



Nemko

Test Report: 3W07340

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

**Equipment Under Test:
(EUT)** FBDA-SMR8-50W-DIV
Fiber Optic Repeater

FCC ID: OIWFBDASMR850WD

In Accordance With: **FCC Part 90**

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



Authorized By: Kevin Carr, EMC Specialist.

Date: 30 October 2003

Total Number of Pages: 30

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EQUIPMENT: FBDA-SMR8-50W-DIV

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.

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.

The EUT is a repeater which connects to a base station, therefore only the Downlink direction was tested.



TESTED BY: _____
Glen Westwell, Wireless Technologist

DATE: 30 October 2003

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This report applies only to the items tested.

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complied
Modulation Characteristics	2.1047	N/A(1)
Occupied Bandwidth	2.1049	Complied
Spurious Emissions at Antenna Terminals	2.1051	Complied
Field Strength of Spurious Emissions	2.1053	Complied
Frequency Stability	2.1055	Complied

Note:

(1) This device does not modulate or demodulated the carrier and therefore does not contain any modulation circuitry. It receives the modulated signal from the BTS via fiber connection then converts this modulated light signal back to RF for amplification and transmission in the downlink direction.

(2) The EUT is a repeater which connects to the base station uplink via fiber, therefore only the downlink direction was tested.

Indoor Temperature: 23°C
 Humidity: 40%

Outdoor Temperature: 12°C
 Humidity: 70%

Section 2. General Equipment Specification

Manufacturer:	Dekolink Wireless LTD.
Model No.:	FBDA-SMR8-50W-DIV
Serial No.:	02051001
Date Received In Laboratory:	6 Oct 2003
Nemko Identification No.:	1
Supply Input Voltage:	120 VAC, 50 Hz
Frequency Range:	Downlink: 851-869 MHz
RF Output (Rated):	Downlink: 10Watts, 40dBm
Emission Designator	GXW F3E F1W

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	Date of Test: 14 Oct 2003
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Minimum Standard: 90.635

Test Results: Complied.

Measurement Data:

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

Channel Frequency (MHZ)	Measured Power (dBm)	Rated Power (dBm)
851	40.0	40.0
860	40.3	40.0
869	39.6	40.0

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Glen Westwell	Date of Test: 15 Oct 2003
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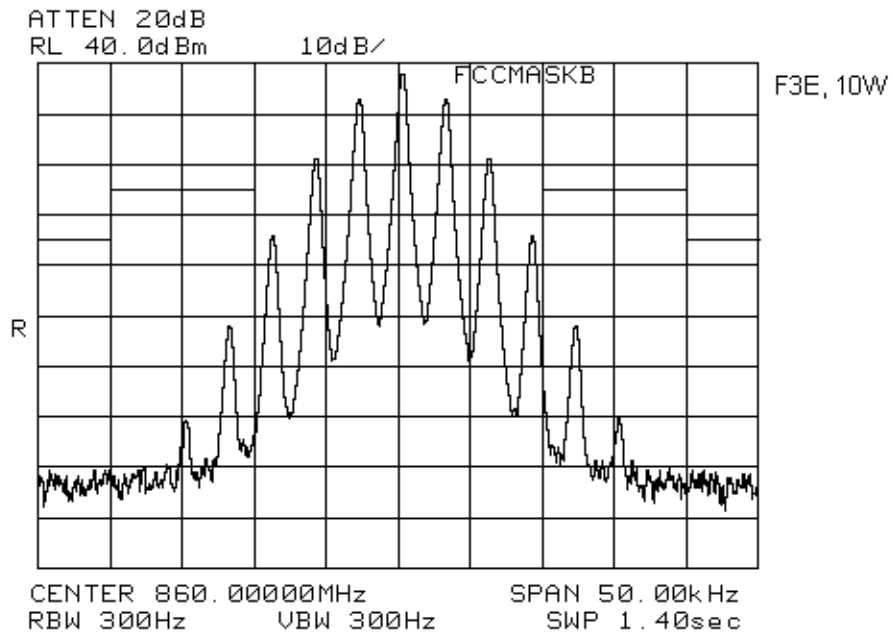
Minimum Standard: 90.210

Test Results: Complies.

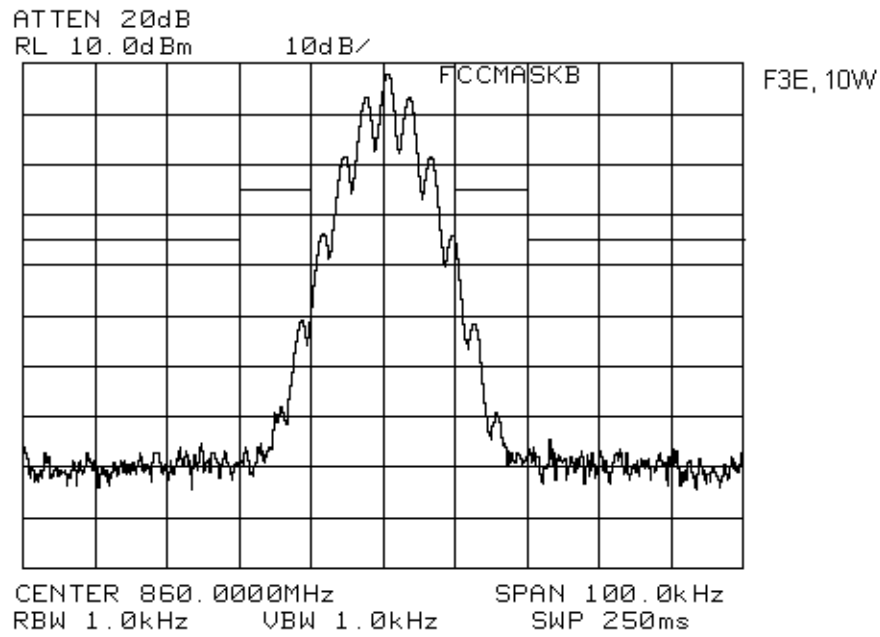
Measurement Data: See attached graphs.

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.

