



Class II Permissive Change To Append New Antennas

Test Report: 2005 010959-FCC
FCC ID: OVFKWC-M200

Equipment Under Test: Communications Module
Model: M200
Antenna Model: Qualcomm Centurion T2 Antenna CV90-J6595
Qualcomm Omni-Express Antenna CV90-53293

Applicant: Kyocera Wireless
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San Diego, CA 92121
858 449-9835
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In Accordance With: FCC Part 22, Subpart H
Industry Canada RSS-129

AND

In Accordance With: FCC Part 24, Subpart E
Industry Canada RSS-133

Tested By: Nemko USA Inc.
11696 Sorrento Valley Road
San Diego, CA 92121-1024

Date: January 20, 2005

Total Number of Pages: 28

Table of Contents

Section 1.	Summary of Test Results	3
Section 2.	General Equipment Specification.....	6
Section 3.	RF Power Output.....	7
Section 5.	Audio Low-Pass Filter Response	13
Section 6.	Modulation Limiting.....	14
Section 7.	Occupied Bandwidth (WB Data).....	15
Section 8.	Spurious Emissions At Antenna Terminals.....	16
Section 9.	Field Strength of Spurious	17
Section 11.	Block Diagrams	26
Section 12.	Conductive Emissions	25
Section 13.	Test Equipment List	27

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, Subpart H and FCC Part 24, Subpart E.

DOCUMENT HISTORY

REVISION	DATE	COMMENTS
-	January 20, 2005	Prepared By: A. Laudani
-	January 20, 2005	Initial Release: R. L. Hill

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4 (1992) "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 January 18, 2004. Testing was performed on the unit described in this report on January 18, 2004 to January 19, 2004 .
- 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.

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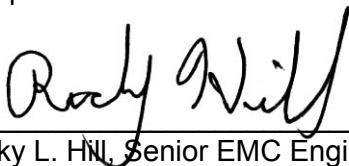
CERTIFICATION

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 C63.4-1992 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.



Ricky L. Hill, Senior EMC Engineer

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	NA ¹
Audio Low Pass Filter Response	2.1047	NA ¹
Modulation Limiting	2.1047	NA ¹
Occupied Bandwidth (WB Data)	2.1049	NA ²
Spurious Emissions at Antenna Terminals	2.1051	NA ²
Field Strength of Spurious Emissions	2.1053	Complies
Frequency Stability	2.1055	NA ²

Footnotes For N/A's:

- ¹ Digital Modulation
- ² Not tested, per customer's instructions.

Test Conditions:

Indoor Temperature: n/a °C
 Humidity: %

Outdoor Temperature: 16-22 °C
 Humidity: 45-62 %

Section 2. General Equipment Specification

Manufacturer: Kyocera Wireless

Model No.: M200 Communications Module

Serial No.: N/A

Antenna Model: Qualcomm Centurion T2 Antenna CV90-J6595
Qualcomm Omni-Express Antenna CV90-53293

Date Received In Laboratory: January 18, 2004

Nemko Identification No.: 24-959-KYO

Frequency Ranges: 824.7 – 848.31 MHz
824.04 – 849.97 MHz
1851.25—1908.75 MHz

RF Output (Limit): Part 22: 7 Watts; Part 24: 2 W

RF Output (Measured): Part 22: 0.29 Watts; Part 24: 0.38W

Emission Designators: 40KDF8W, 1M25F9W, 40KDF1D, 1M25F9W

FCC Identifier: OVFKWC-M200

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Alan Laudani	Date of Test: 1-20-05
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Minimum Standard: Para. 22.913(a). The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts. & Para.24.232, the EIRP must not exceed 2 Watts.

Test Results: Complies, see tables below.

Measurement Data:

Qualcomm Centurion T2 Antenna CV90-J6595

Modulation	Frequency (MHz)	Measured (dBm)	Substituted Result (dBm)	Substituted Result Watts
FM	824.04	30.6	24.7	0.29
	836.49	24.9	23.6	0.23
	848.97	29.1	24.1	0.26
CDMA	824.70	30.4	20.3	0.11
	836.49	29.1	20.3	0.11
	848.97	29.8	21.4	0.14
PCS	1851.25	26.2	24.9	0.31
	1880.00	28.9	25.8	0.38
	1908.75	27.2	24.9	0.31

Qualcomm Omni-Express Antenna CV90-53293

Modulation	Frequency (MHz)	Measured (dBm)	Substituted Result (dBm)	Substituted Result Watts
FM	824.04	12.0	6.0	0.004
	836.49	12.7	11.0	0.012
	848.97	15.2	9.3	0.009
CDMA	824.70	10.4	4.4	0.003
	836.49	13.0	7.3	0.005
	848.97	10.7	4.8	0.003
PCS	1851.25	18.8	23.9	0.246
	1880.00	18.6	24.1	0.255
	1908.75	19.2	24.6	0.286



