Test Report:	3W07649 Issue II
Applicant:	Daniels Electronics Ltd. 43 Erie Street Victoria, B.C., V8V 1P8
Equipment Under Test:	30W VHF Power Amplifier 136-174MHz
FCC ID:	H4JAMP-3-150
In Accordance With:	**FCC Part 22, 80 & 90**
Tested By:	Nemko Canada Inc. 303 River Road, R.R. 5 Ottawa, Ontario K1V 1H2
Authorized By:	 Kevin Carr, EMC Specialist
Date:	4 December 2003
Total Number of Pages:	21

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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 22, 80, & 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.
See " Summary of Test Data".

TESTED BY: _____ DATE: 4 December 2003
Glen Westwell, Wireless Technologist

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
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

Notes:

(1) This application is for a 136-174MHz 30W amplifier(s) used in the transmit path for a single channel only, and is driven by FCC & Industry Canada approved exciters. This amplifier is connected via coaxial connection and operated in an equipment rack.

(2) This amplifier does not translate the RF input, therefore frequency stability is not applicable.

(3) The EUT used to determine verification and performance was the AMP-3/160-30, 150-174MHz amplifier driven by an FCC and Industry Canada approved exciter with F3E & F1E modulations.

Indoor	Temperature:	21 °C
	Humidity:	31 %
Outdoor	Temperature:	6 °C
	Humidity:	55 %

Section 2. General Equipment Specification

Manufacturer:	Daniels Electronics Ltd.
Model No. of EUT:	AMP-3/160-30
Model No. of Family:	AMP-3/150-30 (AMP-3/140-30 & AMP-3/160-30)
Serial No. of EUT:	S/N 10005
Date Received In Laboratory:	03 Nov, 2003
Nemko Identification No.:	#1
Frequency Range:	136-174MHz (F3E, F1E, F3D, F1D)
Frequency Range of EUT:	150-174MHz (F3E, F1E)
Amplifier RF Output (Rated):	10 - 30W
Amplifier Gain (Rated):	10dB
Emission Designator (modulation):	F3E, F1E F3D, F1D G3E

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	**Date of Test: 5 Nov. 2003**

Test Results: Complies.

The maximum RF output power is within ± 1dB of the manufacturer's rating.

Measurement Data: Rated Power = 30W (44.8dBm)

Frequency (MHz)	Rated Power (dBm)	Measured Power (dBm)
150	44.8	44.8
162	44.8	44.6
174	44.8	44.2

