Standards Council of Canada
Accredited Laboratory
Scope of Accreditation 75

Conseil canadien des normes
Laboratoire accrédité
Portée d'accréditation 75

TM

Test Report:	4W08196
Applicant:	Spotwave Wireless Inc. 1 Hines Rd. Ottawa, Ontario K2K 3C7
Equipment Under Test: (EUT)	Spotcell 612
In Accordance With:	**FCC Part 24, Subpart E.**
Tested By:	Nemko Canada Inc. 303 River Road, R.R. 5 Ottawa, Ontario K1V 1H2
Authorized By:	Kevin Carr, EMC/EMI/Wireless Specialist.
Date:	30 June 2004
Total Number of Pages:	21

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 24.

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.

TESTED BY: _____ DATE: 29 June 2004
Glen Westwell, Wireless Specialist.

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complied
Occupied Bandwidth	2.1049	Complied
Spurious Emissions at Antenna Terminals	2.1051	Complied
Field Strength of Spurious Emissions	2.1053	Complied
Out of Band Rejection	EAB/RF-2-11-04	Complied
Frequency Stability	2.1055	N/A(1)

Note:

(1) This device contains no frequency translation capabilities.

Indoor Temperature: 23°C
Humidity: 40%

Outdoor Temperature: 20°C
Humidity: 40%

Section 2. General Equipment Specification

Manufacturer:	Spotwave Wireless Inc.	
Model No.:	Spotcell 612	
Serial No.:	70013	
Date Received In Laboratory:	24 June 2004	
Nemko Identification No.:	#1	
Supply Input Voltage:	110 VAC	
Frequency Range:	Downlink:	1930-1970MHz
Rated Output Power (conducted composite):	Downlink:	18.5dBm, 0.071W
Emission Designator	G7W (GSM) G9W (CDMA)	

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	**Date of Test: 28 June 2004**

Minimum Standard: 24.232

Test Results: Complied.

Measurement Data:

The maximum RF output power is within +1dB of the manufacturer's rating. The Composite RF output power is de-rated according to the number of channels via AGC and is equal to Pmax –10LogN.

Pmax = Maximum Composite RF Output Power
N = Number Of Channels

The power levels were measured at maximum input drive and gain. This device uses AGC to prevent saturation or over-modulation.

Downlink

Channel Frequency (MHZ)	Measured Power (dBm)	Rated Power (dBm)
1931	16.2	18.5
1938	18.3	18.5
1944	18.5	18.5
1950	18.3	18.5
1970	18.5	18.5

Note: Power measurements from 1931-1944MHz are used to characterize the power across to 15MHz filter band. Power measurements across the band of certification have also been presented, 1930-1970MHz.

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Glen Westwell	**Date of Test: 28 June 2004**