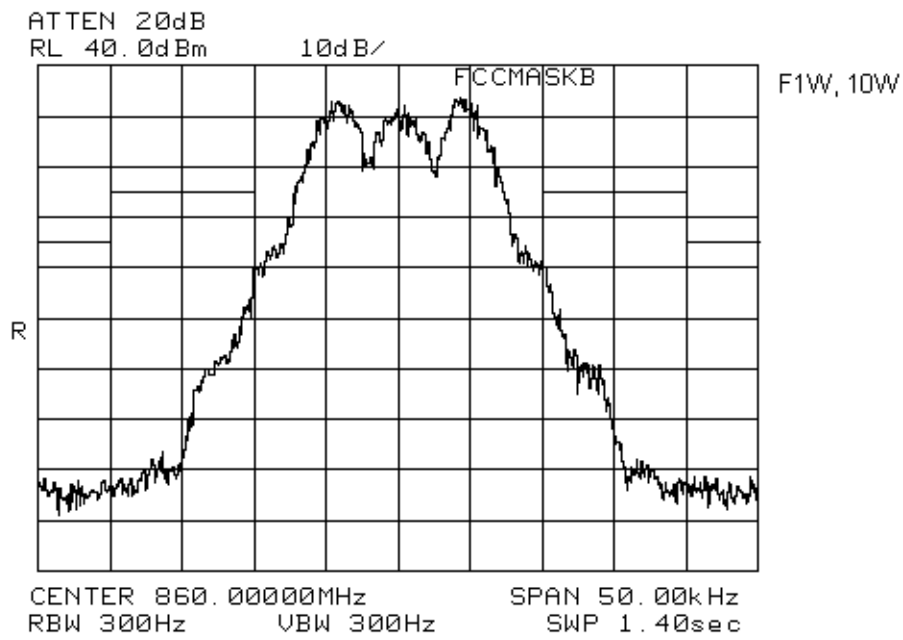
EQUIPMENT: FBDA-SMR8-50W-DIV



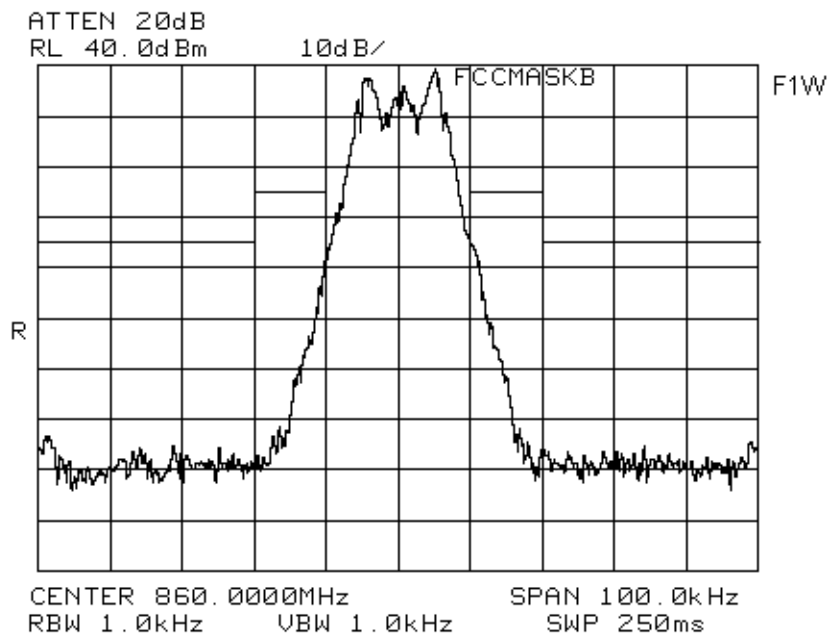
EQUIPMENT: FBDA-SMR8-50W-DIV



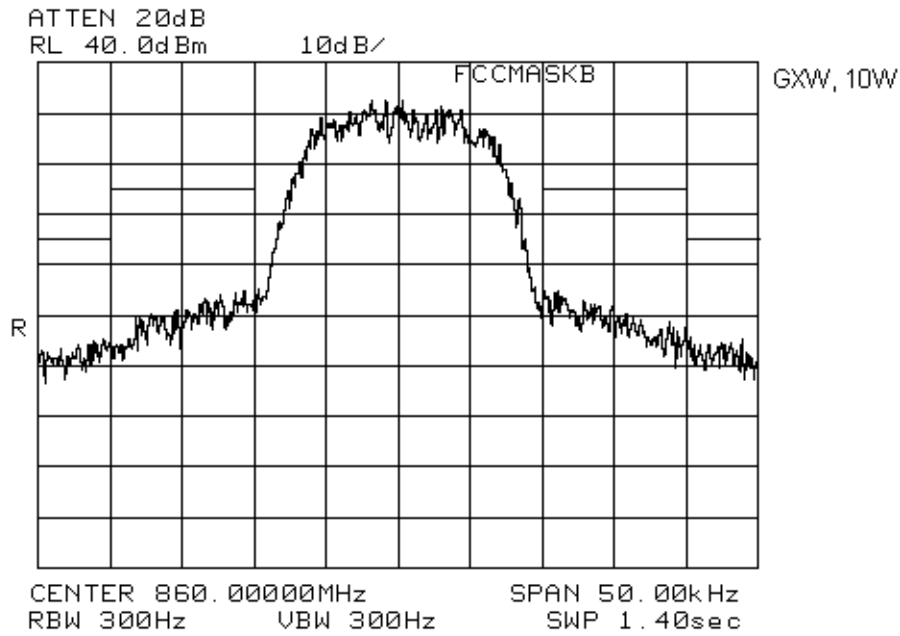
EQUIPMENT: FBDA-SMR8-50W-DIV



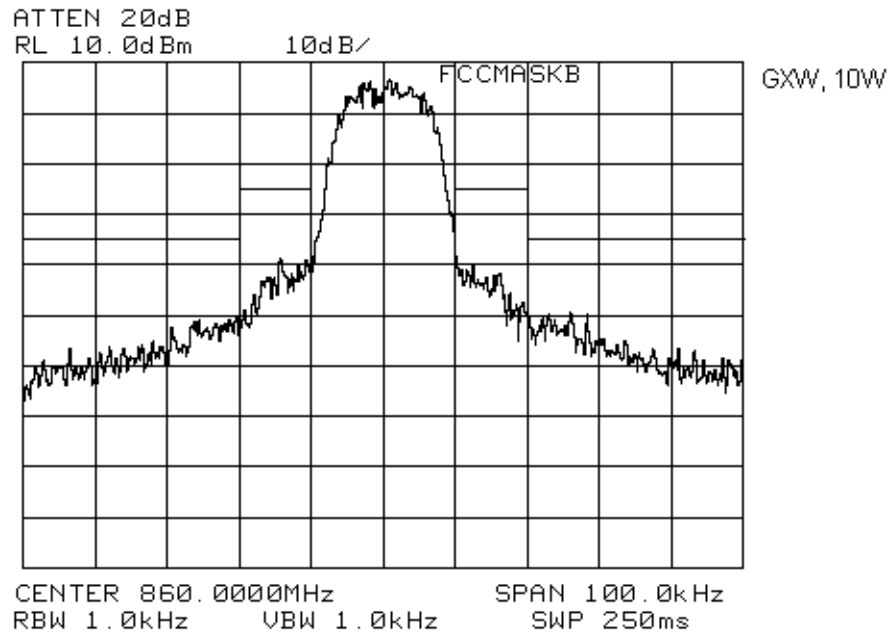
EQUIPMENT: FBDA-SMR8-50W-DIV



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EQUIPMENT: FBDA-SMR8-50W-DIV

