

KTL Test Report: 0R02306

Applicant: Elisra Electronics System Inc.
48 Mitzva Kadesh Street
Bene Beraq, Israel
51203

**Equipment Under Test:
(E.U.T.)** MW-CBDA-SMR-1W60PS-9

FCC ID: OIWCBDASMRPS9

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

Tested By: KTL Ottawa Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

R. Grant, Wireless Group Manager

Date:

Total Number of Pages: 30

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

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EQUIPMENT: MW-CBDA-SMR-1W60PS-9
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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



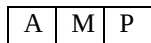
Production Unit



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".



NVLAP LAB CODE: 100351-0

TESTED BY: _____ DATE: _____
Kevin Carr, Technologist

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This report applies only to the items tested.

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	Not Applicable
Audio Low-Pass Filter Response	2.1047	Not Applicable
Modulation Limiting	2.1047	Not Applicable
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	Not Applicable
Transient Frequency Behavior	—	Not Applicable

Footnotes For N/A's:

Indoor Temperature: 24 °C
 Humidity: 30 %

Outdoor Temperature: 15 °C
 Humidity: 30 %

.

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Section 2. General Equipment Specification

Manufacturer: Elisra Electronic Systems Ltd.

Model No.: MW-CBDA-SMR-1W60PS-9

Serial No.: 00031022

Date Received In Laboratory: April 17, 2000

KTL Identification No.: Item #1

Transmitter

Supply Voltage Input: 120 VAC, 60 Hz

Frequency Range: UL-896-902 MHz
DL-935-941 MHz

Tunable Bands: 2

Type(s) of Modulation: F3E, F1E, F1D

Gain: 60 dB Nominal

Output Impedance: 50 ohm

RF Power Output (rated): Total Composite: 26.0 dBm

Operator Selection of Operating Frequency: None

Power Output Adjustment Capability: AGC. The RF output power per channel decreases as the number of channels increases according to the following formula:

$$P = \frac{0.4W}{N} \text{ Where } N = \text{Number of Channels}$$

Frequency Translation: None

Band Selection: None

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Section 3. RF Power Output**Para. No.: 2.1046**

Test Performed By: Kevin Carr	Date of Test: April 18, 2000
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Minimum Standard: Para. No. 90.205 $\pm$ 1 dB Rated**Test Results:** Complies. The measured RF power output is within 0 dB of the manufacturer's rating of RF power output.**Measurement Data:**

Frequency (MHz)	Measured Power (dBm)	Rated Power (dBm)	Measured Rated (dB)
899	26.0	26.0	0.0
938	26.0	26.0	0.0

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Kevin Carr	Date of Test: April 18, 2000
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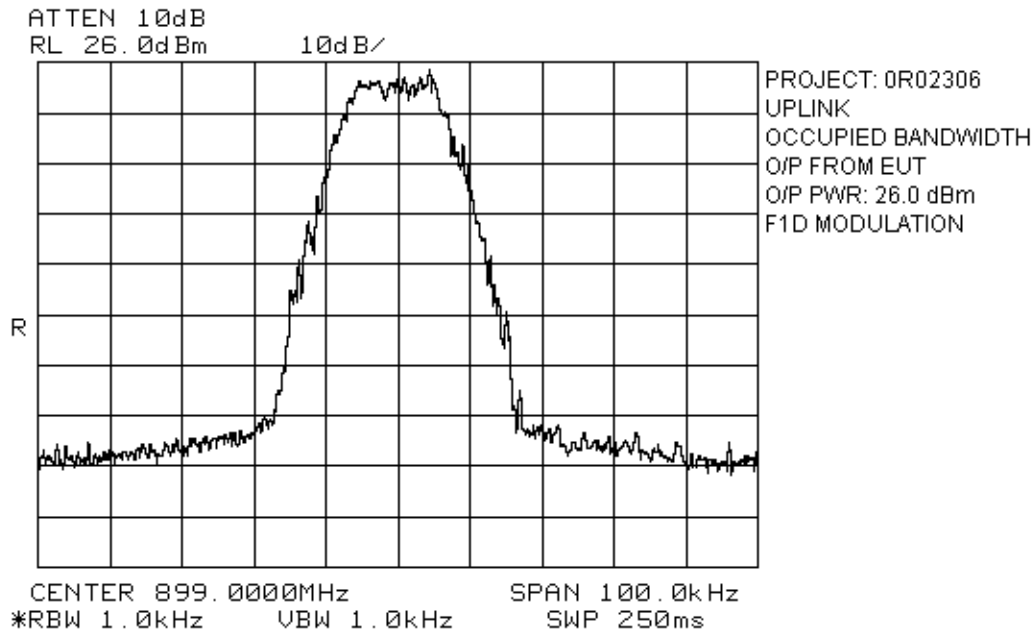
Minimum Standard: Para. No. 90.210

Test Results: Complies. There is no degradation in the occupied bandwidth due to amplification through the repeater. This equipment is a repeater and does not have any frequency generating or modulation circuits, therefore measurements were made to compare the input to the output.

Measurement Data: See attached graph(s).

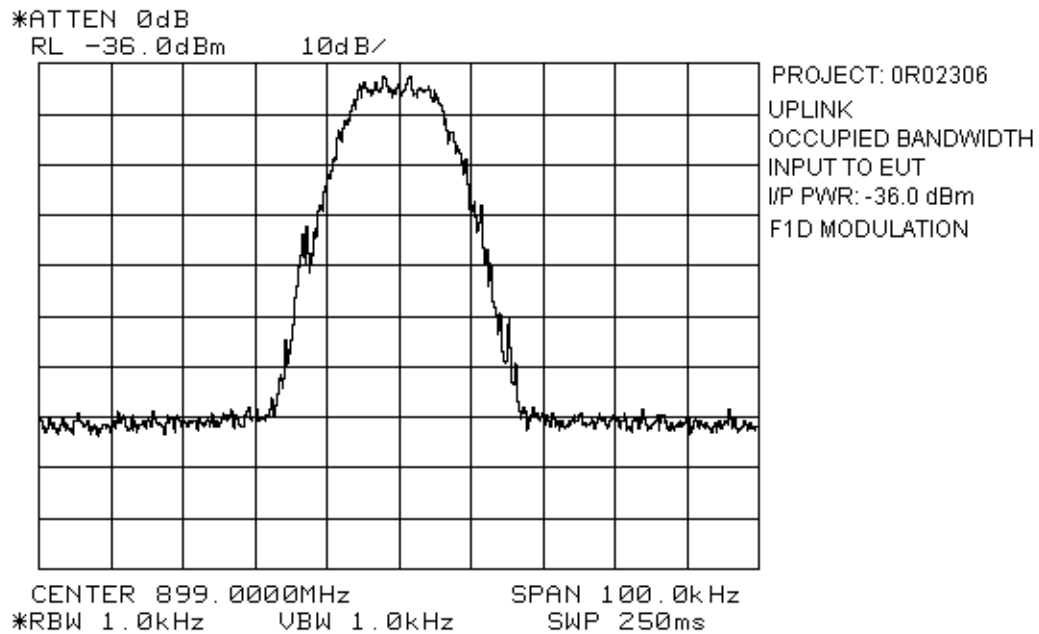
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

