



Nemko

Test Report: 3W07175

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

**Equipment Under Test:
(EUT)** MW-CBDA-SMR-1W80-PS9

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 Technologist

Date: 9 June 2003

Total Number of Pages: 30

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EQUIPMENT: MW-CBDA-SMR-1W80-PS9

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: 9 June 2003
Kevin Carr, EMC Specialist

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This report applies only to the items tested.

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complied
Occupied Bandwidth	2.1409	Complied
Spurious Emissions at Antenna Terminals	2.15051	Complied
Field Strength of Spurious Emissions	2.1053	Complied
Frequency Stability	2.1055	N/A

Footnotes For N/A's:

The EUT is a f1-f1 amplifier, therefore frequency stability was not performed.

Deviation:

A QAM signal was substituted for Iden Modulation

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 37%

Outdoor Temperature: 17°C
 Humidity: 65%

.

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Section 2. General Equipment Specification

Manufacturer:	Dekolink Wireless Ltd.
Model No.:	MW-CBDA-SMR-1W80-PS9
Serial No.:	03051240
Date Received In Laboratory:	2 June 2003
Nemko Identification No.:	1
Supply Voltage Input:	120VAC, 60Hz
Frequency Range:	DL: 935 – 941 MHz UL: 896 – 902 MHz
RF Power Output (rated):	DL And UL : 24.0 dBm,
RF Power Output (Measured):	DL And UL: 24.0 dBm
Emission Designator:	F3E, F1D, F1E, GXW

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Kevin Carr	Date of Test: 2 June 2003
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Minimum Standard: Para. No. 90.205(a).

Test Results: Complied. The maximum RF output power is within ± 1 dB of the manufacturer's rating. The RF output power is de-rated according to the number of channels via AGC and is equal to $P_{max} - 10\log N$.

P_{max} = Maximum RF Output Power
N = Number Of Channels

Measurement Data:

Frequency (MHz)	Measured Power (dBm)	Rated Power (dBm)	Measured Rated (dB)
899.0	24.0	24.0	0.0
938.0	24.0	24.0	0.0

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Kevin Carr	Date of Test: 3 June 2003
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Minimum Standard: Para. No. 90.210

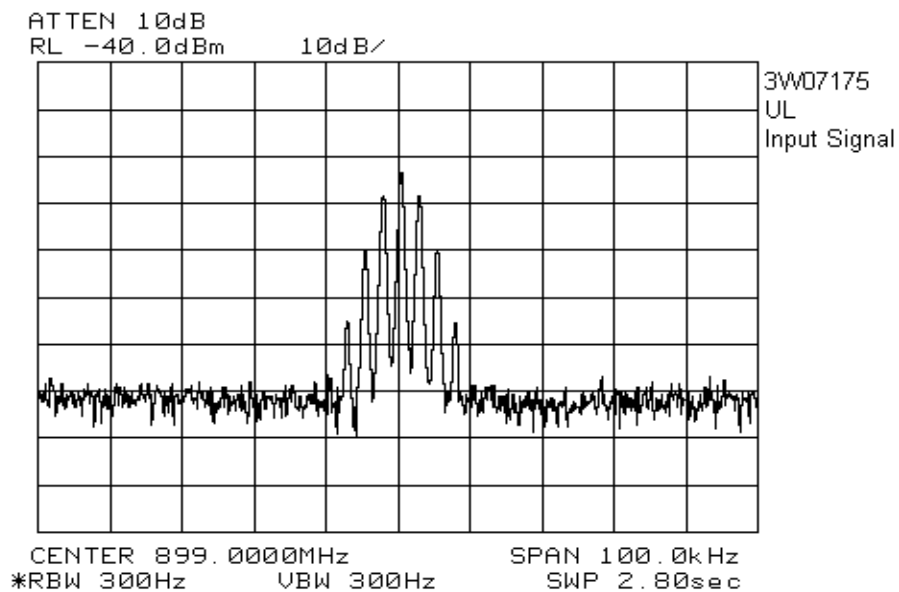
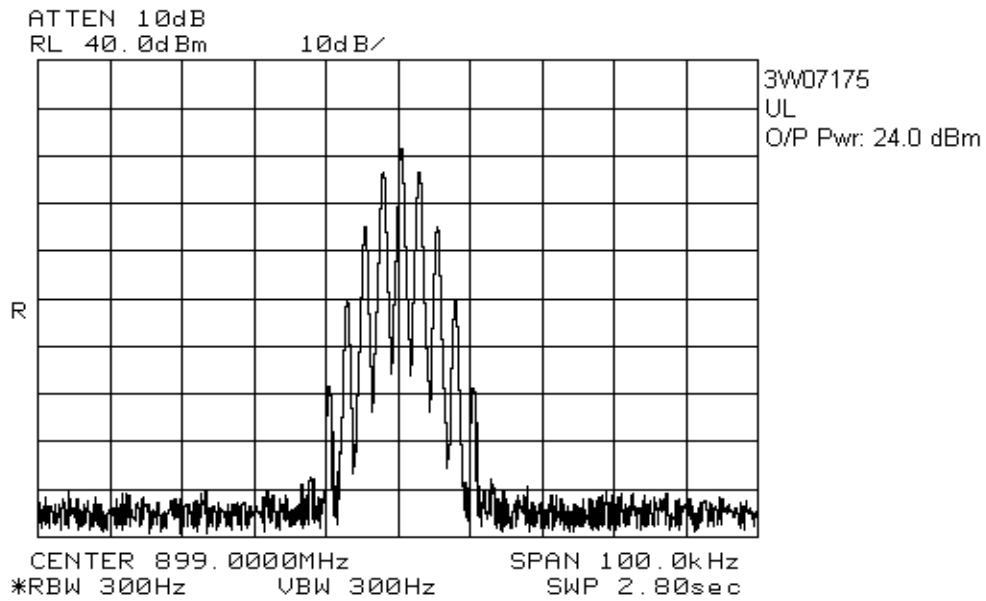
Test Results: Complies.

Measurement Data: See attached graphs.

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

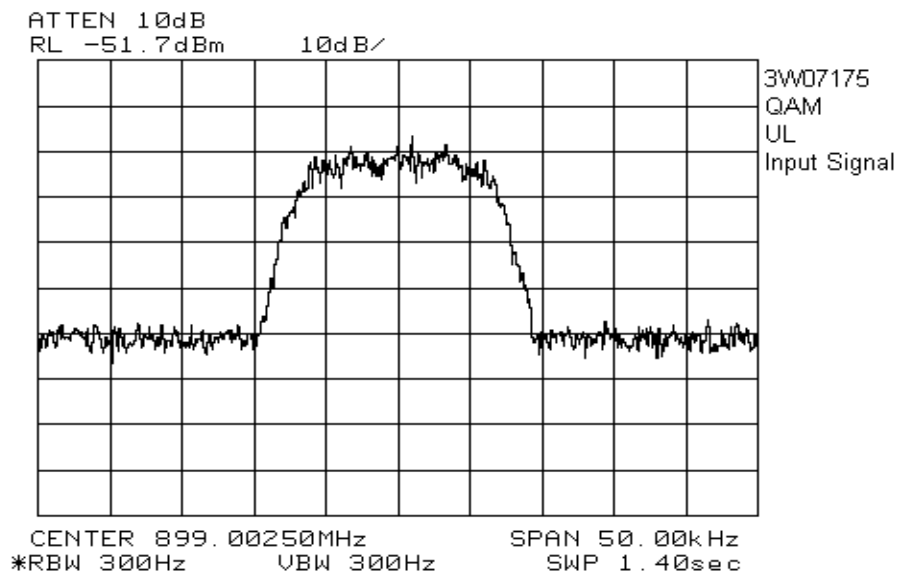
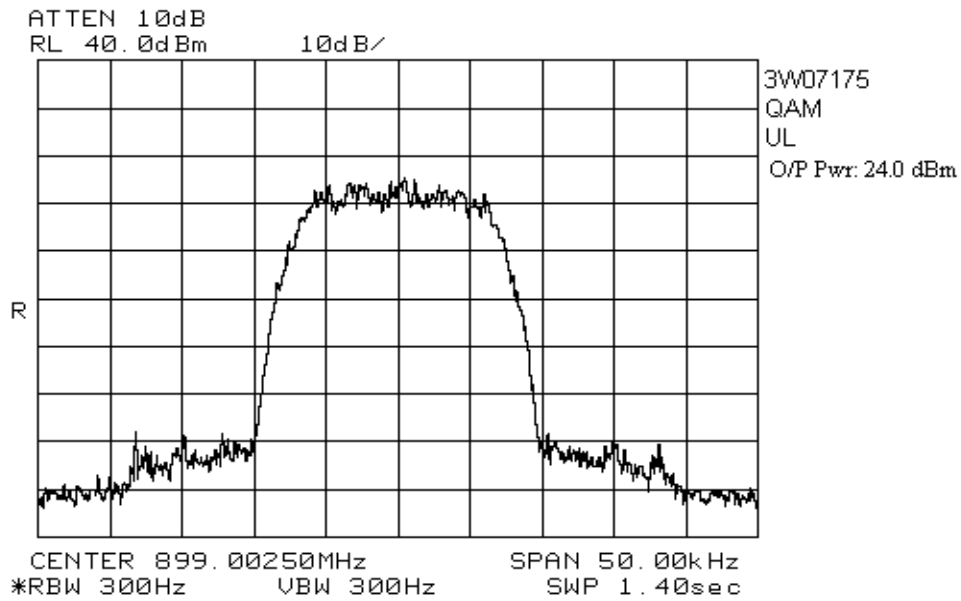
EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Uplink, F3E

