



Test Report: 5W45977, Issue 2

Applicant: VTECH Engineering Canada Ltd.
Suite 200 – 7671 Alderbridge Way
Richmond, B.C.,
Canada
V6X 1Z9

Equipment Under Test: T2340 Analogue Cordless Phone
T2326 Analogue Cordless Phone

In Accordance With: FCC Part 15, Subpart C, 15.249

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

Authorized By: 
Sim Jagpal, General Manager

Date: 10 June 2005

Total Number of Pages: 21

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Section 1. Summary Of Test Results

General

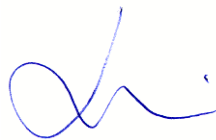
All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.249. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were 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: _____

Xu Jin, Wireless Specialist

DATE: 10 June 2005

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This report applies only to the items tested.

Section 2. Summary Of Test Data

Summary Of Test Data

Name Of Test	Para. No.	Result
Power line Conducted Emissions	15.207(a)	Complies
Radiated Emissions	15.249	Complies

Test Conditions:

Indoor Temperature: 24°C
 Humidity: 50%

Outdoor Temperature: 27°C
 Humidity: 60%

Section 3. General Equipment Specification

Manufacturer:	VTECH Engineering
Model No.:	T2340 Analogue Cordless Phone T2326 Analogue Cordless Phone
Serial No.:	Hand unit : PA 119(H) Base unit : PA 095(B)
Date Received In Laboratory:	May 30, 2005
Nemko Identification No.:	T 2340 Hand Set PA119(H)___Item#1 T 2326 Base Set PA095(B)___Item#3
Frequency Range:	Base: 2410.2-2418.9MHz Handset: 912.75-917.10MHz
Number of Channels:	30
Modulation:	FM
Power Source:	Base: 120VAC Handset : 3.6VDC

Theory of Operation

T 2340 is a basic hybrid analogue cordless telephone. It consists of two mobile handsets and a fixed base unit.

The base and Handset RF module are used as a RF combo to provide a full duplex wireless links between the handsets and base unit. This is accomplished by setting up two simultaneous communications links between the handset and base RF Modules. The RF receiver and transmitter circuitries essentially provide a link between the microphone and speaker in the handset to telephone line the base.

The operation frequency from the handset to base is located from 912.75MHz to 917.10MHz. The operation frequency from the base to handset is located from 2410.2MHz to 2418.9MHz.

T2326 is a basic hybrid analogue cordless telephone with a mobile unit and a fixed base unit.

According to the manufacturer, same base and handset design are used in Model T2326 and T2340. There are two identical handset used in Model T2340 while only one handset is used in Model T2326.

Section 4. Powerline Conducted Emissions**Para. No.: 15.207 (a)**

Test Performed By: Xu Jin	Date of Test: May. 30, 2005
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Test Results: Complies.**Measurement Data:** See attached graph(s).*Limits For Conducted Disturbance At The Mains Ports Of Class B*