F1E/F1D Modulation



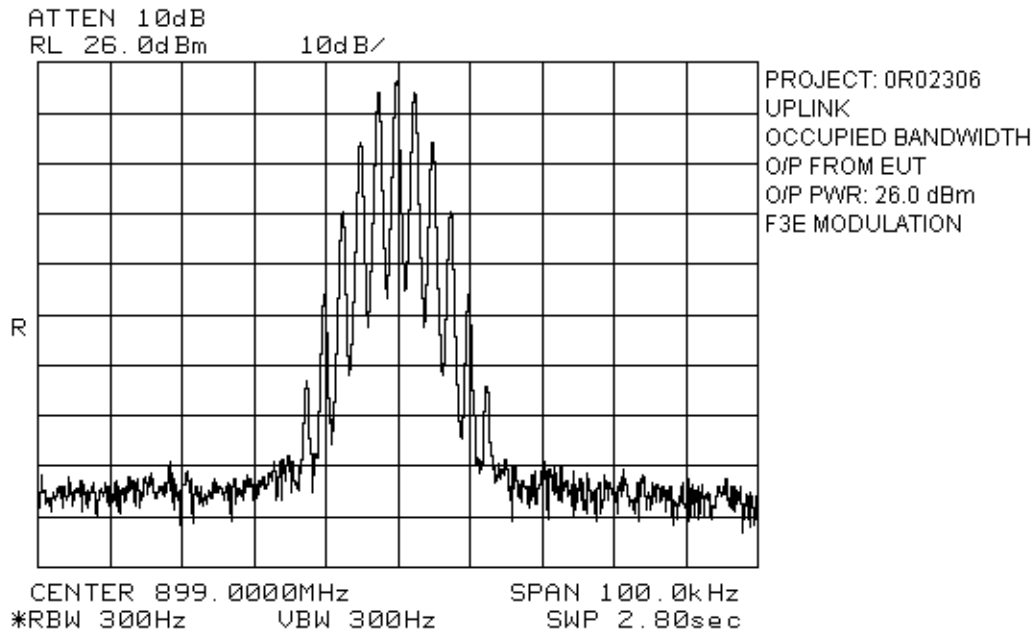
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

F1E/F1D Modulation



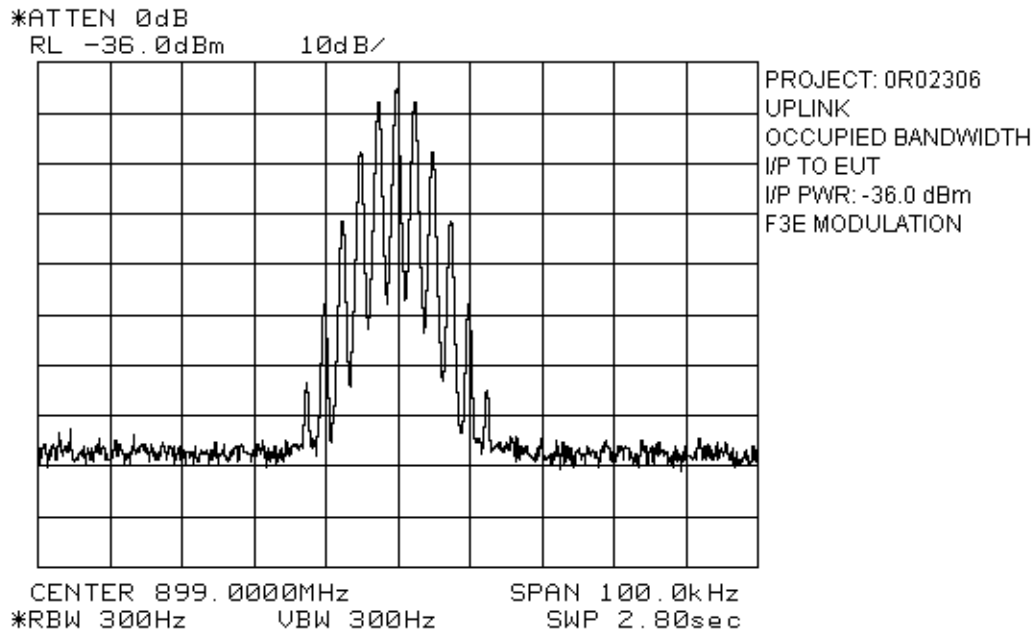
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