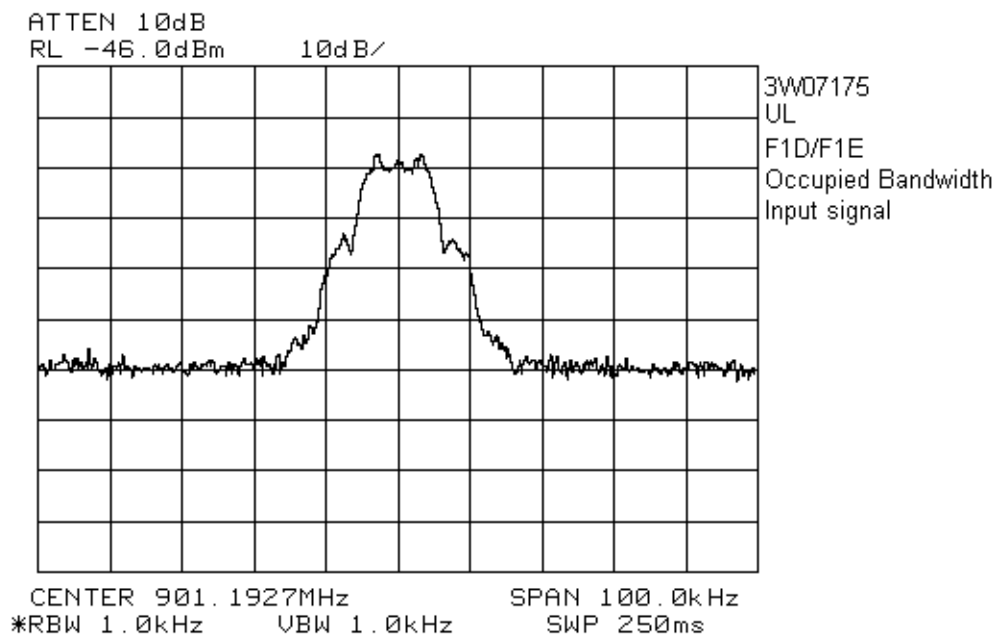
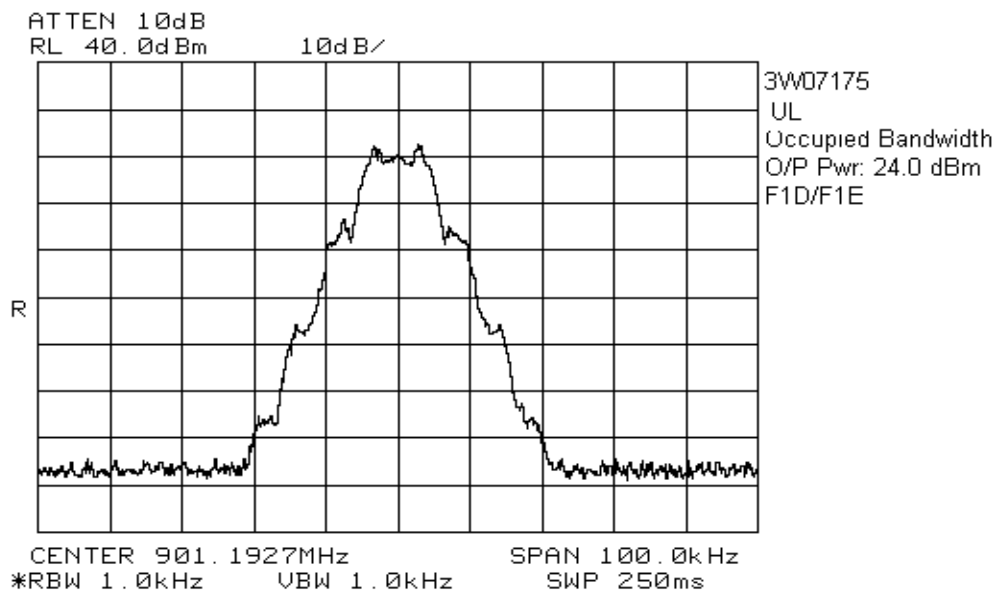


EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Uplink

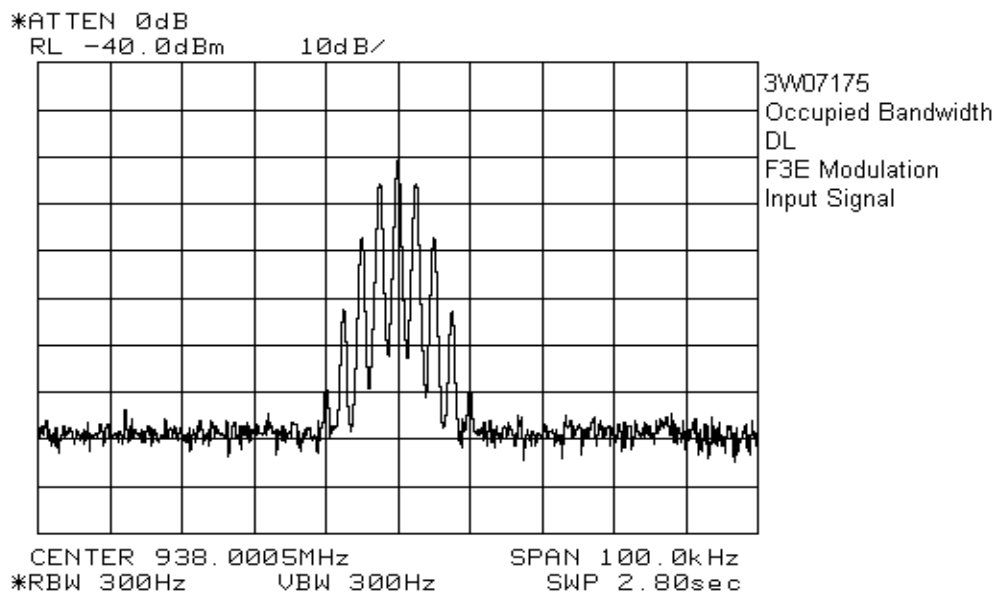
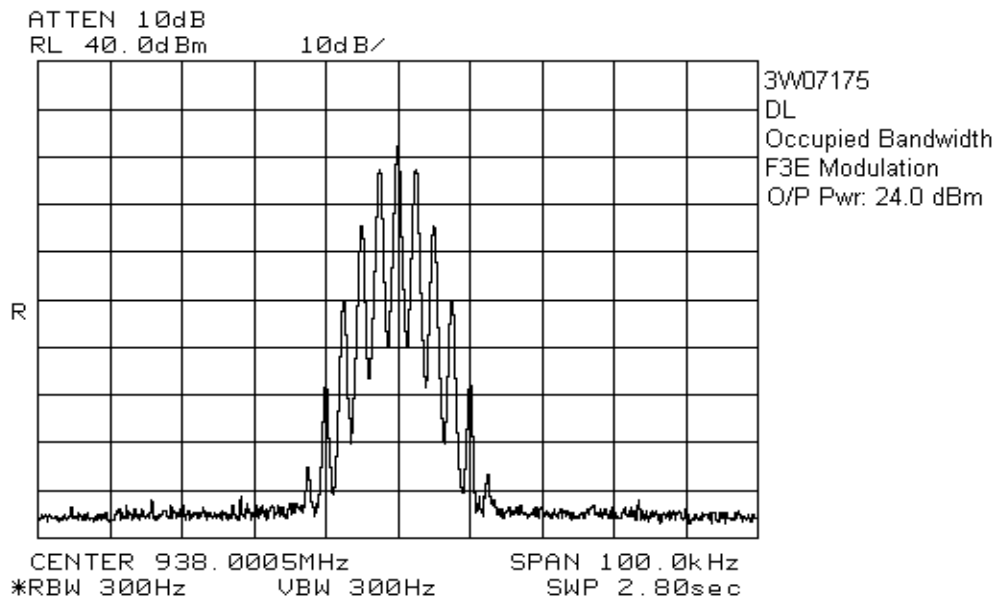


