



Test Report: 4W35609


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

**Equipment Under Test:
(EUT)** Vtech 2101 & Vtech 2121
900MHz Cordless Telephone

FCC ID: EW780-5675-00

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: 25 January 2005

Total Number of Pages: 21

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EQUIPMENT:Vtech 2101 & 2121

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 C63.4-2001. 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.



TESTED BY: _____
Glen Westwell,, Wireless Specialist

DATE: 20 January 2005

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This report applies only to the items tested.

EQUIPMENT:Vtech 2101 & 2121

Summary Of Test Data

Name Of Test	Para. No.	Result
Conducted Emissions	15.207	Complies
Radiated Emissions	15.249	Complies

Note: This device has 2 handset variants, with caller ID, and without caller ID. Both handsets have the same RF device.

Test Conditions:

Indoor Temperature: 23°C
 Humidity: 42%

Outdoor Temperature: -10°C
 Humidity: 30%

EQUIPMENT:Vtech 2101 & 2121

Section 3. Powerline Conducted Emissions

Para. No.: 15.207(a)

Test Performed By: Glen Westwell	Date of Test: 24 Dec 2004
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Minimum Standard:

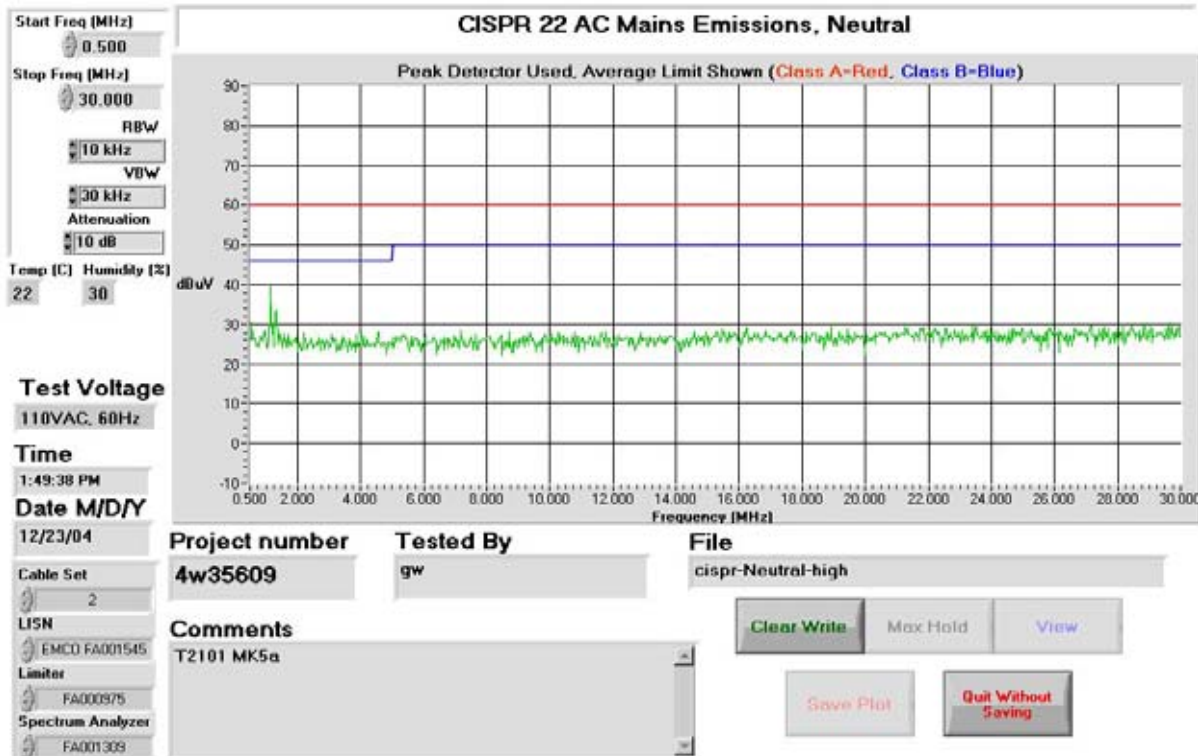
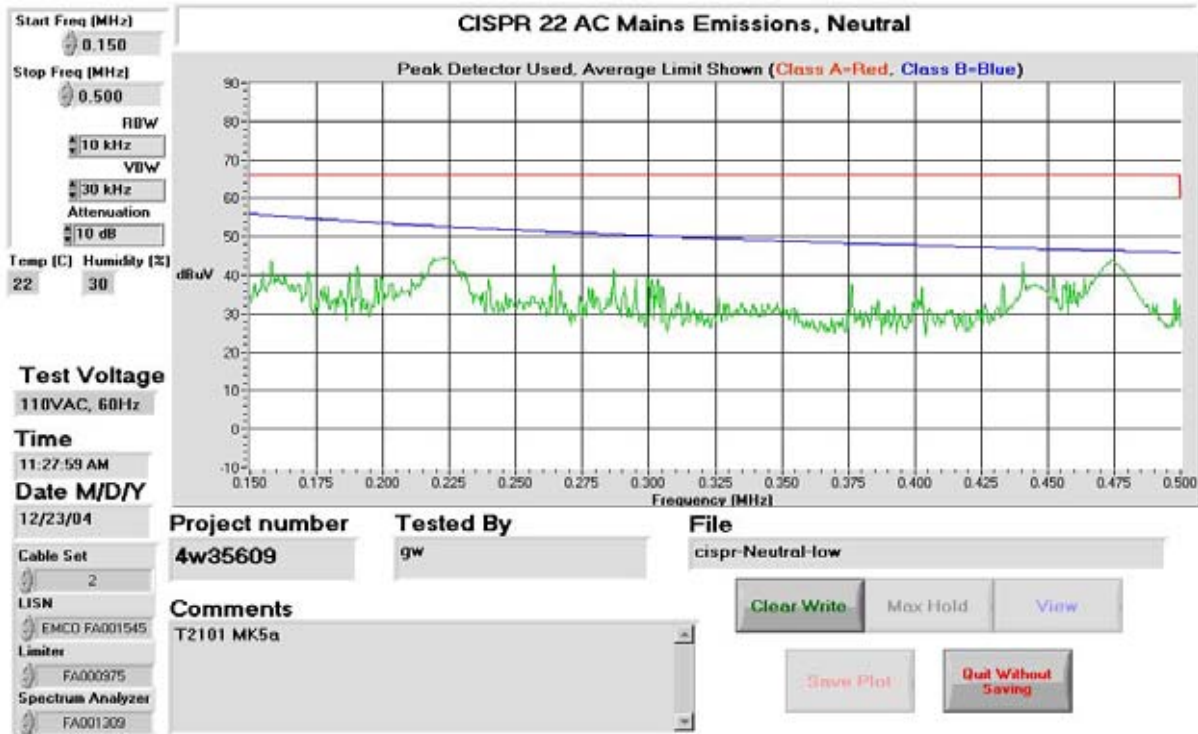
Frequency of Emission (MHz)	Maximum Powerline Conducted RF Voltage	
	Quasi-peak (dBuV)	Average(dBμV)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency

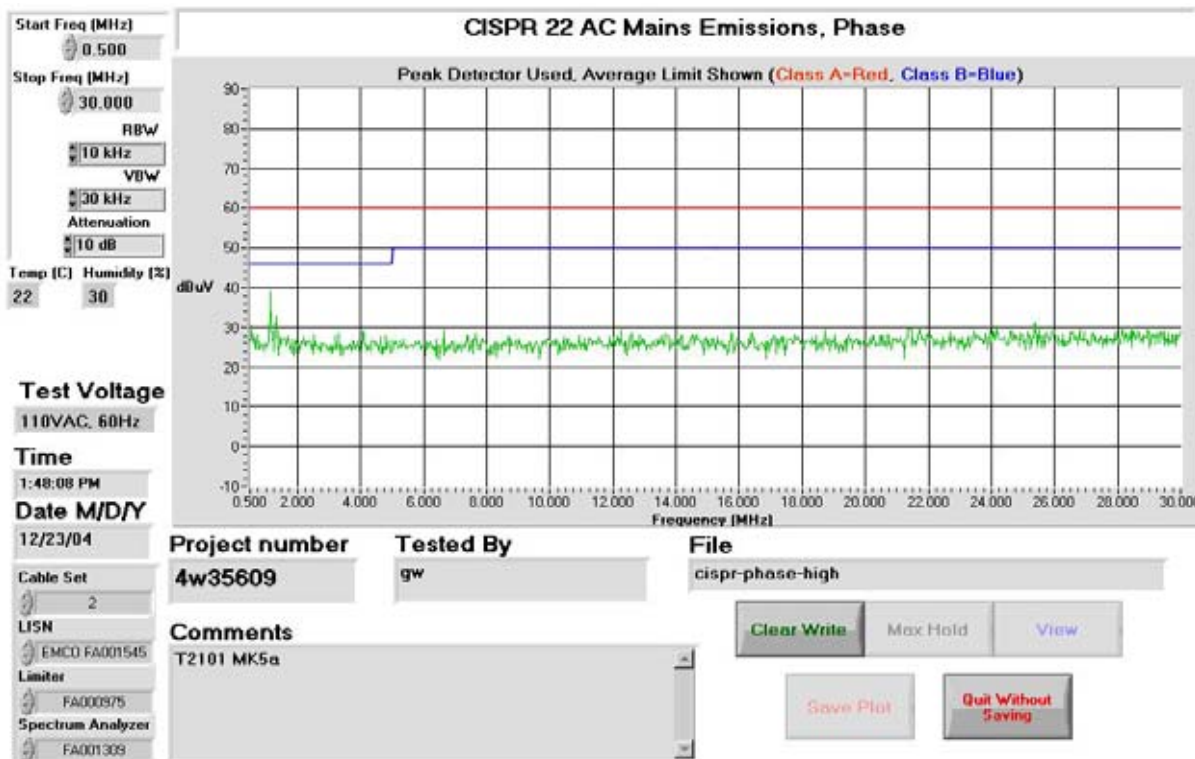
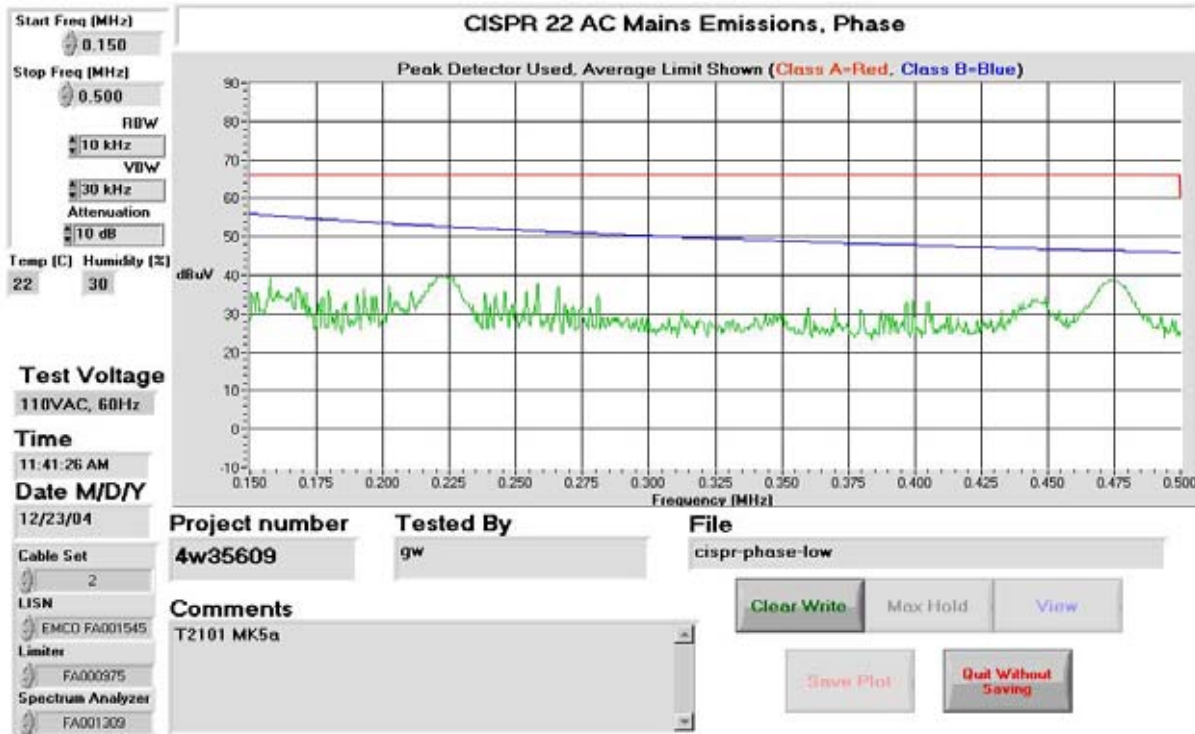
Test Results: Complies

Measurement Data: See attached graphs.