Section 4. Occupied Bandwidth

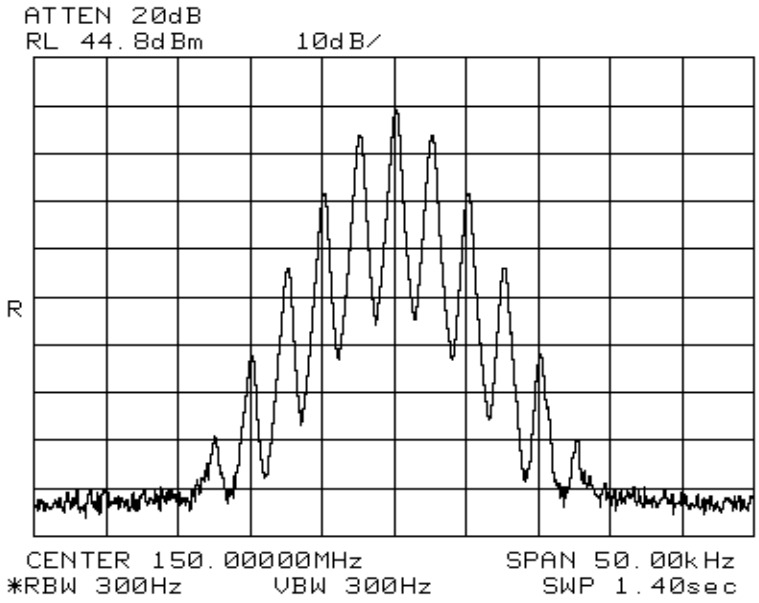
Para. No.: 2.1049

Test Performed By: Glen Westwell	**Date of Test: 5 Nov. 2003**

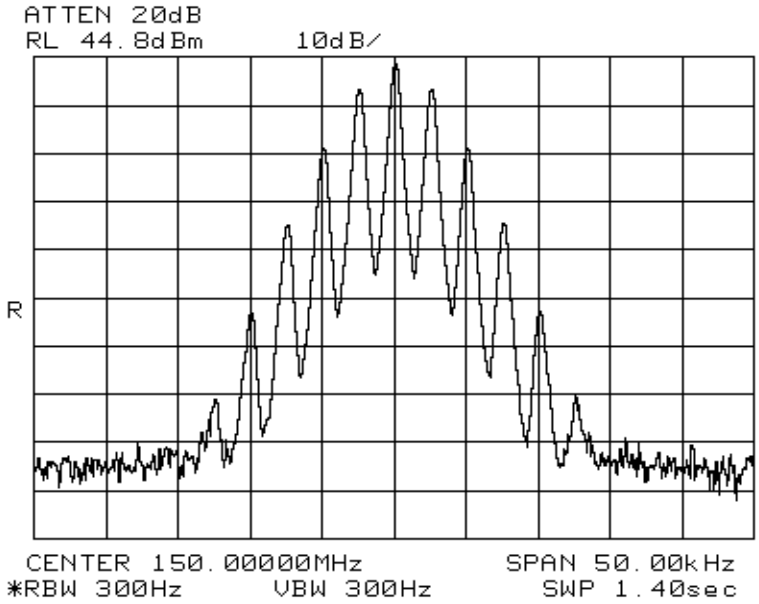
Test Results: Complies.

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.

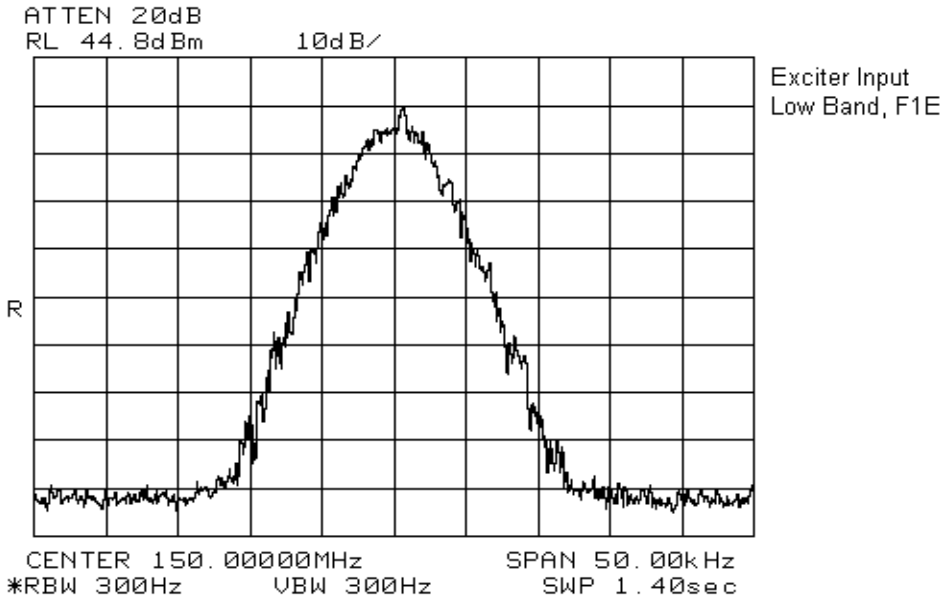
Test Data: See attached graph(s).