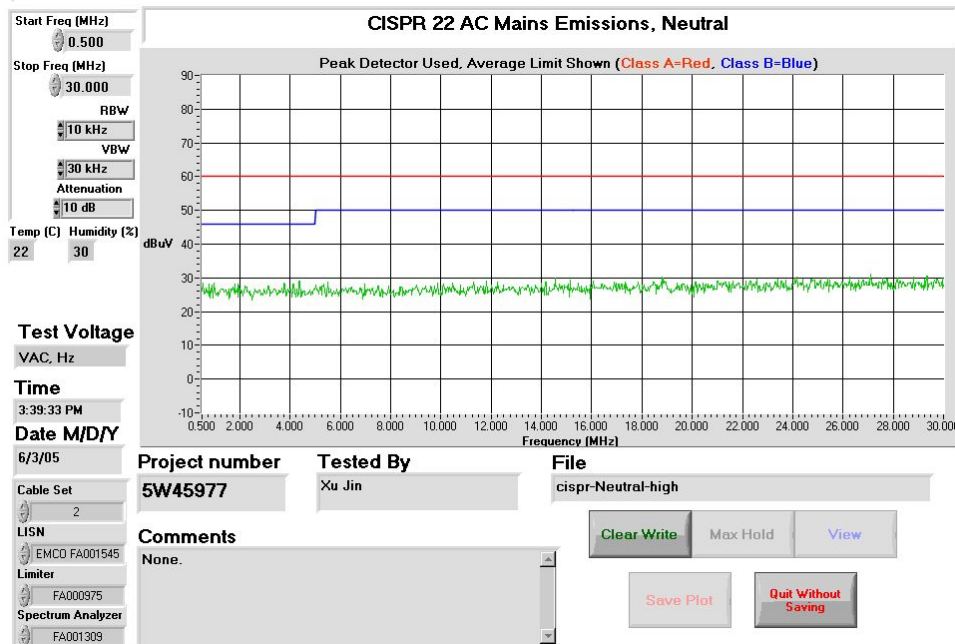
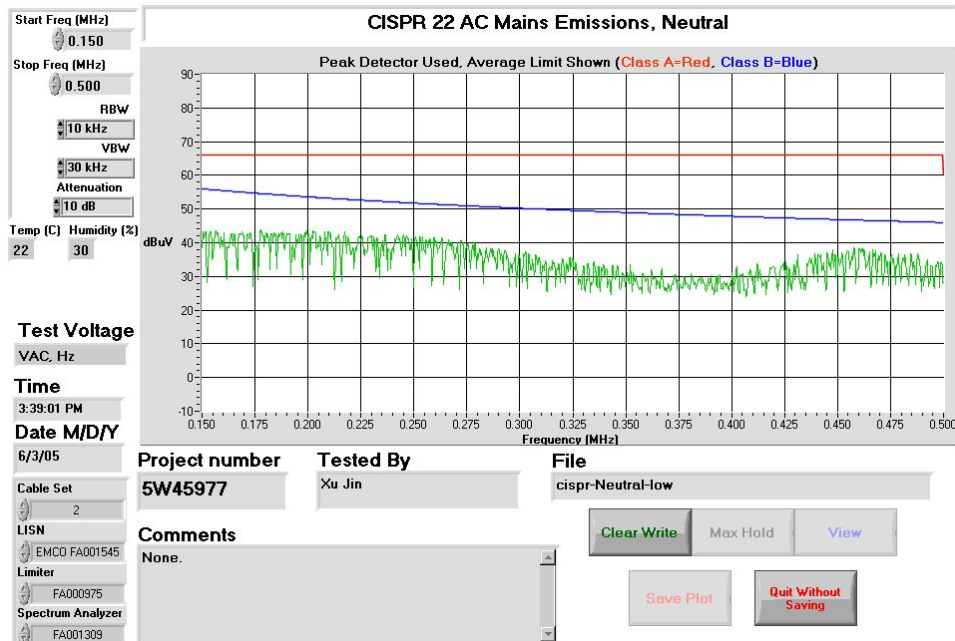
Frequency Range MHz	Limits dB(μV)		Result
	Quasi-Peak	Average	
0.15 to 0.50	66 to 56	56 to 46	Complies.
0.5 to 5	56	46	
5 to 30	60	50	
Note: 1. The lower limit shall apply at the transition frequency. 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50MHz. 3. The test was performed using a peak detector.			