EQUIPMENT:Vtech 2101 & 2121

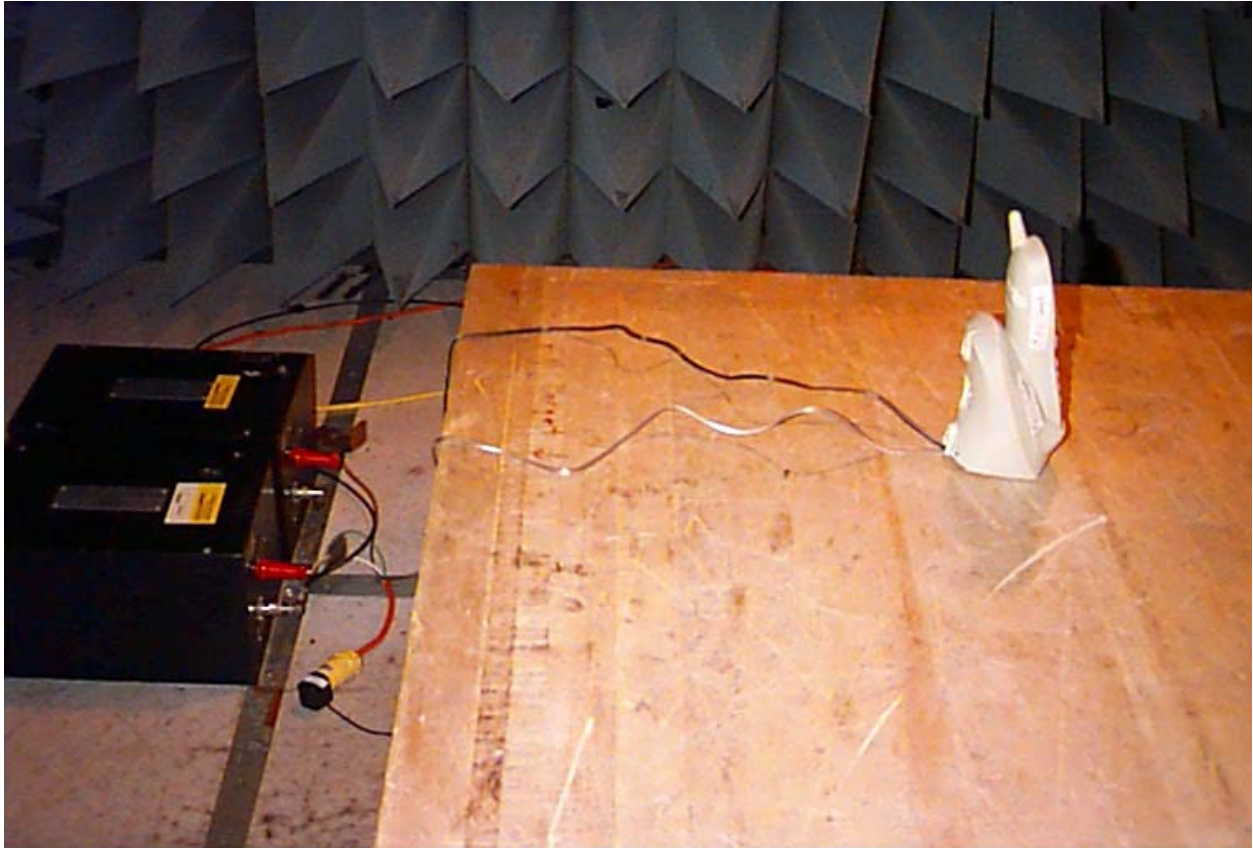


EQUIPMENT:Vtech 2101 & 2121



EQUIPMENT:Vtech 2101 & 2121

Powerline Conducted Photo



EQUIPMENT:Vtech 2101 & 2121

Section 4. Radiated Emissions

Para. No.: 15.249

Test Performed By: Dave Duchesne & Glen Westwell	Date of Test: 3 Jan. 2005
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Minimum Standard:

Fundamental (MHz)	Field Strength (mV/m)	Field Strength (dBµV)	Harmonic (mV/m)	Harmonic (dBµV)
902-928	50	94	0.5	54

Test Results: Complies

Measurement Data: See attached tabulated data.

Emissions were searched from 30MHz to 10GHz.
The EUT was search on 3 orthogonal axis where required.
A voltage variation of +/-15% was verified for worst case emissions.
The Handset was verified using a fresh battery as well as a DC source, both handset variants (with and without CID) were verified. Worst case data has been presented.

EQUIPMENT:Vtech 2101 & 2121

Fundamental Field Strength

Tested as per: Table Top										
Test Distance (meters): 3										
Test Eng. : Dave Duchesne										
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
Radiated Field Strength, Base Unit										
902.4025	ED4	V	55.0	28.5		4.0	87.5	94.0	6.5	Peak
902.4025	ED4	H	56.3	28.5		4.0	88.8	94.0	5.2	Peak
904.8039	ED4	V	51.5	28.5		4.0	84.0	94.0	10.0	Peak
904.8039	ED4	H	50.5	28.5		4.0	83.0	94.0	11.0	Peak
907.0529	ED4	V	49.0	28.5		4.0	81.5	94.0	12.5	Peak
907.0529	ED4	H	50.3	28.5		4.0	82.8	94.0	11.2	Peak
Radiated Field Strength, Handset										
923.4000	ED4	V	55.3	28.5		4.0	87.8	94.0	6.2	Peak
923.4000	ED4	H	58.5	28.5		4.0	91.0	94.0	3.0	Peak
925.5000	ED4	V	52.2	29.1		4.0	85.3	94.0	8.7	Peak
925.5000	ED4	H	57.0	29.1		4.0	90.1	94.0	3.9	Peak
927.7500	ED4	V	53.9	29.1		4.0	87.0	94.0	7.0	Peak
927.7500	ED4	H	57.0	29.1		4.0	90.1	94.0	3.9	Peak

