

Test Report:	1W03671
Applicant:	Elisra Electronic Systems Ltd. 48 Mivtza Kadesh Street 51203, Bene-Beraq, Isreal
Equipment Under Test: (EUT)	MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID:	OIWCBDAESMR1W80
In Accordance With:	FCC Part 22 & 90
Tested By:	Nemko Canada Inc. (Formerly KTL Ottawa Inc.) 3325 River Road, R.R. 5 Ottawa, Ontario K1V 1H2
Authorized By:	G. Westwell, Wireless Technologist
Date:	
Total Number of Pages:	26

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EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

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 22 & 90.



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: _____
Russell Grant, Wireless Group Manager

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This report applies only to the items tested.

EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	N/A
Audio Low-Pass Filter Response	2.1047	N/A
Modulation Limiting	2.1047	N/A
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	N/A
Transient Frequency Behavior	——	N/A

Footnotes For N/A's:

use any

This equipment is a bi-directional amplifier and does not
frequency generating or modulation circuits.

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EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Section 2. General Equipment Specification

Manufacturer: Elisra Electronic Systems Ltd.

Model No.: MW-CBDA-ESMR-1W80A

Serial No.: 01041039

Date Received In Laboratory: April 27, 2001

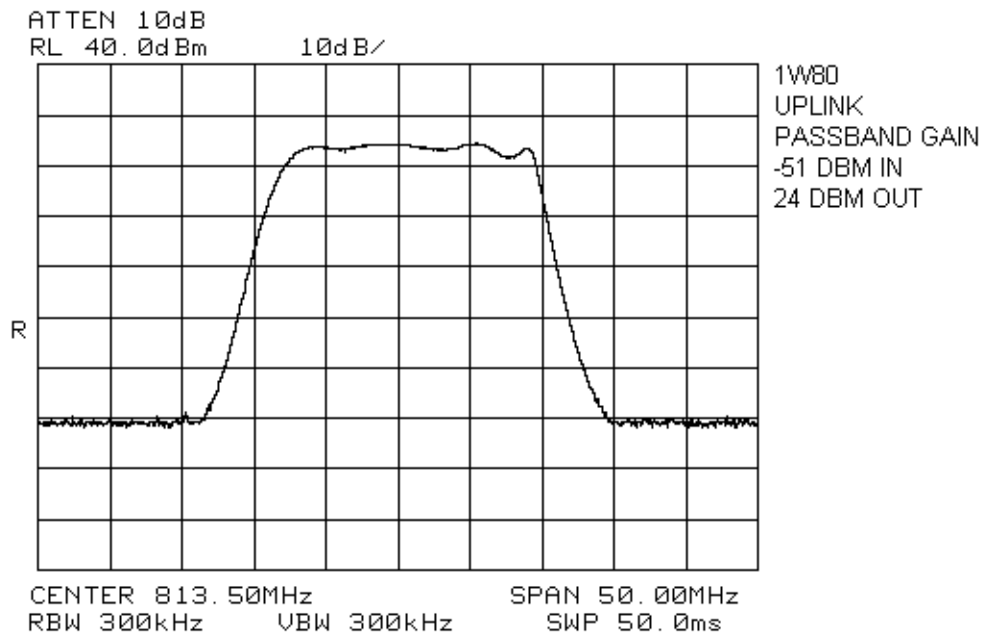
Nemko Identification No.: Item #1

Uplink: 806-821MHz, 24dBm

Downlink: 851-866MHz, 24dBm

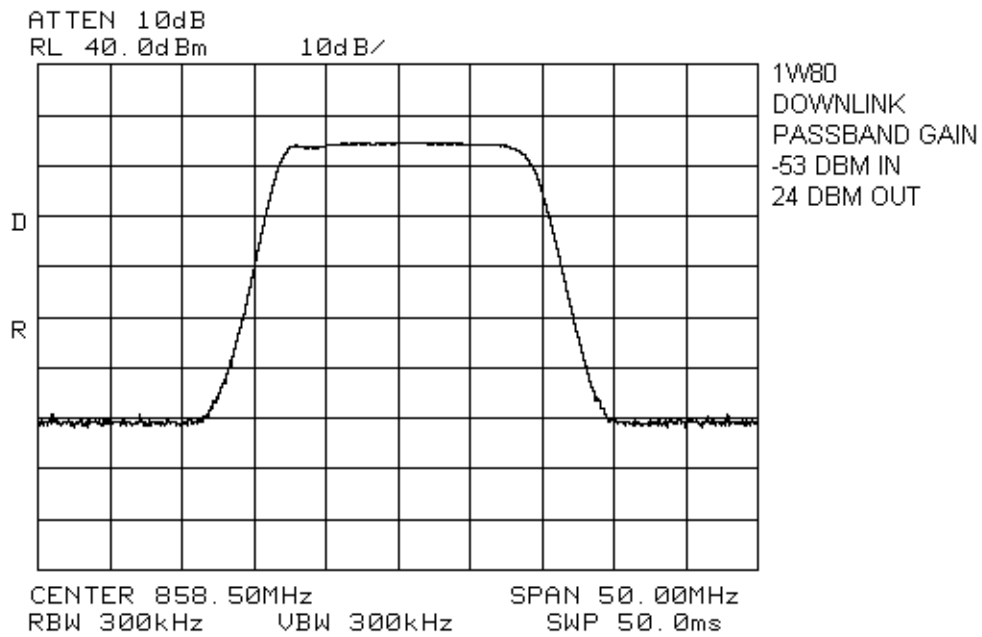
Emission: D7W

EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
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Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Russell Grant	Date of Test: May 2, 2001
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Minimum Standard: $\pm 1\text{dB}$

Test Results: Complies.

Measurement Data: Uplink: 24dBm
Downlink: 24dBm

The per channel output power is de-rated according to the number of channels.

$$\frac{\text{Rated Output Power}}{N}$$

Where N is the number of channels.

EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Russell Grant	Date of Test: May 2, 2001
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Minimum Standard: N/A

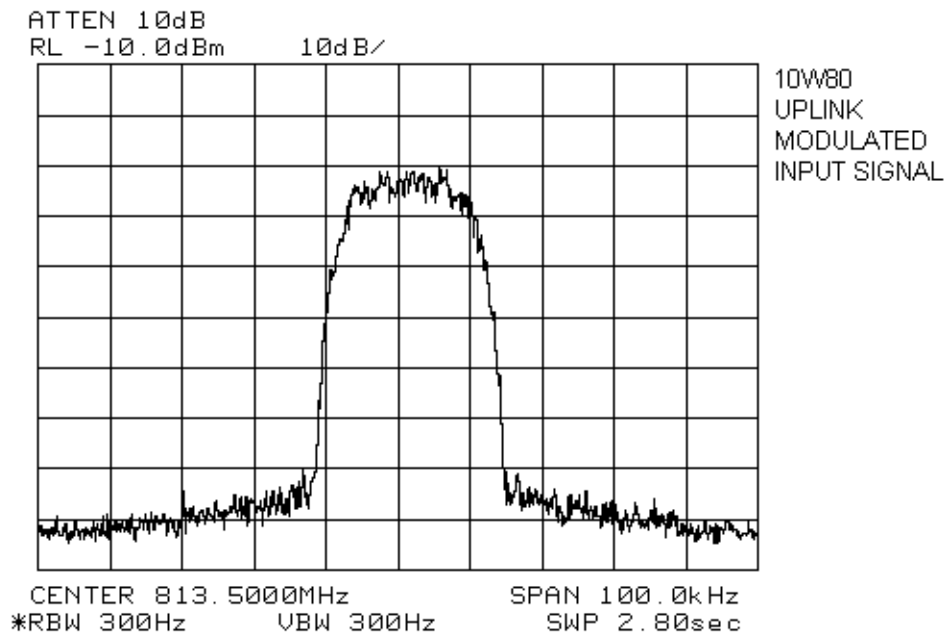
Test Results: Complies/Does Not Comply.

Measurement Data: See attached graphs.

The modulated input/output signals were compared in order to ensure that there is no degradation in the occupied bandwidth.

