS 210(A8.3)	Power Spectral Density	N/A
15.247f	RSS 210(A8.3)	Hybrid System Requirement	N/A
15.247g	RSS 210(A8.1)	Hopping Capability	N/A
15.247h	RSS 210(A8.1)	Hopping Coordination Requirement	N/A
15.247i	RSS Gen(5.5)	RF Exposure Requirement	N/A
	RSS Gen(4.8)	Receiver Spurious Emissions	PASSED

PASS The EUT passed that particular test.
FAIL The EUT failed that particular test.
N/A Not Applicable due to product type.

4.0 STANDARDS AND MEASUREMENT METHODS

The tests were performed in guidance of CFR 47 section 15.247, FCC Public Notice DA 00-705 (March 30, 2000), FCC Report & Order 97-114 (April 10, 1997), Industry Canada RSS-210 Issue 7, and ANSI C63.4 (2003). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method". For the test equipment, see device list in the end of this test.

4.1 Selection of operation mode for tests

Before tests, several operation modes, and modulation patterns were tried. The worst case was selected for each test and those results reported.

5.0 TEST SETUPS

To fulfill all requirements for the testing, total of two different test setups were used. One EUT was used, unmodified for radiated tests.

SMA connector added in place of internal antenna for Antenna Conducted measurements.

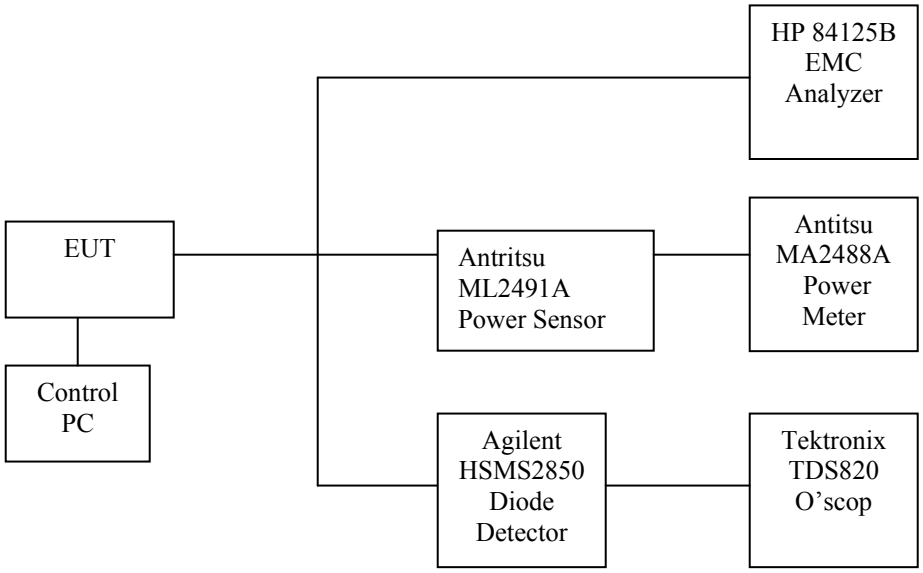
Setup A (Antenna Conducted measurements)

Operational description

ANTENNA CONDUCTED EMISSIONS MEASUREMENTS

The EUT was connected to the Laptop Computer through the serial port (COM1), the antenna bypassed and the SMA Cable connected to the Spectrum Analyzer. This setup was used for the ***PEAK POWER OUTPUT, POWER DENSITY, 20 dB BW, BAND-EDGE COMPLIANCE, and RESTRICTED BAND*** measurements.

Block Diagram



The solid lines are coaxial cables and the dashed lines are either EUT insertion to the test board or control cables between test setup devices. The measurement results were adjusted with the attenuation of the coaxial cable.

Setup B (Radiated measurements)

Operational description

RADIATED EMISSIONS MEASUREMENTS

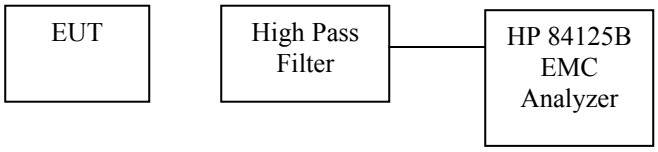
This setup was used in radiated emissions measurements.

The EUT was tested in 3 orthogonal orientations.

Worst case data is presented.

THIS SETUP USED FOR ***RADIATED SPURIOUS EMISSIONS***

Block diagram



Note: The high –pass filter is used for the Radiated Spurious emissions above 2.4835 GHz. A pass-thru connector is used for Radiated Spurious emissions measurements from 30 MHz – 2.4 GHz.

The solid lines are coaxial cables and the dashed lines are either EUT insertion to the test board or control cables between test setup devices.

6.0 ENGINEERING EVALUATION RESULTS

6.1 Antenna Requirement

Requirement(s): CFR47, 15.203:

An intentional radiator shall be designed such that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna requirement must meet one of the following:

- Antenna must be permanently attached to the device.
- Antenna must use unique type of connector to attach to the device.
- Device must be professionally installed. Installer shall be responsible for insuring the the correct antenna is installed with the device.

The antenna is a printed trace, integral to the PCB.

Antenna Gain (max) is -3.0 in the 2400 – 2483.5 MHz band.

