



Test Report: 3W07463

Applicant: Daniels Electronics Ltd.
43 Eire Street
Victoria, BC
V8V-1P8

**Equipment Under Test:
(EUT)** VT-3H045-SXA300
Transmitter

FCC ID: H4JVT-3H040-S-HSO

In Accordance With: **FCC Part 22,90**

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



Authorized By: Kevin Carr, EMC Specialist.

Date: 17 September 2003

Total Number of Pages: 24

Table of Contents

Section 1.	Summary of Test Results	3
Section 2.	General Equipment Specification.....	5
Section 3.	RF Power Output.....	7
Section 4.	Audio Frequency Response.....	8
Section 5.	Modulation Limiting.....	10
Section 6.	Occupied Bandwidth	12
Section 7.	Spurious Emissions at Antenna Terminals	14
Section 8.	Field Strength of Spurious Emissions	18
Section 9.	Frequency Stability.....	20
Section 10.	Test Equipment List	21
Section 11.	Test Diagrams	22

EQUIPMENT: VT-3H045-SXA300 Transmitter

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



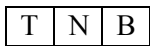
Production Unit



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. NONE
See " Summary of Test Data".



TESTED BY: _____ DATE: 12 September 2003
Glen Westwell, Wireless Technologist

Nemko Canada Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report applies only to the items tested.

*EQUIPMENT: VT-3H045-SXA300 Transmitter***Summary Of Test Data**

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	Complies
Modulation Limiting	2.1047	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	Complies

Indoor

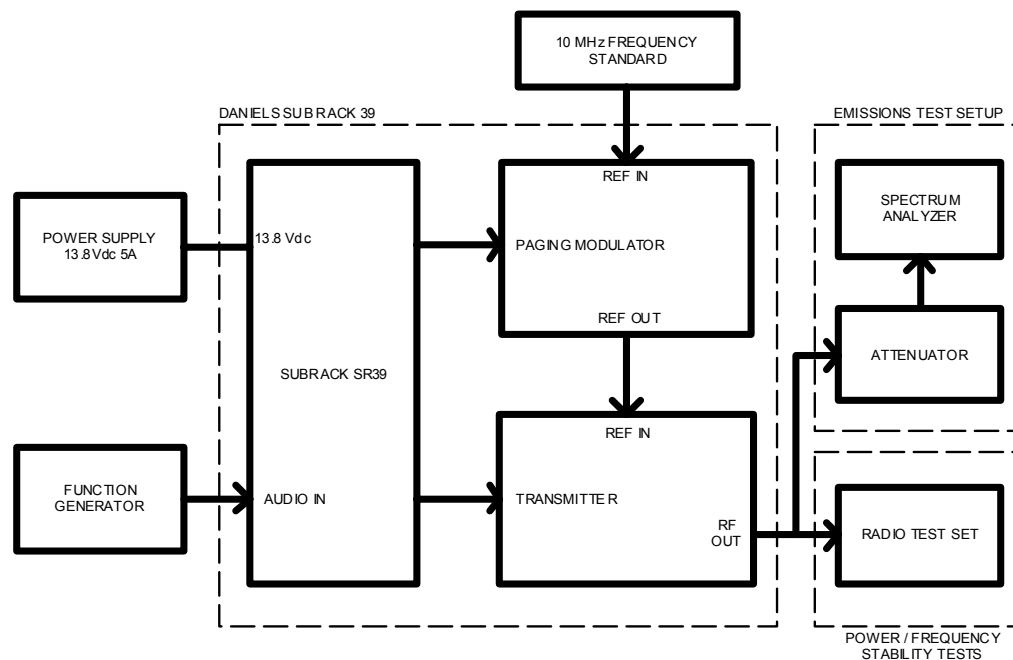
Temperature: 25°C

Humidity: 37 %

Outdoor

Temperature: 20°C

Humidity: 43 %

Test Arrangement Diagram :

EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 2. General Equipment Specification

Manufacturer: Daniels Electronics Ltd.

