



Test Report:

5W38286

Applicant:

Mitel Networks Corporation
350 Legget Drive
Kanata, Ontario
K2K 2W7

**Equipment Under Test:
(EUT)**

Verizon One Phone Handset

In Accordance With:

FCC Part 15.247, Subpart C
FHSS System and Digitally Modulated Radiators
902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz

Tested By:

Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

Sim Jagpal, Resource Manager

Date:

18 February 2005

Total Number of Pages:

24

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EQUIPMENT: Verizon One Phone Handset

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See "Summary of Test Data".



TESTED BY: _____
Jason Nixon, Telecom Specialist

DATE: 18 February 2005

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This report applies only to the items tested.

EQUIPMENT: Verizon One Phone Handset

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207(a)	N/A (1)
6dB Bandwidth	15.247(a)(2)	N/A (2)
20 dB Bandwidth	15.247(a)(1)(ii)	Complies
Number of Hopping Channels	15.247(a)(1)(ii)	Complies
Occupancy Time	15.247(f)	Complies
Minimum Channel Separation	15.247(a)(1)	Complies
Peak Output Power	15.247(b)(1)	Complies
Spurious Emissions (Antenna Conducted)	15.247(c)	N/A(3)
Spurious Emissions (Radiated)	15.247(c)	Complies
Peak Power Spectral Density	15.247(d)	N/A(2)

Footnotes For N/A's:

- 1) The EUT is battery operated.
- 2) The EUT is not a digitally modulated system.
- 3) The EUT contained an integral antenna, therefore a conducted measurement was not possible.

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 21%

Outdoor Temperature: 10°C
 Humidity: 47%

EQUIPMENT: Verizon One Phone Handset

Section 2. General Equipment Specification

Manufacturer: Verizon for Mitel

Model No.: A90-VZ1015-06

Serial No.: 04B412000471

Date Received In Laboratory: February 10, 2005

Nemko Identification No.: 6

Band of Operation: 5725-5850MHz

Operating Frequency of EUT: 5725.809323-5848.888935MHz

Peak Output Power (measured): 10.2dBm

Modulation: EDCT FHSS

Antenna Gain: 3dBi

EQUIPMENT: Verizon One Phone Handset

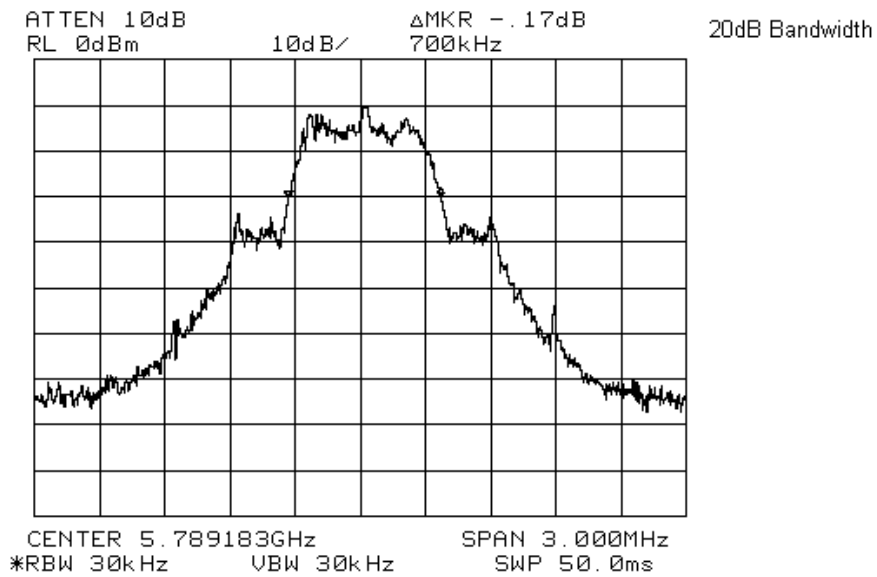
Section 3. 20 dB Bandwidth

Para. No.: 15.247(a) (1)(ii)

Test Performed By: Jason Nixon	Date of Test: February 16, 2005
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Limit: $\leq 1\text{MHz}$

Measurement Data: 700kHz



EQUIPMENT: Verizon One Phone Handset

Section 4. Occupancy Time

Para. No.: 15.247(f)

