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Test Report:	90467-1TRFWL
Applicant:	Dekolink Wireless Ltd. 16 Bazel St. Qiryat-Arieh, Petah-Tikva, Israel 49510
Apparatus:	MW-CMR-PCS-2480
FCC ID:	OIWCMRPCS2480
In Accordance With:	FCC Part 24 Personal Communications Services Subpart E Broadband PCS
Tested By:	Nemko Canada Inc. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	 Jason Nixon, Telecom Specialist
Date:	September 25, 2007
Total Number of Pages:	27

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: MW-CMR-PCS-2480

Specification: FCC Part 24 Subpart E Broadband PCS

Compliance Status: Complies

Exclusions: None

Non-compliances: None

Report Release History: Original Release

Author: Heng Lin EMC / Wireless 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:

MW-CMR-PCS-2480

1.2 Samples Submitted for Assessment

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

Sample No.	Description	Serial No.
1	CDMA Compact Repeater unit with CCD	0707D9137

The first samples were received on: August 13, 2007

1.3 Theory of Operation

The Deko2419 is a CDMA repeater within the Wide PCS (WPCS) band (1800-1900MHz).
This Channel-Selective CDMA Repeater amplifies signals bi-directionally between base stations and mobile handsets, in cellular and other wireless systems. It is suitable for CDMA, Edge, 1xEVDO communication standards in the WPCS band.

1.4 Technical Specifications of the EUT

Operating Frequency:	Uplink:	1850 – 1915MHz
	Downlink:	1930 – 1995MHz
Emission Designator:	F9W, G7W	
Rated Power:	Uplink:	24 ± 1 dBm
	Downlink:	24 ± 1 dBm
Measured Power (Peak Power):	Uplink:	31.77 dBm (1.503 W)
	Downlink:	31.89 dBm (1.545 W)
Modulation:	CDMA, Edge, 1xEVDO	
Power Source:	120VAC	

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 ^{o}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	FSP	FA001920	March 19/08
Spectrum Analyzer	Rohde & Schwarz	FSU	FA001877	Jan. 16/08
Power Meter	Agilent	E4418B	FA001678	Jun. 12/08
Power Sensor	Agilent	8487A	FA001741	Jun. 12/08
Biconical (2) Antenna	EMCO	3109	FA000904	Sept. 12/07
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Sept. 12/07
Horn Antenna #1	EMCO	3115	FA000649	Feb. 26/08
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	Aug. 21/08
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	Aug. 21/08
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	Aug. 21/08
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU

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 Subpart E : 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 Subpart E : Test Results

Clause	Test Method	Test Description	Required	Result
24.235	2.1055	Frequency stability	Y	PASS (1)
24.232	2.1046	Output power	Y	PASS
24.238	2.1051	Conducted spurious emissions	Y	PASS
24.238	2.1053	Radiated spurious emissions	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 Output Power

(a) Base stations are limited to 1640 watts peak equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.

(b) Base stations that are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census, are limited to 3280 watts peak equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT

(c) 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)**	24.6
Date:	September 14, 2007	**Humidity: (%)**	44.8
Modification State:	0	**Tester:**	Heng Lin
		Laboratory:	Ottawa

Test Results: See Attached Table.

Additional Observation:

Power was measured using a Peak detector with a 10MHz RBW/VBW.

Downlink:

Modulation	Measured Power (dBm)		
	1940MHz	1962.5MHz	1985MHz
CDMA	31.89	31.70	31.69
EDGE	26.97	26.77	26.78
1xEVDO	30.90	29.53	31.82

Uplink:

Modulation	Measured Power (dBm)		
	1860MHz	1882.5MHz	1905MHz
CDMA	31.42	31.36	31.77
EDGE	24.96	24.97	24.37
1xEVDO	29.68	28.71	28.54

Measurements were performed with the filter set to 20MHz.

Measured power is at the 1dB compression point for a single carrier.

Clause 24.238 Conducted Spurious Emissions

(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.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Conditions:

Sample Number:	1	**Temperature: (°C)**	24.6
Date:	September 14, 2007	**Humidity: (%)**	44.8
Modification State:	0	**Tester:**	Heng Lin
		Laboratory:	Ottawa

Test Results:

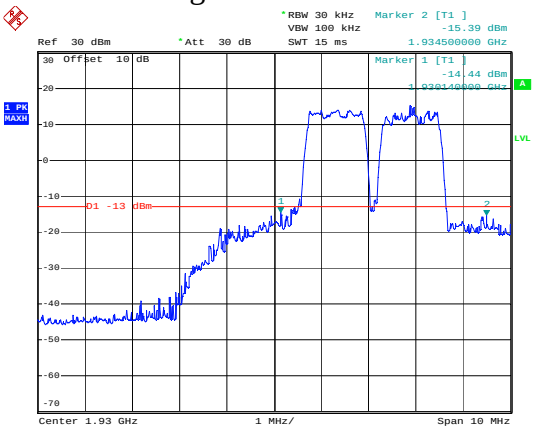
See Attached Plots.

Additional Observations:

Conducted emissions were performed on a low, middle and high channel for each modulation. Only the worst case has been included.