Model No.: VT-3H045-SXA300

Serial No.: 10369,10370,10371

Date Received In Laboratory: Aug. 26, 2003

Nemko Identification No.: 1

Primary Power: 13.8Vdc

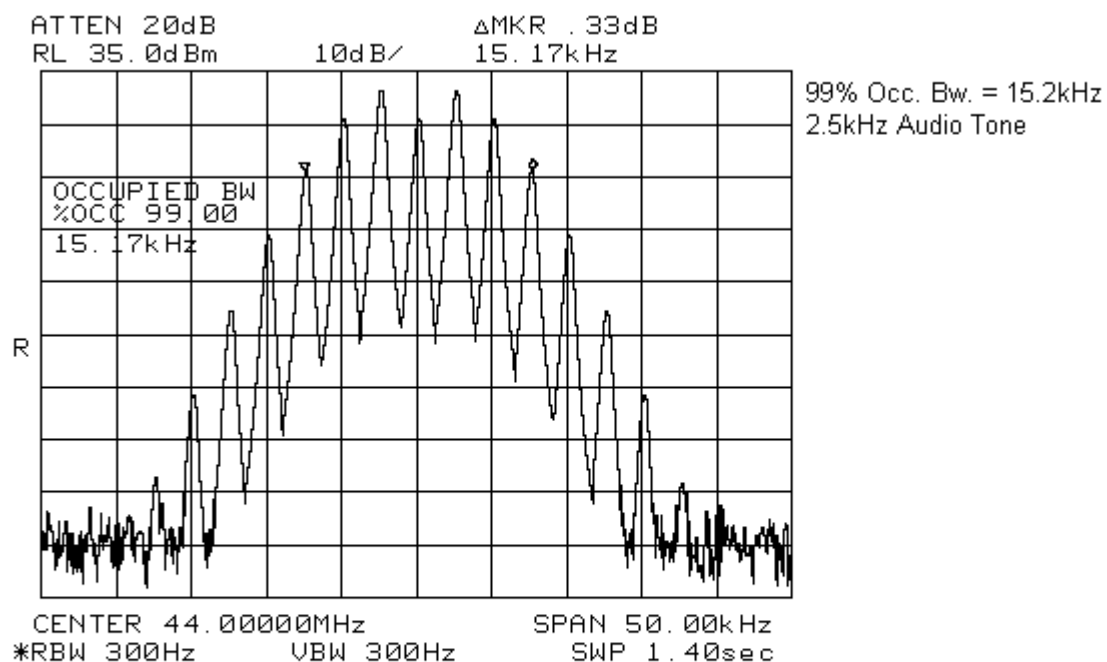
Modulation: FM

Emission Designator: 16K0F3E

Power Output: 3.0W, (34.8dBm)
Channel Spacing: 25 kHz

Frequency Range: 29-50MHz

EQUIPMENT: VT-3H045-SXA300 Transmitter



EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	Date of Test: 8 Sept. 2003
---	-----------------------------------

Minimum Standard: 90.205, 22.535

Test Results: Complies

Measurement Data:

Conducted Power	Rated (dBm)	Measured (dBm)	Delta (dB)
High Band	34.8	35.1	0.3
Mid Band	34.8	35.0	0.2
Low Band	34.8	35.0	0.2

EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 4. Audio Frequency Response

Para. No.: 2.1047

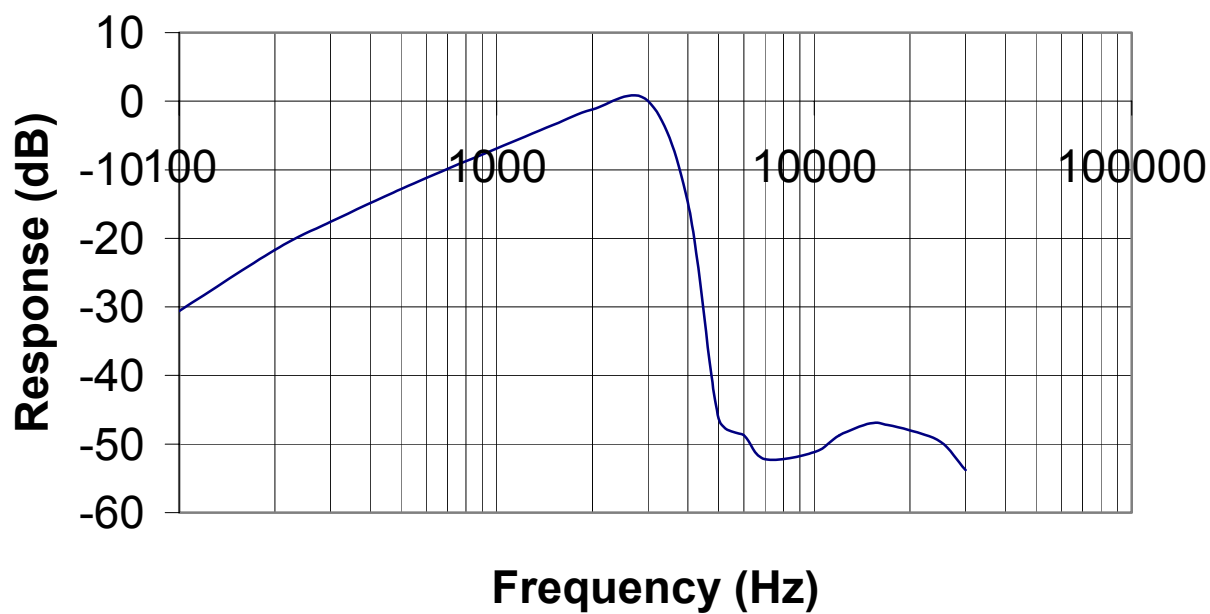
Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2003
---	------------------------------------

Minimum Standard: N/A

Test Results: Complies

Measurement Data: See attached graph.