6.2 Conducted Emissions Voltage

Requirement(s): CFR47, 15.207a, RSS Gen 7.2.2

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

CFR47, 15.207c Waives the requirement for battery powered devices:

Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

AC Line Conducted Emissions Measurement 150 kHz – 30 MHz

EUT	**CORDLESS HAND SCANNER 7Xi / 7XRxi**
Test setup	
Temp, Humidity, Air Pressure	
Date of Measurement	
Measured by	Bob Cole
Result	

CLASS B LIMIT

Frequency Band (MHz)	EN 55022 B Limit (dBµV/m)	Detector
0.15 – 0.5	66 to 56	QP
0.5 – 5.0	56	QP
5.0 – 30.0	60	QP

Not Applicable – Battery Powered EUT

6.3 Radiated Emissions – Restricted Bands

Requirement(s): CFR47, 15.247(d), 15.209, RSS210(2.2, A8.5)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. **In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).**

Restricted Band Measurements

EUT	**CORDLESS HAND SCANNER 7Xi / 7XRxi**
Test setup	B (Radiated)
Temp, Humidity, Air Pressure	74º F, 30.02
Date of Measurement	8/31/11
Measured by	Bob Cole
Result	PASSED

Restricted Band Measurements were taken, using a Peak detector, over the frequency band of 30 - 1000 MHz, and using an Average Detector over the bands of 1000 – 2400 MHz, and 2483.5 – 25000 MHz, in both horizontal and vertical polarizations. All measurements were repeated with the EUT operating at 2402, 2441, and 2480 MHz.

Worst case data is presented in this report.

Restricted Band Spurious Radiated Emissions
Transmit Frequency 2480Hz

30 - 1000 MHz
PEAK DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **EN55022B RADIATED**
Work Order #: **3568** Date: 10/28/2011
Test Type: **Radiated Scan** Time: 16:49:51
Equipment: **Cordless Hand Scanner** Sequence#: 20
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

2480 MHz

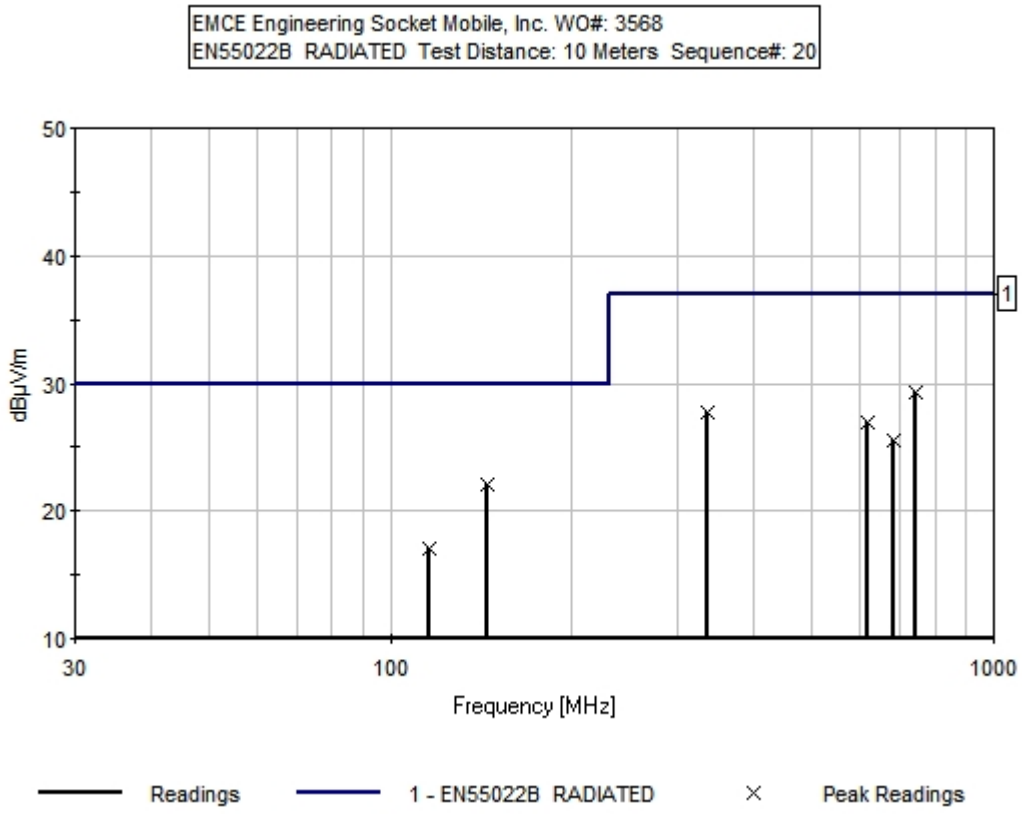
Transducer Legend:

T1=75' LMR Cable to 1 GHz T2=8447 Pre-Amp Asset 377
T3=Sunol JB6 S/N A42610

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	744.210M	32.4	+2.7	+27.0	+21.2		+0.0 104	29.3	37.0	-7.7	Horiz 185
2	144.330M	34.8	+1.1	+26.7	+12.9		+0.0 92	22.1	30.0	-7.9	Vert 125
3	336.100M	38.9	+1.8	+27.0	+14.1		+0.0 277	27.8	37.0	-9.2	Horiz 174
4	617.260M	32.0	+2.3	+27.0	+19.7		+0.0 189	27.0	37.0	-10.0	Vert 128
5	682.440M	30.9	+2.3	+27.0	+19.4		+0.0 188	25.6	37.0	-11.4	Horiz 112
6	116.200M	36.0	+0.5	+26.9	+7.5		+0.0 177	17.1	30.0	-12.9	Vert 244