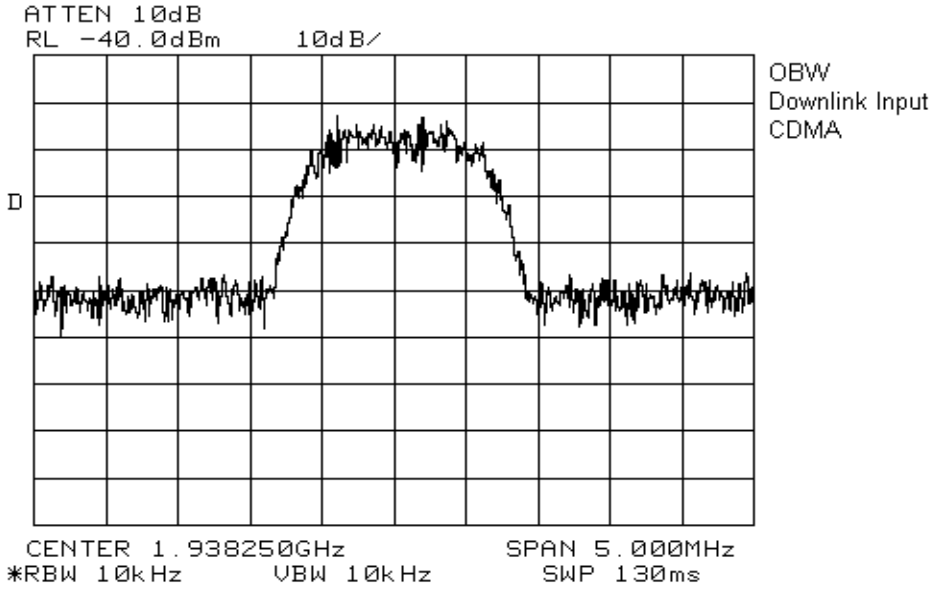
Minimum Standard: 24.238

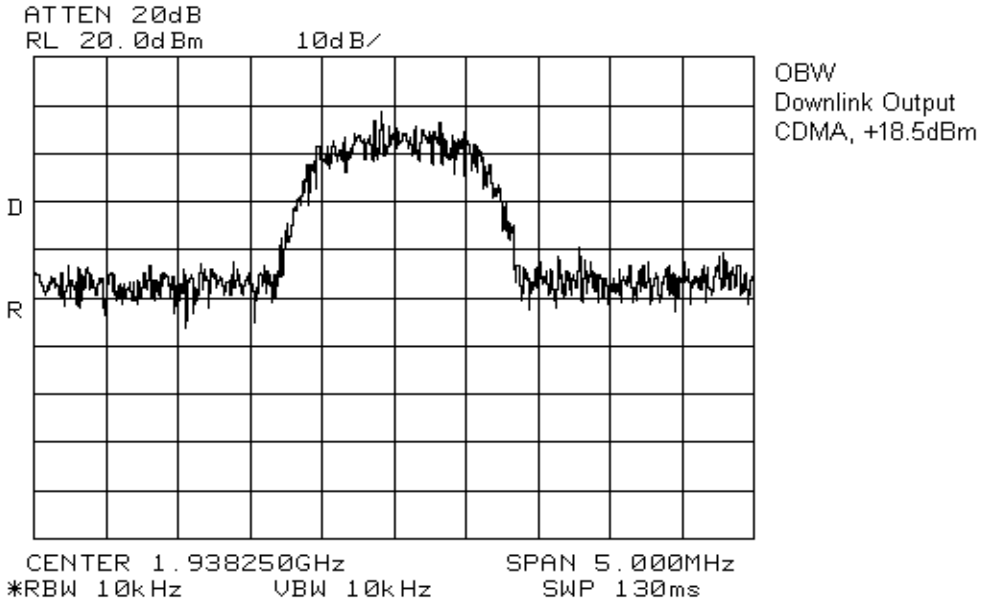
Test Results: Complies.

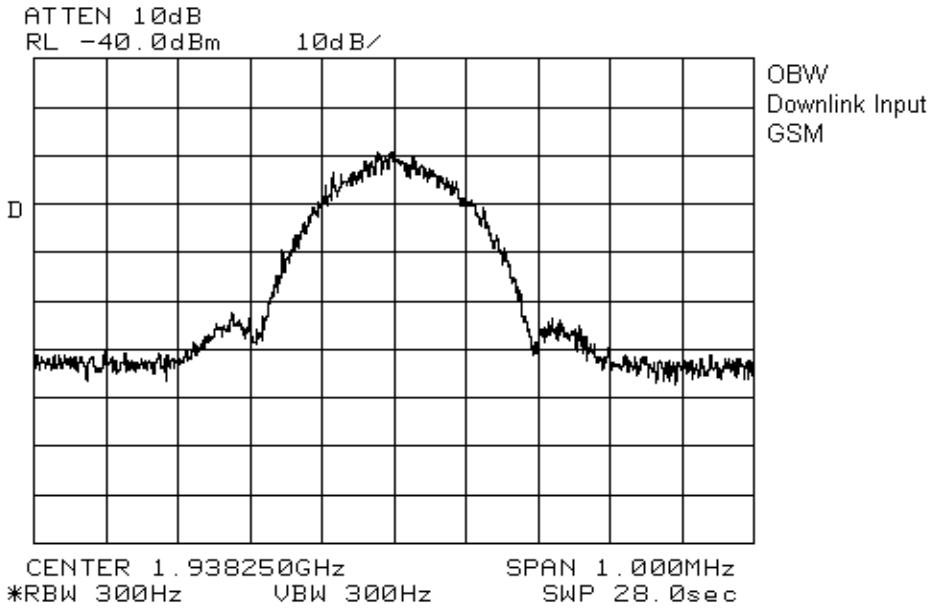
Measurement Data: See attached graphs.