Measured using 100kHz RBW/VBW peak detector

EQUIPMENT:Vtech 2101 & 2121

Radiated Emissions

Tested as per: Table Top										
Test Distance (meters): 3										
Test Eng. : Dave Duchesne										
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
Radiated Emissions, Base Unit										
Low Channel										
1804.805	Horn2	V	52.9	28.4	46.7	3.9	38.5	54.0	15.5	Peak
1804.805	Horn2	H	54.0	28.9	46.7	3.9	40.1	54.0	13.9	Peak
2707.200	Horn2	V	65.0	30.1	56.7	5.7	44.1	54.0	9.9	Peak
2707.200	Horn2	H	66.5	29.9	56.7	5.7	45.4	54.0	8.6	Peak
3609.610	Horn2	V	67.0	32.6	55.1	6.8	51.4	54.0	2.6	Peak
3609.610	Horn2	H	68.0	32.7	55.1	6.8	52.5	54.0	1.5	Peak
Mid Channel										
1809.607	Horn2	V	53.9	28.4	46.7	3.9	39.6	54.0	14.4	Peak
1809.607	Horn2	H	55.9	28.9	46.7	3.9	42.0	54.0	12.0	Peak
2714.411	Horn2	V	70.8	30.1	56.7	5.7	49.9	54.0	4.1	Peak
2714.411	Horn2	H	66.5	29.9	56.7	5.7	45.4	54.0	8.6	Peak
3619.055	Horn2	V	66.7	32.6	55.0	6.8	51.1	54.0	2.9	Peak
3619.055	Horn2	H	67.5	32.7	55.0	6.8	52.0	54.0	2.0	Peak
High Channel										
1814.105	Horn2	V	51.0	28.4	46.6	3.9	36.7	54.0	17.3	Peak
1814.105	Horn2	H	51.5	28.9	46.6	3.9	37.6	54.0	16.4	Peak
2721.158	Horn2	V	69.6	30.1	56.7	5.7	48.7	54.0	5.3	Peak
2721.158	Horn2	H	66.0	29.9	56.7	5.7	44.9	54.0	9.1	Peak
3628.211	Horn2	V	65.9	32.6	55.0	6.9	50.4	54.0	3.6	Peak
3628.211	Horn2	H	66.8	32.7	55.0	6.9	51.4	54.0	2.6	Peak

