Nemko USA, Inc.
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11696 Sorrento Valley Rd., Suite F
San Diego, CA 92121-1024

Certification Test Report: 2006 011064-FCC
Class II Permissive Change

Applicant:

Kyocera Wireless
10300 Campus Point Drive
San Diego, CA 92121
858 449-9835
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Equipment Under Test:

Maingate C&I CDMA Under-Glass Gateway for the Landis+Gyr S4 DGCom Meter
Model **GWC 08101**
M200 Module with new Comverse Antenna

FCC ID: **OVFKWC-M200**

In Accordance With: **FCC Part 22, Subpart H, Part 24, Subpart E**

Tested By:

Nemko USA, Inc.
11696 Sorrento Valley Rd., Suite F
San Diego, CA 92121-1024

Date: **Jan. 19, 2006**

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 24, Subpart E.

DOCUMENT HISTORY

REVISION	DATE	COMMENTS
-	Jan. 19, 2006	Prepared By: Alan Laudani
-	Jan. 19, 2006	Initial Release: Chip Fleury

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4 (2001) "Methods and Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz":

- The unit described in this report was received at Nemko USA, Inc.'s facilities on December 20, 2005 . Testing was performed on the unit described in this report on December 20, 2005 to January 12, 2006 .
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

This Report is the property of Nemko USA, Inc., and shall not be reproduced, except in full, without prior written approval of Nemko USA, Inc. However, all ownership rights are hereby returned unconditionally to Kyocera Wireless, and approval is hereby granted to Kyocera Wireless and its employees and agents to reproduce all or part of this report for any legitimate business purpose without further reference to Nemko USA, Inc.

CERTIFICATION

Nemko USA, Inc., an independent Electromagnetic Compatibility (EMC) Test Laboratory, produced this Test Report and performed the Radio Frequency Interference (RFI) testing and data evaluation contained herein.

Nemko USA, Inc.'s measurement facility is currently registered with the United States Federal Communications Commission (FCC) in accordance with the provisions of 47 United States Code (CFR) Part 2, Subpart I, Section 2.948(a). A current description of Nemko USA, Inc.'s measurement facility is on file with the FCC. Nemko USA Inc. has additionally satisfied the FCC that it complies with the requirements set forth in 47 CFR Part 2, Subpart I, Section 2.948(d) regarding the accreditation of EMC laboratories. As a result, the FCC has placed Nemko USA Inc. on its list of EMC laboratories approved to perform Declaration of Conformity (DOC) procedure testing.

The RFI testing, test data collection and test data evaluation were accomplished in accordance with the ANSI C63.4-2001 Standard, and in accordance with the applicable sections of the FCC rules (47 CFR Parts 2 and 18)." digital devices. The testing was also accomplished in accordance with Industry Canada's ICES-003 standard for unintentional radiating device per EMCAB-3, Issue 3 (May 1998). The administrative summary of this test report provides a description of the test sample

I hereby certify that the test data, test data evaluation, and equipment configurations used to compile this test report are a true and accurate representation of the test sample's radio frequency interference characteristics as of the test date(s), and, for the design of the test sample.

_____ *Chip Fleury* _____
Chip Fleury, EMC Manager

Summary Of Test Data

The intent of this report is to present representative data to conform to a previously tested module and antenna(s). The Center frequency of one Cellular Test Mode is presented as evident of no pronounced changes in emissions.

