

Test Report: 1R03659

Applicant: Alcatel Canada Inc.
600 March Road
PO Box 13600
Kanata, Ontario
K2K 2E6

**Equipment Under Test:
(EUT)** RT 24GHz CoPol Radio

In Accordance With: **FCC Part 101, Subpart C**

Tested By: Nemko Canada Inc.
(Formerly 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: 35

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EQUIPMENT: RT 24GHz CoPol Radio

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 101, Subpart C.



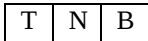
New Submission

Class II Permissive Change



Production Unit

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: _____

Glen Westwell, Technologist

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This report applies only to the items tested.

EQUIPMENT: RT 24GHz CoPol Radio

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	101.113	Complies
Occupied Bandwidth	101.111	Complies
Spurious Emissions at Antenna Terminals	101.111	Complies
Field Strength of Spurious Emissions	101.111	Complies
Frequency Stability	101.107	Complies

Footnotes For N/A's:**Test Conditions:**

Indoor Temperature: 24 °C
 Humidity: 40 %

Outdoor Temperature: N/A °C
 Humidity: N/A %

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Section 2. General Equipment Specification

Manufacturer:	Alcatel Canada Inc.
Model No.:	RT 24GHz CoPol Radio
Serial No.:	3CC12019AAAA N0003
Date Received In Laboratory:	March 16, 2001
Nemko Identification No.:	Item #2
Power Input:	+30 VDC
Frequency Range:	Tx: 25.05175 – 25.24825GHz (3.5MHz) Tx: 25.0535 – 25.2465GHz (7MHz)
Modulation:	QPSK 7.0MHz@10.752Mbps 3.5MHz@5.376Mbps
Internal/External Data Source:	External
Emission Designator:	6M00M1D (7MHz) 2M98M1D (3.5MHz)
Output Impedance:	75Ω
Power Output (Manufacturer's Rating):	14 dBm Max
Channel Spacing:	7MHz & 3.5MHz
Power Output Adjustment:	-37dBm to +14dBm

EQUIPMENT: RT 24GHz CoPol Radio

Section 3. RF Power Output

Para. No.: 1.1046

Test Performed By: Glen Westwell	Date of Test: April 10, 2001
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Minimum Standard: 101.113

Test Results: Complies.

Measurement Data:

Carrier BW	Rated dBm	Measured dBm
3.5MHz	14.0	14.5
7.0MHz	14.0	14.4

EQUIPMENT: RT 24GHz CoPol Radio

Section 4. Occupied Bandwidth

Para. No.: 2.1049

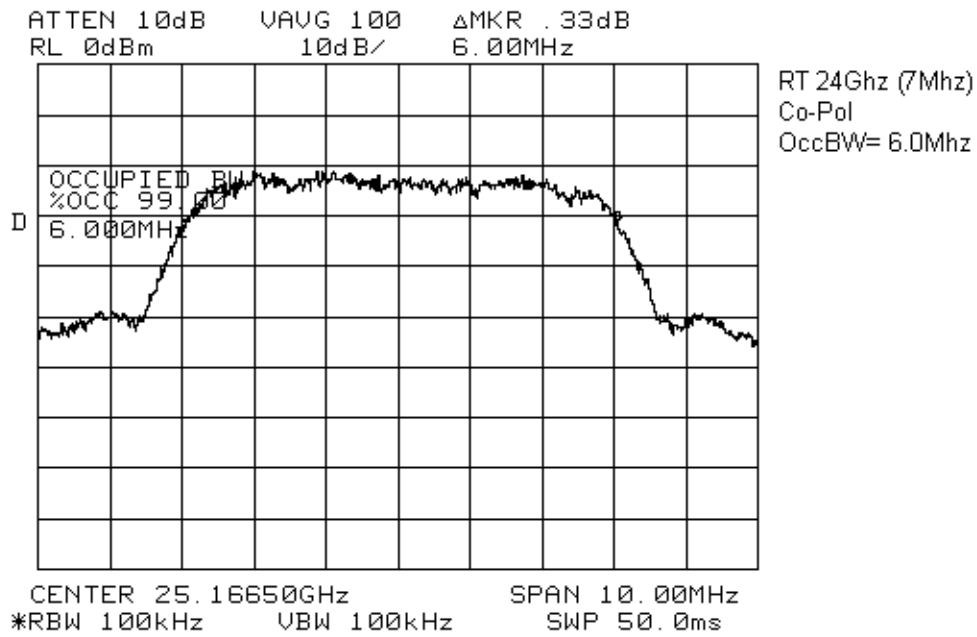
Test Performed By: Glen Westwell	Date of Test: April 9, 2001
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Minimum Standard: 101.111

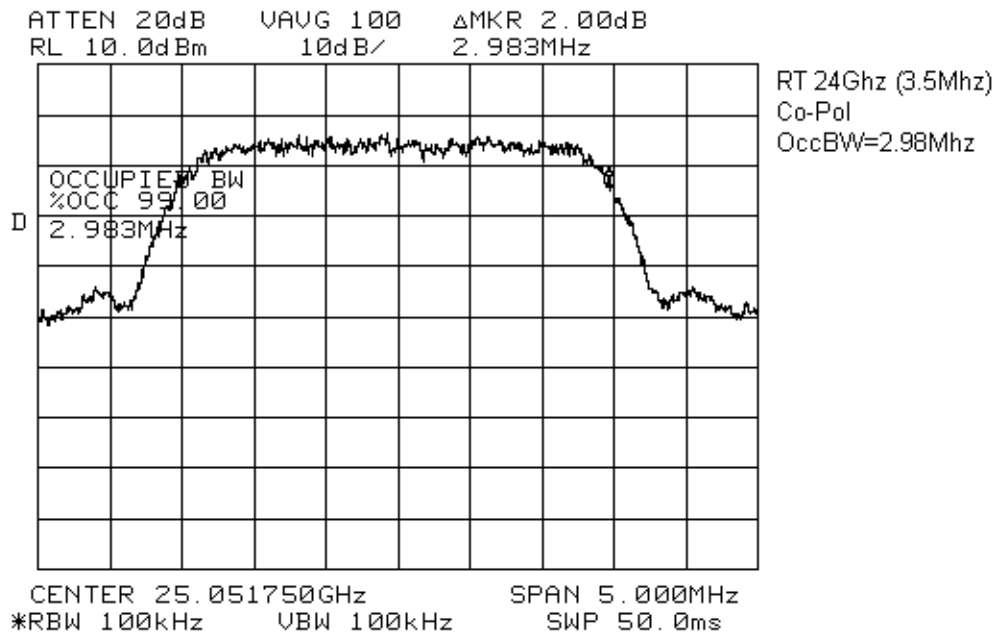
Test Results: Complies.