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

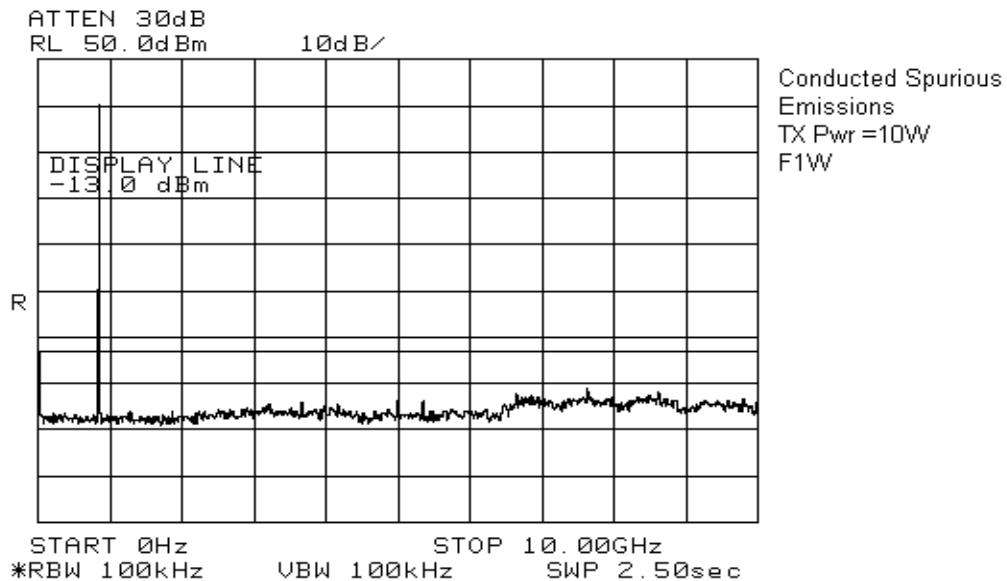
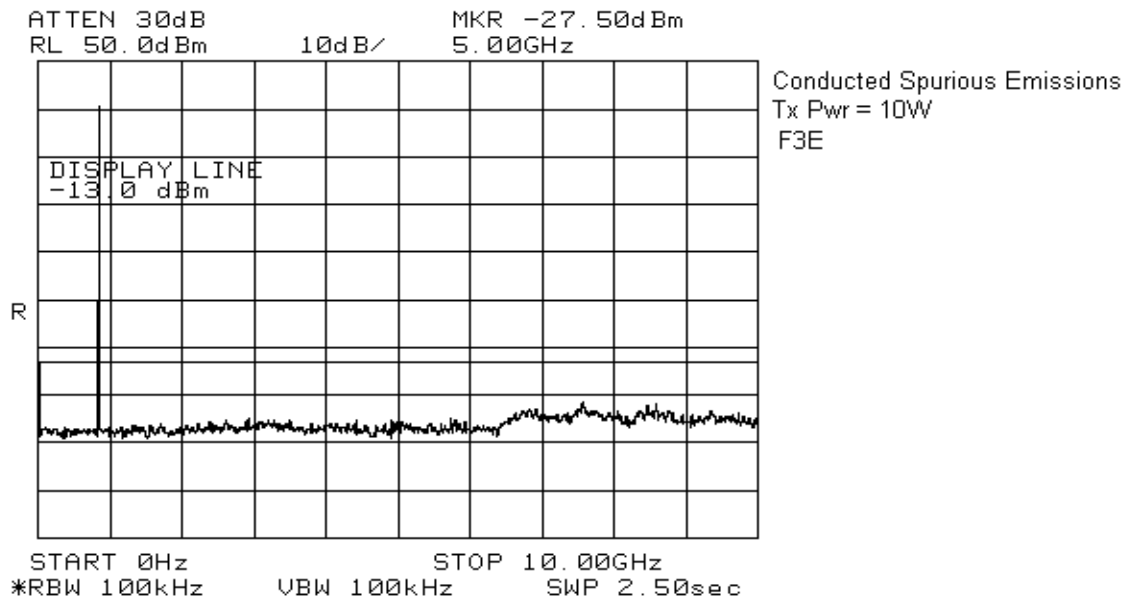
Test Performed By: Glen Westwell	Date of Test: 30 Oct 2003
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Minimum Standard: -13dBm

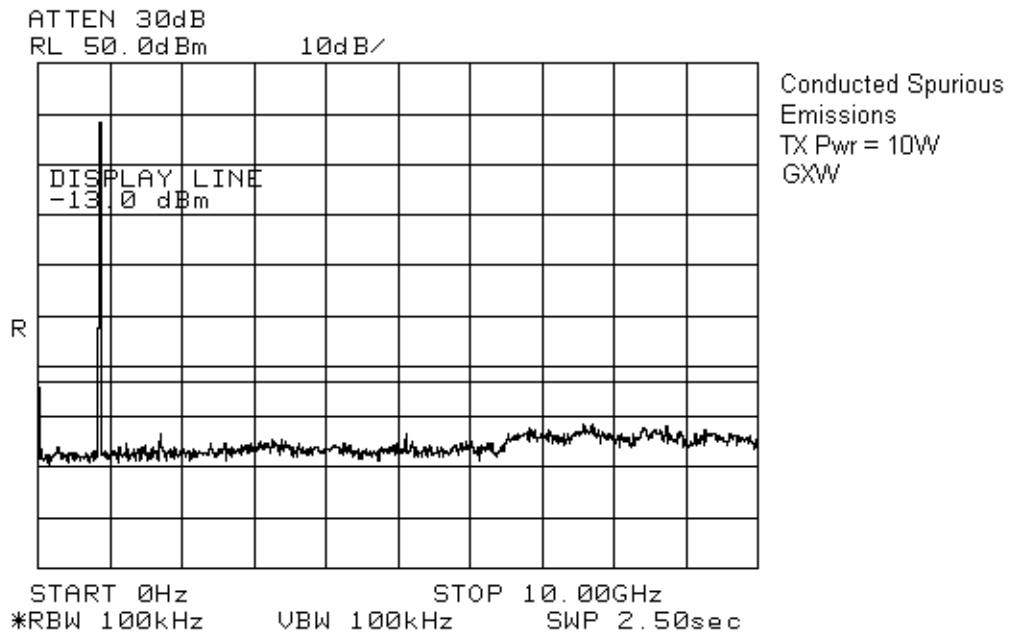
Test Results: Complies.

Measurement Data: See Attached Graphs.