EQUIPMENT: MW-CBDA-SMR-1W80-PS9

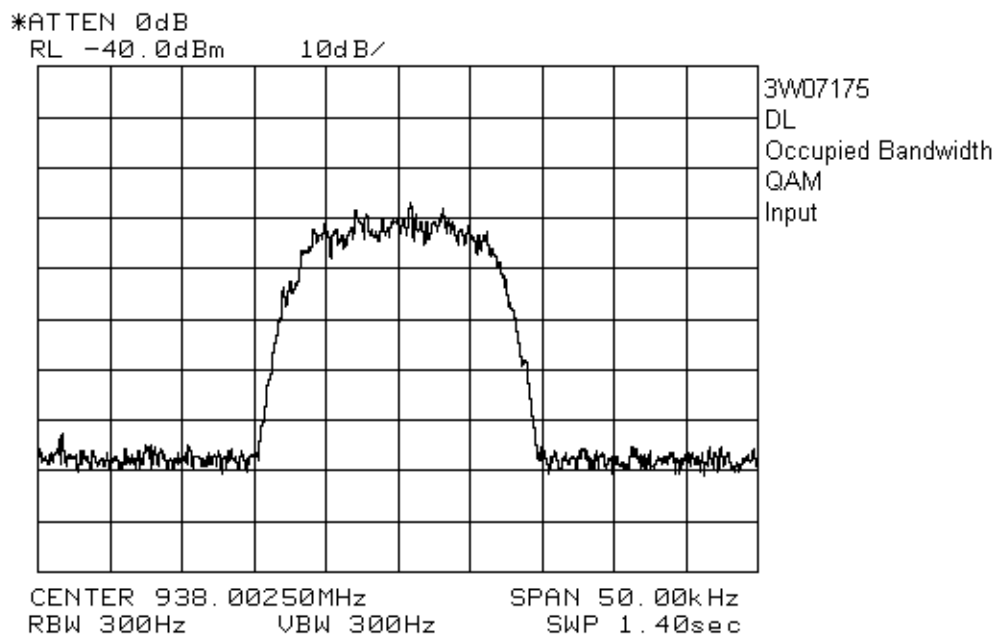
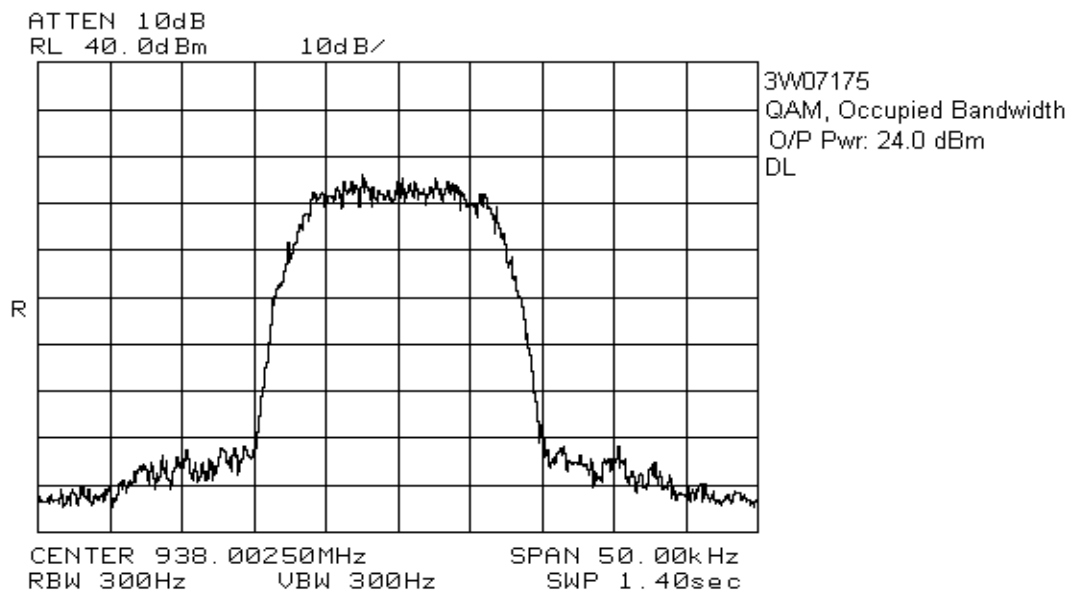


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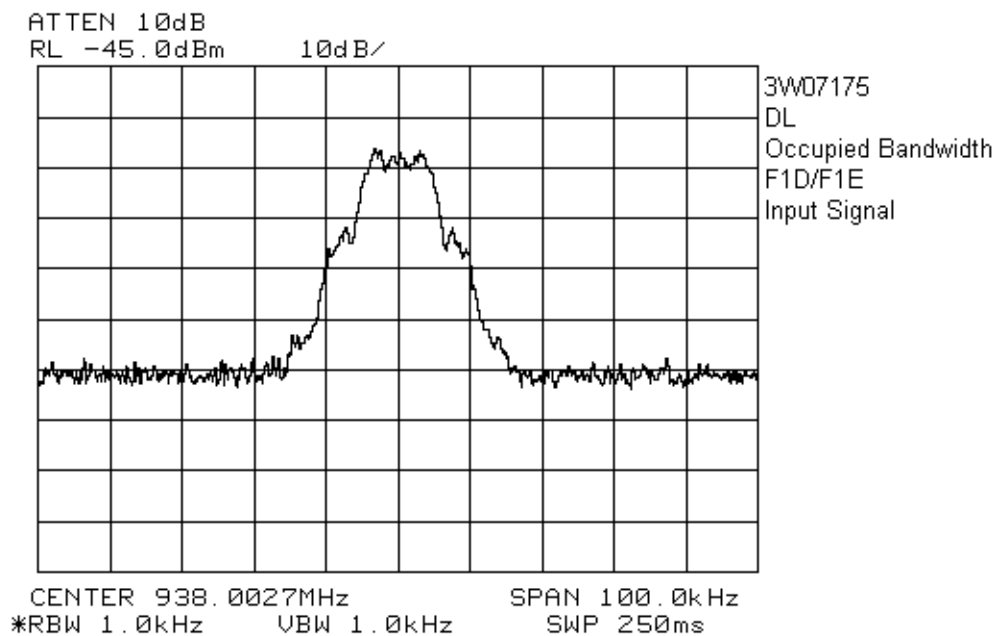
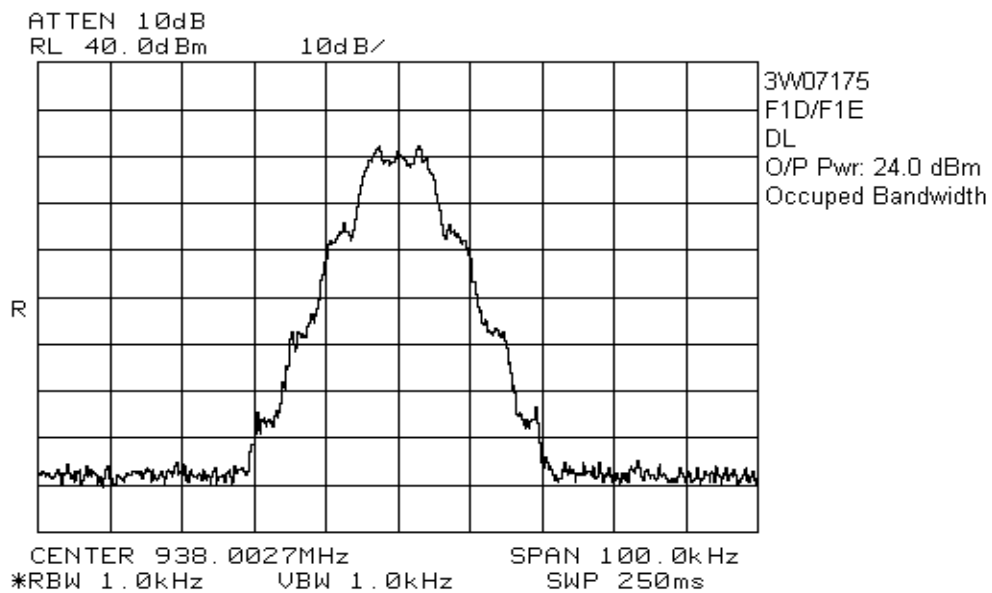
EQUIPMENT: MW-CBDA-SMR-1W80-PS9



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EQUIPMENT: MW-CBDA-SMR-1W80-PS9



EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

Test Performed By: Kevin Carr	Date of Test: 3 June 2003
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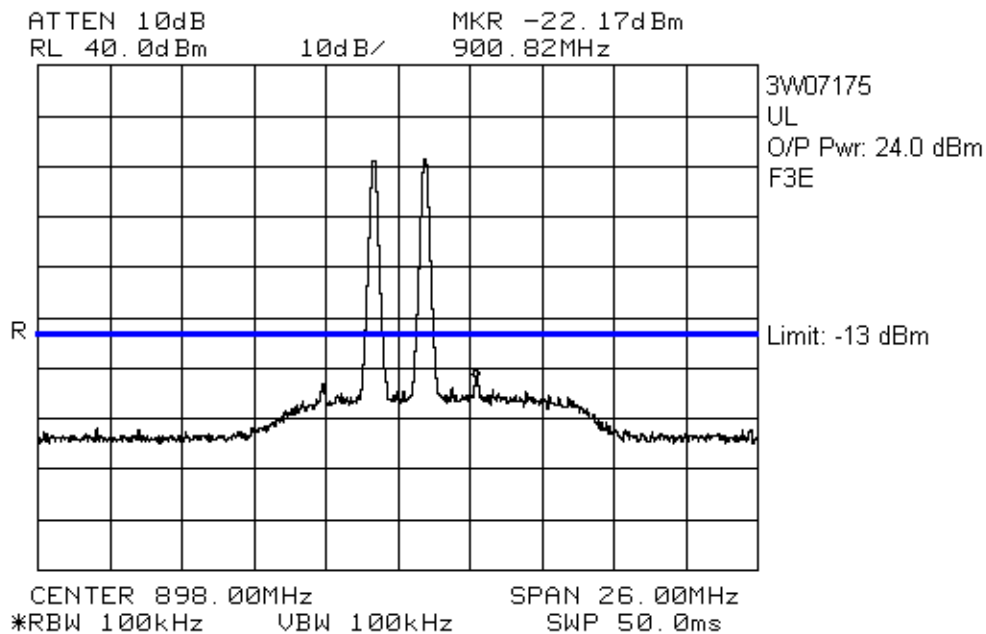
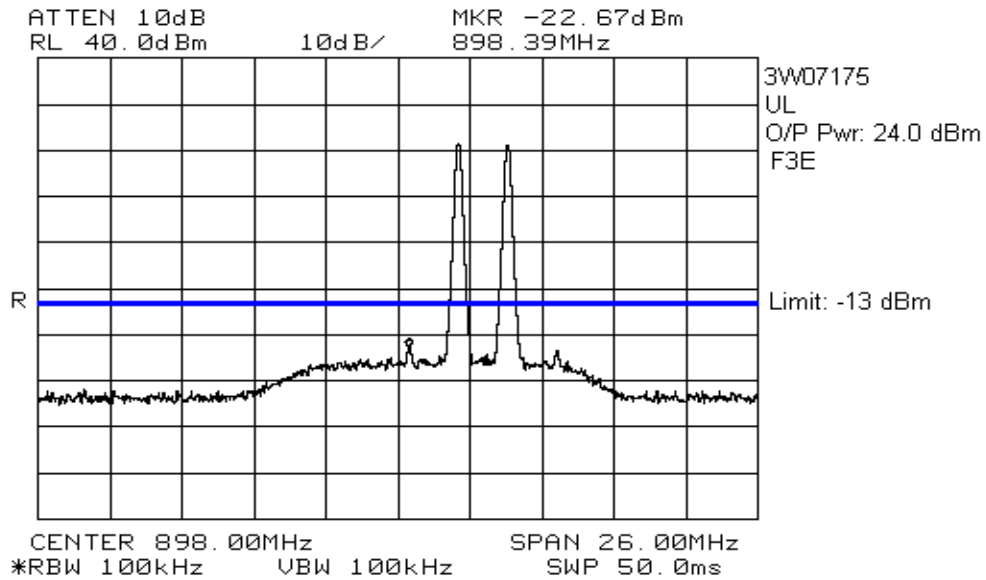
Minimum Standard: -13 dBm

Test Results: Complies.