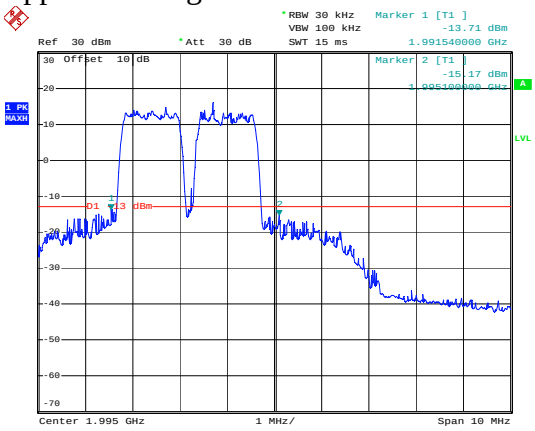
Downlink – CDMA

Lower Bandedge



Date: 19.SEP.2007 14:26:05

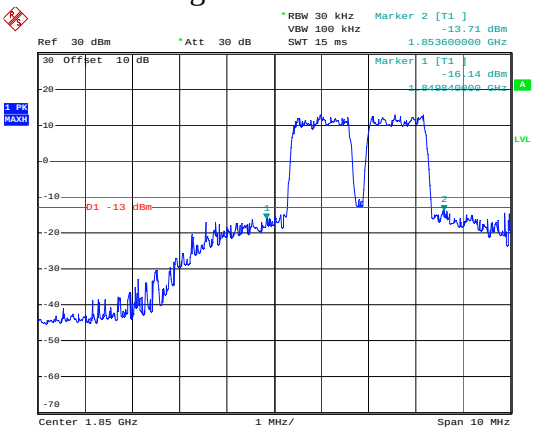
Upper Bandedge



Date: 19.SEP.2007 14:34:41

Uplink – CDMA

Lower Bandedge



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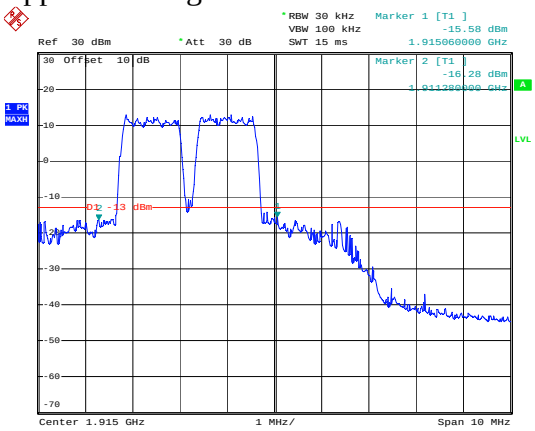
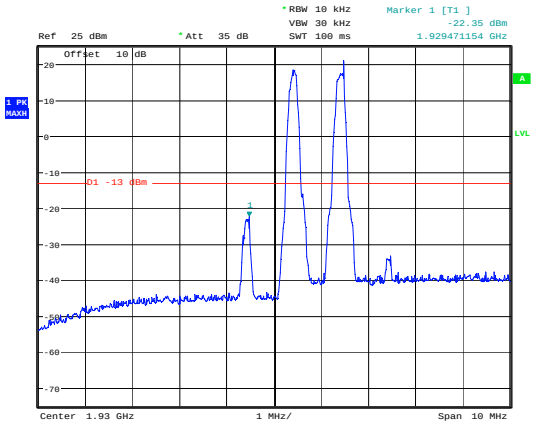
Upper Bandedge



