Standards Council of Canada
Accredited Laboratory
Scope of Accreditation 75

Conseil canadien des normes
Laboratoire accrédité
Portée d'accréditation 75

TM

Test Report:	6W67168
Applicant:	Dekolink Wireless 16 Bazel St., Qiryat Arieh Petah Tikva 49510 Israel
Apparatus:	Deko2119CR (M/N: MW-CMR-PCS-1W80)
FCC ID:	OIWCMRPCS1W80
In Accordance With:	FCC Part 24 Booster, Subpart E Broadband PCS
Tested By:	Nemko Canada Inc. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	Jin Xu, Wireless Specialist
Date:	June 22, 2006
Total Number of Pages:	31

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 24. Conducted measurements were performed in accordance with ANSI TIA-603-B-2002. Radiated tests were conducted is 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:	Deko2119CR (M/N: MW-CMR-PCS-1W80)
Specification:	FCC Part 24 Subpart E Broadband PCS
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Jason Nixon, Telecom 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.

TABLE OF CONTENTS

Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

Deko2119CR (M/N: MW-CMR-PCS-1W80)

1.2 Samples Submitted for Assessment

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

Sample No.	Description	Serial No.
1	DEKO 2119 RF Mini Repeater	0602D9069

The first samples were received on: May 24, 2006

1.3 Theory of Operation

The EUT is a booster for the Cellular PCS Band. The EUT contains filters, which can be programmed via software to filter different PCS blocks. The filters are set up as three different parts. The first and second can be set to any frequency block and are variable from 15MHz to 10MHz or 5MHz. The third filter setting is a 20MHz and two 5MHz filters. The frequency of the 20MHz can be set to any frequency but the 5MHz are at a fixed position in relation to the 20MHz filter. At no time can the filters be programmed to over lap each other.

1.4 Technical Specifications of the EUT

Manufacturer:	Dekolink Wireless
Operating Frequency:	Uplink: 1850-1910MHz Downlink: 1930-1990MHz
Emission Designator:	F9W, DXW, GXW, G7W,
Rated Power:	Uplink: 21dBm (0.126W) Downlink: 21dBm (0.126W)
Measured Power:	Uplink: 21.38dBm Downlink: 21.82dBm
Maximum Gain:	83dB
Modulation:	GSM, GSM EDGE, TDMA, CDMA, WCDMA

Section 2 : Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 2 Subpart J, Equipment Authorization Procedures
FCC Part 24 Subpart E, Broadband PCS
FCC 2-11-04/EAB/RF Amplifier, Booster, and Repeater Reminder Sheet

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 ºC
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	FSP40	FA001920	Mar 17/07
Attenuator	Narda	769-20	FA001394	COU
Power Meter	Agilent	N1911A	FA001946	Dec 28/06
Power Sensor	Agilent	N1922A	FA001947	Dec 8/06
Signal Generator	Rohde & Schwarz	SMIQ03E	FA001269	May 29/07
Signal Generator	Rohde & Schwarz	SMIQ06B	FA001878	June 10/06
Combiner	Mini-circuits	ZA3PD-2	FA001155	COU
Biconical (1) Antenna	EMCO	3109	FA000805	May 03/07
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 29/06
Horn Antenna #1	EMCO	3115	FA000649	Jan. 12/07
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	July 14/06
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	July 14/06
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	July 14/06
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU
Receiver	Rohde & Schwarz	ESVS-30	FA001437	July 27/06
18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	May 3/07

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 Additional Observations

There were no additional observations made during this assessment.

Section 4: Results Summary

This section contains the following:

FCC Part 24: 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 24 : Test Results

Clause	Test Method	Test Description	Required	Result
24.235	2.1055	Frequency stability	Y	PASS (1)
24.232(c)	2.1046	Output power	Y	PASS
24.238(a)	2.1051	Spurious Emissions at the antenna terminal	Y	PASS
24.238(a)	2.1053	Field strength of spurious radiation	Y	PASS
2-11-04/EAB/RF	2.1049	Occupied bandwidth	Y	PASS
2-11-04/EAB/RF	—	Out of band rejection	Y	PASS

Notes:

(1) The EUT does not band translate, however it does down convert and then up convert. A signal was transmitted through the booster in both directions and there was no offset observed.

Appendix A : Test Results

Clause 24.232(c) Effective Isotropic Radiated Power Limits

Mobile/portable stations are limited to 2 watts EIRP peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

Test Conditions:

Sample Number:	1	**Temperature (°C):**	25
Date:	June 8, 2006	**Humidity (%):**	36
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

Test Results:

Band	Rated Power (dBm)	Measured Power (dBm)
Uplink	21	21.38
Downlink	21	21.82

Clause 24.238(a) Spurious emissions at the antenna terminal

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test Conditions:

Sample Number:	1	**Temperature (°C):**	25
Date:	June 8, 2006	**Humidity (%):**	36
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

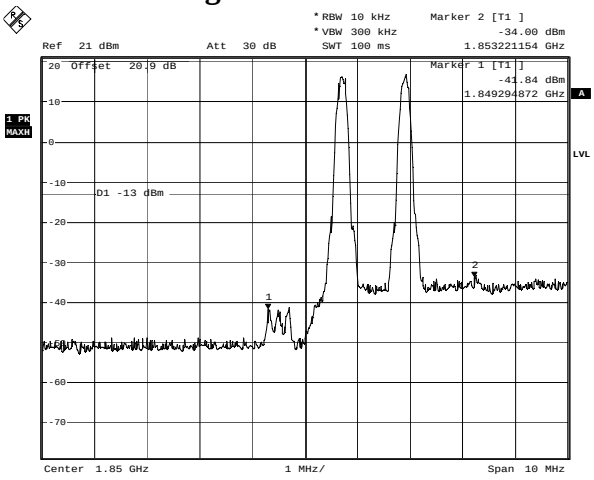
Test Results:

See Attached Plots.

Additional Observations:

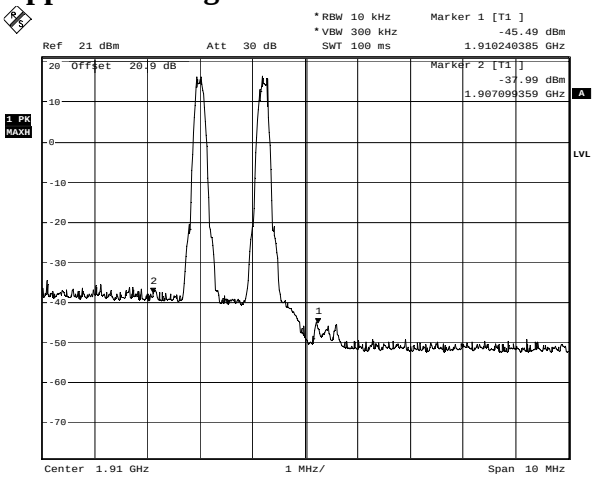
Conducted emissions were tested on all modulation types and on low, mid and high channels. Only the worst case from each direction has been included.

Uplink – GSM
Lower Bandedge



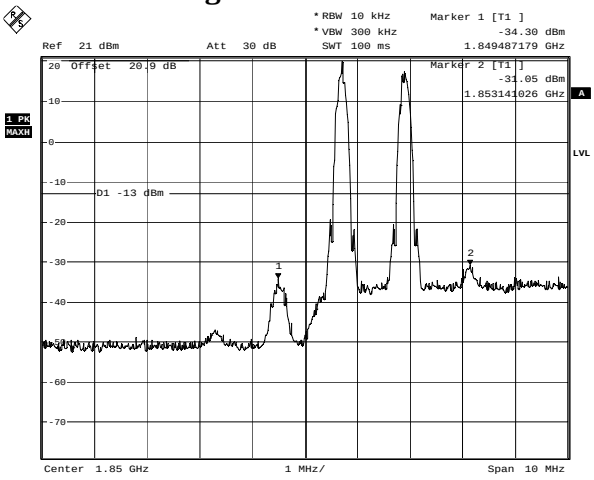
Lower Bandedge - GSM - Uplink
Date: 8.JUN.2006 15:11:36

Upper Bandedge



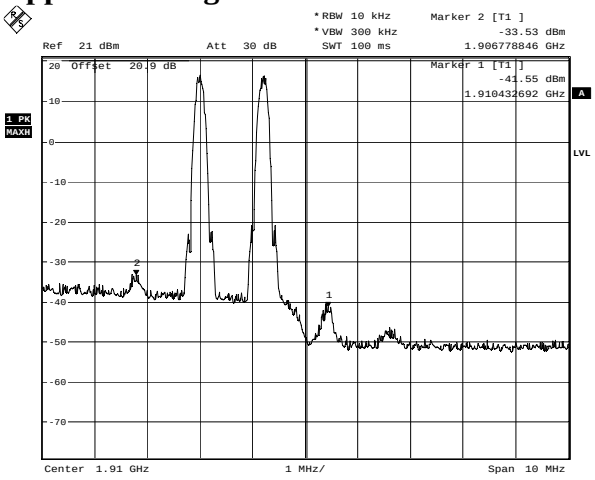
Upper Bandedge - GSM - Uplink
Date: 8.JUN.2006 14:44:48