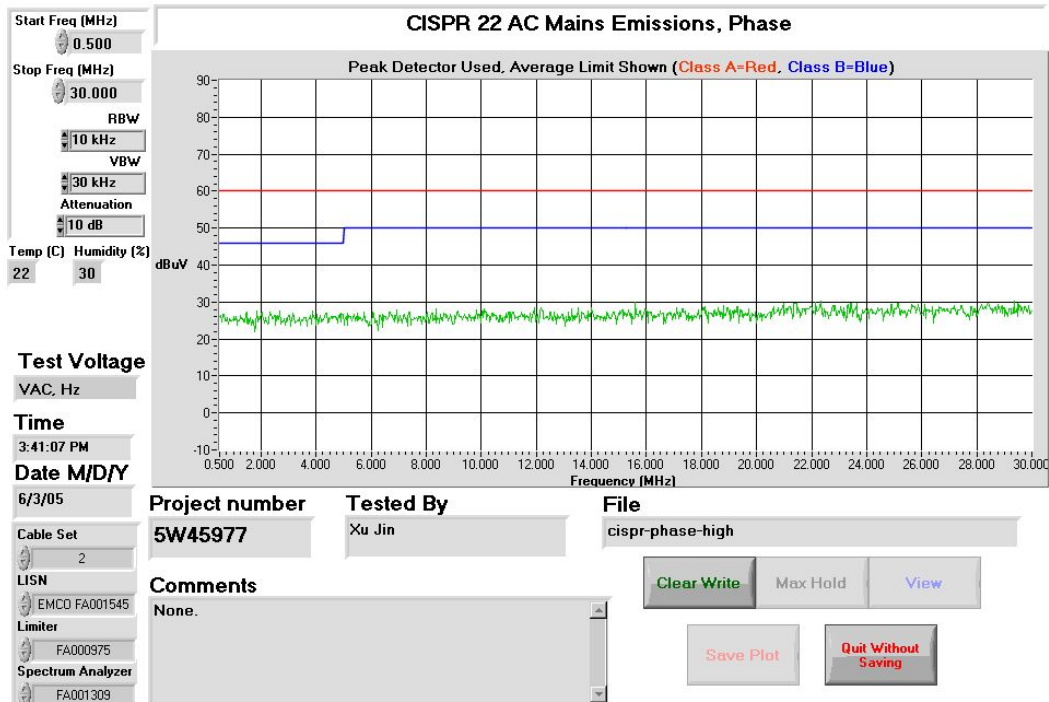
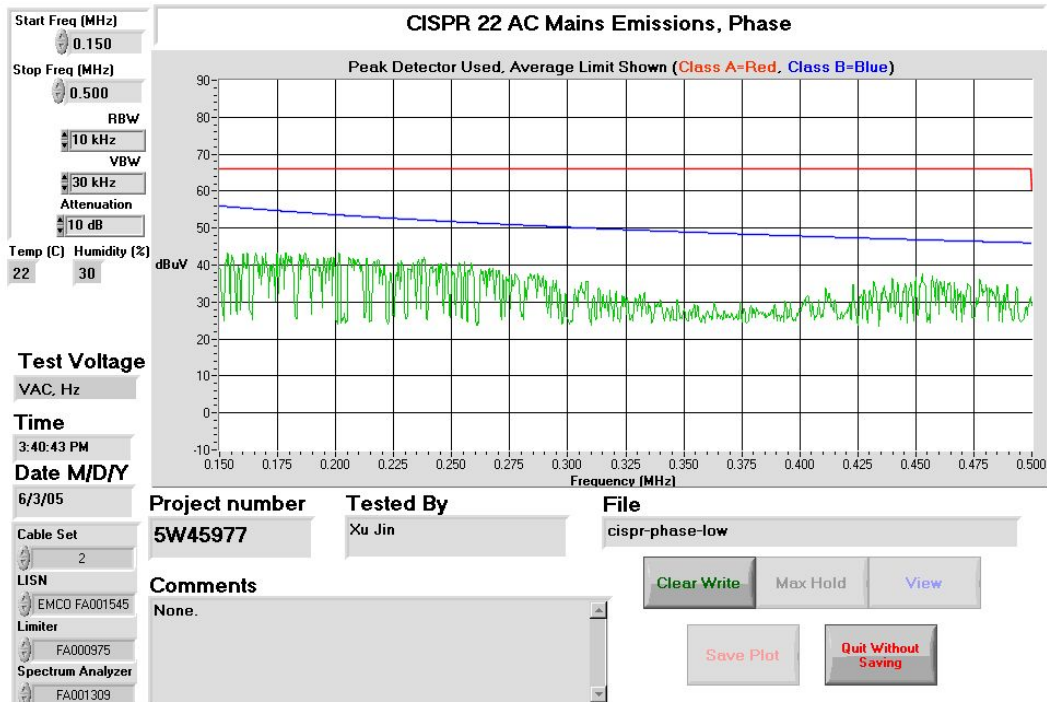
Note:

Power line conducted emissions test was conducted for base unit with the handset on cradle.
The handset was operated with fully charged battery.

Conducted Disturbance at Mains Detailed Setup Photos







Section 5. Radiated Emissions

Para. No.: 15.249

Test Performed By: Xu Jin	Date of Test: May 31, 2005
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Minimum Standard:

15.209&15.249

Band edge check must comply with 50dBc requirement.

Radiated Emission must comply with 15.209 general requirement

Frequency (MHz)	Field Strength (mV/m)	Field Strength (dBµV/m)
Fundamental		
902-928	50	94
2400-2483.5	50	94
Spurious out side the frequency band		
33-88	0.1	40.0
88-216	0.15	43.5
216-960	0.2	46.0
960 above	0.5	54.0

Test Results:

See graphic and data of this section.