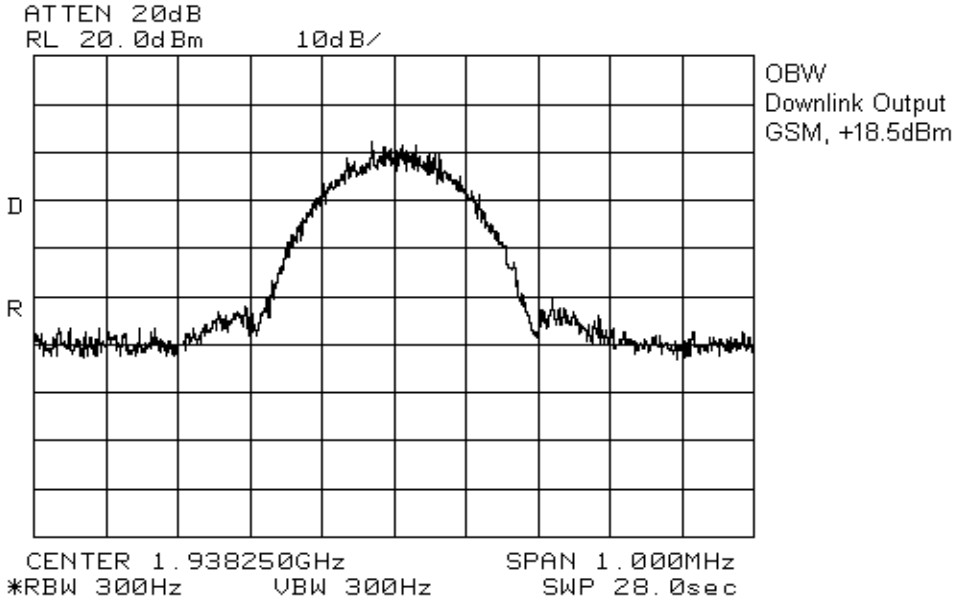
The occupied bandwidth was measured by comparison of input from the signal generator to the output signal from the amplifier. This was done in order to determine if there was any degradation to the output signal due to the amplification and conversion through the repeater.

Downlink, Input vs Output






ATTEN 10dB
RL -40.0dBm
10dB/
D
OBW
Downlink Input
GSM
CENTER 1.938250GHz
SPAN 1.000MHz
*RBW 300Hz
VBW 300Hz
SWP 28.0sec


ATTEN 20dB
RL 20.0dBm
10dB/
D
R
OBW
Downlink Output
GSM, +18.5dBm
CENTER 1.938250GHz
SPAN 1.000MHz
*RBW 300Hz
VBW 300Hz
SWP 28.0sec