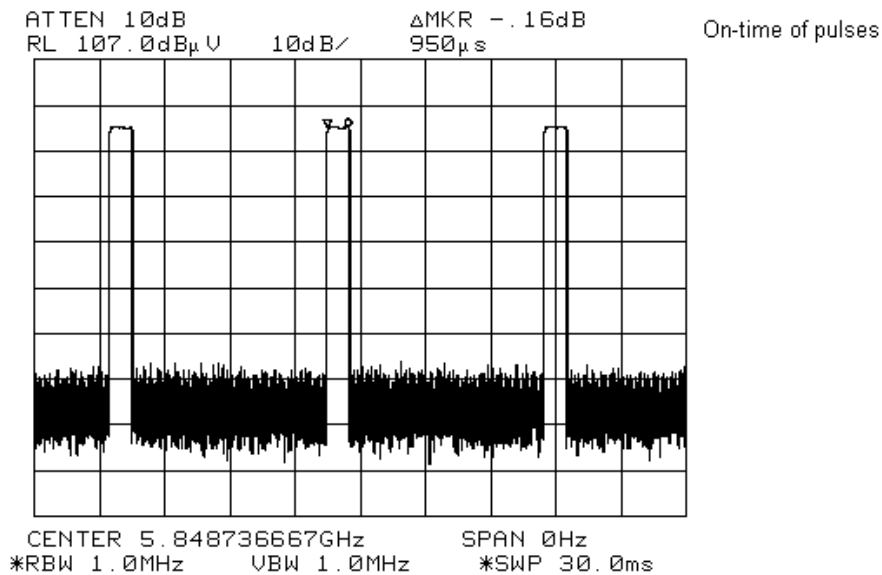
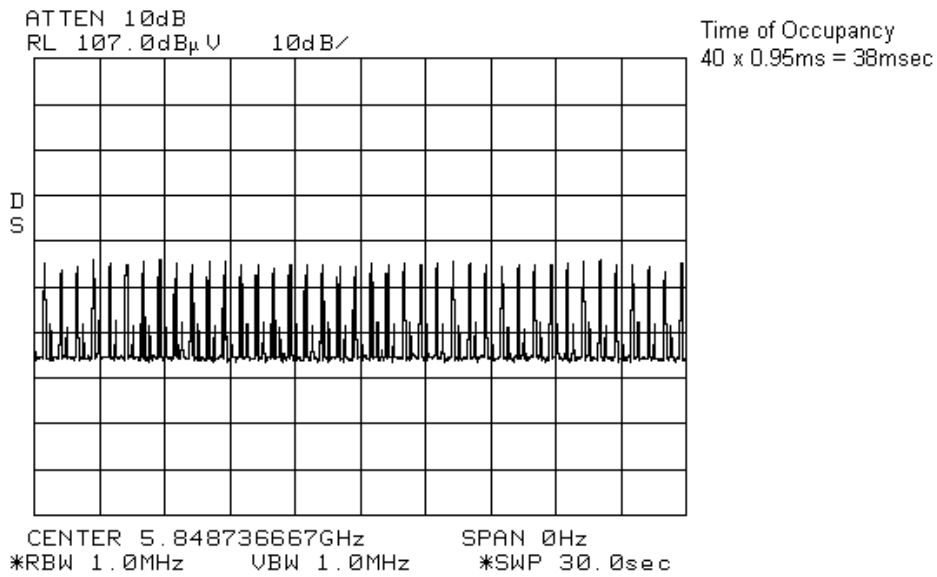
Test Performed By: Jason Nixon	Date of Test: February 1, 2005
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Limit: For the purposes of this section, hybrid systems are those that employ a combination of both frequency hopping and digital modulation techniques. The frequency hopping operation of the hybrid system, with the direct sequence or digital modulation operation turned off, shall have an average time of occupancy on any frequency not to exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4. The digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

Measurement Data: See Plot

Time of Occupancy = 0.95msec x 40pulses = 38msec per 30sec

EQUIPMENT: Verizon One Phone Handset



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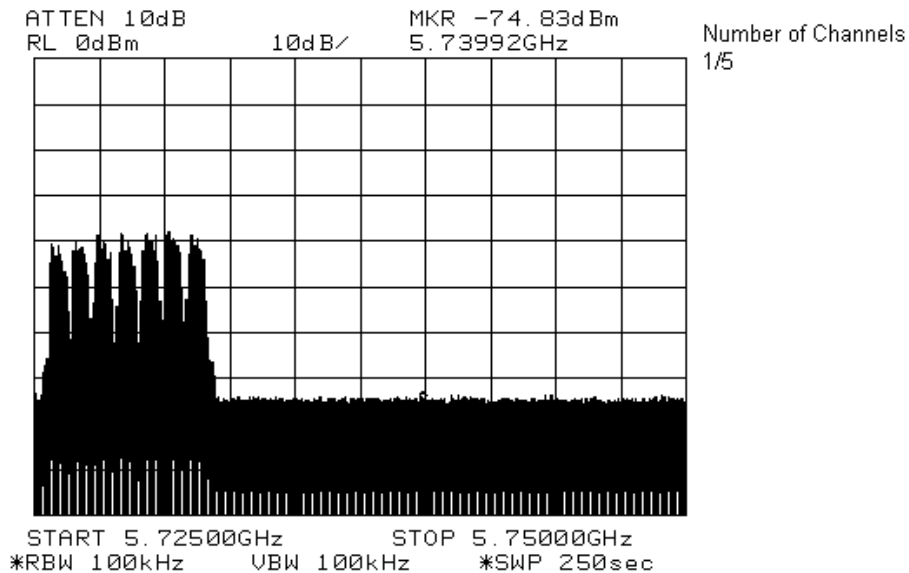
Section 5. Number of Hopping Channels