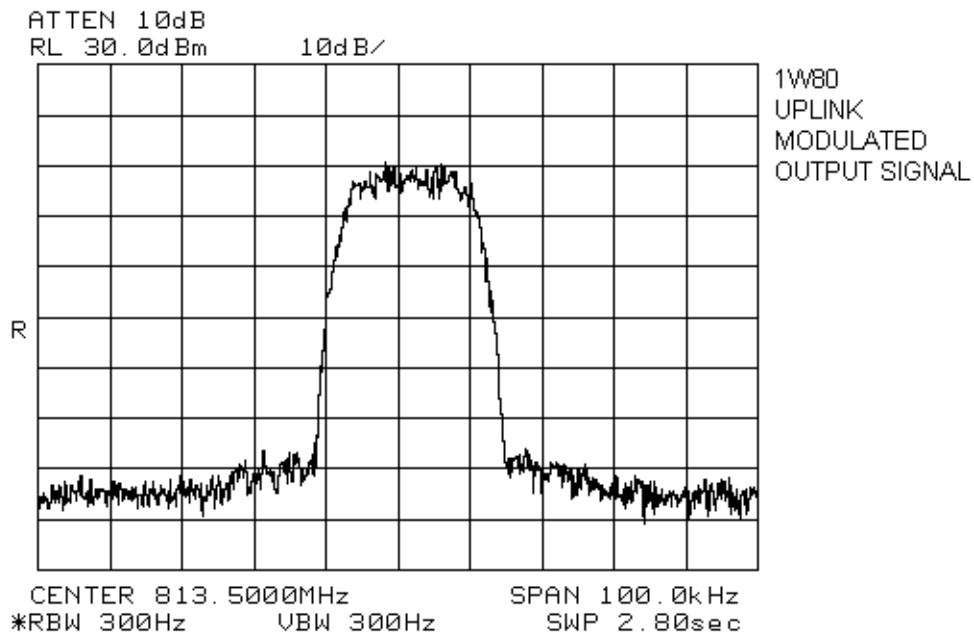
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier

FCC ID: OIWCBDAESMR1W80



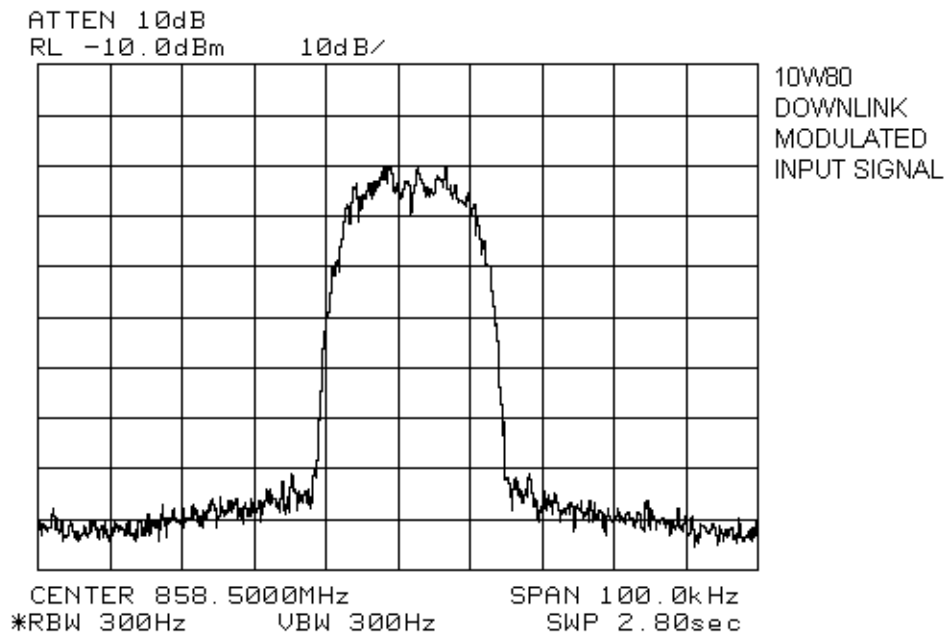
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier

FCC ID: OIWCBD AESMR1W80



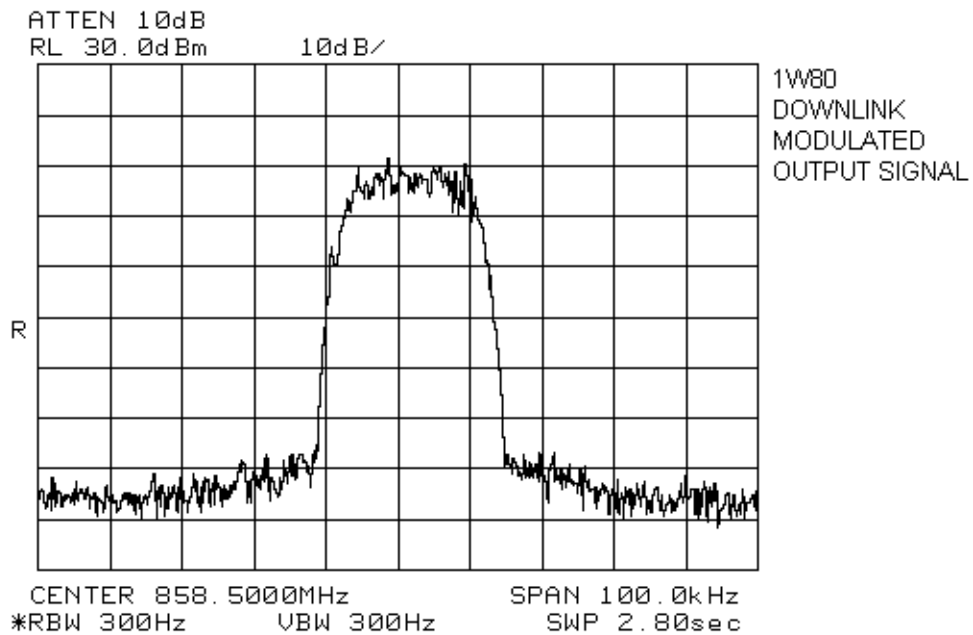
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Section 5. Spurious Emissions At Antenna Terminals

Para. No.: 2.1051

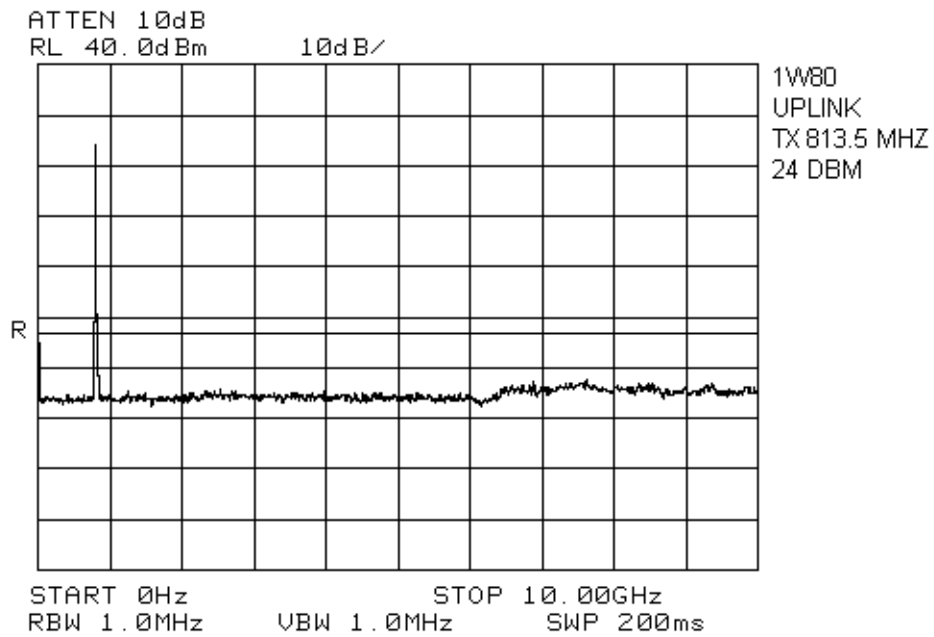
Test Performed By: Russell Grant	Date of Test: May 2, 2001
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Minimum Standard: -13dBm

