



Test Report: 6W73127

Applicant: VTECH Telecommunications Canada Ltd.
200-7671 Alderbridge Way
Richmond, B.C.
V6X 1Z9

Apparatus: AT&T E2801
AT&T E2811

FCC ID: EW780-5312-00

In Accordance With: FCC Part 15 Subpart C, 15.247
FHSS System and Digitally Modulated Radiators
902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz
Class II Permissive Change

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

A handwritten signature in blue ink, appearing to read 'Jason Nixon', with a stylized flourish at the end.

Authorized By:

Jason Nixon, Telecom Specialist

Date: November 2, 2006

Total Number of Pages: 46

Report Summary

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.

The assessment summary is as follows:

Apparatus Assessed:	AT&T E2801 AT&T E2811
Specification:	FCC Part 15 Subpart C, 15.247, Class II Permissive Change
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Heng Lin, EMC / Wireless Test Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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Section 1: Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

AT&T E2801 and E2811

1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
1	AT&T E2811 Base	PA06/08 926
2	Charger	—
3	AT&T E2811 Handset	PA 06/08 1050
4	AT&T E2811 Handset	PA06/08 452
6	Component telephone power supply (MN Uo-90015D12)	—
7	Component telephone power supply (MN UD-0904B)	—
10	AT&T E2811 Base, modified for conducted measurement	PA06/08 1054
11	AT&T E2811 Handset, modified for conducted measurement	PA06/08 960

The first samples were received on: October 2, 2006

1.3 Technical Specifications of the EUT

Manufacturer:	VTECH Engineering Canada
Frequency Band:	2400MHz – 2483.5MHz
Operating Frequency:	2401.056MHz – 2482.272MHz
Rated Power: (Conducted Output Power)	BS: 79mW (19dBm) HS: 79mW (19dBm)
Peak Output Power: (Measured Conducted Output Power)	BS: 80mW (19.05dBm) HS: 77mW (18.85dBm)
Emission Designator	F1D
Modulation:	GFSK
Antenna Data:	BS: 0dBi HS: 0dBi

Section 2 : Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.247

FHSS System and Digitally Modulated Radiators
902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz

2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 °C
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next Cal.
Spectrum Analyzer	Rohde & Schwarz	FSU	FA001877	May 10/07
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 16/07
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 16/07
Biconical (1) Antenna	EMCO	3109	FA000805	May 03/07
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Sep. 12/07
Horn Antenna #2	EMCO	3115	FA000825	Dec. 16/06
Horn Antenna #1	EMCO	3115	FA000649	Jan. 12/07
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	May 3/07
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	Aug. 02/07
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	Aug. 02/07
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	Aug. 02/07
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU
18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU
26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU
LISN	EMCO	4825/2	FA001545	Jan. 30/07
Transient Limiter	Hewlett-Packard	1194 7A	FA000975	May 18/07

COU – Calibrate on Use

NCR – No Calibration Required

Section 3 : Observations

3.1 Modifications Performed During Assessment

No modifications were performed during assessment.

3.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

3.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

3.4 Test Deleted

No Tests were deleted from this assessment.

3.5 Changes to EUT for Class II Permissive Change

The following changes have been performed to the EUT as declared by the manufacturer:

Integrating the two layers FR4 RF module PCB on to the FR4 2 layers main board in the case of both handset and base (RF is no longer a stand alone module though the substrate and stack up of the PCB is the same) Use separate antennas for the 2.4 GHz Transmit and Receive in place of a single antenna. As separate antennas are used for transmit and receive, the transmit / receive switch using PIN diodes is eliminated. The PCB layout is different in order to accommodate the above changes. Slightly different antenna configurations in the handset and base.

Section 4 : Results Summary

This section contains the following:

FCC Part 15.247, Subpart C : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

- N No : not applicable / not relevant.
- Y Yes : Mandatory i.e. the apparatus shall conform to these tests.
- N/T Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

4.1 FCC Part 15 Subpart C : Test Results

Part 15	Test Description	Required	Result
15.207(a)	Powerline Conducted Emissions	Y	PASS
15.209(a)	Radiated Emissions within Restricted Bands	Y	PASS
15.247(a)(1)	Frequency hopping systems	Y	PASS
15.247(a)(1)(i)	Frequency hopping systems operating in the 902-928 MHz band	N	PASS
15.247(a)(1)(ii)	Frequency hopping systems operating in the 5725-5850 MHz band	N	
15.247(a)(1)(iii)	Frequency hopping systems operating in the 2400-2483.5 MHz band	N*	
15.247(a)(2)	Systems using digital modulation techniques	N	
15.247(b)(1)	Maximum peak output power of Frequency hopping systems operating in the 2400-2483.5 MHz band and 5725-5850 MHz band	Y	
15.247(b)(2)	Maximum peak output power of Frequency hopping systems operating in the 902-928 MHz band	N	PASS
15.247(b)(3)	Maximum peak output power of systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands	N	
15.247(b)(4)	Maximum peak output power	N	
15.247(c)(1)	Fixed point-to-point Operation with directional antenna gains greater than 6 dBi	N	
15.247(c)(2)	Transmitters operating in the 2400-2483.5 MHz band that emit multiple directional beams	N	
15.247(d)	Radiated Emissions Not in Restricted Bands	Y	PASS
15.247(e)	Power Spectral Density for Digitally Modulated Devices	N	
15.247(f)	Time of Occupancy for Hybrid Systems	N	

Notes:

* This requirement was not tested due to the changes to the circuitry would have no affect on the results obtained in the original assessment.

Appendix A : Test Results

Section 1. : Power Line Conducted Emissions

Criteria: Clause 15.207(a) Powerline Conducted Emissions

Frequency of Conducted limit (dBmV)		
Emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

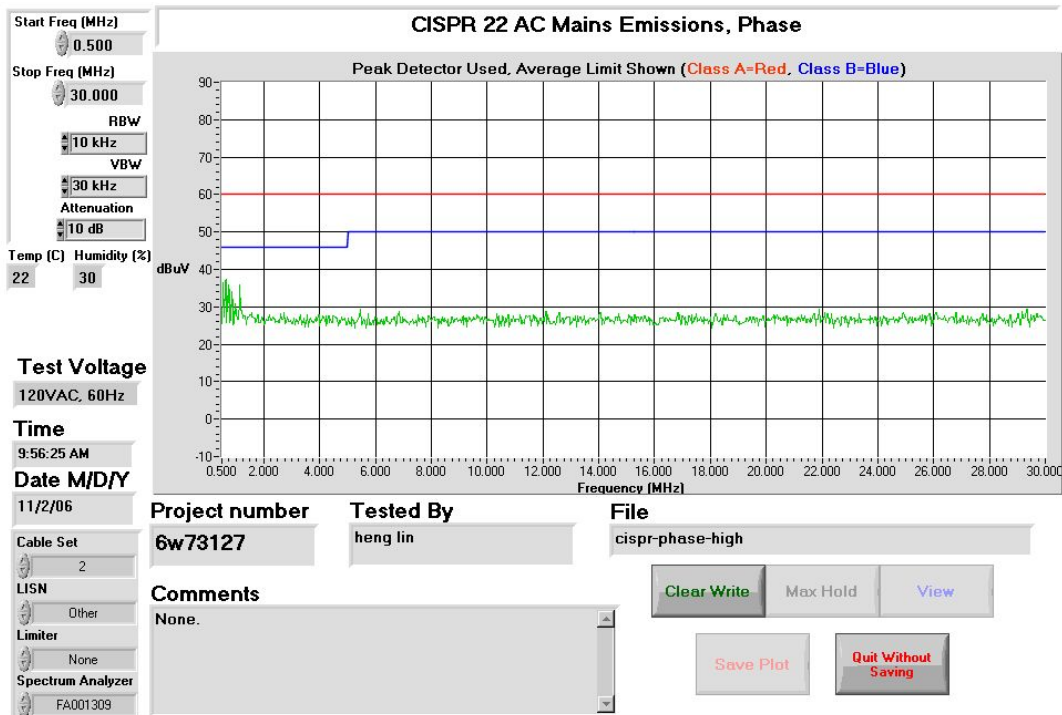
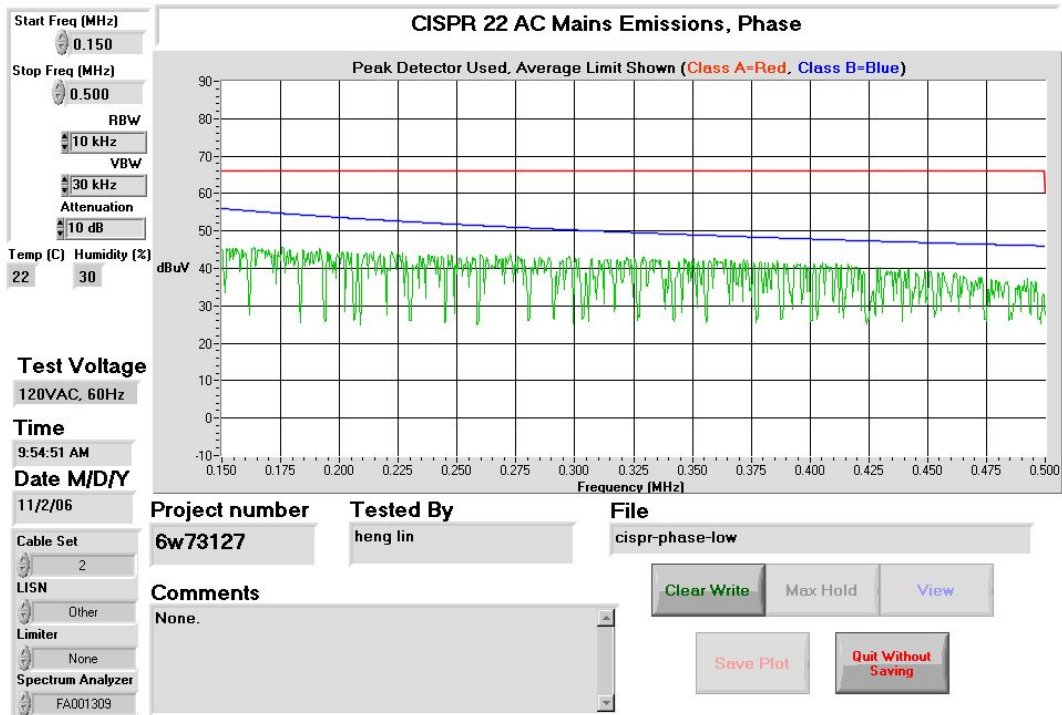
Test Conditions:

Sample Number:	1, 2, 3, 4, 6, 7	Temperature:	22 °C
Date:	Oct. 06, 2006	Humidity:	30 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Shielded Room