Substitution Method For Radiated Emissions

Complete Yes Job #: 24-959-FCC Test #: 6
Preliminary _____ Page 1 of 1

Client Name : KYOCERA WIRELESS Corp.
EUT Name : M200
EUT Model #: Centurion Antenna CV90-J6595
EUT Part #: _____
EUT Serial #: _____
EUT Config.: Transmit

Specification : FCC Part 22/ Part 24 Reference : _____
Rod. Ant. #: NA Temp. (deg. C) : 13 Date : 1/18/2005
Bicon Ant.#: NA Humidity (%) : 50 Time : 16:00
Log Ant.#: NA EUT Voltage : 13 V Staff : A. Laudani
DRG Ant. # tx 752 EUT Frequency : dc Photo ID: _____
DRG Ant. # rx 529 Phase: na Peak Bandwidth: RBW-1MHz, VBW-1MHz
Cable# tx 60ft Location: SOATS
Preamp#: 40dB Distance: 3m
Spec An.#: 835
Cable# rx 40ft
Signal Generator# 440 atronics 1018 cal 9-22-05

Frequency mHz	target		Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (ERP) dBm	Spec dBm	Margin dBm
	level dBuV/m							
FM								
824.04	97.01		0	5.89	30.54	24.7	33	-8.4
836.49	95.75		0	5.89	29.44	23.6	33	-9.5
848.97	96.20		0	5.89	29.97	24.1	33	-8.9
1648.08	83.02		5.41	7.4	-32.35	-34.4	-13	-21.4
1672.98	82.14		5.41	7.4	-33.23	-35.2	-13	-22.2
1697.94	84.49		5.41	7.4	-30.88	-32.9	-13	-19.9
2546.91	75.67		6.98	9.12	-29.33	-31.5	-13	-18.5
CDMA								
824.7	92.70		0	5.89	26.23	20.3	33	-12.7
836.49	92.54		0	5.89	26.23	20.3	33	-12.7
848.31	93.51		0	5.89	27.28	21.4	33	-11.6
1672.98	87.98		5.41	7.4	-27.39	-29.4	-13	-16.4

Frequency mHz	target		Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Spec dBm	Margin dBm
	level dBuV/m							
PCS								
1851.25	87.52		9.5	7.67	23.02	24.9	33	-8.2
1880.00	88.10		9.5	7.80	24.10	25.8	33	-7.2
1908.75	87.30		9.5	7.92	23.30	24.9	33	-8.1
3702.5	84.53		7.95	11.58	-14.97	-18.6	-13	-5.6
3760.00	83.99		7.95	11.58	-18.41	-22.0	-13	-9.0
3817.50	84.44		7.95	11.58	-15.06	-18.7	-13	-5.7
5553.75	61.04		9.29	15.9	-34.09	-40.7	-13	-27.7
5640.00	72.64		9.29	15.9	-22.49	-29.1	-13	-16.1
5726.25	63.99		9.29	15.9	-29.00	-35.6	-13	-22.6



Substitution Method For Radiated Emissions

Complete Yes Job #: 24-959-FCC Test #: 6
Preliminary _____ Page 1 of 1

Client Name: KYOCERA WIRELESS Corp.
EUT Name: M200 Qualcomm Omni-Express Antenna CV90-53293
EUT Model #: _____
EUT Part #: _____
EUT Serial #: _____
EUT Config.: Transmit

Specification: FCC Part 22/ Part 24 Reference: _____
Rod. Ant. #: NA Temp. (deg. C): 13 Date: 1/18/2005
Bicon Ant.#: NA Humidity (%): 50 Time: 16:00
Log Ant.#: NA EUT Voltage: 13 V Staff: A. Laudani
DRG Ant. # tx: 752 EUT Frequency: dc Photo ID: _____
DRG Ant. # rx: 529 Phase: na Peak Bandwidth: RBW-1MHz, VBW-1MHz
Cable# tx: 60ft Location: SOATS
Preamp#: 40dB Distance: 3m
Spec An.#: 835
Cable# rx: 40ft
Signal Generator# 440 atronics 1018 cal 9-22-05

Frequency mHz	target level dBuV/m	dipole Gain dBi	cable loss dB	Signal Generator dBm	Total (ERP) dBm	Spec dBm	Margin dBm
FM							
824.04	78.35	0	5.89	11.88	6.0	33	-8.4
836.49	83.16	0	5.89	16.85	11.0	33	-9.5
848.97	81.42	0	5.89	15.19	9.3	33	-8.9
CDMA							
824.04	76.75	0	5.89	10.28	4.4	33	-12.7
836.49	79.53	0	5.89	13.22	7.3	33	-12.7
848.97	76.92	0	5.89	10.69	4.8	33	-11.6

