



Test Report: 4W32611 Issue 2

Applicant: Dekolink Wireless Ltd.
16 Bazel St. Qiryat-Arieh
Petah-Tikva, Israel
49510

**Equipment Under Test:
(EUT)** MW-DBDA-SMR-50W85-PS9

FCC ID: OIWDBDAPS950W90

In Accordance With: **FCC Part 90, Subpart I**
Private Land Mobile Repeater

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



Authorized By: Glen Westwell, Wireless Specialist

Date: 7 January 2005

Total Number of Pages: 25

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

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EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

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 90, Subpart I.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit



Equipment Code

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: _____ DATE: 7 January 2005
Jason Nixon, Telecom Specialist

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This report applies only to the items tested.

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	TIA EIA-603.3.2.6	N/A (1)
Audio Low-Pass Filter Response	TIA EIA-603.3.2.6	N/A (1)
Modulation Limiting	TIA EIA-603.3.2.6	N/A (1)
Occupied Bandwidth	2.1049	Complies
Spurious Emissions at Antenna Terminals	2.1051	Complies
Field Strength of Spurious Emissions	2.1053	Complies
Frequency Stability	2.1055	Complies (2)
Transient Frequency Behavior	—	

Footnotes:

- 1) The apparatus does not modulate or demodulate the carrier and therefore does not contain any modulation circuitry.
- 2) This equipment uses the same LO for frequency conversion, therefore the transmitted signal is identical in frequency to the received signal. This was verified with frequency counter phase locked to a signal generator and measuring the transmitted signal frequency. The frequency drift was 0 Hz.

Indoor Temperature: 24°C
 Humidity: 22%

Outdoor Temperature: 7°C
 Humidity: 57%

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 2. General Equipment Specification

Manufacturer:	Dekolink Wireless Ltd.
Model No.:	MW-DBDA-SMR-50W85-PS9
Serial No.:	04108066
Date Received In Laboratory:	November 5, 2004
Nemko Identification No.:	1
Supply Voltage Input:	90 to 260 Vac
Frequency Range:	UpLink: 896-902 MHz DownLink: 935-941 MHz
Type(s) of Modulation:	iDEN
RF Power Output (rated):	UpLink: 1Watts, +30dBm DownLink: 10Watts, +40dBm
Channel Spacing(s):	Programmable via client software
Operator Selection of Operating Frequency:	Programmable via client software
Emission Designator	G7W (iDEN)

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Jason Nixon	Date of Test: November 29, 2004
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Minimum Standard: Para. No. 90.205(a).**Test Results:** Complies**Measurement Data:**

The power levels were measured at maximum input drive and gain. This device uses AGC to prevent saturation or over modulation.

UpLink

Channel Frequency (MHz)	Measured Power (dBm)	Rated Power (dBm)
896	28.22	30
899	28.03	30
902	27.73	30

DownLink

Channel Frequency (MHz)	Measured Power (dBm)	Rated Power (dBm)
935	38.99	40
938	39.24	40
941	39.87	40

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Jason Nixon	Date of Test: November 29, 2004
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Minimum Standard: Para. No. 90.210

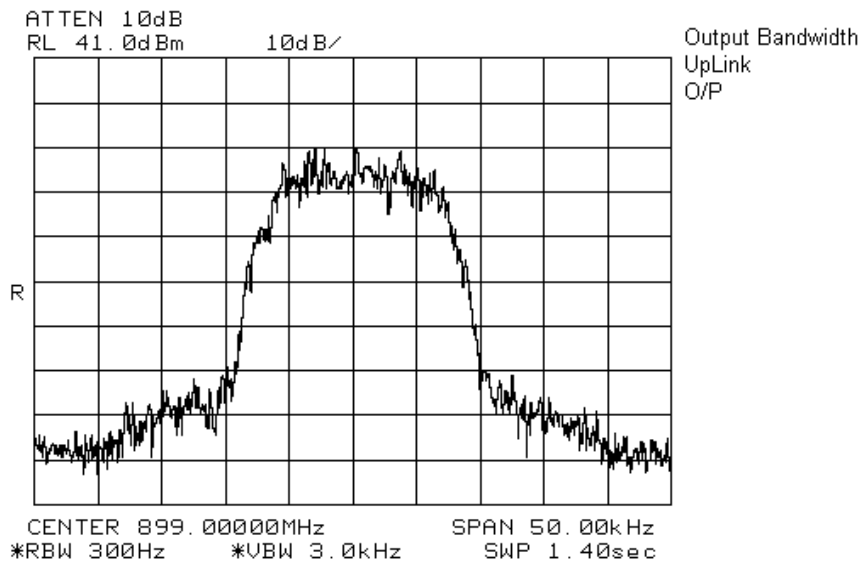
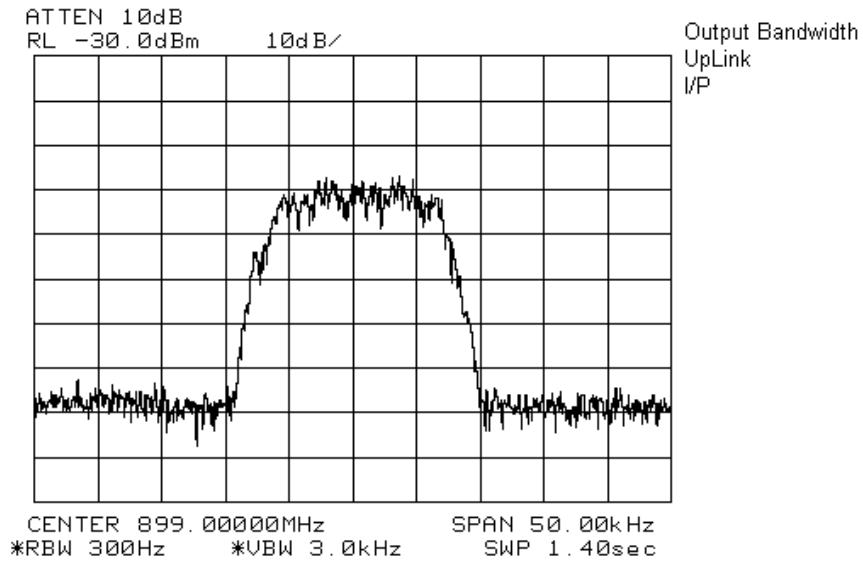
Test Results: Complies

Measurement Data: See attached graphs.