EMCE Engineering Socket Mobile, Inc. WO#: 3568
EN55022B RADIATED Test Distance: 10 Meters Sequence#: 20
50
40
30
20
10
dBµV/m
1
30
100
1000
Frequency [MHz]
Readings
1 - EN55022B RADIATED
Peak Readings

Restricted Band Spurious Radiated Emissions
Transmit Frequency 2402 MHz
1000 - 2400 MHz
AVERAGE DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC Rad Restricted Band 1000 - 2400**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 11:44:05 AM
Equipment: **Cordless Hand Scanner** Sequence#: 21
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

2402 MHz

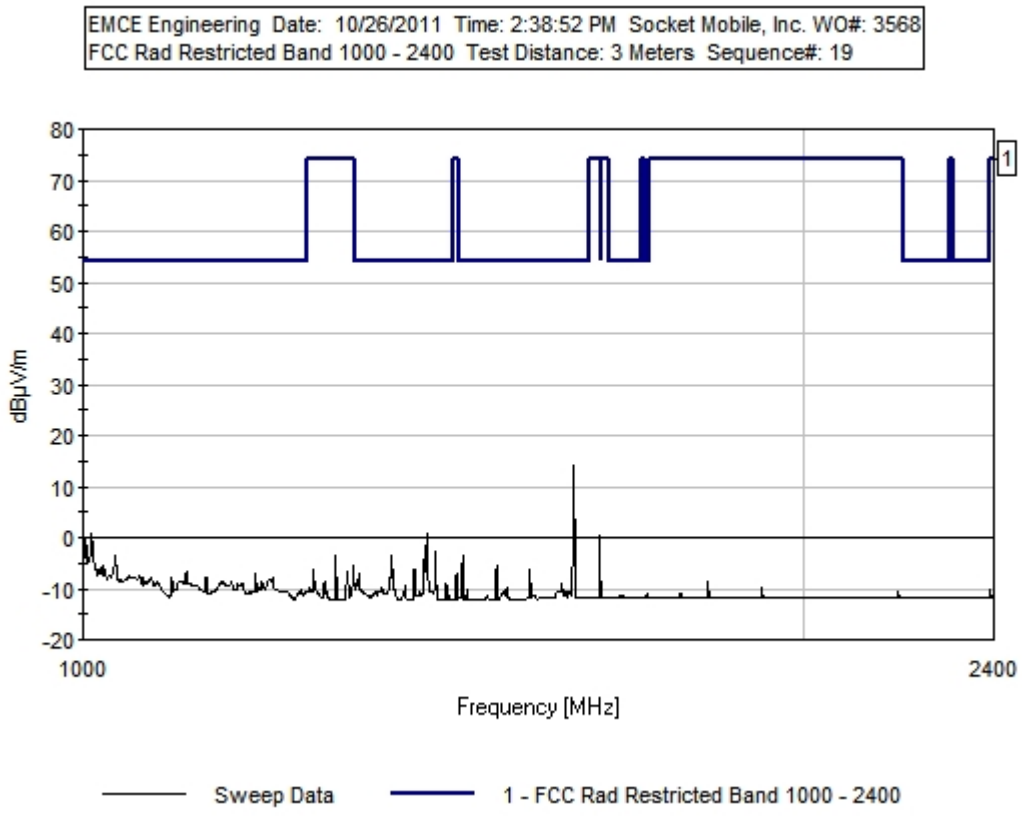
Transducer Legend:

T1=25' LMR #001

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1602.179M	42.5	+1.2				-10.0	33.7	54.0	-20.3	Vert
2	1008.493M	25.3	+1.0				-10.0	16.3	54.0	-37.7	Vert
3	1389.117M	24.6	+0.9				-10.0	15.5	54.0	-38.5	Vert
4	1002.548M	24.0	+1.0				-10.0	15.0	54.0	-39.0	Vert
5	1392.132M	23.4	+0.9				-10.0	14.3	54.0	-39.7	Vert
6	1031.424M	22.0	+1.0				-10.0	13.0	54.0	-41.0	Vert


EMCE Engineering Date: 10/26/2011 Time: 2:38:52 PM Socket Mobile, Inc. WO#: 3568
FCC Rad Restricted Band 1000 - 2400 Test Distance: 3 Meters Sequence#: 19
80
70
60
50
40
30
20
10
0
-10
-20
dBµV/m
1
1000
2400
Frequency [MHz]
Sweep Data
1 - FCC Rad Restricted Band 1000 - 2400

Restricted Band Spurious Radiated Emissions
Transmit Frequency 2402 MHz

2483.5 - 25000 MHz
AVERAGE DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC 15.209 Average Limits**
Work Order #: **3568** Date: 10/28/2011
Test Type: **Radiated Scan** Time: 10:20:21 AM
Equipment: **Cordless Hand Scanner** Sequence#: 35
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