F3E Modulation



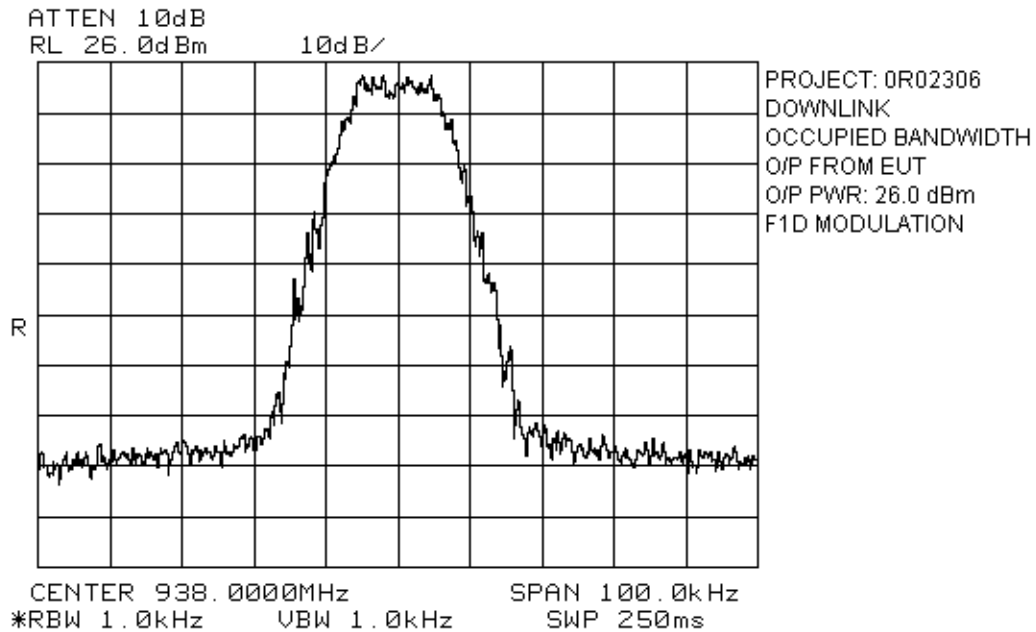
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FCC ID: OIWCBDASMRPS9

F3E Modulation



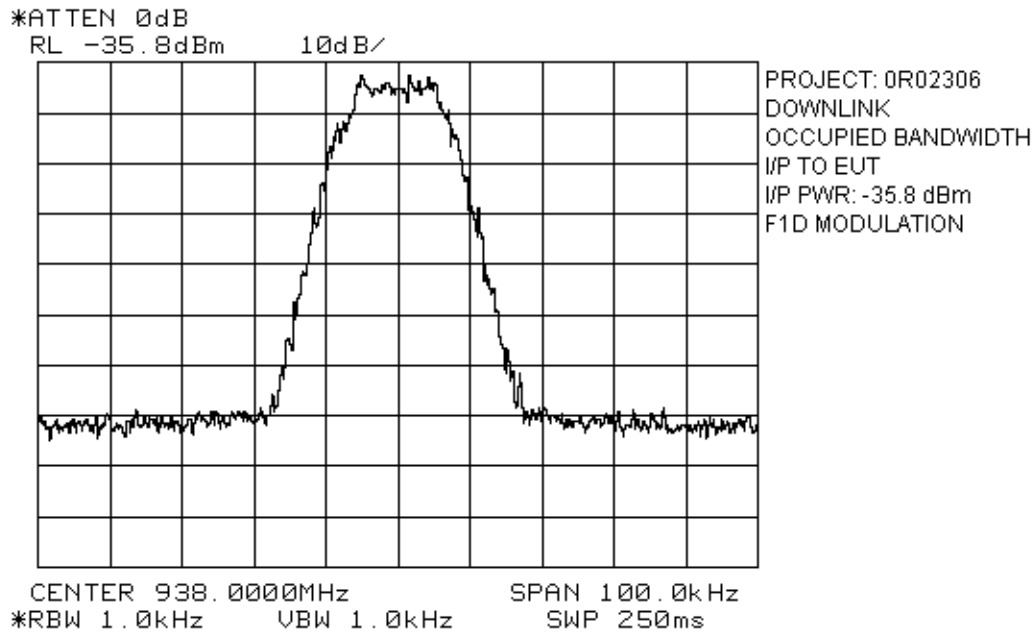
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FCC ID: OIWCBDASMRPS9

F1E/F1D Modulation



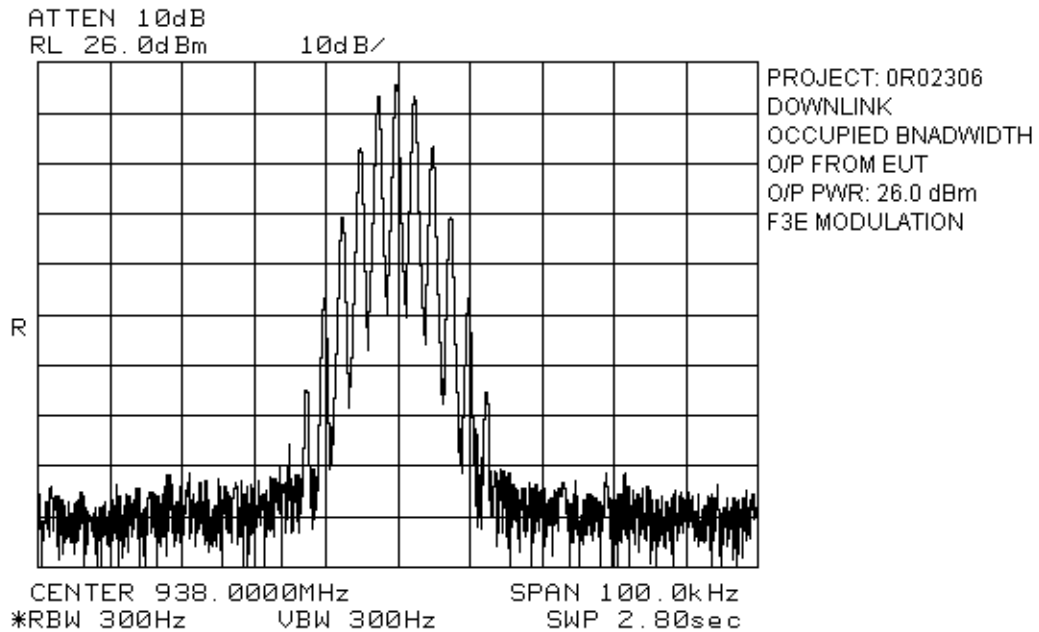
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FCC ID: OIWCBDASMRPS9