The occupied bandwidth was measured by comparison of input from the signal generator to the output signal from the amplifier. This was done in order to determine if there was any degradation to the output signal due to the amplification and conversion through the repeater.

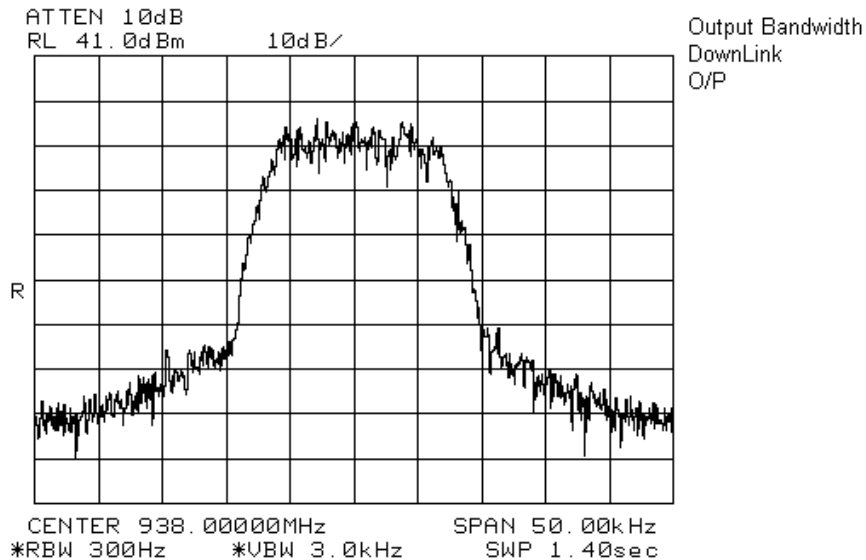
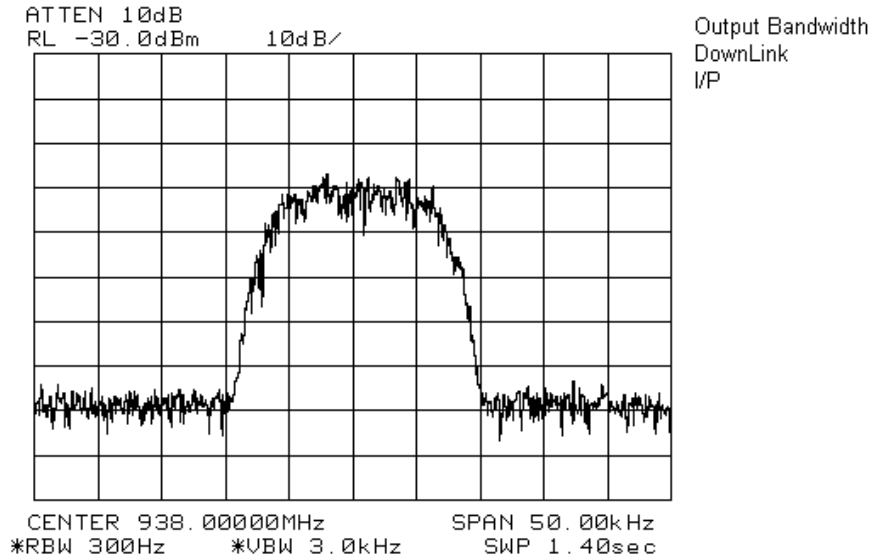
EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

UpLink, Input vs Output



EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

DownLink, Input vs Output



EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

Test Performed By: Jason Nixon	Date of Test: November 29, 2004
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Minimum Standard: -13dBm

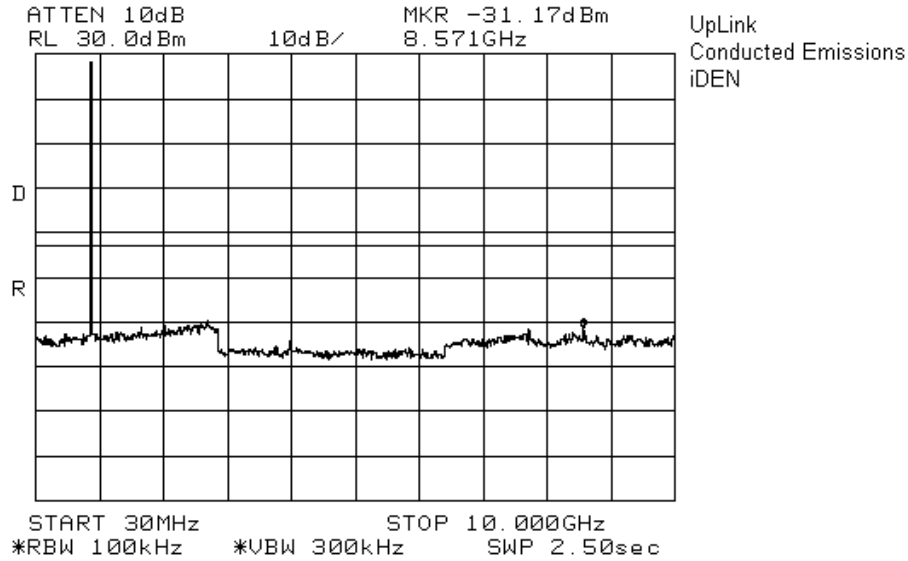
Test Results: Complies

Spurious emissions were searched at low, medium and high ends of the bands for both uplink and downlink directions. Worst case plots have been included.