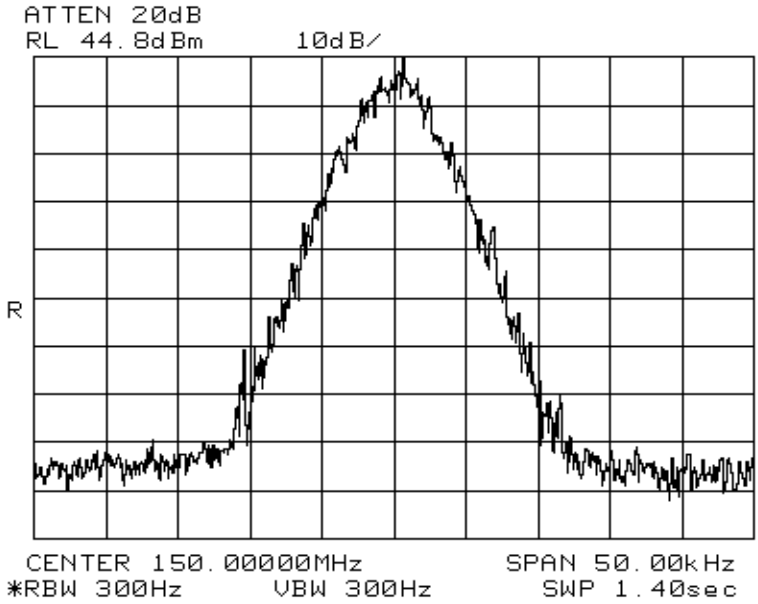
Exciter Input
Low Band, F3E



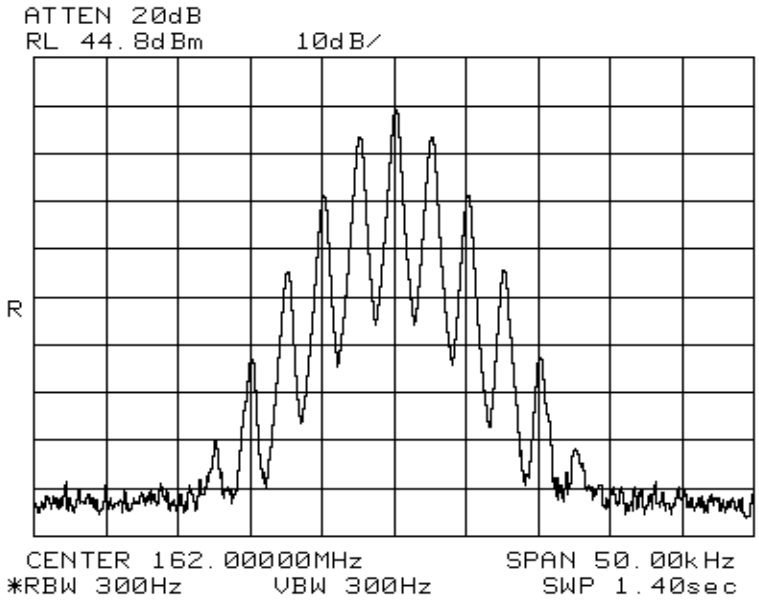
Amplifier Output
Low Band 30W, F3E



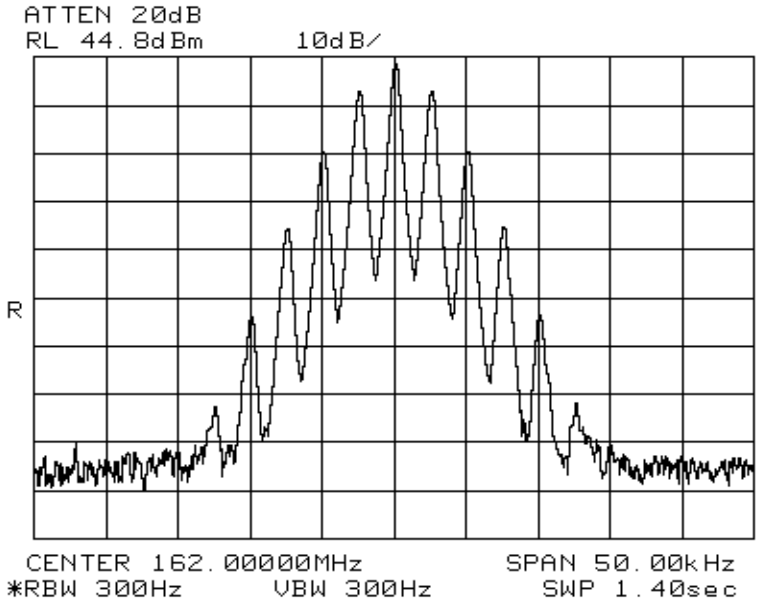
Exciter Input
Low Band, F1E



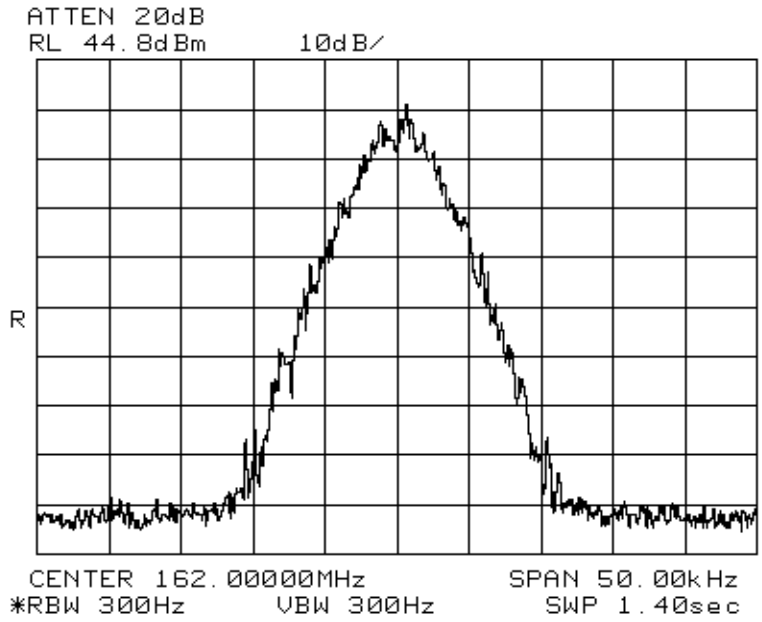
Amplifier Output
Low Band 30W, F1E



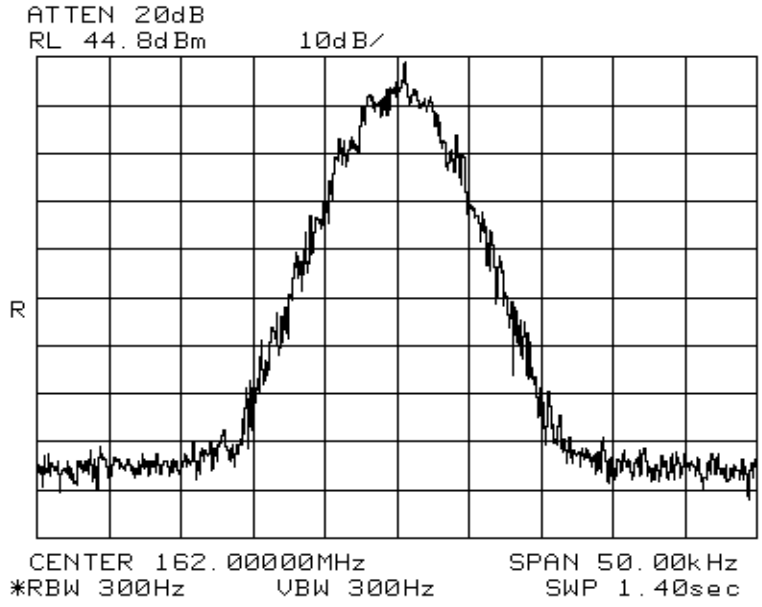