F1E/F1D Modulation



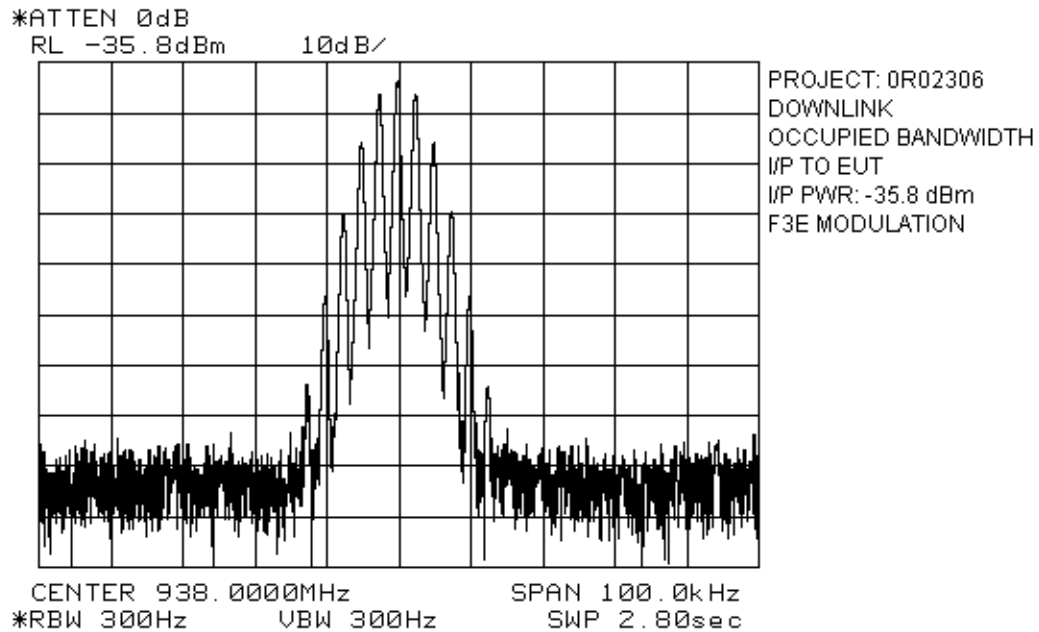
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

F3E Modulation



EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

F3E Modulation



EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

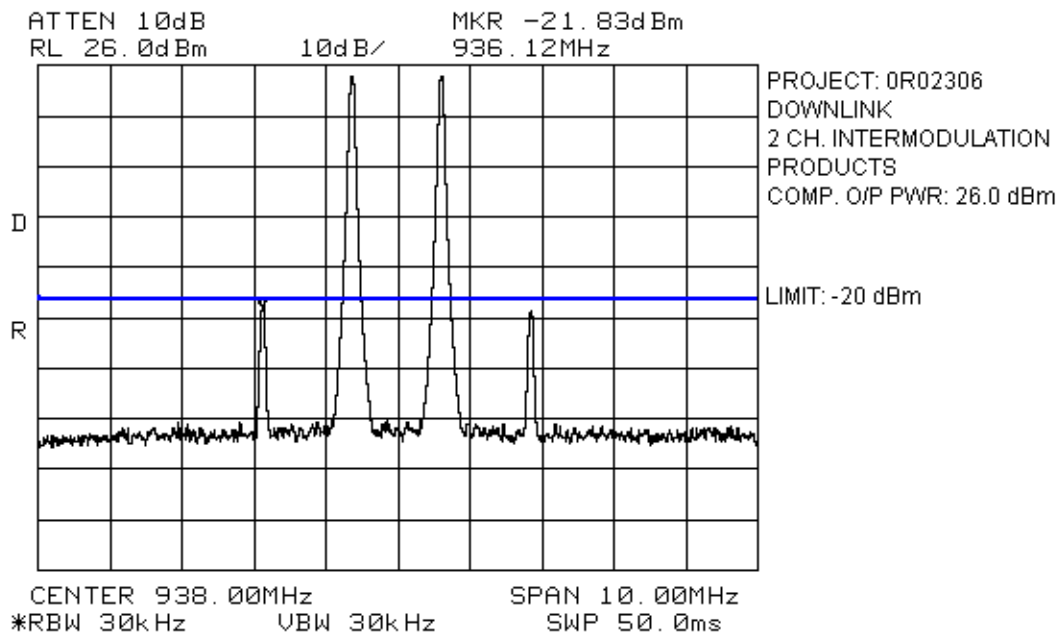
Test Performed By: Kevin Carr	Date of Test: April 18, 2000
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Minimum Standard: 90.210(j) –20 dBm

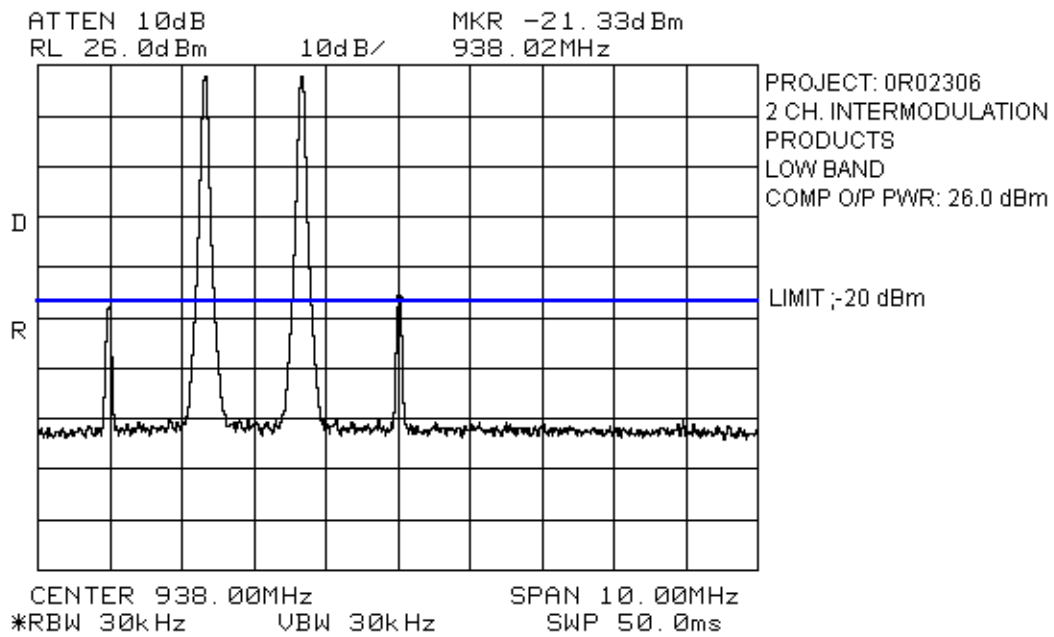
Test Results: Complies.