Uplink – GSM EDGE
Lower Bandedge



Lower Bandedge - GSM EDGE - Uplink
Date: 8.JUN.2006 15:13:06

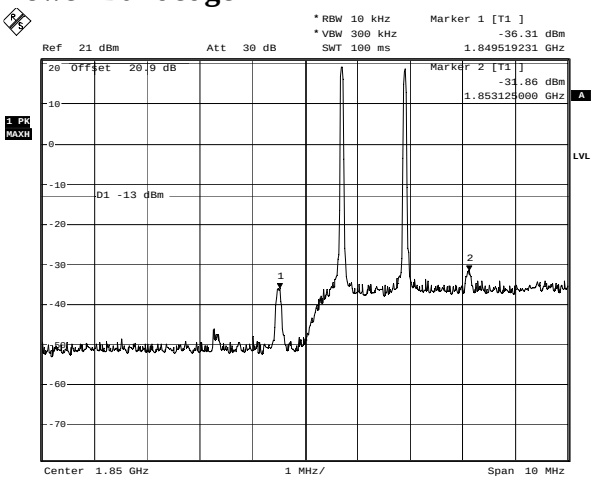
Upper Bandedge



Upper Bandedge - GSM EDGE - Uplink
Date: 8.JUN.2006 14:42:42

Uplink – TDMA

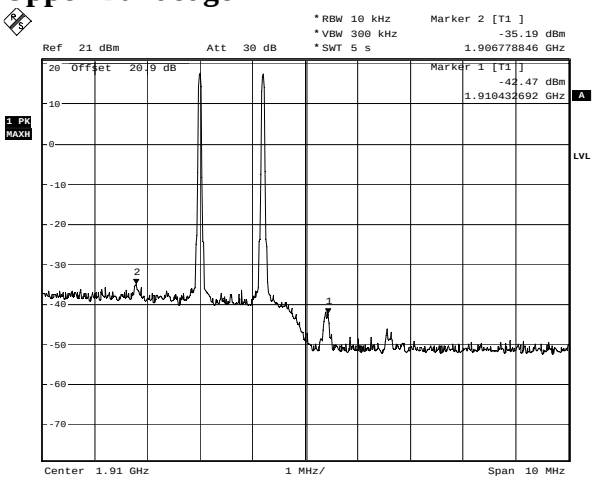
Lower Bandedge



Lower Bandedge - TDMA - Uplink

Date: 8.JUN.2006 15:09:31

Upper Bandedge

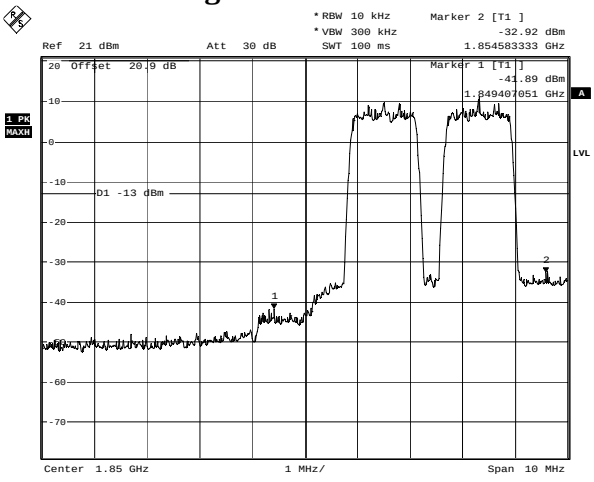


Upper Bandedge - TDMA - Uplink

Date: 8.JUN.2006 14:47:08

Uplink – CDMA

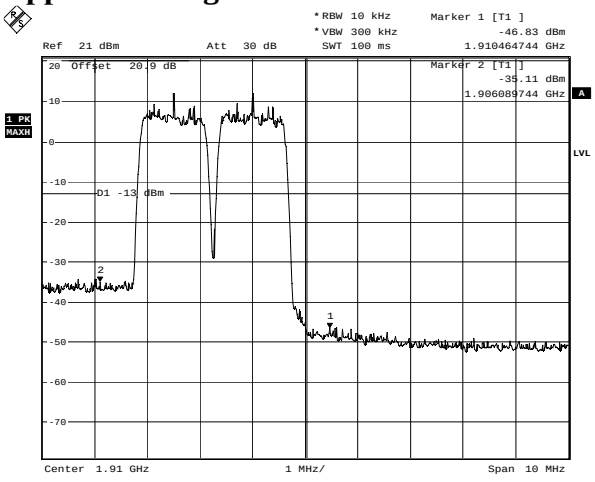
Lower Bandedge



Lower Bandedge - CDMA - Uplink

Date: 8.JUN.2006 15:02:36

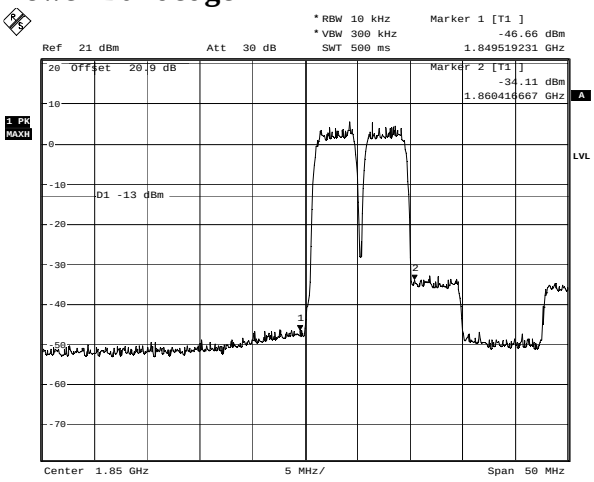
Upper Bandedge



Upper Bandedge - CDMA - Uplink

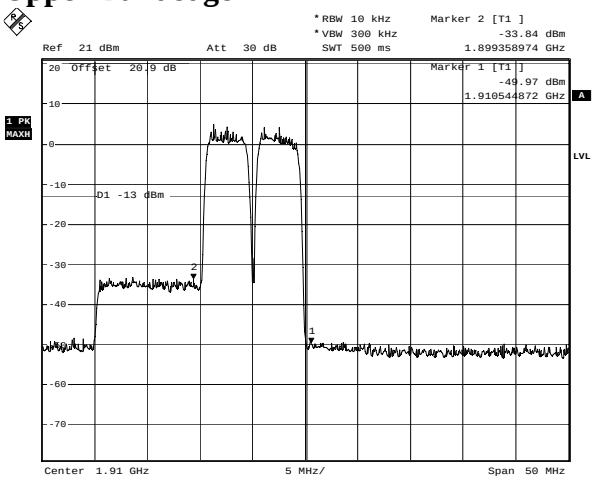
Date: 8.JUN.2006 14:49:55

Uplink – WCDMA
Lower Bandedge



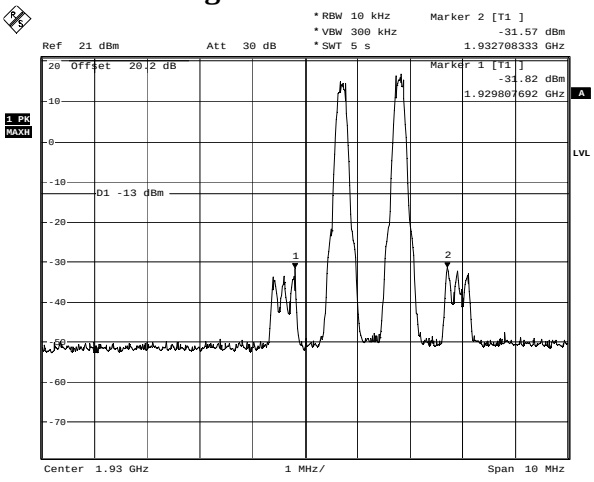
Lower Bandedge - WCDMA - Uplink
Date: 8.JUN.2006 14:58:41

Upper Bandedge



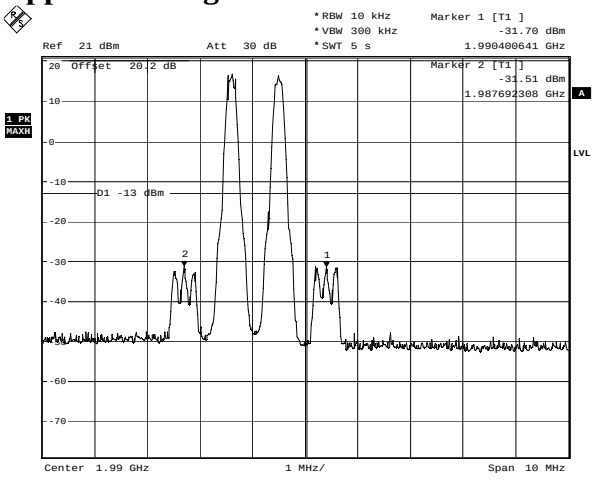
Upper Bandedge - WCDMA - Uplink
Date: 8.JUN.2006 14:52:28