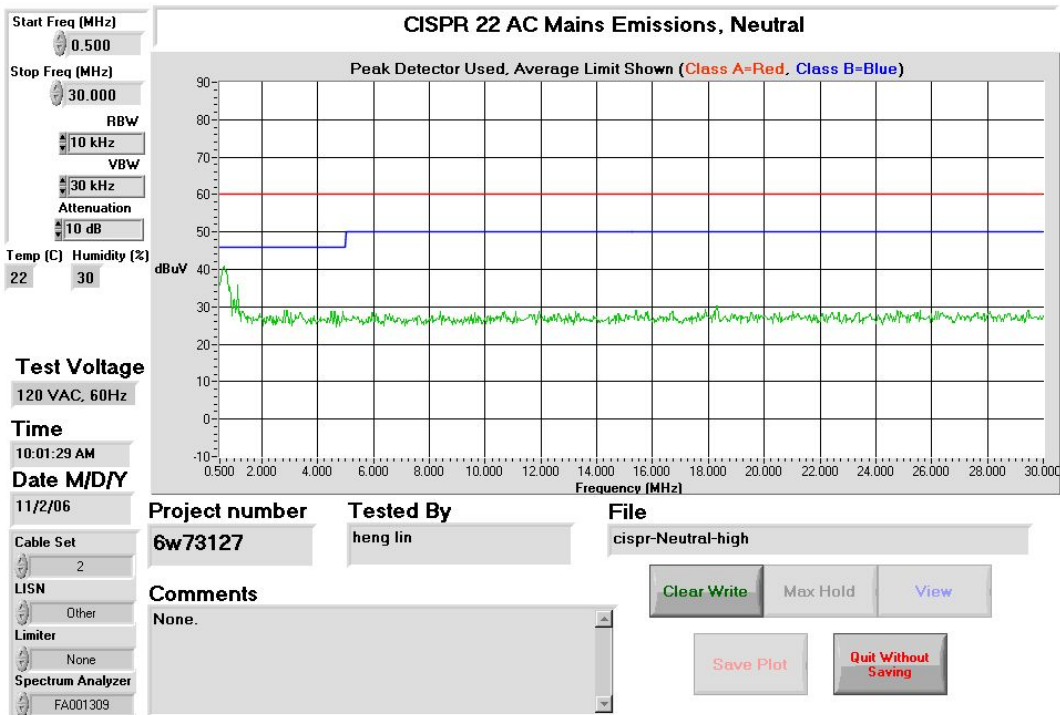
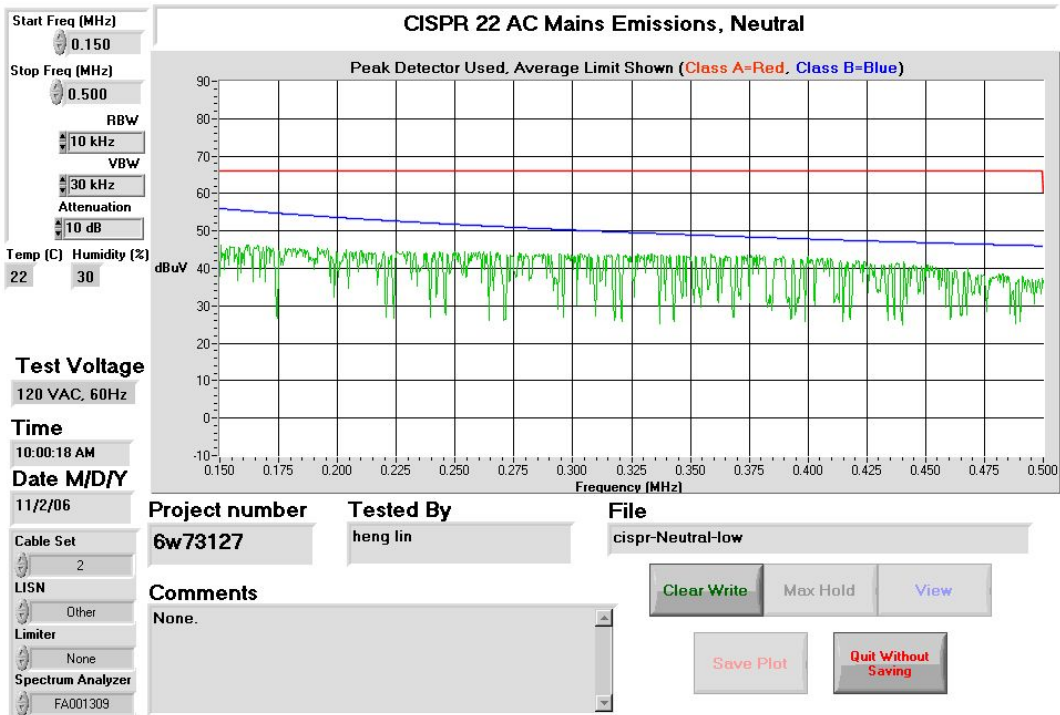
Test Results: Complies

Test Data: See Attached Plots and Tables.

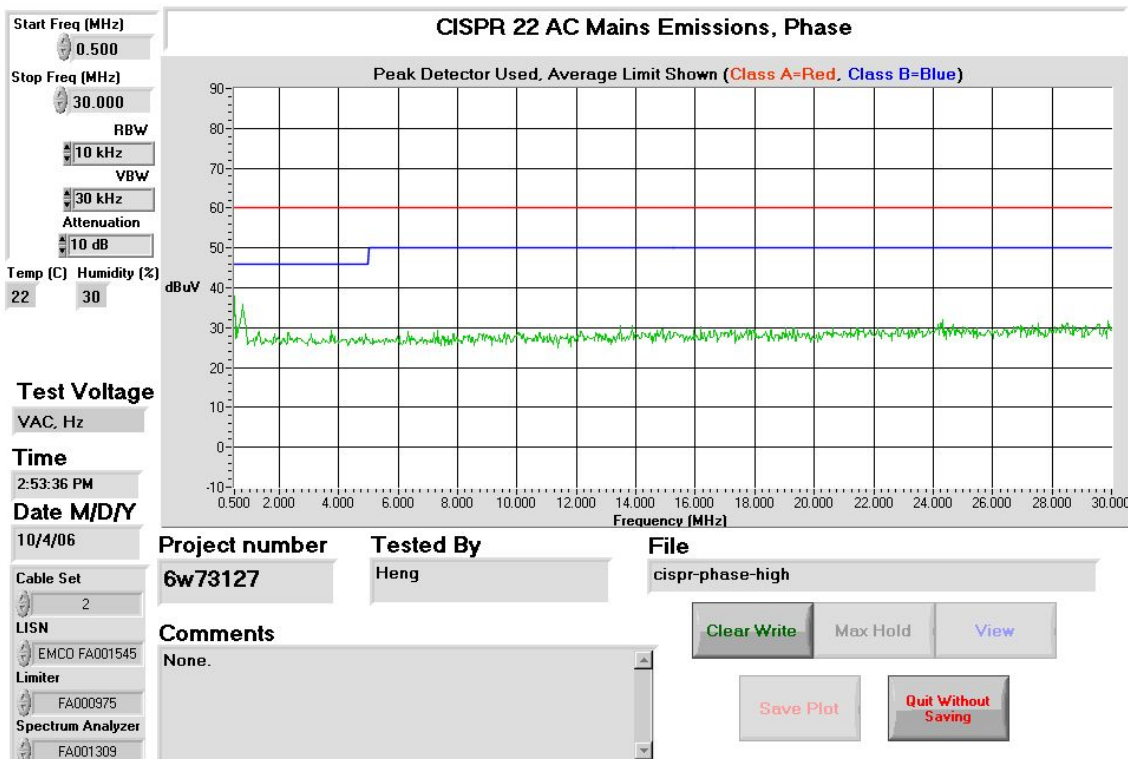
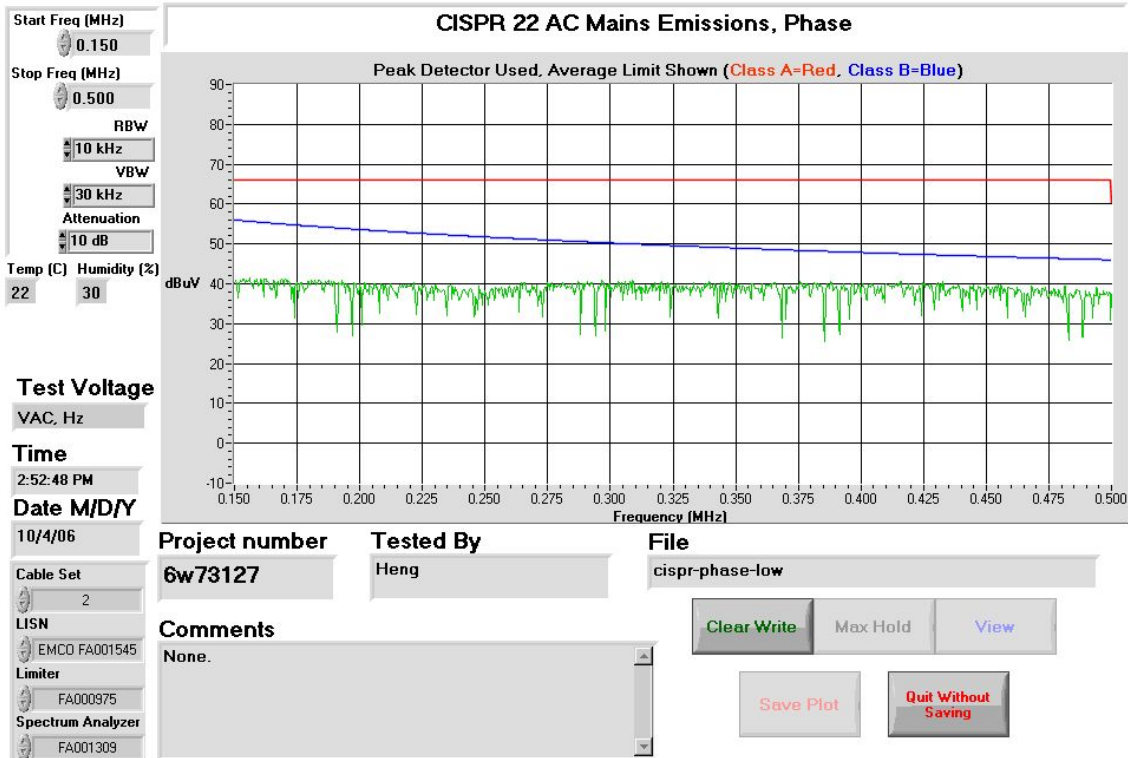
Phase – Base with Handset



