Test Report:	3W06782
Applicant:	Rohde & Schwarz 555 March Road, Kanata Ontario K2K 2M5
Equipment Under Test: (EUT)	XT4410A VHF Transceiver
FCC ID:	KVW61020307
In Accordance With:	FCC Part 87, Subpart D
Tested By:	Nemko Canada Inc. 303 River Road, R.R. 5 Ottawa, Ontario K1V 1H2
Authorized By:	Glen Westwell, Wireless Technologist
Date:	23 May 2003
Total Number of Pages:	23

Table of Contents

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 87, Subpart D.

Equipment Type: TNB
Production Unit

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: 23 May 2003
Russell Grant,

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	Complies
Audio Low-Pass Filter Response	2.1047	N/A (1)
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

(1) This equipment does not use frequency modulation. Therefore there is no requirement for an audio low pass filter.

.

Section 2. General Equipment Specification

Manufacturer:	Rohde & Schwarz
Model No.:	XT4410A
Serial No.:	100013
Date Received In Laboratory:	April 17, 2003
Nemko Identification No.:	1
TX/RX	118 – 136.975 MHz
RF Power Output	3 – 30 W
Modulation	Double Sideband AM Voice
Modulation Limit	90% AM
Emission Designator	6K00A3E
Equipment Under Test	ROHDE & SCHWARZ M3SR XT4410A TRANSCEIVER P/N 6102.0307.91 S/N 100013 ROHDE & SCHWARZ AC POWER SUPPLY M/N IN 4000A P/N 6105.5500.03 S/N 100166 / 2003988

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Russell Grant	**Date of Test: April 29, 2003**

Minimum Standard: 87.131, 50W

Test Conditions: 120VAC
27°C, 16%RH

Test Results: Complies. The maximum RF output power is 41.3 W with 90% AM modulation. The carrier power is within –0.3 dB of the manufacturer's rating of RF power output.

Measurement Data:

TX 128 MHz
Modulated 2500 Hz, 16 dB overdrive, ref: 50% AM, 1000 Hz

Carrier Power			Mean Power		
Rated	Measured	(Measured/Rated) dB	Rated	Measured	(Measured/Rated) dB
30.0	29.2	-0.1	42.2	41.3	-0.1
3.0	2.8	-0.3	4.2	4.0	-0.2

Note: Mean power rating is based on the limit of 90% AM.
This is equivalent to 1.405 x carrier power.

Carrier power is the average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle taken under the condition of no modulation.

Mean power is the average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

Section 4. Audio Frequency Response

Para. No.: 2.1047

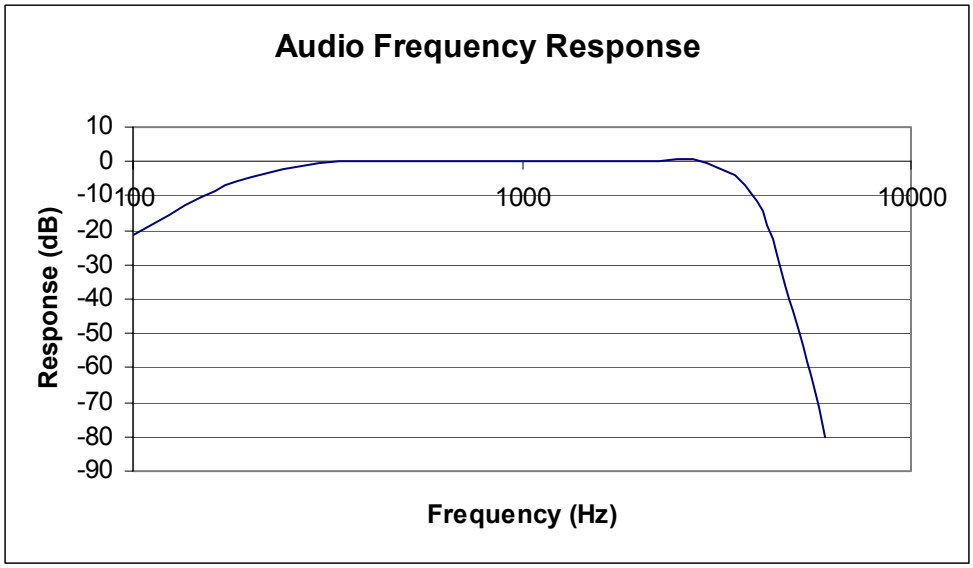
Test Performed By: Russell Grant	**Date of Test: April 30, 2003**

Minimum Standard: N/A

Test Conditions: 120VAC
22°C, 16%RH

Test Results: See attached graph.