Frequency mHz	target level dBuV/m	Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Spec dBm	Margin dBm
PCS							
1851.25	86.58	9.5	7.67	22.08	23.9	33	-9.1
1880.00	86.36	9.5	7.80	22.36	24.1	33	-8.9
1908.75	86.99	9.5	7.92	22.99	24.6	33	-8.4
3702.50	70.83	7.92	11.58	-28.17	-31.8	-13	-18.8
3760.00	71.86	7.95	11.58	-27.64	-31.3	-13	-18.3
3817.50	78.46	7.96	11.58	-20.54	-24.2	-13	-11.2
5640.00	61.04	9.29	15.9	-31.95	-38.6	-13	-25.6



Radiated Emissions Data

Complete Yes Job # : 24-959-KYO Test # : 1
 Preliminary _____ Page 1 of 1

Client Name : Kyocera Wireless
 EUT Name : M200
 EUT Model # : Centurion Antenna CV90-J6595
 EUT Part # : _____
 EUT Serial # : _____
 EUT Config. : TRANSMIT

Specification : FCC Part 22 Reference : _____
 Rod. Ant. # : NA Temp. (deg. C) : 21 Date : 1/18/2005
 Bicon Ant.# : NA Humidity (%) : 45 Time : _____
 Log Ant.# : 110 EUT Voltage : 120 Staff : A. Laudani
 DRG Ant. # : NA EUT Frequency : 60 Photo ID : _____
 Dipole Ant.# : NA Phase : 1 Peak Bandwidth: 100 kHz
 Cable# : SOATS Location: SOATS Video Bandwidth 100 kHz
 Preamp# : NA Distance: 3m
 Spec An.# : 835
 QP # : NA
 PreSelect# : NA

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
FM											
824.04	v	0	97.01	21.8	9.1	0.0	127.9	130.4	-2.5	Pass	
824.04	h	0	91.37	21.8	9.1	0.0	122.3	130.4	-8.1	Pass	
836.49	v	0	95.75	21.4	9.3	0.0	126.5	130.4	-4.0	Pass	
836.49	h	0	89.02	21.4	9.3	0.0	119.7	130.4	-10.7	Pass	
848.97	v	0	96.20	21.7	9.3	0.0	127.2	130.4	-3.2	Pass	
848.97	h	0	90.75	21.7	9.3	0.0	121.8	130.4	-8.7	Pass	
CDMA											
824.7	v	0	92.70	21.8	9.1	0.0	123.6	130.4	-6.8	Pass	
824.7	h	0	87.21	21.8	9.1	0.0	118.1	130.4	-12.3	Pass	
836.49	v	0	92.54	21.4	9.3	0.0	123.2	130.4	-7.2	Pass	
836.49	h	0	89.79	21.4	9.3	0.0	120.5	130.4	-9.9	Pass	
848.31	v	0	93.51	21.7	9.3	0.0	124.5	130.4	-5.9	Pass	
848.31	h	0	87.48	21.7	9.3	0.0	118.5	130.4	-11.9	Pass	



Radiated Emissions Data

Complete Yes Job # : 24-959-KYO Test # : 7
 Preliminary _____ Page 1 of 1

Client Name : Kyocera Wireless
 EUT Name : M200
 EUT Model # : Qualcomm Omni-Express Antenna CV90-53293
 EUT Part # : _____
 EUT Serial # : _____
 EUT Config : TRANSMIT

Specification : FCC Part 22 Reference : _____
 Rod. Ant. # : NA Temp. (deg. C) : 21 Date : 1/18/2005
 Bicon Ant.#: NA Humidity (%) : 45 Time : _____
 Log Ant.#: 110 EUT Voltage : 120 Staff : A. Laudani
 DRG Ant. # NA EUT Frequency : 60 Photo ID: _____
 Dipole Ant.#: NA Phase: 1 Peak Bandwidth: 100 kHz
 Cable#: SOATS Location: SOATS Video Bandwidth 100 kHz
 Preamp#: NA Distance: 3m
 Spec An.#: 835
 QP #: NA
 PreSelect#: NA