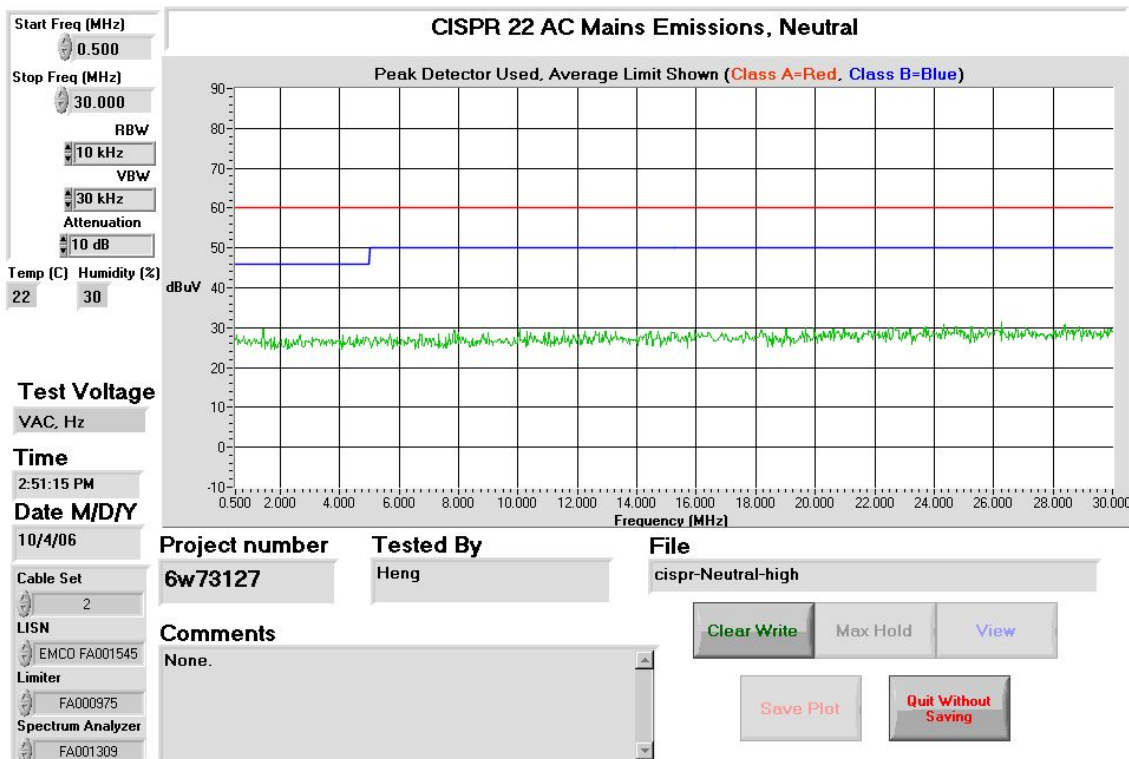
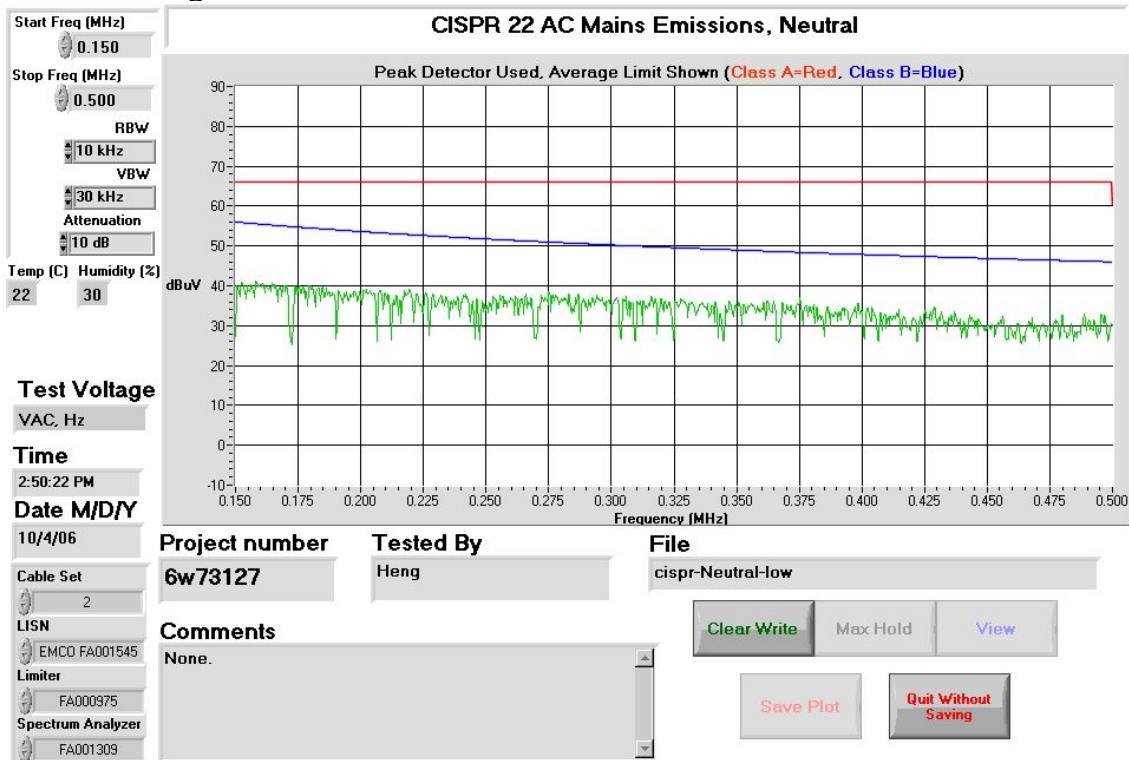
Neutral – Base with Handset



Phase – Charger with Handset



Neutral – Charger with Handset



Section 2. : Radiated Emissions within Restricted Bands**Clause 15.209(a) Radiated Emissions within Restricted Bands**

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvoltsmeter)	Measurement Distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Conditions:

Sample Number:	1, 3, 6	Temperature:	24 °C
Date:	Oct 19, 2006	Humidity:	32 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Ottawa

Test Results:

See Attached Table for Results

Additional Observations:

The Spectrum was searched from 30MHz to 25GHz.

These results apply to emissions found in the Restricted bands defined in FCC Part 15 Subpart C, 15.205.

The EUT was measured on three orthogonal axes.

All measurements were performed using a Peak Detector with 100kHz RBW / 300kHz VBW below 1GHz and a 1MHz RBW / 3MHz VBW above 1GHz at a distance of 3 meters.

Average measurements were calculated using the duty cycle correction factor and the Peak measurement.

The testing for handset was performed with fully charged battery.

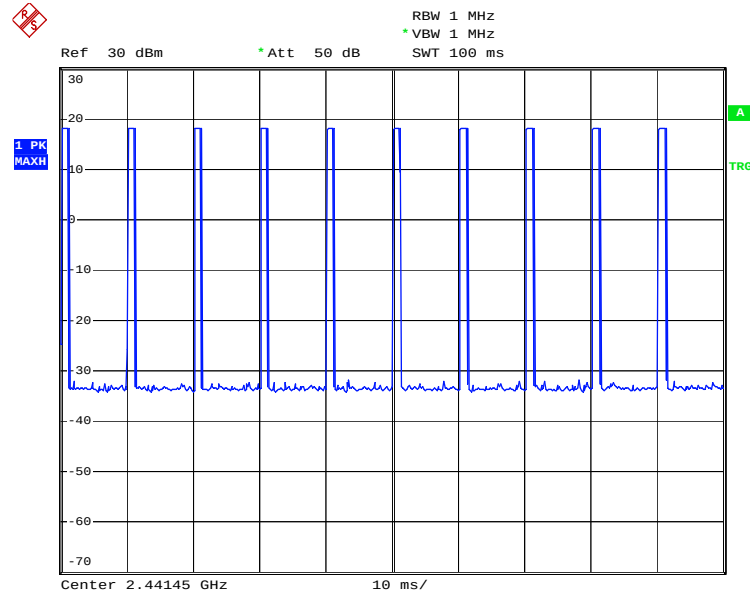
Only emissions within 20dB below the limit have been included.

Base

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain (dB)	Duty Cycle Corr.	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	CH00											
1	4802.2000	Horn2	V	72.1	33.3	55.6	22	8.6	58.4 36.4	74.0 54	15.6 17.6	Peak Average
2	4802.2000	Horn2	H	69.8	33.1	55.6	22	8.6	56.0 34	74.0 54	18.0 20	Peak Average
	CH47											
3	4883.2000	Horn2	V	69.0	33.3	55.3	22	8.6	55.6 33.6	74.0 54.0	18.4 20.4	Peak Average
4	4883.2000	Horn2	H	67.6	33.2	55.3	22	8.6	54.1 34.1	74.0 54.0	19.9 21.9	Peak Average
5	7325.5600	Horn2	V	67.6	36.4	55.7	22	12.3	60.5 38.5	74.0 54.0	13.5 15.5	Peak Average
6	7325.5600	Horn2	H	67.4	36.4	55.7	22	12.3	60.3 38.3	74.0 54.0	13.7 15.7	Peak Average
	CH94											
7	4964.8000	Horn2	V	69.8	33.3	55.0	22	8.4	56.5 34.5	74.0 54.0	17.5 19.5	Peak Average
8	4964.8000	Horn2	H	71.2	33.2	55.0	22	8.4	57.8 35.8	74.0 54.0	16.2 18.2	Peak Average
9	7446.2000	Horn2	V	68.4	36.4	55.7	22	12.4	61.5 39.5	74.0 54.0	12.5 14.5	Peak Average
10	7446.2000	Horn2	H	67.8	36.4	55.7	22	12.4	60.9 38.9	74.0 54.0	13.1 15.1	Peak Average

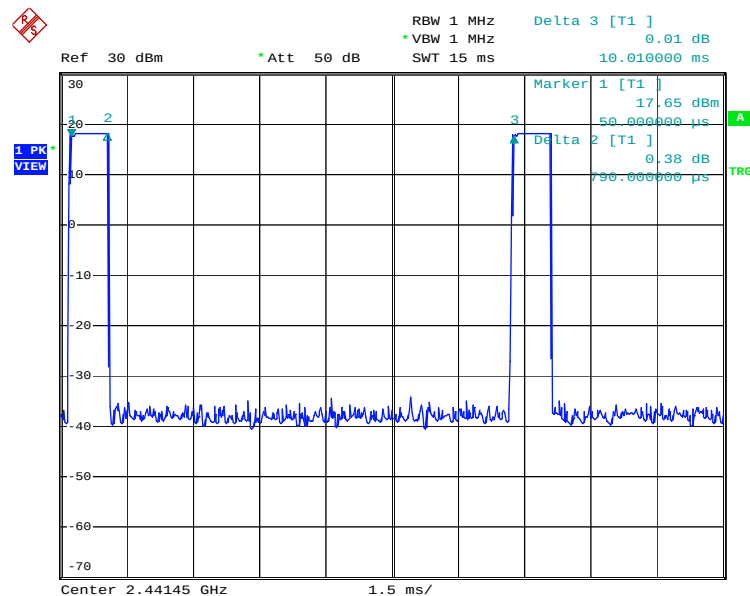
Handset

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain (dB)	Duty Cycle Corr.	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	CH00											
1	4802.2400	Horn2	H	69.1	33.1	55.6	20.8	8.6	55.3 34.5	74.0 54	18.7 19.5	Peak Average
2	4802.2400	Horn2	V	68.7	33.3	55.6	20.8	8.6	55.0 34.2	74.0 54	19.0 19.8	Peak Average
	CH47											
5	4883.1000	Horn2	H	68.1	33.2	55.3	20.8	8.6	54.6 33.8	74.0 54	19.4 20.2	Peak Average
6	4883.1000	Horn2	V	67.6	33.3	55.3	20.8	8.6	54.2 33.4	74.0 54	19.8 20.6	Peak Average
	CH94											
7	4963.6000	Horn2	H	67.5	33.2	55	20.8	8.4	54.1 33.3	74.0 54	19.9 20.7	Peak Average
8	4963.6000	Horn2	V	66.9	33.3	55	20.8	8.4	53.6 32.8	74.0 54	20.4 21.2	Peak Average