Measurement Data:



Section 5. Audio Low-Pass Filter Response

Para. No.: 2.1047

Test Performed By:	**Date of Test:**

Minimum Standard:

Test Conditions:

Test Results: N/A

Measurement Data:

Section 6. Modulation Limiting

Para. No.: 2.1047

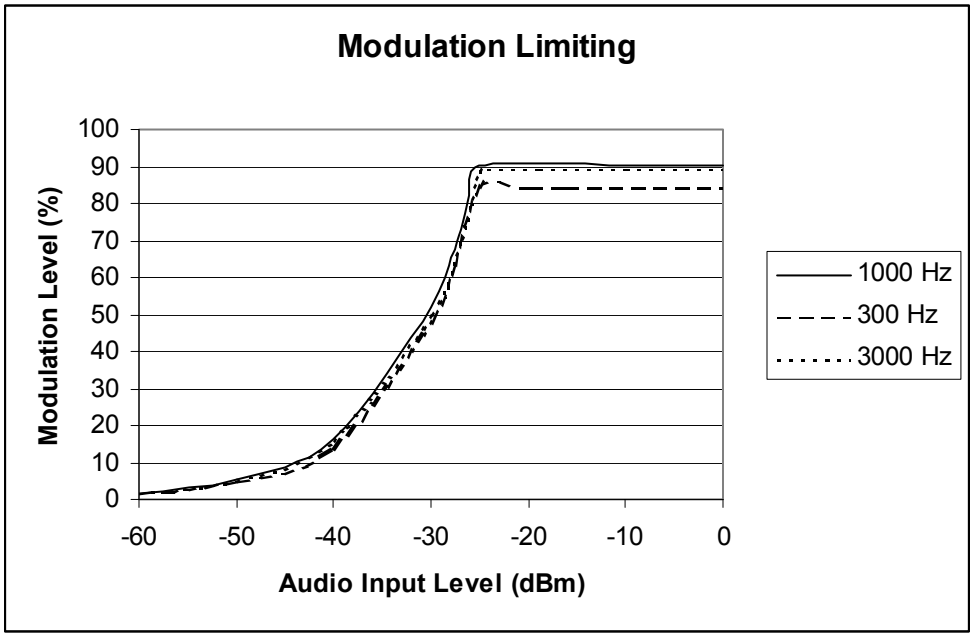
Test Performed By: Russell Grant	**Date of Test: April 30, 2003**

Minimum Standard: 87.141(b) 100%

Test Conditions: 120VAC
22°C, 16%RH

Test Results: Complies. The maximum AM modulation level is 90.3% @ 1000 Hz.

Measurement Data: See attached graph.



Section 7. Occupied Bandwidth

Para. No.: 2.1049

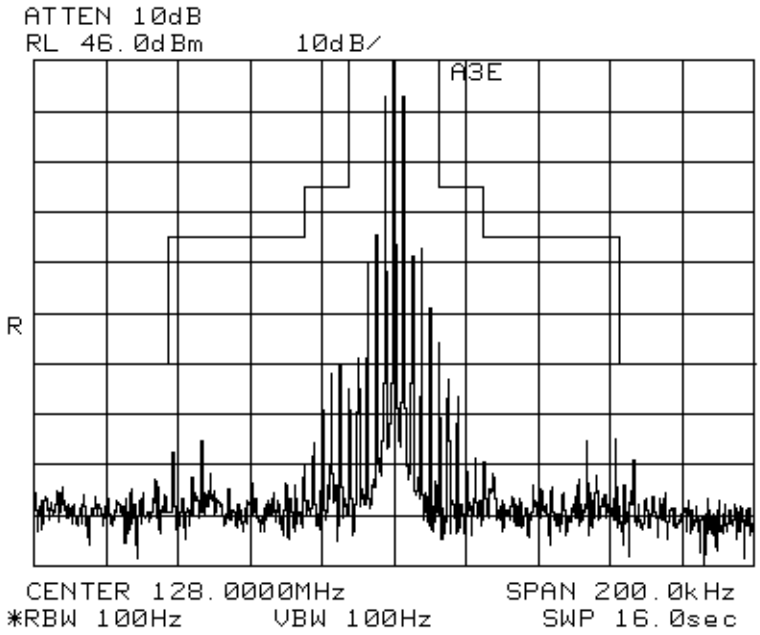
Test Performed By: Russell Grant	**Date of Test: April 30, 2003**