Exciter Input
Mid Band, F3E



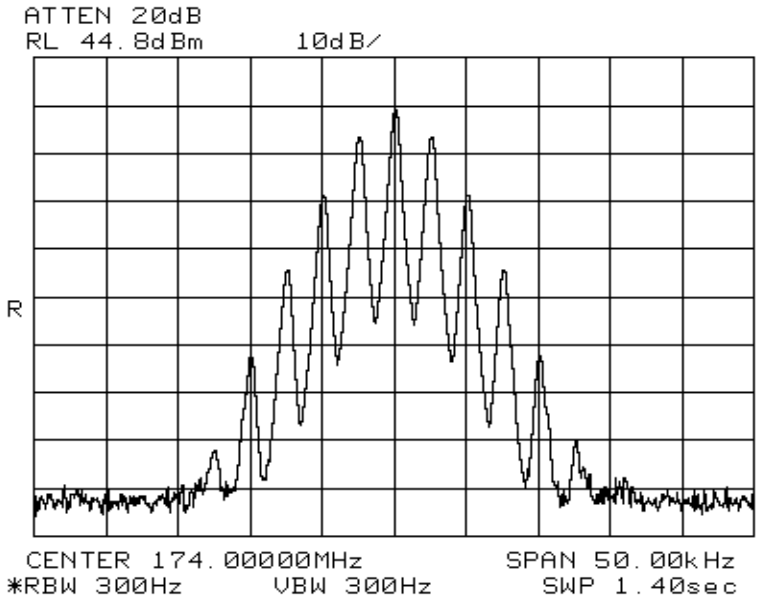
Amplifier Output
Mid Band 30W, F3E



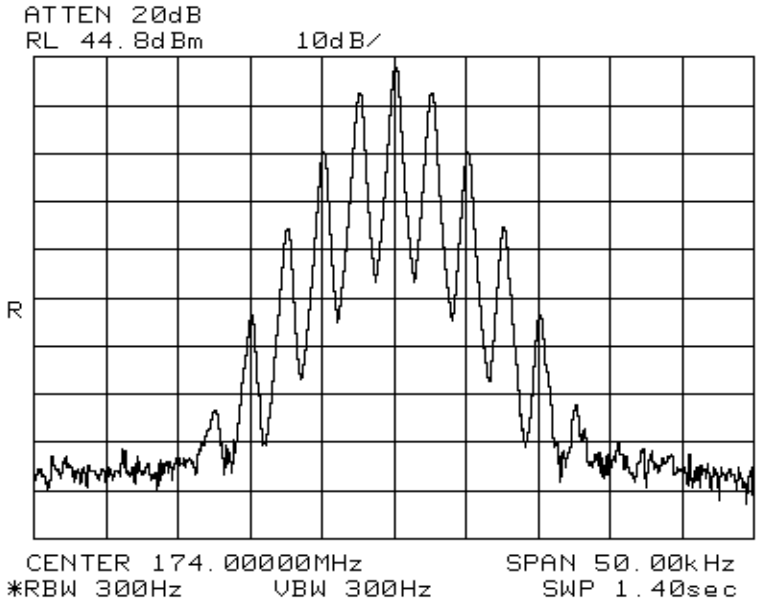
Exciter Input
Mid Band, F1E



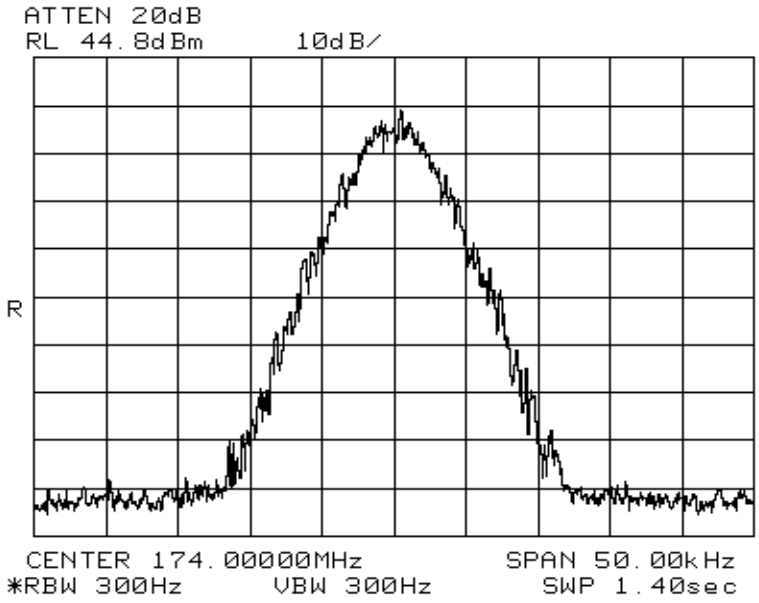
Amplifier Output
Mid Band 30W, F1E



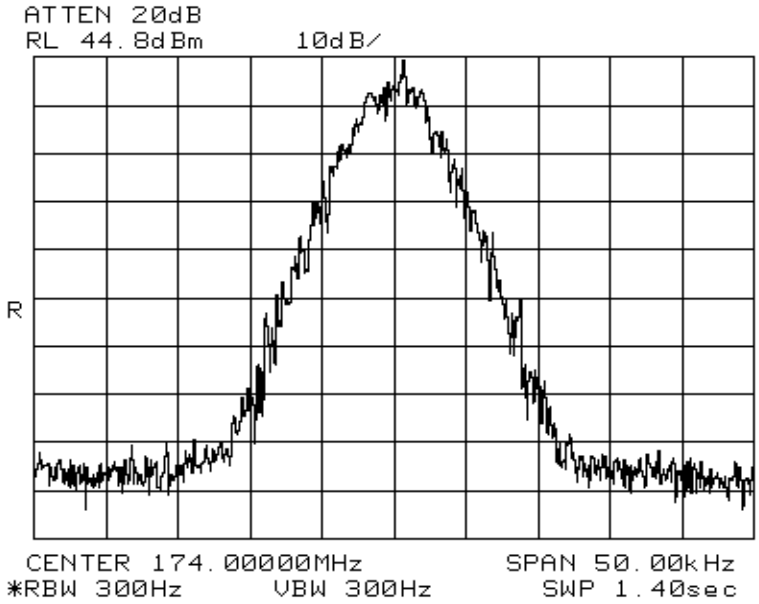
Exciter Input
High Band, F3E



Amplifier Output