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Radiated emission test was conducted at 3 meter at open area test site. The EUT was searched from 30MHz to the 26GHz, and for low, medium and high frequencies at the frequency band.

The EUT was searched for 3 orthogonal axis to determine the worst case emissions.

Only worst cases have been reported.

Additional radiated test was conducted from 8MHz to 30MHz, no emission was observed.

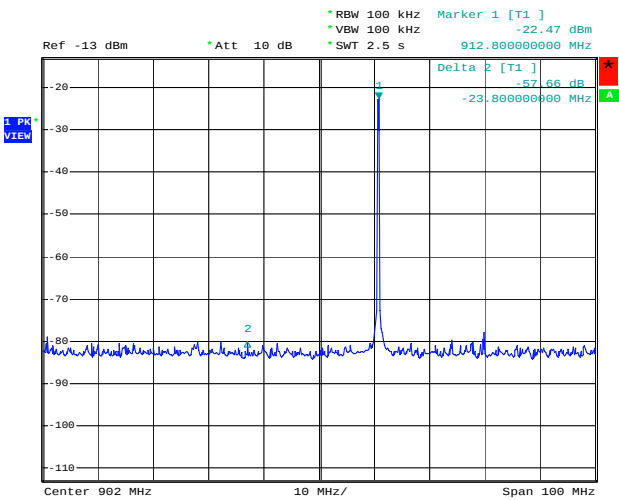
EQUIPMENT: VTECH T2340 & VTECH T2326 Analogue Cordless Phone

50dBc Band Edge Check

Hand Unit

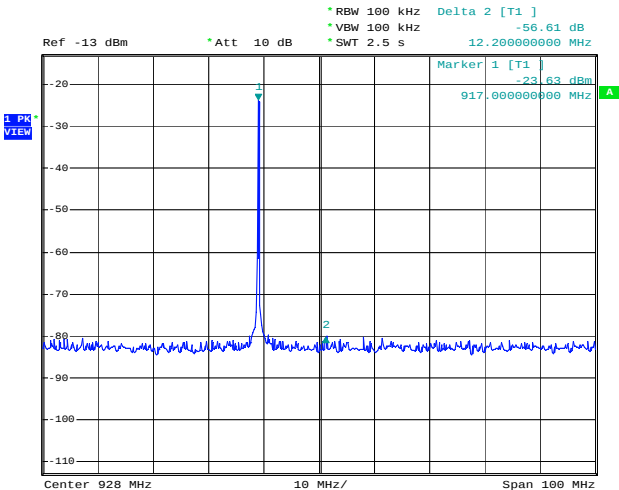
The hand unit was modulated with 2.5kHz tone during the test