Downlink – GSM
Lower Bandedge



Lower Bandedge - GSM - Downlink
Date: 8.JUN.2006 11:39:49

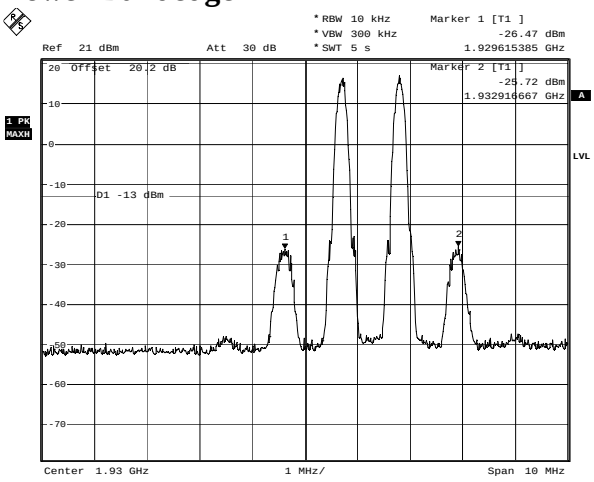
Upper Bandedge



Upper Bandedge - GSM - Downlink
Date: 8.JUN.2006 11:15:05

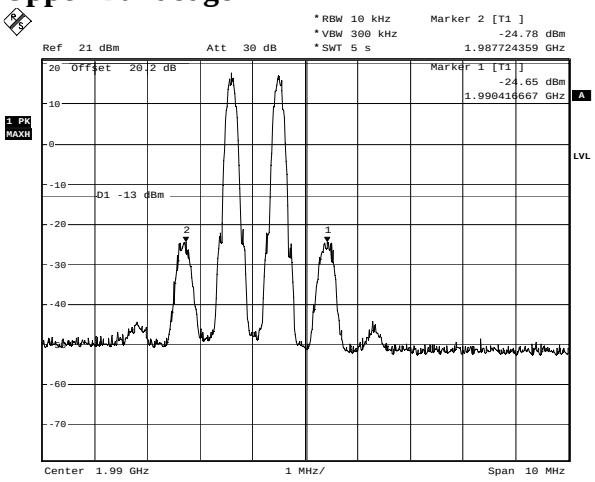
Downlink – GSM EDGE

Lower Bandedge



Lower Bandedge - GSM EDGE - Downlink
Date: 8.JUN.2006 11:35:52

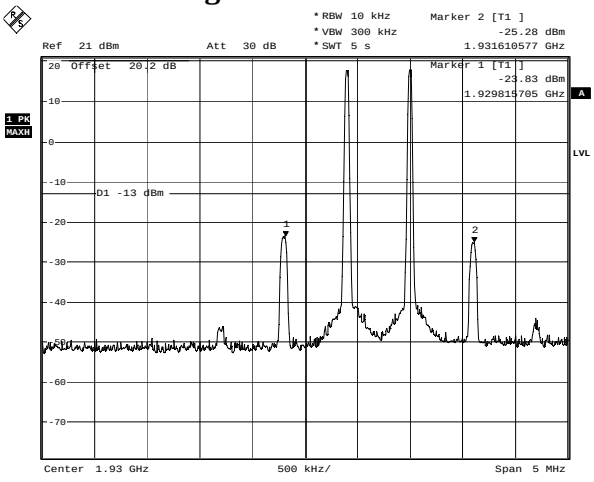
Upper Bandedge



Upper Bandedge - GSM EDGE - Downlink
Date: 8.JUN.2006 11:17:19

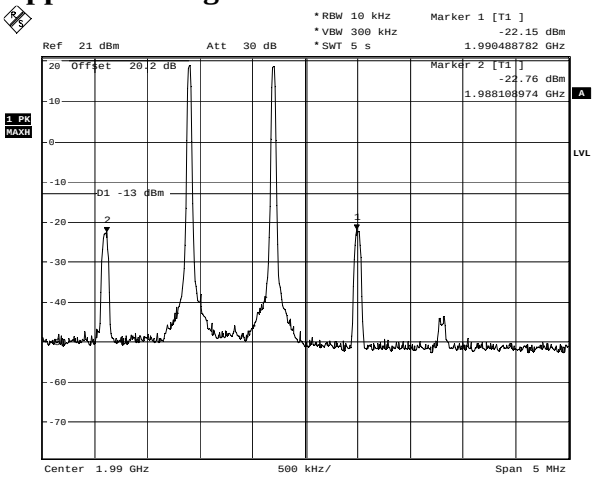
Downlink – TDMA

Lower Bandedge



Lower Bandedge - TDMA - Downlink
Date: 8.JUN.2006 11:33:09

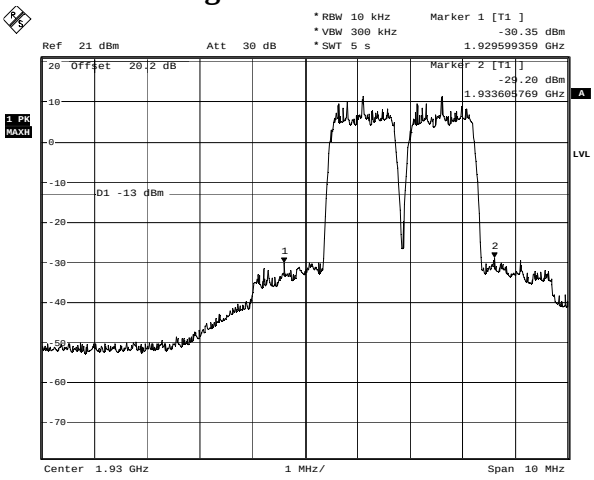
Upper Bandedge



Upper Bandedge - TDMA - Downlink
Date: 8.JUN.2006 11:19:58

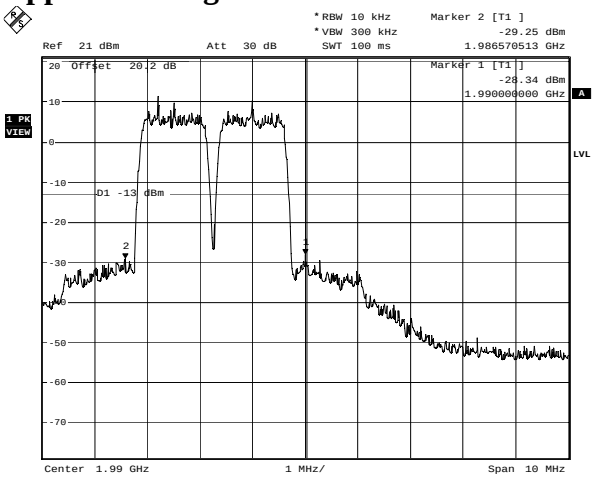
Downlink – CDMA

Lower Bandedge



Lower Bandedge - CDMA - Downlink
Date: 8.JUN.2006 11:43:41

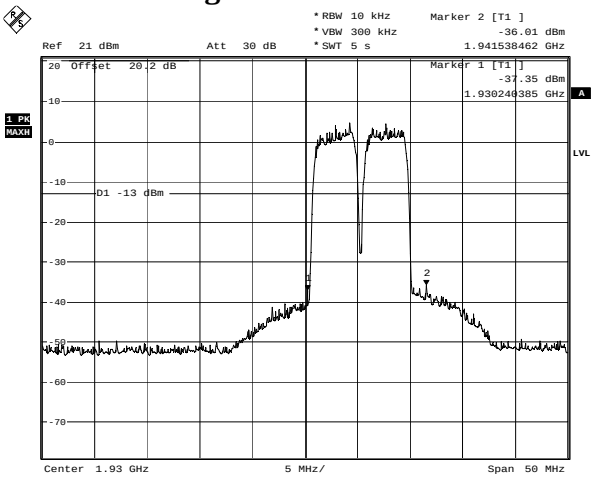
Upper Bandedge



Upper Bandedge - CDMA - Downlink
Date: 8.JUN.2006 11:12:05

Downlink – WCDMA

Lower Bandedge



Lower Bandedge - WCDMA - Downlink
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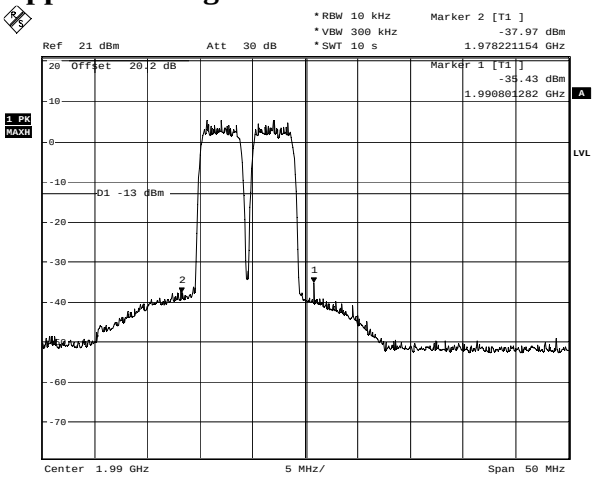
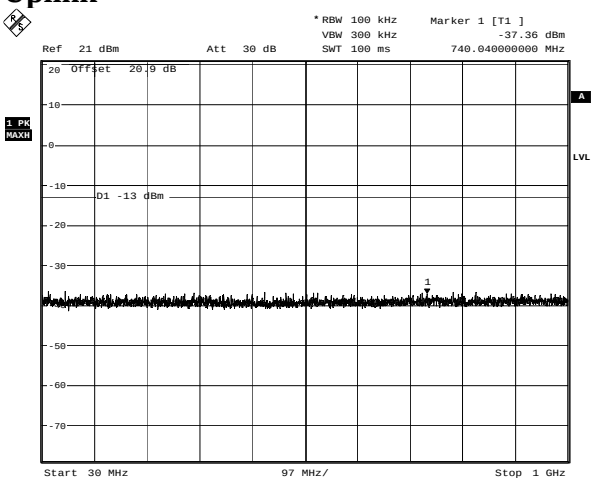
Upper Bandedge