Measurement Data: See attached graph(s).

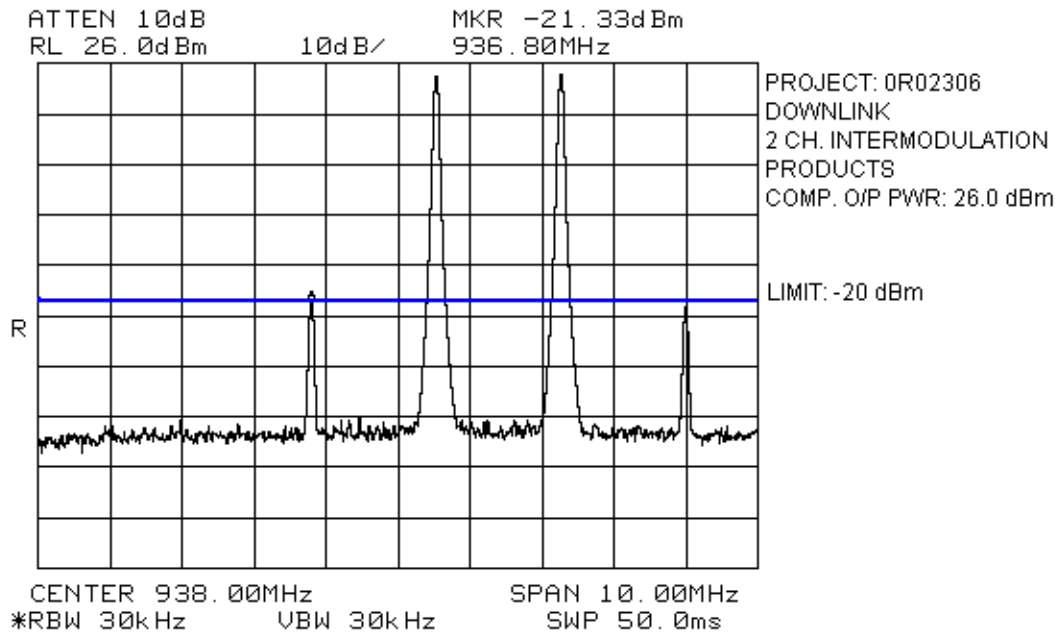
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



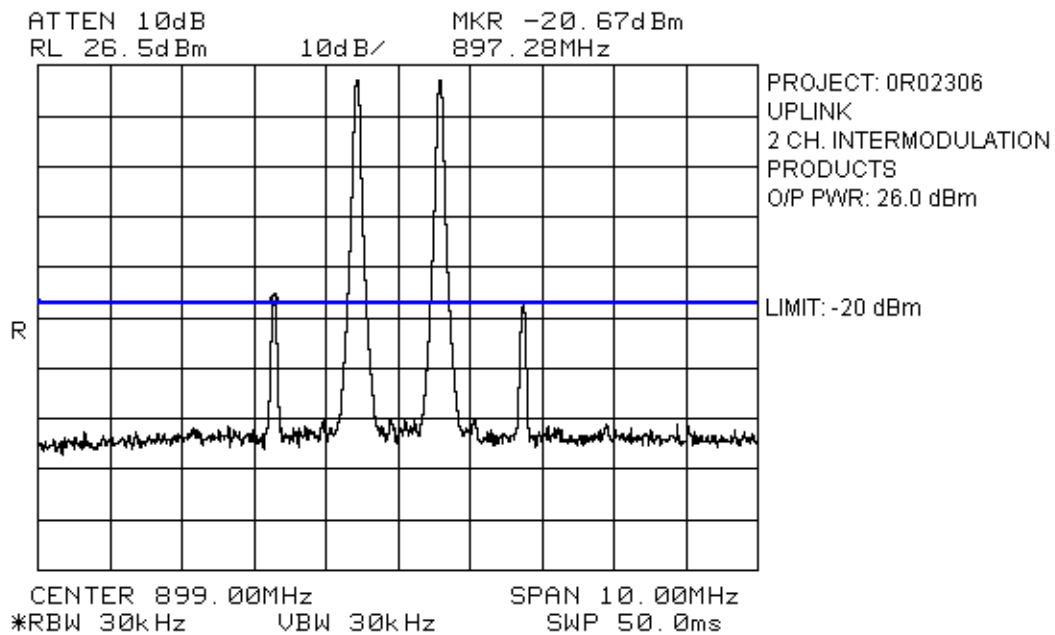
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



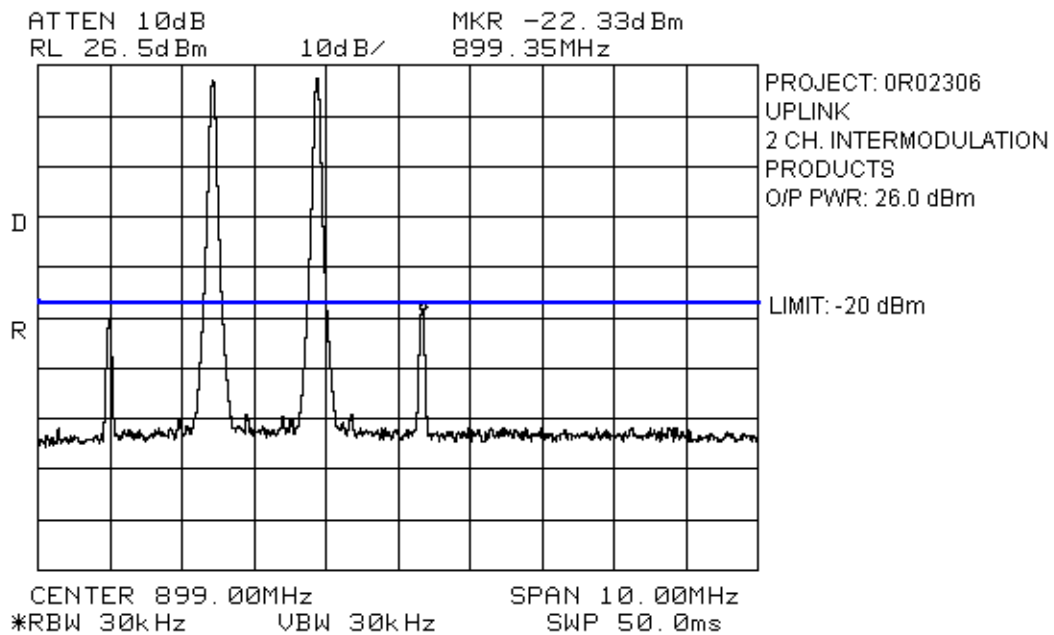
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FCC ID: OIWCBDASMRPS9