Audio Frequency Response



EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 5. Modulation Limiting

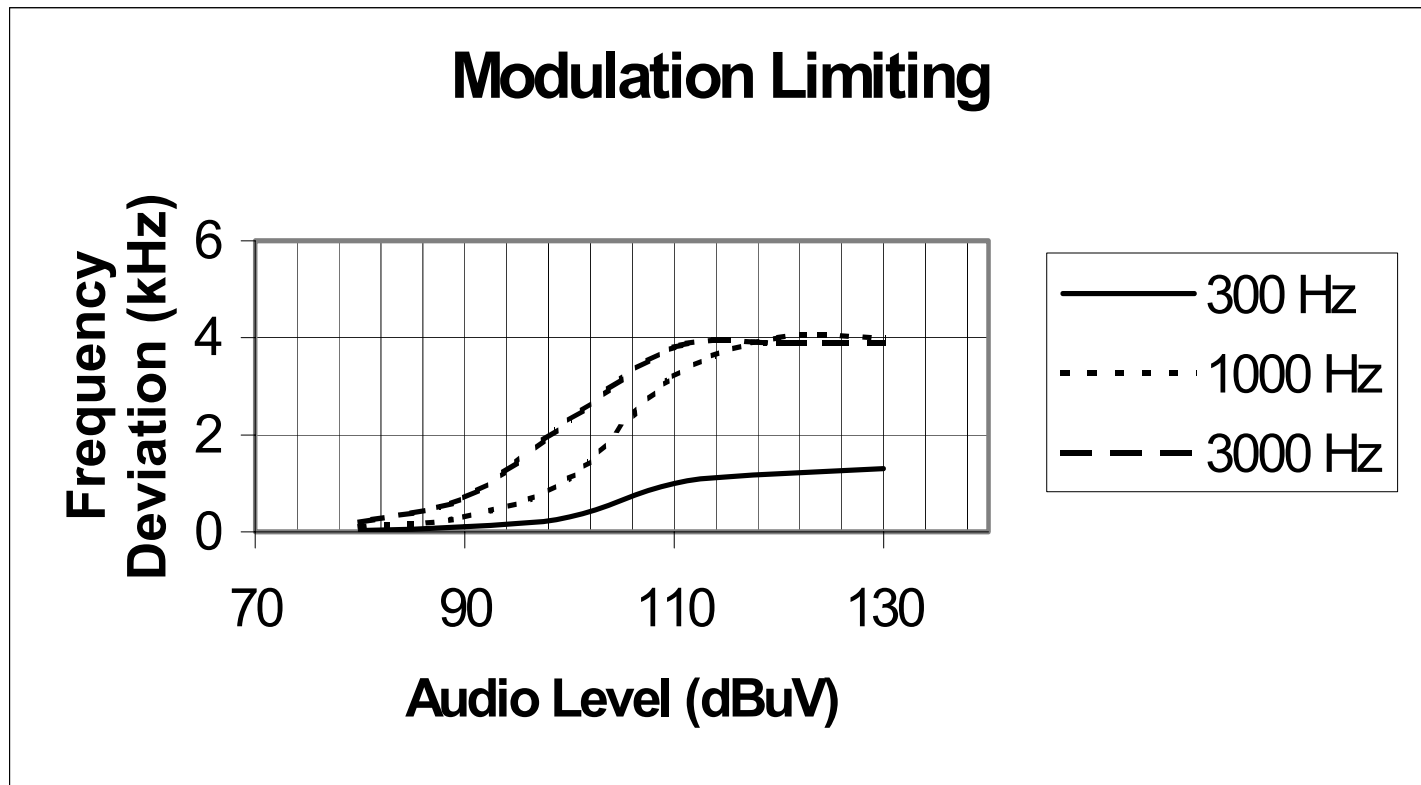
Para. No.: 2.1047

Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2003
---	------------------------------------

Minimum Standard: N/A

Test Results: Complies

Measurement Data: See attached graph.



EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 6. Occupied Bandwidth

Para. No.: 2.1049

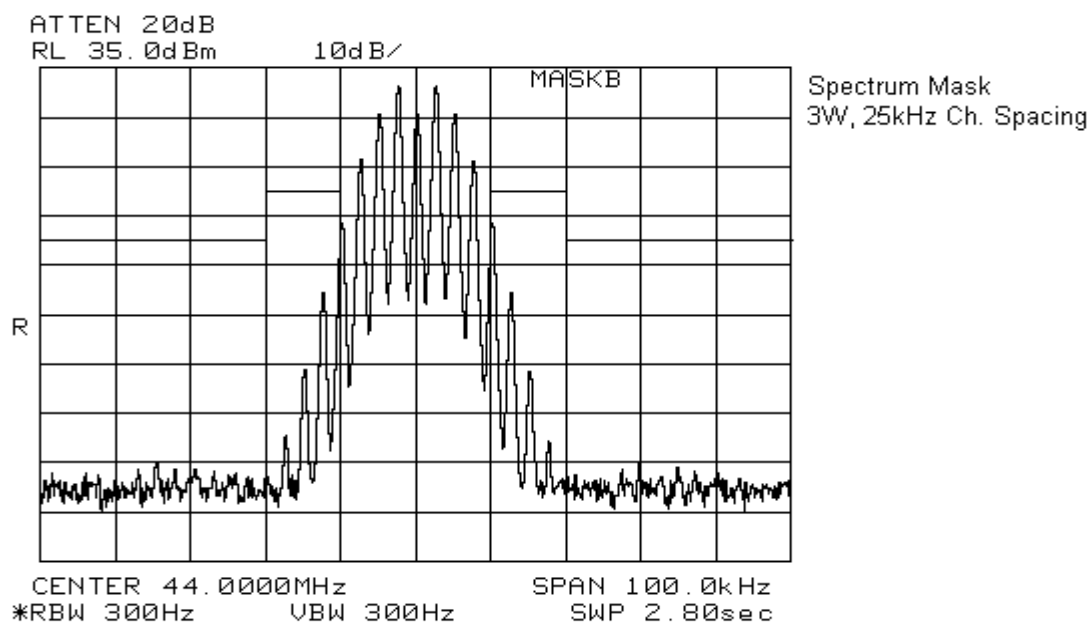
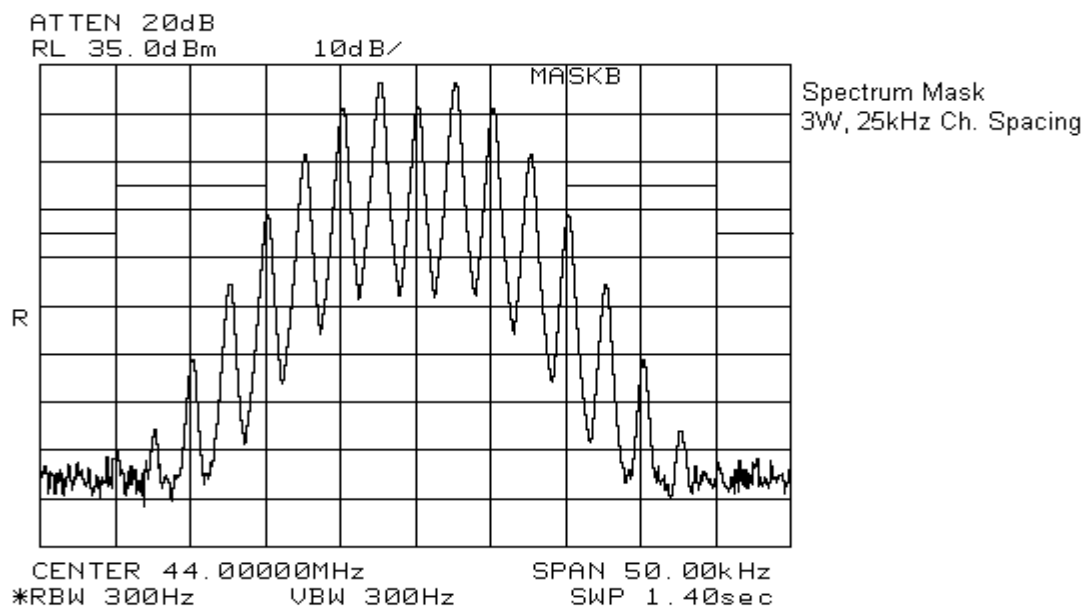
Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2003
---	------------------------------------