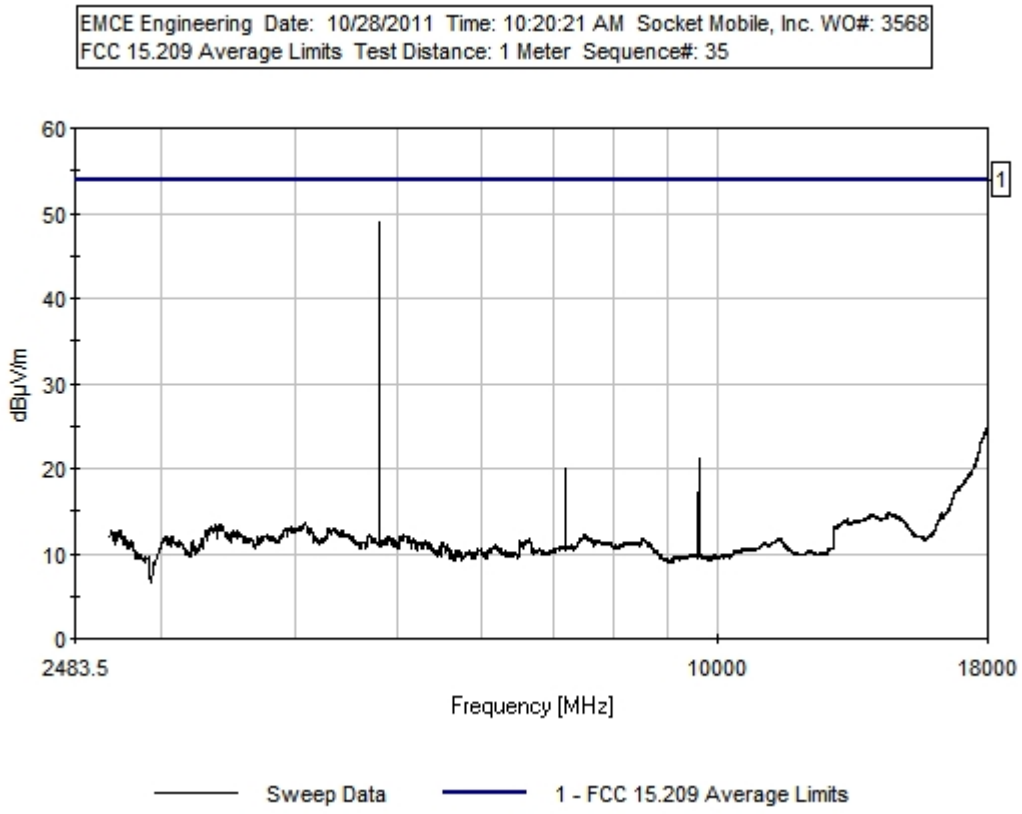
2402 MHz

Transducer Legend:

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	4806.162M	58.9					-10.0	48.9	54.0	-5.1	Vert
2	17972.900M	35.0					-10.0	25.0	54.0	-29.0	Vert
3	9609.643M	31.1					-10.0	21.1	54.0	-32.9	Vert
4	17493.440M	30.4					-10.0	20.4	54.0	-33.6	Vert
5	7207.149M	30.0					-10.0	20.0	54.0	-34.0	Vert
6	16893.940M	27.8					-10.0	17.8	54.0	-36.2	Vert


EMCE Engineering Date: 10/28/2011 Time: 10:20:21 AM Socket Mobile, Inc. WO#: 3568
FCC 15.209 Average Limits Test Distance: 1 Meter Sequence#: 35
60
50
40
30
20
10
0
dBµV/m
1
2483.5
10000
18000
Frequency [MHz]
Sweep Data
1 - FCC 15.209 Average Limits

Restricted Band Spurious Radiated Emissions
Transmit Frequency 2402 MHz

1000 - 2400 MHz
PEAK DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC Peak 1000 - 2400**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 11:52:25 AM
Equipment: **Cordless Hand Scanner** Sequence#: 23
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

2402 MHz

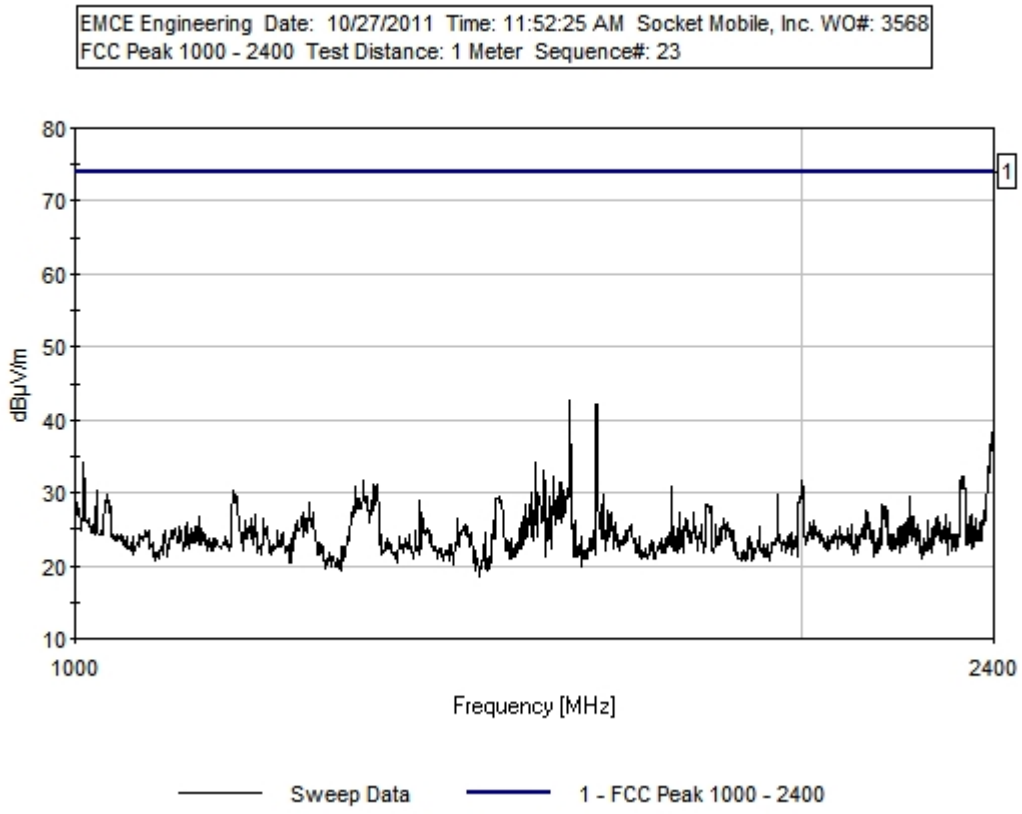
Transducer Legend:

T1=25' LMR #001

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1603.184M	51.6	+1.2				-10.0	42.8	74.0	-31.2	Vert
2	1643.385M	51.0	+1.2				-10.0	42.2	74.0	-31.8	Vert
3	2399.351M	48.3	+1.3				-10.0	39.6	74.0	-34.4	Vert
4	1550.924M	43.1	+1.1				-10.0	34.2	74.0	-39.8	Vert
5	1008.493M	43.1	+1.0				-10.0	34.1	74.0	-39.9	Vert
6	1562.984M	42.0	+1.1				-10.0	33.1	74.0	-40.9	Vert


EMCE Engineering Date: 10/27/2011 Time: 11:52:25 AM Socket Mobile, Inc. WO#: 3568
FCC Peak 1000 - 2400 Test Distance: 1 Meter Sequence#: 23
80
70
60
50
40
30
20
10
dBµV/m
1
1000
2400
Frequency [MHz]
Sweep Data
1 - FCC Peak 1000 - 2400

Restricted Band Spurious Radiated Emissions
Transmit Frequency 2441 MHz

2483.5 - 25000 MHz
PEAK DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC 15.209 Peak Limits**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 12:48:25 PM
Equipment: **Cordless Hand Scanner** Sequence#: 30
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

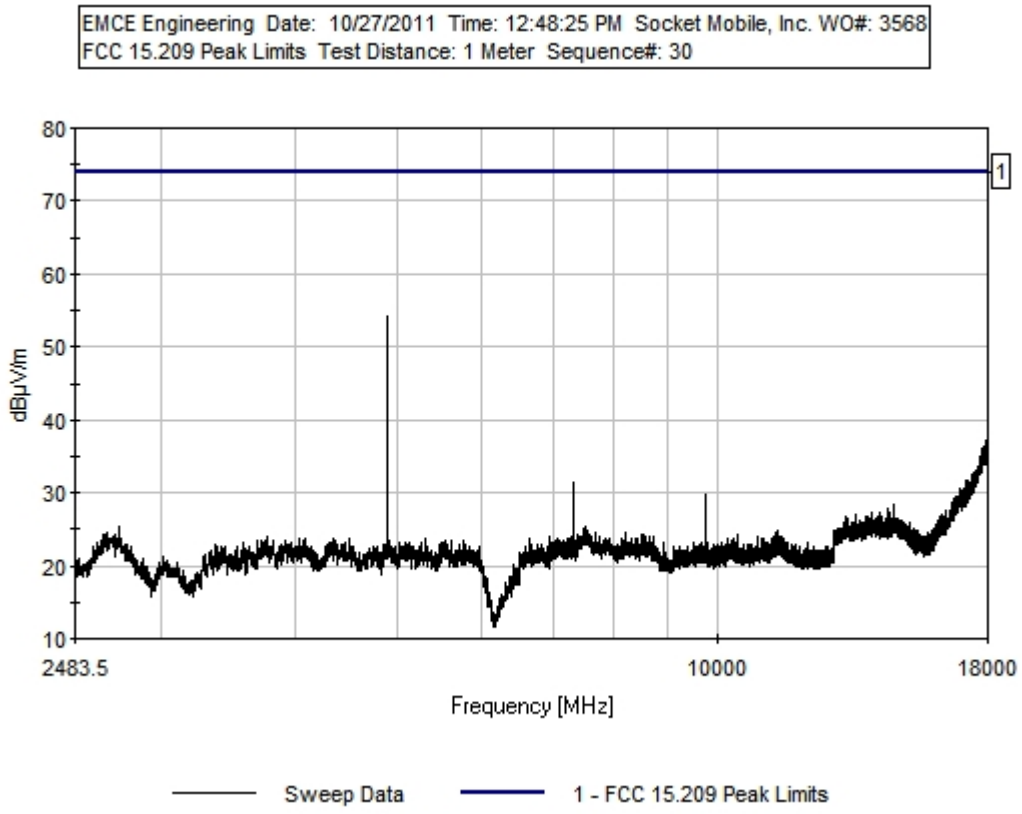
2441 MHz

Transducer Legend:

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	4884.487M	64.2					-10.0	54.2	74.0	-19.8	Vert
2	17903.920M	47.2					-10.0	37.2	74.0	-36.8	Vert
3	17833.700M	46.3					-10.0	36.3	74.0	-37.7	Vert
4	17881.740M	46.2					-10.0	36.2	74.0	-37.8	Vert
5	17804.140M	46.1					-10.0	36.1	74.0	-37.9	Vert
6	17754.870M	46.0					-10.0	36.0	74.0	-38.0	Vert


EMCE Engineering Date: 10/27/2011 Time: 12:48:25 PM Socket Mobile, Inc. WO#: 3568
FCC 15.209 Peak Limits Test Distance: 1 Meter Sequence#: 30
80
70
60
50
40
30
20
10
dBµV/m
1
2483.5
10000
18000
Frequency [MHz]
Sweep Data
1 - FCC 15.209 Peak Limits