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
FM											
824.04	v	0	75.64	21.8	9.1	0.0	106.5	130.4	-23.9	Pass	
824.04	h	0	78.35	21.8	9.1	0.0	109.3	130.4	-21.2	Pass	
836.49	v	0	79.25	21.4	9.3	0.0	110.0	130.4	-20.5	Pass	
836.49	h	0	83.16	21.4	9.3	0.0	113.9	130.4	-16.5	Pass	
848.97	v	0	77.19	21.7	9.3	0.0	108.2	130.4	-22.2	Pass	
848.97	h	0	81.42	21.7	9.3	0.0	112.4	130.4	-18.0	Pass	
CDMA											
824.7	v	0	70.92	21.8	9.1	0.0	101.8	130.4	-28.6	Pass	
824.7	h	0	76.75	21.8	9.1	0.0	107.7	130.4	-22.8	Pass	
836.49	v	0	75.31	21.4	9.3	0.0	106.0	130.4	-24.4	Pass	
836.49	h	0	79.53	21.4	9.3	0.0	110.2	130.4	-20.2	Pass	
848.31	v	0	73.02	21.7	9.3	0.0	104.0	130.4	-26.4	Pass	
848.31	h	0	76.92	21.7	9.3	0.0	107.9	130.4	-22.5	Pass	

Section 4. Audio Frequency Response

Para. No.: 2.1047

Test Performed By:	Date of Test:
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Minimum Standard: Para. No. 15-19-B.

Test Results: Not Applicable, digital modulation

Measurement Data: See attached graph.

Section 5. Audio Low-Pass Filter Response**Para. No.: 2.1047**

Test Performed By:	Date of Test:
---------------------------	----------------------

Minimum Standard: Para. No. 22.915 (d).**Test Results:** Not Applicable, digital modulation**Measurement Data:**

- d) Audio filter characteristics. Except as provided in Sec. 22.917, radiotelephony signals applied to the modulator from the modulation limiter must be attenuated as a function of frequency as specified in this paragraph.
- (1) For mobile stations, these signals must be attenuated, relative to the level at 1 kHz, as follows:
 - (i) In the frequency ranges of 3.0 to 5.9 kHz and 6.1 to 15.0 kHz, signals must be attenuated by at least $40 \log(f/3)$ dB, where f is the frequency of the signal in kHz.
 - (ii) In the frequency range of 5.9 to 6.1 kHz, signals must be attenuated at least 35 dB.
 - (iii) In the frequency range above 15 kHz, signals must be attenuated at least 28 dB.

Section 6. Modulation Limiting

Para. No.: 2.1047

Test Performed By:	Date of Test:
---------------------------	----------------------

Minimum Standard: 22.915(b)

Test Results: Not Applicable, digital modulation

Measurement Data:

SAT Deviation:
WB Data Deviation:
ST Deviation:

Section 7. Occupied Bandwidth (WB Data)

Para. No.: 2.1049

Test Performed By:	Date of Test:
---------------------------	----------------------

Minimum Standard: 22.917(d); Para. No.: 24.238.

Test Results: Not applicable, per customer's instructions.

Test Data:

Section 8. Spurious Emissions At Antenna Terminals

Para. No.: 2.1051

Test Performed By:	Date of Test:
---------------------------	----------------------

Minimum Standard: Para. No. 22.917(b). Para. No.: 24.238.

Test Results: Not applicable, per customer's instructions.

Test Data:

Section 9. Field Strength of Spurious**Para. No.: 2.1053**

Test Performed By: Alan Laudani	Date of Test: 1/18/2005
--	--------------------------------

Minimum Standard: Para. No. 22.917(b); Para. No.: 24.238.**Test Results:**

The maximum spurious field strength in FM mode is -12.3 dB below the limit @ 1697.94 MHz
The maximum spurious field strength in CDMA mode is -8.8 dB below the limit @ 1696.62 MHz
The maximum spurious field strength in PCS mode is -0.3 dB below the limit @ 3702.5 MHz

Test Data: See attached tables.



Radiated Emissions Data

Job # : 24-403-KYO Page 1 of 1
 Test # : 1 of 1

Client Name : Kyocera Wireless Corp.
 EUT Name : M200
 EUT Model # : Centuri Centurion Antenna CV90-J6595
 EUT Part # :
 EUT Serial # :
 EUT Config : FM Tx Harmonics

Specification :	FCC Part 22	Reference :	
Rod. Ant. # :	NA	Temp. (deg. C) :	
Bicon Ant. # :	NA	Humidity (%) :	
Log Ant. # :	NA	EUT Voltage :	NA
DRG Ant. # :	529	EUT Frequency :	NA
Dipole Ant. # :	NA	Phase :	NA
Cable # :	40ft	Location :	RN# 90579
Preamp # :	40db	Distance :	3m
Spec An. # :	835	ERP conversion factor :	7
QP # :	NA		
PreSelect # :	NA		
		Date :	1/18/05
		Time :	
		Staff :	A. Laudani
		Peak Bandwidth :	1 MHz
		Video Bandwidth :	1 MHz