Section 5. Spurious Emissions at Antenna Terminals

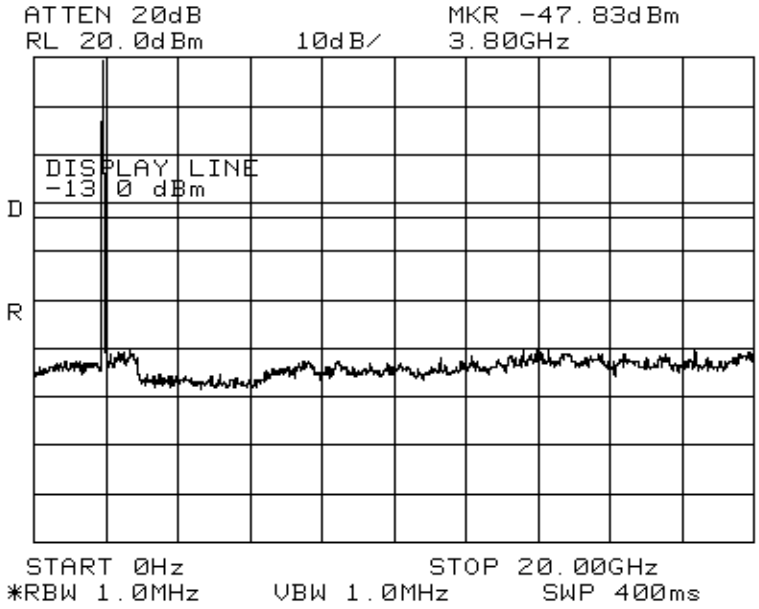
Para. No.: 2.1051

Test Performed By: Glen Westwell	**Date of Test: 25 June 2004**

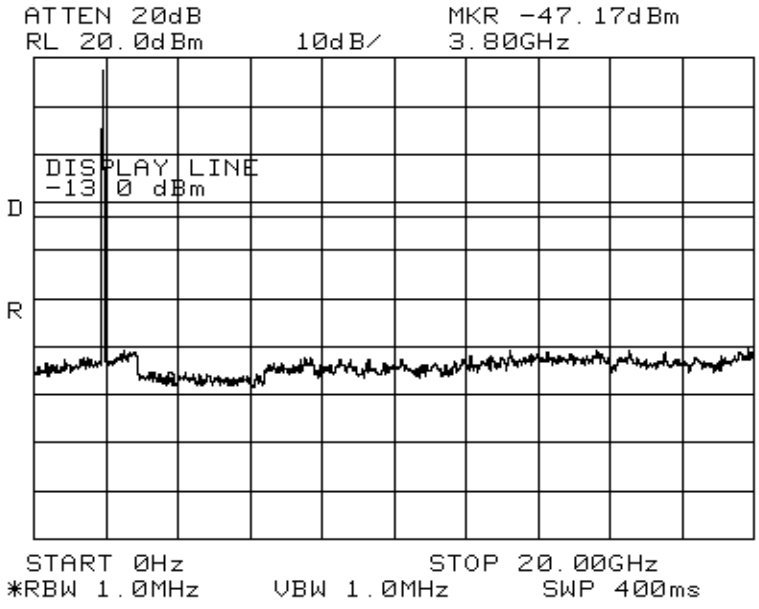
Minimum Standard: 24.238, -13dBm

Test Results: Complies.
Spurious emissions were searches at low, mid & high ends of the band. Worst case plots have been included.

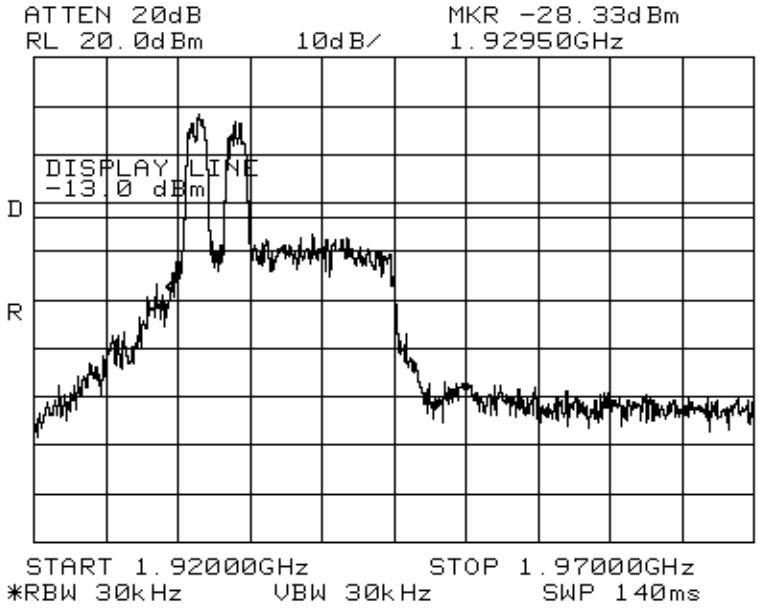
Measurement Data: See Attached Graphs.