Duty Cycle:**Base**

Conducted emissions with MS activated

Date: 18.OCT.2006 21:48:36

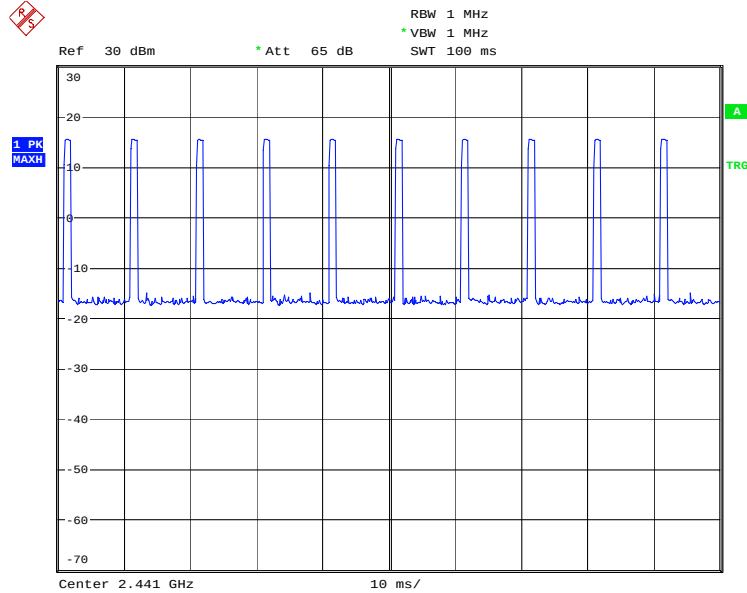


Conducted emissions with MS activated

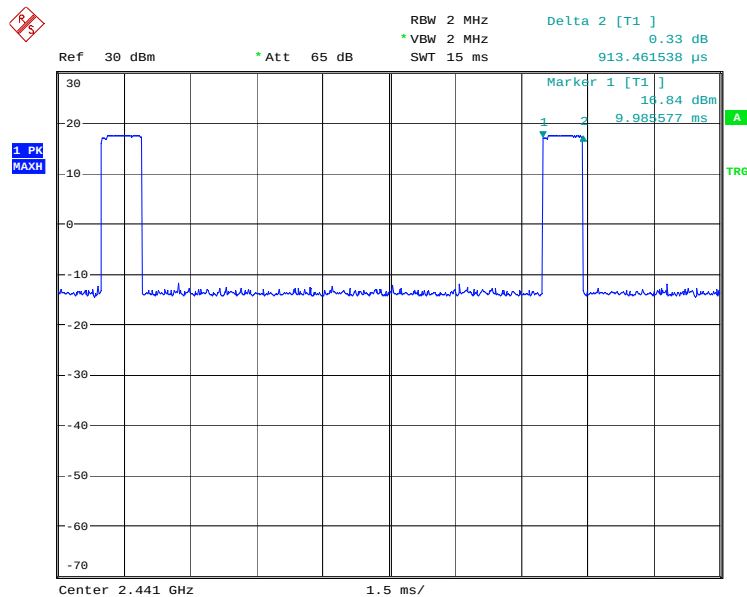
Date: 18.OCT.2006 21:44:55

Duty Cycle Correction factor: $20\text{Log}[(10 \times 0.79\text{ms})/100\text{ms}] = -22.0\text{dB}$

Duty Cycle: Handset



Date: 30.OCT.2006 16:10:55

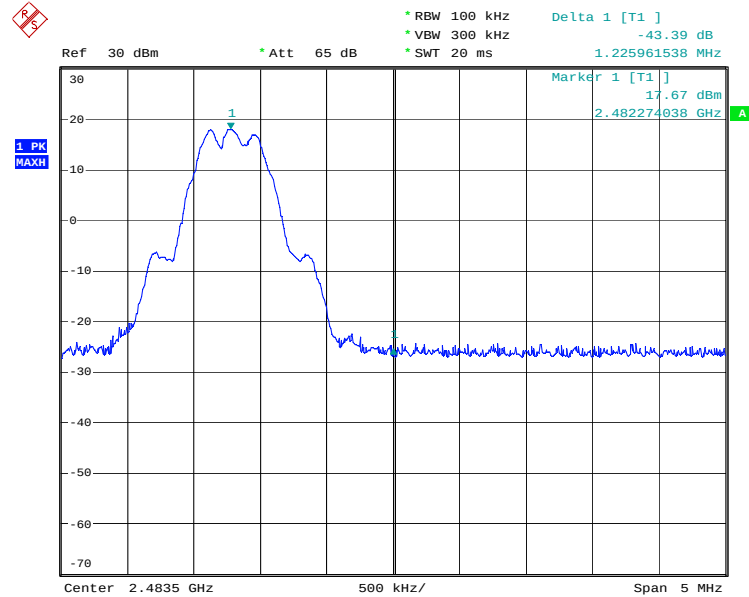


Date: 30.OCT.2006 16:13:26

Duty Cycle Correction factor: $20\text{Log}[(10 \times 0.91\text{ms})/100\text{ms}] = -20.8\text{dB}$

Restricted Band Checking

Delta Marker Measurement for 2.4845GHz Band Edge Base



20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:58:53

Measured Field Strength for High Channel in 1MHz RBW = 109dBuV/m

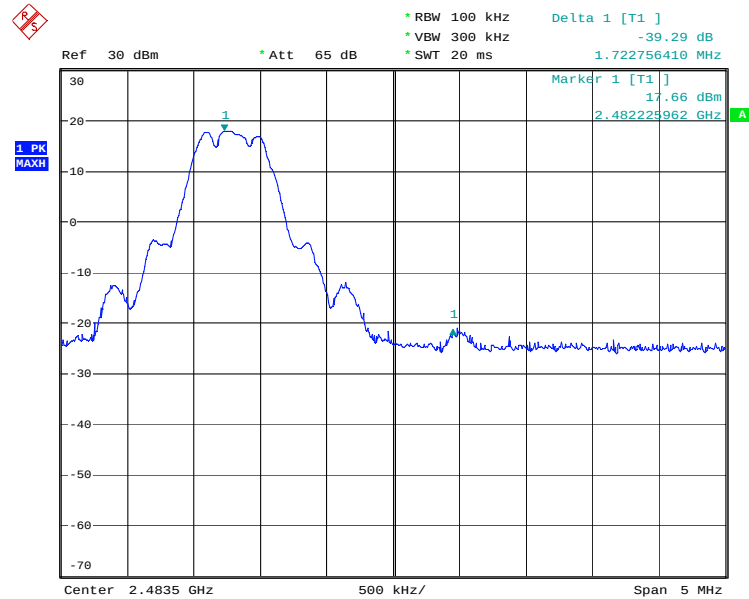
Delta Marker = 43.39dB

Therefore, Peak Field Strength = 109dBuV/m - 43.39dB = 65.61dBuV/m

Limits = 74 dBuV/m

Average Field Strength = 65.61dBuV/m – 22 dB(Duty Cycle) = 43.61dBuV/m

Limits = 54dBuV/m

Handset

20dB bandwidth - Low Channel

Date: 25.OCT.2006 17:55:17

Measured Field Strength for High Channel in 1MHz RBW = 110.1dBuV/m

Delta Marker = 39.29dB

Therefore, Peak Field Strength = 109dBuV/m - 39.29dB = 71.81dBuV/m

Limits = 74 dBuV/m

Average Field Strength = 71.81dBuV/m - 20.8 dB(Duty Cycle) = 51.08dBuV/m

Limits = 54dBuV/m

Section 3. : 20dB Bandwidth

Criteria: Clause 15.247(a)(1) Frequency hopping systems

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Conditions:

Sample Number:	1, 3, 10, 11	Temperature:	22 °C
Date:	October 18, 2006	Humidity:	15 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Ottawa

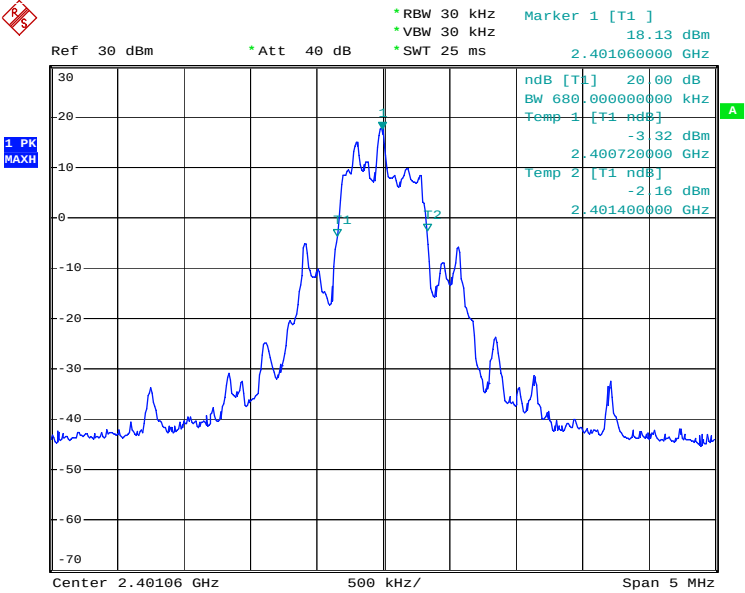
Test Results: Complies

Test Data: See attached table and graphics

20dB Occupied Bandwidth (KHz)

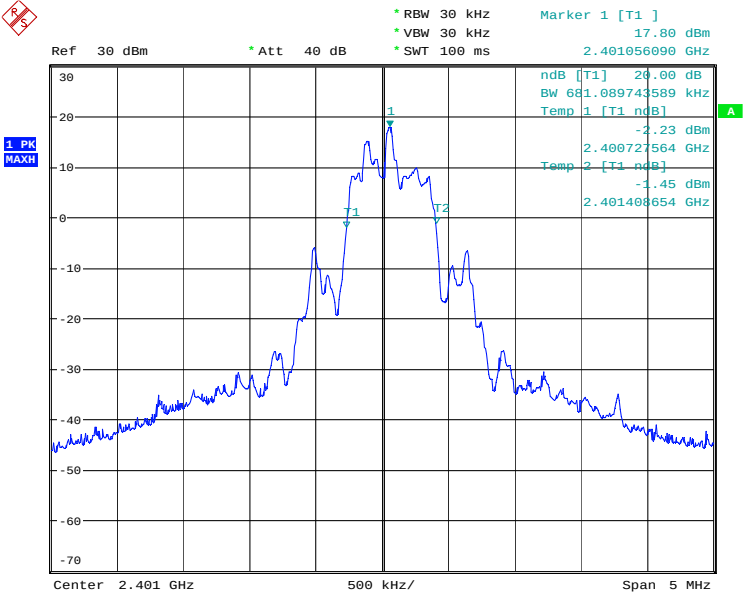
Operation Frequency(MHz)	Channel 00 2401	Channel 47 2441	Channel 94 2482
Base 20dB Occupied Bandwidth (kHz)	680	690	690
Handset 20dB Occupied Bandwidth (kHz)	681	697	697

20dB Bandwidth:
Base Channel 0



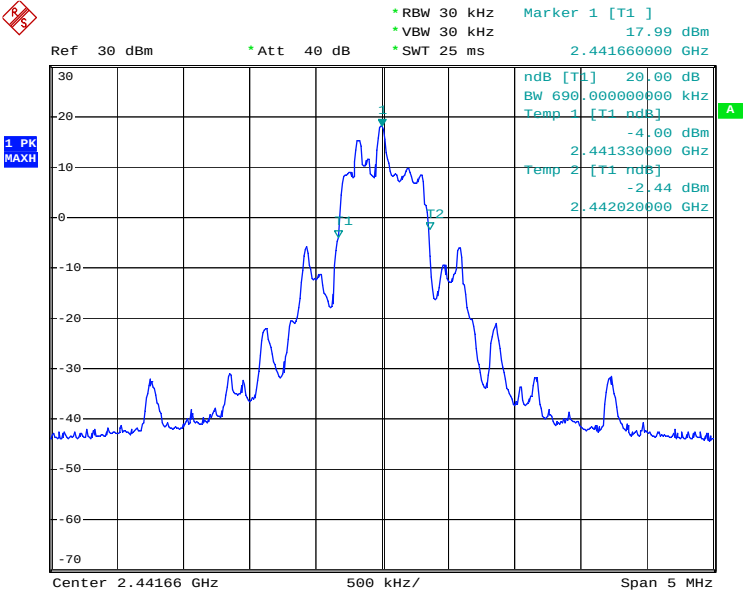
Conducted emissions with MS activated
Date: 18.OCT.2006 19:18:42