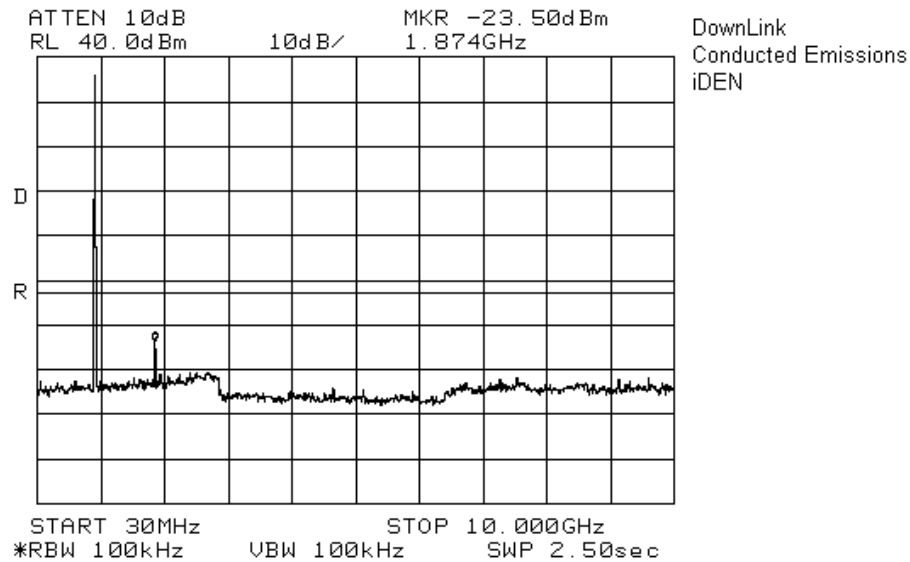
Measurement Data: See attached graphs.