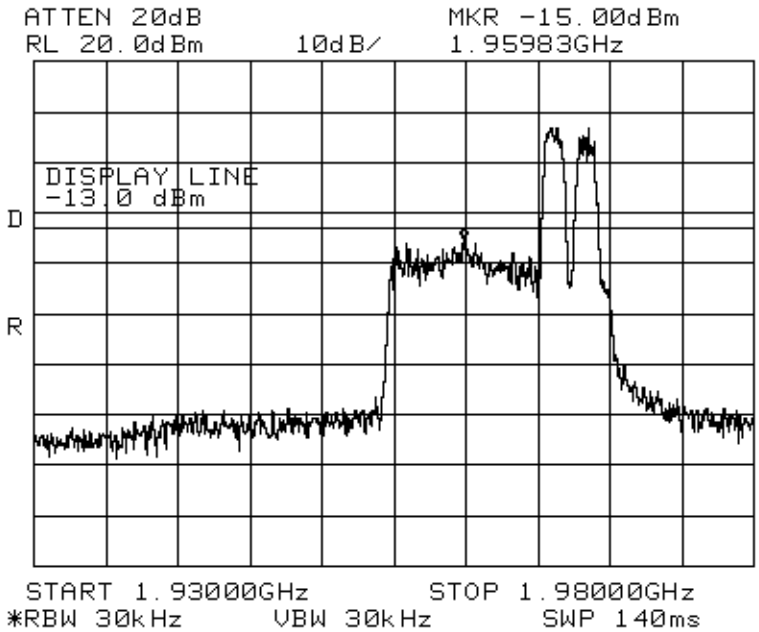
Conducted Spur.
CDMA
+18.5dBm Composite



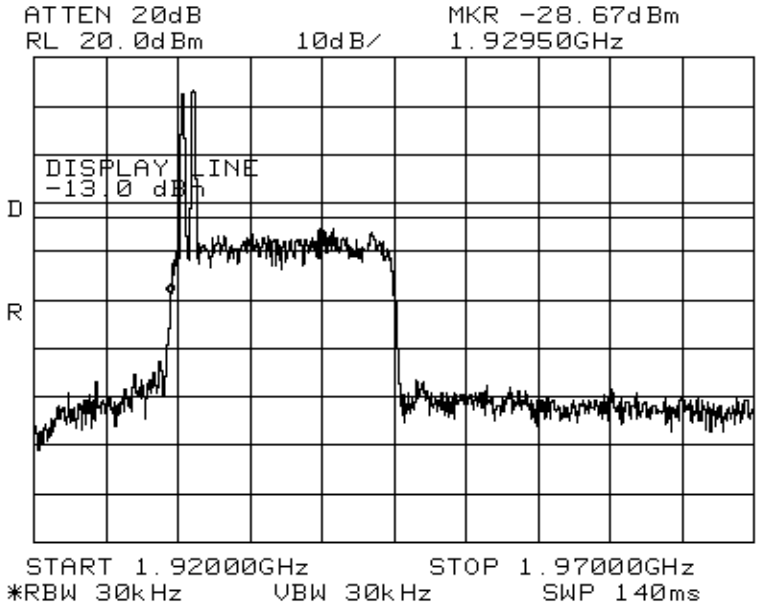
Conducted Spur.
GSM
+18.5dBm Composite



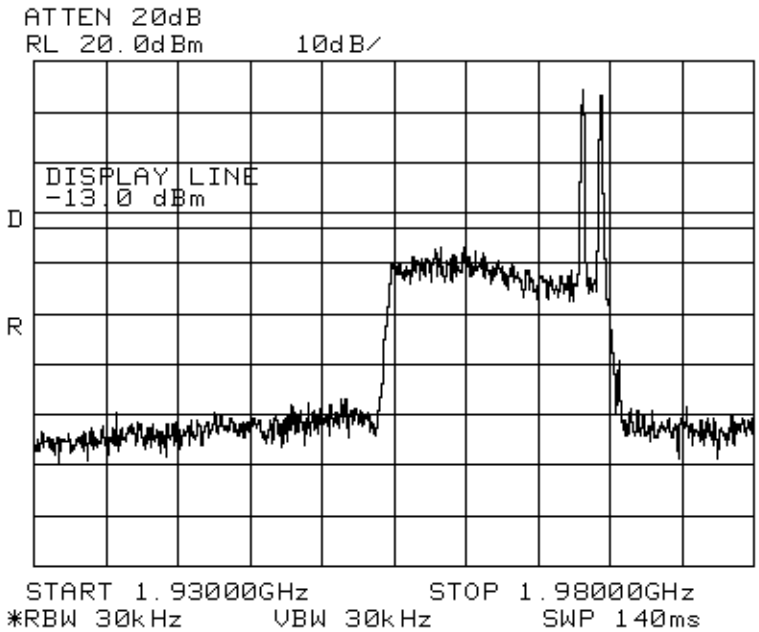
Band Edge
+18.5dBm Composite
CDMA



Band Edge Intermod.
+18.5dBm Composite
CDMA



Band Edge Intermod.
+18.5dBm Composite
GSM



Band Edge Intermod.
+18.5dBm Composite
GSM

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	**Date of Test: 28 June 2004**