Minimum Standard: Mask B

Test Results: Complies

Measurement Data: See attached graphs.

EQUIPMENT: VT-3H045-SXA300 Transmitter



EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 7. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

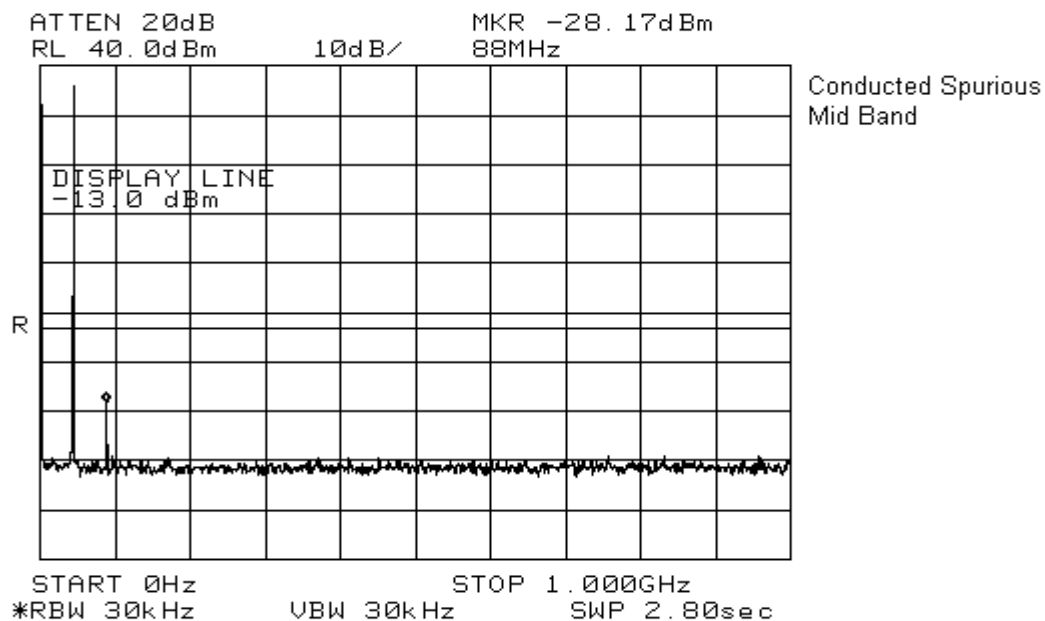
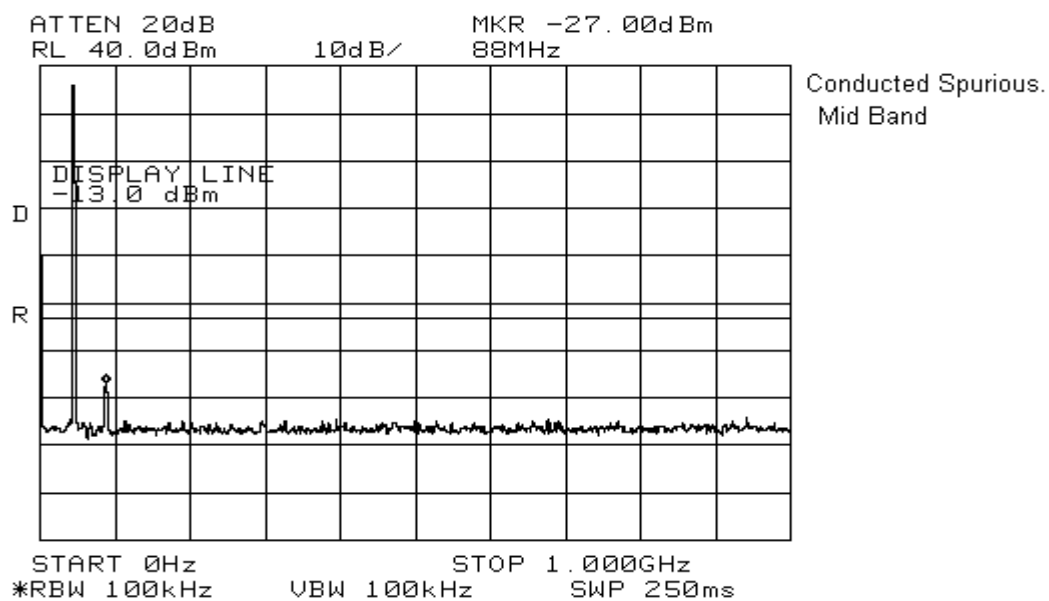
Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2003
---	------------------------------------