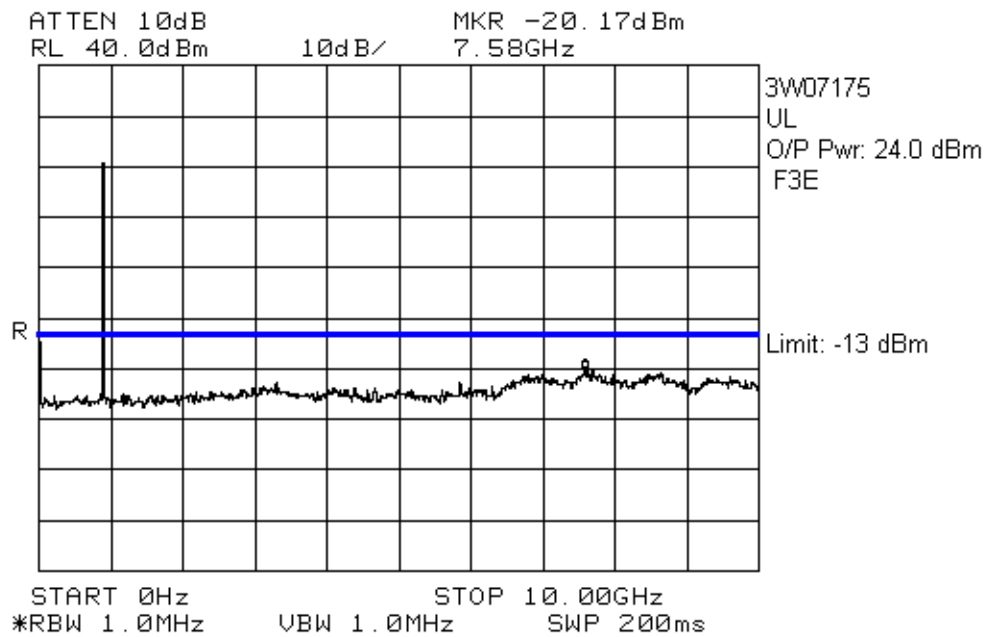
Measurement Data: See attached charts.

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

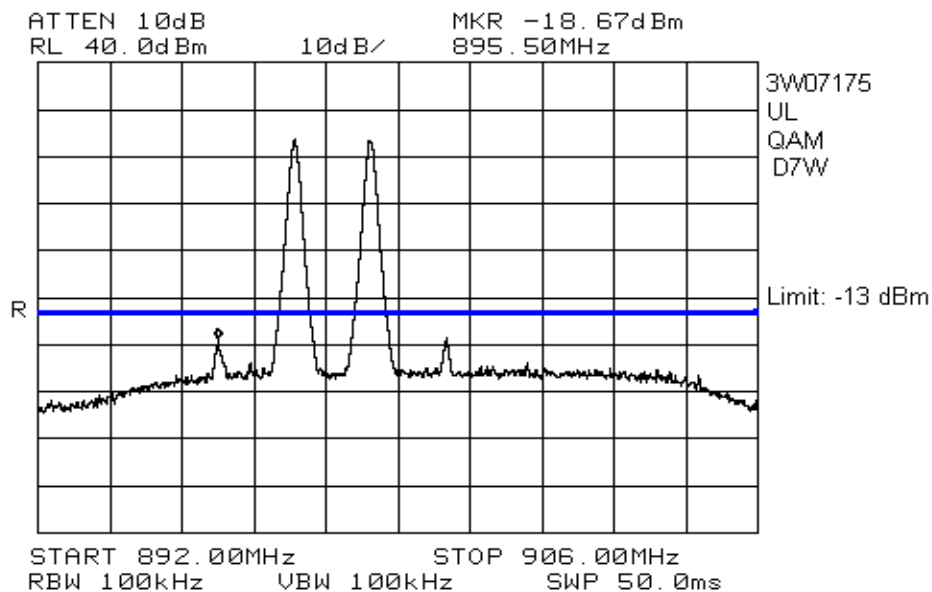
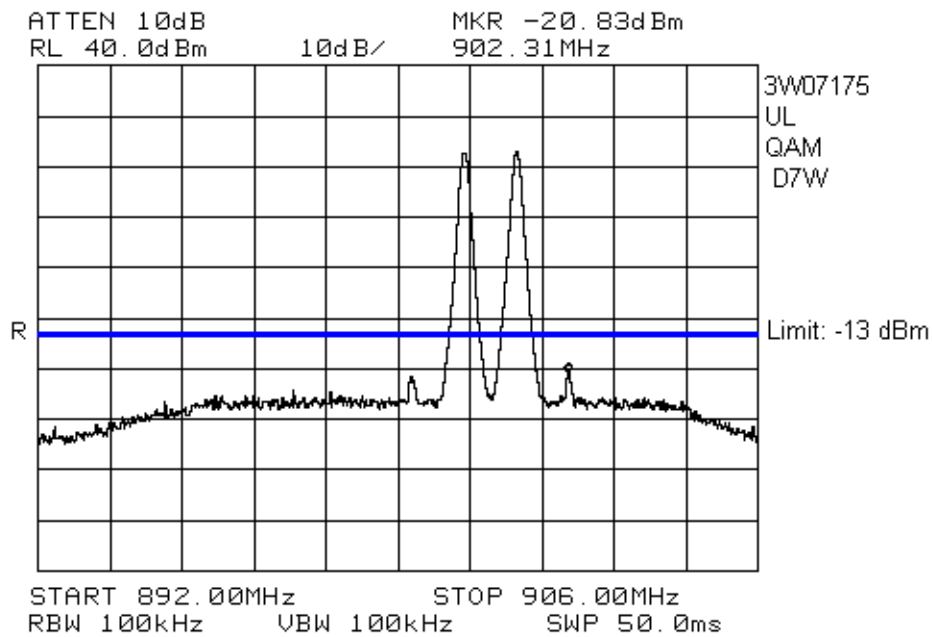
Uplink