Minimum Standard: 24.238, -13dBm

Test Results: Complied.

Measurement Data: No Emissions Detected.

The EUT was searched on the downlink direction at top, mid & bottom of the band.

Emissions Search Photos
Spotcell 612

Section 7. Out of Band Rejection

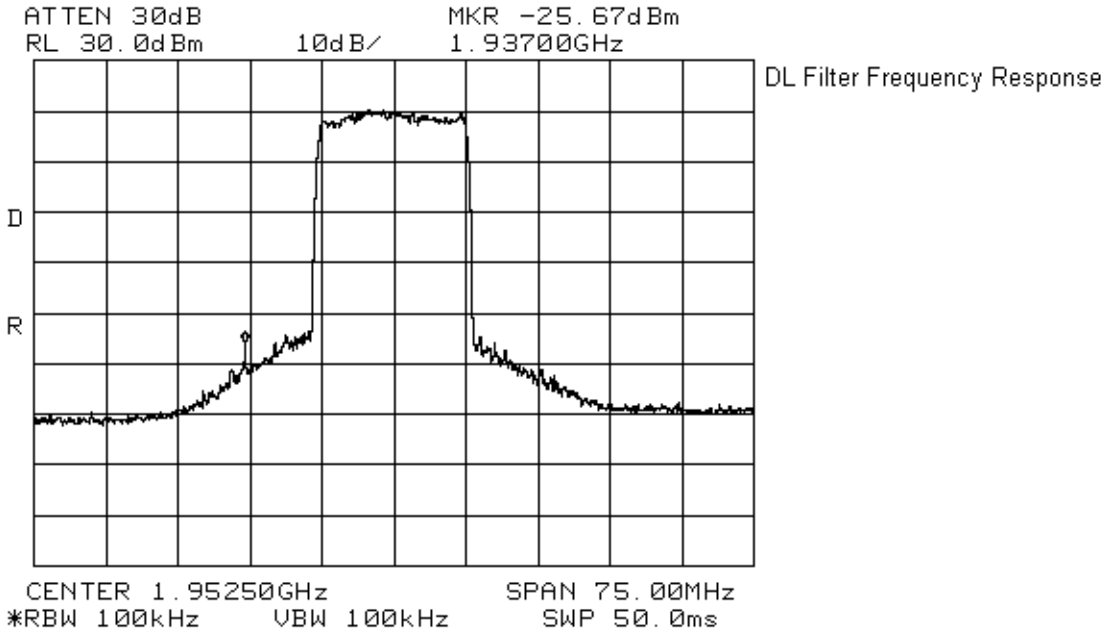
Para. No.: EAB/RF-2-11-04

Test Performed By: Glen Westwell	**Date of Test: 28 June 2004**

Limit: -13dBm

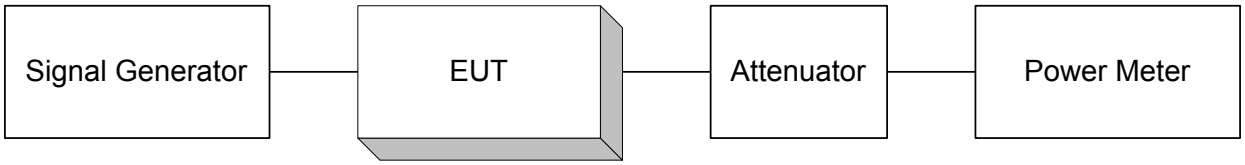
Test Results: Complied.