Date: 19.SEP.2007 14:47:16

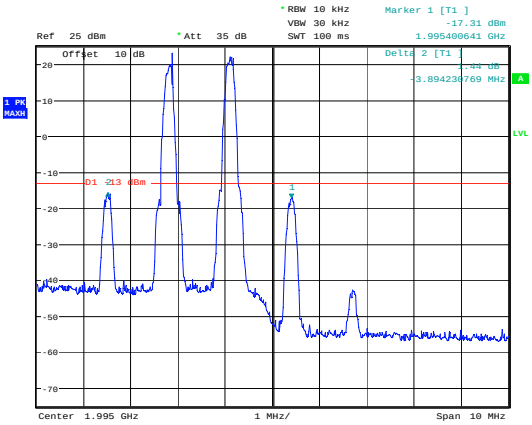
Downlink – EDGE

Lower Bandedge



Date: 14.SEP.2007 15:34:43

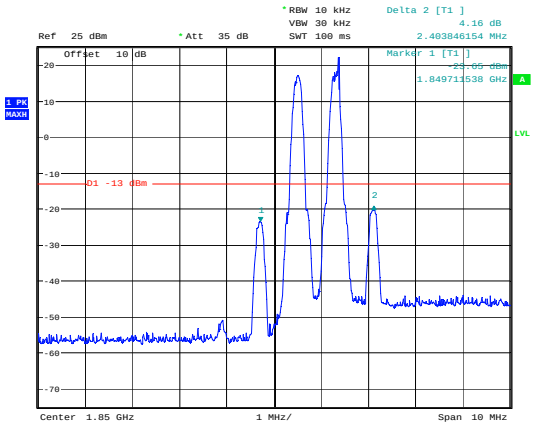
Upper Bandedge



Date: 14.SEP.2007 15:39:42

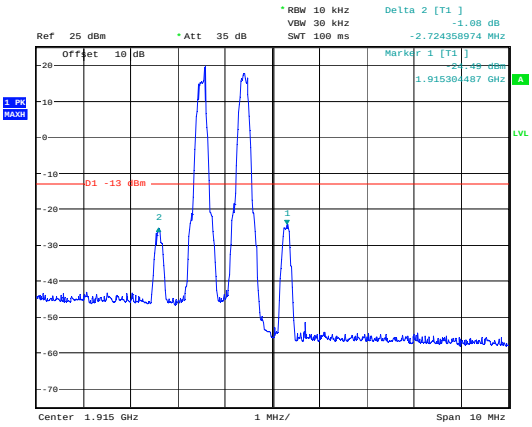
Uplink – EDGE

Lower Bandedge



Date: 14.SEP.2007 15:58:32

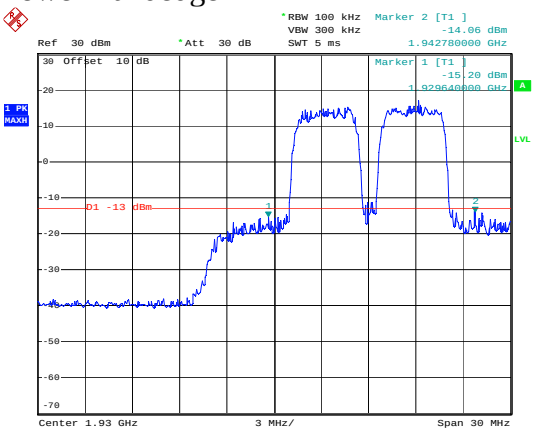
Upper Bandedge



Date: 14.SEP.2007 15:51:17

Downlink – 1 x EVDO

Lower Bandedge



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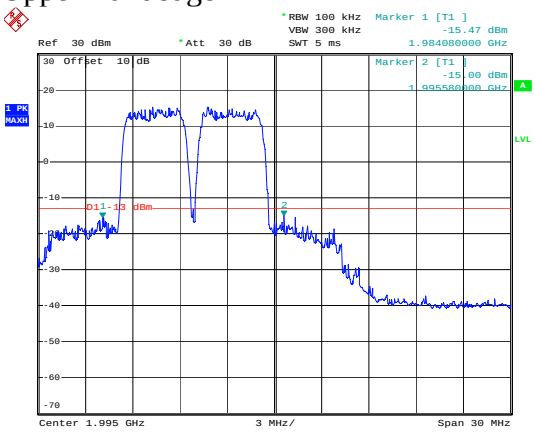
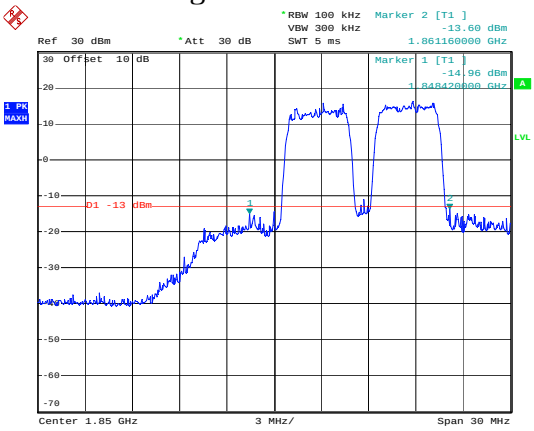
Upper Bandedge



Date: 19.SEP.2007 14:39:07

Uplink – 1 x EVDO

Lower Bandedge



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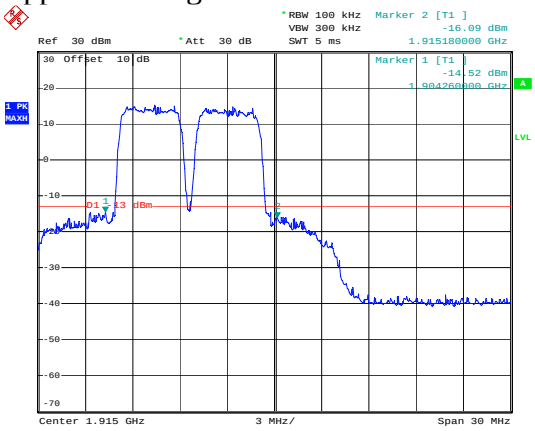
Upper Bandedge



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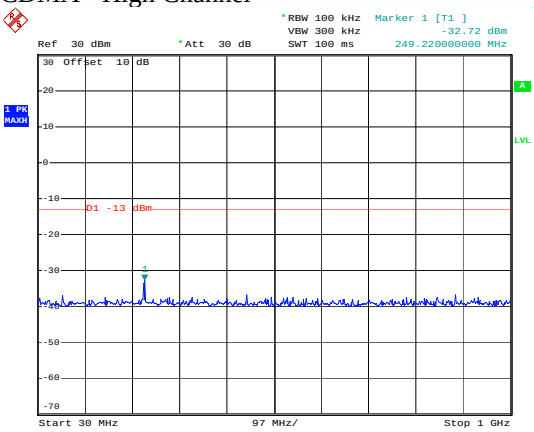
Conducted Emissions

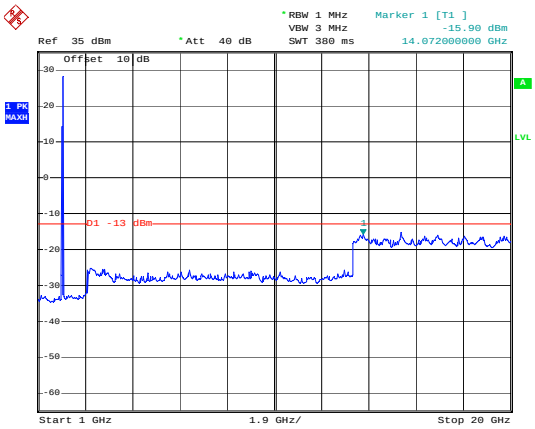
Downlink – Conducted Emission

CDMA - High Channel



Date: 19.SEP.2007 15:43:32

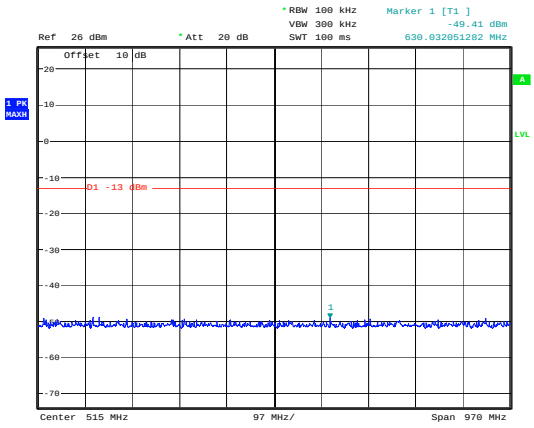
1 x EVDO - Low channel



Date: 19.SEP.2007 15:46:19

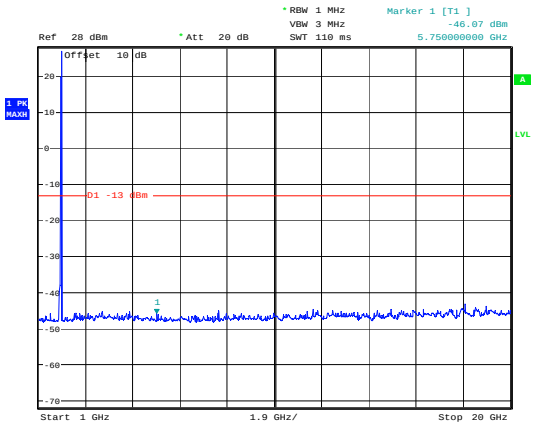
Uplink – Conducted Emission

GSM EDGE - Mid Channel



Date: 14.SEP.2007 16:50:19

CDMA - Low channel



Date: 14.SEP.2007 16:58:08

Clause 24.238 Radiated Spurious Emissions

(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)**	24.5
Date:	September 04, 2007	**Humidity: (%)**	48.8
Modification State:	0	**Tester:**	Heng Lin
		Laboratory:	Ottawa

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 below 1GHz and a 1MHz RBW above 1GHz at a distance of 3 meters.