Minimum Standard: 87.139(a)

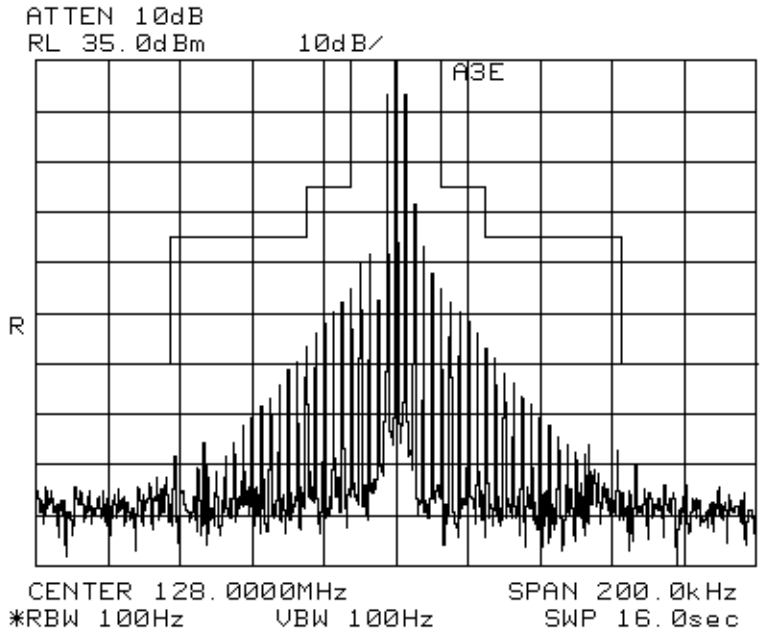
Test Conditions: 120VAC
22°C, 16%RH

Test Results: Complies. See attached graphs.

Test Data: See attached graphs.



6K00A3E
TX 128 MHz ,30 Watts
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)
Authorized Bandwidth: 25 kHz, 87.137(a)
$43 + 10Log(30) = 57.8dB$



6K00A3E
TX 128 MHz, 3 Watts
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)
Authorized Bandwidth: 25 kHz, 87.137(a)
$43 + 10Log3 = 47.8dB$

Section 8. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

Test Performed By: Russell Grant	**Date of Test: April 30, 2003**

Minimum Standard: 87.139(a)(3), -13 dBm

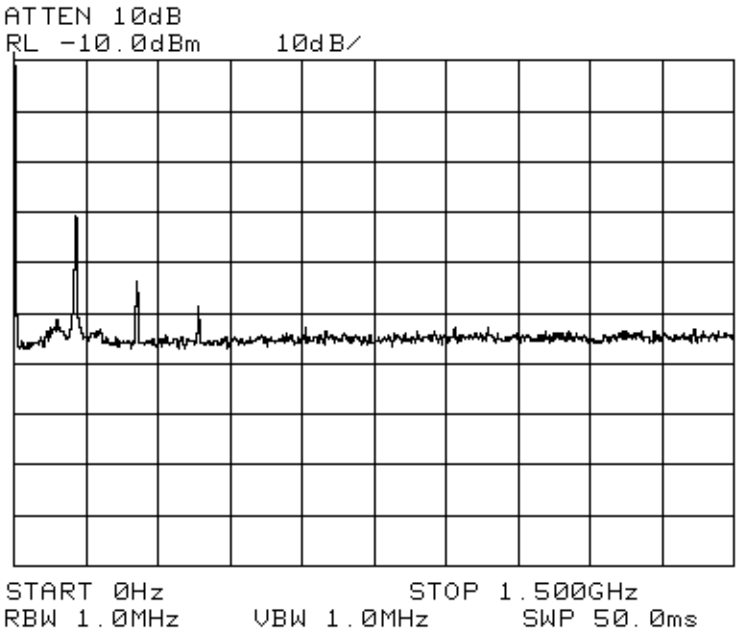
Test Conditions: 120VAC
22°C, 16%RH

Test Results: Complies. The strongest emission is –34 dBm at 256 MHz. This is 21 dB below the specification limit. The spectrum was searched from 30 to 1280 MHz using a spectrum analyzer set to positive peak detector, 1 MHz RBW/VBW. A notch filter was used to suppress the fundamental emission. Measurements were made using signal substitution method.