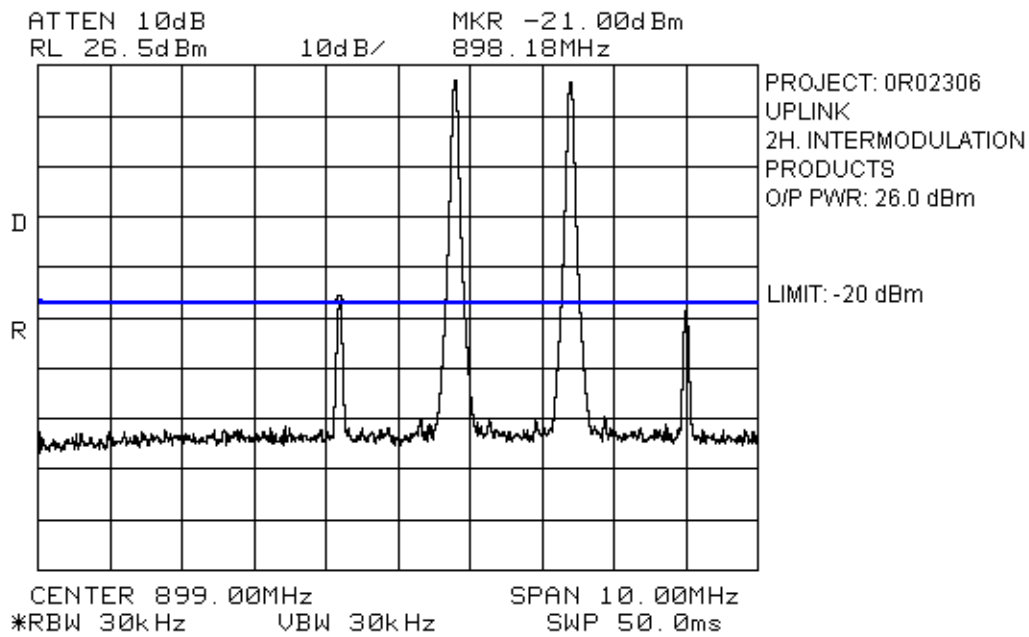
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



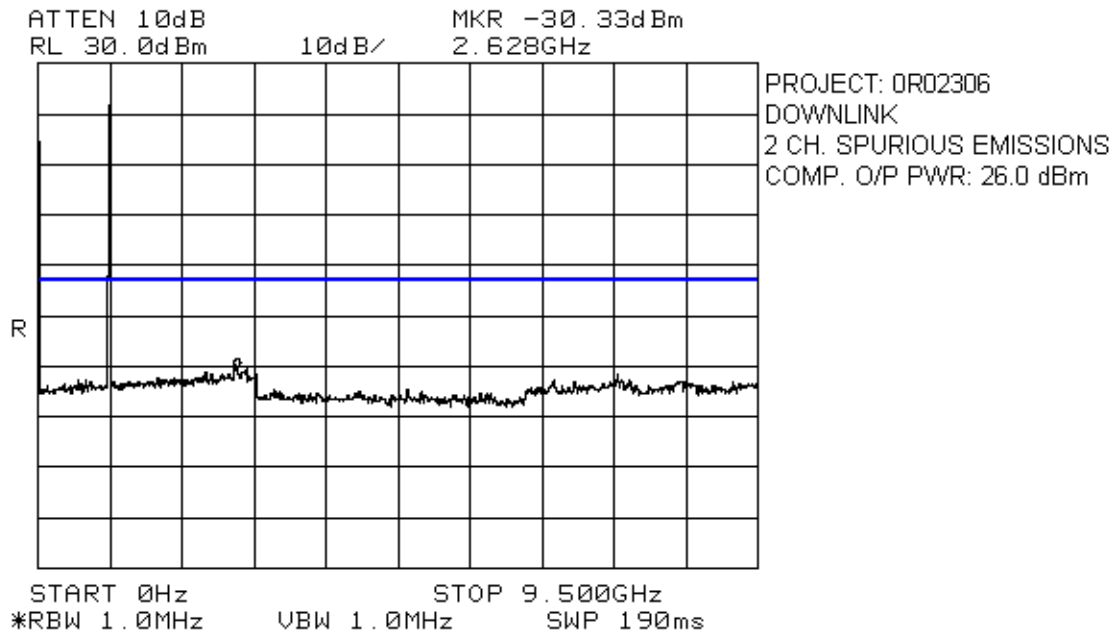
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



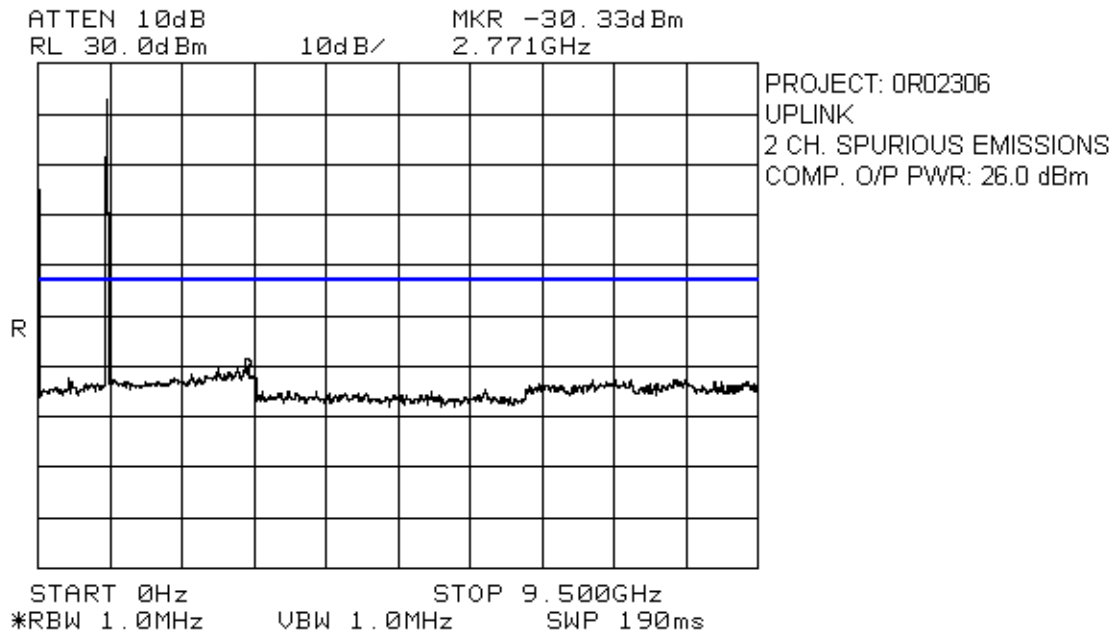
EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