Handset Channel 0



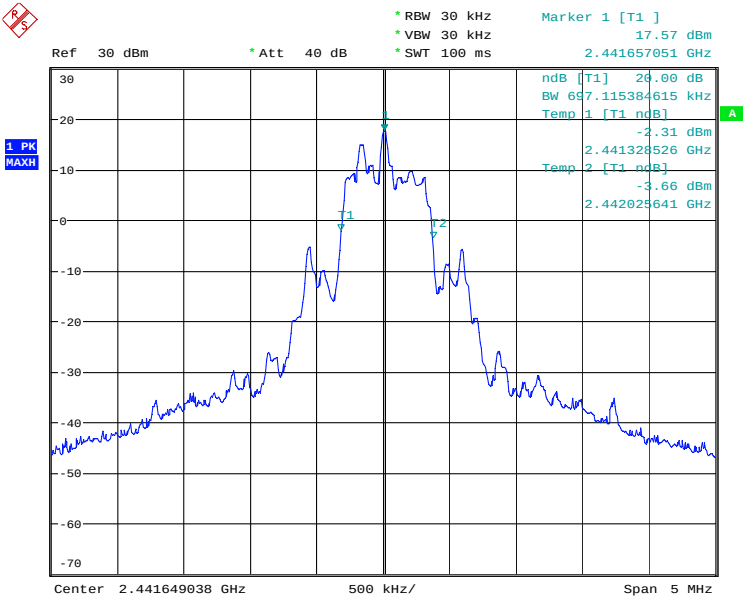
20dB bandwidth - Low Channel
Date: 25.OCT.2006 18:40:57

Base Channel 47



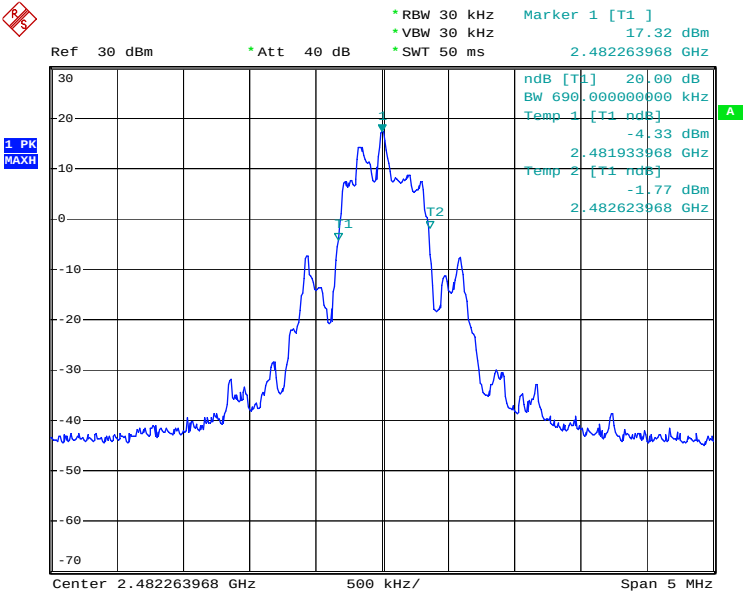
Conducted emissions with MS activated
Date: 18.OCT.2006 19:16:49

Handset Channel 47



20dB bandwidth - Low Channel
Date: 25.OCT.2006 18:37:26

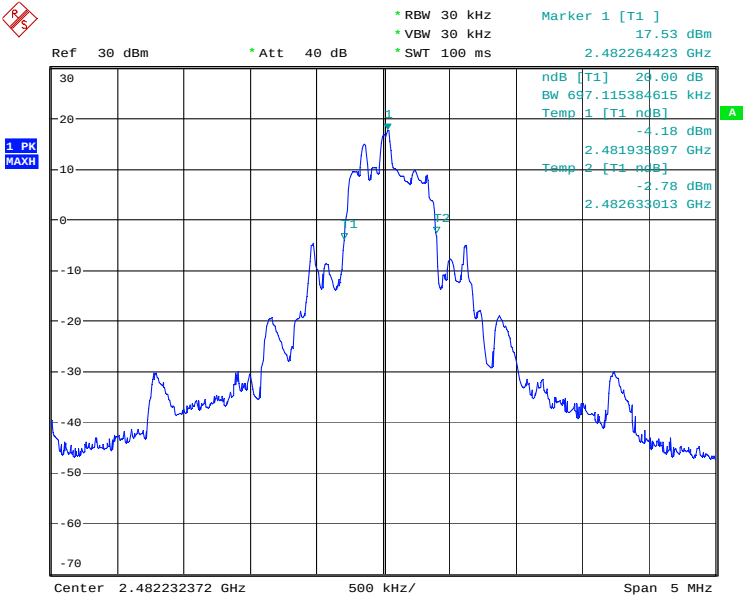
Base Channel 94



Conducted emissions with MS activated

Date: 18.OCT.2006 19:10:51

Handset Channel 94



20dB bandwidth - Low Channel

Date: 25.OCT.2006 18:42:34

Section 3. : Output Power**Criteria: Clause 15.247(b)(1) Maximum peak output power of Frequency hopping systems operating in the 2400-2483.5 MHz band and 5725-5850 MHz band**

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts..

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Conditions:

Sample Number:	10, 11	Temperature:	20 °C
Date:	October 18, 2006	Humidity:	30 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Ottawa

Test Results: Complies

Test Data: See attached table and plots

Conducted Output Power:**Base**

Channel Range	Measured Output Power (dBm)	Cable Loss (dB)	Actual Output Power (W) Conducted
Low	18.21	0.84	0.080W (19.05dBm)
Mid	18.05	0.84	0.077W (18.89dBm)
High	17.40	0.84	0.067W (18.24dBm)

Antenna gain = 0 dBi

Measured output power = 19.05dBm

Maximum output power = 19.05dBm + 0dBi = 19.05dBm (E.I.R.P.)

Limit = 30dBm + 6dBi antenna (E.I.R.P.)

Handset

Channel Range	Measured Output Power (dBm)	Cable Loss (dB)	Actual Output Power (W) Conducted
Low	17.99	0.84	0.076W (18.83dBm)
Mid	17.66	0.84	0.070W (18.5dBm)
High	17.54	0.84	0.069W (18.38dBm)

Antenna gain = 0 dBi

Measured output power = 18.85dBm

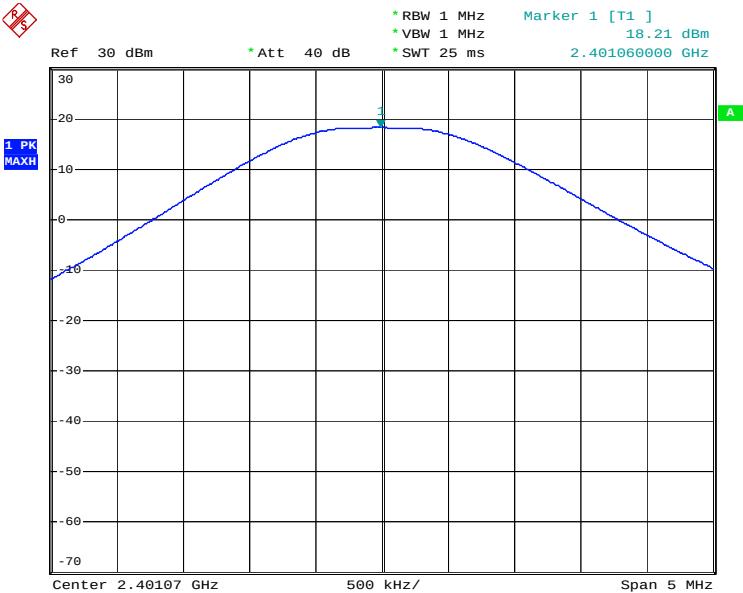
Maximum output power = 18.85dBm + 0dBi = 18.85dBm (E.I.R.P.)

Limit = 30dBm + 6dBi antenna (E.I.R.P.)

The output power was measured at +/-15% of the supply voltage and found that there was no change.

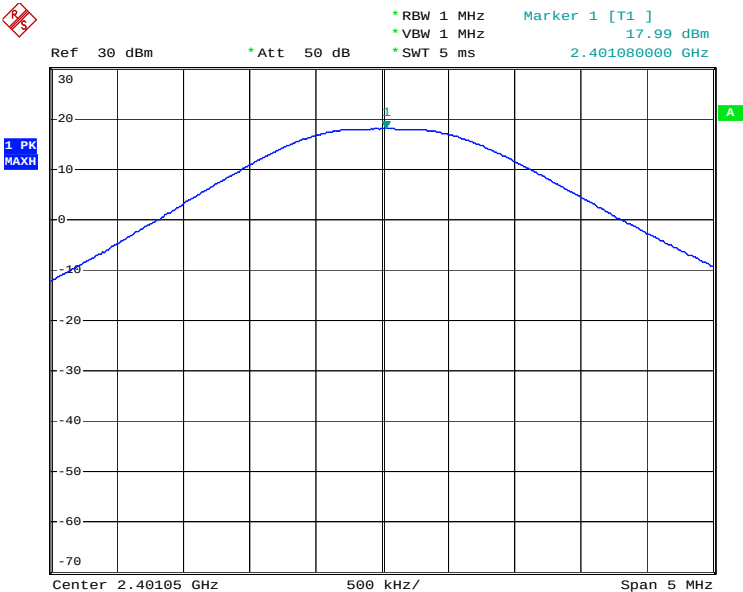
Note: The EUT was modified by the manufacturer to perform conducted measurements.
The testing for handset was performed with fully charged battery.

Channel 00:
Base



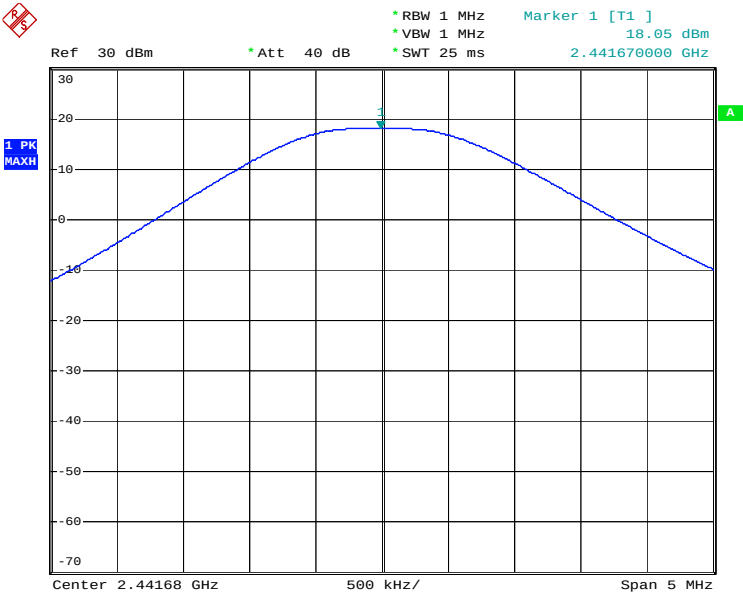
Conducted emissions with MS activated
Date: 18.OCT.2006 19:22:44

Handset



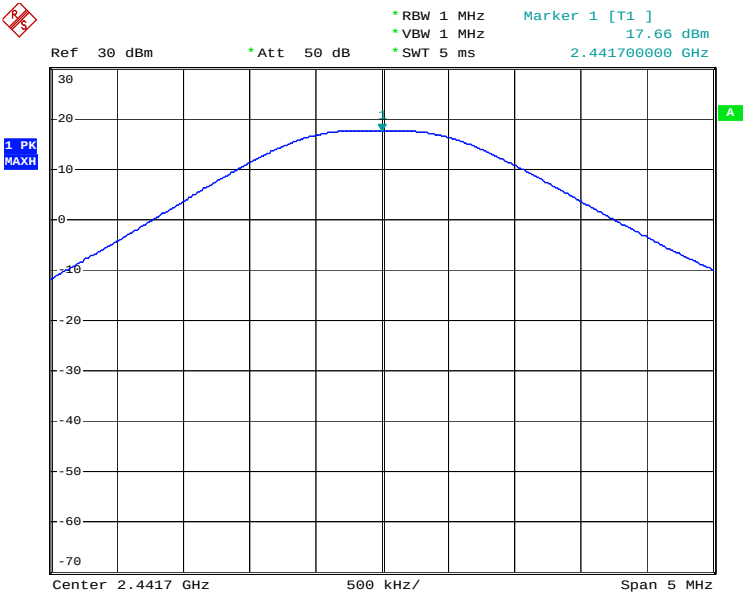
Conducted emissions with MS activated
Date: 18.OCT.2006 22:10:09