Lower Band Edge_Ch00, 912.75MHz



Date: 31.MAY.2005 08:48:12

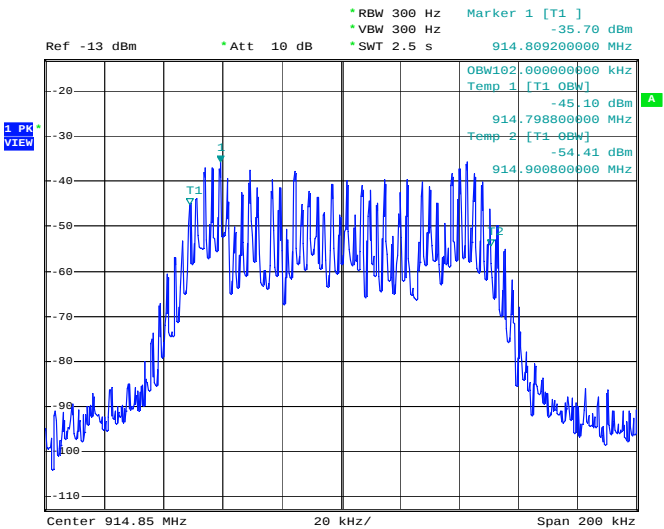
Higher Band Edge _Ch29, 917.10MHz



Date: 31.MAY.2005 08:49:44

EQUIPMENT: VTECH T2340 & VTECH T2326 Analogue Cordless Phone

99%Channel Bandwidth _Ch 14, 914.85MHz



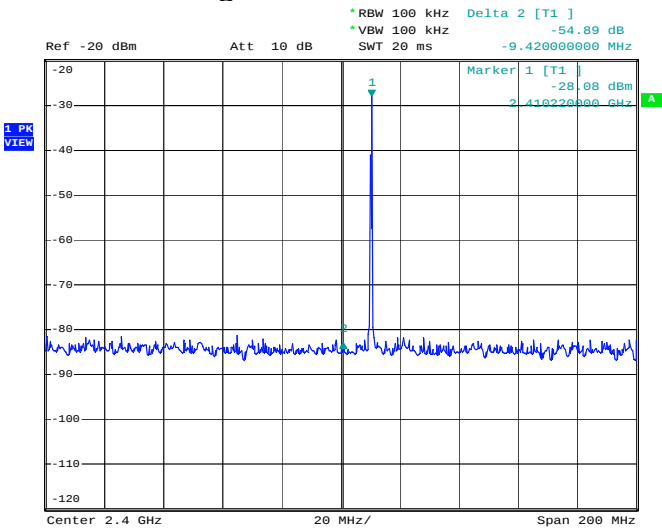
Date: 31.MAY.2005 08:59:01

EQUIPMENT: VTECH T2340 & VTECH T2326 Analogue Cordless Phone

Base Unit

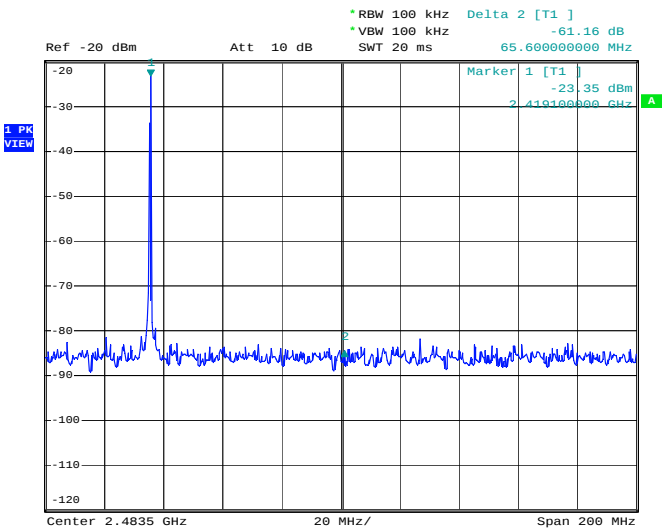
The Base unit was modulated with 2.5kHz tone during the test.