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EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9



FCC ID: OIWCBDASMRPS9

Para. No.: 2.1053

Test Performed By: Kevin Carr	Date of Test: April 18, 2000
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Minimum Standard:	Para. No. 90.210 (j)	–20 dBm
		77.4 dBμV/m @ 3m < 1 GHz
		75.2 dBμV/m @ 3m > 1 GHz

Test Results: Complies. No emissions were detected within 20 dB of the specification limit.

Measurement Data: See attached table.

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	June 16/99	June 16/00
1 Year	Attenuator	Narda	768-10	9707	Aug. 23/99	Aug. 23/00
1 Year	Attenuator	Narda	768-10	9709	Oct. 8/99	Oct. 8/00
2 Year	RF Millivoltmeter	Rohde & Schwarz	URV5	FA000420	Oct. 6/99	Oct. 6/01
2 Year	Insertion Unit	Rohde & Schwarz	URV5-Z4	FA000905	Oct. 6/99	Oct. 6/01
1 Year	Receiver	Rohde & Schwarz	ESVP	892661/014	Mar. 29/99	Mar. 29/00
1 Year	Horn Antenna	EMCO #2	3115	4336	Nov. 11/99	Nov. 11/00
	50 Ω Termination	Wiltron	26N50	605248	N/A	N/A
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	1084-8004-03	Sept. 17/97	Sept. 17/00
3 Year	RF Generator	Rohde & Schwarz	SIMIQ03E	DE24154	Oct. 4/99	Oct. 4/01

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

KTL Ottawa

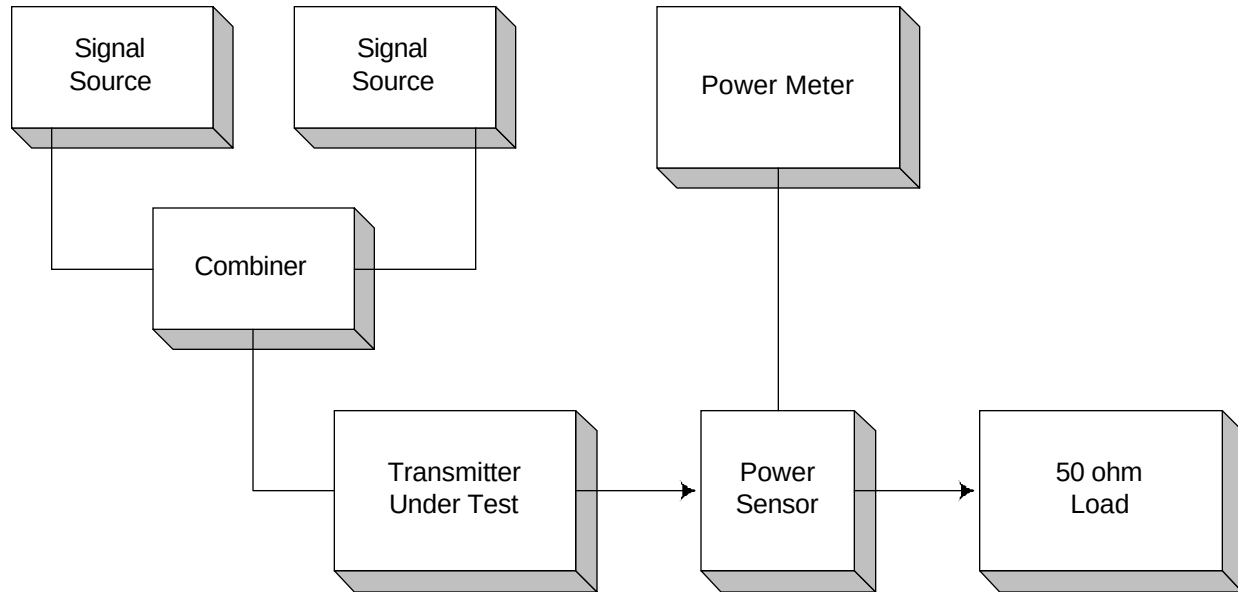
FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 0R02306
ANNEX A