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
1648.08	83.02	73.34	-12.5	-26.7	-13.0	-13.7	270.0	1.0	Pass	
2472.12	65.91	62.20	-7.9	-39.3	-13.0	-26.3		1.0	Pass	
3296.16	61.11	53.26	-4.0	-40.2	-13.0	-27.2		1.0	Pass	
4120.20	53.27	58.40	-0.8	-39.7	-13.0	-26.7		1.0	Pass	
4944.24	52.96	51.18	-1.2	-45.5	-13.0	-32.5		1.0	Pass	
5768.28	49.98	49.71	2.5	-44.8	-13.0	-31.8		1.0	Pass	noise floor
6592.32	48.70	50.12	3.4	-43.7	-13.0	-30.7		1.0	Pass	noise floor
7416.36	47.83	47.32	5.8	-43.6	-13.0	-30.6		1.0	Pass	noise floor
8240.40	47.55	46.06	7.5	-42.2	-13.0	-29.2		1.0	Pass	noise floor
1672.98	82.14	72.90	-12.5	-27.6	-13.0	-14.6	270.0	1.0	Pass	
2509.47	69.31	68.89	-7.0	-35.0	-13.0	-22.0		1.0	Pass	
3345.96	59.77	56.22	-4.0	-41.5	-13.0	-28.5		1.0	Pass	
4182.45	54.40	55.91	-0.8	-42.2	-13.0	-29.2		1.0	Pass	
5018.94	54.85	52.25	1.7	-40.7	-13.0	-27.7		1.0	Pass	
5855.43	50.83	48.33	2.5	-43.9	-13.0	-30.9		1.0	Pass	noise floor
6691.92	53.71	49.92	3.4	-40.2	-13.0	-27.2		1.0	Pass	noise floor
7528.41	48.05	48.38	7.0	-41.9	-13.0	-28.9		1.0	Pass	noise floor
8364.90	46.02	47.72	7.5	-42.0	-13.0	-29.0		1.0	Pass	noise floor
1697.94	84.49	73.88	-12.5	-25.3	-13.0	-12.3	270.0	1.0	Pass	
2546.91	75.67	59.82	-7.0	-28.6	-13.0	-15.6		1.0	Pass	
3395.88	61.17	57.30	-4.0	-40.1	-13.0	-27.1		1.0	Pass	
4244.85	57.60	55.39	-0.8	-40.5	-13.0	-27.5		1.0	Pass	
5093.82	55.39	52.31	1.7	-40.2	-13.0	-27.2		1.0	Pass	
5942.79	49.48	48.59	2.5	-45.3	-13.0	-32.3		1.0	Pass	noise floor
6791.76	49.83	47.26	3.4	-44.0	-13.0	-31.0		1.0	Pass	noise floor
7640.73	51.28	47.20	7.0	-39.0	-13.0	-26.0		1.0	Pass	noise floor
8489.70	46.57	47.51	7.5	-42.3	-13.0	-29.3		1.0	Pass	noise floor



Radiated Emissions Data

Job # : 24-403-KYO Test # : 2
Page 1 of 1

Client Name : Kyocera Wireless Corp.
EUT Name : M200
EUT Model # : Centuri Centurion Antenna CV90-J6595
EUT Part # :
EUT Serial # :
EUT Config : CDMA Tx Harmonics