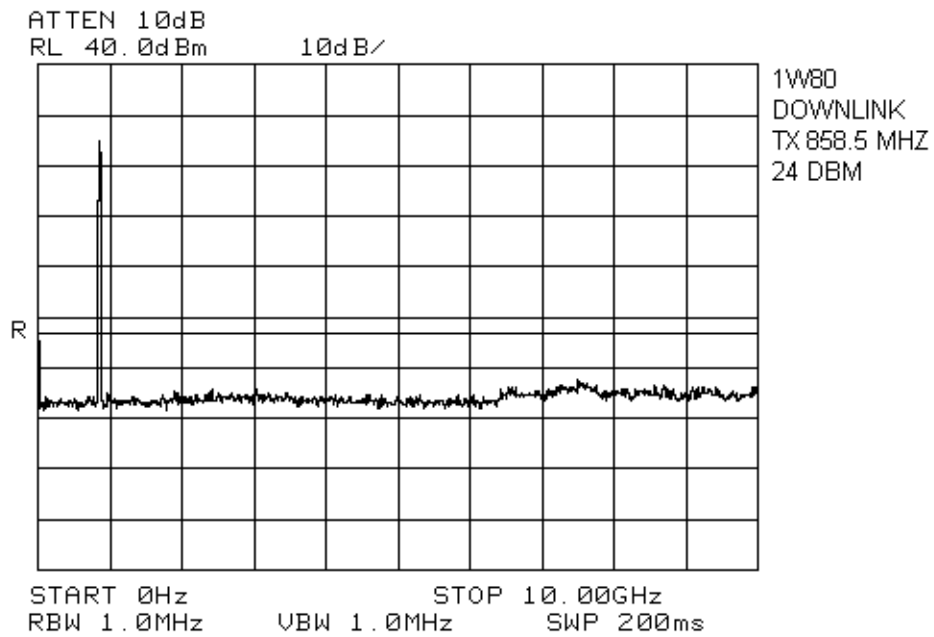
Test Results: Complies.

Measurement Data: See attached graphs.

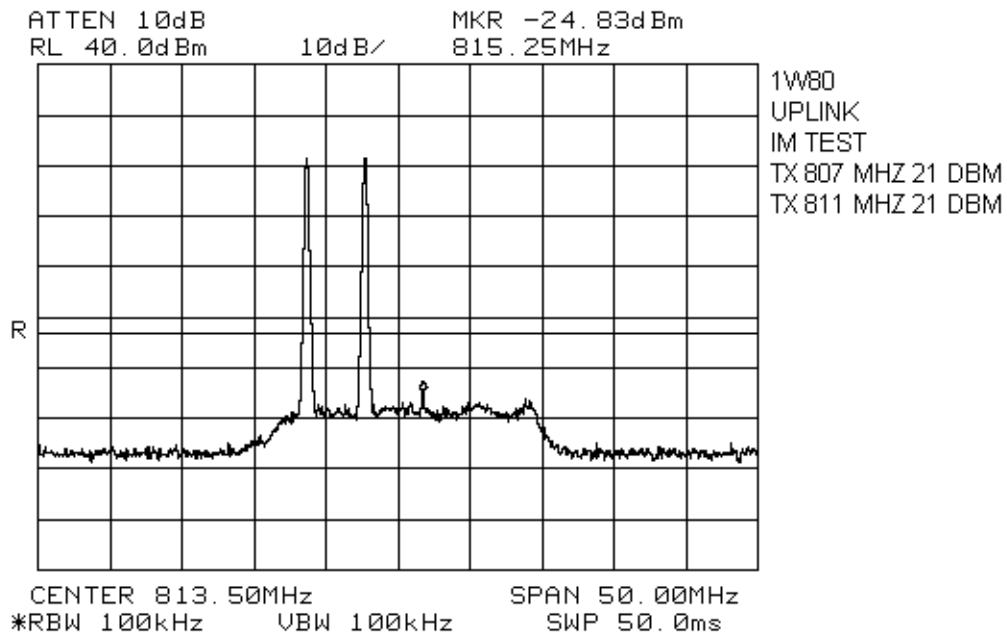
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80



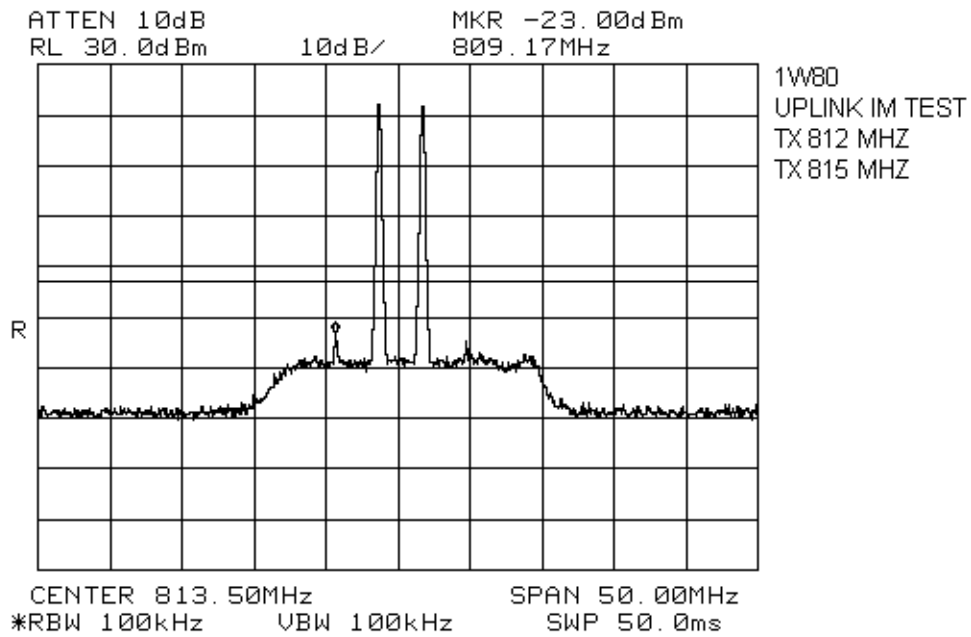
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80