Minimum Standard: -13 dBm

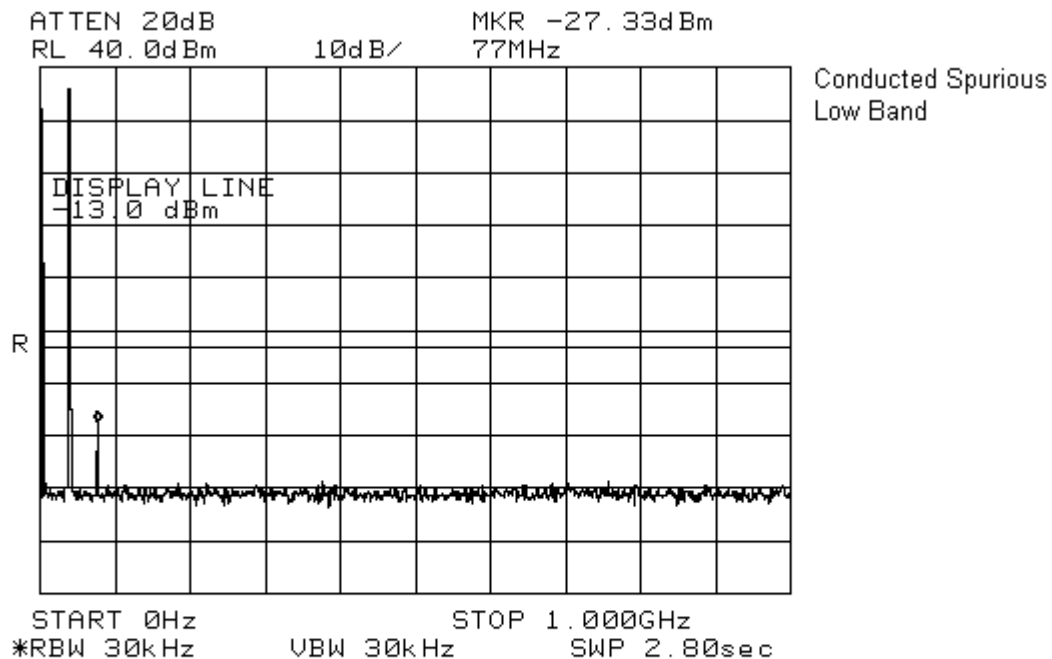
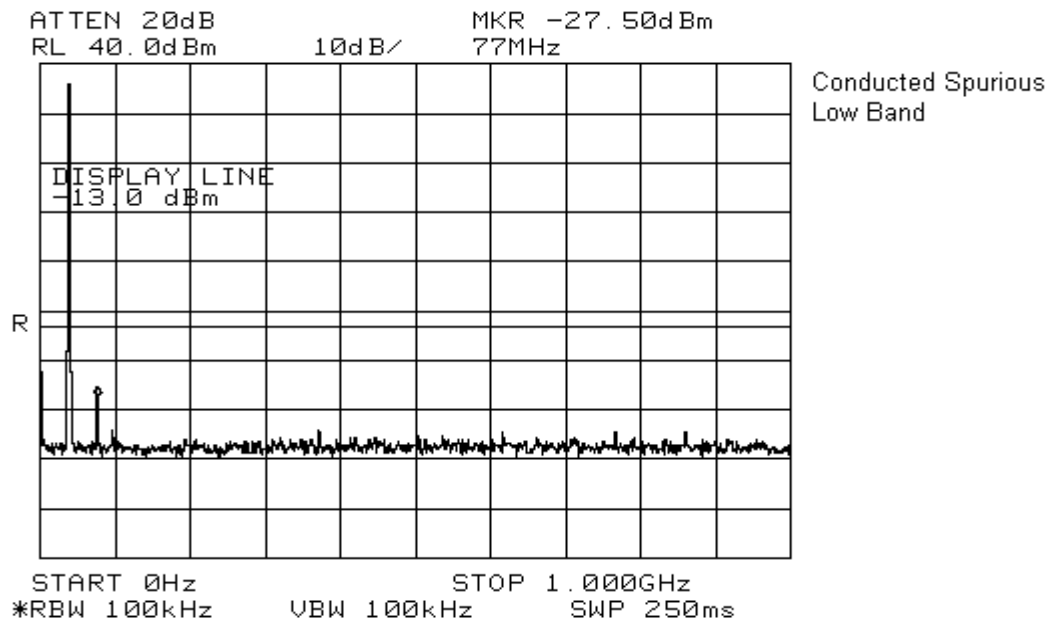
Test Results: Complies

Measurement Data: See attached graph.