Specification : FCC Part 22 Reference :
Rod. Ant. # : NA Temp. (deg. C) : 24 Date : 1/18/05
Bicon Ant.#: NA Humidity (%) : 32 Time :
Log Ant.#: NA EUT Voltage : NA Staff : A. Laudani
DRG Ant. # : 529 EUT Frequency : NA Photo ID:
Dipole Ant.#: NA Phase: NA Peak Bandwidth: 1 MHz
Cable#: 40ft Location: RN# 90579 Video Bandwidth 1 MHz
Preamp#: 40db 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	73.59	65.14	-12.5	-36.2	-13.0	-23.2	135.0	1.0	Pass	
2474.10	51.60	51.57	-7.9	-53.6	-13.0	-40.6		1.0	Pass	
3298.80	63.06	55.22	-4	-38.2	-13.0	-25.2		1.0	Pass	
4123.50	56.40	53.13	-0.8	-41.7	-13.0	-28.7		1.0	Pass	
4948.20	53.52	49.18	-1.2	-44.9	-13.0	-31.9		1.0	Pass	
5772.90	49.20	48.14	2.5	-45.6	-13.0	-32.6		1.0	Pass	noise floor
6597.60	47.54	47.43	3.4	-46.3	-13.0	-33.3		1.0	Pass	noise floor
7422.30	49.30	47.07	5.8	-42.2	-13.0	-29.2		1.0	Pass	noise floor
8247.00	47.18	46.65	7.5	-42.6	-13.0	-29.6		1.0	Pass	noise floor
1672.98	74.00	60.66	-12.5	-35.8	-13.0	-22.8	135.0	1.0	Pass	
2509.47	63.35	50.00	-7	-40.9	-13.0	-27.9		1.0	Pass	
3345.96	59.44	53.54	-4	-41.8	-13.0	-28.8		1.0	Pass	
4182.45	52.24	55.09	-0.8	-43.0	-13.0	-30.0		1.0	Pass	
5018.94	50.55	48.30	1.7	-45.0	-13.0	-32.0		1.0	Pass	
5855.43	47.77	47.85	2.5	-46.9	-13.0	-33.9		1.0	Pass	noise floor
6691.92	51.44	47.05	3.4	-42.4	-13.0	-29.4		1.0	Pass	noise floor
7528.41	48.05	46.22	7	-42.2	-13.0	-29.2		1.0	Pass	noise floor
8364.90	47.42	46.94	7.5	-42.3	-13.0	-29.3		1.0	Pass	noise floor
1696.62	87.98	67.47	-12.5	-21.8	-13.0	-8.8	135.0	2.0	Pass	
2544.93	73.90	51.26	-7	-30.4	-13.0	-17.4		1.0	Pass	
3393.24	58.23	55.09	-4	-43.0	-13.0	-30.0		1.0	Pass	
4241.55	54.24	55.82	-0.8	-42.2	-13.0	-29.2		1.0	Pass	
5089.86	50.45	49.28	1.7	-45.1	-13.0	-32.1		1.0	Pass	
5938.17	47.24	46.71	2.5	-47.5	-13.0	-34.5		1.0	Pass	noise floor
6786.48	46.18	46.74	3.4	-47.1	-13.0	-34.1		1.0	Pass	noise floor
7634.79	49.01	46.47	7	-41.3	-13.0	-28.3		1.0	Pass	noise floor
8483.10	47.33	46.47	7.5	-42.4	-13.0	-29.4		1.0	Pass	noise floor



Radiated Emissions Data

Job # : 24-403-KYO Test # : 3
 Page 1 of 1

Client Name : Kyocera Wireless Corp.
 EUT Name : M200
 EUT Model # : Centuri Centurion Antenna CV90-J6595
 EUT Part # : _____
 EUT Serial # : _____
 EUT Config. : PCS Tx

Specification : FCC Part 24 Reference : _____
 Rod. Ant. # : NA Temp. (deg. C) : 21 Date : 1/18/05
 Bicon Ant.# : NA Humidity (%) : 45 Time : _____
 Log Ant.# : NA EUT Voltage : NA Staff : A.Laudani
 DRG Ant. # : 529 EUT Frequency : NA Photo ID: _____
 Dipole Ant.# : NA Phase: NA Peak Bandwidth: 1 MHz
 Cable#: 40ft Location: RN# 90579 Video Bandwidth 1 MHz
 Preamp#: 40db 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	87.52	85.92	27.5	19.8	33.0	-13.2	90.0	1.0	Pass	
3702.50	84.53	76.92	-2.6	-13.3	-13.0	-0.3		1.0	Pass	
5553.75	61.04	56.78	2.5	-31.7	-13.0	-18.7		1.0	Pass	
7405.00	53.67	50.62	5.8	-35.8	-13.0	-22.8		1.0	Pass	
9256.25	45.84	44.99	8.8	-40.6	-13.0	-27.6		1.0	Pass	noise floor
11107.50	44.10	45.04	13.1	-37.1	-13.0	-24.1		1.0	Pass	noise floor
12958.75	42.66	42.66	15.4	-37.2	-13.0	-24.2		1.0	Pass	noise floor
14810.00	43.50	42.65	22.9	-28.9	-13.0	-15.9		1.0	Pass	noise floor
16661.25	40.96	40.05	22.8	-31.5	-13.0	-18.5		1.0	Pass	noise floor
18512.50	38.44	38.97	34.8	-21.5	-13.0	-8.5		1.0	Pass	noise floor
1880.00	88.10	83.82	27.5	20.3	33.0	-12.7	90.0	1.0	Pass	
3760.00	83.99	83.55	-2.6	-13.0	-13.0	-0.9		1.0	Pass	
5640.00	72.64	64.50	2.5	-20.1	-13.0	-7.1		1.0	Pass	
7520.00	50.31	49.91	7.0	-38.0	-13.0	-25.0		1.0	Pass	
9400.00	47.58	47.18	8.8	-38.8	-13.0	-25.8		1.0	Pass	noise floor
11280.00	42.90	43.71	13.1	-38.5	-13.0	-25.5		1.0	Pass	noise floor
13160.00	42.95	44.03	18.4	-32.8	-13.0	-19.8		1.0	Pass	noise floor
15040.00	41.89	41.61	22.5	-30.9	-13.0	-17.9		1.0	Pass	noise floor
16920.00	40.42	41.68	22.8	-30.8	-13.0	-17.8		1.0	Pass	noise floor
18800.00	37.93	37.24	34.8	-22.5	-13.0	-9.5		1.0	Pass	noise floor
1908.75	87.30	81.21	27.5	19.5	33.0	-13.5	90.0	1.0	Pass	
3817.50	44.41	38.58	37.4	-13.5	-13.0	-0.5		1.0	Pass	
5726.25	63.99	58.52	2.5	-28.8	-13.0	-15.8		1.0	Pass	
7635.00	53.54	50.97	7.0	-34.7	-13.0	-21.7		1.0	Pass	
9543.75	46.74	44.47	8.5	-40.0	-13.0	-27.0		1.0	Pass	
11452.50	46.57	44.47	13.1	-35.6	-13.0	-22.6		1.0	Pass	noise floor
13361.25	41.52	41.48	18.4	-35.3	-13.0	-22.3		1.0	Pass	noise floor
15270.00	40.81	41.33	22.5	-31.4	-13.0	-18.4		1.0	Pass	noise floor
17178.75	39.19	39.59	27.7	-28.0	-13.0	-15.0		1.0	Pass	noise floor
19087.50	32.53	31.58	34.8	-27.9	-13.0	-14.9		1.0	Pass	noise floor rbw = 100kHz