Para. No.: 15.247(a)(1)(ii)

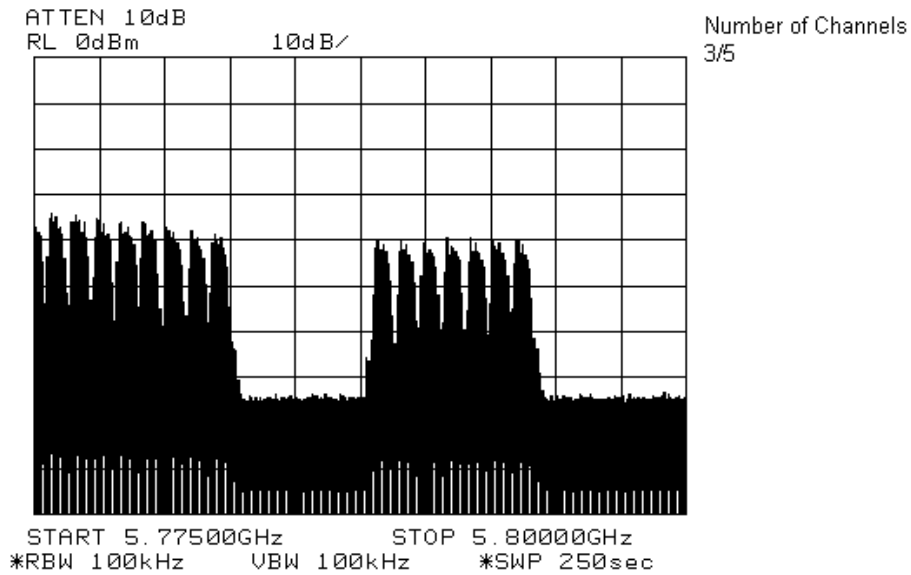
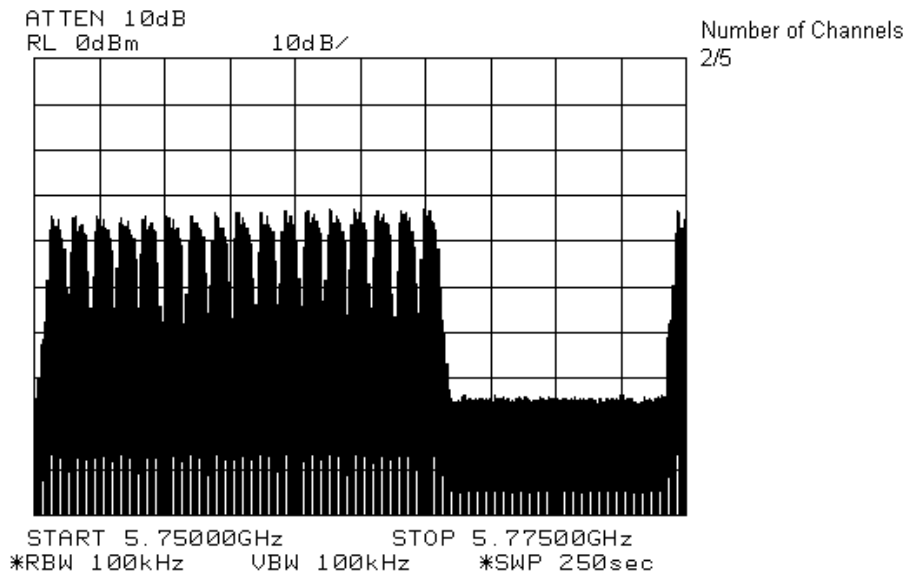
Test Performed By: Jason Nixon	Date of Test: February 11, 2005
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Limit: Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