Measured using 1MHz RBW/VBW peak detector

EQUIPMENT:Vtech 2101 & 2121

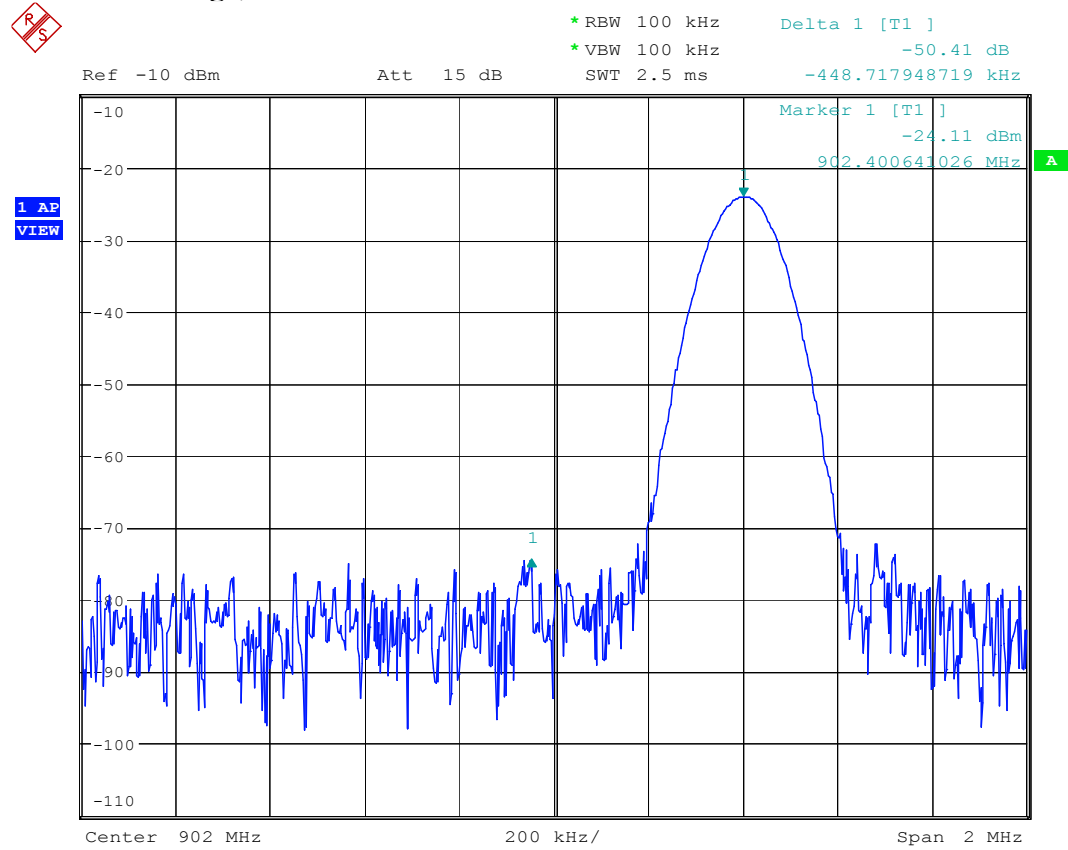
Radiated Emissions

Tested as per: Table Top										
Test Distance (meters): 3										
Test Eng. : Dave Duchesne										
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
Radiated Emissions, Handset										
Low Channel										
1846.800	Horn2	V	58.0	28.5	46.5	3.9	43.9	54.0	10.1	Peak
1846.800	Horn2	H	55.0	28.9	46.5	3.9	41.3	54.0	12.7	Peak
2770.200	Horn2	V	70.0	30.1	56.6	5.7	49.3	54.0	4.7	Peak
2770.200	Horn2	H	69.0	29.9	56.6	5.7	48.1	54.0	5.9	Peak
3688.600	Horn2	V	68.6	32.7	54.8	7.0	53.5	54.0	0.5	Peak
3688.600	Horn2	H	62.3	32.8	54.8	7.0	47.2	54.0	6.8	Peak
Mid Channel										
1851.000	Horn2	V	57.7	28.5	46.5	3.9	43.6	54.0	10.4	Peak
1851.000	Horn2	H	54.9	28.9	46.5	3.9	41.3	54.0	12.7	Peak
2776.500	Horn2	V	65.8	30.1	56.5	5.8	45.1	54.0	8.9	Peak
2776.500	Horn2	H	63.6	29.9	56.5	5.8	42.7	54.0	11.3	Peak
3702.000	Horn2	V	69.5	32.7	54.8	6.6	53.9	54.0	0.1	Peak
3702.000	Horn2	H	68.1	32.8	54.8	6.6	52.6	54.0	1.4	Peak
High Channel										
1855.500	Horn2	V	57.8	28.5	46.5	3.9	43.7	54.0	10.3	Peak
1855.500	Horn2	H	55.1	28.9	46.5	3.9	41.5	54.0	12.5	Peak
2783.250	Horn2	V	68.8	30.1	56.5	5.8	48.1	54.0	5.9	Peak
2783.250	Horn2	H	67.2	29.9	56.5	5.8	46.3	54.0	7.7	Peak
3711.000	Horn2	V	69.0	32.7	54.8	6.6	53.5	54.0	0.5	Peak
3711.000	Horn2	H	67.9	32.8	54.8	6.6	52.5	54.0	1.5	Peak