Lower Band Edge_Ch00, 2410.2 MHz



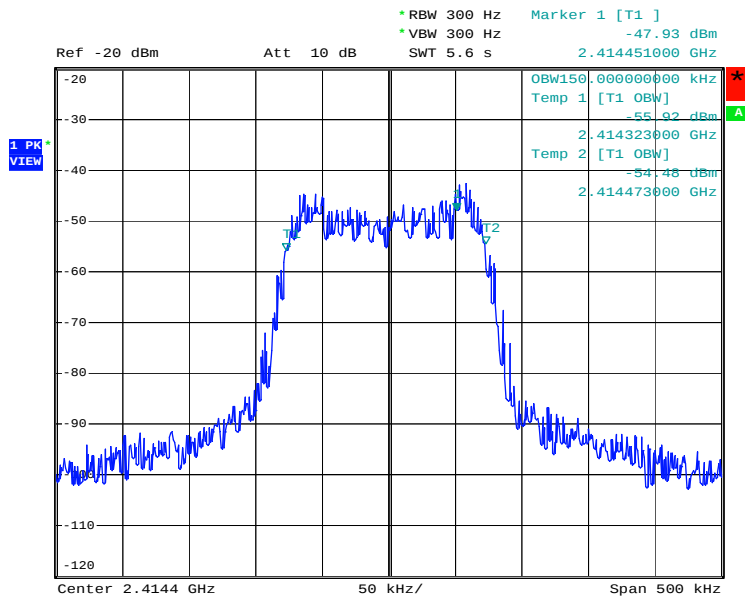
Date: 9.JUN.2005 13:45:35

Higher Band Edge_Ch29, 2418.9MHz



Date: 9.JUN.2005 13:49:16

99%Channel Bandwidth _Ch 14, 2414.4MHz



Date: 9.JUN.2005 13:59:58

Radiated Emissions Test Data

Hand Unit

Test Date: June 1, 2005										
Engineer's Name: Xu Jin										
Tested as per: Table Top										
Temperature (C°): Indoor: 24, Outdoor: 27							Humidity %: Indoor: 50 , Outdoor: 60			
Test Distance (meters): 3							Dome: 1			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
Channel 00										
912.7500	LP1	H	60.3	23.7	0	4	88.0	94	6.0	Peak
912.7500	LP1	V	46.8	23.0	0	4	73.8	94	20.2	Peak
1825.5000	Horn2	H	50.1	27.7	46.6	4.2	35.4	54	18.6	Peak
1825.5000	Horn2	V	46.8	27.6	46.6	4.2	32.0	54	22.0	Peak
Channel 14										
914.8500	LP1	H	61.9	23.0	0	4	88.9	94	5.1	Peak
914.8500	LP1	V	48.6	23.7	0	4	76.3	94	17.3	Peak
1829.7000	Horn2	H	51.3	27.7	46.6	4.2	36.7	54	17.3	Peak
1829.7000	Horn2	V	48.4	27.6	46.6	4.2	33.6	54	20.4	Peak
Channel 29										
917.1000	LP1	H	58.6	23.0	0	4	85.6	94	8.4	Peak
917.1000	LP1	V	45.3	23.7	0	4	73.0	94	21.0	Peak
1834.2000	Horn2	H	49.2	27.7	0	4.2	34.6	54	19.4	Peak
1834.2000	Horn2	V	46.7	27.6	0	4.2	32.0	54	22.0	Peak
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole										
Note 2: Detector Legend: Below 1GHz, Peak detector with 100 kHz RBW, 100KHz VBW										
Above 1GHz, Peak detector with 1.0MHz RBW, 1.0MHz VBW										

Base Unit

Test Date: June 1, 2005										
Engineer's Name: Xu Jin										
Tested as per: Table Top										
Temperature (C°): Indoor: 24, Outdoor: 27							Humidity %: Indoor: 50 , Outdoor: 60			
Test Distance (meters): 3							Dome: 1			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
Channel 00										
2410.2000	Horn2	H	56.7	28.4	0	5.3	90.4	94	3.6	Peak
2410.2000	Horn2	V	52.5	28.4	0	5.3	86.2	94	7.8	Peak
4820.4000	Horn2	H	62.3	33.2	53.1	7.5	49.8	54	4.2	Peak
4820.4000	Horn2	V	65.3	33.3	53.1	7.5	53.1	54	0.9	Peak
Channel 14										
2414.4000	Horn2	H	55.4	28.4	0	5.4	89.2	94	4.8	Peak
2414.4000	Horn2	V	51.3	28.4	0	5.4	85.1	94	8.9	Peak
4828.8000	Horn2	H	62.3	33.2	53	7.6	50.0	54	4.0	Peak
4828.8000	Horn2	V	63.2	33.3	53	7.6	51.0	54	3.0	Peak
Channel 29										
2418.9000	Horn2	H	58.9	28.4	0	5.4	92.7	94	1.3	Peak
2418.9000	Horn2	V	55.4	28.4	0	5.4	89.2	94	4.8	Peak
4837.8000	Horn2	H	62.1	33.2	52.9	7.7	49.9	54	4.1	Peak
4837.8000	Horn2	V	64.5	33.3	52.9	7.7	52.6	54	1.4	Peak
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole										
Note 2: Detector Legend: Below 1GHz, Peak detector with 100 kHz RBW, 100KHz VBW										
Above 1GHz, Peak detector with 1.0MHz RBW, 1.0MHz VBW										