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

UpLink Conducted Emissions

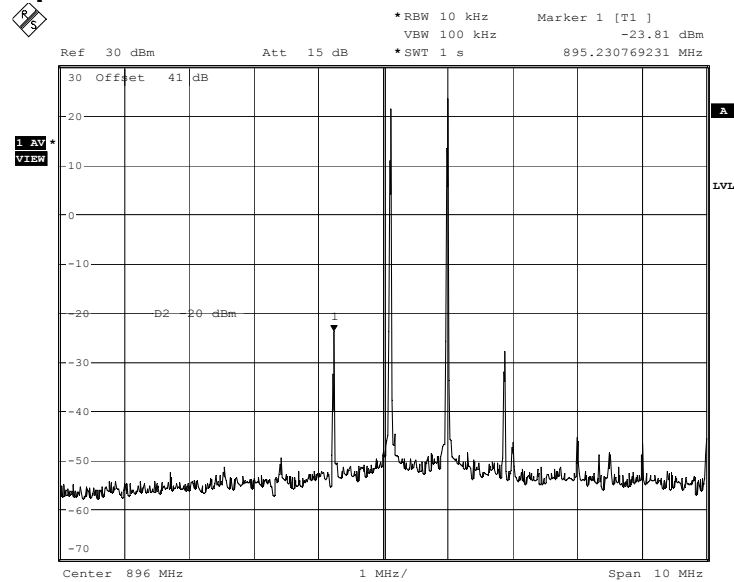


DownLink Conducted Emissions

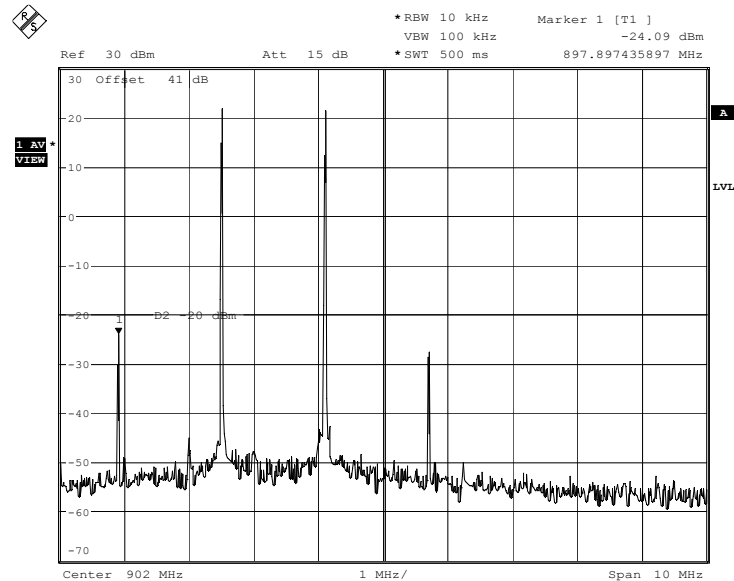


EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

3rd Order Inter-modulation Plots UpLink



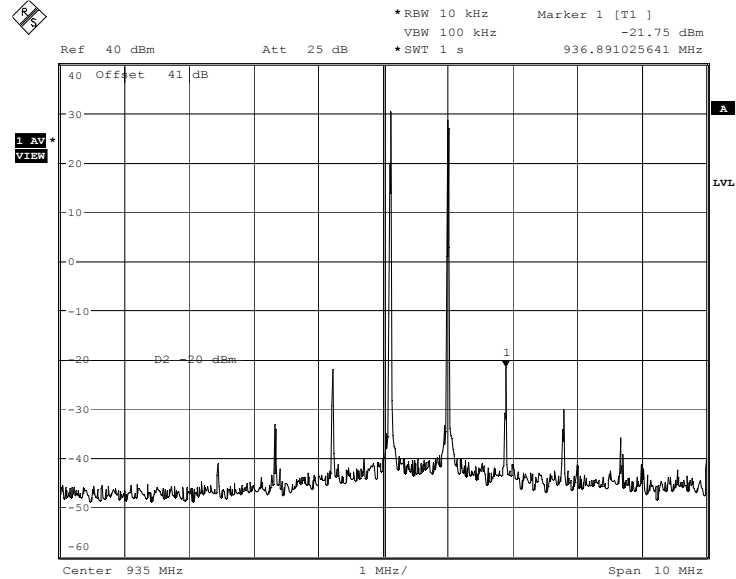
Uplink Lower Bandedge iDEN
Date: 13.JAN.2005 13:08:40



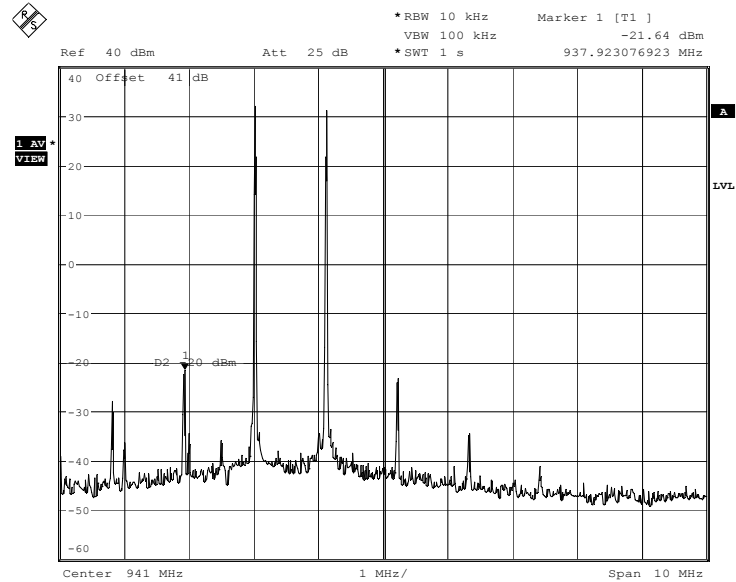
Uplink Upper Bandedge iDEN
Date: 13.JAN.2005 13:13:16

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

DownLink



Downlink Lower Bandedge iDEN
Date: 13.JAN.2005 13:01:40



Downlink Upper Bandedge iDEN
Date: 13.JAN.2005 12:57:46

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Jason Nixon	Date of Test: November 22, 2004
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Minimum Standard: -13dBm

Test Results: Complies

Measurement Data: See attached table.

The EUT was searched in both the uplink and downlink directions at top, mid and bottom of the bands. The worst case results have been included.

All emissions were measured using signal substitution relative to a half wave dipole antenna and are reported as ERP.

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Test Data - Radiated Emissions

Test Distance (meters) : 3m		Range: 1		Receiver: 8564E	RBW(kHz): 100kHz		Detector: Peak	
Freq. (MHz)	Ant. *	Pol. (V/H)	RCVD Signal (dBμV/m)	Signal Substitution Factor** (dB)	Dist. Corr. (dB)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
1876.0000	Horn1	V	61.2	-115.4	N/A	-54.3	-13.0	41.3
1876.0000	Horn1	H	58.2	-116.3	N/A	-58.2	-13.0	45.2
2814.0000	Horn1	V	67.0	-122.6	N/A	-55.6	-13.0	42.6
2814.0000	Horn1	H	61.3	-123.7	N/A	-62.4	-13.0	49.4
196.6370	BC1	V	33.3	-78.8	N/A	-45.5	-13.0	32.5
196.6370	BC1	H	32.7	-84.1	N/A	-51.4	-13.0	38.4
1048.5720	Horn1	V	53.7	-120.7	N/A	-67.0	-13.0	54.0
1048.5720	Horn1	H	49.8	-120.2	N/A	-70.4	-13.0	57.4
1441.7750	Horn1	V	51.8	-119.6	N/A	-67.7	-13.0	54.7
1441.7750	Horn1	H	49.0	-119.0	N/A	-70.0	-13.0	57.0
1703.9400	Horn1	V	52.3	-118.1	N/A	-65.7	-13.0	52.7
1179.6500	Horn1	V	54.2	-120.4	N/A	-66.2	-13.0	53.2
1179.6500	Horn1	H	54.2	-122.0	N/A	-67.8	-13.0	54.8
Notes: BC = Biconical, BL = Biconilog, LP = Log-Periodic, DP = Dipole * Re-measured using dipole antenna. ** Includes Cable Loss () Denotes failing emission level. N.D. = Not Detected								

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Photographs of Test Setup (Worst Case Configuration)

Front View



Rear View



EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 7. Out of Band Rejection

Para. No.: EAB/RF-2-11-04

Test Performed By: Jason Nixon	Date of Test: November 23 ,2004
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Minimum Standard: -13dBm