Measured using 1MHz RBW/VBW peak detector

EQUIPMENT:Vtech 2101 & 2121

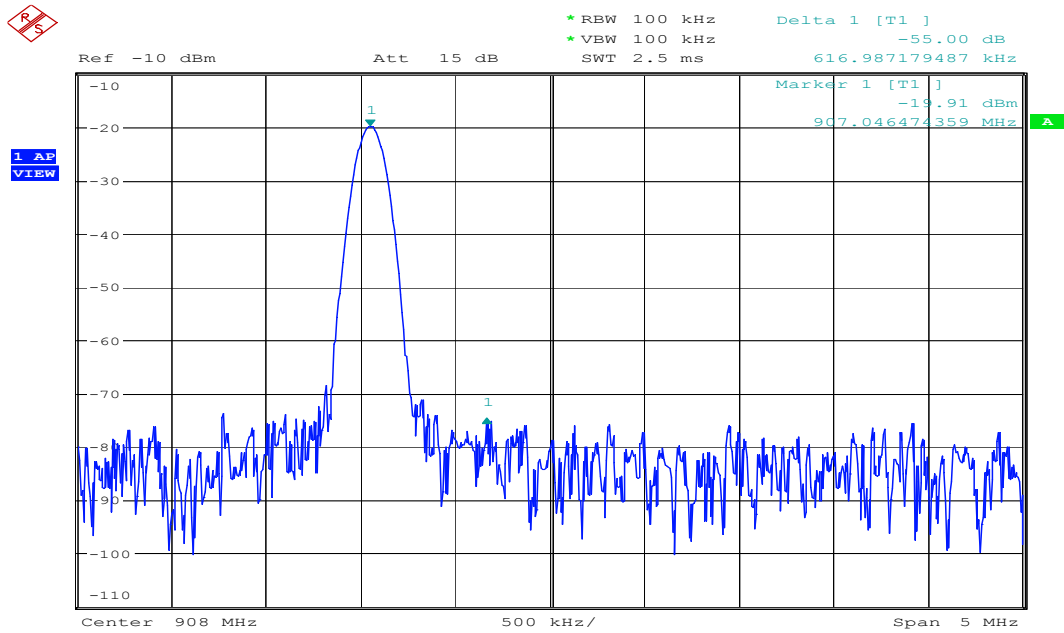
50dBc Bandedge, Base Unit



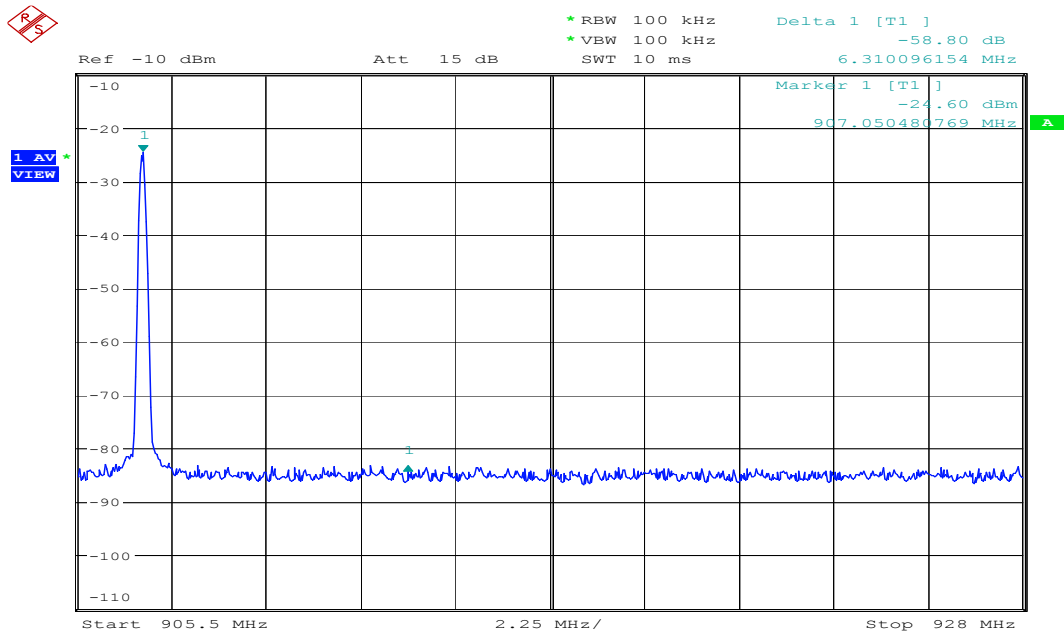
Long pulse width

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EQUIPMENT:Vtech 2101 & 2121



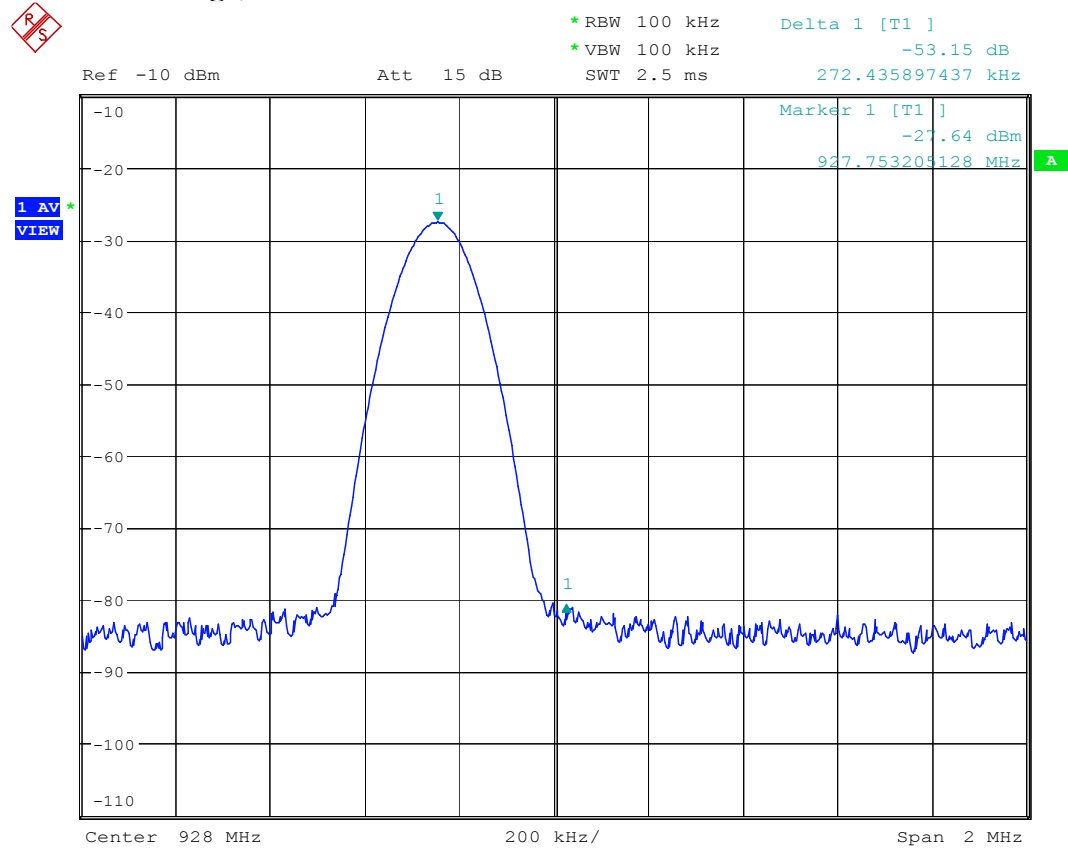
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Long pulse width
Date: 21.JAN.2005 08:50:28