EQUIPMENT: FBDA-SMR8-50W-DIV

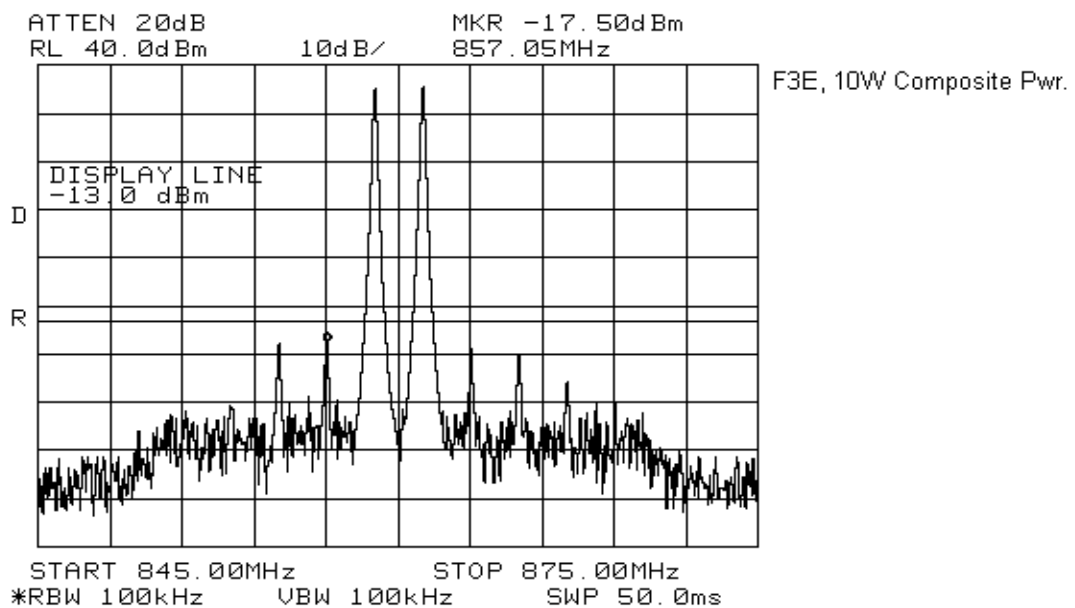
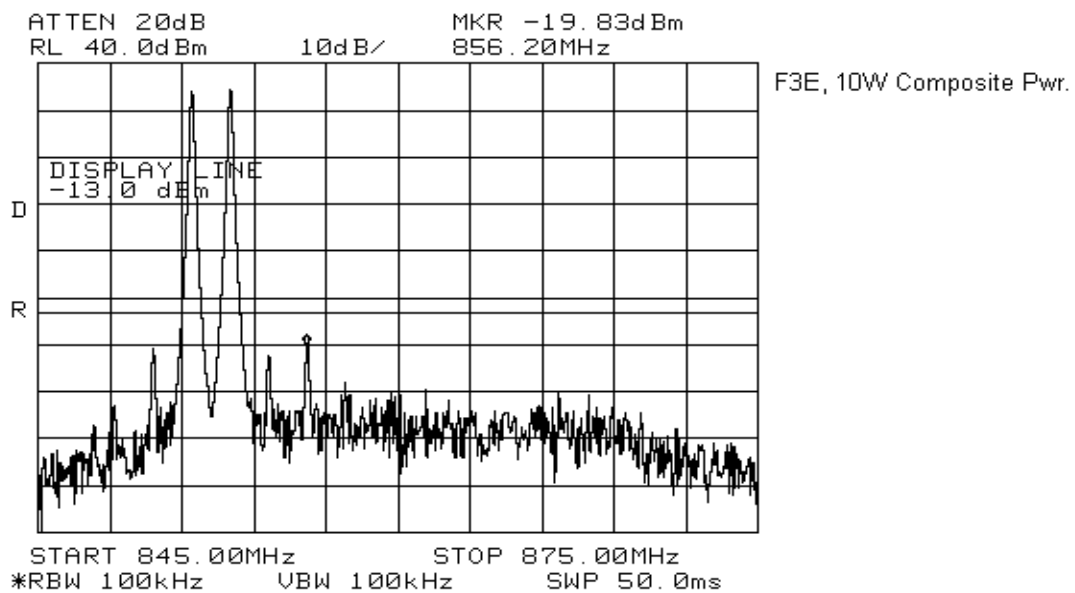


EQUIPMENT: FBDA-SMR8-50W-DIV

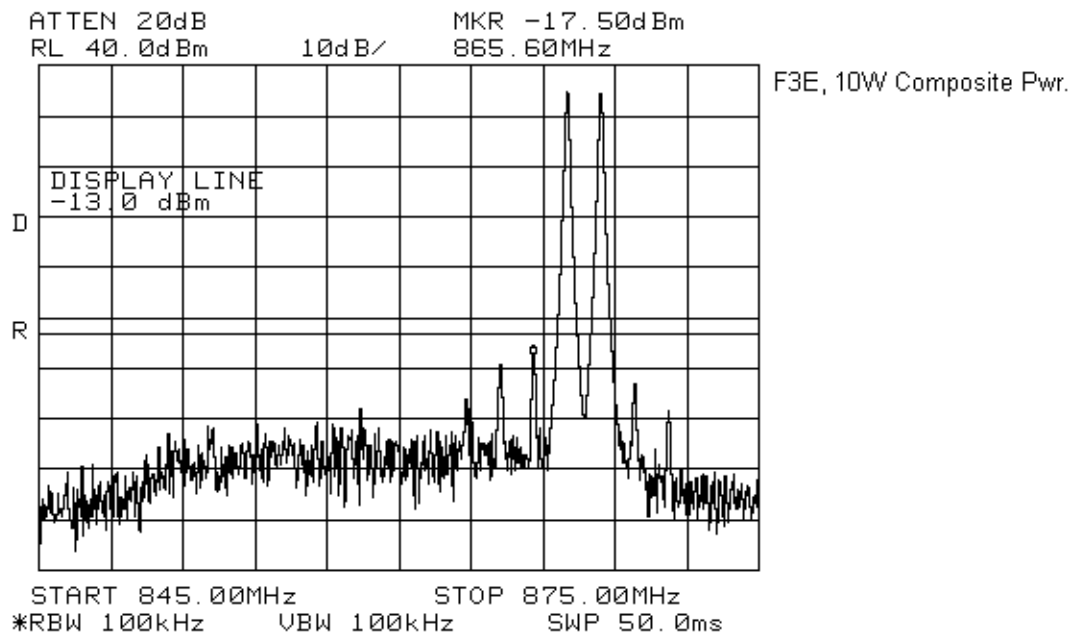


EQUIPMENT: FBDA-SMR8-50W-DIV

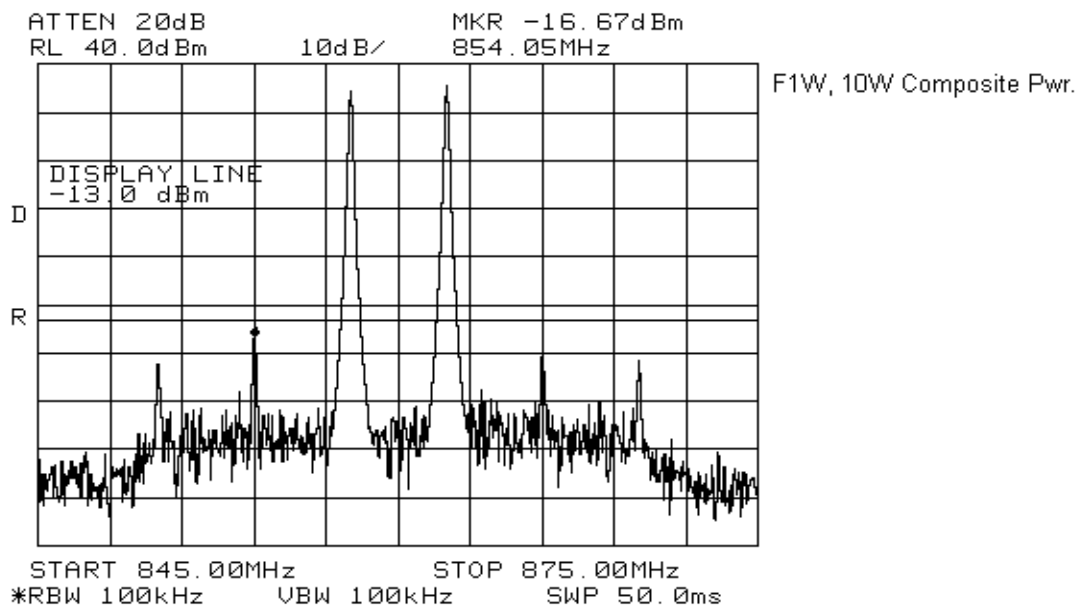
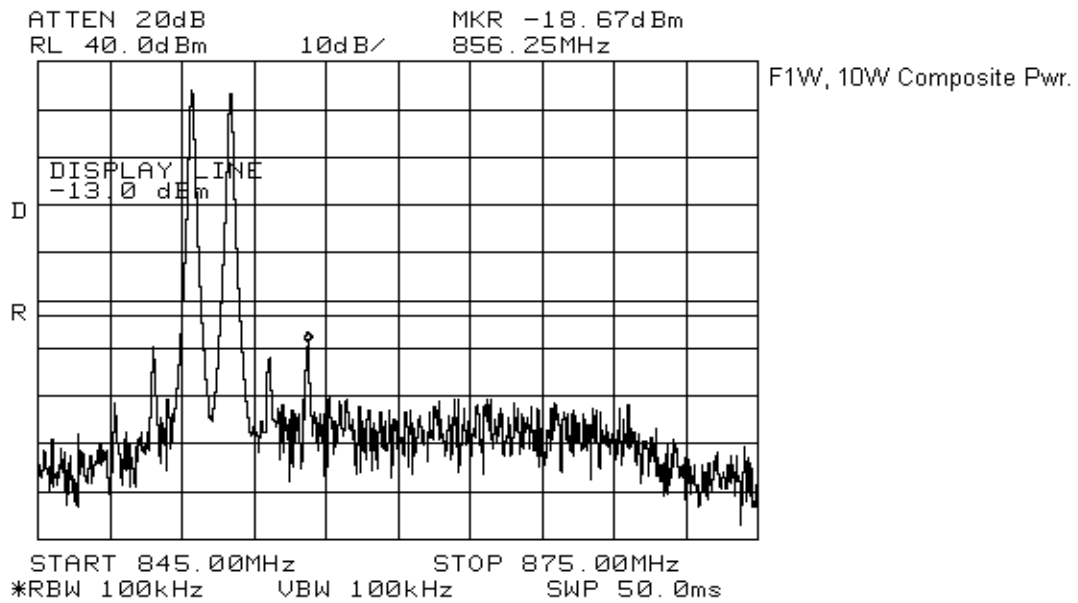
3rd Order Inter-modulation Plots