Test Data: See attached graph(s).

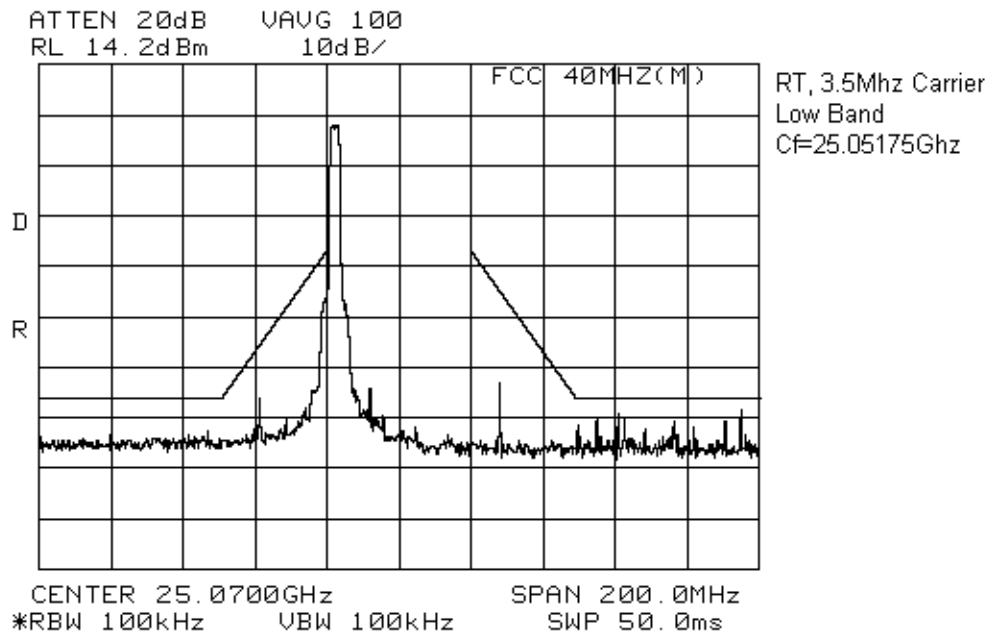
EQUIPMENT: RT 24GHz CoPol Radio



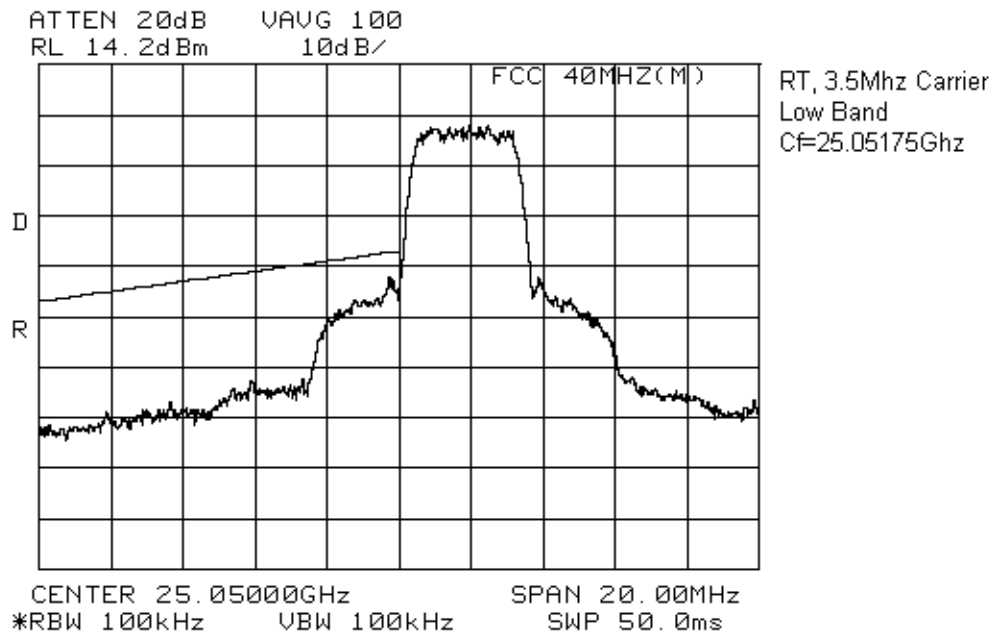
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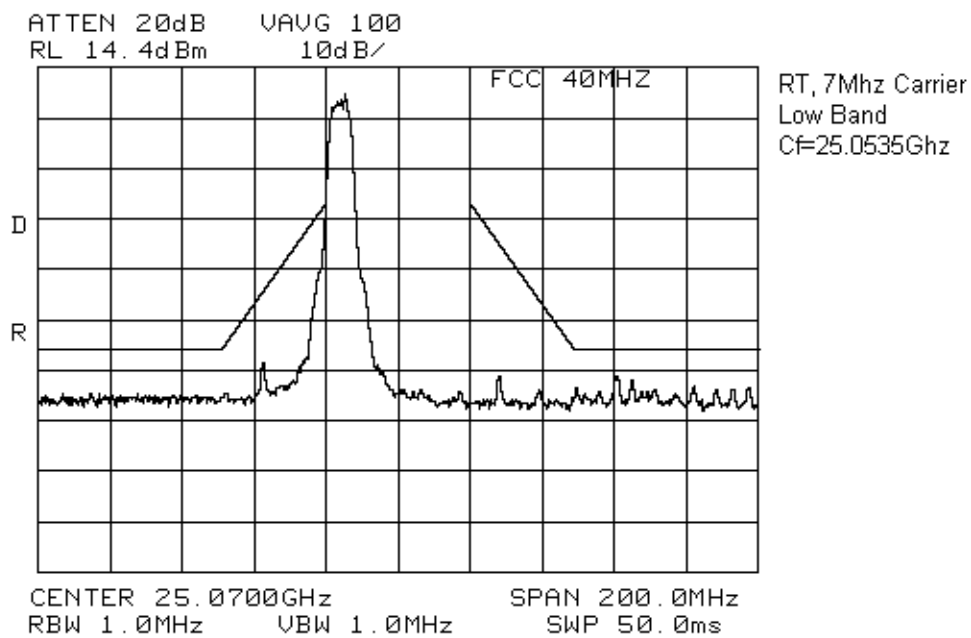
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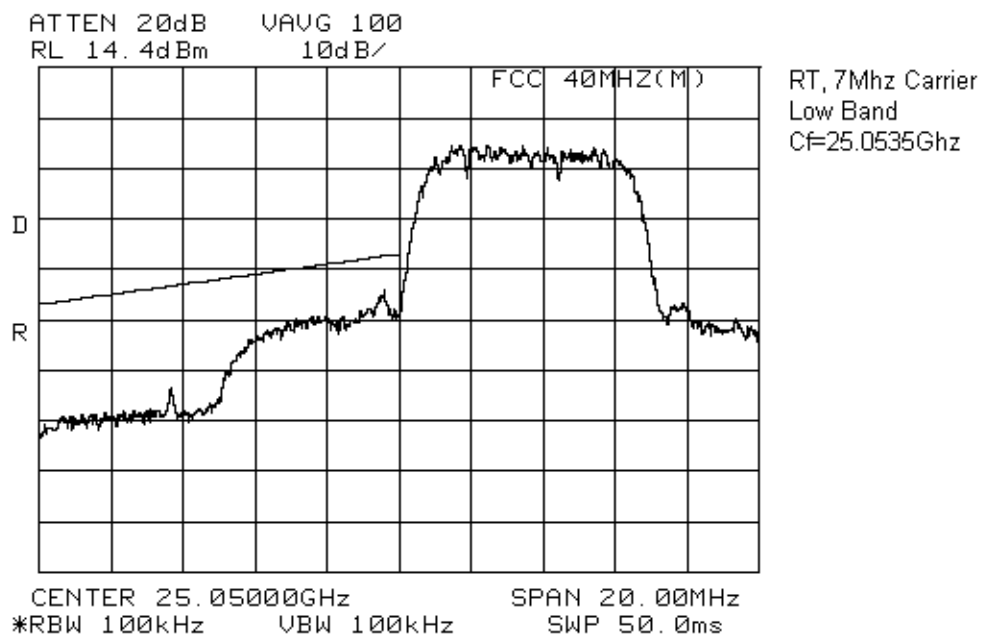