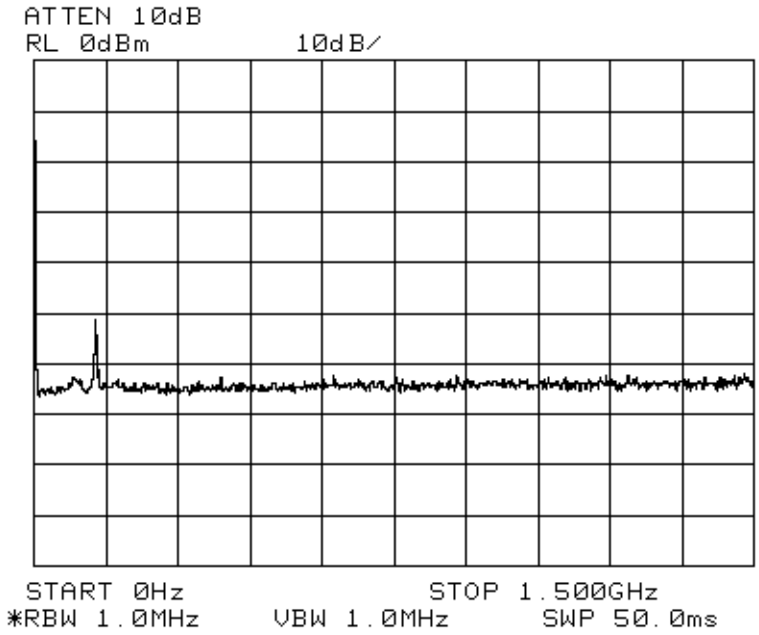
Test Data: See attached graphs.

TX 128 MHz, 30 Watts

Frequency of Emission (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
256	-34	-13	21
384	-38	-13	25



For frequency identification only.
A notch filter was used to suppress the fundamental emission.
See tabulated data. Measured using signal substitution method.
6K00A3E
TX 128 MHz, 30 Watts
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)
Authorized Bandwidth: 25 kHz, 87.137(a)



For frequency identification only.
A notch filter was used to suppress the fundamental emission.
See tabulated data. Measured using signal substitution method.
6K00A3E
TX 128 MHz, 3 Watts
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)
Authorized Bandwidth: 25 kHz, 87.137(a)

Section 9. Field Strength of Spurious Emissions

Para. No.: 2.1053

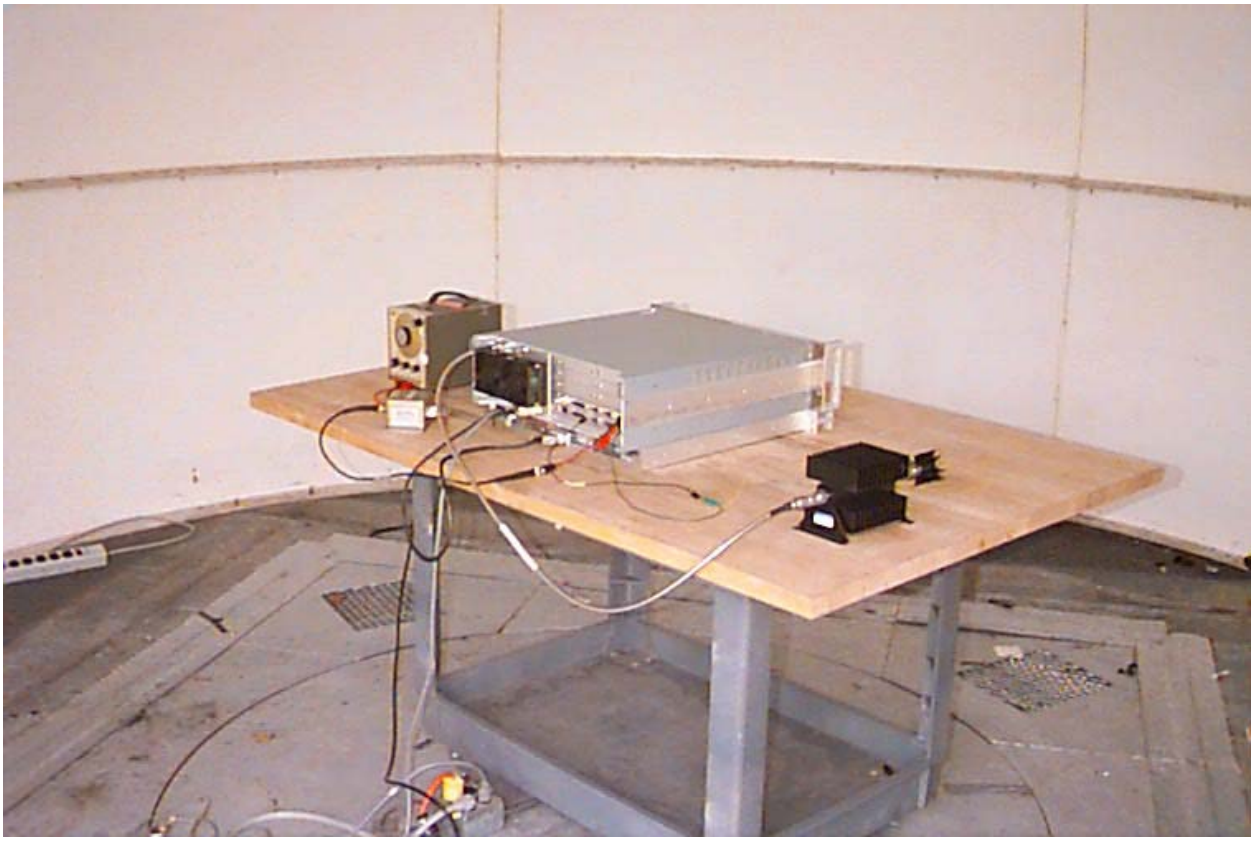
Test Performed By: Russell Grant	**Date of Test: May 1, 2003**

Minimum Standard: 87.139(a)(3), -13 dBm

Test Conditions: 120VAC
23°C, 30%RH

Test Results: Complies. No emissions were detected within 20 dB of the specification limit. The spectrum was searched from 30 to 1280 MHz.

Test Data: No emissions detected



TX 128 MHz, 30 Watts
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

Section 10. Frequency Stability

Para. No.: 2.1055

Test Performed By: Russell Grant	**Date of Test: April 29, 2003**

Minimum Standard: 87.133(a), 20 ppm

Test Conditions: As per measurement data.

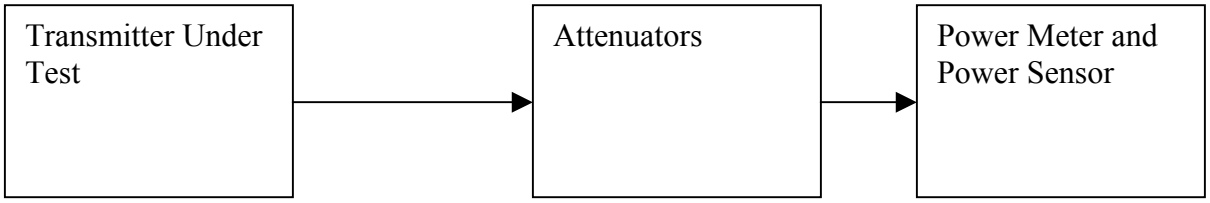
Test Results: Complies. The maximum frequency drift is 1 Hz. This is 0.00781 ppm.

Test Data:
Test Frequency: 128.000 MHz
Standard Test Voltage: 120 VAC, 60 Hz
Humidity 18%