Measurement Data: See attached plots.

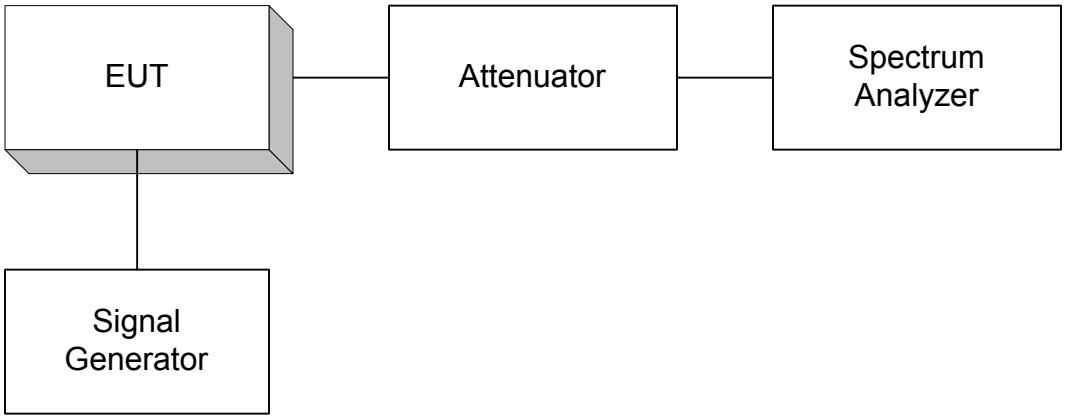

ATTEN 30dB
RL 30.0dBm
10dB/
MKR -25.67dBm
1.93700GHz
DL Filter Frequency Response
D
R
CENTER 1.95250GHz
SPAN 75.00MHz
*RBW 100kHz
VBW 100kHz
SWP 50.0ms