Channel 47:
Base



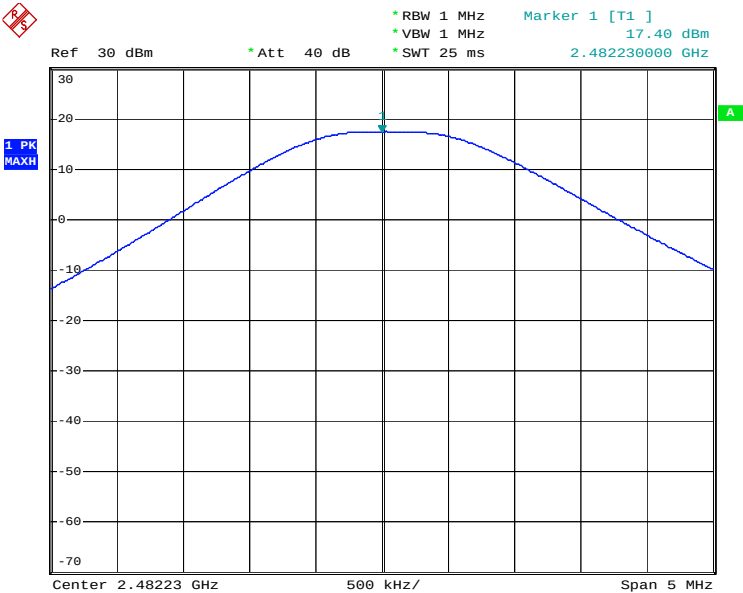
Conducted emissions with MS activated
Date: 18.OCT.2006 19:24:50

Handset



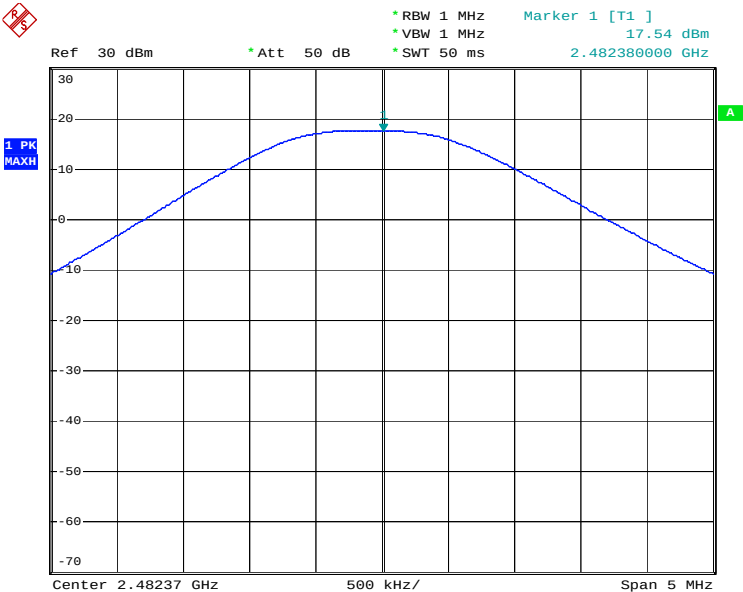
Conducted emissions with MS activated
Date: 18.OCT.2006 22:11:56

Channel 94:
Base



Conducted emissions with MS activated
Date: 18.OCT.2006 19:27:09

Handset



Conducted emissions with MS activated
Date: 18.OCT.2006 22:14:24

Section 4. : Spurious Emissions**Criteria: Clause 15.247(d) Radiated Emissions Not in Restricted Bands**

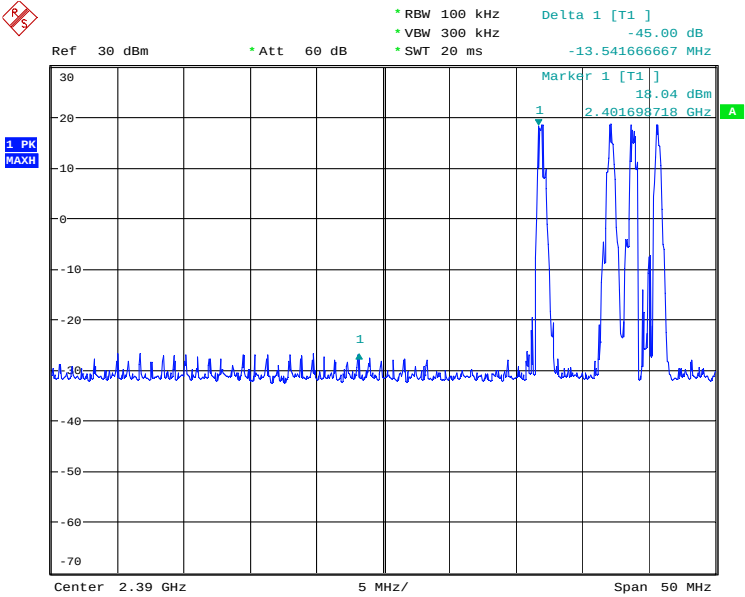
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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)).

Test Conditions:

Sample Number:	1, 3, 10, 11	Temperature:	22 °C
Date:	October 18 , 2006	Humidity:	17 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Ottawa

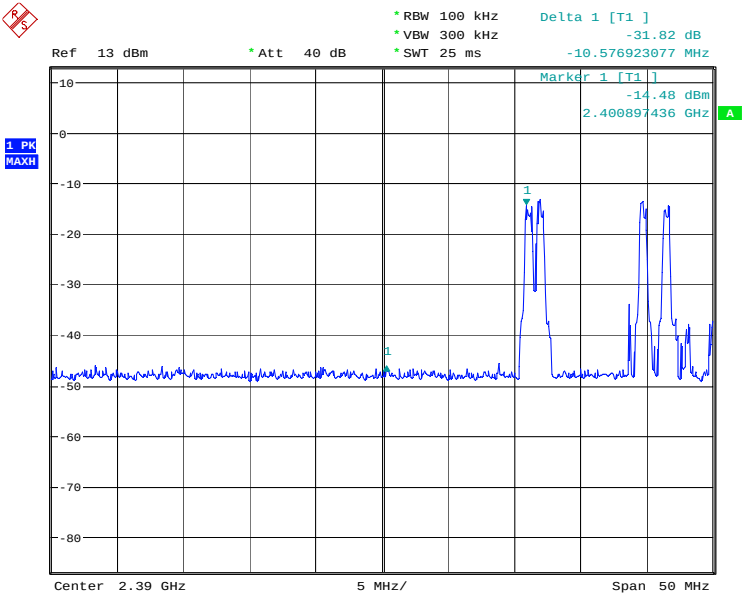
Test Results: Complies**Test Data:** See Attached Table and Plots.

Lower Band Edge Hopping On:
Base Channel 00



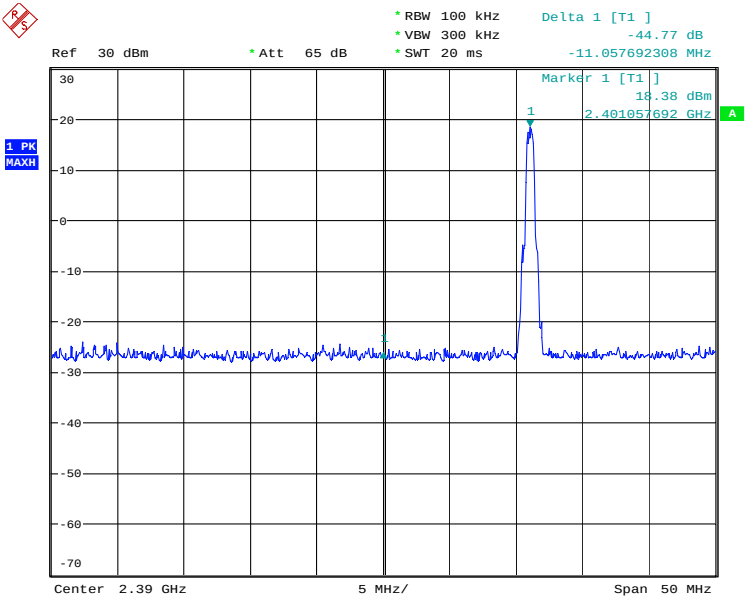
20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:13:11

Handset



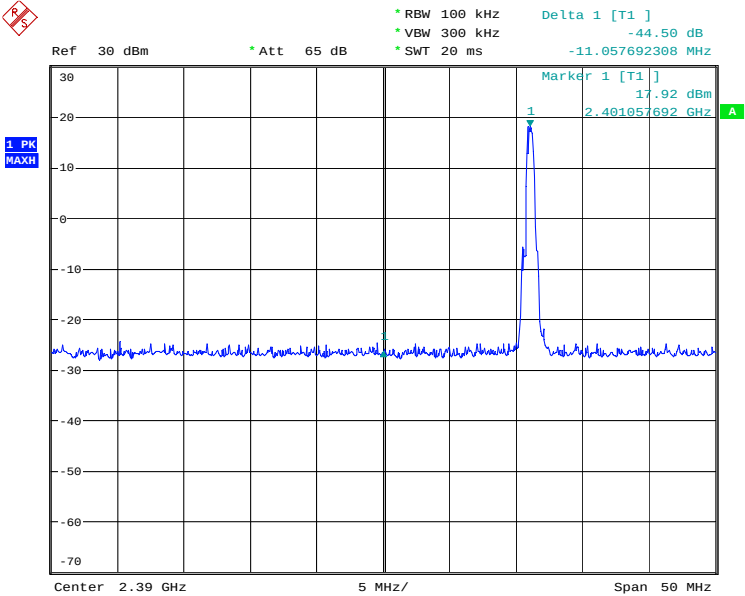
Date: 30.OCT.2006 16:25:49

Lower Band Edge Hopping Off:
Base



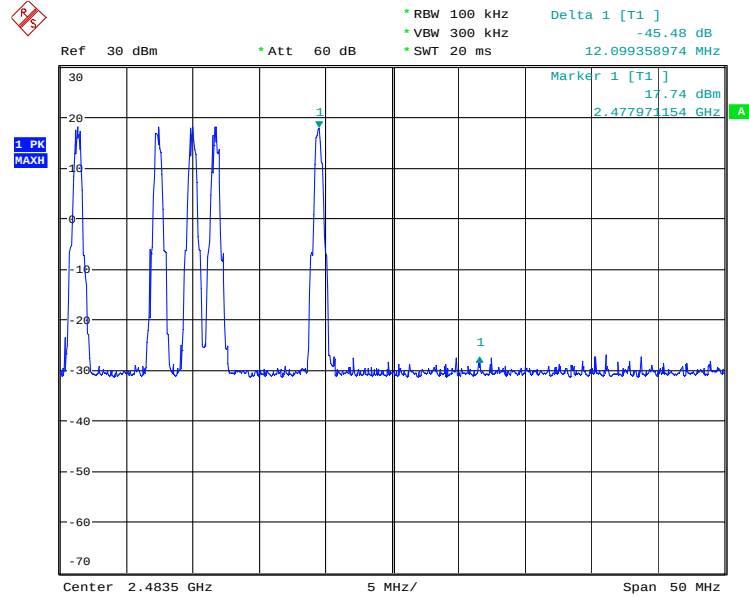
20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:15:42