The EUT was stimulated with a CW signal in a low, middle and high channel.

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Sig. Sub. Factor	Emission Level (dBm)	Limit (dBm)	Margin (dB)
1	1993.0000	Horn1	V	57.0	-113.4	-56.4	-13.0	43.4
2	1993.0000	Horn1	H	61.0	-114.4	-53.3	-13.0	40.3
3	1994.0000	Horn1	V	56.0	-113.4	-57.4	-13.0	44.4
4	1994.0000	Horn1	H	61.0	-114.4	-53.3	-13.0	40.3
5	2049.7500	Horn1	V	65.0	-123.1	-58.1	-13.0	45.1
6	2049.7500	Horn1	H	66.5	-123.3	-56.8	-13.0	43.8
7	2054.6800	Horn1	V	67.5	-123.2	-55.7	-13.0	42.7
8	2054.6800	Horn1	H	65.0	-123.3	-58.3	-13.0	45.3
9	2132.3350	Horn1	V	66.4	-123.3	-56.9	-13.0	43.9
10	2132.3350	Horn1	H	66.6	-123.3	-56.7	-13.0	43.7

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)**	24.6
Date:	September 14, 2007	**Humidity: (%)**	44.8
Modification State:	0	**Tester:**	Heng Lin
		Laboratory:	Ottawa

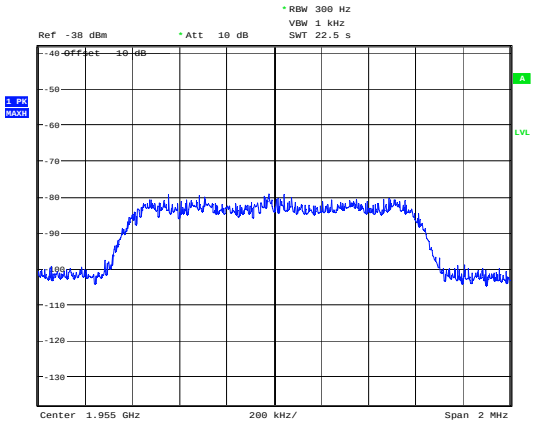
Test Results: See Attached Plots.

Additional Observations:

Input and output signals were compared to verify that there was no any degradation to the signal due to amplification and conversion in the DUT.