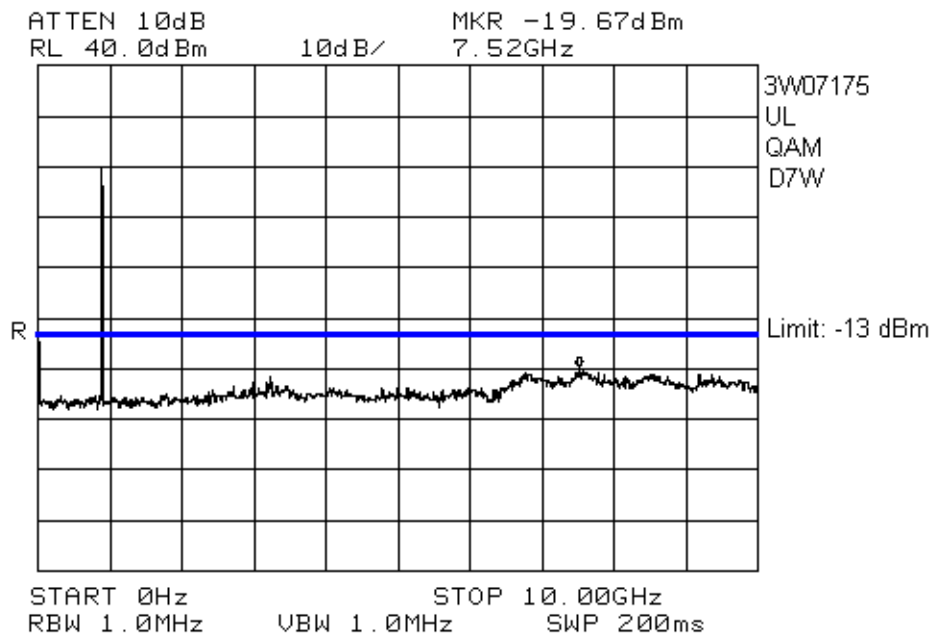
EQUIPMENT: MW-CBDA-SMR-1W80-PS9



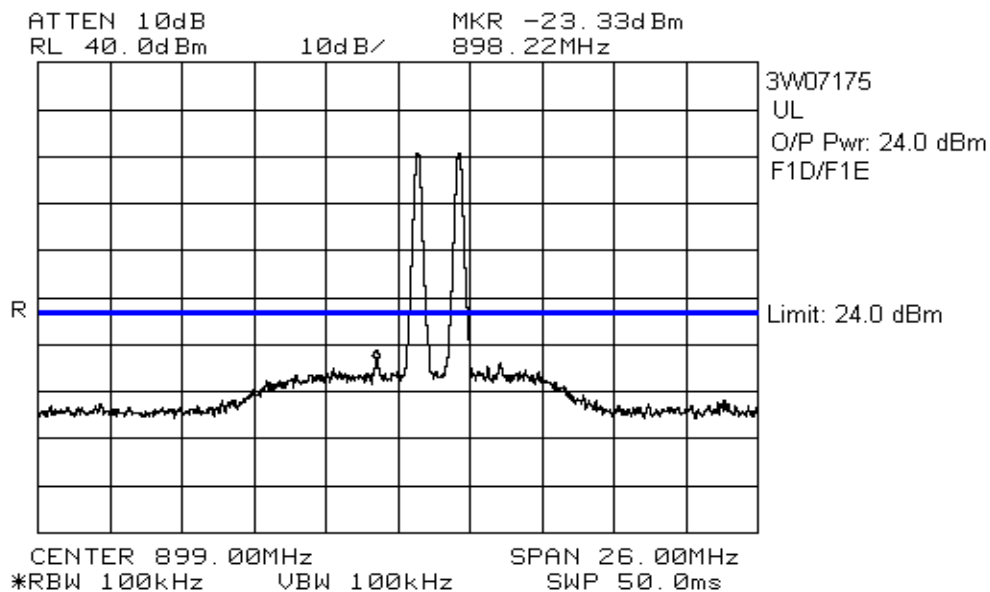
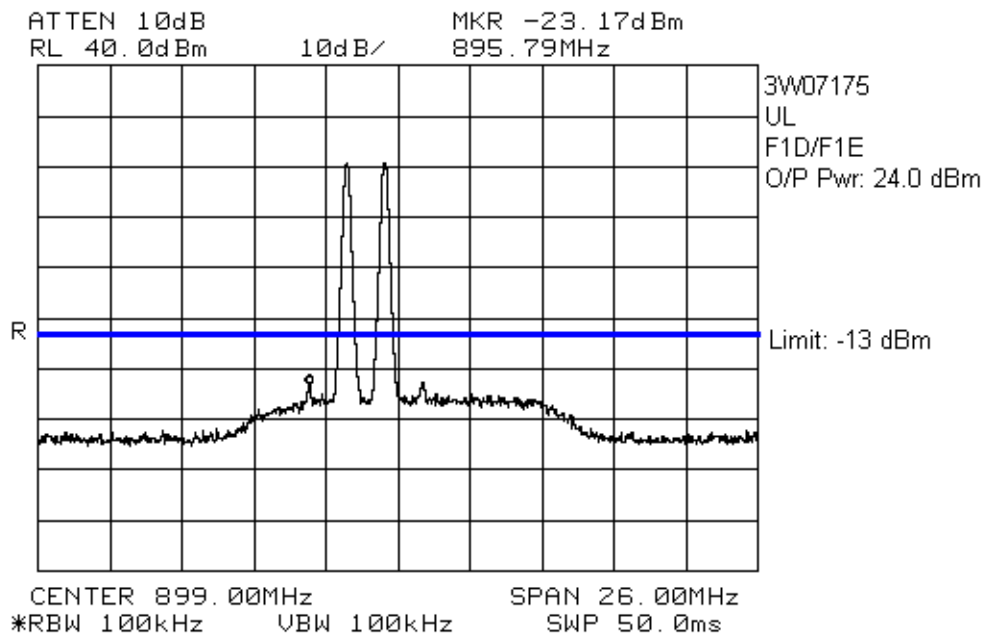
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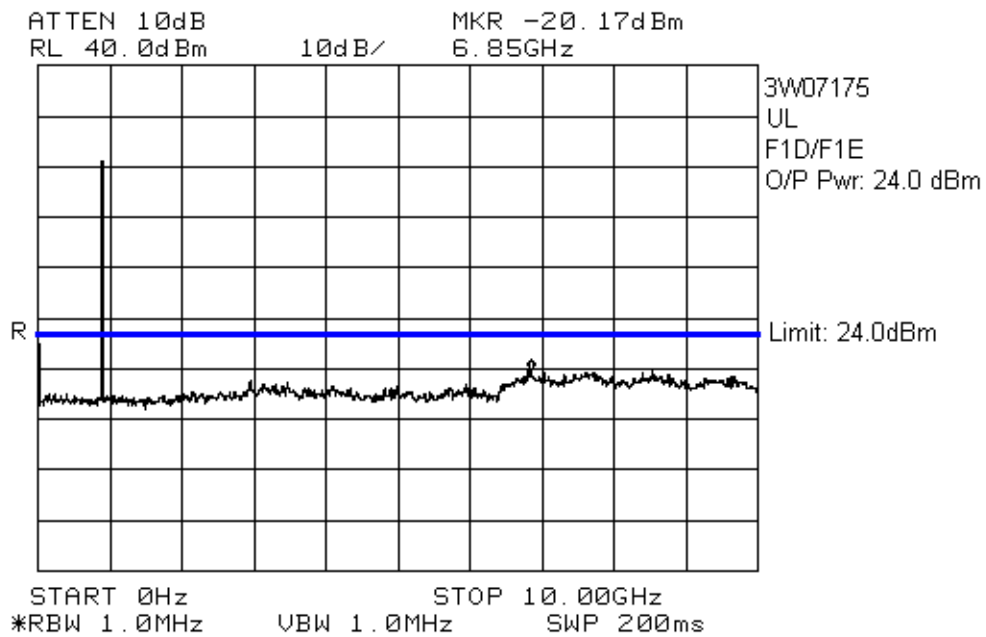
EQUIPMENT: MW-CBDA-SMR-1W80-PS9



EQUIPMENT: MW-CBDA-SMR-1W80-PS9

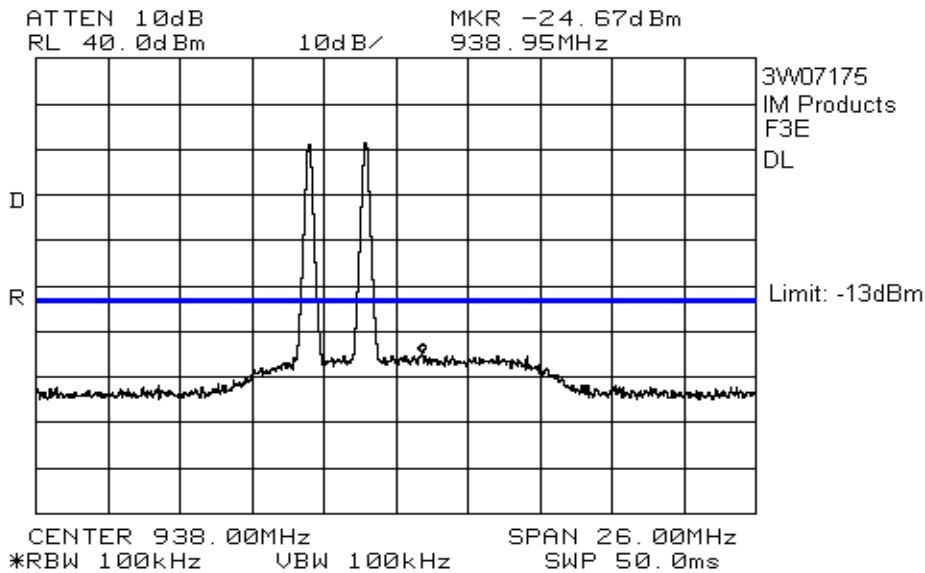
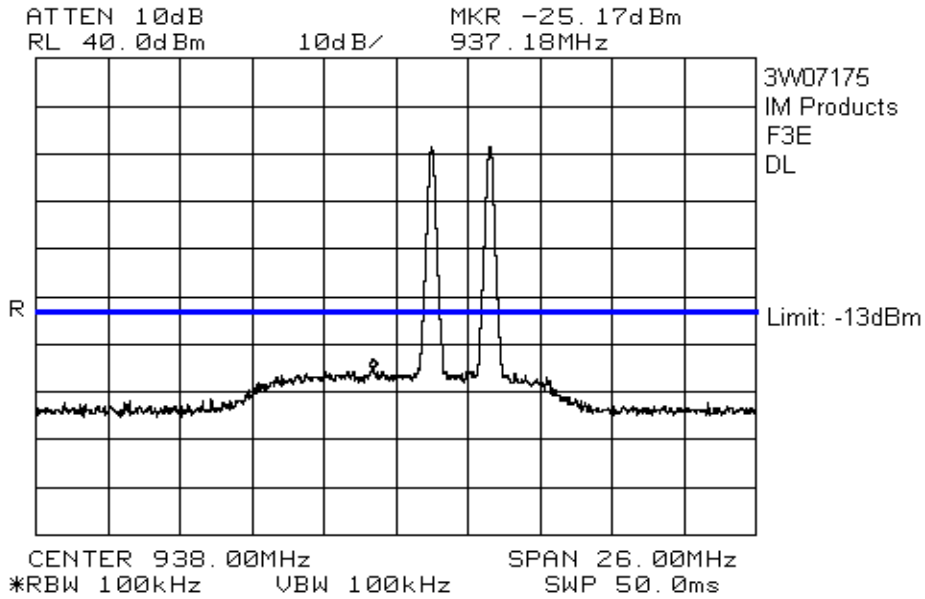