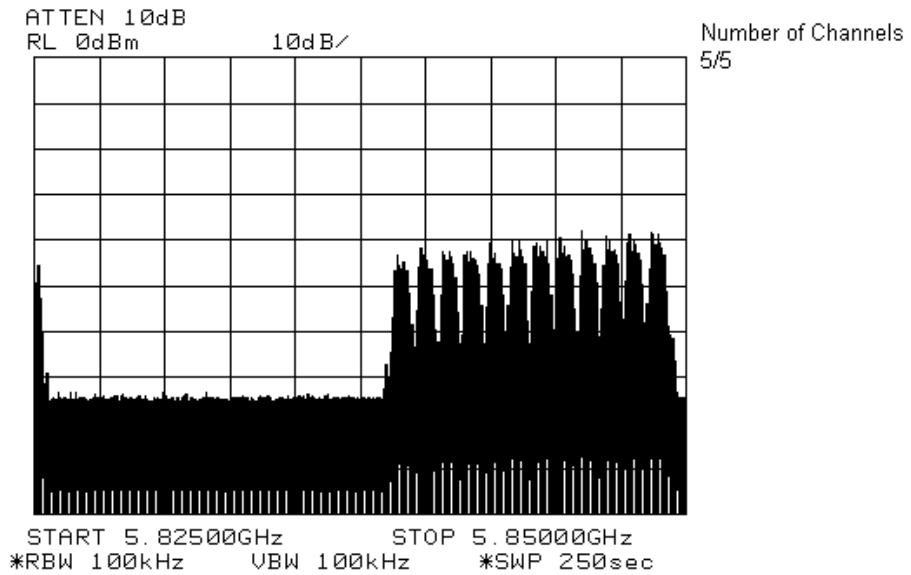
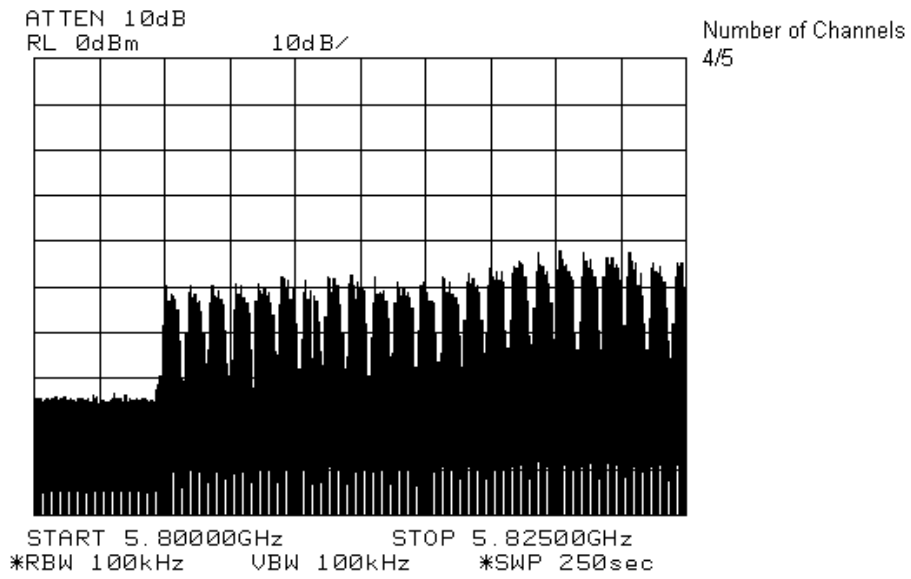
Measurement Data: See Plots, Number of Channels = 75



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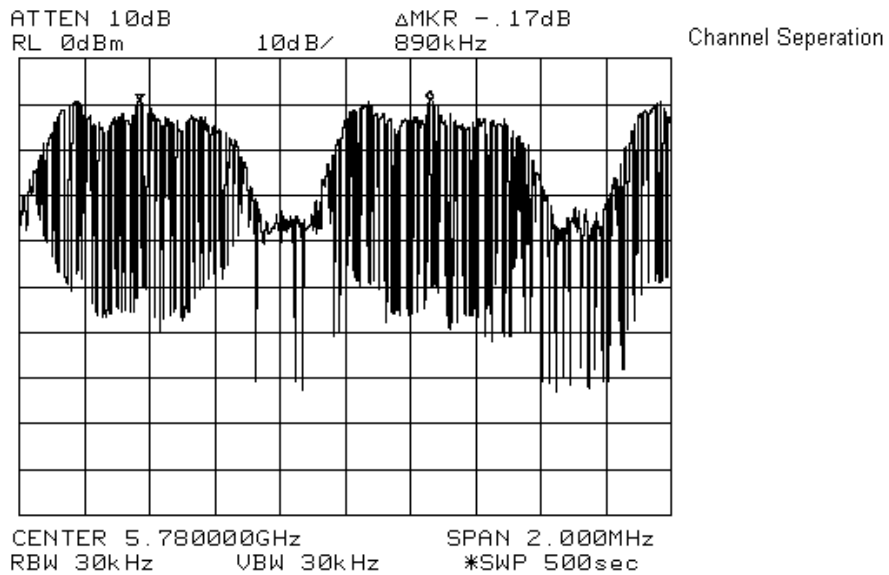
Section 6. Minimum Channel Separation

Para. No.: 15.247(a)(1)

Test Performed By: Jason Nixon	Date of Test: February 16, 2005
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Limit: Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

Measurement Data: Channel Spacing = 890kHz



EQUIPMENT: Verizon One Phone Handset

Section 7. Peak Output Power

Para. No.: 15.247 (b)(1)

Test Performed By: Jason Nixon	Date of Test: February 11,2005
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Limit: 1W

Measurement Data: See Tabulated Data.