High Band 30W, F3E



Exciter Input
High Band, F1E



Amplifier Output
High Band 30W, F1E

Section 5. Spurious Emissions at Antenna Terminals

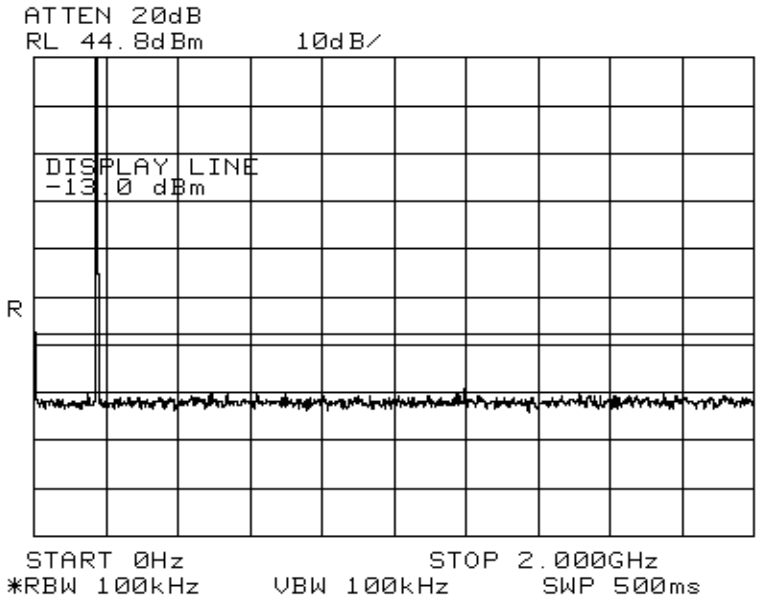
Para. No.: 2.1051

Test Performed By: Glen Westwell	**Date of Test: 5 Nov. 2003**

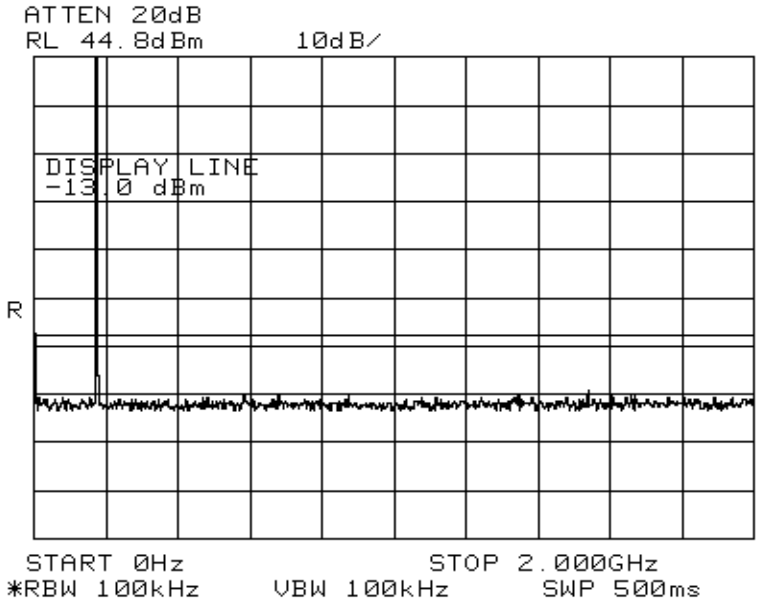
Minimum Standard: -13dBm

Test Results: Complies.

Measurement Data: See attached graphs (worst case).



Conducted Spurious
F3E



Conducted Spurious
F1E

Section 6. Field Strength of Spurious

Para. No.: 2.1053

Test Performed By: Glen Westwell	**Date of Test: 6 Nov. 2003**

Minimum Standard: -13dBm

Test Results: Complies.

Measurement Data: See attached graphs and table (worst case).