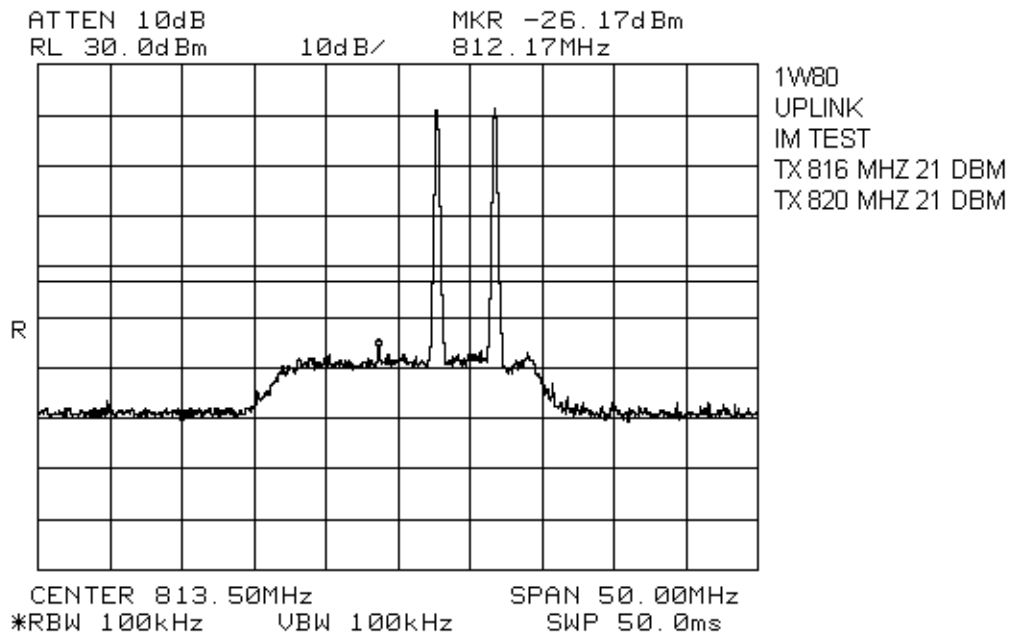
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80



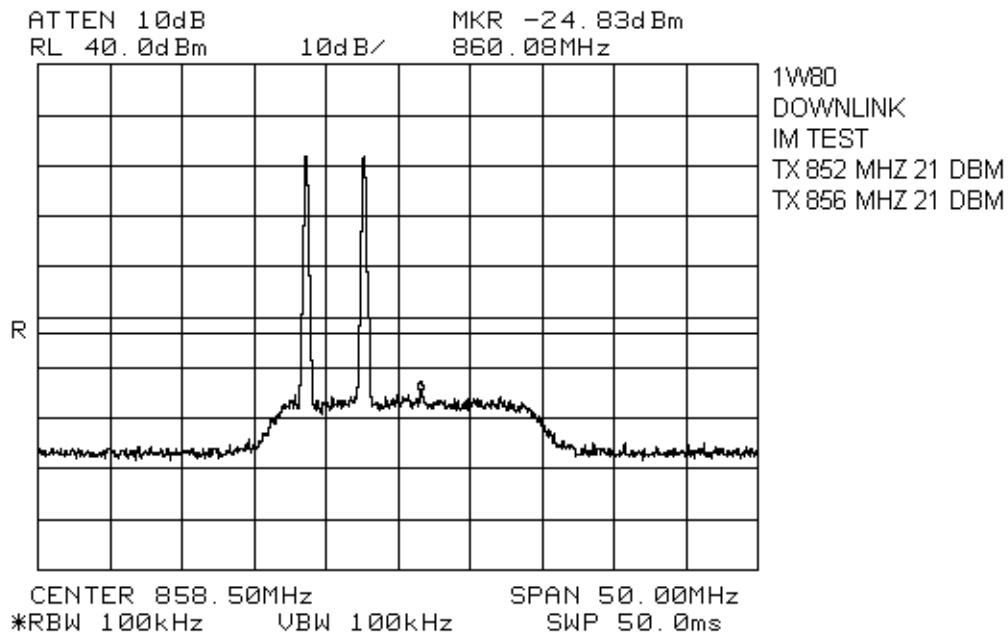
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FCC ID: OIWCBD AESMR1W80



EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBDAESMR1W80

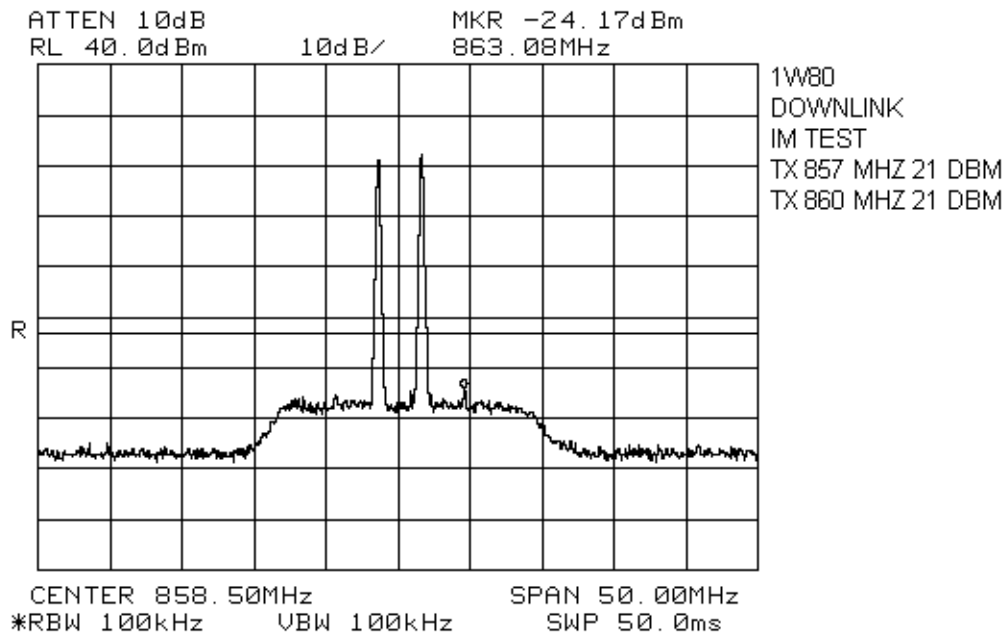


EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80



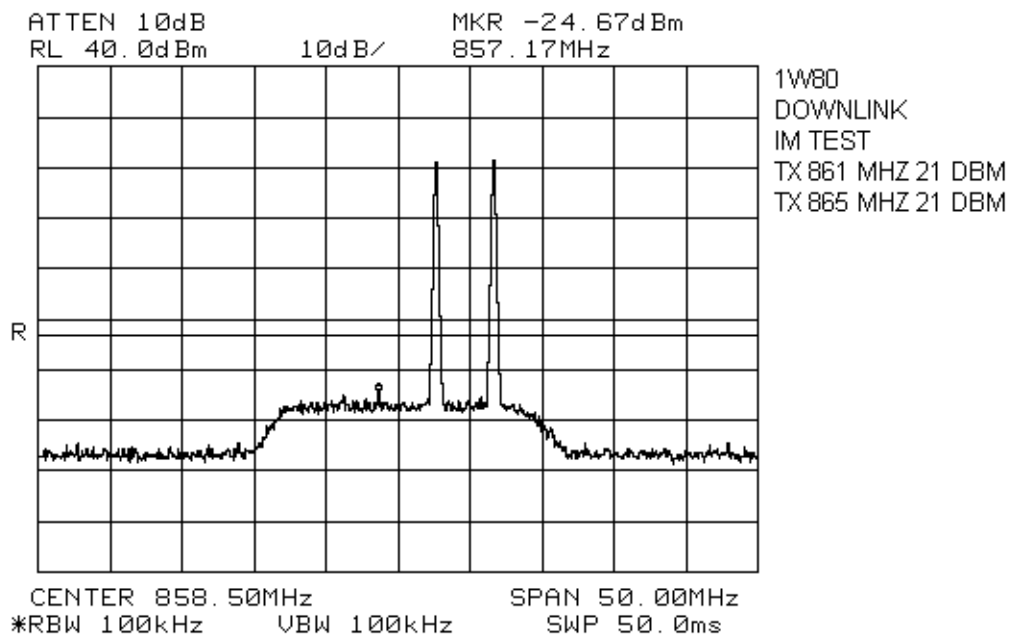
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier