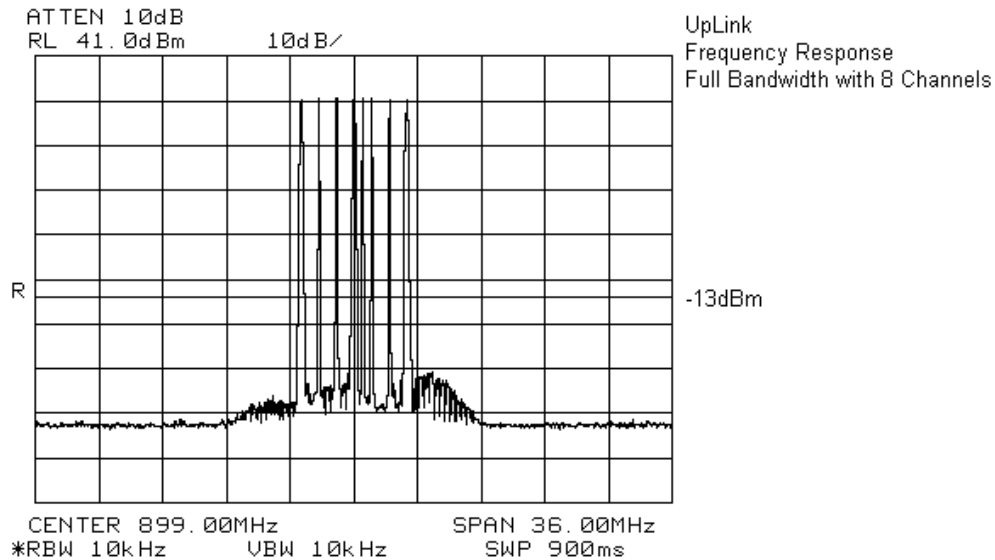
Test Results: Complies

Measurement Data: See attached plots.

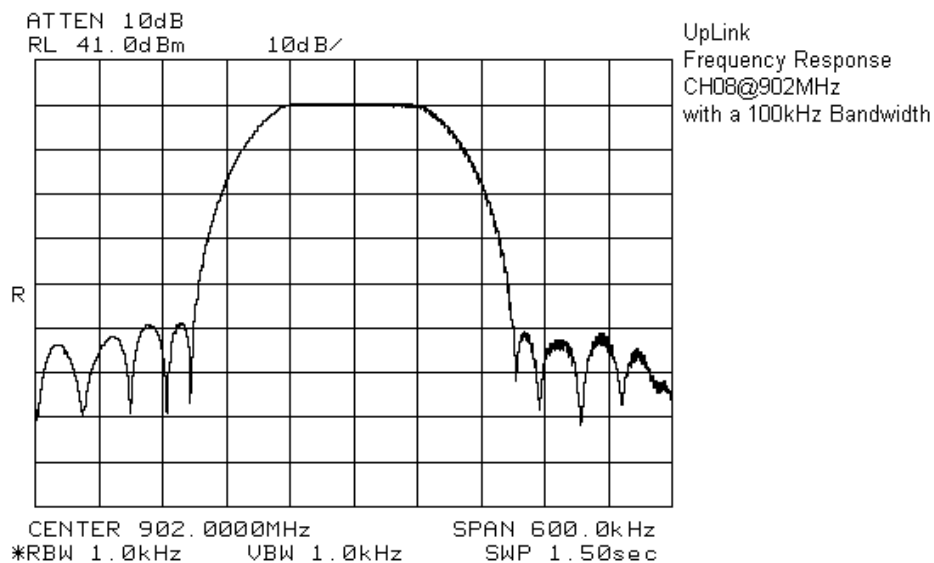
The apparatus has 8 programmable channels with in the band. The out of band rejection was tested on a low, middle and high channel set with the highest bandwidth.

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Uplink Full band with 8 channels