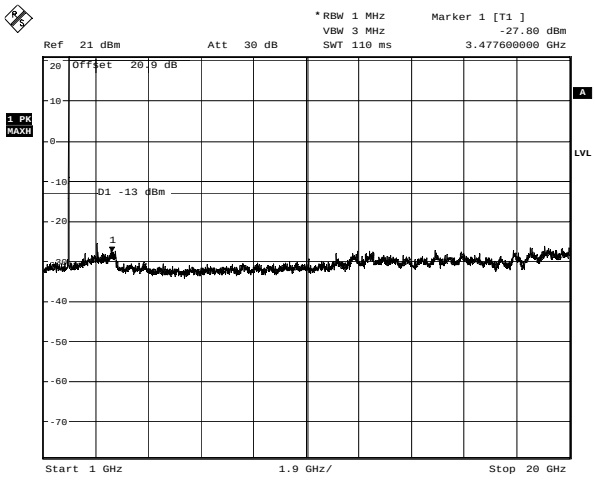


Upper Bandedge - WCDMA - Downlink
Date: 8.JUN.2006 11:08:41

Uplink

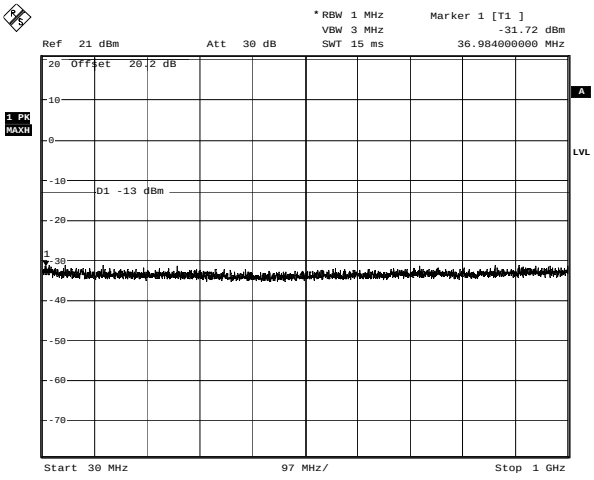


CDMA - Lower Frequencies - Uplink
Date: 9.JUN.2006 08:45:41



CDMA - Upper Frequencies - Uplink
Date: 9.JUN.2006 08:45:01

Downlink



WCDMA - Lower Frequencies - Downlink
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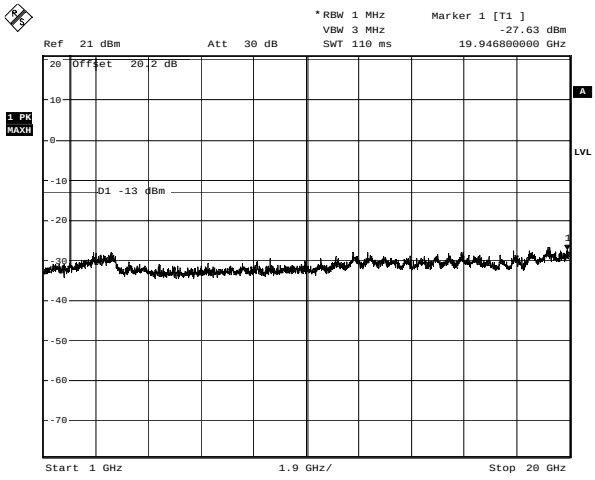


WCDMA - Upper Frequencies - Downlink
Date: 8.JUN.2006 12:44:32

Clause 24.238(a) Field Strength of spurious radiation

Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test Conditions:

Sample Number:	1	**Temperature (°C):**	14
Date:	June 12, 2006	**Humidity (%):**	77
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	OATS

Test Results:

See attached Table.

Additional Observations:

The Spectrum was searched from 30MHz to 20GHz.

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

Spurious Emissions

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Sig. Sub. Factor	Emission Level (dBm)	Limit (dBm)	Margin (dB)
1	31.4713	BC1	V	16.4	-84.6	-68.2	-13.0	55.2
2	31.4713	BC1	H	16.5	-80.0	-63.5	-13.0	50.5
3	77.2575	BC1	V	18.9	-91.4	-72.5	-13.0	59.5
4	77.2575	BC1	H	22.2	-91.8	-69.6	-13.0	56.6
5	297.0022	BC1	V	12.7	-76.9	-64.2	-13.0	51.2
6	297.0022	BC1	H	12.1	-81.7	-69.6	-13.0	56.6
7	362.8787	LP1	V	10.3	-82.0	-71.7	-13.0	58.7
8	362.8787	LP1	H	9.4	-82.5	-73.1	-13.0	60.1
9	495.0031	LP1	V	8.7	-78.2	-69.5	-13.0	56.5
10	495.0031	LP1	H	8.6	-79.9	-71.3	-13.0	58.3
11	693.1274	LP1	V	9.8	-74.9	-65.1	-13.0	52.1
12	693.1274	LP1	H	7.0	-75.8	-68.8	-13.0	55.8

Clause 2-11-04/EAB/RF Occupied Bandwidth

Using an RBW of 300Hz or 1% of the emission bandwidth, The spectral shape of the output should look similar to the input for all modulations.

Test Conditions:

Sample Number:	1	**Temperature (°C):**	25
Date:	June 8, 2006	**Humidity (%):**	36
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

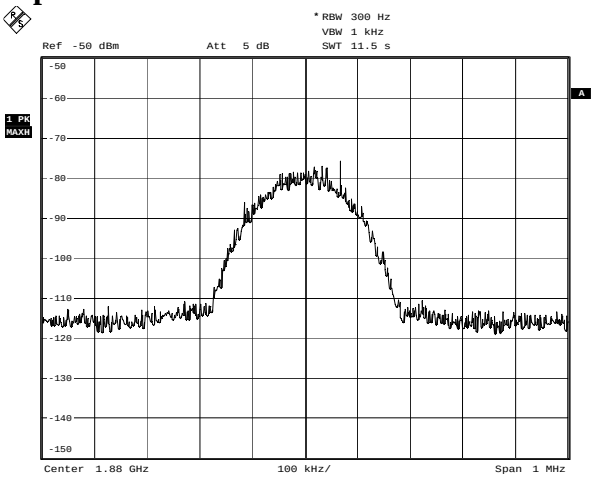
Test Results:

See Attached Plots.

Additional Observations:

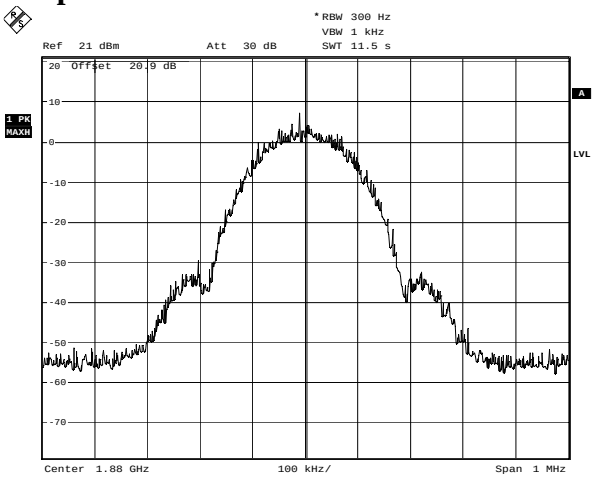
Uplink – GSM

Input



Input - GSM - Uplink
Date: 8.JUN.2006 14:16:41

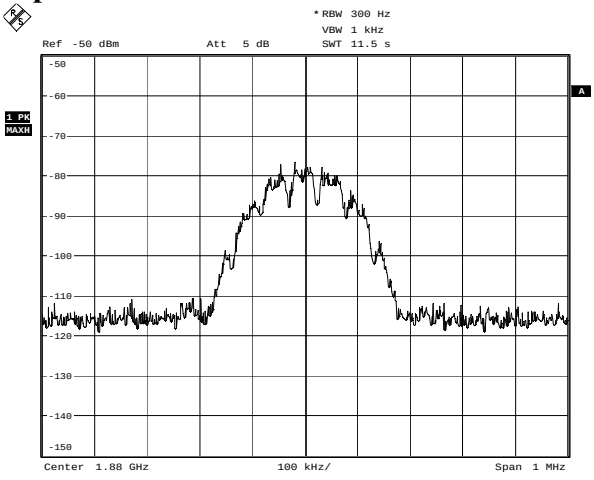
Output



Output - GSM - Uplink
Date: 8.JUN.2006 14:08:59

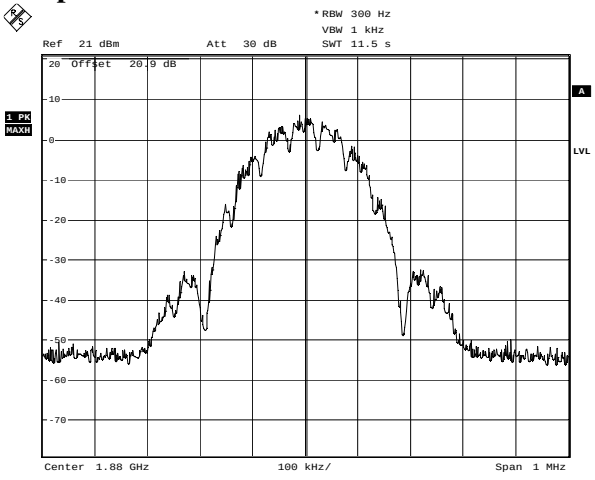
Uplink – GSM EDGE

Input



Input - GSM EDGE - Uplink
Date: 8.JUN.2006 14:17:38

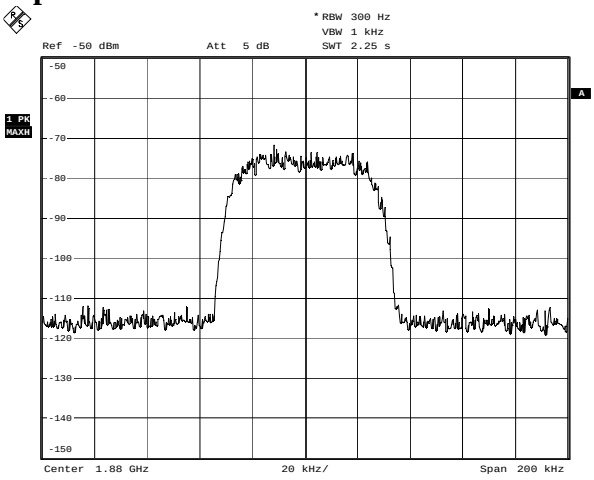
Output



Output - GSM EDGE - Uplink
Date: 8.JUN.2006 14:08:05

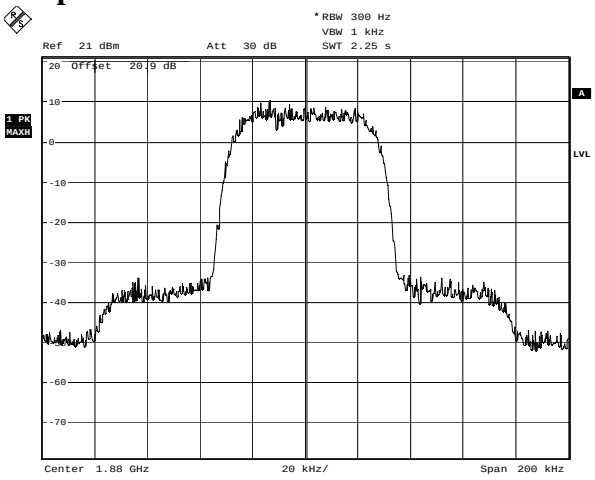
Uplink – TDMA

Input



Input - TDMA - Uplink
Date: 8.JUN.2006 14:15:43

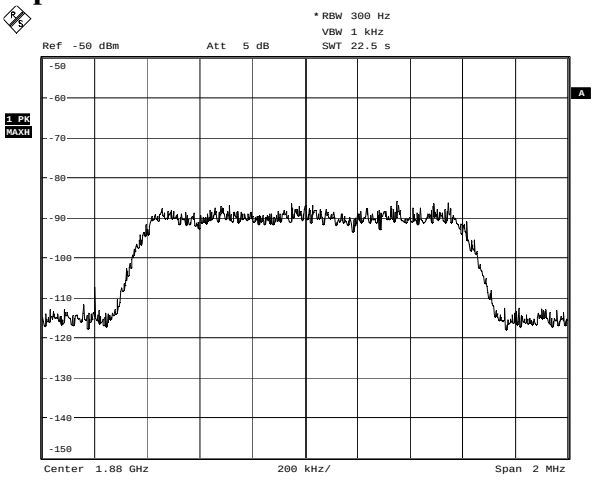
Output



Output - TDMA - Uplink
Date: 8.JUN.2006 14:09:49

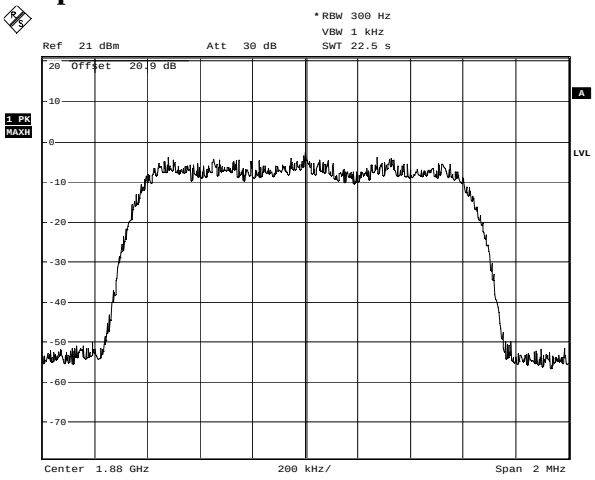
Uplink – CDMA

Input



Input - CDMA - Uplink
Date: 8.JUN.2006 14:14:50

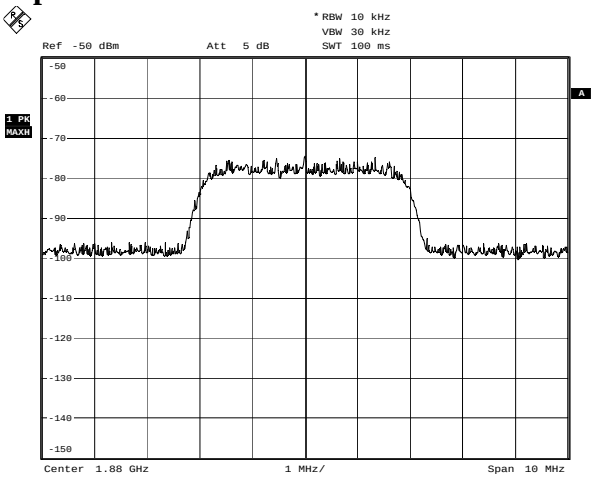
Output



Output - CDMA - Uplink
Date: 8.JUN.2006 14:11:07

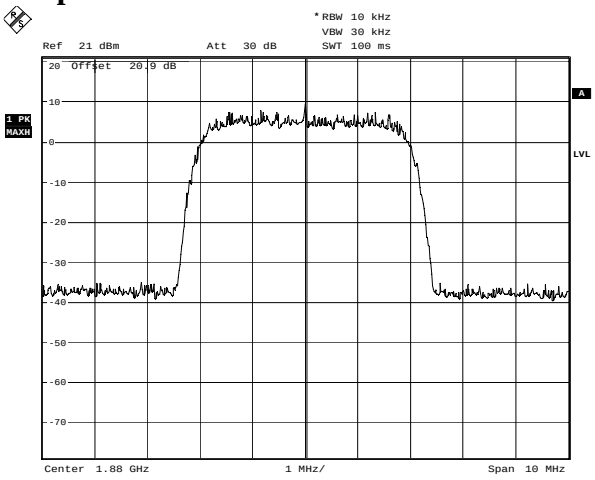
Uplink – WCDMA

Input



Input - WCDMA - Uplink
Date: 8.JUN.2006 14:13:11