EQUIPMENT: MW-CBDA-SMR-1W80-PS9

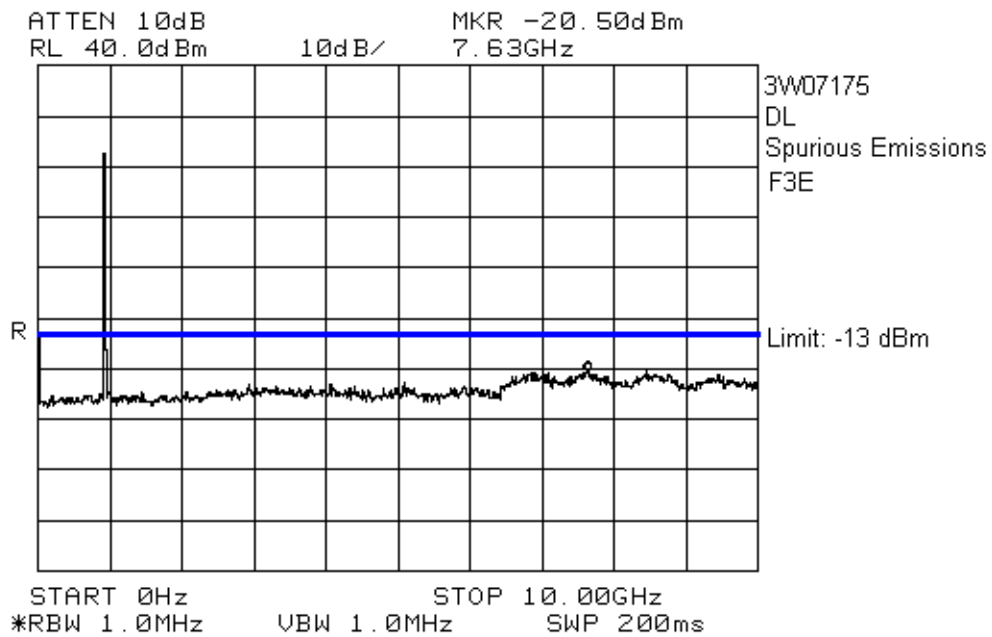


EQUIPMENT: MW-CBDA-SMR-1W80-PS9

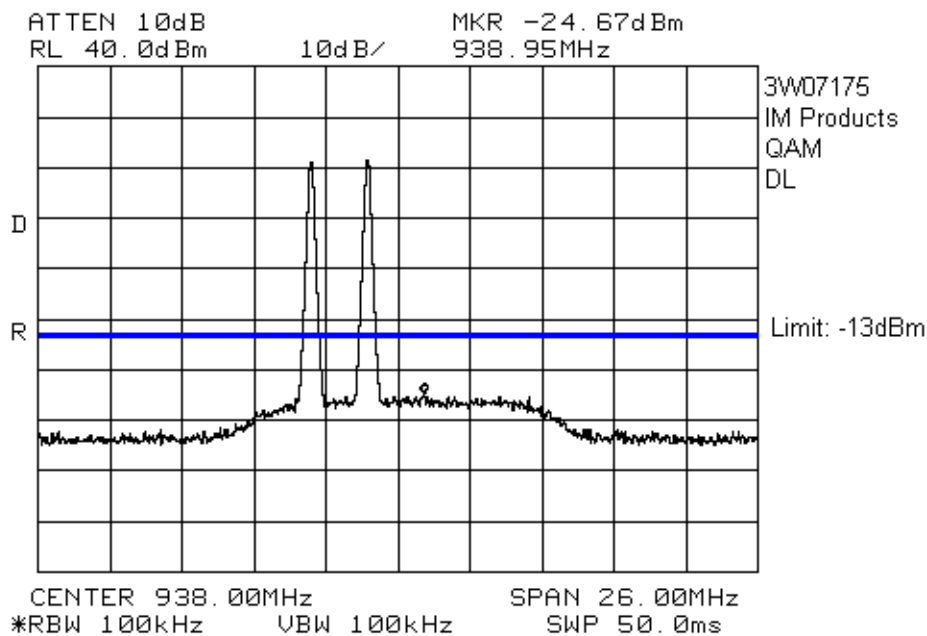
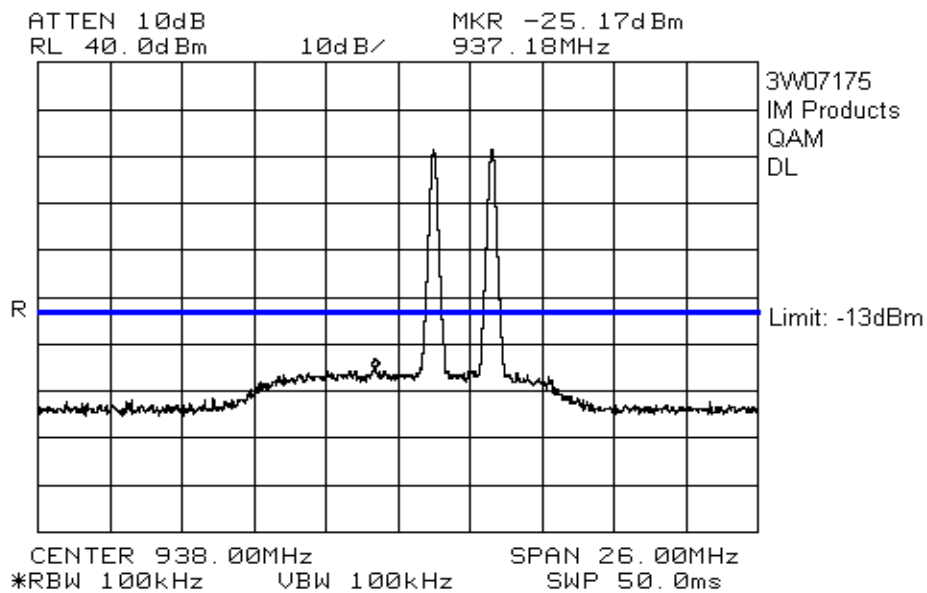
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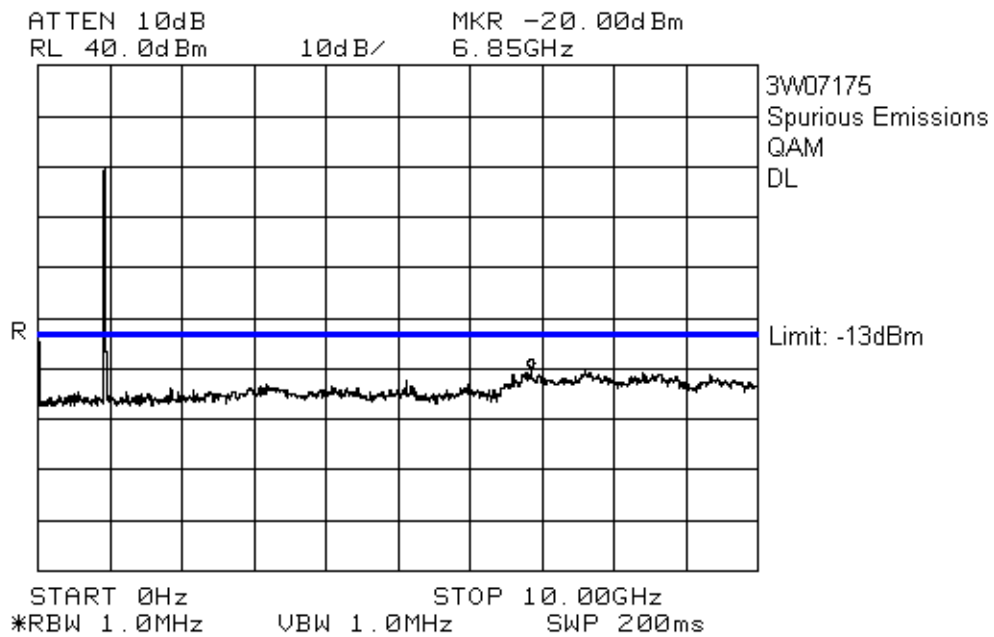
EQUIPMENT: MW-CBDA-SMR-1W80-PS9