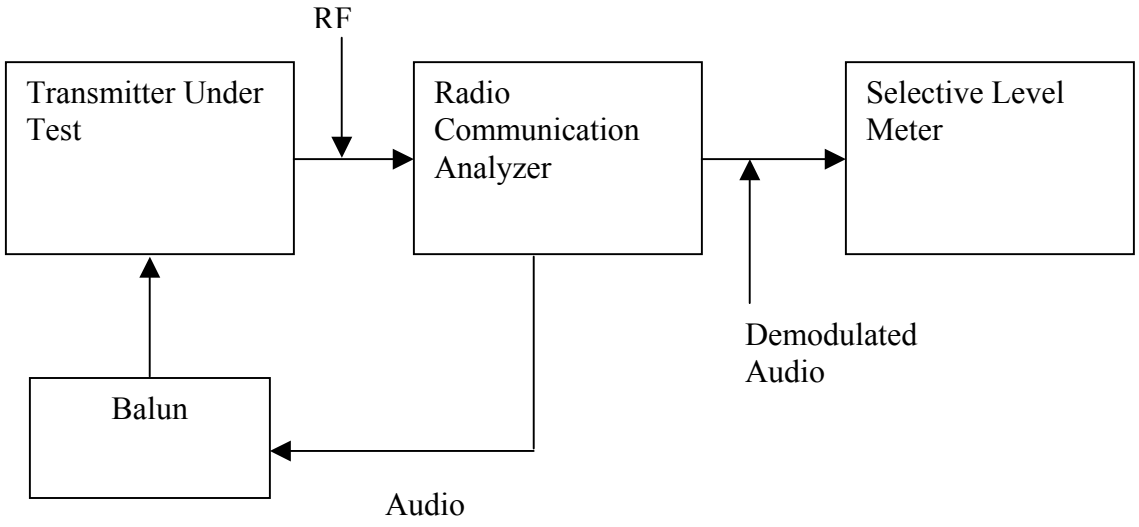
Test Condition	Frequency (MHz)	Frequency Drift (Hz)
50°C, 120 VAC	127.999999	-1
40°C, 120 VAC	127.999999	-1
30°C, 120 VAC	127.999999	-1
20°C, 138 VAC	127.999999	-1
20°C, 120 VAC	127.999999	-1
20°C, 102 VAC	127.999999	-1
10°C, 120 VAC	127.999999	-1
0°C, 120 VAC	127.999999	-1
-10°C, 120 VAC	127.999999	-1
-20°C, 120 VAC	127.999999	-1
-30°C, 120 VAC	127.999999	-1