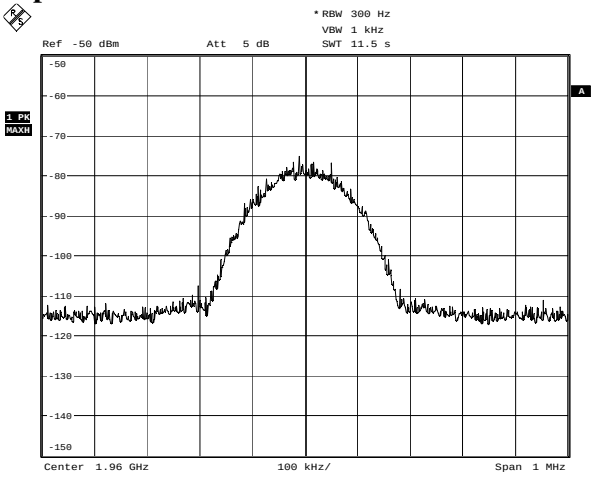
Output



Output - WCDMA - Uplink
Date: 8.JUN.2006 14:11:50

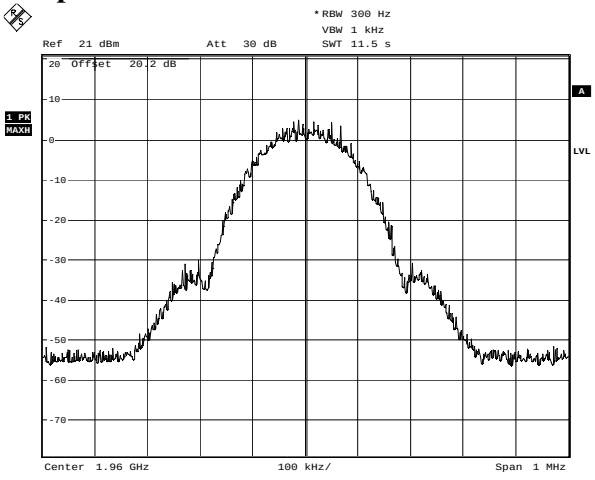
Downlink – GSM

Input



Input - GSM - Downlink
Date: 8.JUN.2006 10:37:41

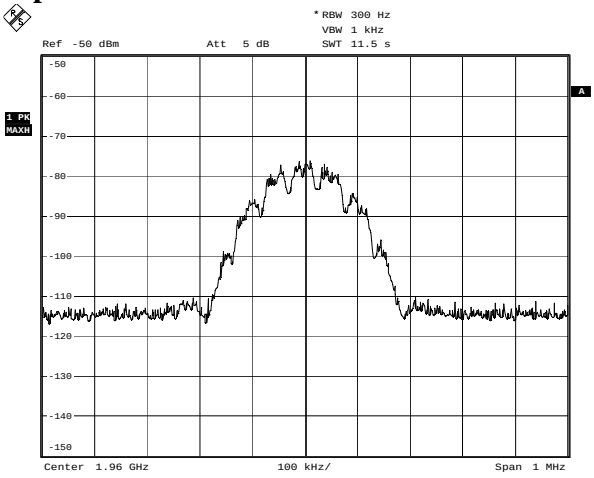
Output



Output - GSM - Downlink
Date: 8.JUN.2006 09:13:51

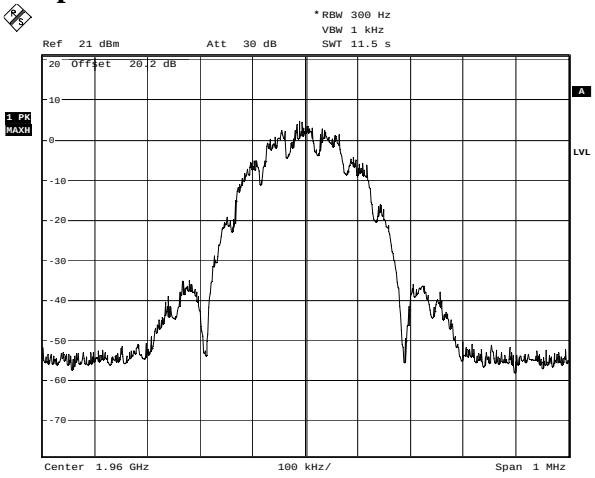
Downlink – GSM EDGE

Input



Input - GSM EDGE - Downlink
Date: 8.JUN.2006 10:40:24

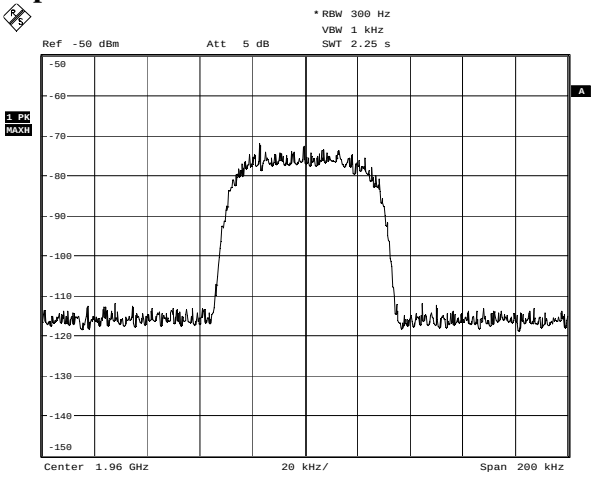
Output



Output - GSM EDGE - Downlink
Date: 8.JUN.2006 09:15:21

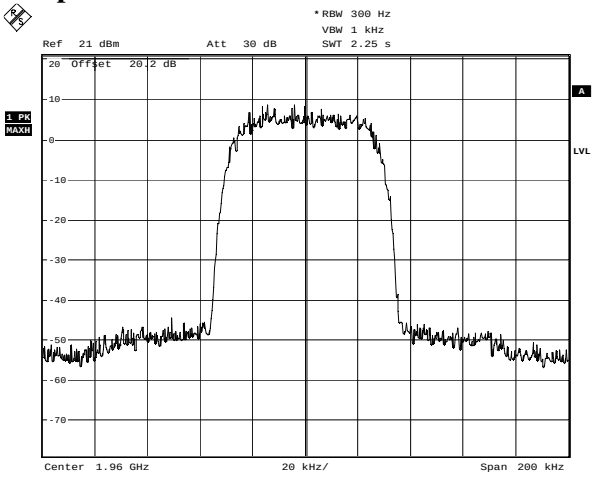
Downlink – TDMA

Input



Input - TDMA - Downlink
Date: 8.JUN.2006 10:35:35

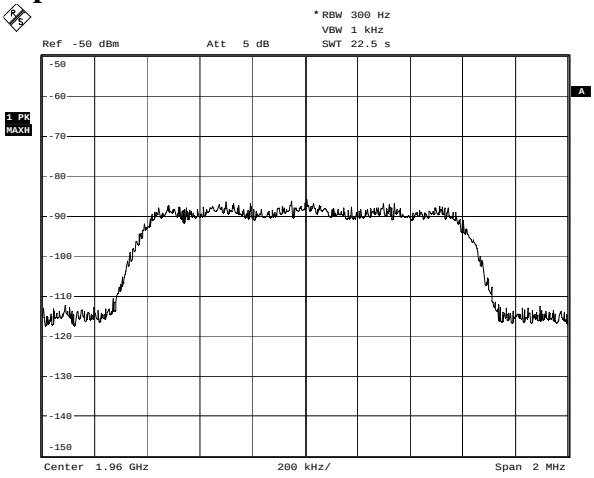
Output



Output - TDMA - Downlink
Date: 8.JUN.2006 09:23:20

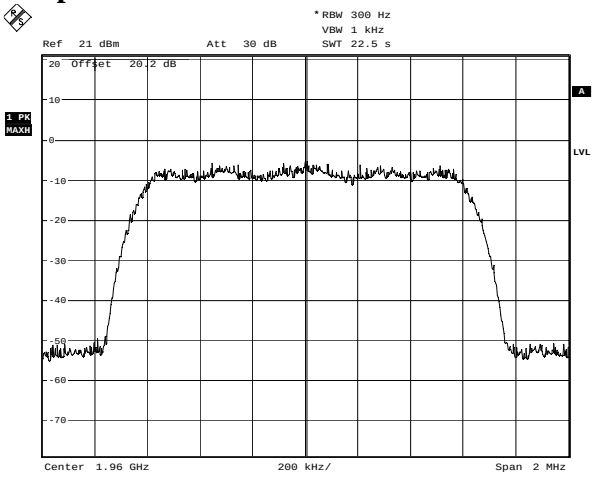
Downlink – CDMA

Input



Input - CDMA - Downlink
Date: 8.JUN.2006 10:51:04

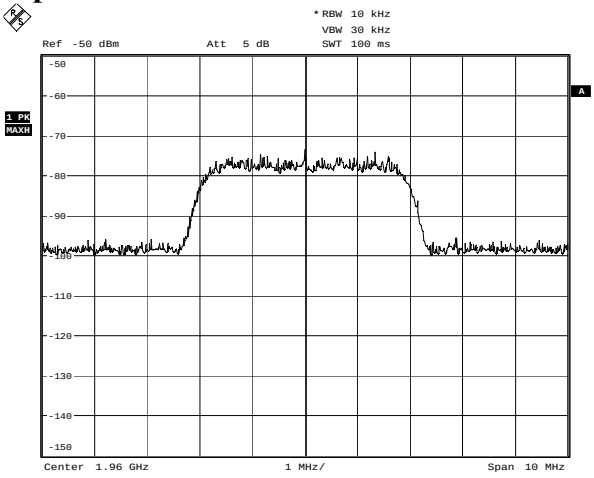
Output



Output - CDMA - Downlink
Date: 8.JUN.2006 09:17:57