Section 8. Block Diagrams

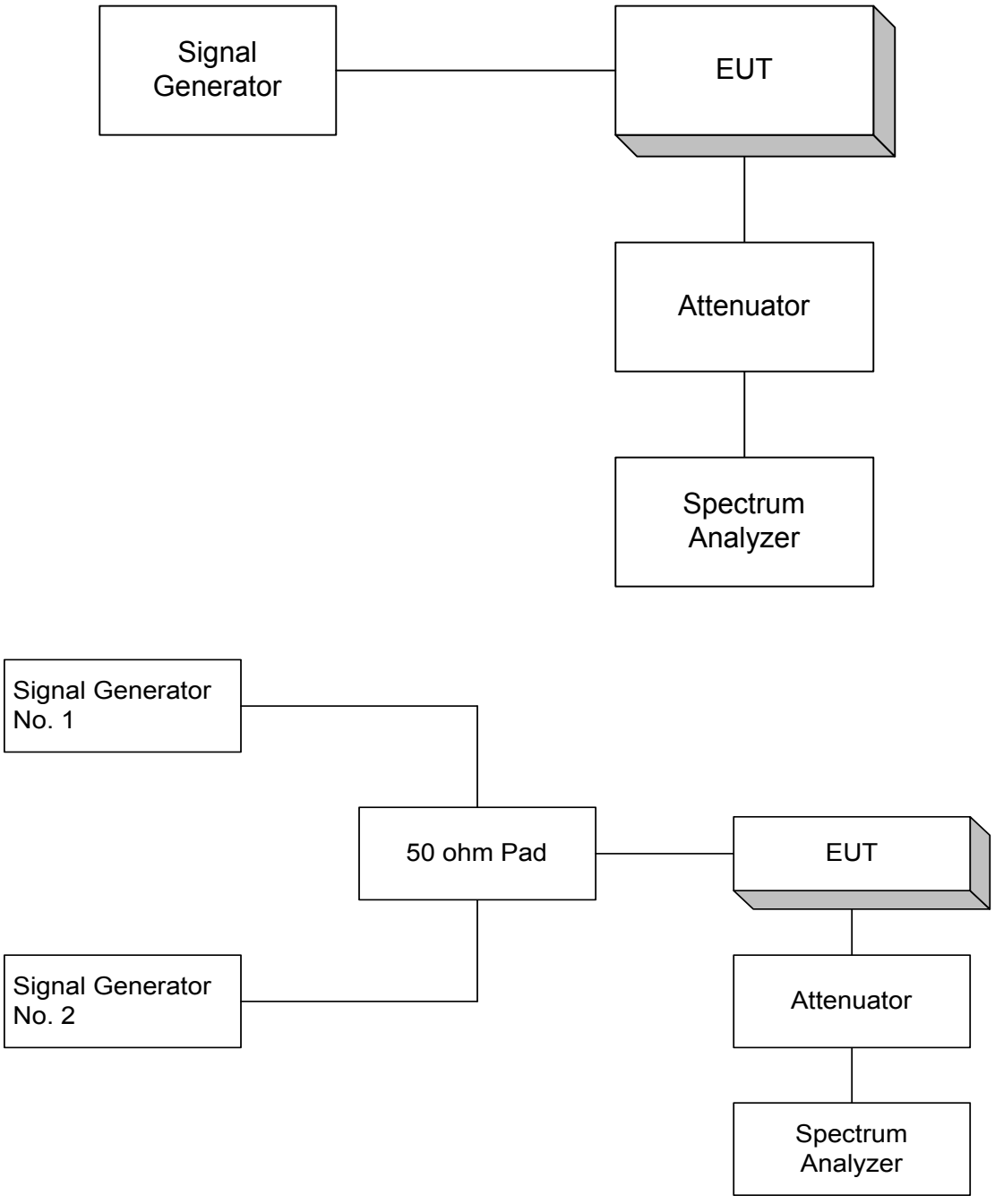
Para. No. 1046 - R.F. Power Output



Para. No. 2.1049 - Occupied Bandwidth

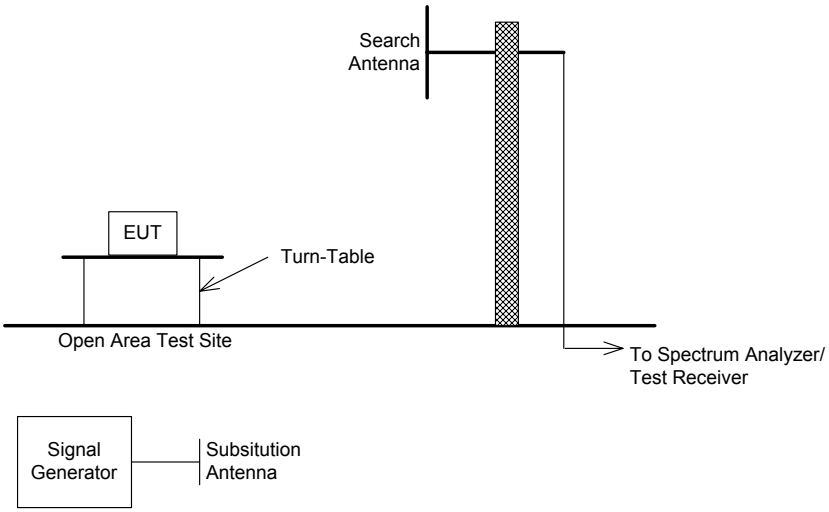


Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation

TIA/EIA 603, Signal Substitution Method



Section 9. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	FA001367	13 May 04	28 Jun 05
3 Year	Signal Generator	Rhode & Schwarz	SM1Q03E	FA001269	09 Jan 04	09 Jan 05
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	FA001091	25 Sep 03	25 Sep 06
1 Year	Power Meter	Hewlett Packard	E4418B	FA001678	27 Feb 04	27 Feb 05
1 Year	Power Sensor	Hewlett Packard	8487A	Rental	11 Mar 04	11 Mar 05
1 Year	RF AMP	JCA	4-8 GHz	FA001497	18 June 04	18 June 05
1 Year	RF AMP	JCA	2-4 GHz	FA001496	18 June 04	18 June 05
1 Year	RF AMP	JCA	1-2 GHz	FA001498	18 June 04	18 June 05
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 28/04	May 28/05
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 28/04	May 28/05
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR
1 Year	Horn Antenna	EMCO #1	3115	FA000649	18 Dec 03	18 Dec 04

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