Ch.	Freq.	Pol V/H	ANT.	Rx dBuV	Cable loss dB	Ant Factor dB/m	F.S. dBuV/m
low	5725.6000	Horn2	V	66.2	6.8	34.3	107.3
	5725.6000	Horn2	H	64.2	6.8	34.3	105.3
mid	5788.9000	Horn2	V	67.2	6.9	34.4	108.4
	5788.9000	Horn2	H	63.8	6.9	34.3	105.0
hi	5848.6000	Horn2	V	66.8	6.9	34.4	108.1
	5848.6000	Horn2	H	63.3	6.9	34.3	104.5

Measured value (V/m) = $10^{(FS/20)} / 1000000 = 0.263V/m$

Antenna Gain (numeric) = $10^{(Ag/10)} = 1.995$

Output Power (W) = $\frac{E^2 R^2}{30G} = 0.0104W$

- E = Measured Value (V/m)
- R = Measurement distance
- G = Antenna Gain (numeric)

Additional Observations:

All Measurements were performed at 3m using a 1MHz RBW/VBW.

The EUT was measured on three orthogonal axis to maximize emissions.

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FCC PART 15, SUBPART C
FREQUENCY HOPPING TRANSMITTERS
PROJECT NO.: 5W38286

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Section 8. Spurious Emissions

Para. No.: 15.247(c)

Test Performed By: Jason Nixon	Date of Test: February 11, 2005
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Limit: 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. 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)).

Measurement Data: See Attached Tabulated Data

The Spectrum was searched from 30MHz to 40GHz on an OATS at 3m.

All emissions were searched on three orthogonal axis.

Measurements performed within Restricted Bands were measured using a 1MHz RBW/VBW and measurements performed outside of the restricted bands were measured with a 100kHz RBW/VBW and compared to the Fundamental emission in a 100kHz RBW.

EQUIPMENT: Verizon One Phone Handset

Frequency (MHz)	Antenna	Polarit y	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain / Cable Loss (dB)	Duty Cycle Corr.	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
11451.2000	Horn2	V	69.8	38.6	37.7	20.4	70.8	74	3.2	Peak
							50.4	54	3.6	Average
11451.2000	Horn2	H	67.2	38.6	37.7	20.4	68.1	74	5.9	Peak
							47.7	54	6.3	Average
17176.8000	Horn2	V	67.7	42.0	36.0	-	73.6	87.5	13.9	Peak
17176.8000	Horn2	H	70.2	41.9	36.0	-	76.1	84.8	8.7	Peak
22902.4000	18-40GHz Horn	V	62.0	45.6	35.8	20.4	71.8	74	2.2	Peak
							51.4	54	2.6	Average
22902.4000	18-40GHz Horn	H	61.0	45.0	35.8	20.4	70.2	74	3.8	Peak
							49.8	54	4.2	Average
11577.8000	Horn2	V	67.7	38.8	37.7	20.4	68.7	74	5.3	Peak
							48.3	54	5.7	Average
11577.8000	Horn2	H	67.2	38.7	37.7	20.4	68.2	74	5.8	Peak
							47.8	54	6.2	Average
17366.7000	Horn2	V	65.3	43.0	36.0	-	72.4	88.2	15.8	Peak
17366.7000	Horn2	H	68.2	43.0	36.0	-	75.2	84.3	9.1	Peak
23155.6000	18-40GHz Horn	V	55.2	45.5	35.8	-	64.8	88.2	23.4	Peak
23155.6000	18-40GHz Horn	H	58.0	44.8	35.8	-	67.0	84.3	17.3	Peak
11697.2000	Horn2	V	65.5	38.9	37.7	20.4	66.7	74	7.3	Peak
							46.3	54	7.7	Average
11697.2000	Horn2	H	64.0	38.8	37.7	20.4	65.1	74	8.9	Peak
							44.7	54	9.3	Average
17545.8000	Horn2	V	64.3	43.9	36.0	-	72.3	87.7	15.4	Peak
17545.8000	Horn2	H	67.2	43.9	36.0	-	75.1	82.2	7.1	Peak
23394.4000	18-40GHz Horn	V	55.3	45.4	35.8	-	64.9	87.7	22.8	Peak
23394.4000	18-40GHz Horn	H	55.7	44.6	35.8	-	64.5	82.2	17.7	Peak

Emission Level Peak (dBuV/m) = RCVD Signal + Ant. Factor – Amp Gain

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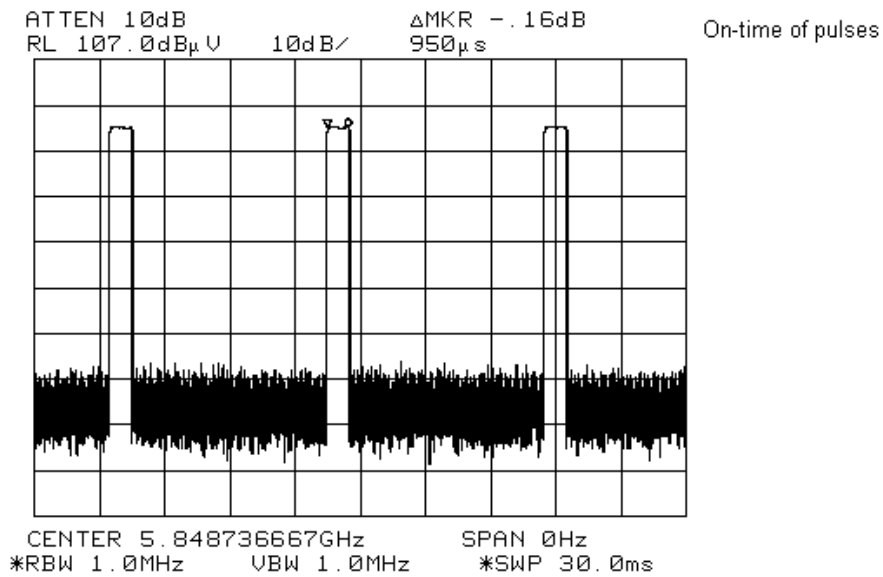
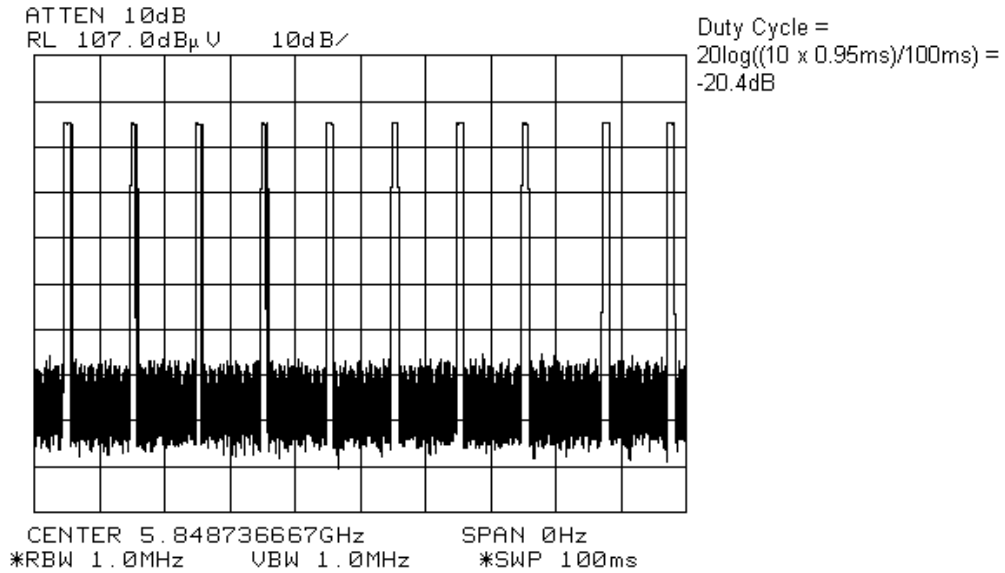
FCC PART 15, SUBPART C
FREQUENCY HOPPING TRANSMITTERS
PROJECT NO.: 5W38286

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Emission Level Average (dBuV/m) = RCVD Signal + Ant. Factor – Amp Gain – Duty Cycle