Name Of Test	Para. No.	Result
RF Power Output	2.1046	PASS
Occupied Bandwidth	2.1049	NOT TESTED
Spurious Emissions at Antenna Terminals	2.1051	NOT TESTED
Field Strength of Spurious Emissions	2.1053	PASS
Frequency Stability	2.1055	NOT TESTED

Section 2. General Equipment Specification

Manufacturer:	Kyocera Wireless
Model No.:	M200
Serial No.:	Lab. Test Unit 1
Date Received In Laboratory:	December 20, 2005
Nemko Project Identifier:	25-1064-EMC
Frequency Ranges:	824.04 – 849.97 MHz 1851.25—1908.75 MHz
RF Output (Grant-Radiated):	29.5 dBm 0.89 W Cellular 25.4 dBm 0.35 W PCS
RF Output (Measured/Substituted):	26.9 dBm 0.49 W Cellular 26.0 dBm 0.40 W PCS
Emission Designator:	40KDF8W, 1M25F9W
FCC Identifier:	OVFKWC-M200

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Alan Laudani	**Date of Test:** **January 12, 2006**

Minimum Standard: Para. No.: 22,913, 24.232.

Test Results: Pass (within 2 dB of Original Certified Levels)

Measurement Data: See attached Table

NEMKO USA, Inc.

Substitution Method For Radiated Emissions

Complete	Yes	Job # :	25-1064	Test # :	3
Preliminary		Page	1	of	1

Client Name :	KYOCERA WIRELESS Corp.
EUT Name :	
EUT Model # :	MGS
EUT Part # :	
EUT Serial # :	MGS104T10052 ESN 45G5a52
EUT Config. :	Transmit

Specification :	FCC Part 22 & Part 24			Reference :	
Rod. Ant. #:	NA	Temp. (deg. C) :	12	Date :	1/12/2006
Bicon Ant.#:	NA	Humidity (%) :	75	Time :	
Log Ant.#:	110	EUT Voltage :	na	Staff :	A. Laudani
DRG Ant. #	529	EUT Frequency :	na	Photo ID:	
Dipole Ant.#:	NA	Phase:	na	Peak Bandwidth:	RBW-1MHz, VBW-1MHz
Cable#:	60ft	Location:	SOATS		
Preamp#:	317	Distance:	3m		
Spec An.#:	NA				
QP #:	NA				
PreSelect#:	NA				

target Frequency mHz	target level dBuV/m	dipole	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Watts
824.70	99	0	3.4	28.60	25.2	**0.33**
836.49	100.4	0	3.4	30.10	26.7	**0.47**
848.31	100.6	0	3.4	30.30	26.9	**0.49**

target Frequency mHz	target level dBuV/m	Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	
1851.25	87.2	7.8	5.4	18.6	21.0	**0.13**
1880.00	91.6	7.8	5.4	23.0	25.4	**0.35**
1908.75	92.3	7.8	5.5	23.7	26.0	**0.40**

Radiated Emissions Data

Job # : 25-1064-KYO Test # : 2
Page 1 of 1

Client Name : Kyocera Wireless Corp.
EUT Name : MODULE
EUT Model # : M200
EUT Part # :
EUT Serial # :
EUT Config. : CDMA Tx Harmonics

Specification : FCC Part 22 Reference :

Rod. Ant. #:	NA	Temp. (°C) :	12	Date :	1/12/06
Bicon Ant.#:	NA	Humidity (%) :	75	Time :	
Log Ant.#:	111	EUT Voltage :	120	Staff :	AL
DRG Ant. #	529	EUT Frequency :	60	Photo ID:	
Dipole Ant.#:	NA	Phase:	1	Peak Bandwidth:	1 MHz
Cable#:	SOATS2	Location:	RN# 90579	Video Bandwidth	1 MHz
Preamp#:	NA	Distance:	3m		
Spec An.#:	835	ERP conversion factor	7		
QP #:	NA				
PreSelect#:	NA				

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
824.70	89.0	99.2	25.2	27.1	38.5	-11.4	0	1.1	Pass	
836.49	91.1	100.4	25.1	28.2	38.5	-10.3	0	1.1	Pass	
848.31	90.6	100.6	25.4	28.7	38.5	-9.8	0	1.1	Pass	

Radiated Emissions Data

Job # : 25-1064-KYO Test # : 3
Page 1 of 1

Client Name : Kyocera Wireless Corp.
EUT Name : MODULE
EUT Model # : M200
EUT Part # :
EUT Serial # :
EUT Config. : PCS Tx Synthesizer