Radiated Emissions Data

Job #: 24-959-KYO Page 1 of 1 Test #: 1 of 1

Client Name: Kyocera Wireless Corp.
EUT Name: M200
EUT Model #: Qualcomm Omni-Express Antenna CV90-53293
EUT Part #:
EUT Serial #:
EUT Config.: FM Tx Harmonics

Specification: FCC Part 22
Reference:
Rod. Ant. #: NA Temp. (deg. C): 22
Bicon Ant. #: NA Humidity (%): 45
Log Ant. #: NA EUT Voltage: 120
DRG Ant. #: 529 EUT Frequency: 60
Dipole Ant. #: NA Phase: NA
Cable#: 40ft Location: RN# 90579
Preamp#: 40db Distance: 3m
Spec An. #: 835 ERP conversion factor: 7
QP #: NA
PreSelect#: NA

Table with 11 columns: 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. Rows include various frequency measurements and their corresponding levels and margins.



Radiated Emissions Data

Job # : 24-959-KYO Test # : 2
 Page 1 of 1

Client Name : Kyocera Wireless Corp.
 EUT Name : M200
 EUT Model # : Qualcomm Omni-Express Antenna CV90-53293
 EUT Part # : _____
 EUT Serial # : _____
 EUT Config. : CDMA Tx Harmonics

Specification : FCC Part 22 Reference : _____
 Rod. Ant. # : NA Temp. (deg. C) : _____ Date : _____
 Bicon Ant.# : NA Humidity (%) : _____ Time : _____
 Log Ant.# : NA EUT Voltage : NA Staff : _____
 DRG Ant. # : 529 EUT Frequency : NA Photo ID : _____
 Dipole Ant.# : NA Phase : NA Peak Bandwidth: 1 MHz
 Cable# : 40ft Location: RN# 90579 Video Bandwidth 1 MHz
 Preamp# : 40db 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	54.98	53.64	-12.5	-54.8	-13.0	-41.8			Pass	
2474.10	50.98	50.54	-7.9	-54.2	-13.0	-41.2			Pass	noise floor
3298.80	62.15	56.34	-4	-39.1	-13.0	-26.1			Pass	
4123.50	58.93	53.94	-0.8	-39.1	-13.0	-26.1			Pass	
4948.20	52.00	48.55	-1.2	-46.5	-13.0	-33.5			Pass	
5772.90	49.20	48.14	2.5	-45.6	-13.0	-32.6			Pass	noise floor
6597.60	47.54	47.43	3.4	-46.3	-13.0	-33.3			Pass	noise floor
7422.30	49.30	47.07	5.8	-42.2	-13.0	-29.2			Pass	noise floor
8247.00	47.18	46.65	7.5	-42.6	-13.0	-29.6			Pass	noise floor
1672.98	55.33	53.46	-12.5	-54.4	-13.0	-41.4			Pass	
2509.47	57.21	50.81	-7	-47.1	-13.0	-34.1			Pass	
3345.96	59.17	57.83	-4	-42.1	-13.0	-29.1			Pass	
4182.45	60.46	56.49	-0.8	-37.6	-13.0	-24.6			Pass	
5018.94	56.35	49.41	1.7	-39.2	-13.0	-26.2			Pass	
5855.43	47.77	47.85	2.5	-46.9	-13.0	-33.9			Pass	noise floor
6691.92	51.44	47.05	3.4	-42.4	-13.0	-29.4			Pass	noise floor
7528.41	48.05	46.22	7	-42.2	-13.0	-29.2			Pass	noise floor
8364.90	47.42	46.94	7.5	-42.3	-13.0	-29.3			Pass	noise floor
1696.62	53.98	53.35	-12.5	-55.8	-13.0	-42.8			Pass	
2544.93	57.97	53.32	-7	-46.3	-13.0	-33.3			Pass	
3393.24	55.24	54.09	-4	-46.0	-13.0	-33.0			Pass	
4241.55	53.67	55.47	-0.8	-42.6	-13.0	-29.6			Pass	
5089.86	59.16	51.58	1.7	-36.4	-13.0	-23.4			Pass	
5938.17	47.24	46.71	2.5	-47.5	-13.0	-34.5			Pass	noise floor
6786.48	46.18	46.74	3.4	-47.1	-13.0	-34.1			Pass	noise floor
7634.79	49.01	46.47	7	-41.3	-13.0	-28.3			Pass	noise floor
8483.10	47.33	46.47	7.5	-42.4	-13.0	-29.4			Pass	noise floor