Restricted Band Spurious Radiated Emissions

RX MODE

1000 - 2400 MHz
PEAK DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC Peak 1000 - 2400**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 12:09:38 PM
Equipment: **Cordless Hand Scanner** Sequence#: 26
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

RX Mode

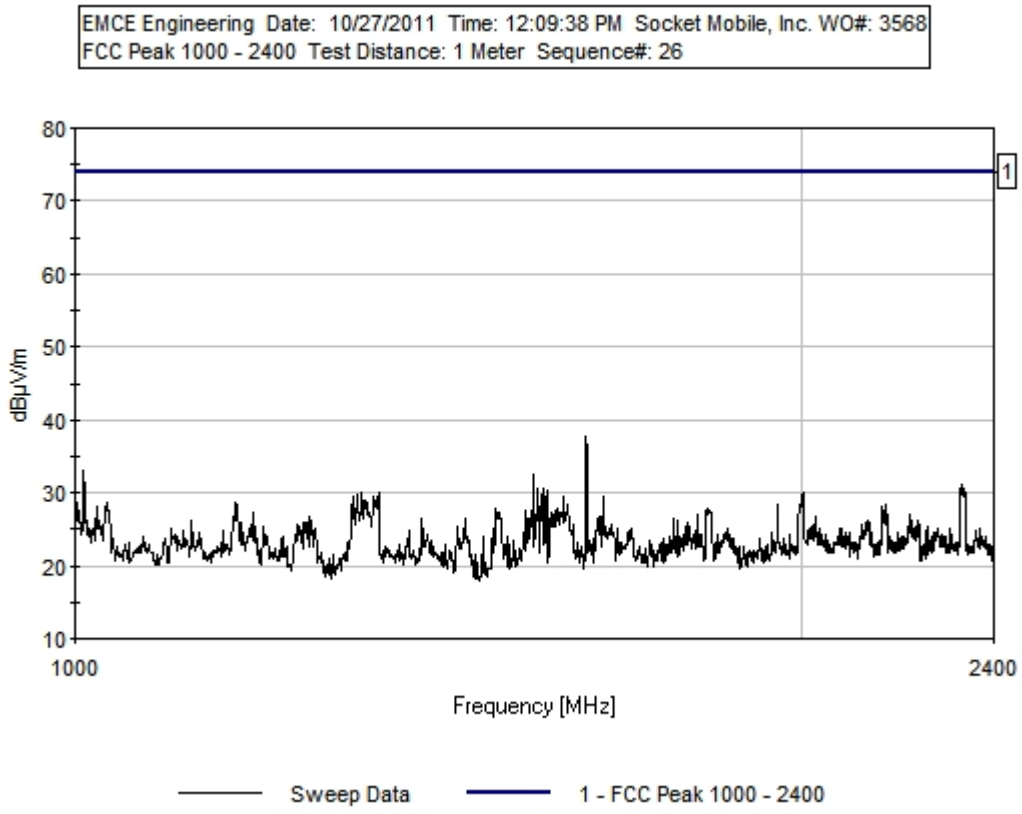
Transducer Legend:

T1=25' LMR #001

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1627.304M	46.6	+1.2				-10.0	37.8	74.0	-36.2	Vert
2	1008.493M	42.0	+1.0				-10.0	33.0	74.0	-41.0	Vert
3	1547.908M	41.5	+1.0				-10.0	32.5	74.0	-41.5	Vert
4	2329.209M	39.9	+1.2				-10.0	31.1	74.0	-42.9	Vert
5	1554.944M	39.6	+1.1				-10.0	30.7	74.0	-43.3	Vert
6	1561.979M	39.4	+1.1				-10.0	30.5	74.0	-43.5	Vert


EMCE Engineering Date: 10/27/2011 Time: 12:09:38 PM Socket Mobile, Inc. WO#: 3568
FCC Peak 1000 - 2400 Test Distance: 1 Meter Sequence#: 26
80
70
60
50
40
30
20
10
dBµV/m
1
1000
2400
Frequency [MHz]
Sweep Data
1 - FCC Peak 1000 - 2400

Restricted Band Spurious Radiated Emissions

RX MODE

1000 - 2400 MHz
AVERAGE DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC 15.209 Average Limits**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 2:29:08 PM
Equipment: **Cordless Hand Scanner** Sequence#: 33
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