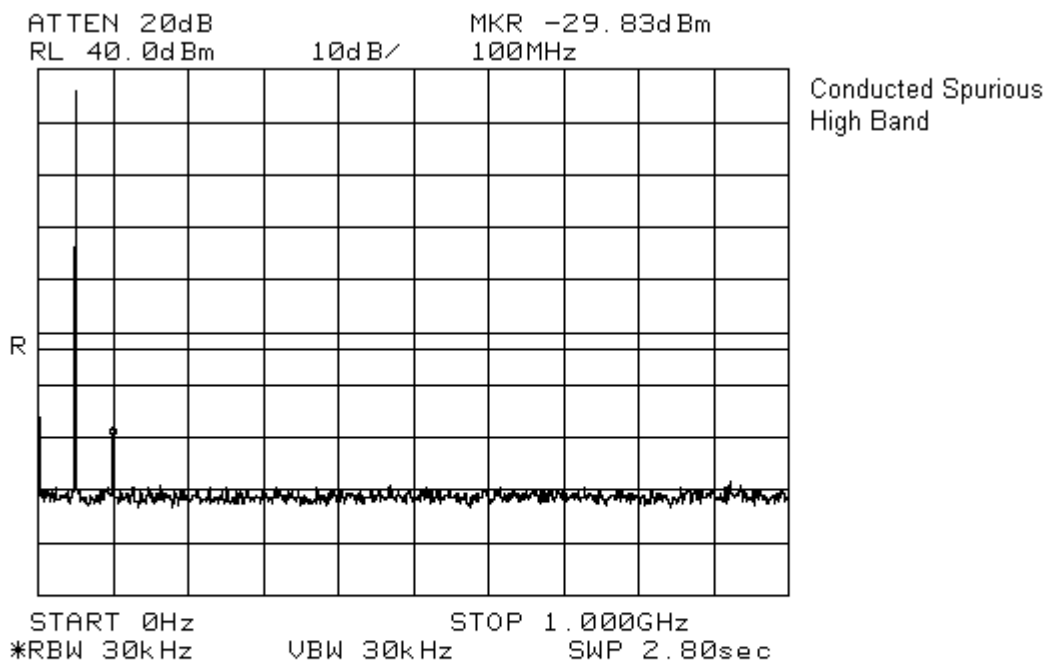
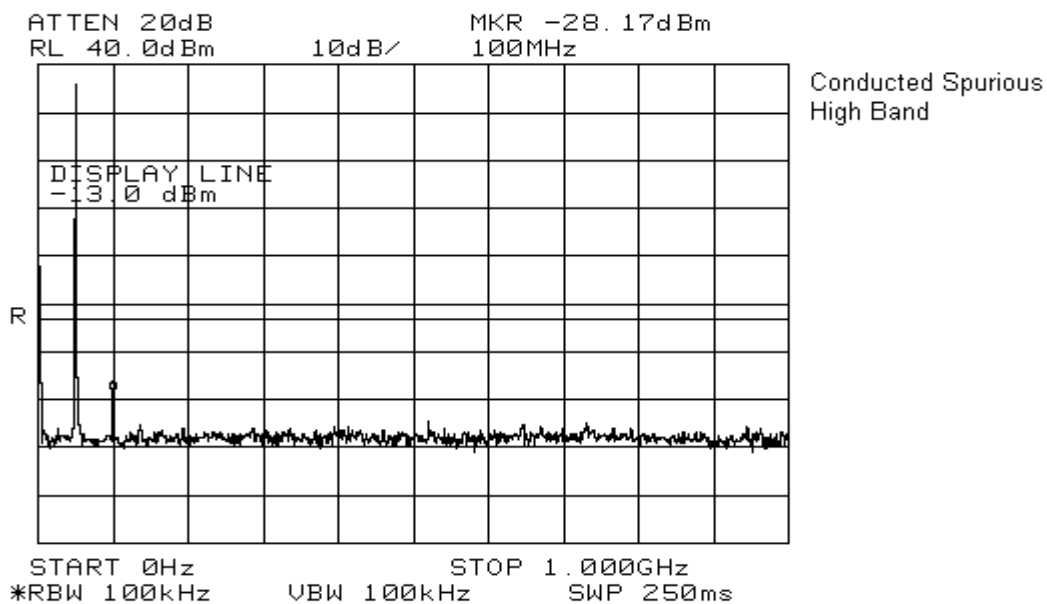
EQUIPMENT: VT-3H045-SXA300 Transmitter



EQUIPMENT: VT-3H045-SXA300 Transmitter



EQUIPMENT: VT-3H045-SXA300 Transmitter



Section 8. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	Date of Test: 9 Sept., 2003
---	------------------------------------

Minimum Standard: -13 dBm

Test Results: Complies

Measurement Data: No Emissions were detected.
Emissions were searched up to the 10th harmonic.

EQUIPMENT: VT-3H045-SXA300 Transmitter

Pre-Scan Photo



OATS Radiated Emissions Photo



EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 9. Frequency Stability

Para. No.: 2.1055

Test Performed By: Glen Westwell**Date of Test: 8 Sept., 2003****Minimum Standard: 20ppm/0.002% (880Hz)****Test Results:** Complies.The maximum frequency drift is 2Hz.
This is 0.045ppm/0.0000045%.**Measurement Data:** Standard Test Voltage: STV: 13.8Vdc
Standard Test Freq: 44 000.000KHz

Test Condition	Frequency (kHz)	Frequency Drift (Hz)
STV	44 000 .000	0
115% STV	44 000 .000	0
85% STV	44 000 .000	0
-30 °C	44 000 .001	1.0
-20 °C	44 000 .000	0
-10 °C	44 000 .002	2.0
0 °C	44 000 .002	2.0
+10 °C	44 000 .002	2.0
+30 °C	44 000 .000	0
+40 °C	44 000 .000	0
+50 °C	44 000 .000	0