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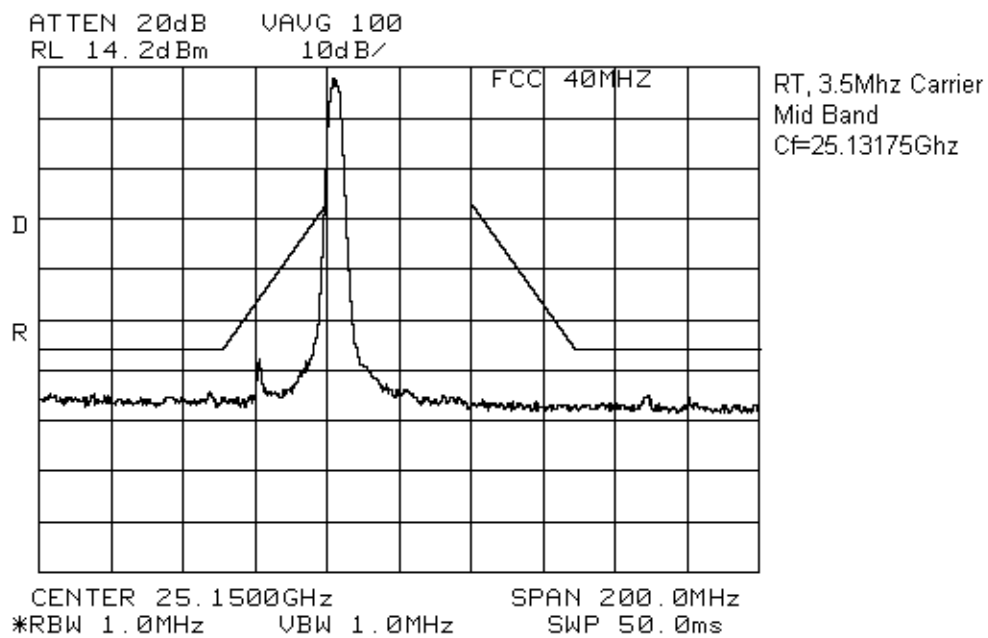
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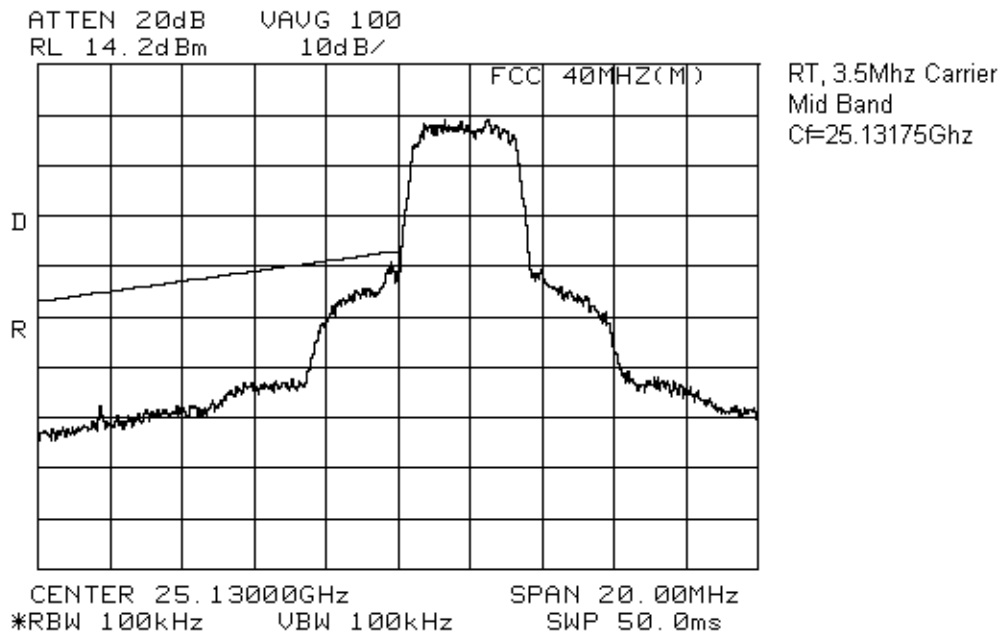
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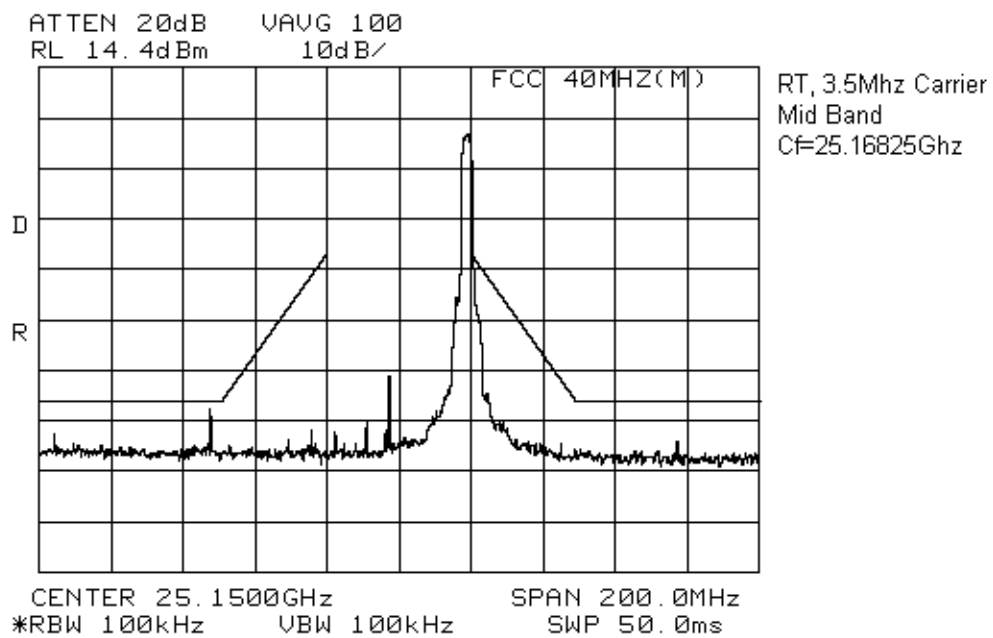