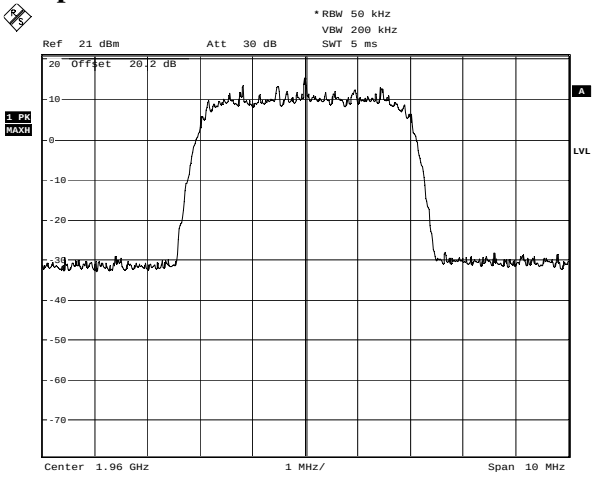
Downlink – WCDMA

Input



Input - WCDMA - Downlink
Date: 8.JUN.2006 10:51:47

Output



Output - WCDMA - Downlink
Date: 8.JUN.2006 09:20:46

Clause 2-11-04/EAB/RF Out of Band Rejection

Plots showing the filter frequency response.

Test Conditions:

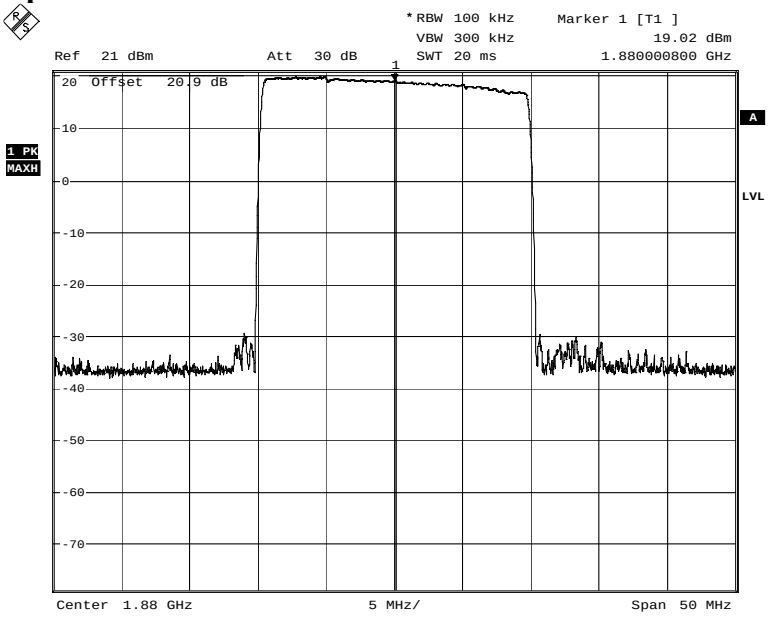
Sample Number:	1	**Temperature (°C):**	25
Date:	June 8, 2006	**Humidity (%):**	36
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

Test Results:

See Attached Plots.

Additional Observations:

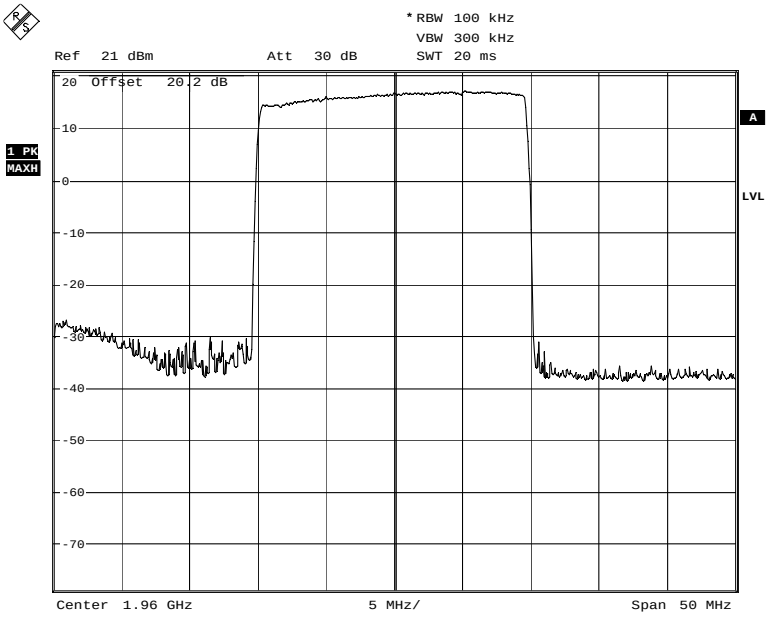
Uplink – 20MHz Filter



Out-of-Band Reject - 20MHz Filter - Uplink

Date: 8.JUN.2006 13:55:29

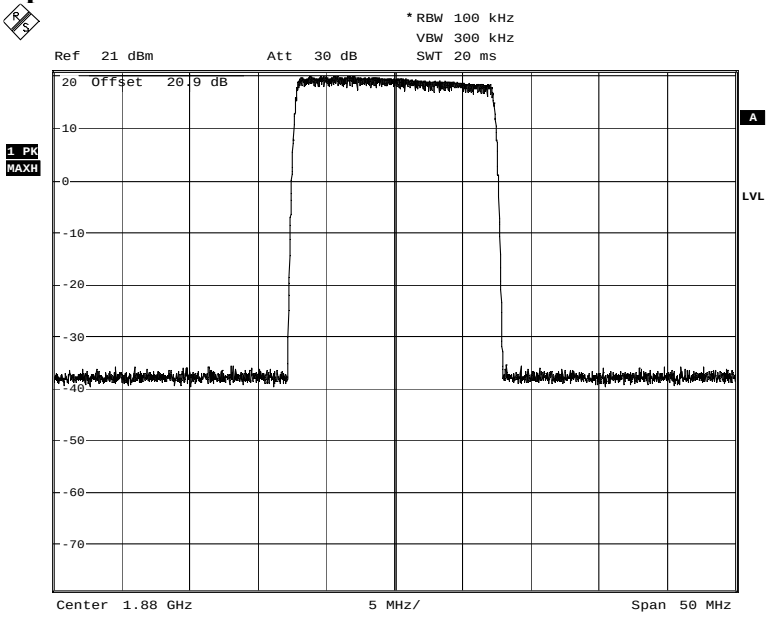
Downlink – 20MHz Filter



Out-of-Band Reject - 20MHz Filter - Downlink

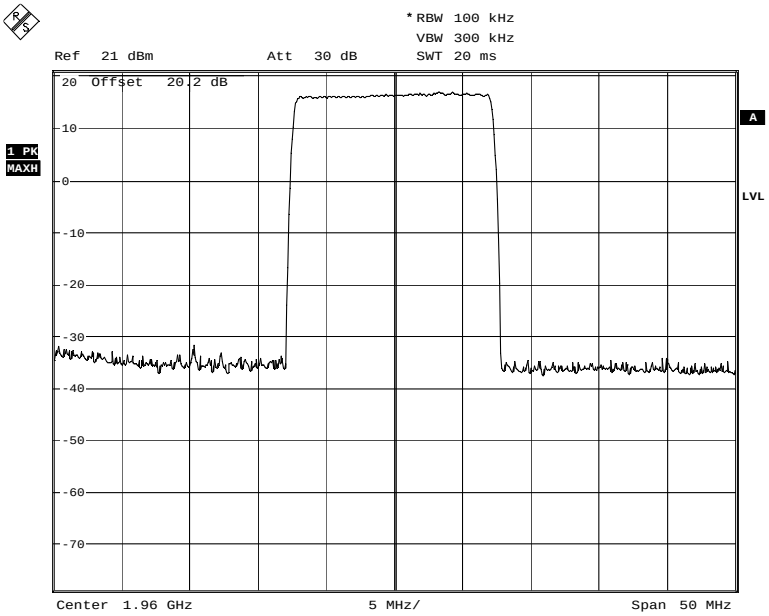
Date: 8.JUN.2006 08:29:17

Uplink – 15MHz Filter



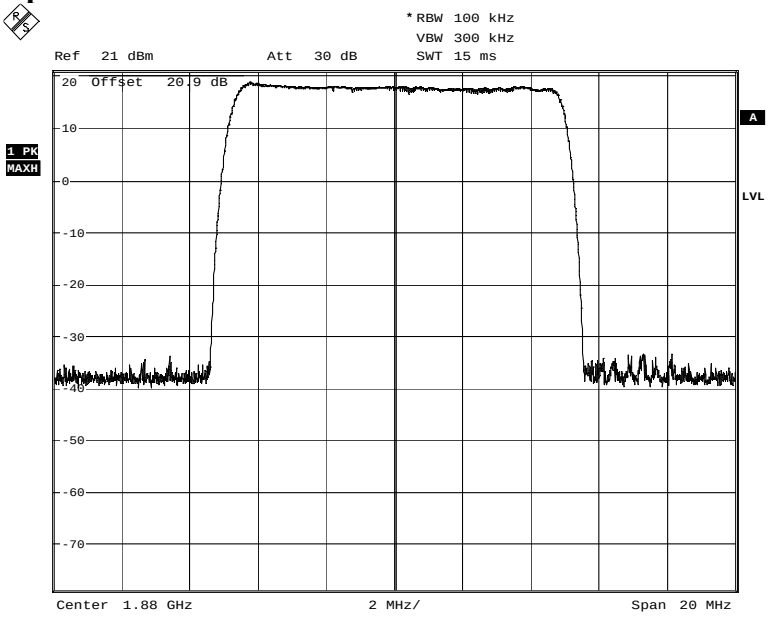
Out-of-Band Reject - 15MHz Filter - Uplink
Date: 8.JUN.2006 13:57:37