Handset



20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:23:06

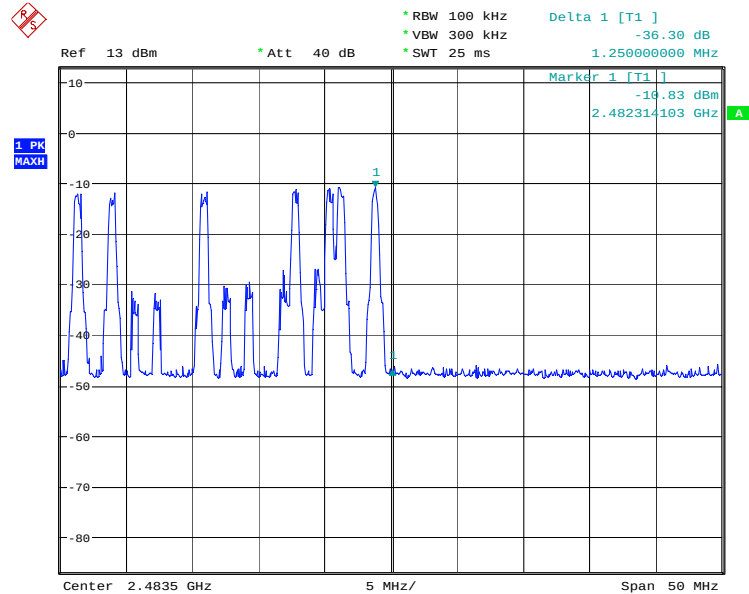
Upper Band Edge Hopping On: Base



20dB bandwidth - Low Channel

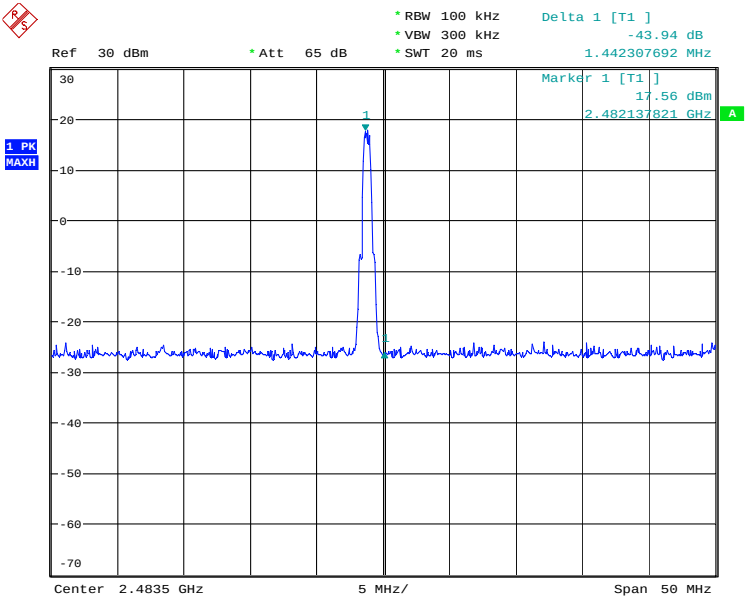
Date: 25.OCT.2006 17:10:26

Handset



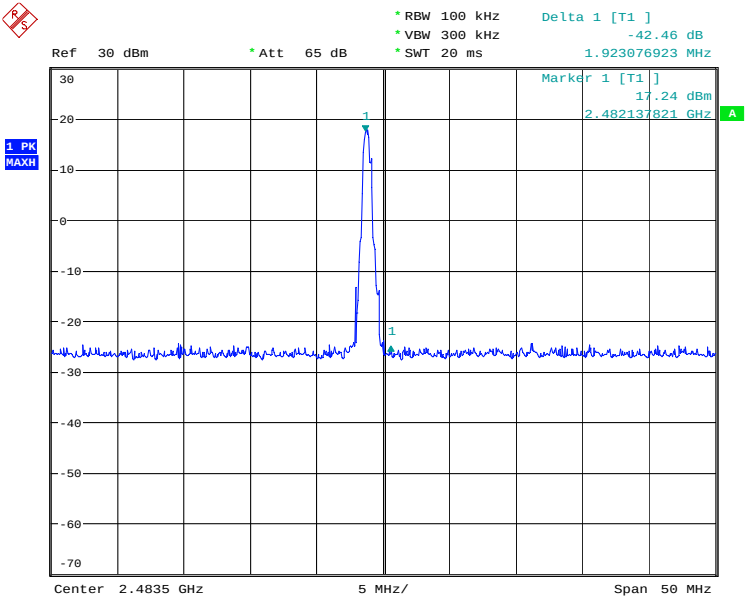
Date: 30.OCT.2006 16:32:08

Upper Band Edge Hopping Off:
Base



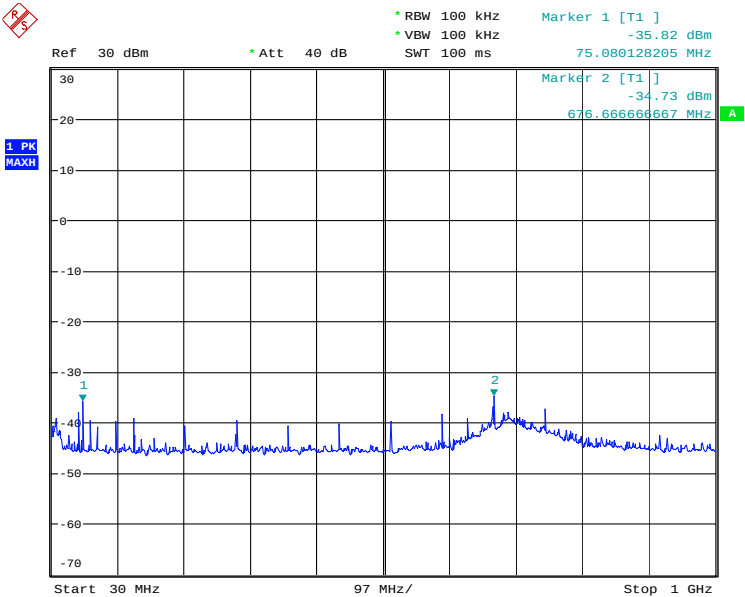
20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:17:40

Handset

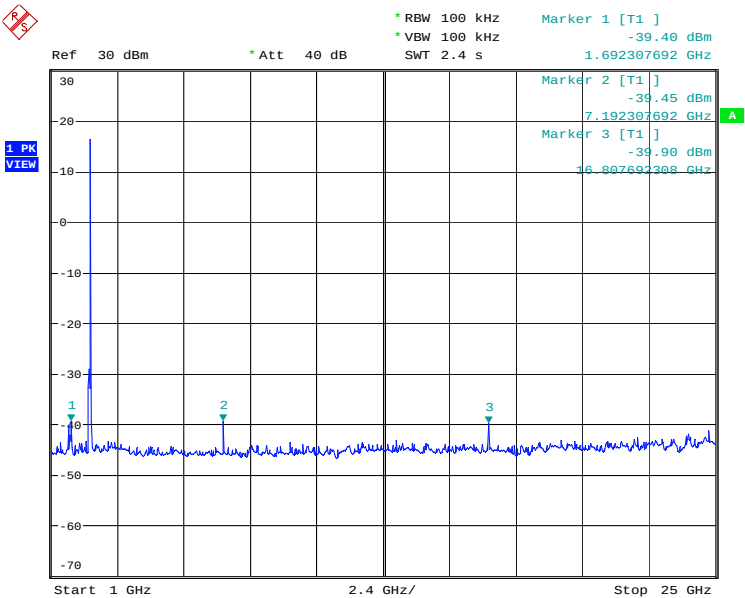


20dB bandwidth - Low Channel
Date: 25.OCT.2006 17:21:10

Conducted Emissions
Base – Low Channel

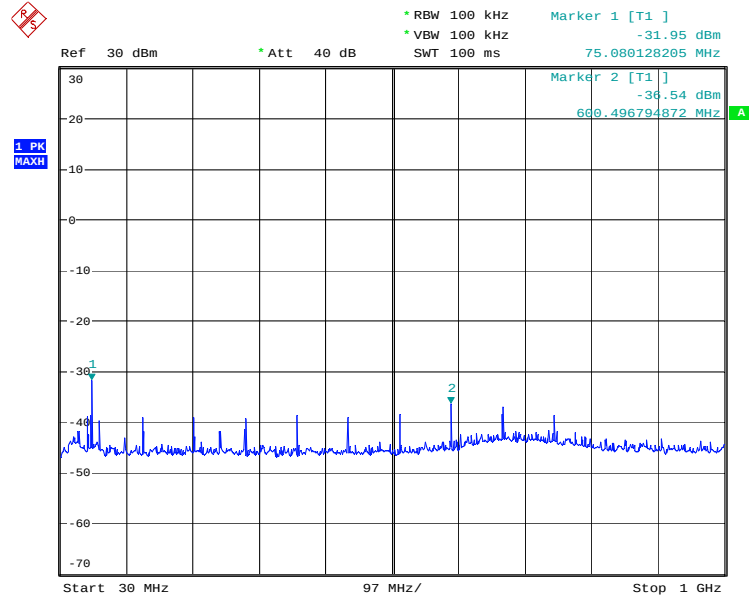


Conducted emissions
Date: 1.NOV.2006 12:17:43



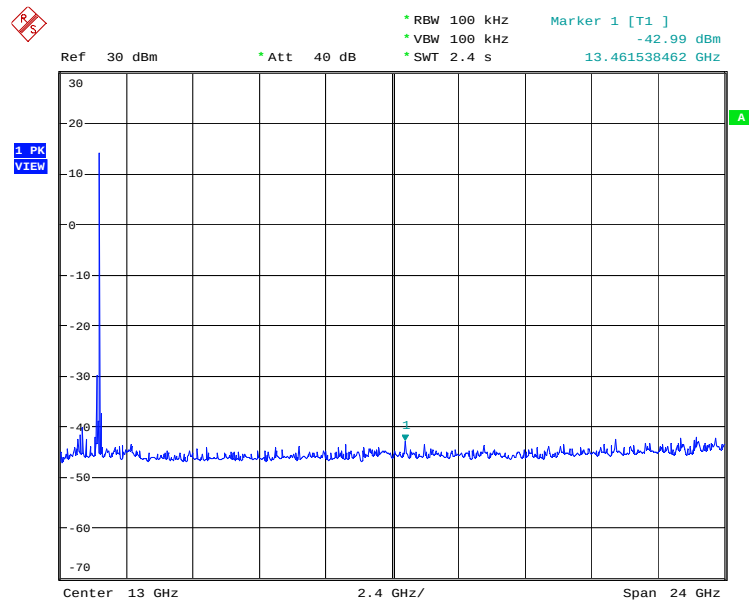
Conducted emissions
Date: 1.NOV.2006 12:21:36