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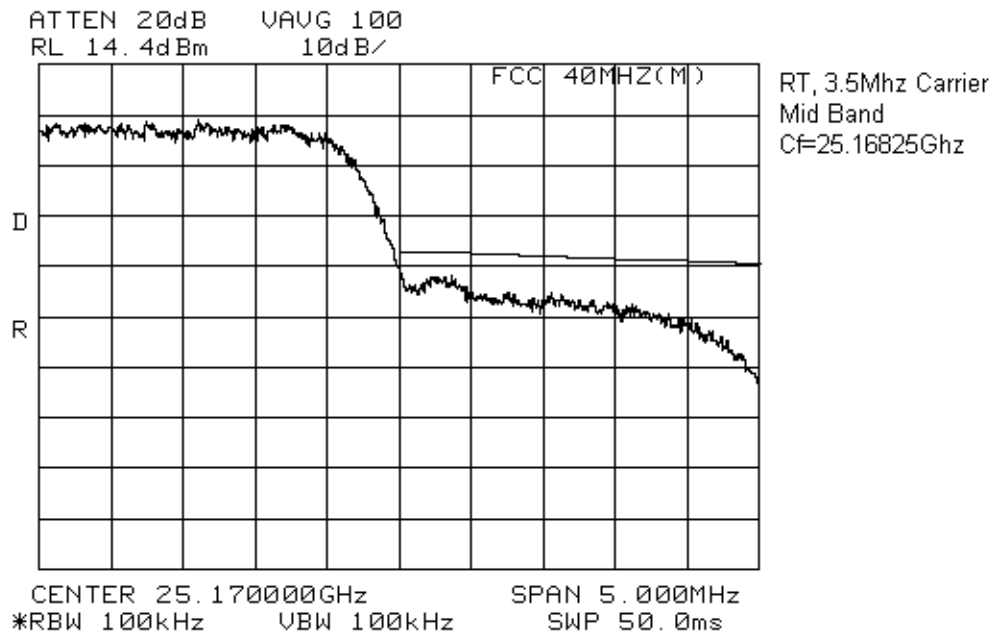
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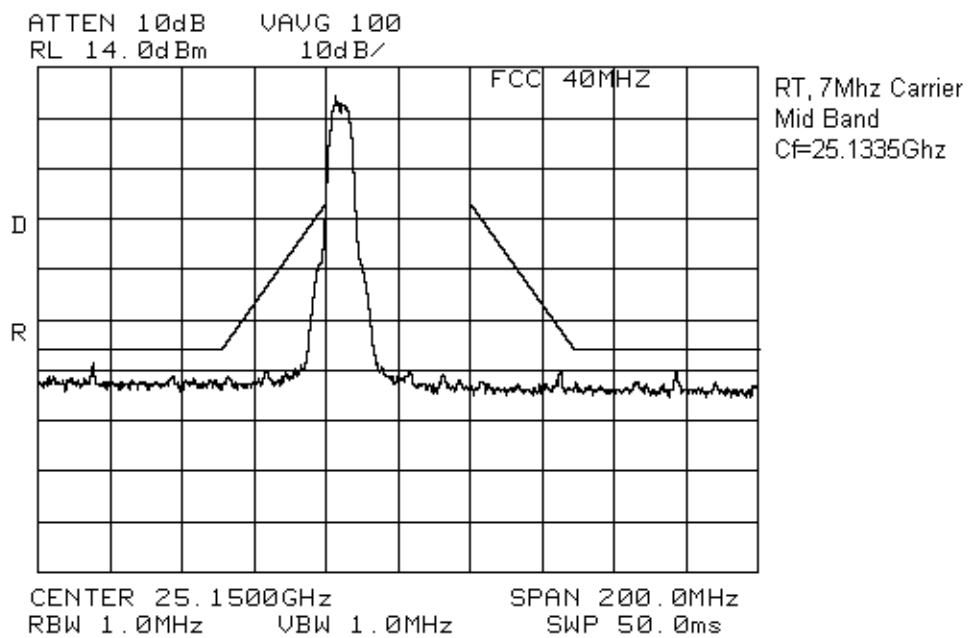
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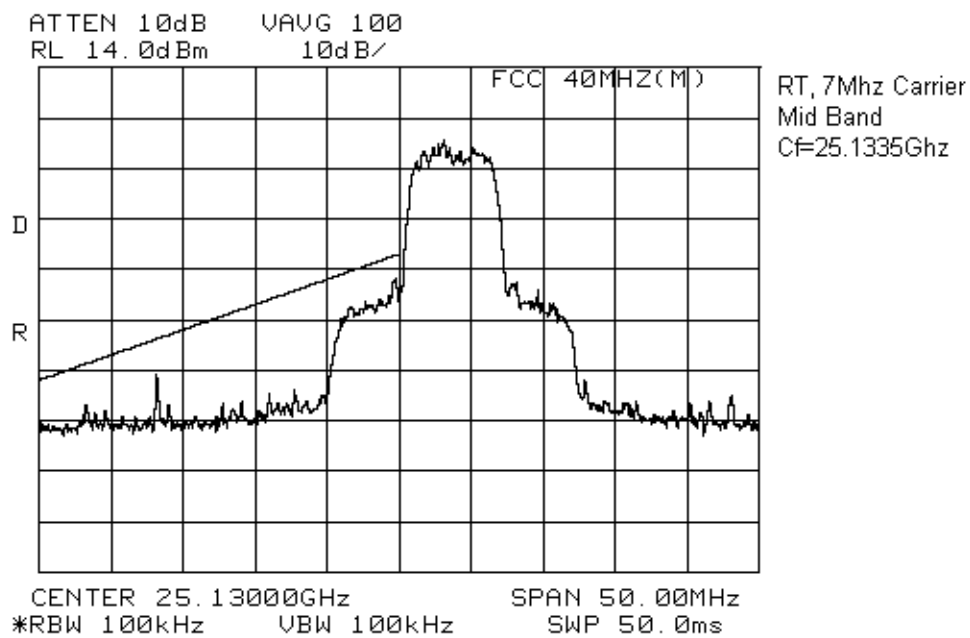