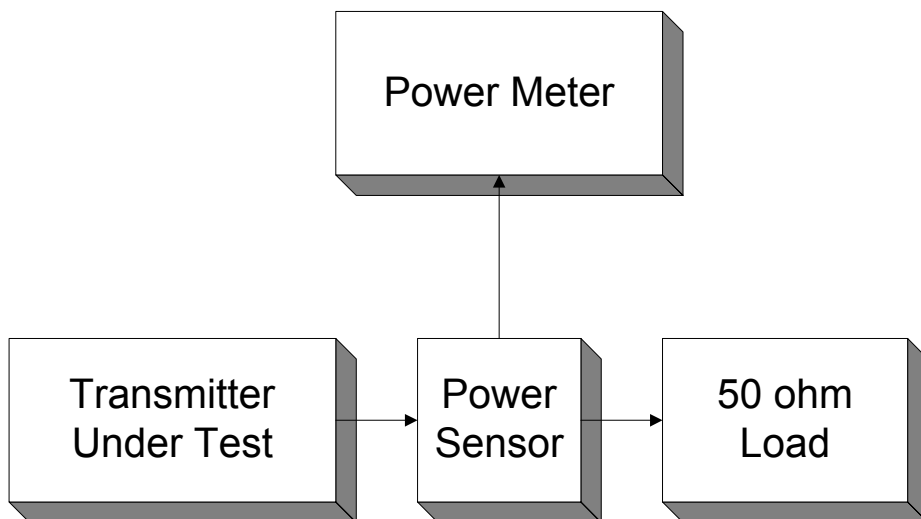
EQUIPMENT: VT-3H045-SXA300 Transmitter

Section 10. Test Equipment List**RADIO TEST EQUIPMENT LIST**

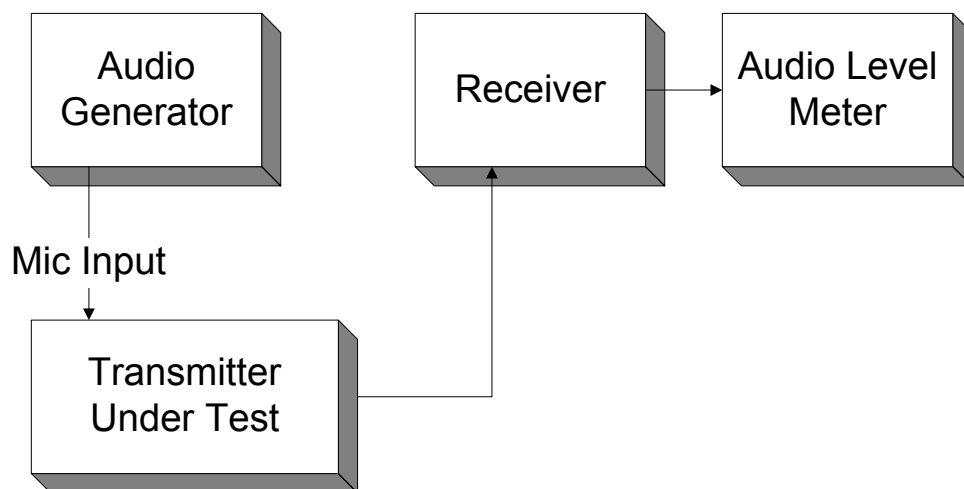
CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	FA01367	13 May 03	13 May 04
1 Year	Radio Communications	Rohde & Schwarz	CMTA 54	840343/013	23 Oct 02	23 Oct 03
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	16 Jan 03	16 Jan 04
1 Year	Selective Level Meter	Anritsu	ML422C	FA001552	21 Oct 2002	21 Oct 2003
1 Year	Attenuator	Winschel	47-10-34	FA001740	COU	COU
1 Year	Attenuator	Narda	769-20	FA001394	COU	COU
1 Year	Power Meter	Hewlett Packard	E4418B	FA001678	01 Apr 03	01 Apr 04
1 Year	Power Sensor	Hewlett Packard	8487A	FA001741	28 Mar 03	28 Mar 04
1 Year	Receiver	Rohde & Schwarz	ESVP	FA000871	Nov. 15/02	Nov. 15/03
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	April. 15/03	April. 15/04
1Year	Frequency Counter	Hewlett Packard	HP5350A	2444A00135	2 Apr. 03	2 Apr 04
1 Year	Log Periodic Antenna #2	EMCO	3148	FA001355	May. 09/03	May. 09/04