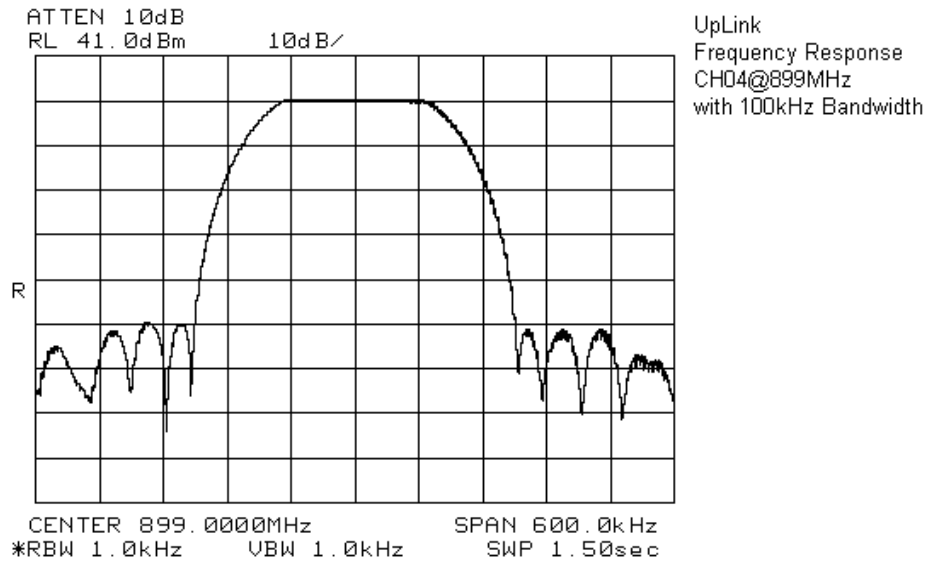


High channel frequency response

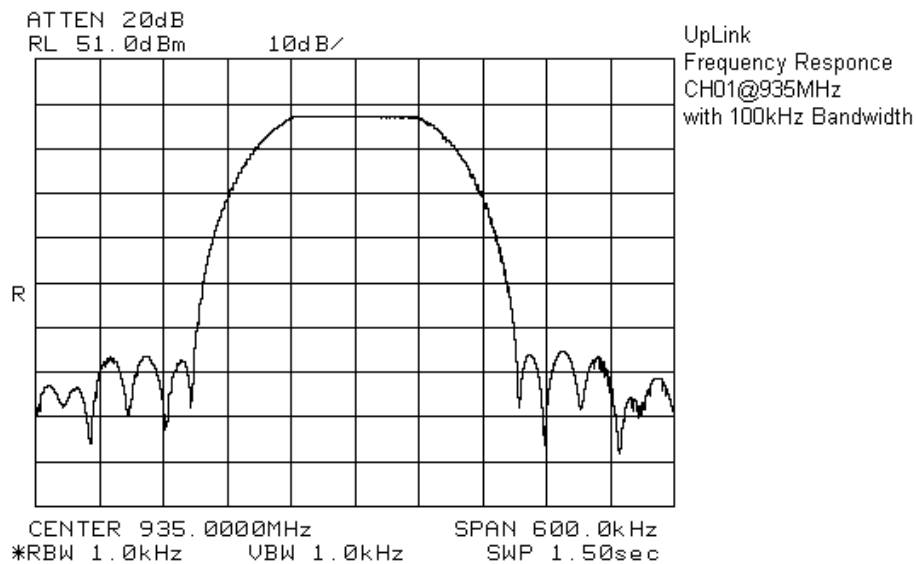


EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Mid channel frequency response

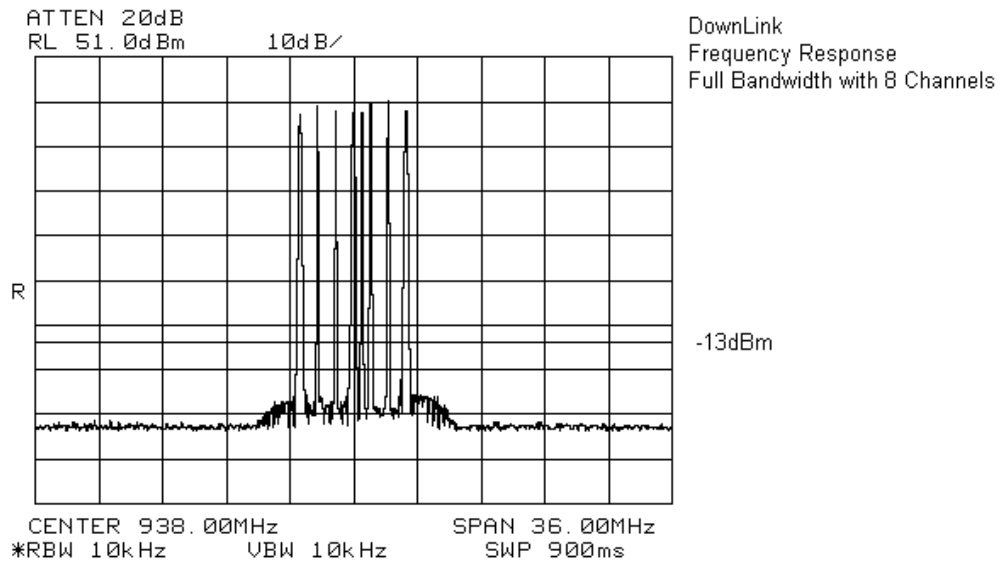


Low channel frequency response

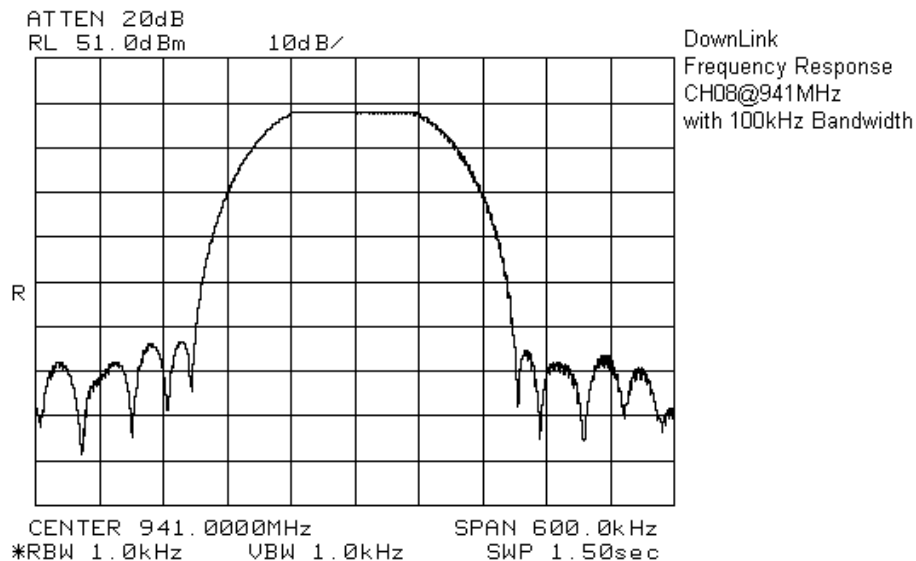


EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Downlink Full band with 8 channels