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

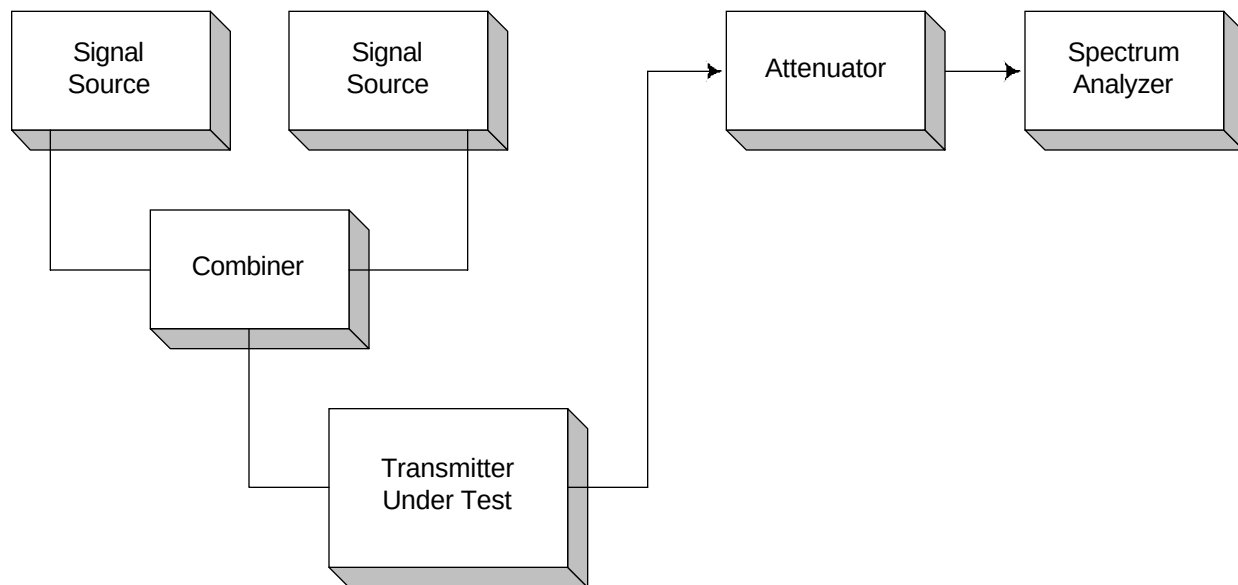
Annex A
Test Diagrams

EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

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

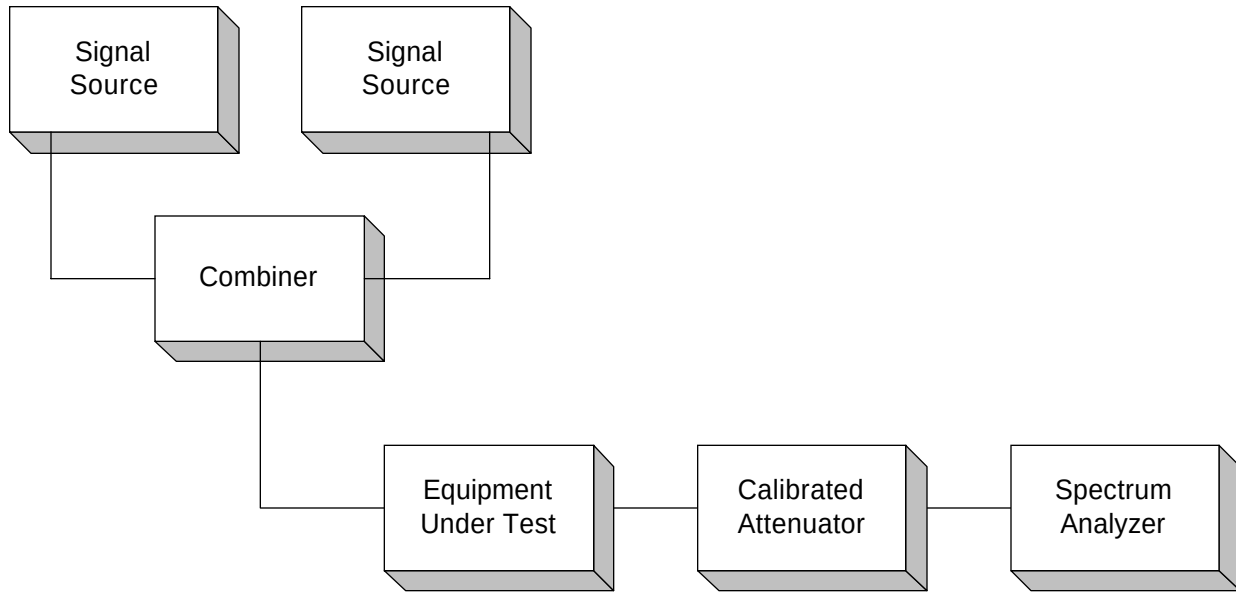


Para. No. 2.1049 - Occupied Bandwidth

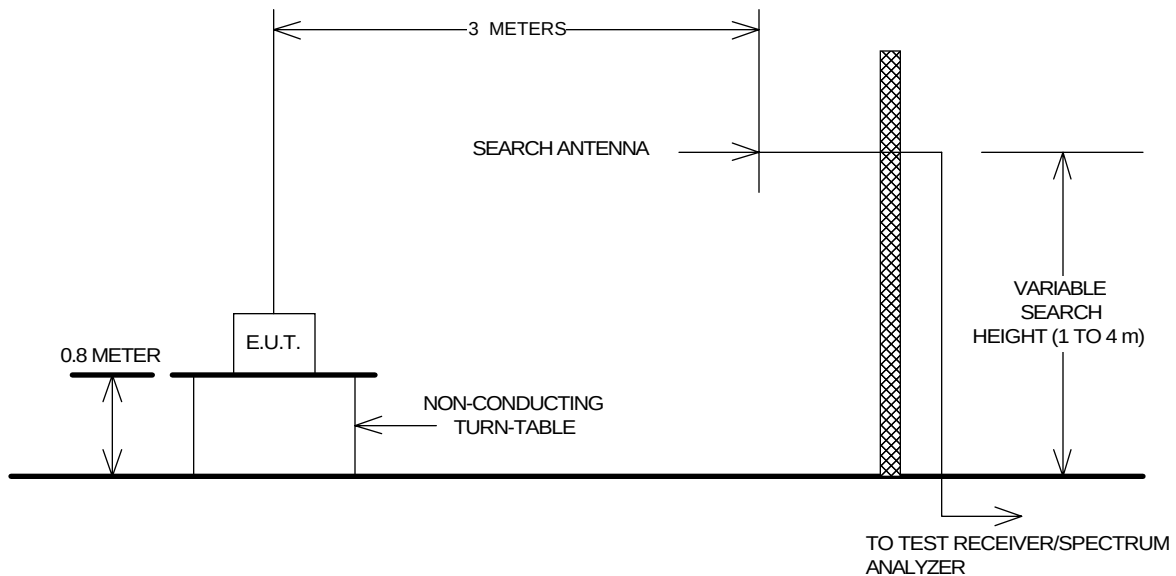


EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation



EQUIPMENT: MW-CBDA-SMR-1W60PS-9
FCC ID: OIWCBDASMRPS9

Para. No. 2.1055 - Frequency Stability