Specification : FCC Part 24 Reference :

Rod. Ant. #:	NA	Temp. (°C) :	12	Date :	1/12/06
Bicon Ant.#:	NA	Humidity (%) :	75	Time :	
Log Ant.#:	111	EUT Voltage :	120	Staff :	AL
DRG Ant. #	529	EUT Frequency :	60	Photo ID:	
Dipole Ant.#:	NA	Phase:	1	Peak Bandwidth:	1 MHz
Cable#:	40FT	Location:	RN# 90579	Video Bandwidth	1 MHz
Preamp#:	317	Distance:	3m		
Spec An.#:	835	EIRP conversion factor	5.5		
QP #:	NA				
PreSelect#:	NA				

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1851.25	82.4	87.2	27.5	19.4	33.0	-13.6	0.0	1.0	Pass	NO preamp
1880.00	80.4	91.6	27.5	23.8	33.0	-9.2	0.0	1.0	Pass	NO preamp
1908.75	84.0	92.3	27.5	24.5	33.0	-8.5	0.0	1.0	Pass	NO preamp

Section 4. Occupied Bandwidth

Para. No.: 2.1049

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

Minimum Standard: Para. No.: 24.238.

Test Results: NOT TESTED

Test Data:

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

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

Minimum Standard: Para. No.: 24.238.

Test Results: NOT TESTED

Test Data:

Section 6. Field Strength of Spurious

Para. No.: 2.1053

Test Performed By: Alan Laudani	**Date of Test: Jan. 12, 2006**

Minimum Standard: Para. No.: 22.917, 24.238.

Test Results: Pass

Test Data: See attached Table Page 14 - 15.

Radiated Emissions Data

Job # : 25-1064-KYO Test # : 2
Page 1 of 1

Client Name : Kyocera Wireless Corp.
EUT Name : MODULE
EUT Model # : M200
EUT Part # :
EUT Serial # :
EUT Config. : CDMA Tx Harmonics
Emmissions were seached for between 1000 MHz and 9000 MHz
Specification : FCC Part 22
Reference :

Rod. Ant. #:	NA	Temp. (°C) :	12	Date :	1/12/06
Bicon Ant.#:	NA	Humidity (%) :	75	Time :	
Log Ant.#:	111	EUT Voltage :	120	Staff :	AL
DRG Ant. #	529	EUT Frequency :	60	Photo ID:	
Dipole Ant.#:	NA	Phase:	1	Peak Bandwidth:	1 MHz
Cable#:	40FT	Location:	RN# 90579	Video Bandwidth	1 MHz
Preamp#:	317	Distance:	3m		
Spec An.#:	835	ERP conversion factor	7		
QP #:	NA				
PreSelect#:	NA				

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1649.40	50.0	56.7	-0.5	-41.1	-13.0	-28.1	0.0	1.1	Pass	
2474.10	48.9	48.9	4	-44.4	-13.0	-31.4			Pass	
3298.80	53.5	51.1	8.8	-35.0	-13.0	-22.0	0.0	1.1	Pass	
4123.50	52.2	50.3	11.9	-33.2	-13.0	-20.2	0.0	1.1	Pass	
1672.98	49.1	54.4	-0.5	-43.4	-13.0	-30.4	0.0	1.1	Pass	
2509.47	55.6	50.3	4.9	-36.8	-13.0	-23.8	0.0	1.1	Pass	
3345.96	52.8	52.3	8.8	-35.7	-13.0	-22.7	0.0	1.1	Pass	
4182.45	48.3	49.1	11.9	-36.3	-13.0	-23.3	0.0	1.1	Pass	
5018.94	47.3	45.5	14	-36.0	-13.0	-23.0	0.0	1.1	Pass	
1696.00	50.8	47.1	-0.5	-47.0	-13.0	-34.0	0.0	1.1	Pass	
2544.00	52.8	50.2	4.9	-39.6	-13.0	-26.6	0.0	1.1	Pass	
3392.00	51.9	52.3	8.8	-36.2	-13.0	-23.2	0.0	1.1	Pass	
4240.00	48.7	50.4	11.9	-35.0	-13.0	-22.0	0.0	1.1	Pass	
5088.00	48.4	47.6	14	-34.9	-13.0	-21.9	0.0	1.1	Pass	