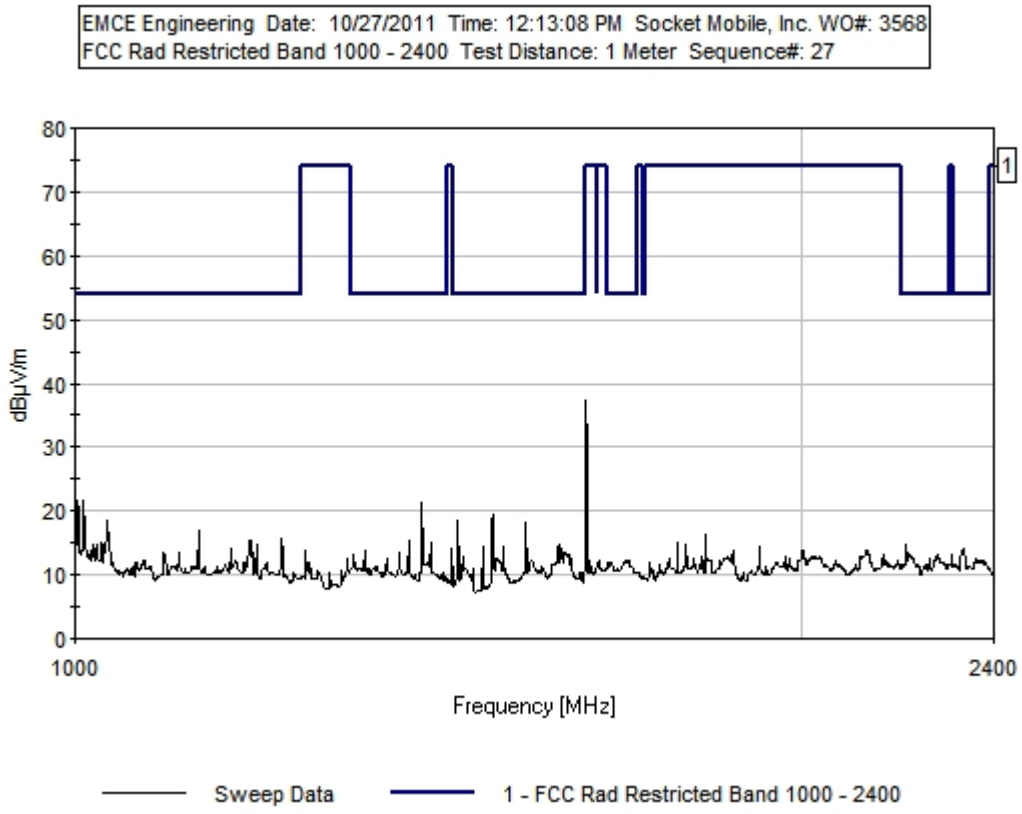
RX Mode

Transducer Legend:

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	17983.990M	34.8					-10.0	24.8	54.0	-29.2	Vert
2	17499.460M	30.2					-10.0	20.2	54.0	-33.8	Vert
3	16898.460M	27.7					-10.0	17.7	54.0	-36.3	Vert
4	14503.500M	24.9					-10.0	14.9	54.0	-39.1	Vert
5	16289.930M	24.8					-10.0	14.8	54.0	-39.2	Vert
6	13983.840M	24.5					-10.0	14.5	54.0	-39.5	Vert


EMCE Engineering Date: 10/27/2011 Time: 12:13:08 PM Socket Mobile, Inc. WO#: 3568
FCC Rad Restricted Band 1000 - 2400 Test Distance: 1 Meter Sequence#: 27
80
70
60
50
40
30
20
10
0
dBµV/m
1
1000
2400
Frequency [MHz]
Sweep Data
1 - FCC Rad Restricted Band 1000 - 2400

Restricted Band Spurious Radiated Emissions

RX MODE

2483.5 - 25000 MHz
PEAK DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC 15.209 Average Limits**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 2:29:08 PM
Equipment: **Cordless Hand Scanner** Sequence#: 33
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

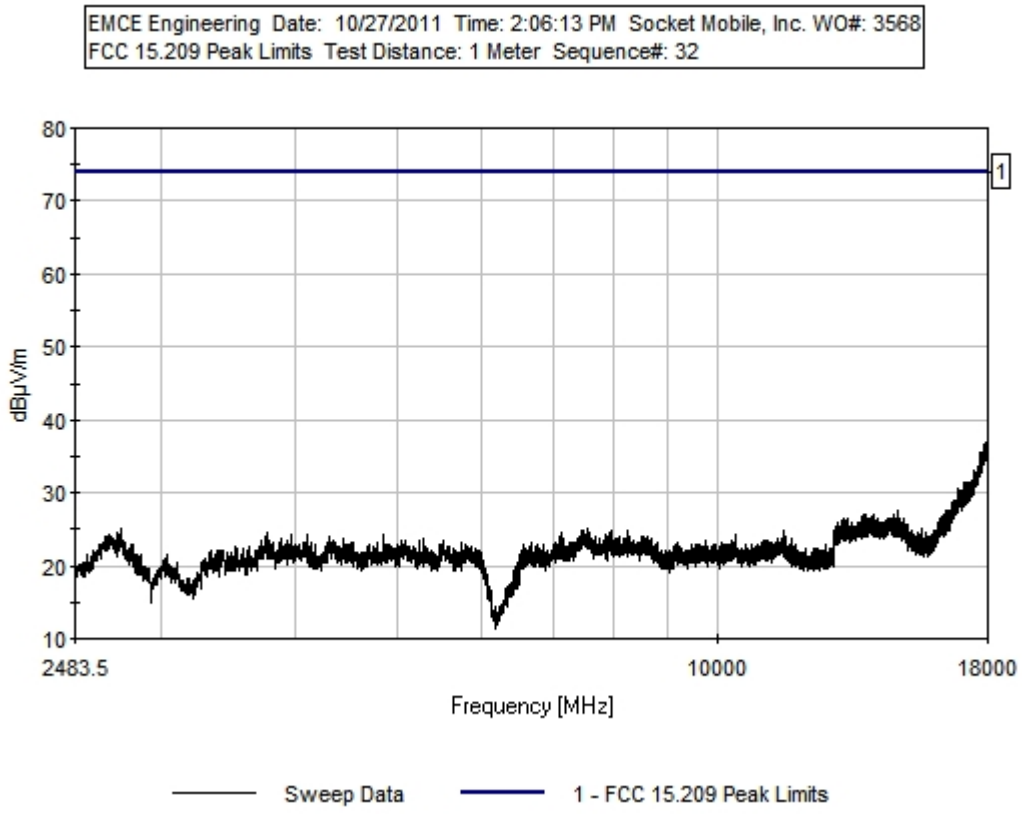
RX Mode

Transducer Legend:

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	17983.990M	34.8					-10.0	24.8	54.0	-29.2	Vert
2	17499.460M	30.2					-10.0	20.2	54.0	-33.8	Vert
3	16898.460M	27.7					-10.0	17.7	54.0	-36.3	Vert
4	14503.500M	24.9					-10.0	14.9	54.0	-39.1	Vert
5	16289.930M	24.8					-10.0	14.8	54.0	-39.2	Vert
6	13983.840M	24.5					-10.0	14.5	54.0	-39.5	Vert


EMCE Engineering Date: 10/27/2011 Time: 2:06:13 PM Socket Mobile, Inc. WO#: 3568
FCC 15.209 Peak Limits Test Distance: 1 Meter Sequence#: 32
80
70
60
50
40
30
20
10
dBµV/m
1
2483.5
10000
18000
Frequency [MHz]
Sweep Data
1 - FCC 15.209 Peak Limits

Restricted Band Spurious Radiated Emissions

RX MODE

2483.5 - 25000 MHz
Average DETECTOR

Test Location: EMCE Engineering •44366 S. Grimmer Blvd • Fremont, CA 94538 • 510-490-4307

Customer: **Socket Mobile, Inc.**
Specification: **FCC 15.209 Average Limits**
Work Order #: **3568** Date: 10/27/2011
Test Type: **Radiated Scan** Time: 2:29:08 PM
Equipment: **Cordless Hand Scanner** Sequence#: 33
Manufacturer: Socket Mobile Tested By: Bob Cole
Model: CHS 7C
S/N:

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 84125B RF Measurement System	2542A11087	05/17/2011	05/17/2012	001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Cordless Hand Scanner*	Socket Mobile	CHS 7C	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

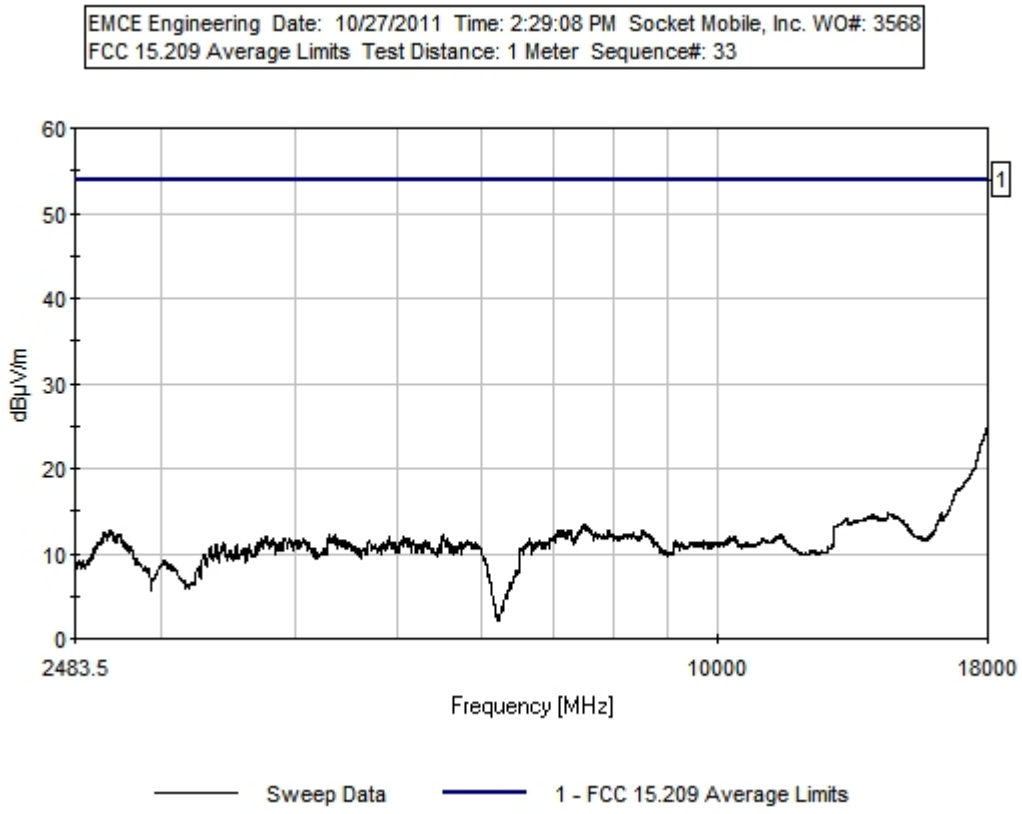
RX Mode

Transducer Legend:

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	17983.990M	34.8					-10.0	24.8	54.0	-29.2	Vert
2	17499.460M	30.2					-10.0	20.2	54.0	-33.8	Vert
3	16898.460M	27.7					-10.0	17.7	54.0	-36.3	Vert
4	14503.500M	24.9					-10.0	14.9	54.0	-39.1	Vert
5	16289.930M	24.8					-10.0	14.8	54.0	-39.2	Vert
6	13983.840M	24.5					-10.0	14.5	54.0	-39.5	Vert


EMCE Engineering Date: 10/27/2011 Time: 2:29:08 PM Socket Mobile, Inc. WO#: 3568
FCC 15.209 Average Limits Test Distance: 1 Meter Sequence#: 33
60
50
40
30
20
10
0
dBµV/m
1
2483.5
10000
18000
Frequency [MHz]
Sweep Data
1 - FCC 15.209 Average Limits