Downlink – 15MHz Filter



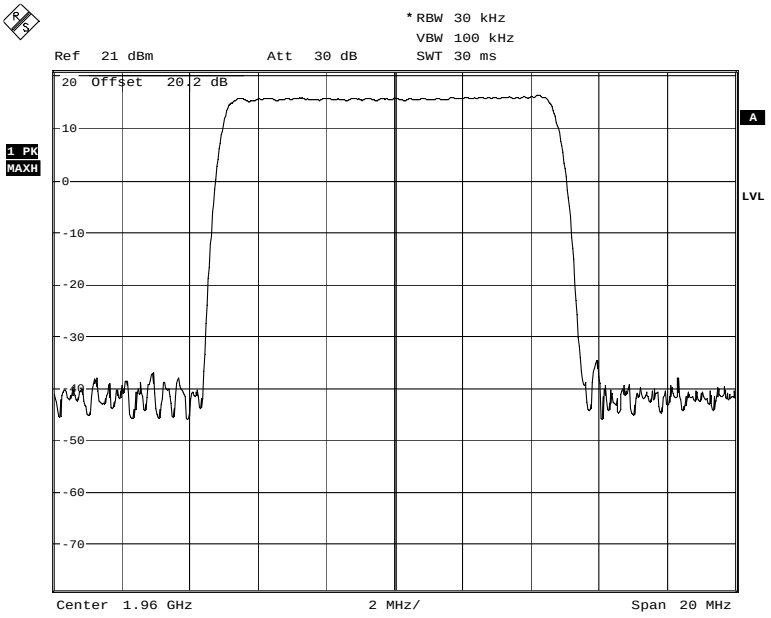
Out-of-Band Reject - 15MHz Filter - Downlink
Date: 8.JUN.2006 08:56:40

Uplink – 10MHz Filter



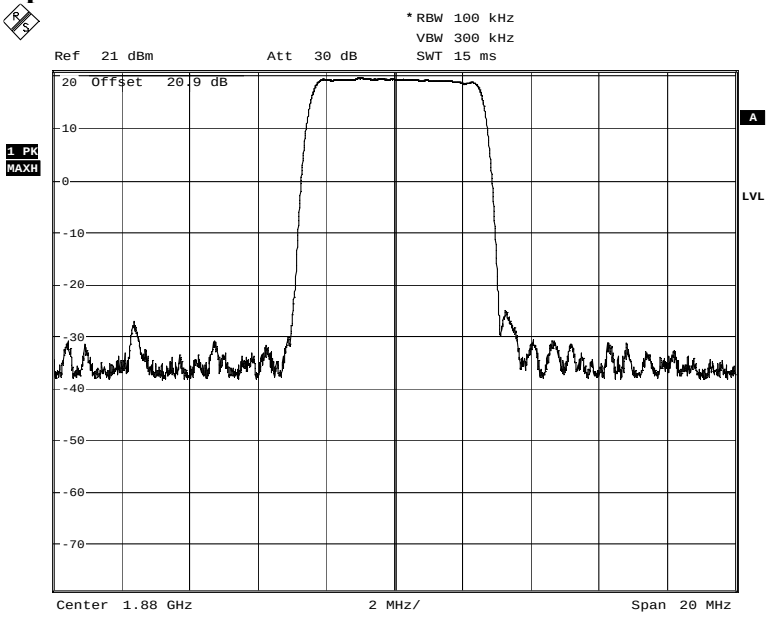
Out-of-Band Reject - 10MHz Filter - Uplink
Date: 8.JUN.2006 13:59:10

Downlink – 10MHz Filter



Out-of-Band Reject - 10MHz Filter - Downlink
Date: 8.JUN.2006 09:01:49

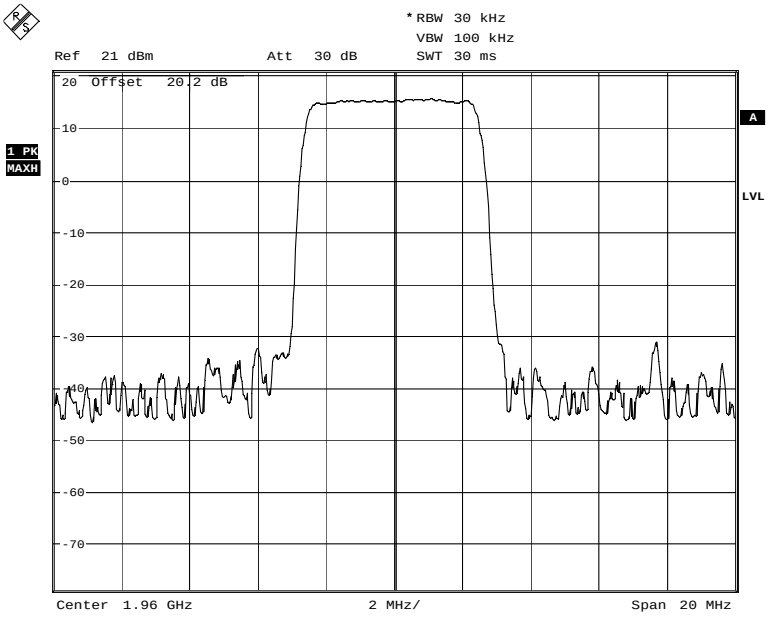
Uplink – 5MHz Filter



Out-of-Band Reject - 5MHz Filter - Uplink

Date: 8.JUN.2006 14:03:16

Downlink – 5MHz Filter



Out-of-Band Reject - 5MHz Filter - Downlink

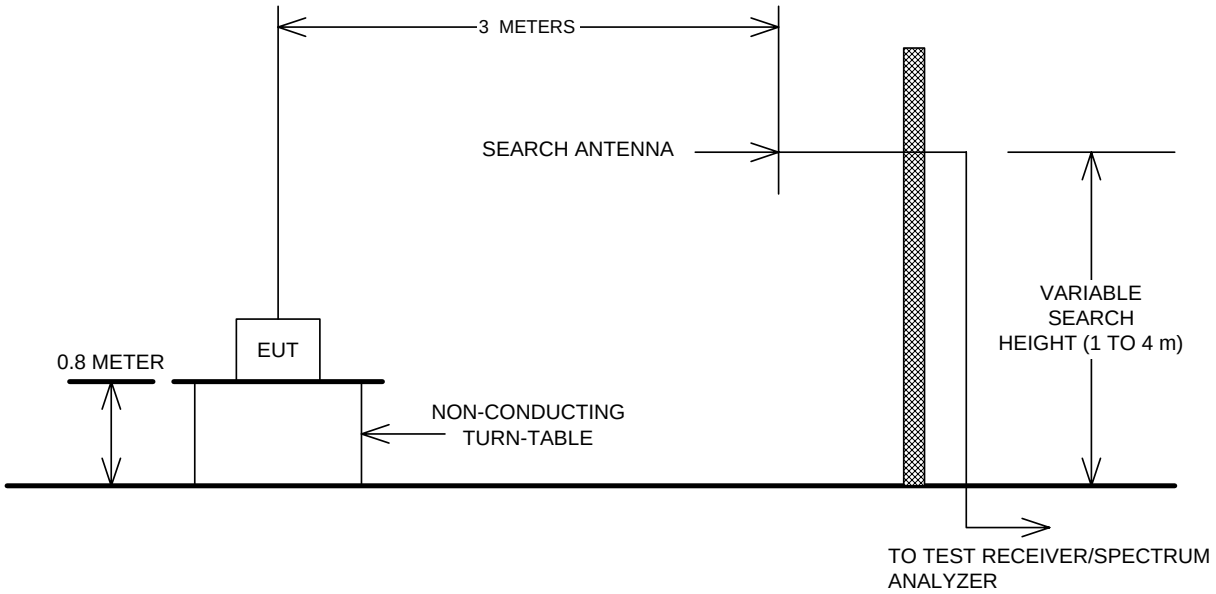
Date: 8.JUN.2006 09:03:56

Appendix B : Setup Photographs

Radiated Spurious Emissions Setup:

Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions, Output power, Occupied Bandwidth and Out of Band Rejection