Radiated Emissions Data

Job # : 25-1064-KYO Test # : 4
Page 1 of 1

Client Name : Kyocera Wireless Corp.
EUT Name : MODULE
EUT Model # : M200
EUT Part # :
EUT Serial # :
EUT Config. : PCS Tx Synthesizer
Emmissions were seached for between 1000 MHz and 19100 MHz
Specification : FCC Part 24 Reference :

Rod. Ant. #:	NA	Temp. (°C) :	23	Date :	12/20/05
Bicon Ant.#:	NA	Humidity (%) :	26	Time :	
Log Ant.#:	NA	EUT Voltage :	120	Staff :	AL
DRG Ant. #	529	EUT Frequency :	60	Photo ID:	
Dipole Ant.#:	NA	Phase:	1	Peak Bandwidth:	1 MHz
Cable#:	40ft	Location:	RN# 90579	Video Bandwidth	1 MHz
Preamp#:	842	Distance:	3m		
Spec An.#:	835	EIRP conversion factor	5.5		
QP #:	NA				
PreSelect#:	NA				

Meas. Freq. (MHz)	Vertical (dBuV) pk	Horizontal (dBuV) pk	CF (db)	Max Level (dBm) pk	Spec. Limit (ERIP) (dBm) pk	Margin dB pk	EUT Rotation	Ant. Height	Pass Fail Unc.	Comment
1851.25	82.4	87.2	27.5	19.4	33.0	-13.6	0.0	1.0	Pass	NO preamp
3702.50	53.9	55.3	-8.4	-48.4	-13.0	-35.4	0.0	1.1	Pass	
5553.75	45.5	46.9	-0.8	-49.1	-13.0	-36.1	0.0	1.1	Pass	
1880.00	80.4	91.6	27.5	23.8	33.0	-9.2	0.0	1.0	Pass	NO preamp
3760.00	60.5	61.8	-8.4	-41.9	-13.0	-28.9	0.0	1.1	Pass	
5640.00	48.3	46.7	-0.8	-47.7	-13.0	-34.7	0.0	1.1	Pass	
1908.75	84.0	92.3	27.5	24.5	33.0	-8.5	0.0	1.0	Pass	NO preamp
3817.50	51.1	56.5	-8.4	-47.2	-13.0	-34.2	0.0	1.1	Pass	
5726.25	49.7	46.0	-0.8	-46.3	-13.0	-33.3	0.0	1.1	Pass	