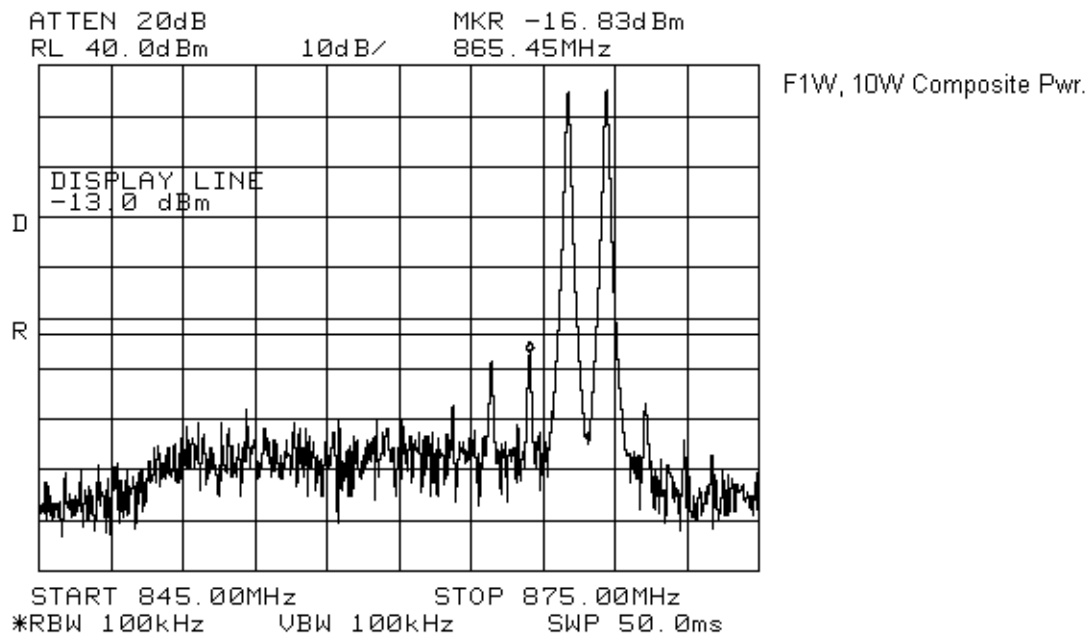
EQUIPMENT: FBDA-SMR8-50W-DIV



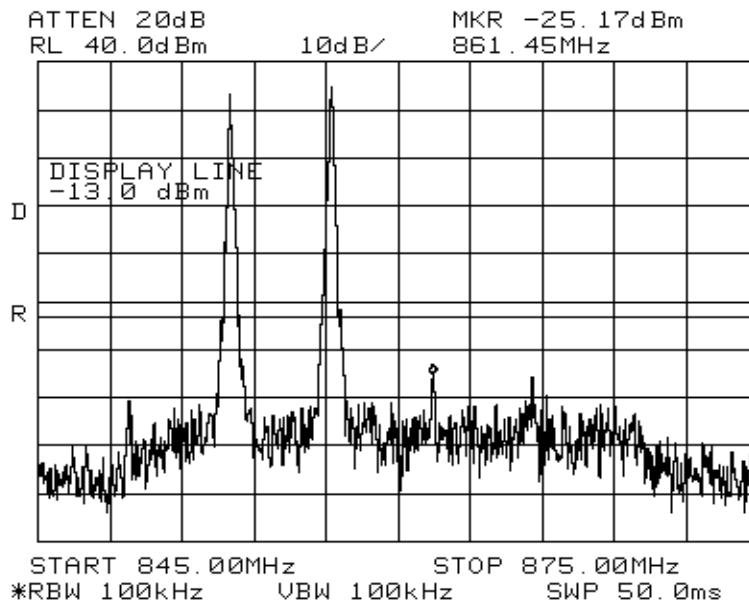
EQUIPMENT: FBDA-SMR8-50W-DIV



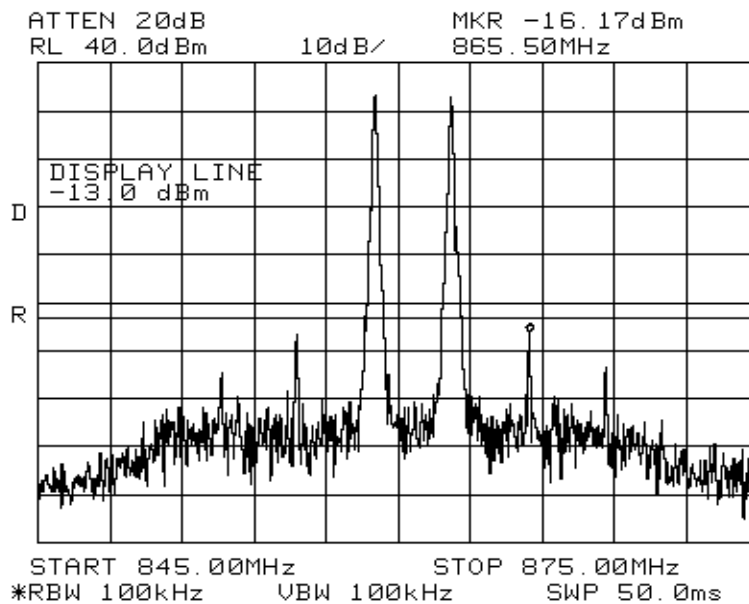
EQUIPMENT: FBDA-SMR8-50W-DIV



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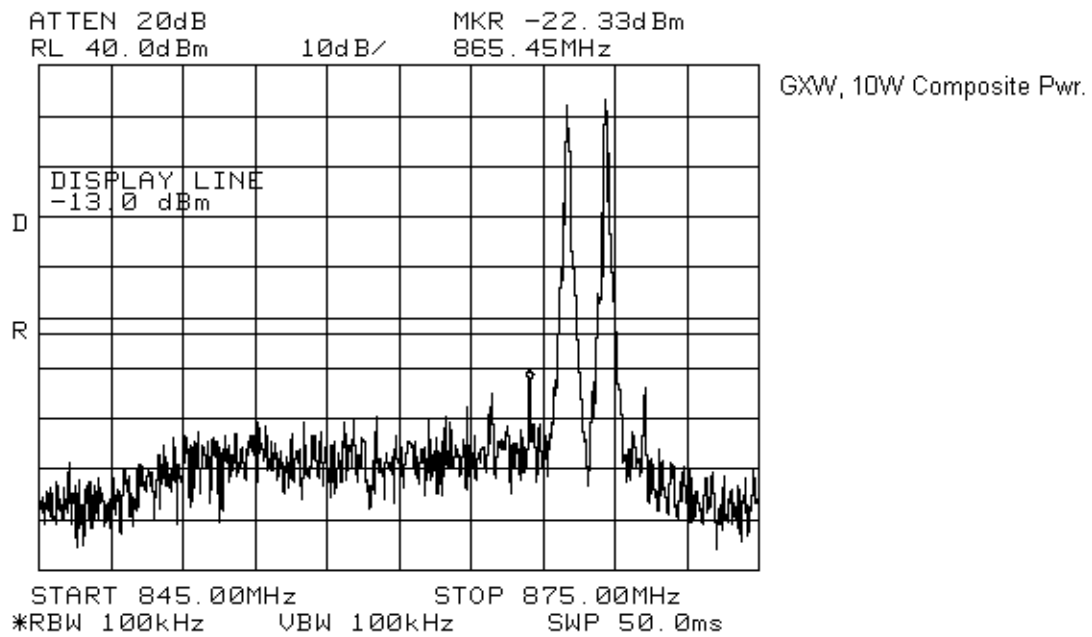


GXW, 10W Composite Pwr.