Handset – Low channel



Conducted emissions

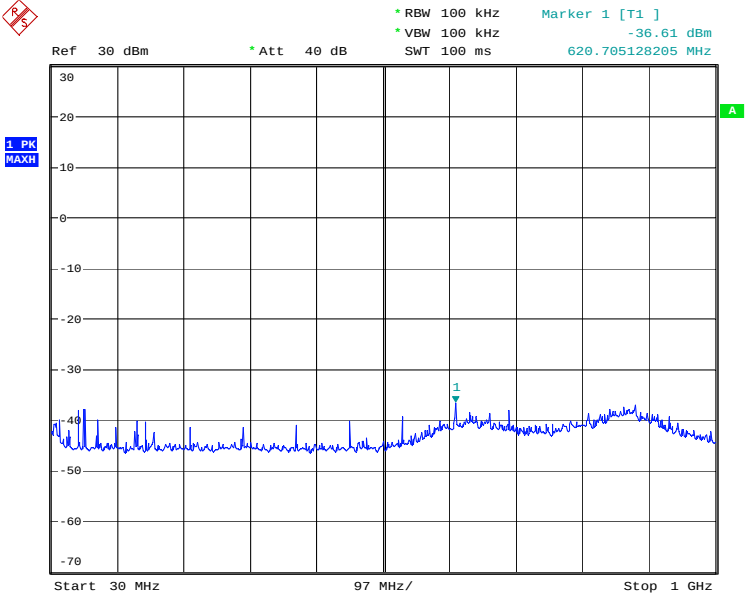
Date: 1.NOV.2006 12:38:06



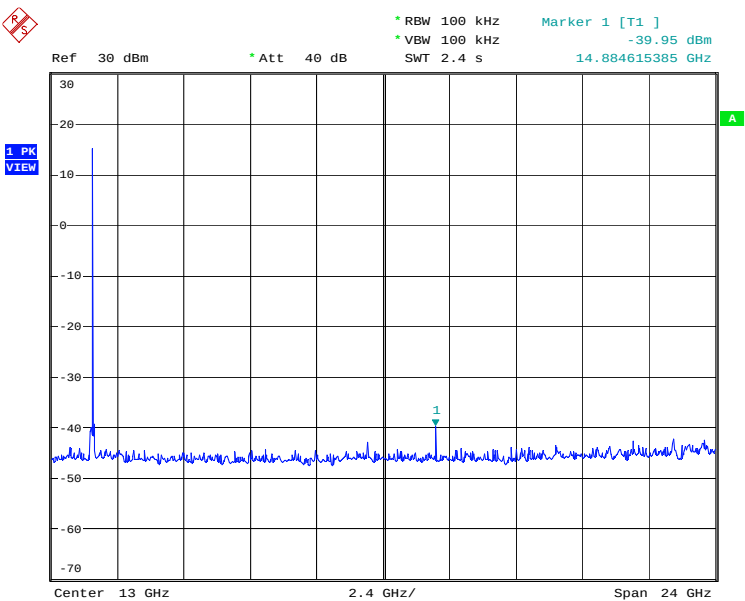
Conducted emissions

Date: 1.NOV.2006 13:17:30

Base – High Channel

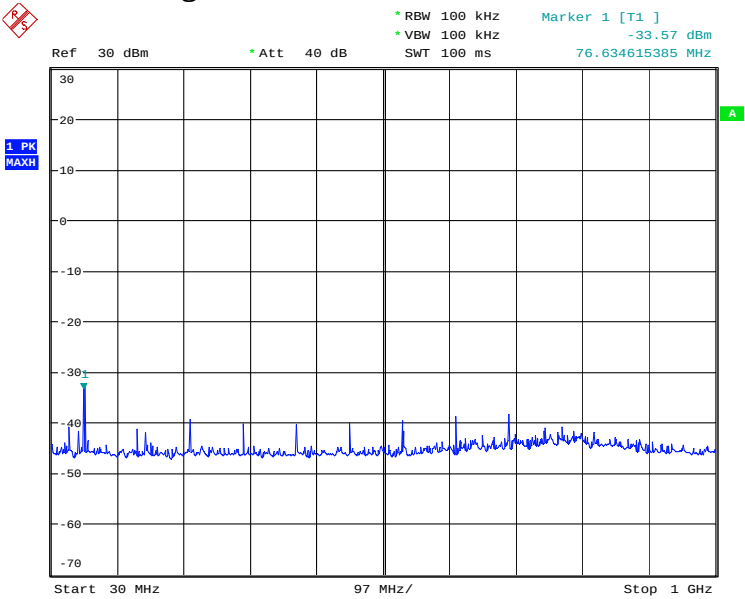


Conducted emissions
Date: 1.NOV.2006 12:27:05

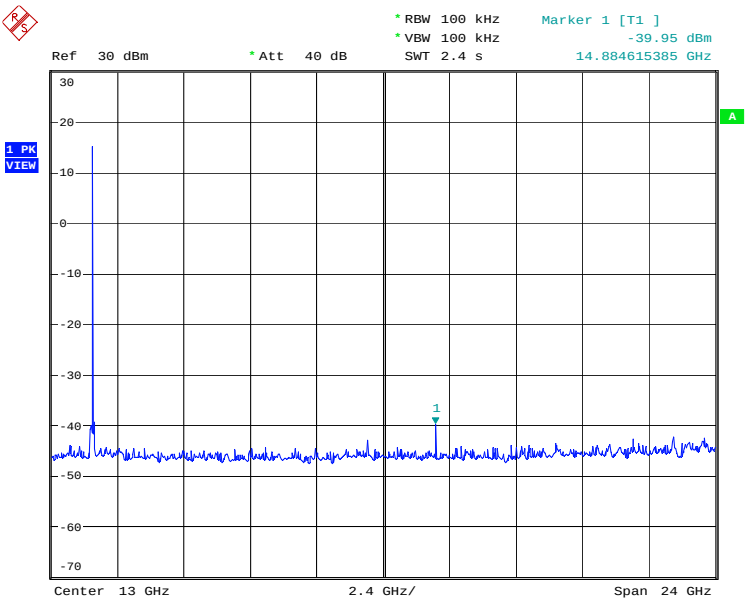


Conducted emissions
Date: 1.NOV.2006 12:32:39

Handset – High channel



Conducted emissions
Date: 1.NOV.2006 12:29:29



Conducted emissions
Date: 1.NOV.2006 12:32:39

Radiated Emissions

The EUT was searched from 30MHz to 10th harmonics, and for low, medium and high frequencies. Measurement has conducted on three orthogonal axes and at 3meter distance.

The spectrum analyser was set to Q-Peak detector mode with RBW/VBW as 100KHz/300KHz below 1GHz, and average detector with RBW/VBW as 1MHz/3MHz above 1GHz.

The testing for handset was performed with fully charged battery.

Only worst-case data was presented.

Base

Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB/m)	Amp. Gain (dB)	Cable Loss (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
42.3350	BC2	V	27.2	10.4	—	1.3	39.0	40.0	1.0
42.3350	BC2	H	14.6	11.7	—	1.3	27.7	40.0	12.3
44.0633	BC2	V	26.9	10.4	—	1.4	38.7	40.0	1.3
44.0633	BC2	H	14.3	11.7	—	1.4	27.4	40.0	12.6
44.9000	BC2	V	24.5	10.4	—	1.4	36.3	40.0	3.7
44.9000	BC2	H	14.5	11.7	—	1.4	27.6	40.0	12.4
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole									

Handset

Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB/m)	Amp. Gain (dB)	Cable Loss (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
138.2300	BC2	V	25.2	13.3	—	1.9	40.4	43.5	3.1
138.2300	BC2	H	14.5	12.8	—	1.9	29.2	43.5	14.3
152.0652	BC2	V	23.8	13.4	—	1.9	39.1	43.5	4.4
152.0000	BC2	H	21.4	12.7	—	1.9	36.0	43.5	7.5
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole									

Section 5. : Supply Voltage Variation**Criteria: Clause 15.31**

§ 15.31 (e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

Test Conditions:

Sample Number:	1	Temperature:	22 °C
Date:	October 18, 2006	Humidity:	50 %
Modification State:	0	Tester:	Heng Lin
		Laboratory:	Ottawa

Test Method: Average power for selected channels was verified under voltage extreme conditions using a wideband power meter with thermocouple detector.

Extreme Voltage: ±15% of AC supply

Test Result: No change for output power level was noticed during the test.

Appendix B : Setup Photographs

AC Power Line Conducted Emissions Setup:

Base with handset



Charger with handset



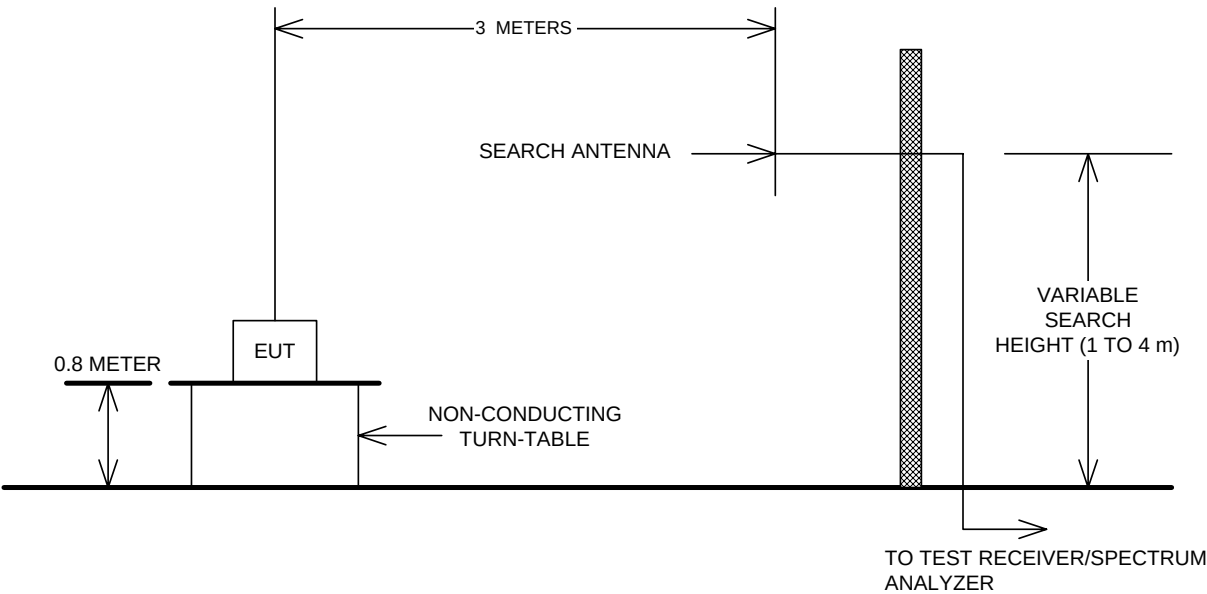
Radiated Emissions Setup:



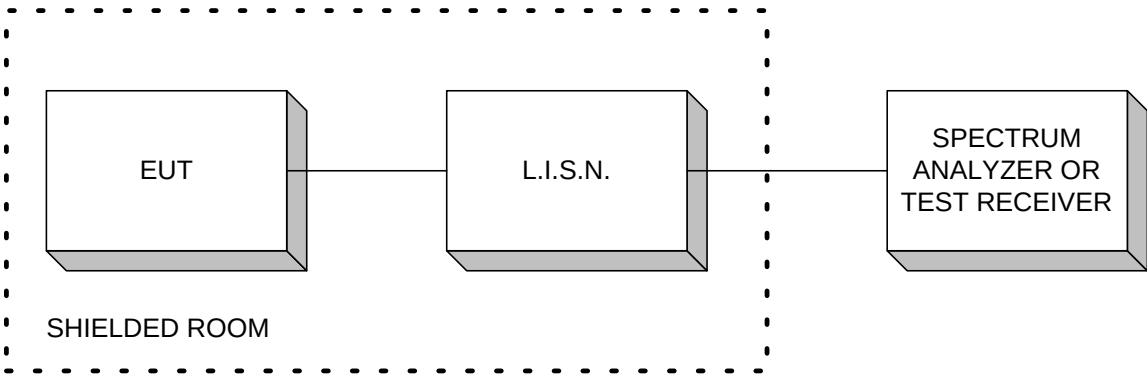


Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions



Conducted Measurements