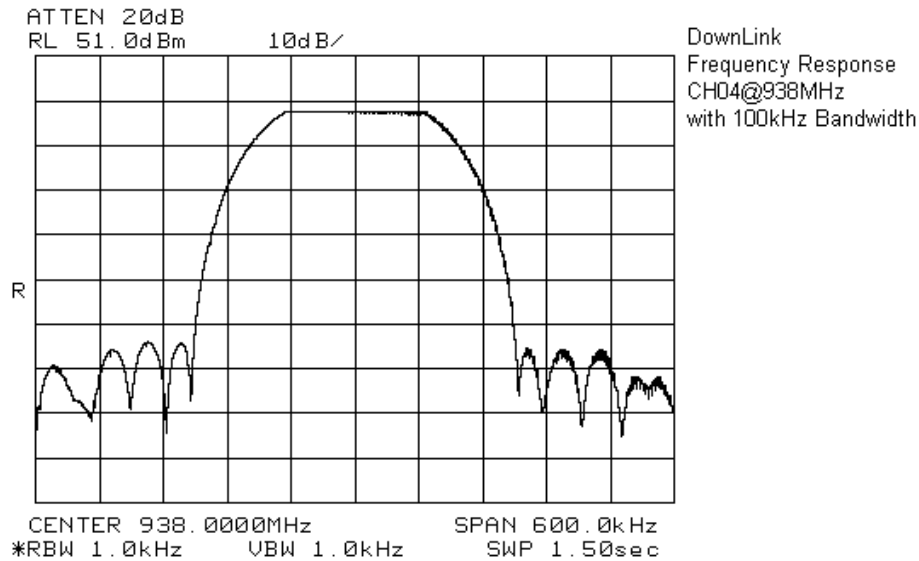


High channel frequency response

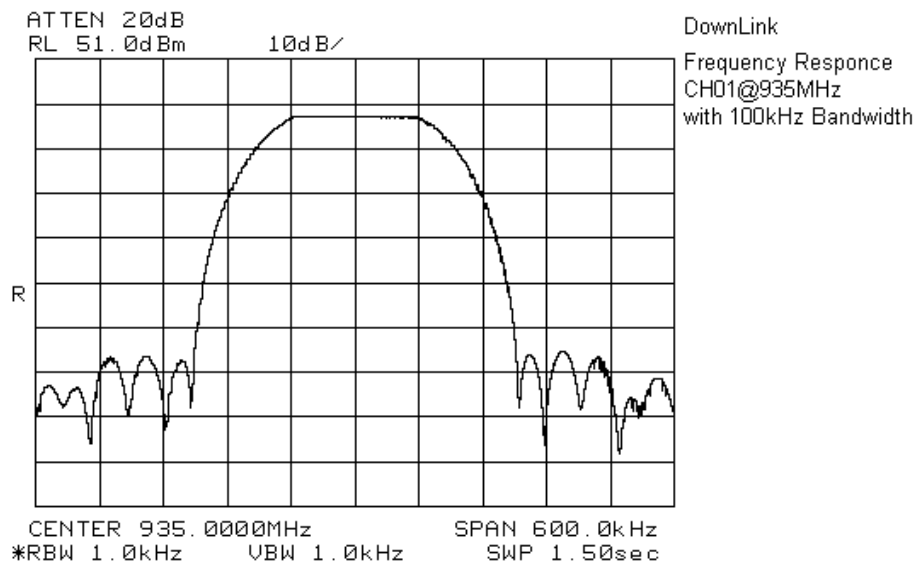


EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Mid channel frequency response



Low channel frequency response



EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Section 8. Test Equipment List

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	May 31/04	May 31/05
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	April 23/04	April 23/05
1 Year	Horn Antenna #1	EMCO	3115	FA000649	Dec. 18/03	Dec. 18/04
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 26/04	Aug. 26/05
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June 18/04	June 18/05
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June 18/04	June 18/05
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June 18/04	June 18/05
1 Year	Power Meter	Hewlett Packard	E4418B	FA001413	May 25/04	May 25/05
1 Year	Power Sensor	Hewlett Packard	8487A	FA001741	June 9/04	June 9/04
1 Year	Signal Generator	Rohde & Schwarz	SMIQ03	FA001091	Aug 20/04	Aug 20/05
1 Year	Signal Generator	Rohde & Schwarz	SMIQ	FA001878	May 18/04	May 18/05
-	Attenuator	Narda	776B-20	FA001153	COU	COU
-	Attenuator	Narda	769-20	FA001394	COU	COU
-	Mixer	Mini-circuits	ZA3PD-2	FA001155	COU	COU

COU = Calibrate On Use

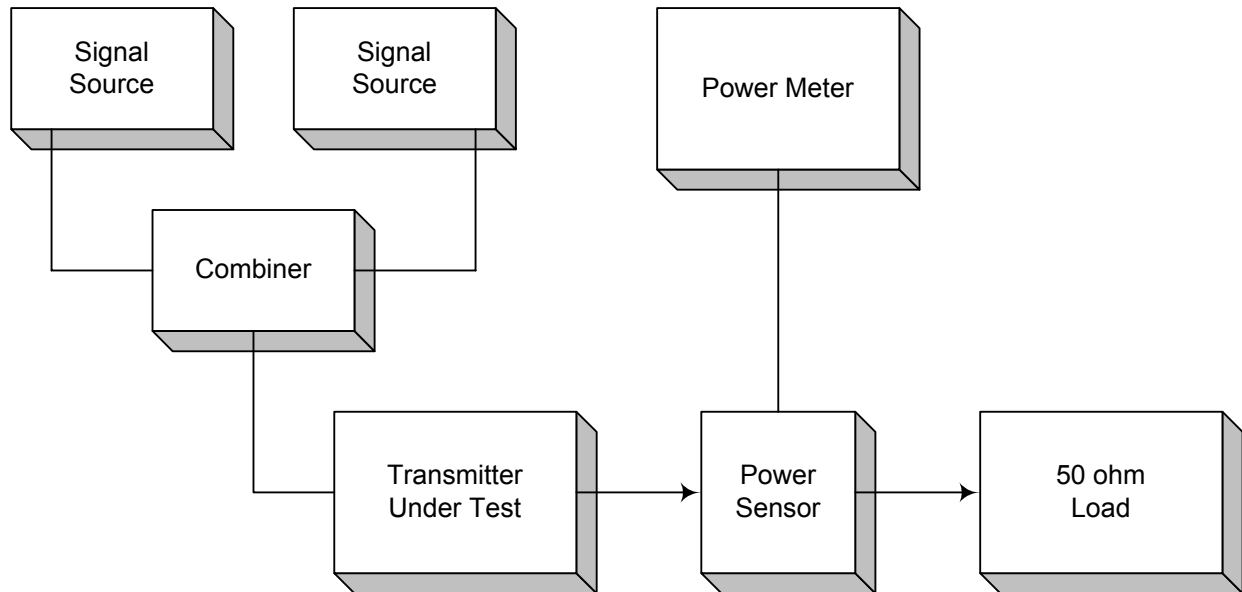
EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Appendix A