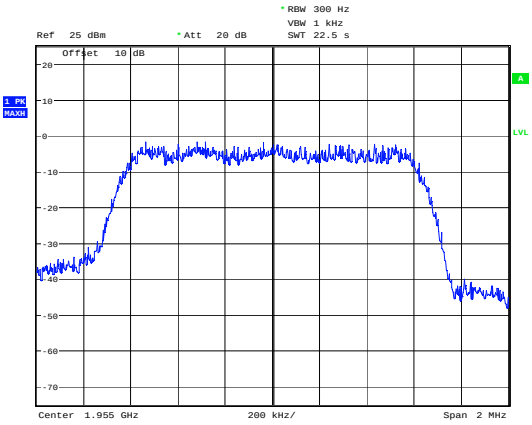
Downlink – CDMA

Input



Date: 14.SEP.2007 17:24:39

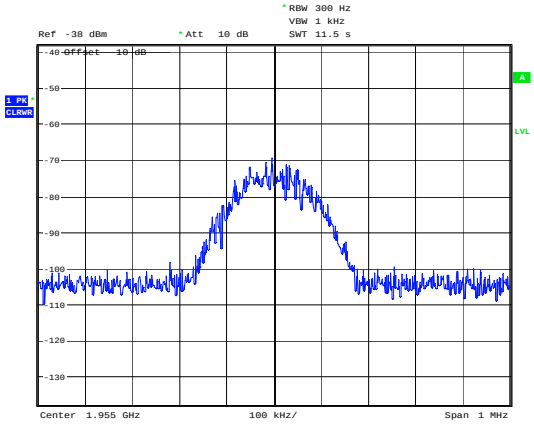
Output



Date: 14.SEP.2007 17:31:43

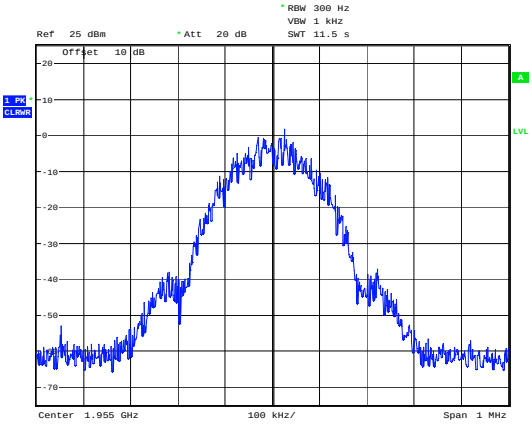
Downlink - EDGE

Input



Date: 14.SEP.2007 17:26:30

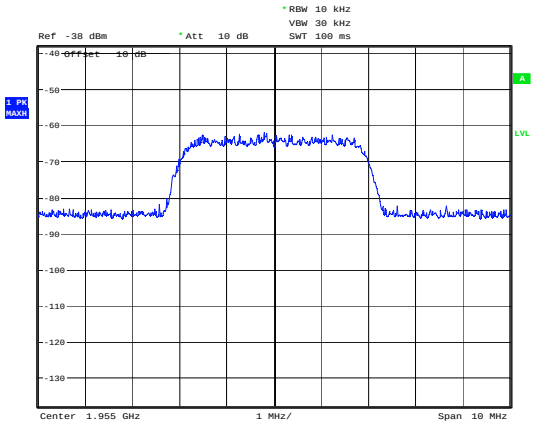
Output



Date: 14.SEP.2007 17:30:11

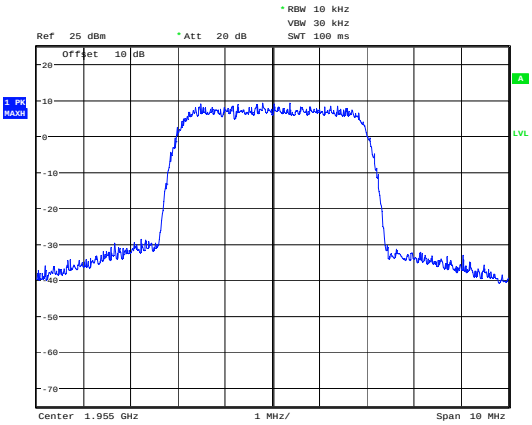
Downlink – 1 x EVDO

Input



Date: 14.SEP.2007 17:23:04

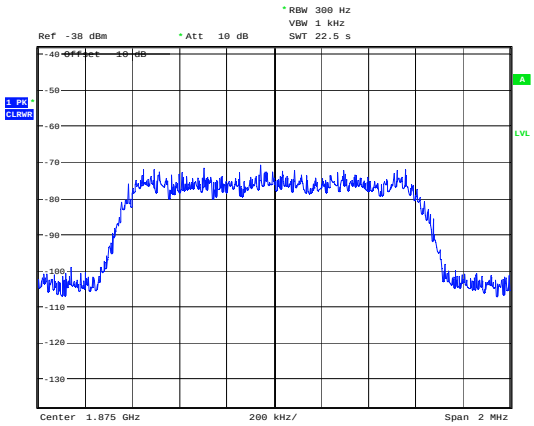
Output



Date: 14.SEP.2007 17:33:03

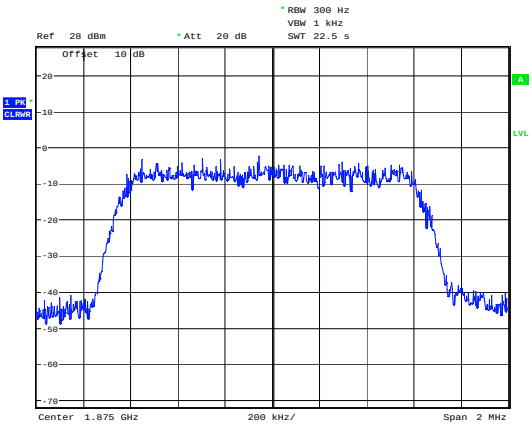
Uplink - CDMA

Input



Date: 14.SEP.2007 17:20:09

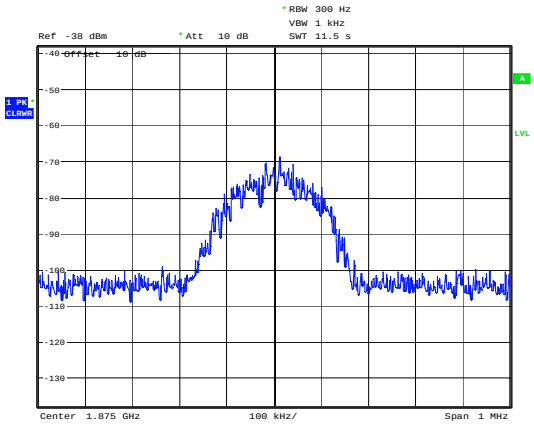
Output



Date: 14.SEP.2007 17:17:51

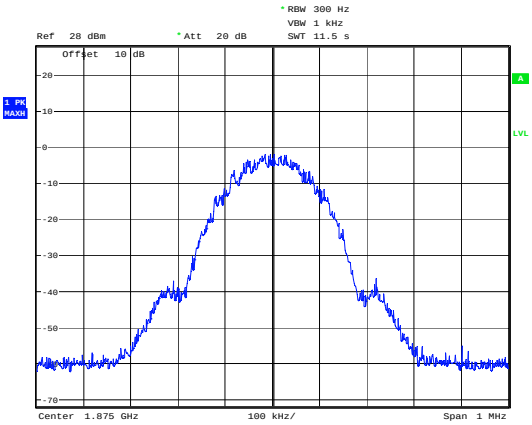