GXW, 10W Composite Pwr.

EQUIPMENT: FBDA-SMR8-50W-DIV



Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	Date of Test: 16 Oct 2003
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Minimum Standard: -13dBm

Test Results: Complied.

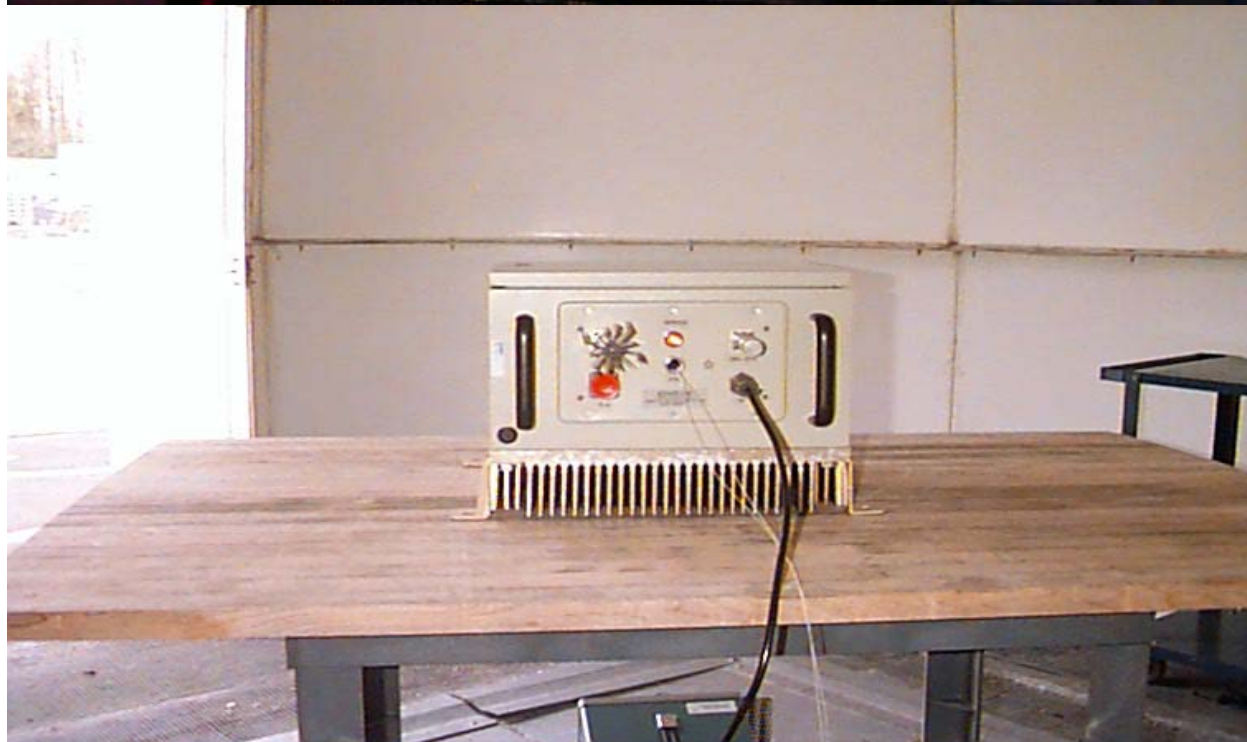
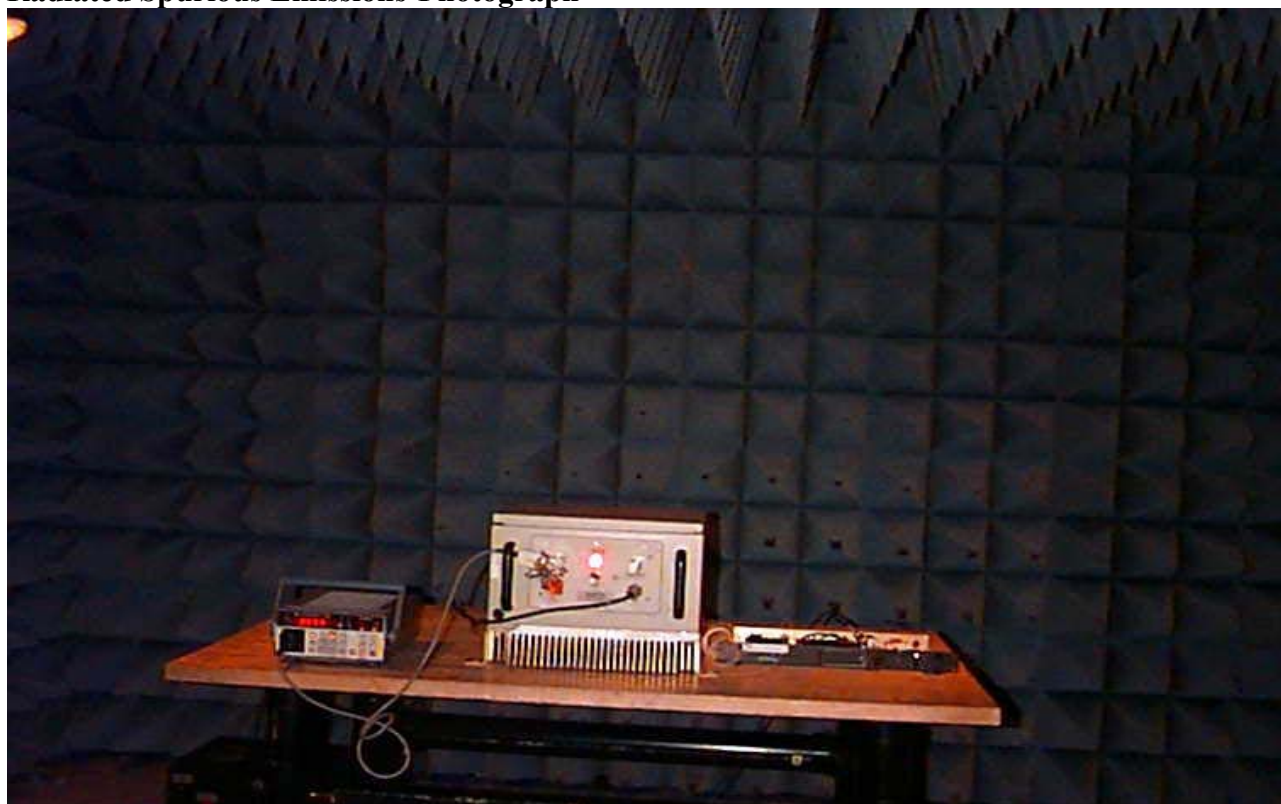
Measurement Data: See attached data.