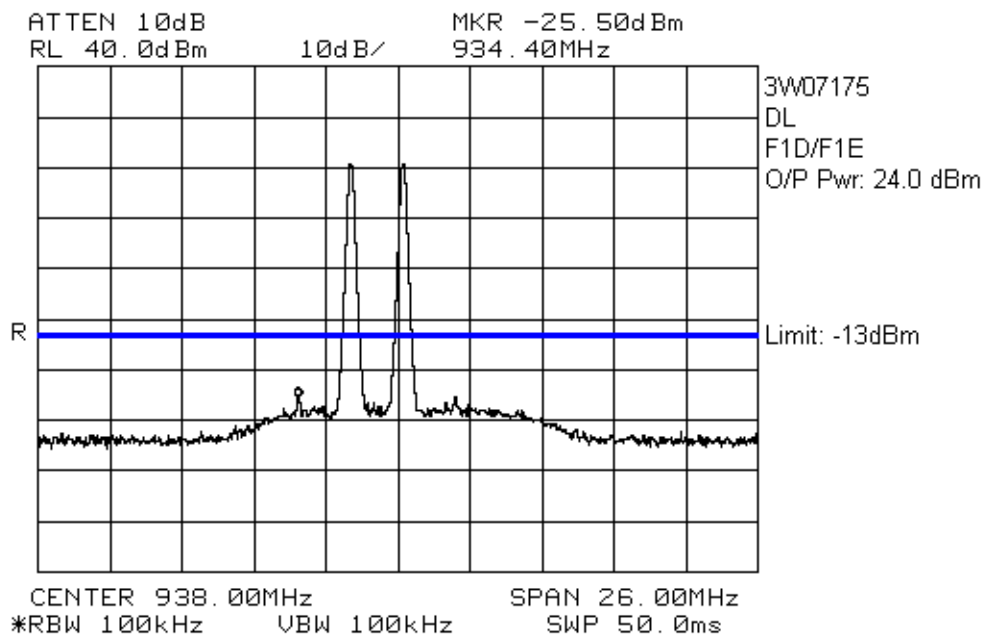
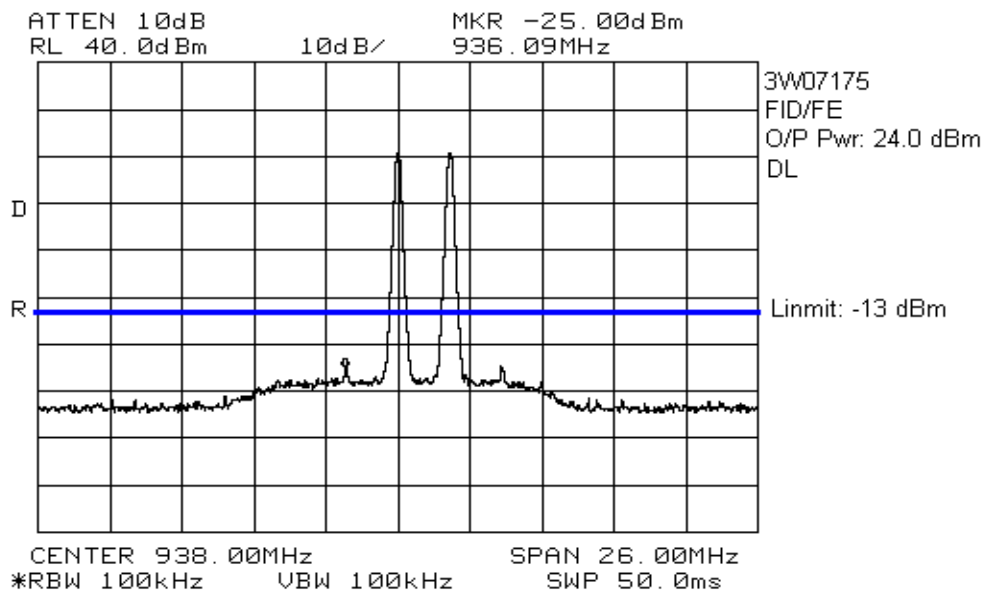
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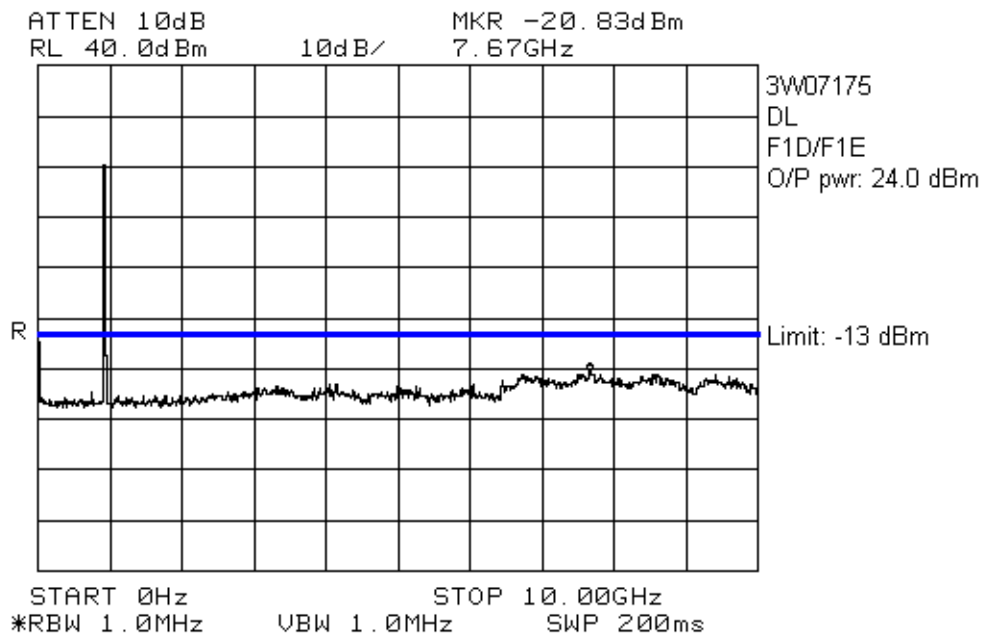
EQUIPMENT: MW-CBDA-SMR-1W80-PS9



EQUIPMENT: MW-CBDA-SMR-1W80-PS9



EQUIPMENT: MW-CBDA-SMR-1W80-PS9



EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.993

Test Performed By: Kevin Carr	Date of Test: 5 June 2003
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Minimum Standard: Para. No. 90.210, -13 dBm

Test Results: Complies.

Measurement Data: See attached Table.

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

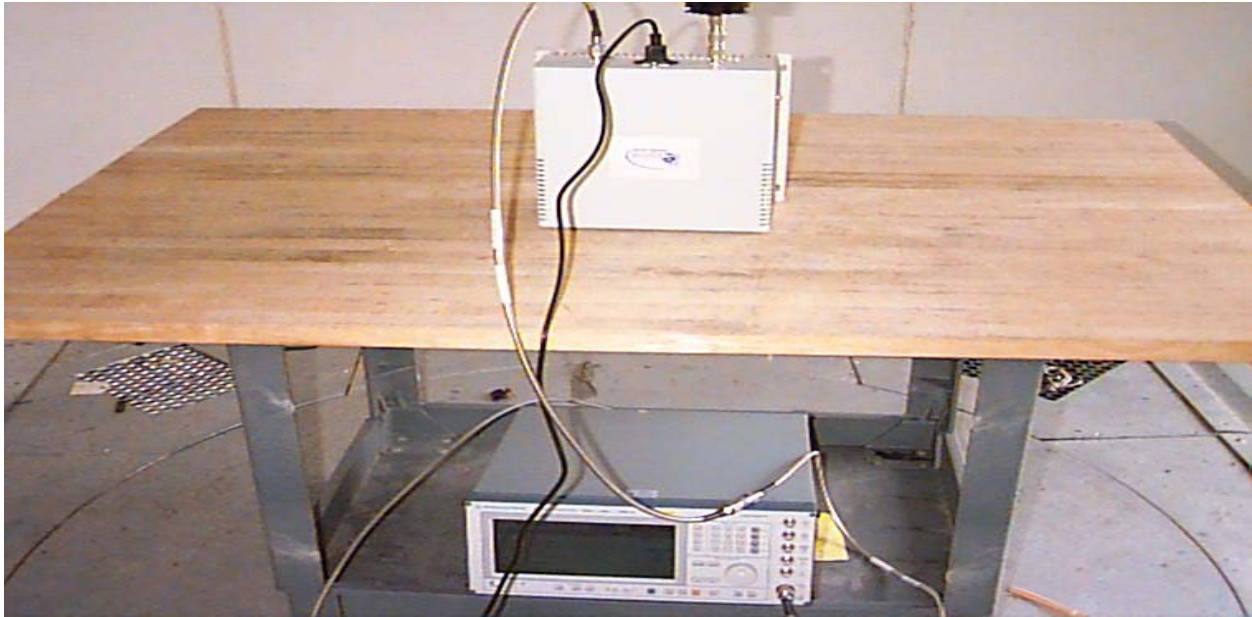
Test Data - Radiated Emissions

Test Date: 5 May 2003									
Engineer's Name: Kevin Carr									
Temperature (C°): Outdoor: 17						Humidity %: Outdoor: 65			
Measurement Bandwidth = 100/1000 kHz									
Tested as per (Table Top/Floor Standing): Table Top									
Test Distance (meters): 3						Range: A			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Sig Sub. Factor (dB)	Cable Loss (dB)	Signal Substitution Power (dBm)	Limit (dBm)	Margin (dB)	Detector
Uplink									
2694.0000	Horn2	V	62.8	-127.5	7.6	-57.2	-13.0	44.2	Peak
2694.0000	Horn2	H	62.8	-128.7	7.6	-58.3	-13.0	45.3	Peak
3592.0000	Horn2	V	61.2	-125.3	7.4	-56.7	-13.0	43.7	Peak
3592.0000	Horn2	H	59.8	-127.0	7.4	-59.9	-13.0	46.9	Peak
4490.0000	Horn2	V	57.8	-120.4	7.3	-55.3	-13.0	42.3	Peak
4490.0000	Horn2	H	57.8	-121.0	7.3	-55.9	-13.0	42.9	Peak
Downlink									
2814.0000	Horn2	V	61.5	-127.3	5.8	-60.0	-13.0	47.0	Peak
2814.0000	Horn2	H	61.2	-129.1	5.8	-62.1	-13.0	49.1	Peak
3752.0000	Horn2	V	60.3	-124.1	6.8	-57.0	-13.0	44.0	Peak
3752.0000	Horn2	H	60.3	-125.4	6.8	-58.3	-13.0	45.3	Peak
4690.0000	Horn2	V	57.5	-121.2	8.0	-55.7	-13.0	42.7	Peak
4690.0000	Horn2	H	57.8	-121.4	8.0	-55.6	-13.0	42.6	Peak
Digital									
31.5670	BC1	V	29.3	-88.4	0.7	-58.4	-13.0	45.4	Peak
31.5670	BC1	H	29.0	-82.5	0.7	-52.8	-13.0	39.8	Peak
30.8380	BC1	V	29.2	-88.9	0.7	-59.0	-13.0	46.0	Peak
30.8380	BC1	H	29.0	-82.6	0.7	-52.9	-13.0	39.9	Peak
32.0000	BC1	V	29.5	-88.1	0.7	-57.9	-13.0	44.9	Peak
32.0000	BC1	H	29.8	-82.5	0.7	-51.9	-13.0	38.9	Peak
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole Note 2: Detector Legend: Peak: 100 kHz RBW/VBW for emissions below 1 GHz, Peak: 1.0 MHz RBW/VBW for emissions above 1GHz Note 3: All emissions were searched to the 10 th harmonic									
Notes:		AGC On							