EQUIPMENT:Vtech 2101 & 2121

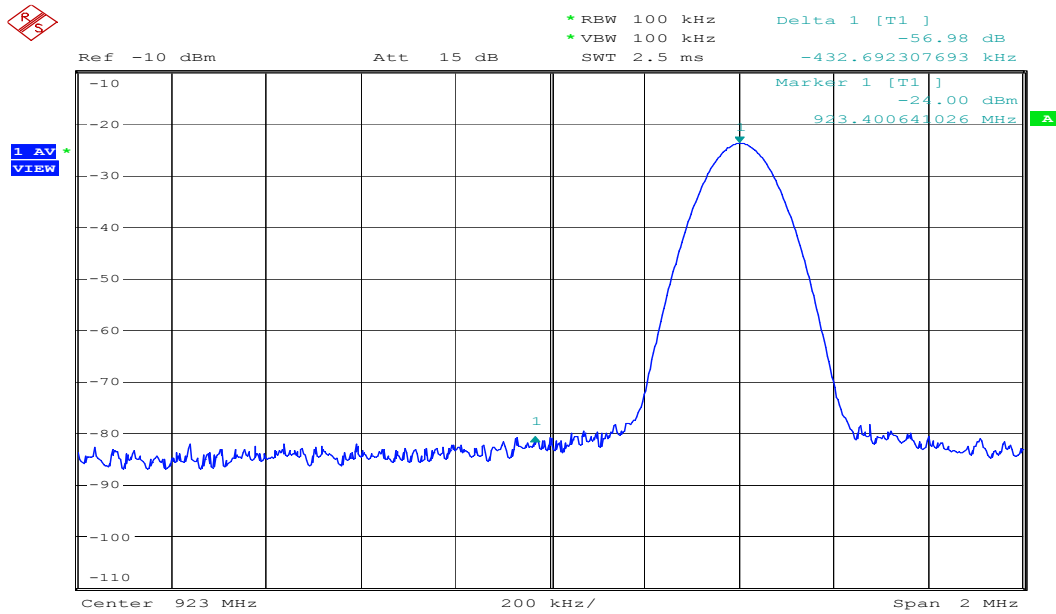
50dBc Bandedge, Portable



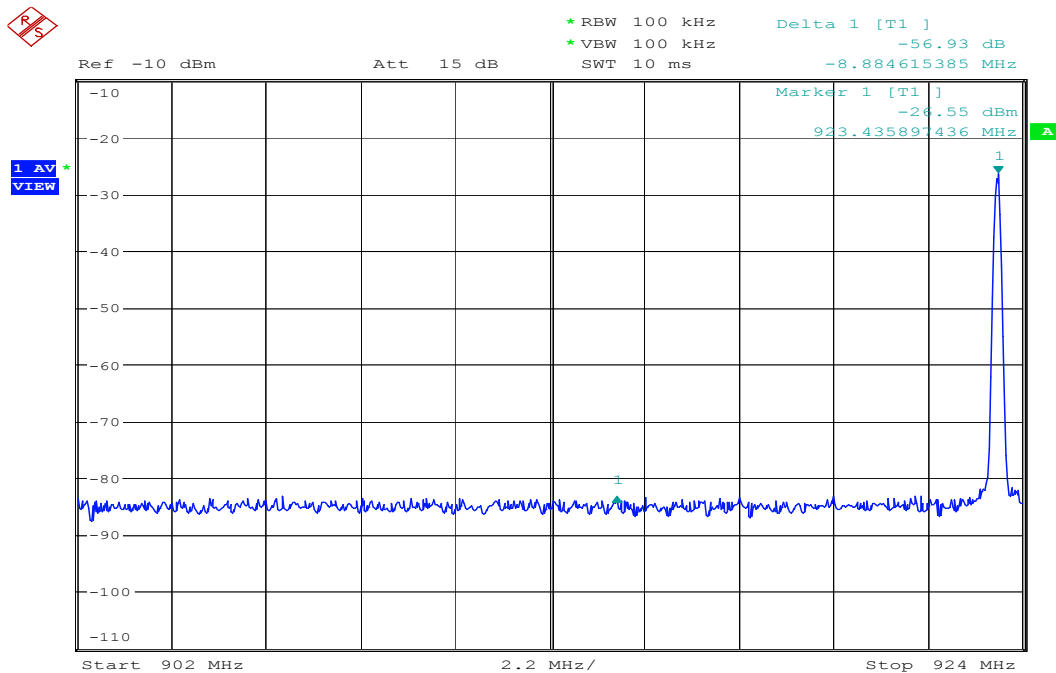
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EQUIPMENT:Vtech 2101 & 2121



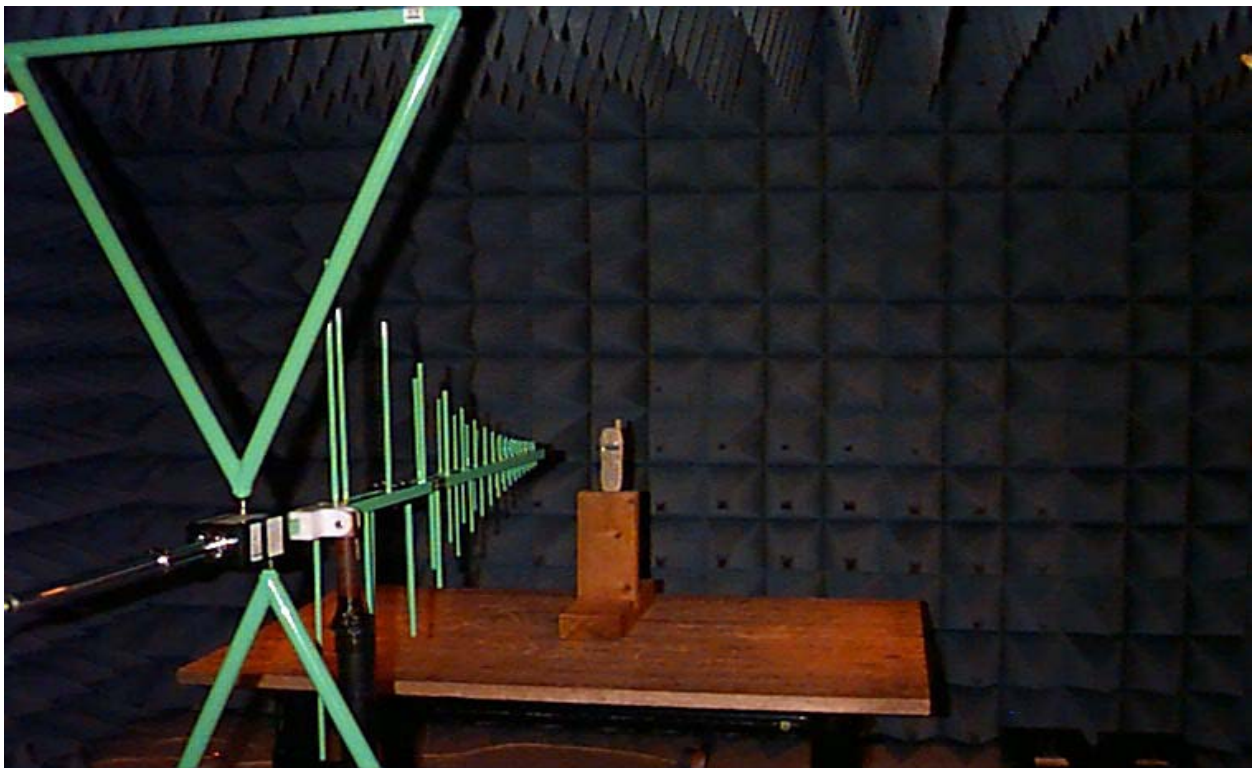
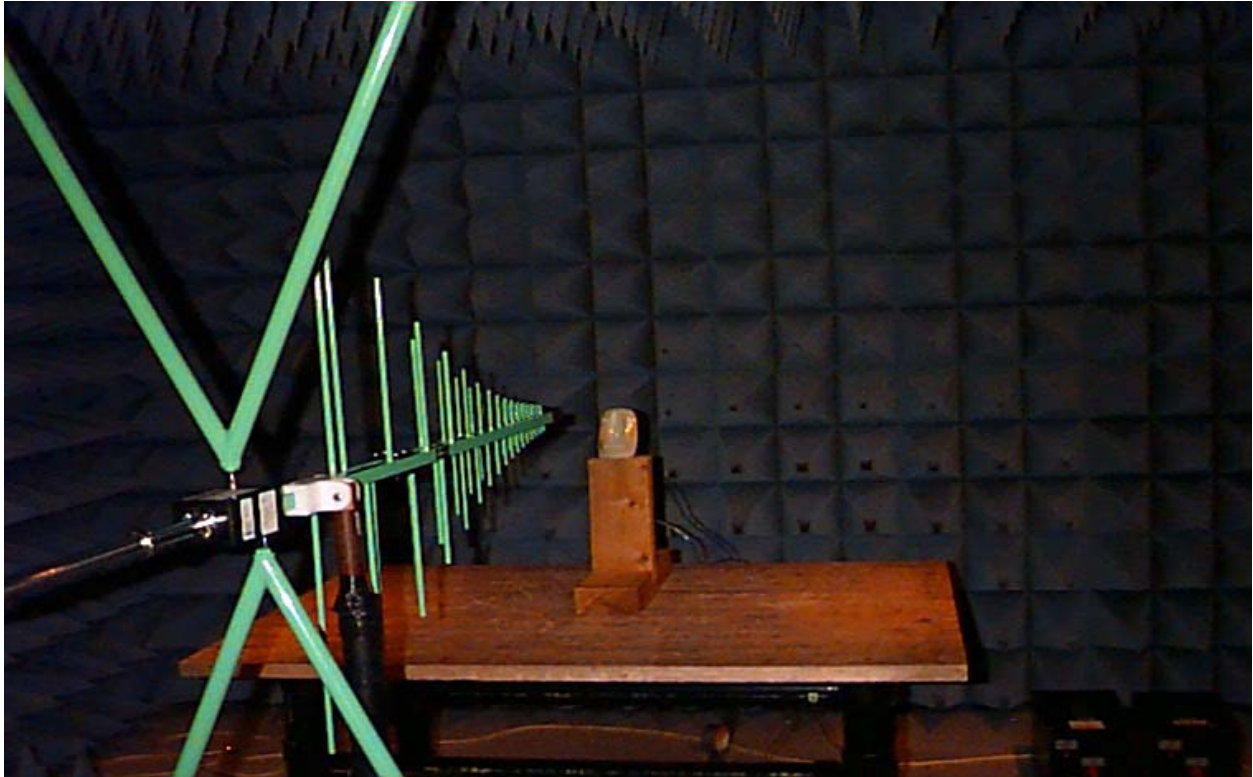
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Long pulse width
Date: 21.JAN.2005 09:05:04