*EQUIPMENT: FBDA-SMR8-50W-DIV***Test Data-Field Strength of Harmonic & Spurious Emissions**

Test Distance (meters) : 3	Range: A	Receiver: HP8565E	RBW(kHz): 1000	Detector: Peak		
Freq. (MHz)	Ant.	Pol (V/H)	RCVD Signal (dBμV)	Signal Substitution Level (dBm)	Limit (dBm)	Margin (dB)
1722.0000	Horn1	V	96.0	-21.9	-13.0	8.9
1722.0000	Horn1	H	82.7	-35.2	-13.0	22.2
2583.0000	Horn1	V	84.0	-39.9	-13.0	26.9
2583.0000	Horn1	H	74.5	-50.4	-13.0	37.4
3444.0000	Horn1	V	82.2	-36.6	-13.0	23.6
3444.0000	Horn1	H	74.2	-46.5	-13.0	33.5
4305.0000	Horn1	V	75.0	-37.9	-13.0	24.9
4305.0000	Horn1	H	70.7	-43.4	-13.0	30.4
All spurious and harmonic emissions to the 10 th harmonic were searched.						

EQUIPMENT: FBDA-SMR8-50W-DIV

Radiated Spurious Emissions-Photograph



Section 7. Frequency Stability

Para. No.: 2.1055

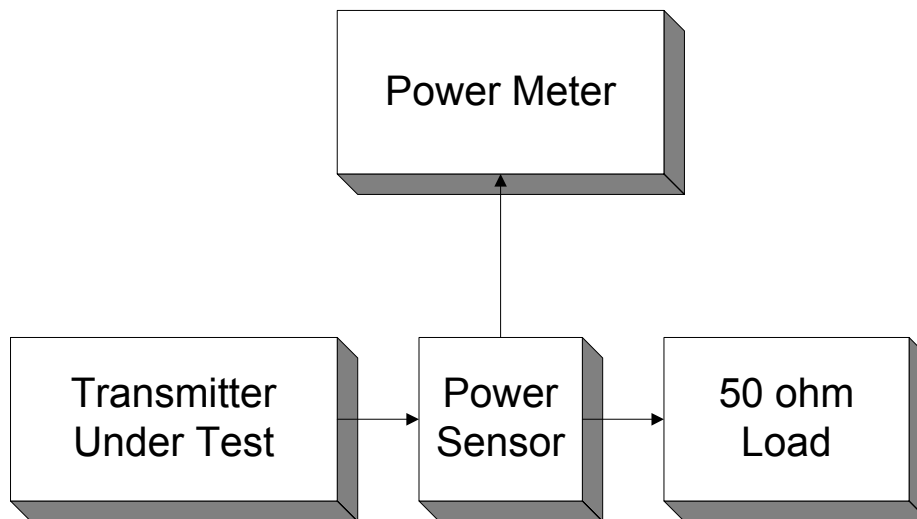
Test Performed By: Glen Westwell	Date of Test: 16 Oct 2003
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Test Results: Complied. The maximum frequency drift was 0Hz.

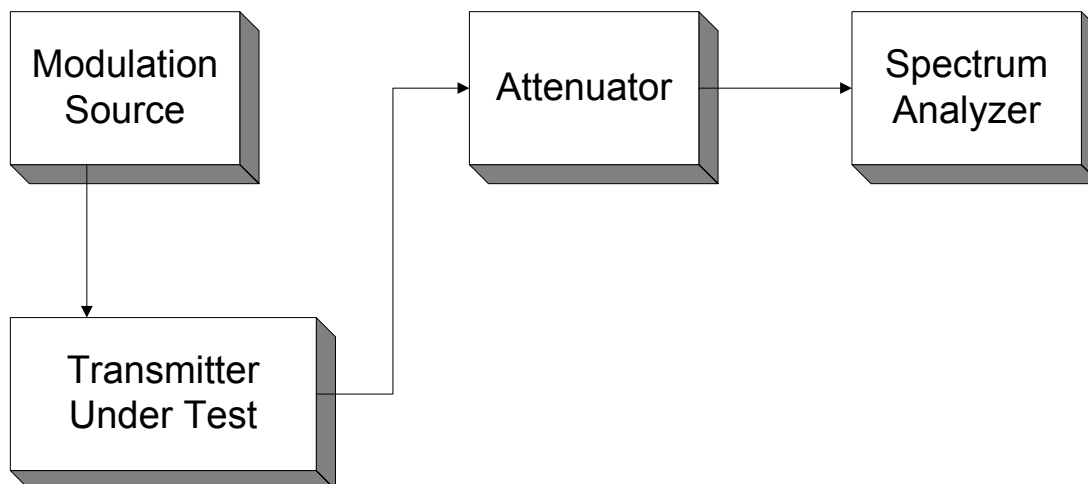
Measurement Data: Temperature Range : -30Deg. C to 50 Deg. C.
Downlink, Test Frequency: 860MHz.
+/- 15% of the standard input voltage of 120Vac.