Uplink - EDGE

Input



Date: 14.SEP.2007 17:21:06

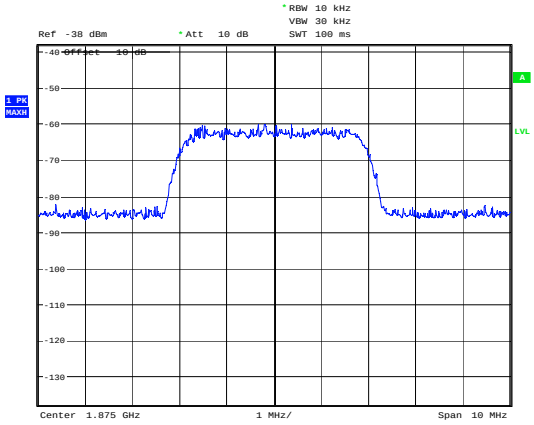
Output



Date: 14.SEP.2007 17:13:07

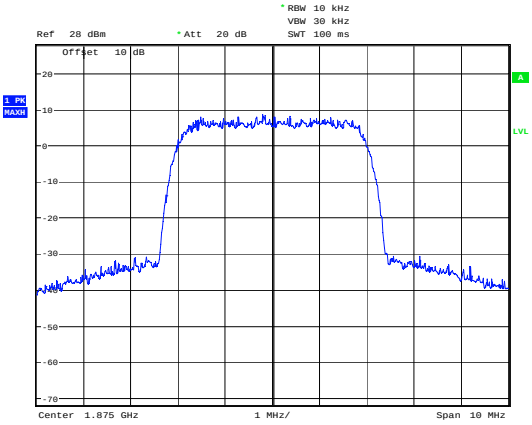
Uplink – 1 x EVDO

Input



Date: 14.SEP.2007 17:22:07

Output



Date: 14.SEP.2007 17:15:41

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

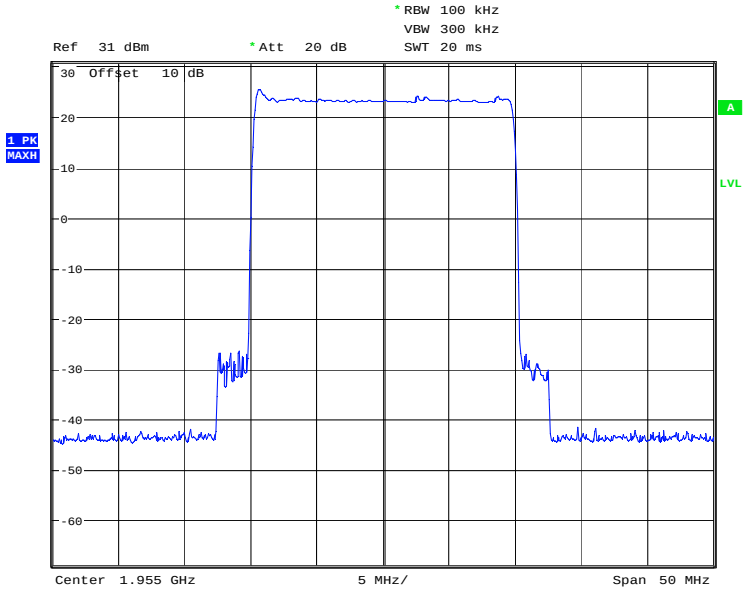
Plots showing the filter frequency response.

Test Conditions:

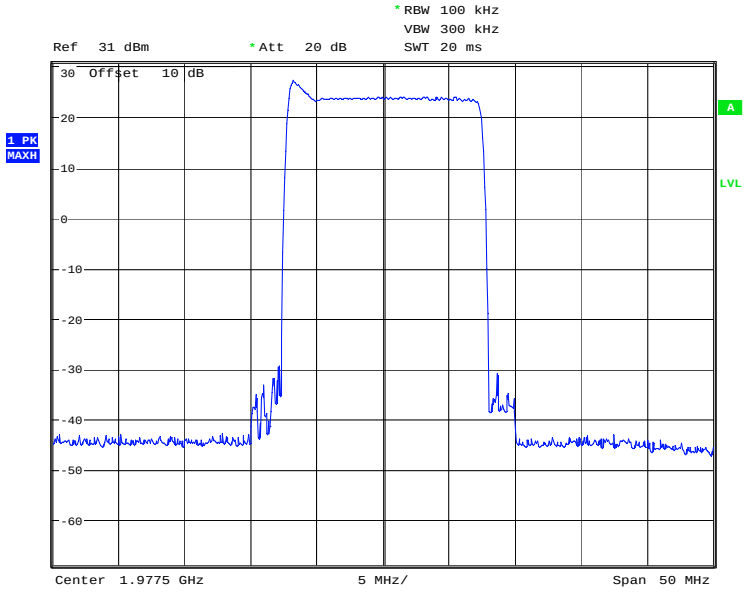
Sample Number:	1	**Temperature: (°C)**	24.6
Date:	September 14, 2007	**Humidity: (%)**	44.8
Modification State:	0	**Tester:**	Heng Lin
		Laboratory:	Ottawa

Test Results: See Attached Plots.

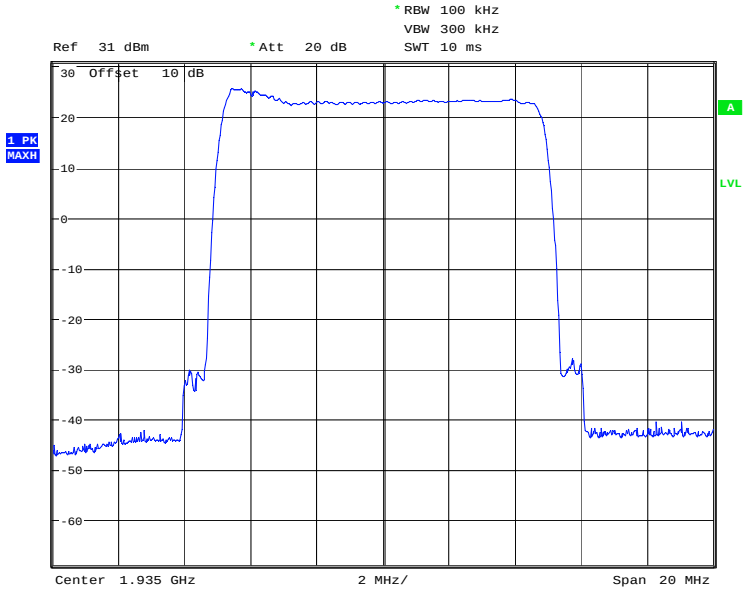
Downlink (20 MHz Filter)



Downlink (15 MHz Filter)