Section 11. Block Diagrams

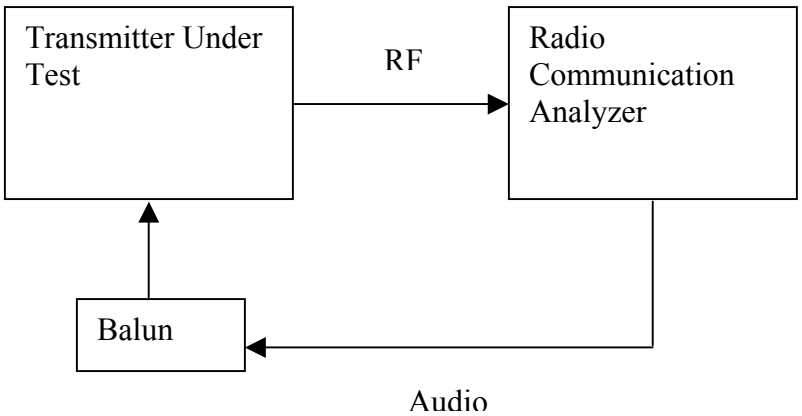
RF Output Power



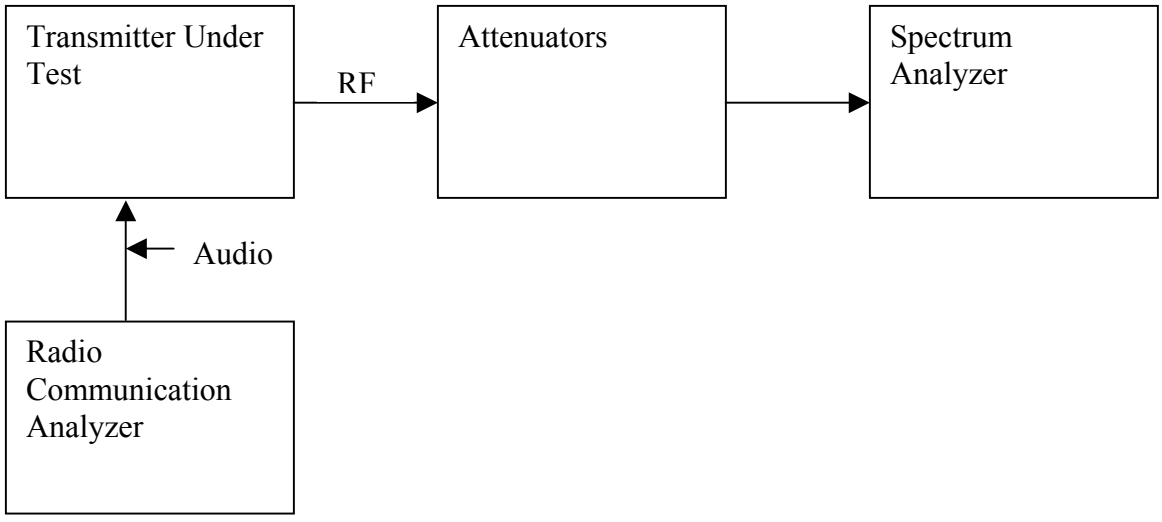
Audio Frequency Response



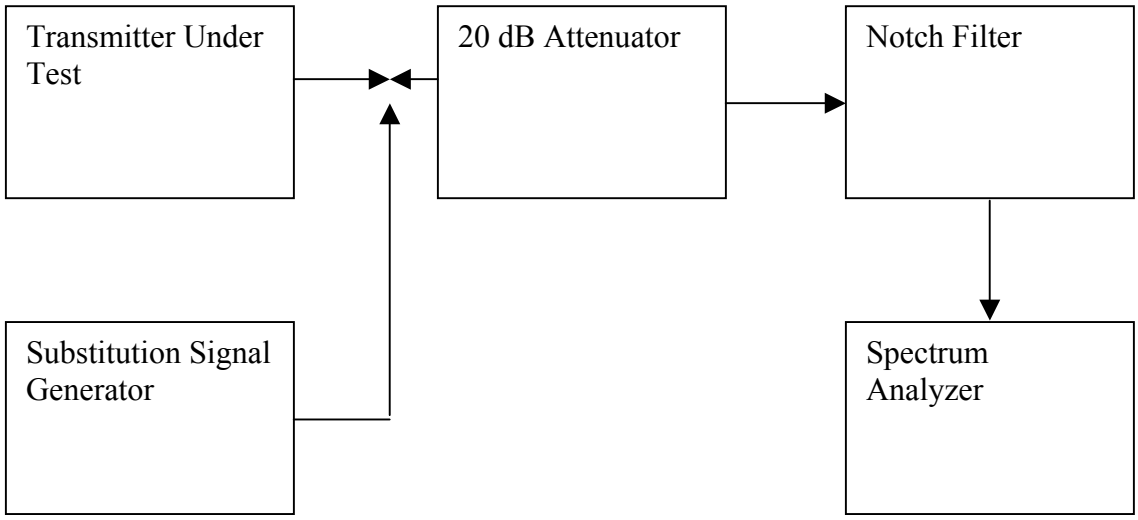
Modulation Limiting



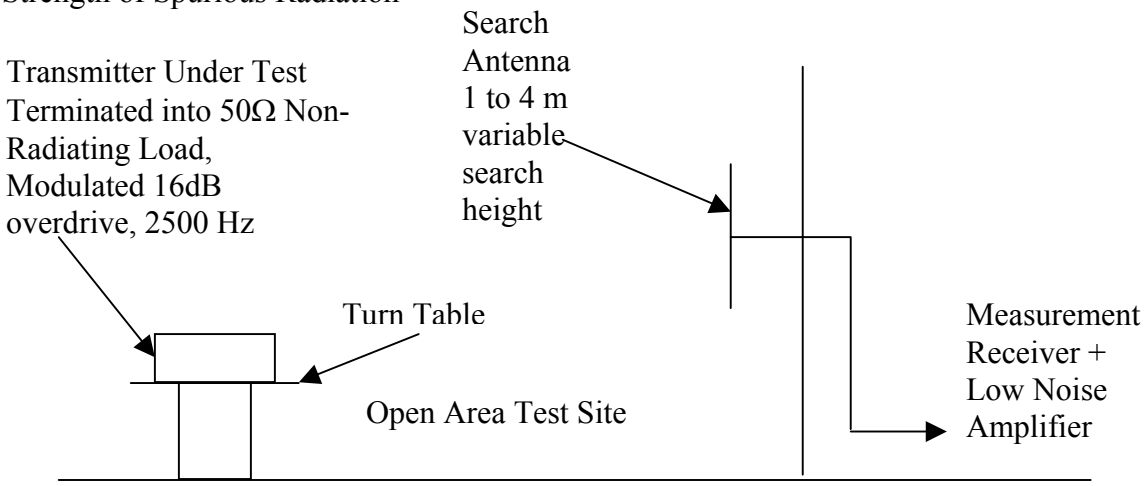
Occupied Bandwidth



Spurious Emissions at Antenna Terminals

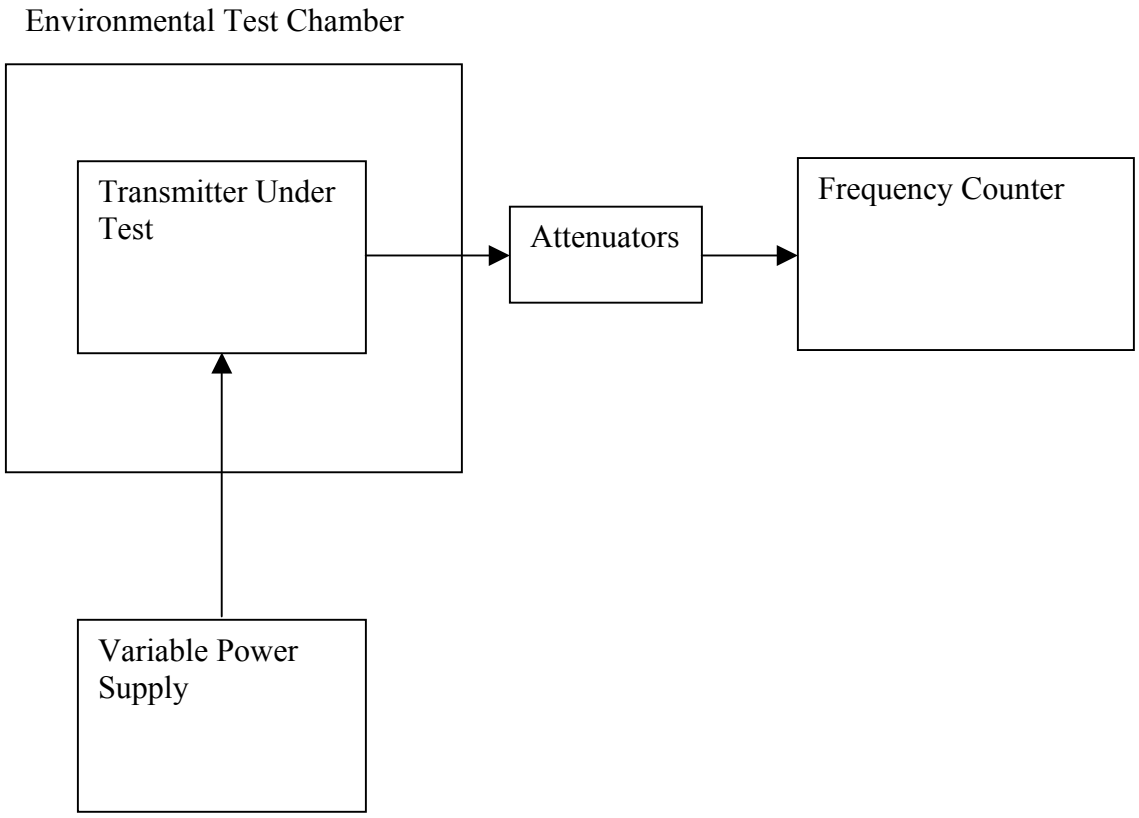


Field Strength of Spurious Radiation



Emission levels are measured in terms of ERP. All emissions within 20 dB of the specification limit are maximized along 360° azimuth and further maximized by raising and lowering the search antenna from 1 to 4 m. The transmitter under test is replaced with a dipole antenna and calibrated signal generator. The level and frequency of the signal generator are adjusted in order to reproduce the previously detected emission and maximized by varying the height of the search antenna. This procedure is performed both horizontal and vertical polarization of the detected signal. This test procedure is adopted from ANSI/TIA-603.

Frequency Stability



Section 12. Test Equipment List

Test Equipment	Asset Number
HP5350A Frequency Counter	FA000086
Narda 20 dB Attenuator	FA001394
Narda 20 dB Attenuator	FA001153
Weinschel 10 dB Attenuator	FA001739
Weinschel 10 dB Attenuator	FA001740
50Ω Termination	FA000510
Environmental Test Chamber	FA001030
Variable Power Supply	FA000006
R&S CMTA54 Radio Communication Analyzer	FA001317
Balun	FA001259
Anritsu Selective Meter	FA001552
HP 8565E Spectrum Analyzer	FA000981
R&S SMIQ Signal Generator	FA001091
Notch Filter	FA001666
HP209A Oscillator	FA000101
R&S ESVP Test Receiver	FA000981
Biconical Antenna 2	FA000904
Log Periodic Antenna LP 1	FA000477
Horn Antenna 1	FA000649
1-2 GHz Amplifier	FA001498
Agilent E4418B Power Meter	FA001678
Agilent 8487A Power Sensor	FA001741