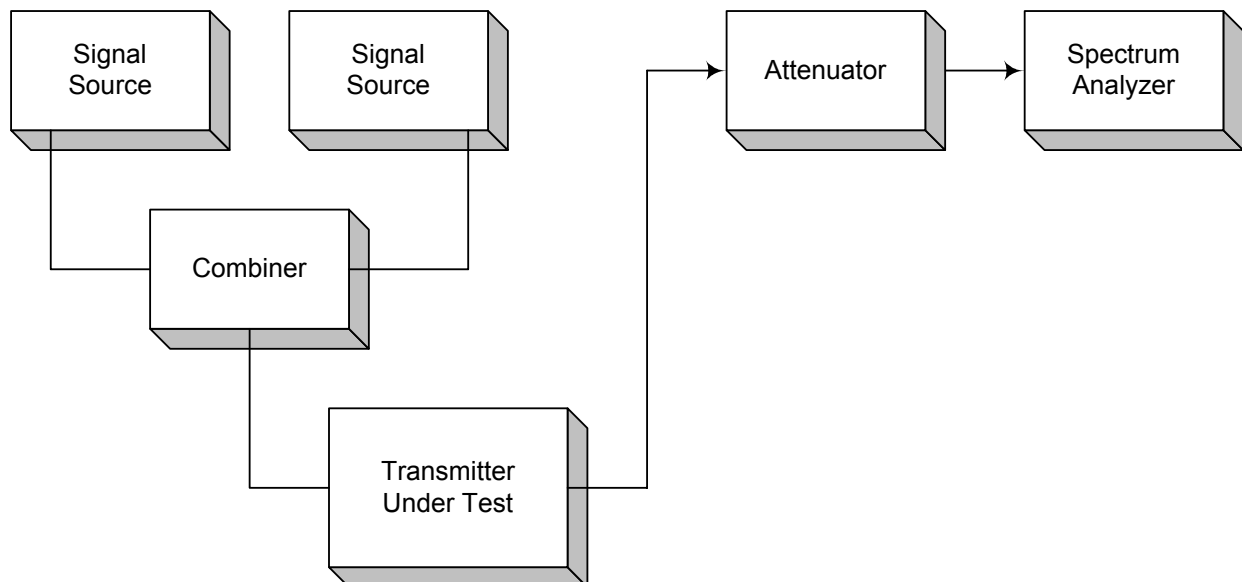
Test Diagrams

EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Para. No. 2.985 - R.F. Power Output

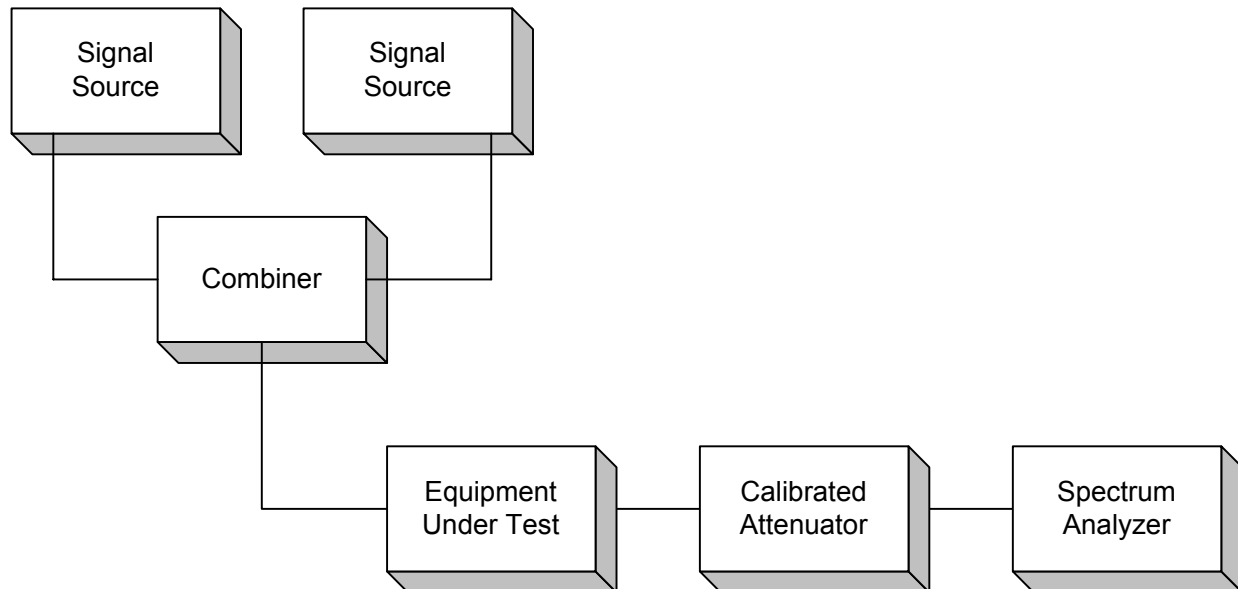


Para. No. 2.989 - Occupied Bandwidth



EQUIPMENT: MW-DBDA-SMR-50W85-PS9
FCC ID: OIWDBDAPS950W90

Para. No. 2.991 - Spurious Emissions at Antenna Terminals



Para. No. 2.993 - Field Strength of Spurious Radiation