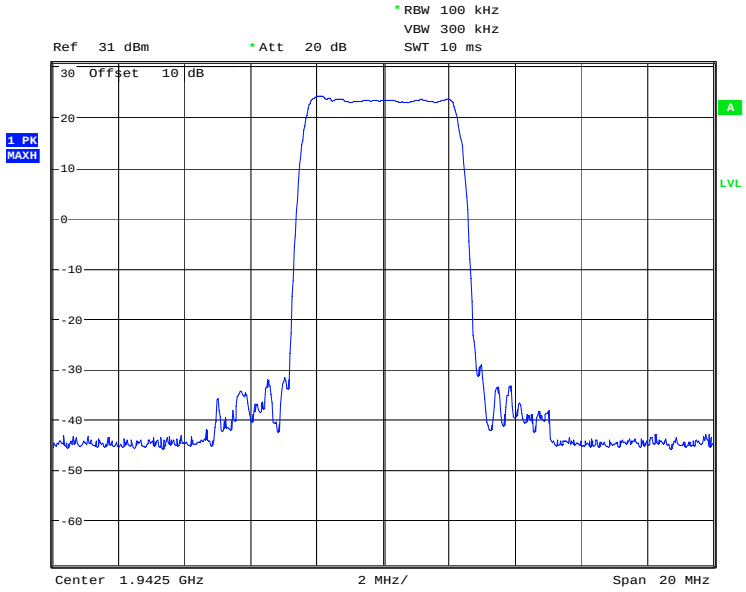


Downlink (10 MHz Filter)



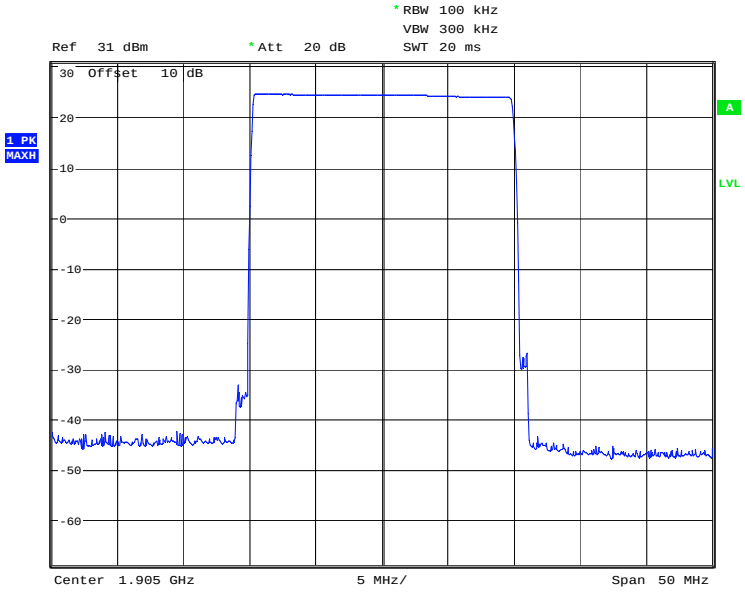
Date: 17.SEP.2007 09:25:34

Downlink (5 MHz Filter)



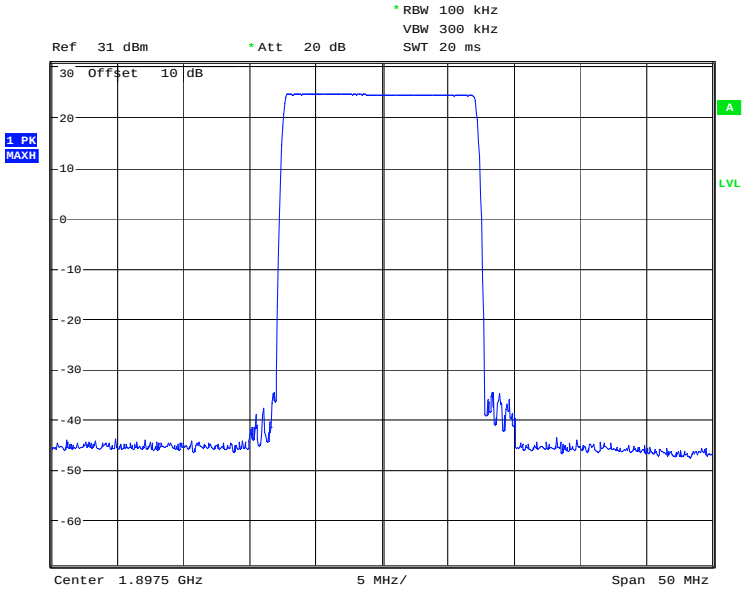
Date: 14.SEP.2007 17:56:03

Uplink (20 MHz Filter)



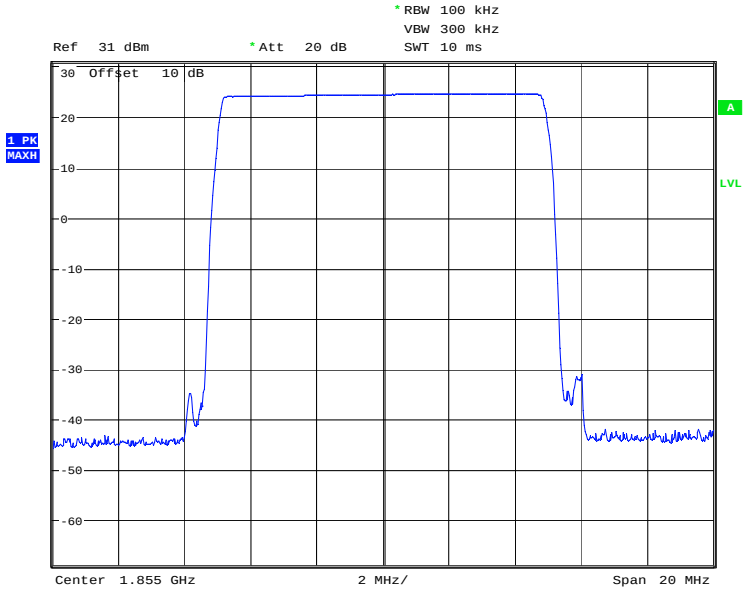
Date: 17.SEP.2007 09:19:01

Uplink (15 MHz Filter)