Section 11. Test Diagrams

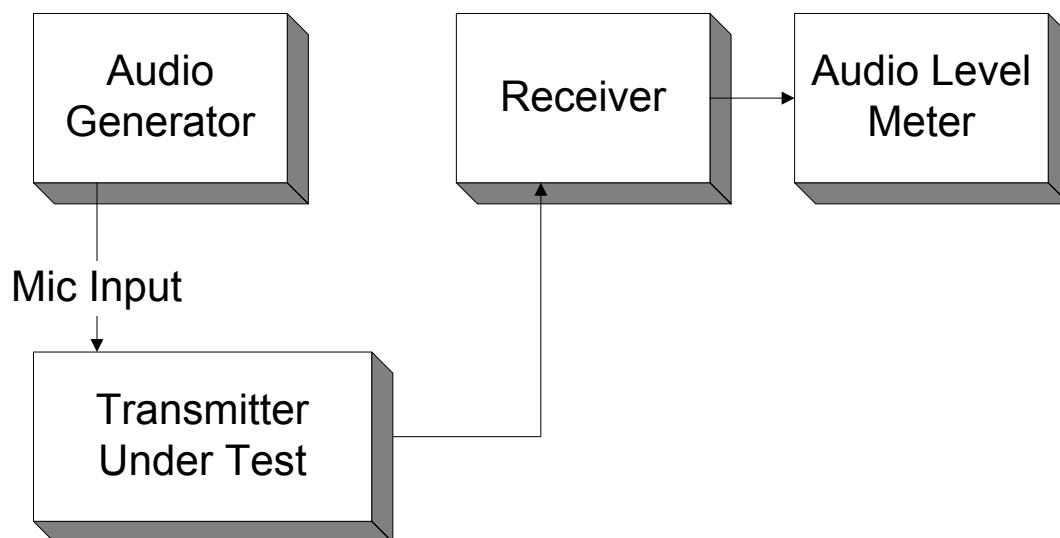
Para. No. 2.1046 - R.F. Power Output



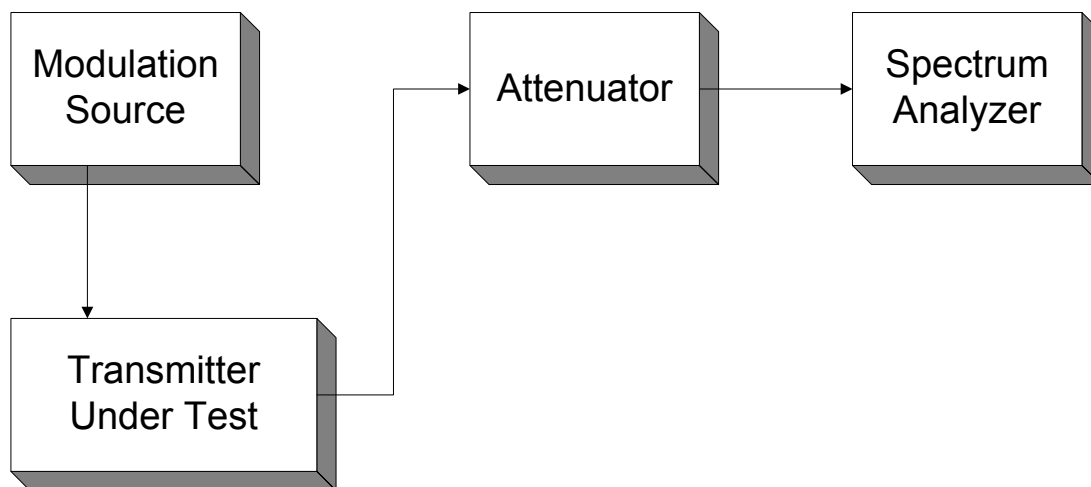
Para. No. 2.2.1047 - Audio Frequency Response



Para. No. 2.1047 - Modulation Limiting

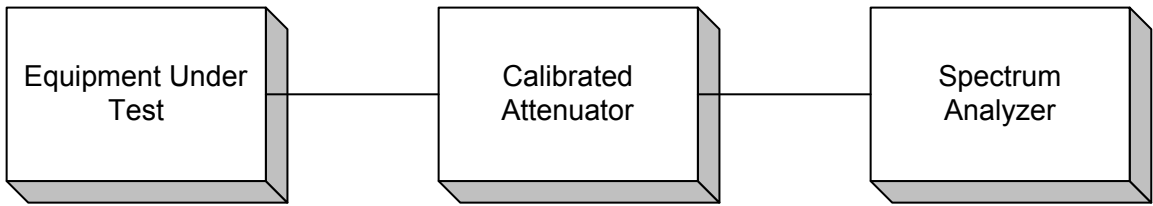


Para. No. 2.1049 - Occupied Bandwidth

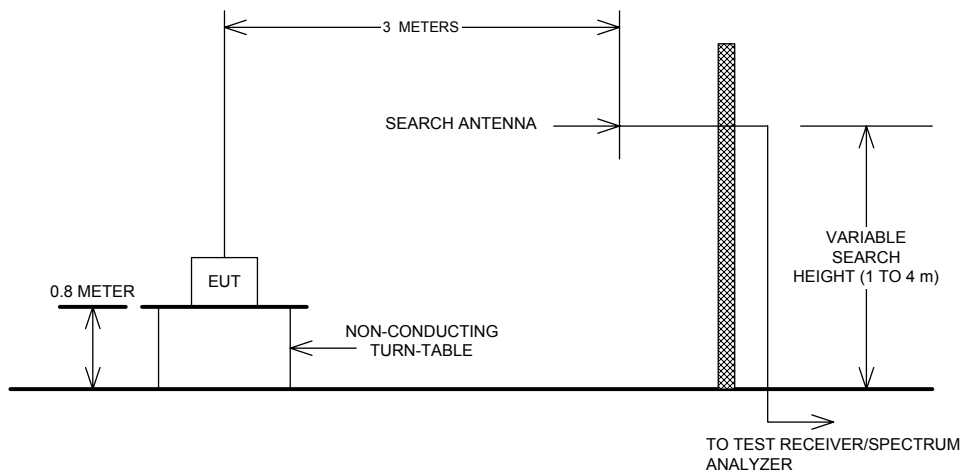


EQUIPMENT: VT-3H045-SXA300 Transmitter

Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation



Para. No. 2.1055 - Frequency Stability