EQUIPMENT:Vtech 2101 & 2121

Radiated Emissions Photo's

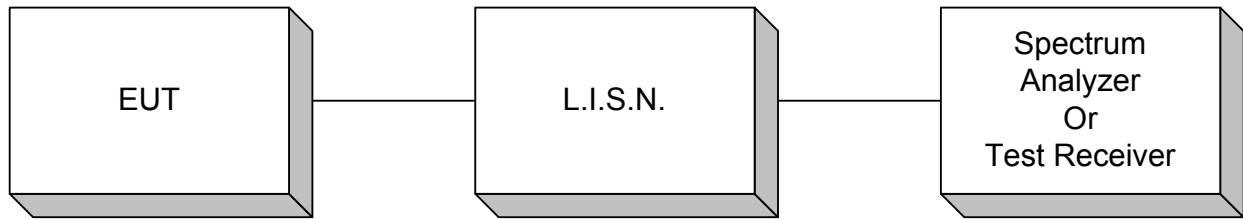


EQUIPMENT:Vtech 2101 & 2121

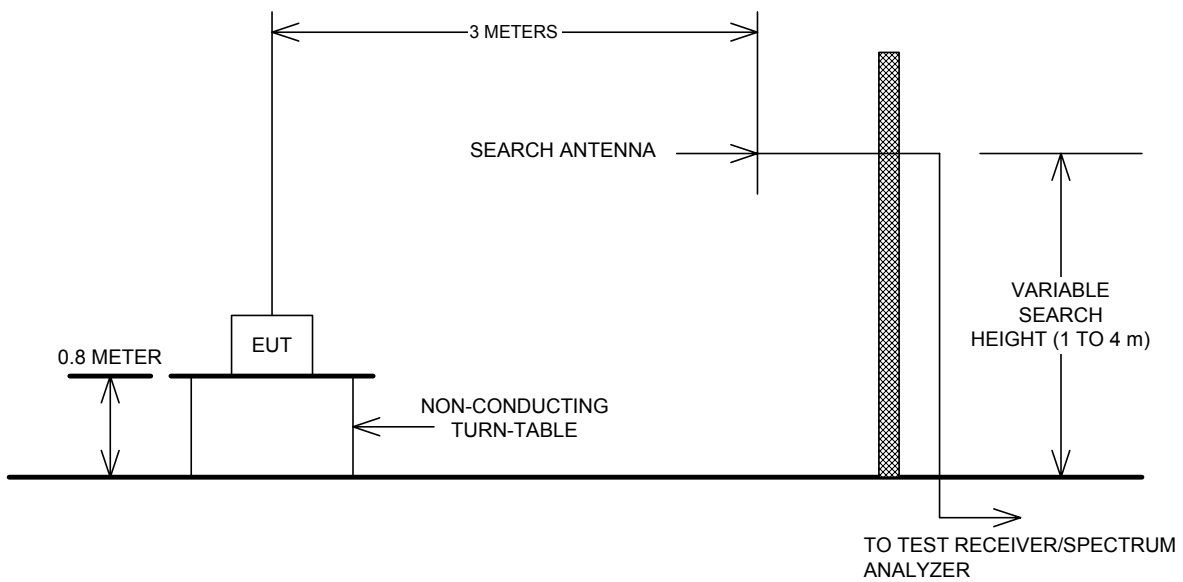


Section 5. Block Diagrams

Conducted Emissions



Test Site For Radiated Emissions



The spectrum was search up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT:Vtech 2101 & 2121

Section 6. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Receiver	Rohde & Schwarz	ESVS-30	FA001437	July 26/04	July 26/05
1 Year	Spectrum Analyzer	Rhode & Schwarz	FSU46	FA001877	26 May 04	26 May 05
1 Year	Horn Antenna	EMCO #1	3115	FA000649	22 Dec 04	22 Dec 05
1 Year	Dipole Antenna Set	EMCO #1	3121C	FA000814	April 21/04	April 21/05
1 Year	RF AMP	JCA	4-8 GHz	FA001497	18 June 04	18 June 05
1 Year	RF AMP	JCA	2-4 GHz	FA001496	18 June 04	18 June 05
1 Year	RF AMP	JCA	1-2 GHz	FA001498	18 June 04	18 June 05
1 Year	High Pass Filter (1.7GHz)	K&L	3DH1-2000	FA001434	COU	COU
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 28/04	May 28/05
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 28/04	May 28/05
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR
1 Year	LISN (peripheral)	Tegam	95300-50	FA000986	Jan. 27/04	Jan. 27/05
1 Year	LISN (peripheral)	Tegam	95300-50	FA000987	Jan. 27/04	Jan. 27/05