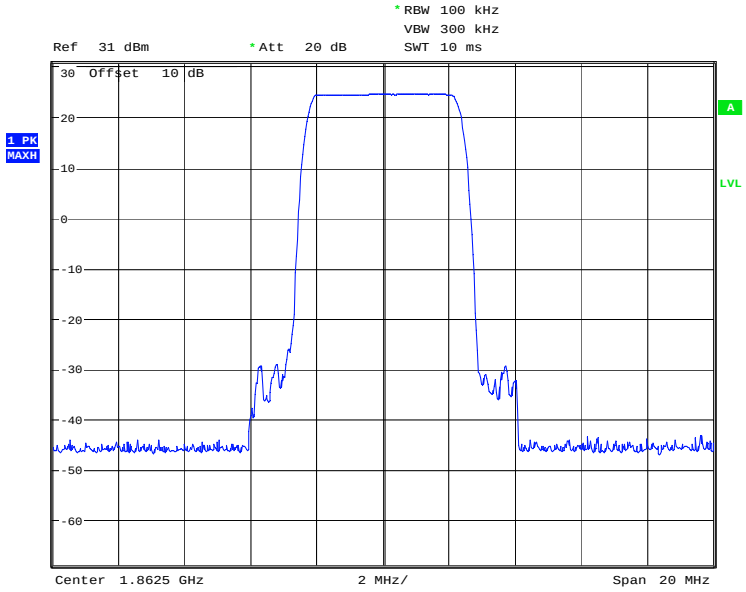
Date: 14.SEP.2007 18:04:28

Uplink (10 MHz Filter)



Date: 17.SEP.2007 09:16:00

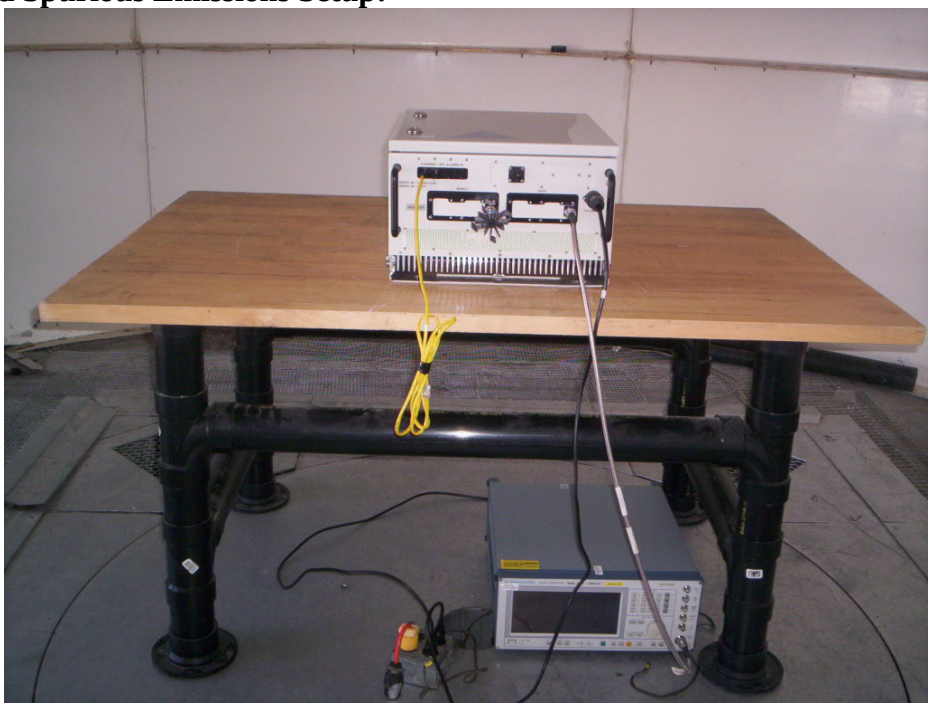
Uplink (5 MHz Filter)



Date: 14.SEP.2007 18:08:11

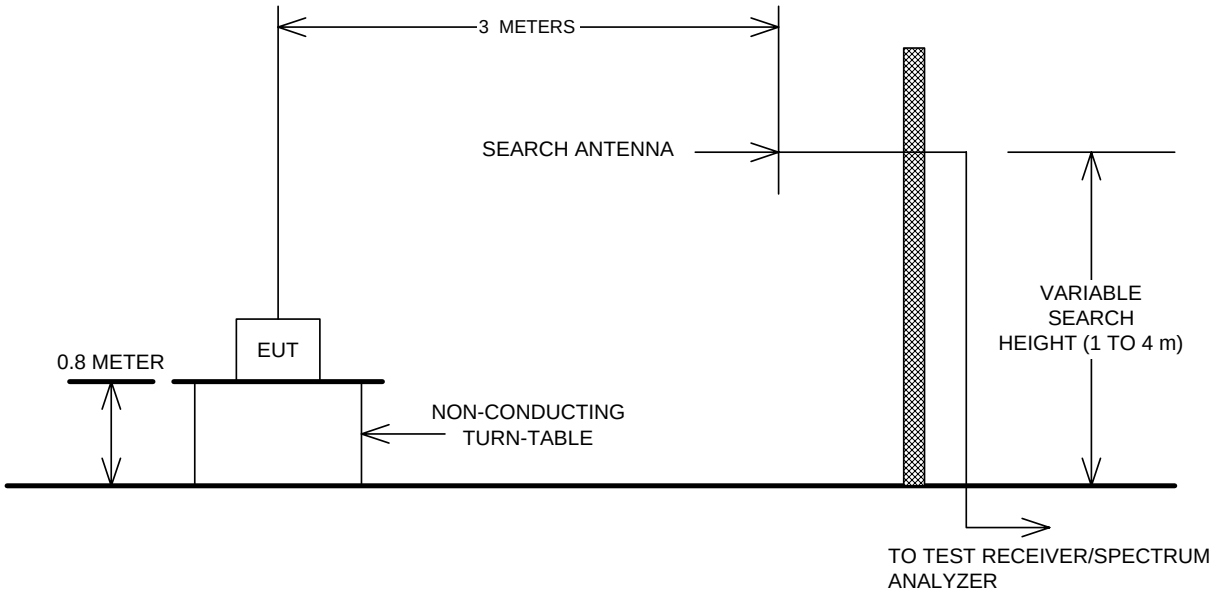
Appendix B : Setup Photographs

Radiated Spurious Emissions Setup:



Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions, Output power, Occupied Bandwidth