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Photographs of Test Setup (Worst Case Configuration)

Front View



Rear View



*EQUIPMENT: MW-CBDA-SMR-1W80-PS9***Section 7. Test Equipment List****Equipment List – Prescan for Radiated Emissions (Shielded Chamber)**

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8564E	FA001367	May. 13/03	May. 13/04
1 Year (Rental)	Spectrum Analyzer	Agilent	8564E	3943A01794	April. 14/03	April. 14/04
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 09/02	Dec. 09/03
NCR	0.1 – 1300 MHz Amplifier	Hewlett Packard	8447D	FA001748	NCR	NCR
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 04/02	June. 04/03
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 04/02	June. 04/03
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June. 04/02	June. 04/03

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8564E	FA001367	May. 13/03	May. 13/04
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	April. 15/03	April. 15/04
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 09/02	Dec. 09/03
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 04/02	June. 04/03
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 04/02	June. 04/03
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June. 04/02	June. 04/03

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair

Nemko Canada Inc.

FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.:3W07175
ANNEX A

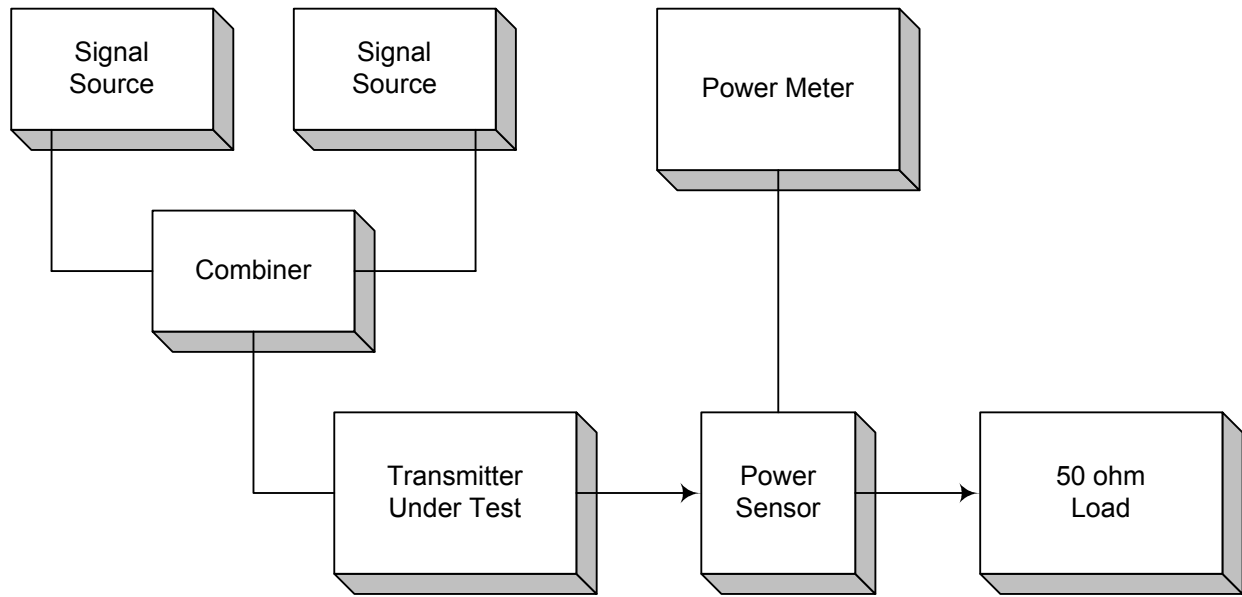
EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Annex A

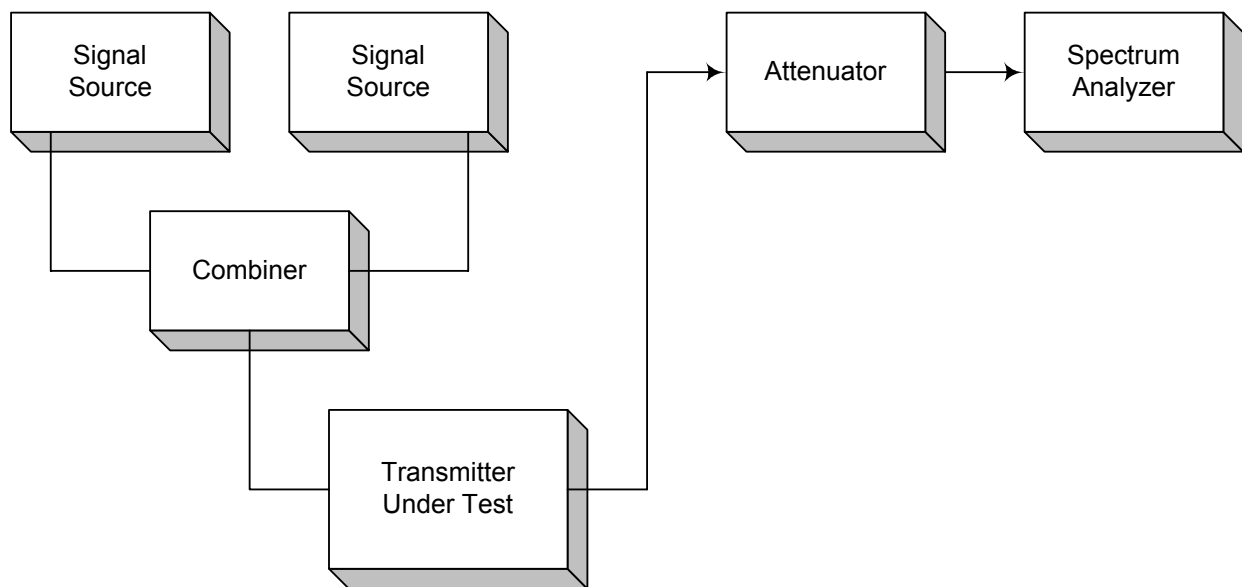
Test Diagrams

EQUIPMENT: MW-CBDA-SMR-1W80-PS9

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

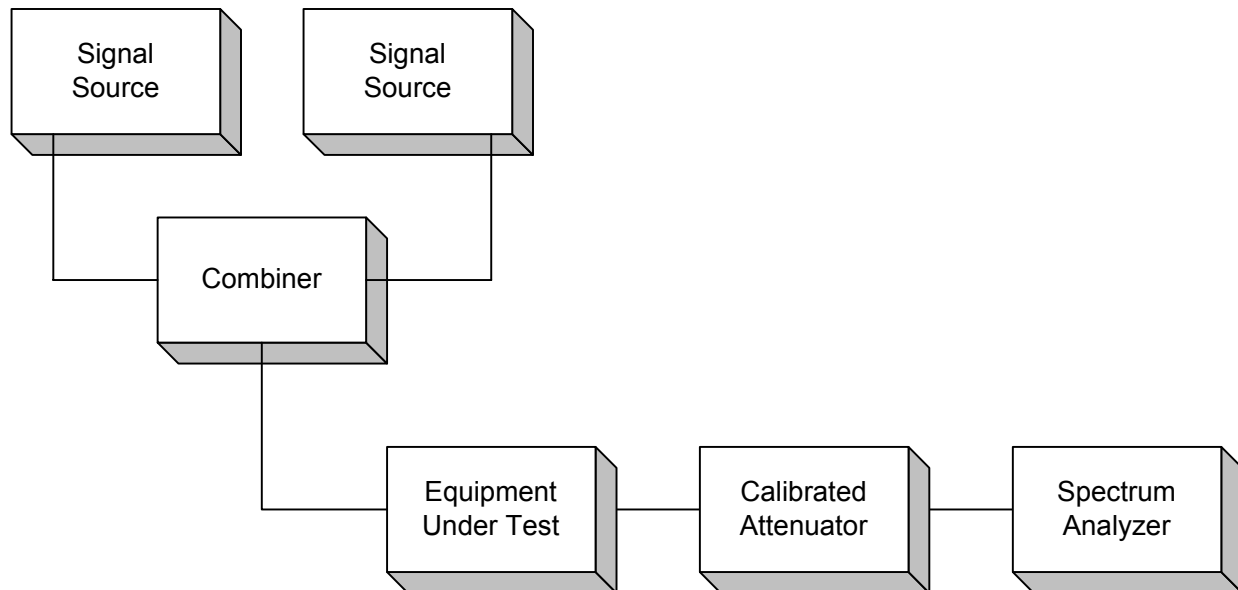


Para. No. 2.989 - Occupied Bandwidth



EQUIPMENT: MW-CBDA-SMR-1W80-PS9

Para. No. 2.991 - Spurious Emissions at Antenna Terminals



Para. No. 2.993 - Field Strength of Spurious Radiation