Section 8. Block Diagrams

Para. No. 2.1046 - R.F. Power Output

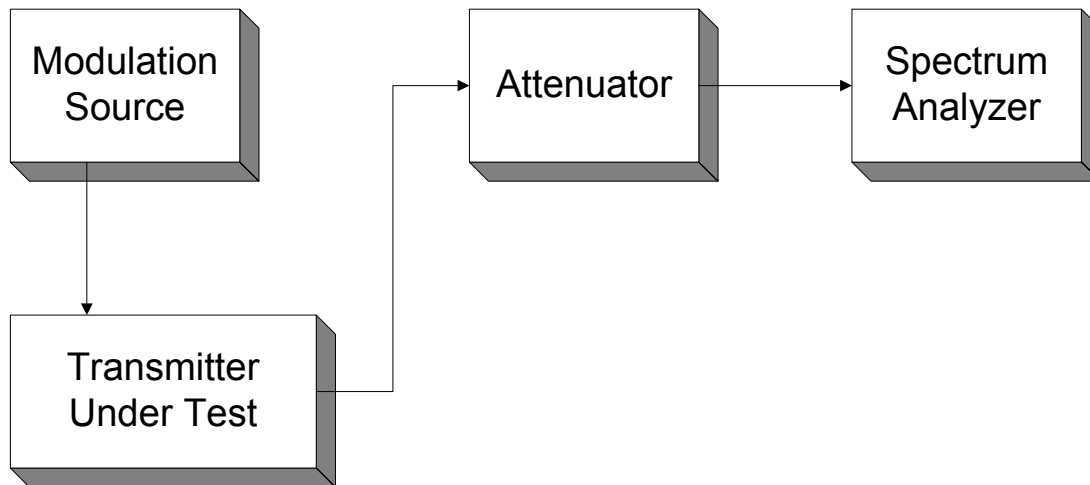


Para. No. 2.1049 - Occupied Bandwidth

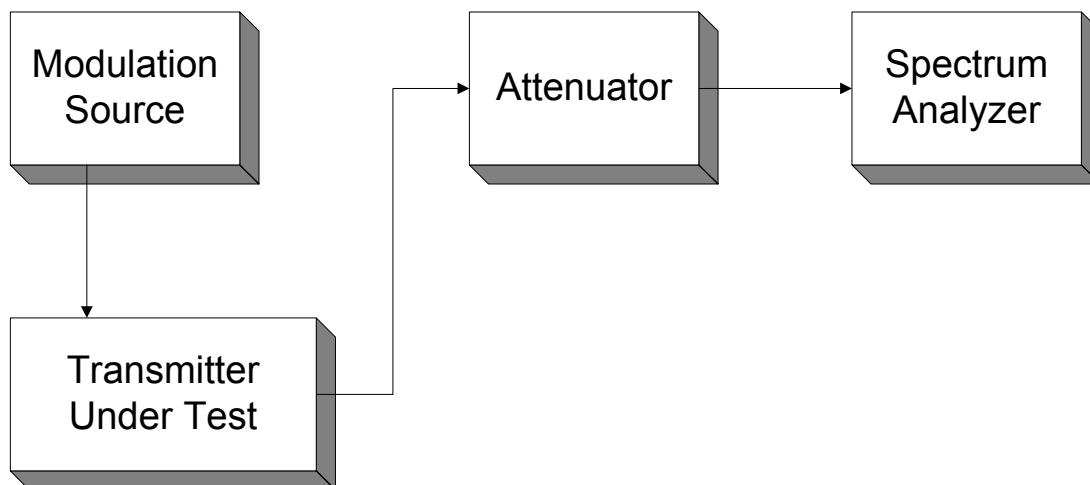


EQUIPMENT: FBDA-SMR8-50W-DIV

Para. No. 2.1049 - Occupied Bandwidth

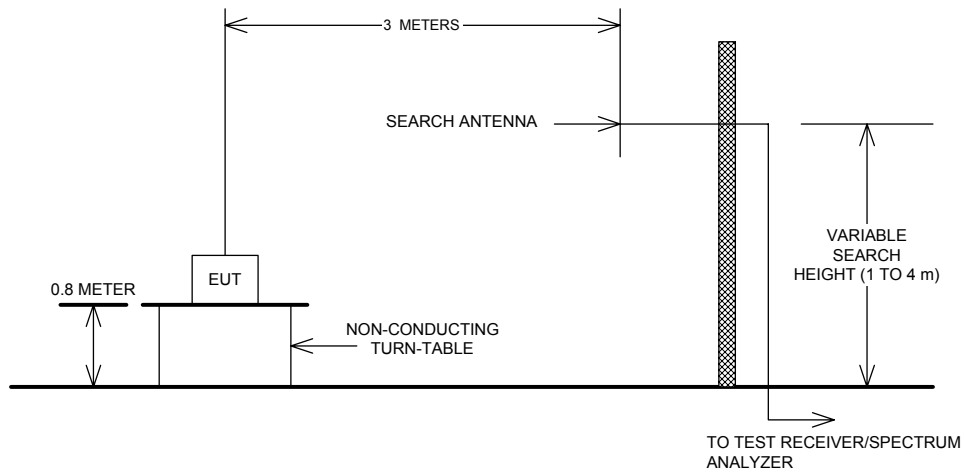


Para. No. 2.1051 - Spurious Emissions at Antenna Terminals

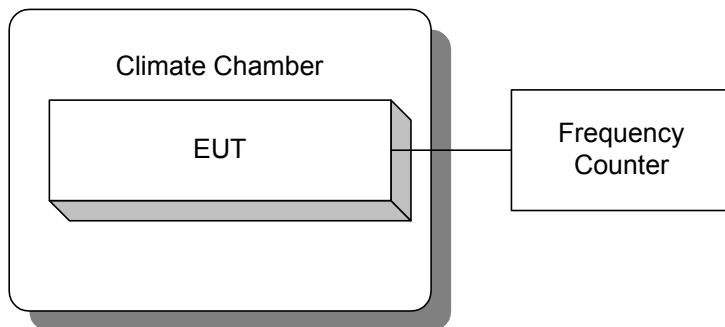


EQUIPMENT: FBDA-SMR8-50W-DIV

Para. No. 2.1053 - Field Strength of Spurious Radiation
TIA/EIA 603, Signal Substitution Method



Para. No. 2.1055 - Frequency Stability



*EQUIPMENT: FBDA-SMR8-50W-DIV***Section 9. Test Equipment List**

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	FA001367	13 May 03	13 May 04
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU
1 Year	Signal Generator	Rhode & Schwarz	SM1Q03E	FA001269	06 Dec 02	06 Dec 03
1 Year	Signal Generator	Rohde & Schwarz	SM1Q03	FA001091	25 Sep 03	25 Sep 04
1 Year	RF Millivoltmeter	Rohde & Schwarz	URV5	FA000420	20 May 03	20 May 04
1 Year	Insertion Unit	Rohde & Schwarz	URV5-Z4	FA000905	10 Apr 03	10 Apr 04
1 Year	Power Sensor	Rohde & Schwarz	URV5-Z5	FA000419	10 Apr 03	10 Apr 04
1 Year	RF AMP	JCA	4-8 GHz	FA001497	18 June 03	18 June 04
1 Year	RF AMP	JCA	2-4 GHz	FA001496	18 June 03	18 June 04
1 Year	RF AMP	JCA	1-2 GHz	FA001498	18 June 03	18 June 04
1 Year	Frequency Counter	Hewlett Packard	HP5350A	FA000086	02 Apr 03	02 Apr 04
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	June. 05/03	June. 05/04
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	June. 05/03	June. 05/04
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 09/02	Dec. 09/03
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	03 Jul 03	03 Jul 04
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Sept. 02/03	Sept. 02/04

NA: Not Applicable
NCR: No Cal Required
COU: CAL On Use