Section 7. Frequency Stability

Para. No.: 2.1055

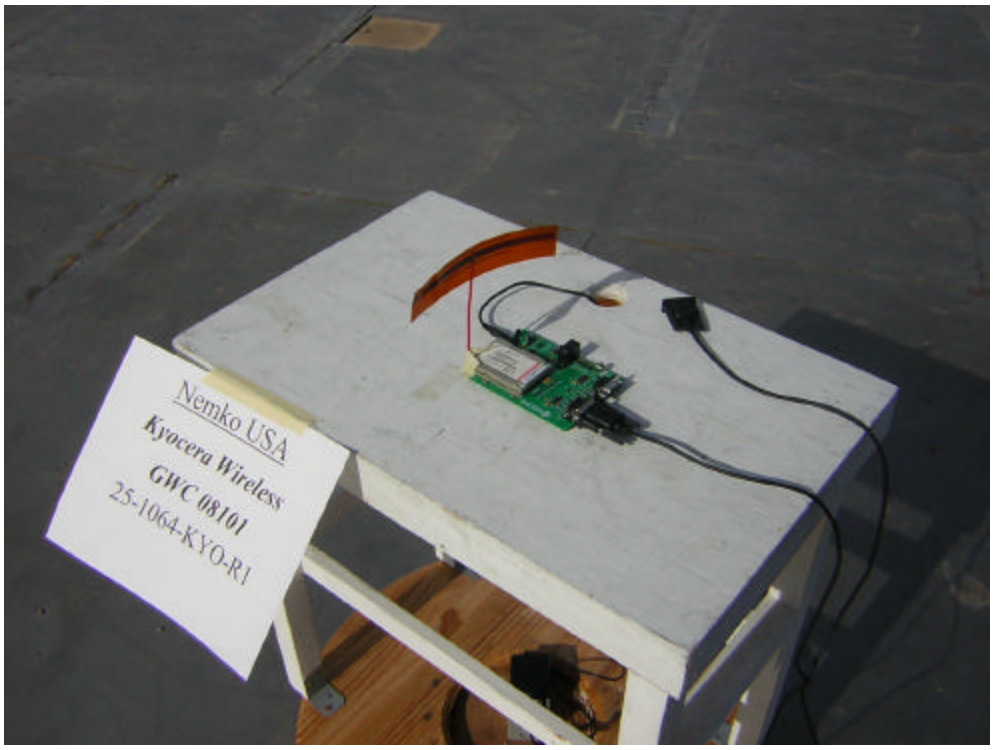
Test Performed By:	Date of Test:

Minimum Standard: Part 22.917, Part 24.235

Test Results: NOT TESTED

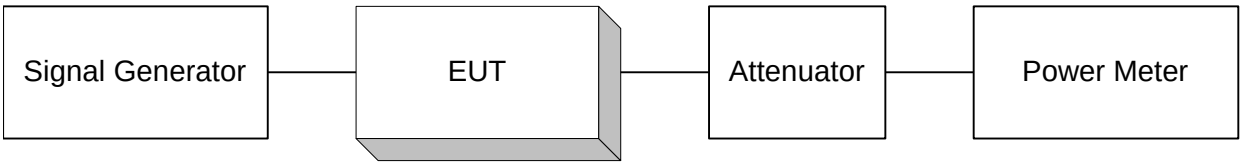
Test Data:

Range Set up: Photo

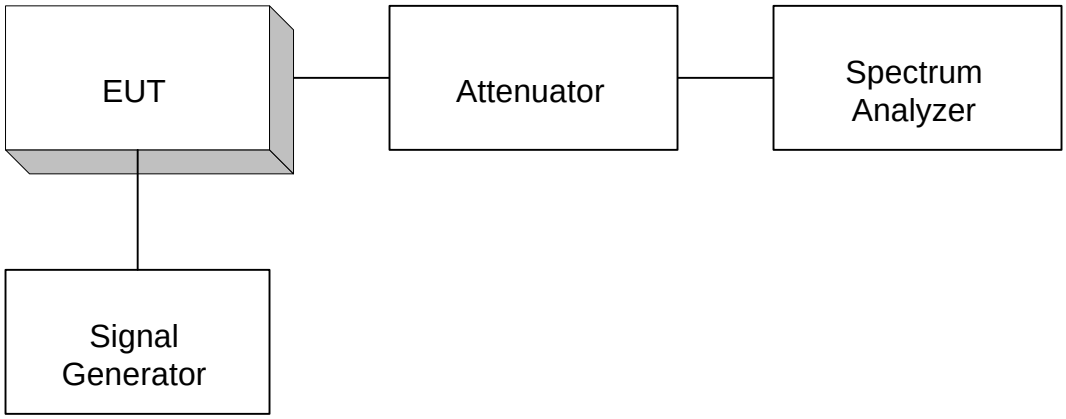


Section 7. Block Diagrams

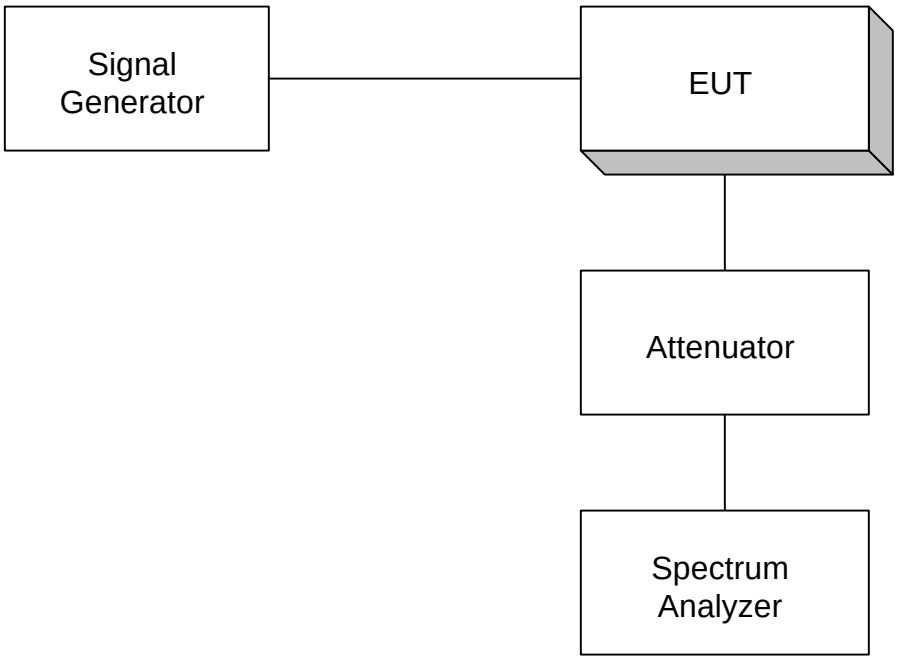
Para. No. 1046 - R.F. Power Output

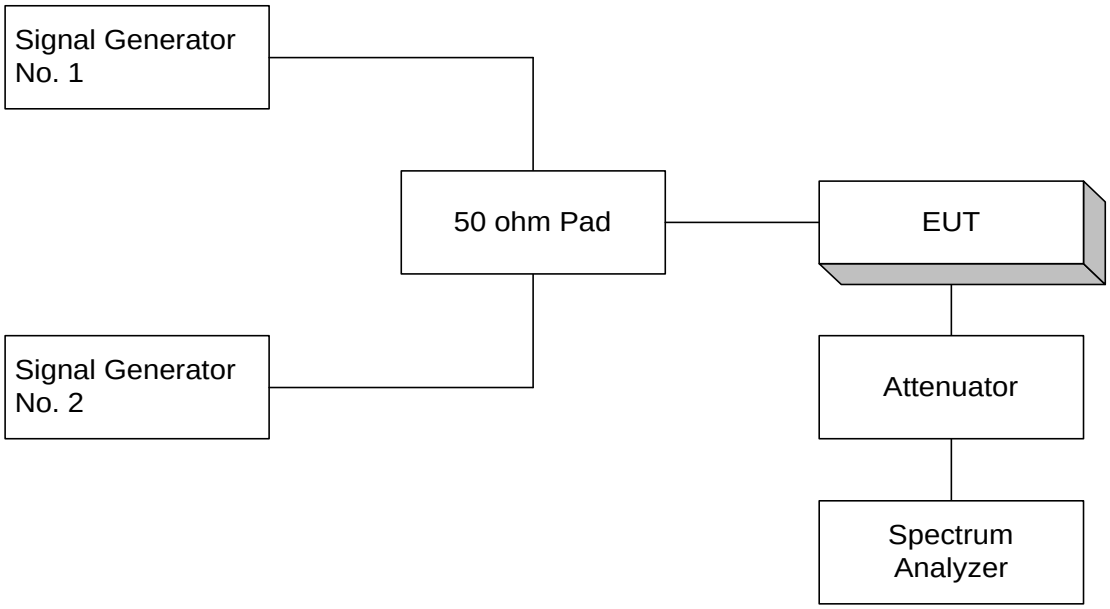


Para. No. 2.1049 - Occupied Bandwidth

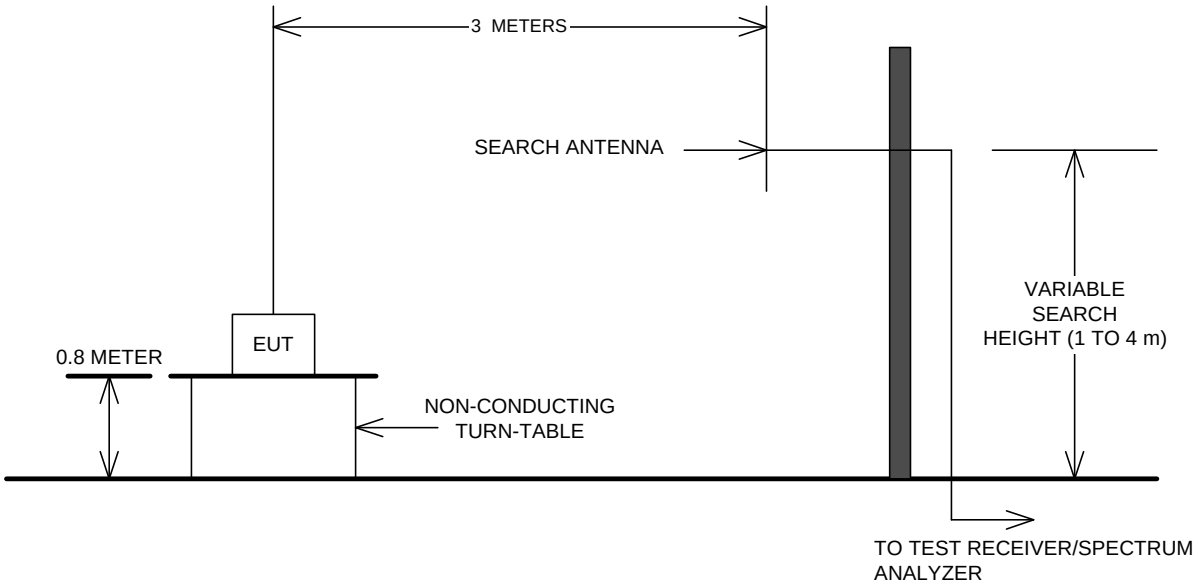


Para. No. 2.1051 - Spurious Emissions at Antenna Terminals





Para. No. 2.1053 - Field Strength of Spurious Radiation



Section 8. Test Equipment List

Asset Number	Description	Model Number	Serial Number	Last Cal	Cal Due
835	Spectrum Analyzer, Rhode & Schwartz	RHDFSEK	829058/005	12/30/04	12/30/05
317	Preamplifier, HP	8449A	2749A00167	1/6/05	1/6/06
752	Antenna, DRWG, EMCO	3115	4943	12/29/04	12/29/05
529	Antenna, DRWG, EMCO	3115	2505	4/13/05	4/13/06
112	Antenna, LPA, EMCO	3146	9101-2988	10/28/05	10/28/06
765	Antenna Set, Dipole, EMCO	3121C	1214	1/28/05	1/28/06
836	Signal Generator, Agilent	E8254A	US41140229	12/5/05	12/5/06
674	Spectrum Analyzer, HP	8568B	2007A00910	10/12/05	10/12/06
675	Spectrum Analyzer Display, HP	85662A	2005A01282	10/12/05	10/12/06
676	Quasi-Peak Adapter, HP	85650A	2430A00576	10/12/05	10/12/06
384	LISN, Solar	9348-50-R-24-BNC	941716	8/31/05	8/31/06
682	Transient Limiter, HP	11974A	3107A02633	11/16/05	11/16/06
559	High Pass Filter, Solar	8310-1.0	844823	1/6/05	1/6/06