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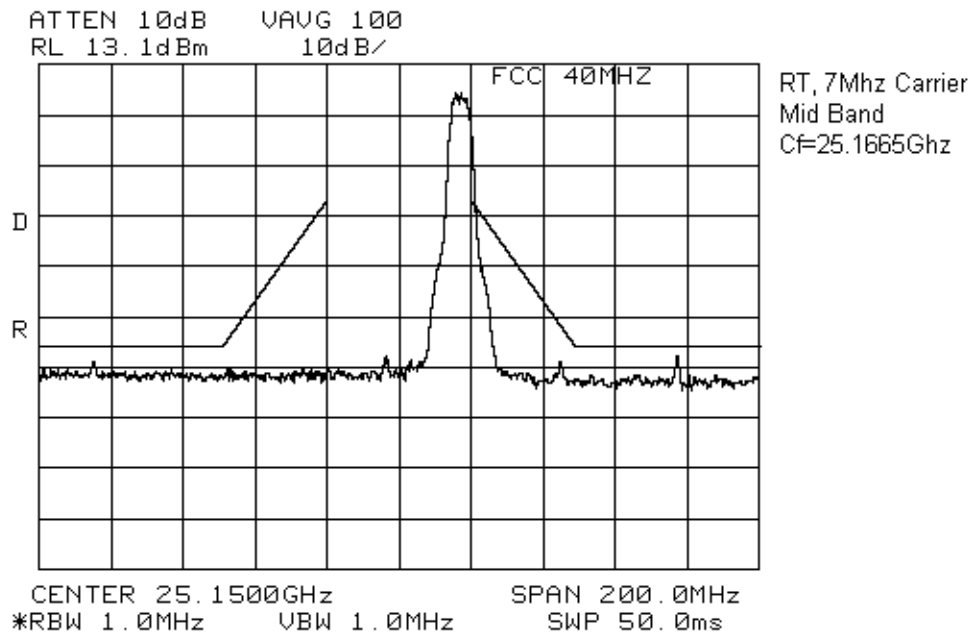
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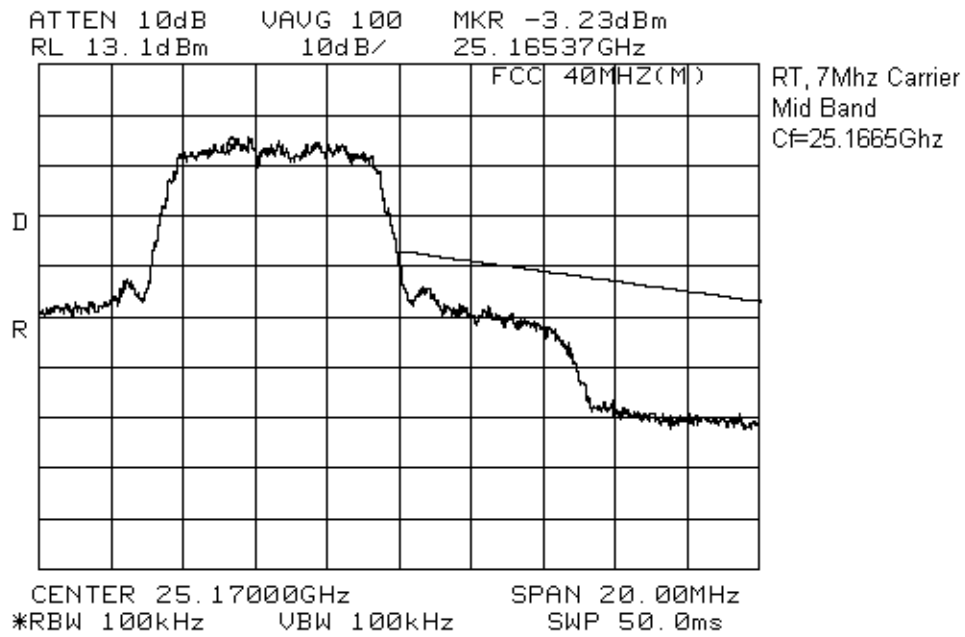
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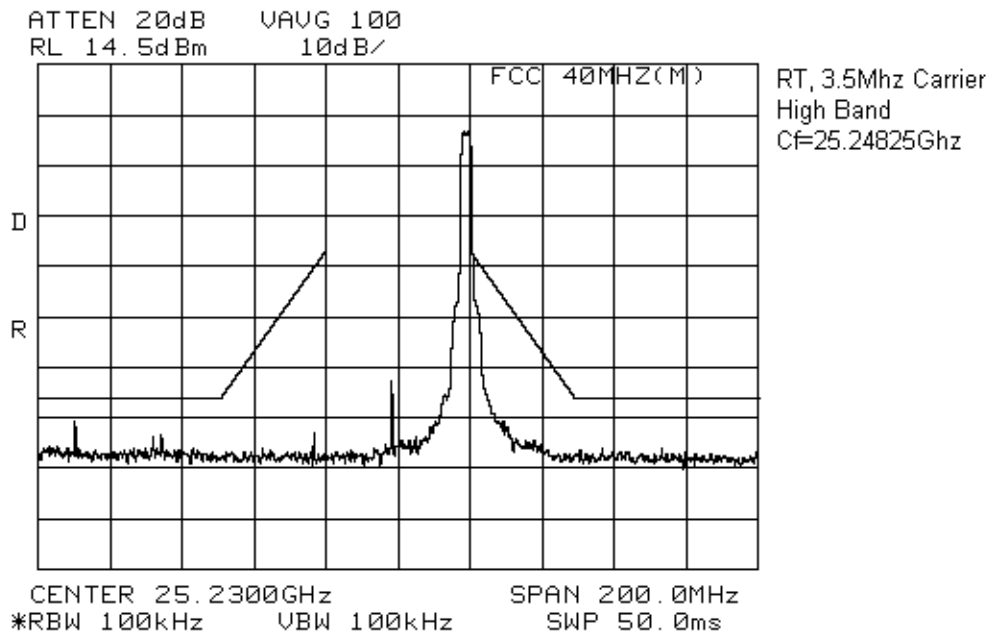