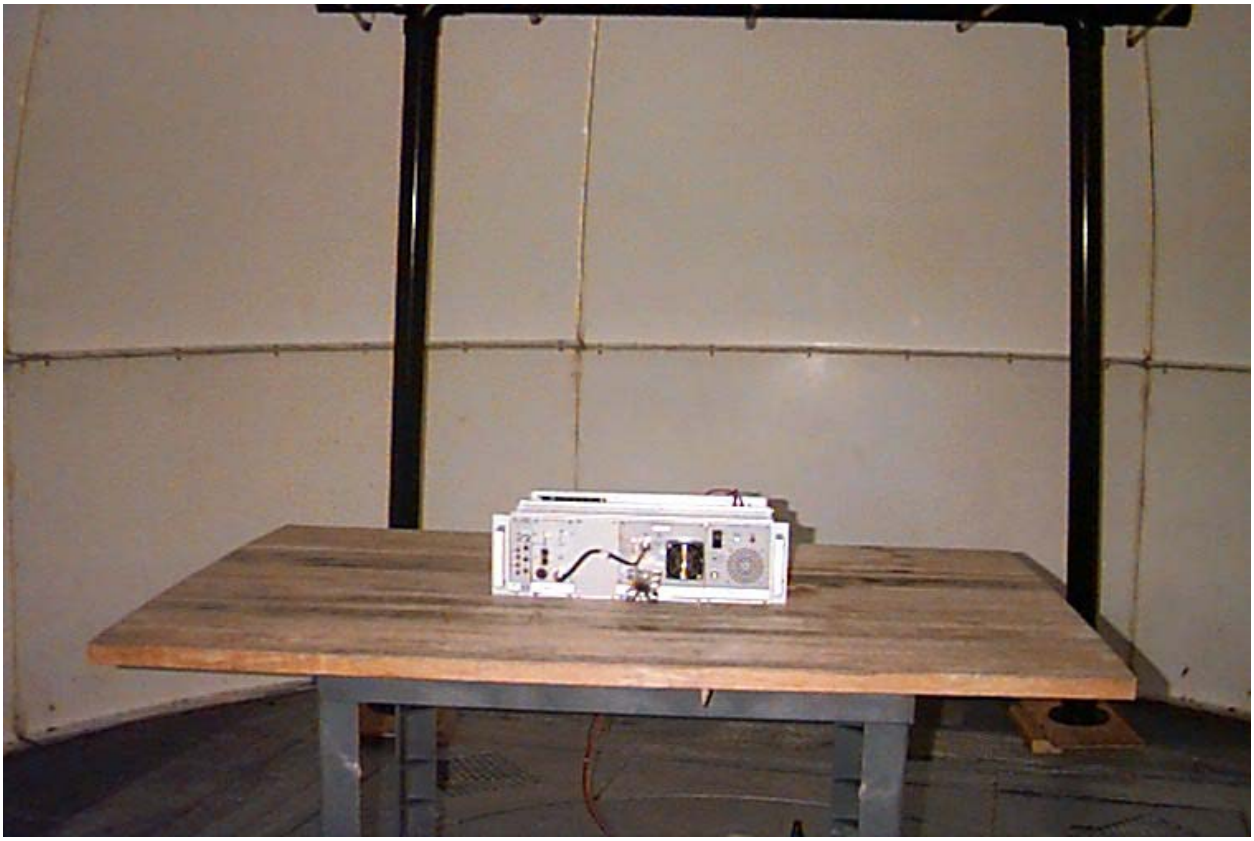
Radiated Spurious Emissions were evaluated using the signal substitution method as per ANSI/TIA/EIA-603.

Test Data-Field Strength of Harmonic & Spurious Emissions

Test Distance (meters) : 3	**Range: A**	**Receiver: HP8564E**	**RBW(kHz): 100**	**Detector: Peak**		
Freq. (MHz)	**Ant.**	**Pol (V/H)**	**RCVD Signal (dBµV)**	**Signal Substitution Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
324.0000	LP1	V	44.3	-37.8	-13.0	24.8
324.0000	LP1	H	45.0	-38.1	-13.0	25.1
486.0000	LP1	V	38.0	-41.0	-13.0	28.0
486.0000	LP1	H	35.3	-44.9	-13.0	31.9
All spurious and harmonic emissions to the 10^{th} harmonic were searched.						

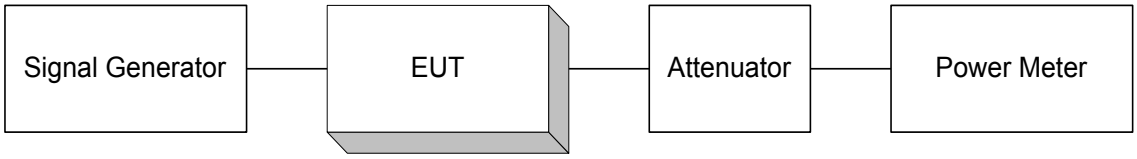
All spurious and harmonic emissions to the 10^{th} harmonic were searched.