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EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Russell Grant	Date of Test: May 3, 2001
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Minimum Standard: -13dBm

Test Results: Complies.

Measurement Data: No emissions detected.

The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation. All emissions within 20dB of the specification limit are measured and reported.

EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Field Strength of Spurious Emissions Setup Photographs – Worst Case

Front View:



EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407	May 31/99	Nov. 30/00
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
1 Year	Attenuator	Narda	769-20	4153	Oct. 1/99	Oct. 1/00
2 Year	RF Millivoltmeter	Rohde & Schwarz	URV5	FA000420	Oct. 6/99	Oct. 6/01
2 Year	Power Sensor	Rohde & Schwarz	URV5-Z5	FA000419	Oct. 6/99	Oct. 6/01
1 Year	Horn Antenna	EMCO #2	3115	4336	Dec. 1/00	Dec. 1/01
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	DE22004	Sept. 18/00	Sept. 18/03
3 Year	Standard Gain Horn	Electro-Metrics	SH-50/60-1	FA000479	July 7/00	July 7/01
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

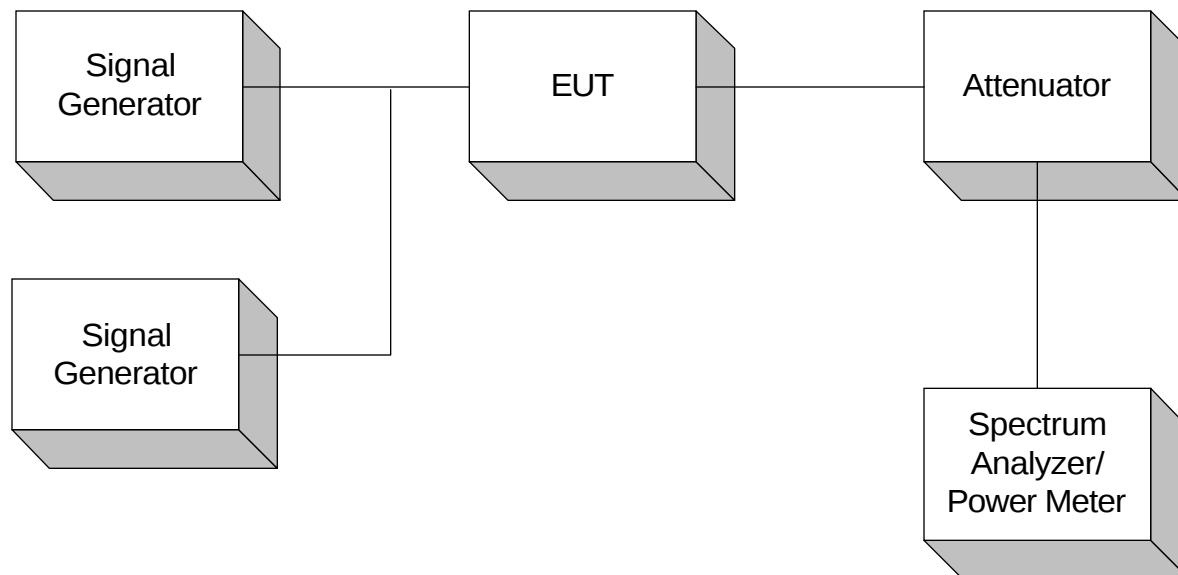
EQUIPMENT: MW-CBDA-ESMR-1W80A Bi-Directional Amplifier
FCC ID: OIWCBD AESMR1W80

Section 8. Test Diagrams

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

Para. No. 2.1049 – Occupied Bandwidth

Para. No. 2.1051 – Spurious Emissions At Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation