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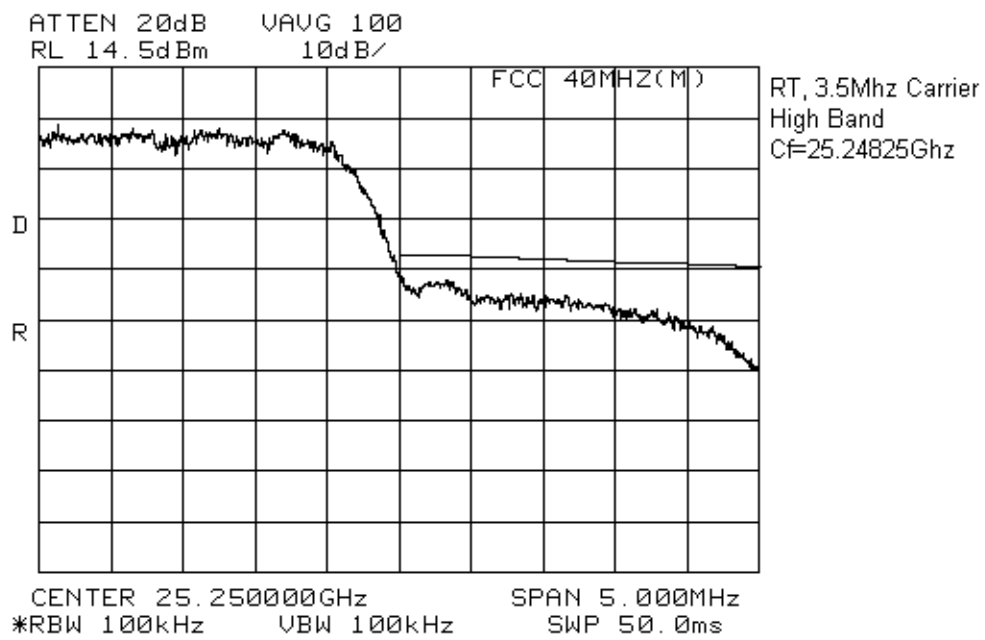
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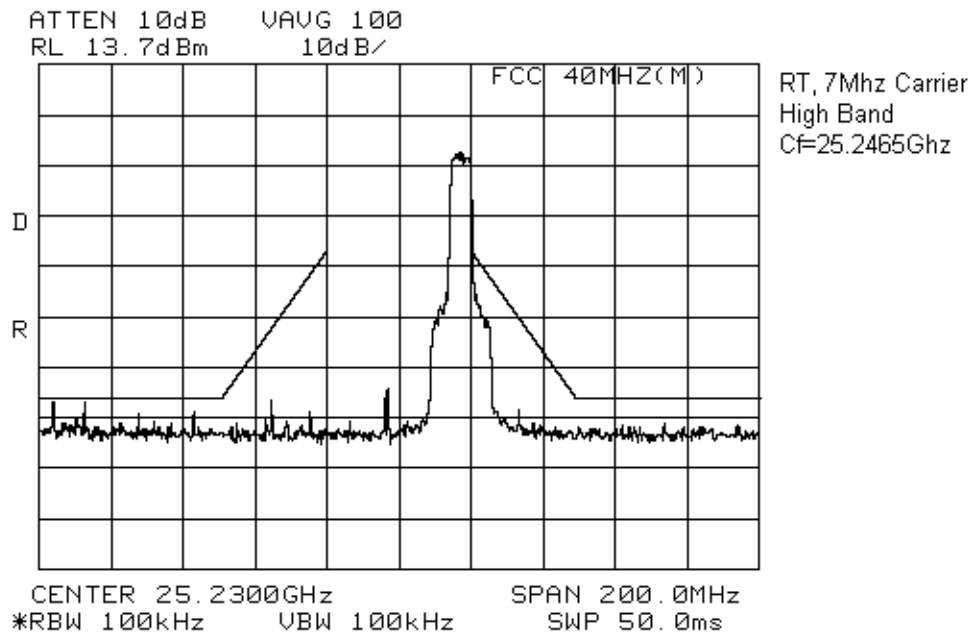
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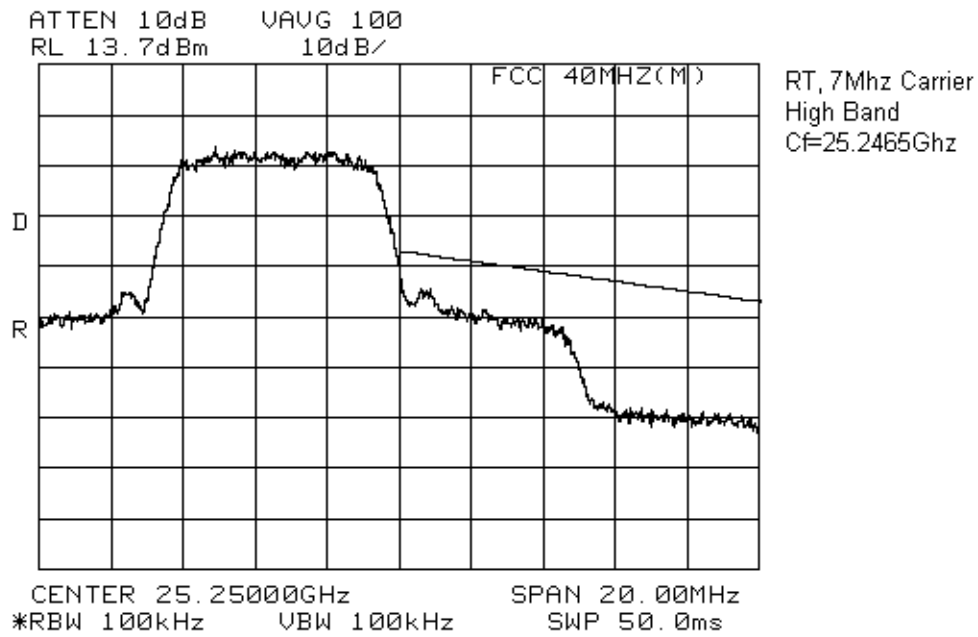
EQUIPMENT: RT 24GHz CoPol Radio