Radiated Emissions Set-Up Photo

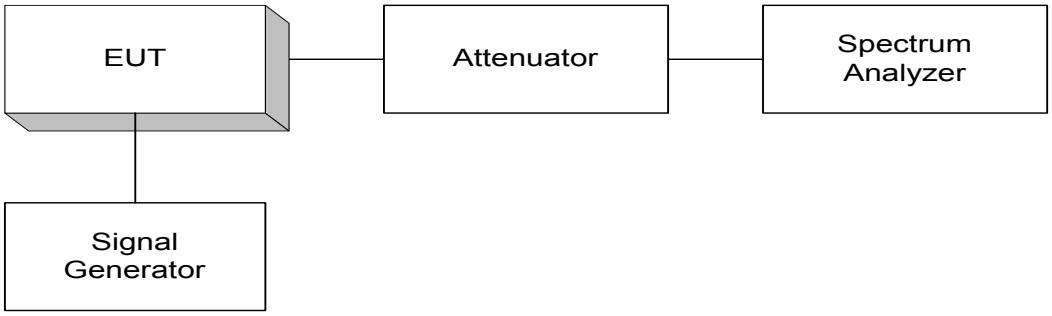


Section 7. Block Diagrams

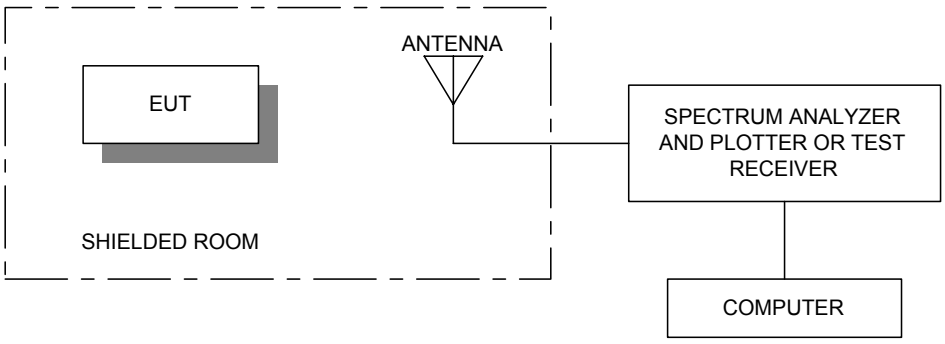
Para. No. 1046 - R.F. Power Output



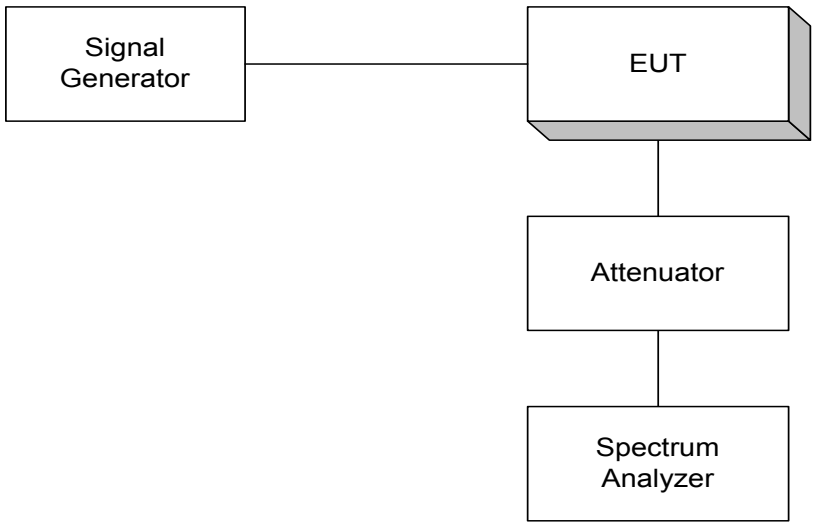
Para. No. 2.1049 - Occupied Bandwidth



Pre-Scan for Spurious emissions

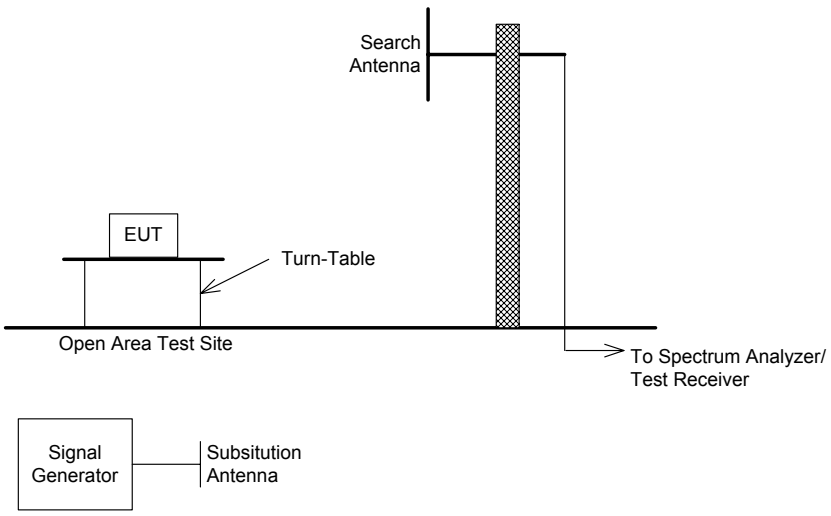


Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation

TIA/EIA 603
Effective Radiated Power
Spurious Emissions



Section 8. 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	Spectrum Analyzer-**1**	Hewlett Packard	8566B	2311A02238	27 Nov 2002	27 Nov 2003
1 Year	Spectrum Analyzer Display-**1**	Hewlett Packard	8566B	2314A04759	27 Nov 2002	27 Nov 2003
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	Radio Communications	Rohde & Schwarz	CMTA 54	FA001317	17 Oct 03	17 Oct 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