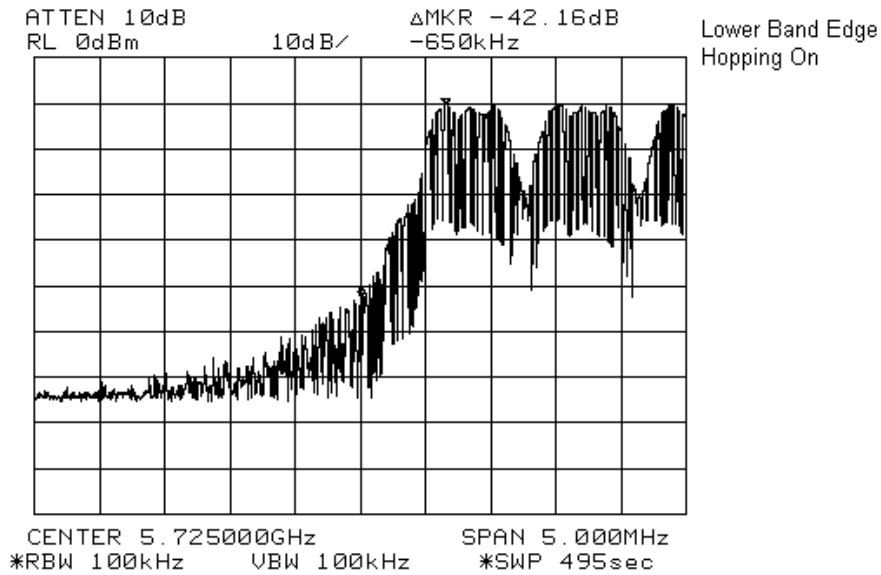
EQUIPMENT: Verizon One Phone Handset

Duty Cycle

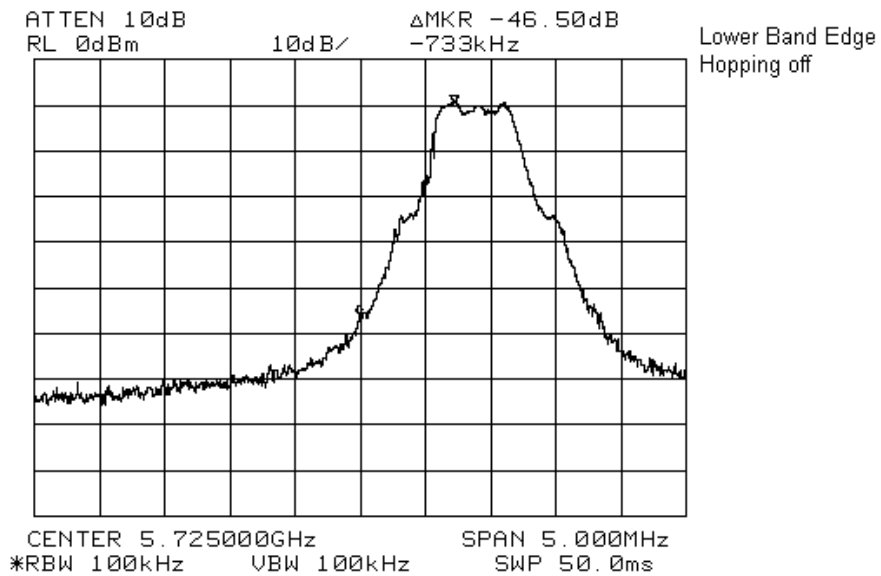


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Lower Band Edge Hopping On

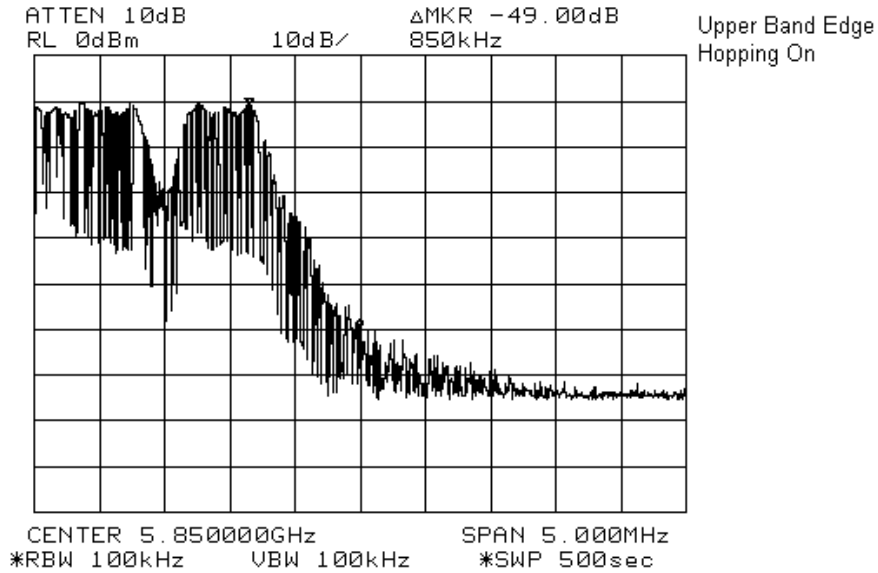


Lower Band Edge Hopping Off

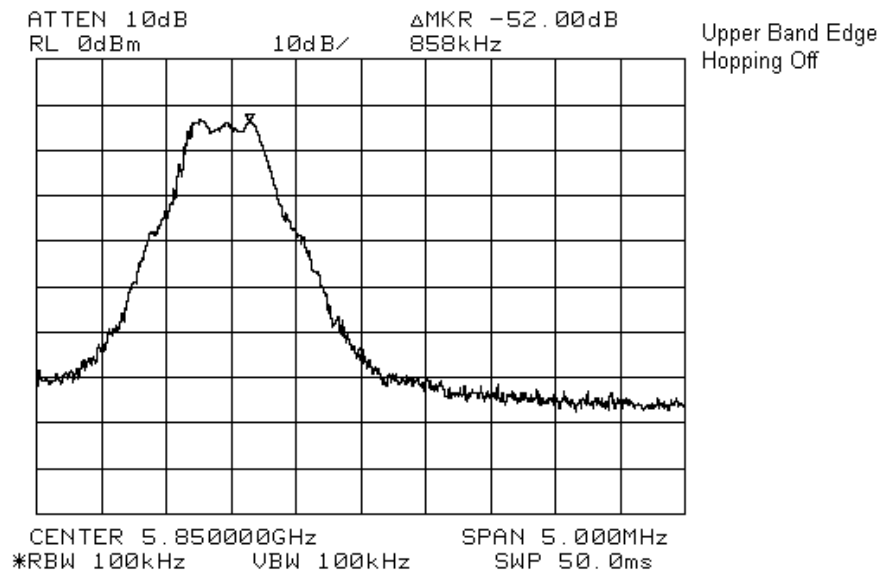


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Upper Band Edge Hopping On



Upper Band Edge Hopping Off



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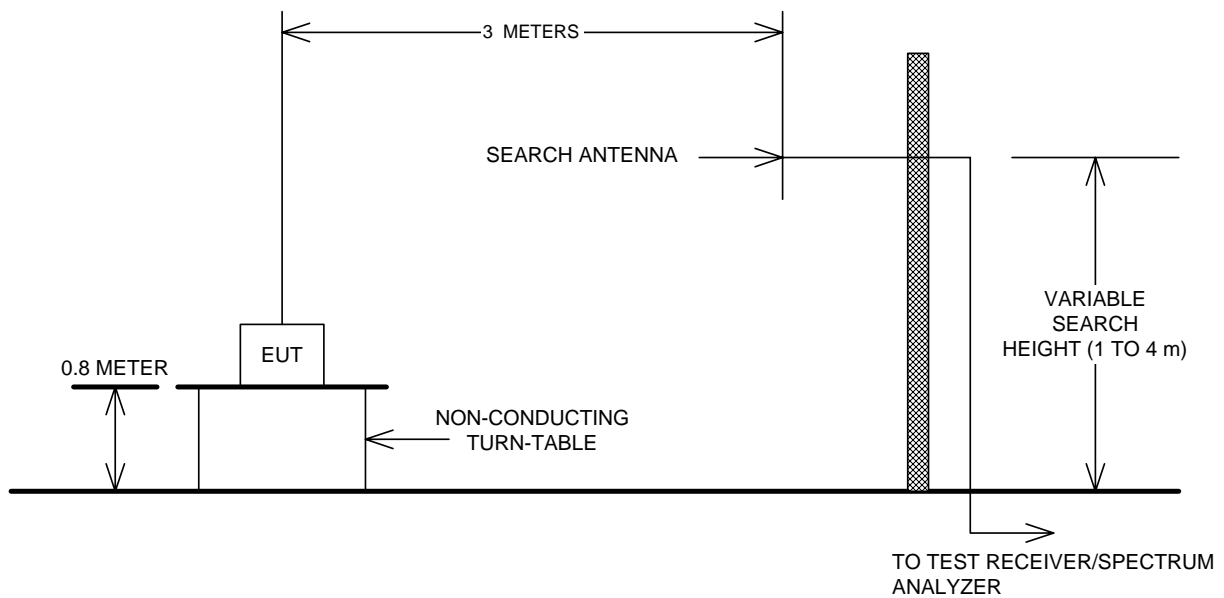
Set-up Photo



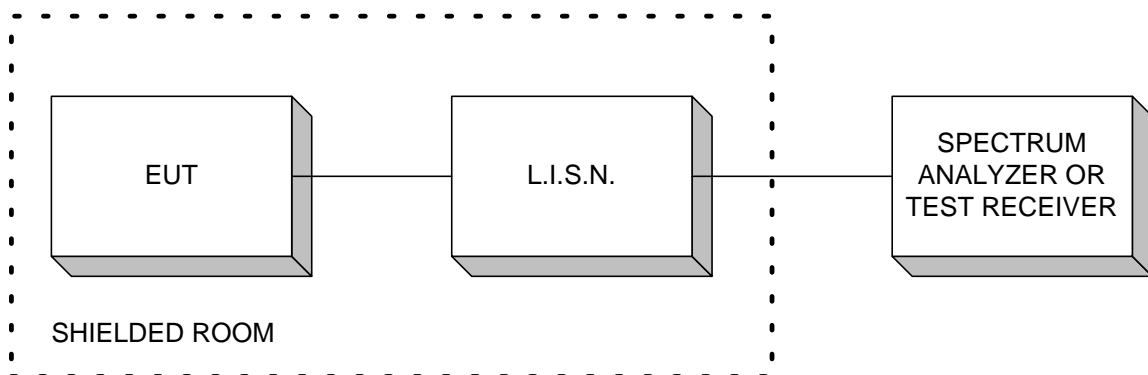
EQUIPMENT: Verizon One Phone Handset

Section 9. Block Diagrams

Test Site For Radiated Emissions



Conducted Emissions



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Section 10. Test Equipment List

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Hewlett-Packard	8564E	3943A01798	Dec 22/04	Dec 22/05
Horn Antenna #2	EMCO	3115	FA000825	Dec. 14/04	Dec. 14/05
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU	COU
18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU	COU
26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU	COU
18-40GHz Horn	EMCO	3116	FA001847	Jan 19/04	Apr 19/05

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Section 11. Restricted bands (15.205)

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			