EQUIPMENT: RT 24GHz CoPol Radio



EQUIPMENT: RT 24GHz CoPol Radio



Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

Test Performed By: Glen Westwell	Date of Test: April 5, 2001
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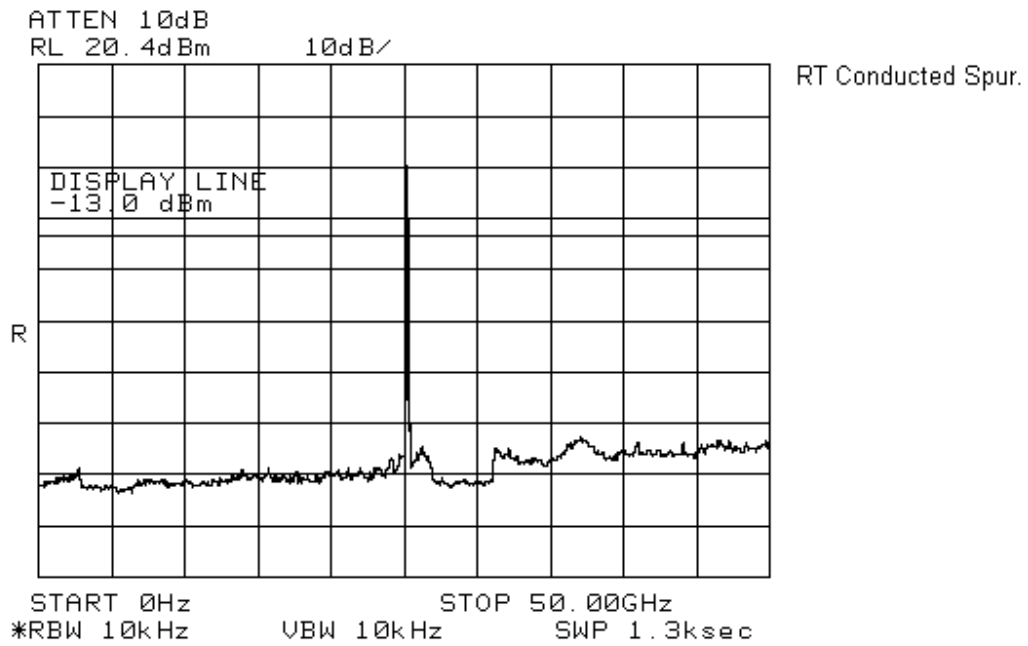
Minimum Standard: 101.111 (a)(2)(iii) –13dBm

Test Results: Complies.

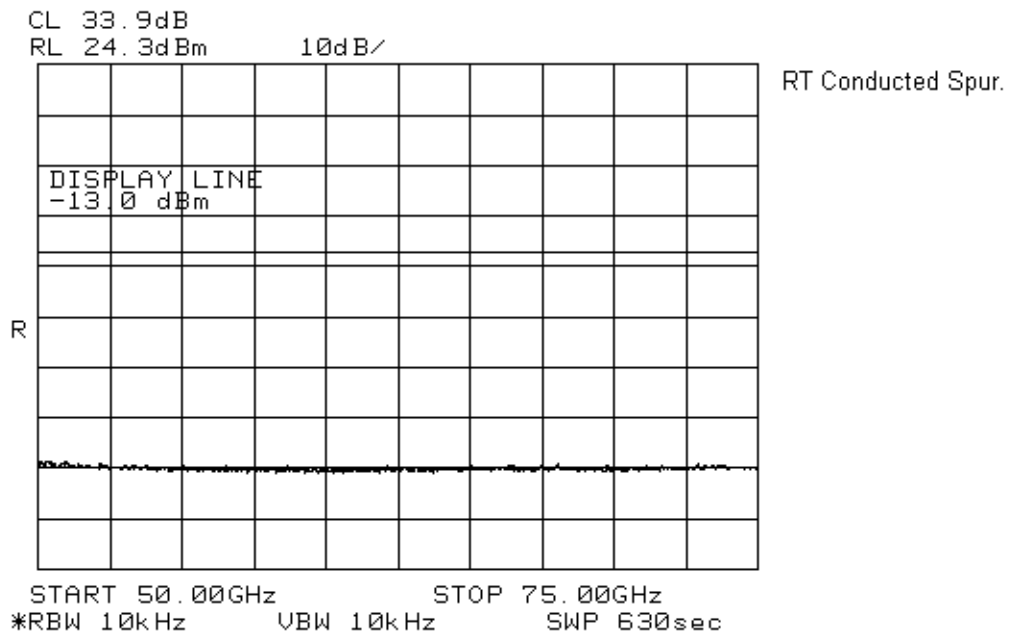
No emissions were detected within 20dB of the specification limit.

Test Data: See attached graph(s).