Radiated Emissions Photos
Hand Unit



Base Unit



Output Power Measurement Under Extreme Voltage Conditions

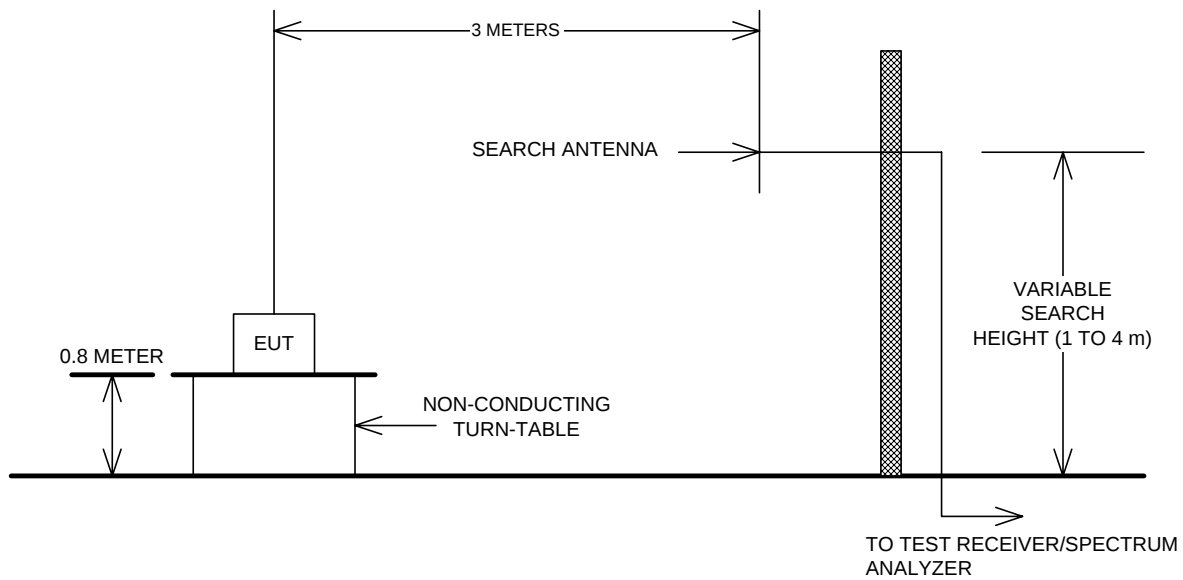
Test Method: Radiated power was verified under voltage extreme conditions for base unit at channel 14, 2414.4MHz

Extreme Voltage: $\pm 15\%$ of AC Mains for base unit

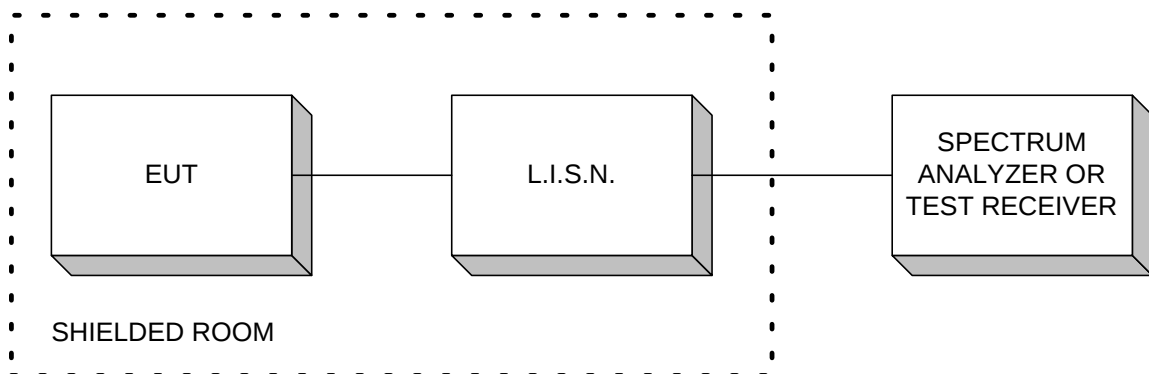
Test Result: No change in fundamental power level for base unit was observed during the test.

Section 6. Block Diagrams

Test Site For Radiated Emissions



Conducted Emissions



Section 7. Test Equipment List

EQUIPMENT	MANUFACTURE R	MODEL	SERIAL	LAST CAL.	NEXT CAL.
Spectrum Analyzer	Rohde & Schwarz	FSP	FA001920	Mar 22/05	Mar 22/06
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 18/05	May 18/06
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 18/05	May 18/06
0.1 – 1300 MHz Amplifier	Hewlett Packard	8447D	FA001909	Jan. 13/05	Jan. 13/06
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June 18/04	June 18/05
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June 18/04	June 18/05
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June 18/04	June 18/05
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU	COU
18.0 – 26.0 GHz Amplifier	Narda	BBS-1826N612	FA001550	COU	COU
Biconical Antenna	EMCO	3109	FA000904	Aug. 03/04	Aug. 03/05
Horn Antenna #2	EMCO	3115	FA000825	Dec. 14/04	Dec. 14/05
Log Periodic Antenna	EMCO	LPA-25	FA000477	Aug. 26/04	Aug. 26/05
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	April 25/05	April 25/06
LISN	EMCO	4825/2	FA001545	Jan. 13/05	Jan. 13/06
Transient Limiter	Hewlett-Packard	1194 7A	FA000975	June 10/04	June 10/05