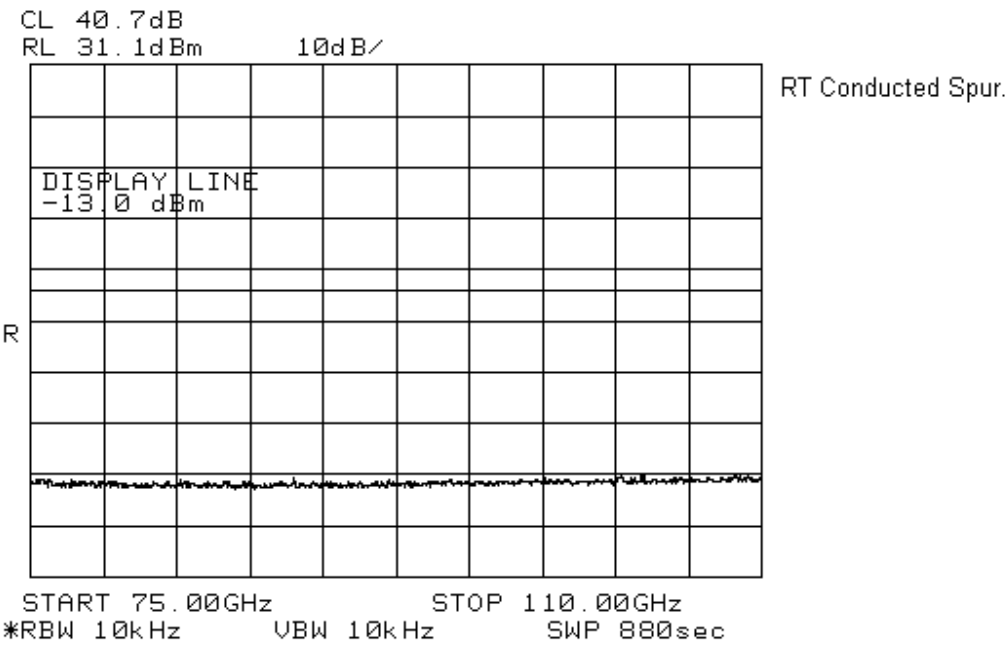
EQUIPMENT: RT 24GHz CoPol Radio



EQUIPMENT: RT 24GHz CoPol Radio



EQUIPMENT: RT 24GHz CoPol Radio



Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	Date of Test: April 5, 2001
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Minimum Standard: 101.111 (a)(2)(iii) -13dBm

84.4dB μ V/m@3m <1GHz

82.2dB μ V/m@3m >1GHz

Test Results: Complies.

No emissions were detected within 20dB of the specification limit.

Test Data: The spectrum was searched from 400MHz to 110GHz.

No emissions were detected.

Section 7. Frequency Stability

Para. No.: 2.1055

Test Performed By: Glen Westwell	Date of Test: April 3, 2001
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Minimum Standard: $\pm 0.03\%$ (7545kHz)

Test Results: Complies.

The maximum frequency drift is 130kHz.
This is 0.0005%.

Measurement Data: Standard Test Voltage: STV: +30Vdc
Standard Test Frequency: 25 150.000 MHz

Test Condition	Frequency (kHz)	Frequency Drift (kHz)
STV	25 149 935	65
115% STV	25 149 940	60
85% STV	25 149 937	63
-30 °C	25 150 130	130
-20 °C	25 150 102	102
-10 °C	25 150 015	15
0 °C	25 150 011	11
+10 °C	25 150 003	3
+30 °C	25 149 980	20
+40 °C	25 149 930	70
+50 °C	25 150 050	50

EQUIPMENT: RT 24GHz CoPol Radio

Section 8. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	June 16/00	June 16/01
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU
1 Year	Horn Antenna	EMCO #2	3115	4336	COU	COU
1 Year	Power Meter	Hewlett Packard	E4418B	FA001413	Nov. 8/99	Jan. 8/02
3 Year	Harmonic Mixer	Hewlett Packard	50-75 GHz	FA001027	Mar. 9/00	Mar. 9/03
3 Year	Harmonic Mixer	Hewlett Packard	75-110 GHz	FA001302	Oct. 13/00	Oct. 13/01
3 Year	Diplexer	Olsen-OML	DPL.20(HP)	—	Mar. 15/00	Mar. 15/03
3 Year	Mixer Antenna 90-140 GHz	Olsen-OML	M05HWA(HP)	—	Mar. 15/00	Mar. 15/03

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

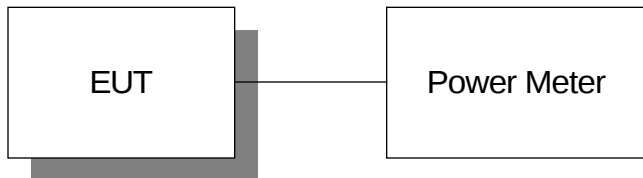
EQUIPMENT: RT 24GHz CoPol Radio

Annex A

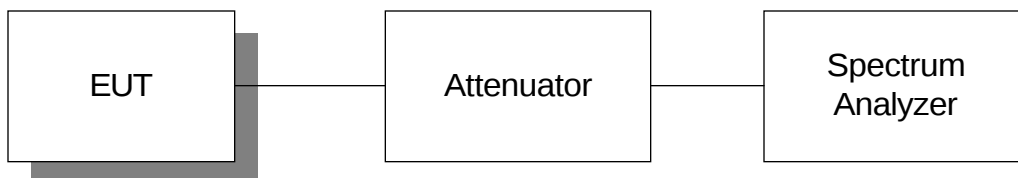
Test Diagrams

EQUIPMENT: RT 24GHz CoPol Radio

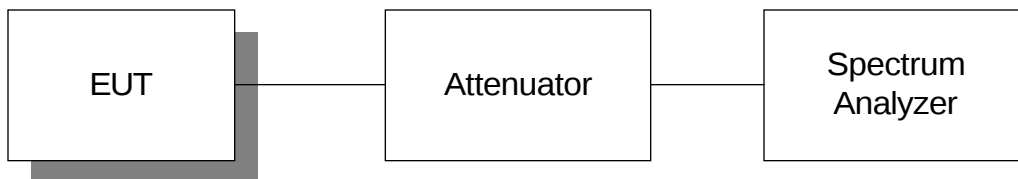
Para. No. 2.1046 - R.F. Power Output



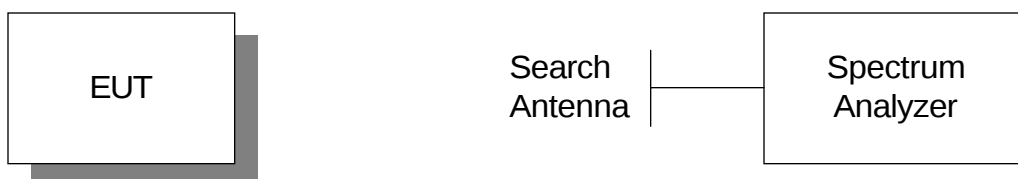
Para. No. 2.1049 - Occupied Bandwidth



Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation



EQUIPMENT: RT 24GHz CoPol Radio

Para. No. 2.1055 - Frequency Stability