Radiated Emissions Data

Job # : 24-959-KYO Test # : 3
 Page 1 of 1

Client Name : Kyocera Wireless Corp.
 EUT Name : M200
 EUT Model # : Qualcomm Omni-Express Antenna CV90-53293
 EUT Part # : _____
 EUT Serial # : _____
 EUT Config. : PCS Tx

Specification : FCC Part 24 Reference : _____
 Rod. Ant. # : NA Temp. (deg. C) : 21 Date : 1/18/05
 Bicon Ant.#: NA Humidity (%) : 45 Time : _____
 Log Ant.#: NA EUT Voltage : NA Staff : A.Laudani
 DRG Ant. # : 529 EUT Frequency : NA Photo ID: _____
 Dipole Ant.#: NA Phase: NA Peak Bandwidth: 1 MHz
 Cable#: 40ft Location: RN# 90579 Video Bandwidth 1 MHz
 Preamp#: 40db 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	86.58	82.17	27.5	18.8	33.0	-14.2	90.0	1.0	Pass	
3702.50	70.83	72.34	-2.6	-25.5	-13.0	-12.5		1.0	Pass	
5553.75	59.03	52.30	2.5	-33.7	-13.0	-20.7		1.0	Pass	
7405.00	54.69	48.85	5.8	-34.8	-13.0	-21.8		1.0	Pass	
9256.25	45.84	44.99	8.8	-40.6	-13.0	-27.6		1.0	Pass	noise floor
11107.50	44.10	45.04	13.1	-37.1	-13.0	-24.1		1.0	Pass	noise floor
12958.75	42.66	42.66	15.4	-37.2	-13.0	-24.2		1.0	Pass	noise floor
14810.00	43.50	42.65	22.9	-28.9	-13.0	-15.9		1.0	Pass	noise floor
16661.25	40.96	40.05	22.8	-31.5	-13.0	-18.5		1.0	Pass	noise floor
18512.50	38.44	38.97	34.8	-21.5	-13.0	-8.5		1.0	Pass	noise floor
1880.00	86.36	80.33	27.5	18.6	33.0	-14.4	90.0	1.0	Pass	
3760.00	71.86	71.01	-2.6	-26.0	-13.0	-13.0		1.0	Pass	
5640.00	61.04	56.46	2.5	-31.7	-13.0	-18.7		1.0	Pass	
7520.00	50.12	47.26	7.0	-38.1	-13.0	-25.1		1.0	Pass	
9400.00	47.58	47.18	8.8	-38.8	-13.0	-25.8		1.0	Pass	noise floor
11280.00	42.90	43.71	13.1	-38.5	-13.0	-25.5		1.0	Pass	noise floor
13160.00	42.95	44.03	18.4	-32.8	-13.0	-19.8		1.0	Pass	noise floor
15040.00	41.89	41.61	22.5	-30.9	-13.0	-17.9		1.0	Pass	noise floor
16920.00	40.42	41.68	22.8	-30.8	-13.0	-17.8		1.0	Pass	noise floor
18800.00	37.93	37.24	34.8	-22.5	-13.0	-9.5		1.0	Pass	noise floor
1908.75	86.99	81.71	27.5	19.2	33.0	-13.8	90.0	1.0	Pass	
3817.50	38.46	38.28	37.4	-19.4	-13.0	-6.4		1.0	Pass	
5726.25	59.34	58.71	2.5	-33.4	-13.0	-20.4		1.0	Pass	
7635.00	51.60	49.19	7.0	-36.7	-13.0	-23.7		1.0	Pass	
9543.75	45.04	44.47	8.5	-41.7	-13.0	-28.7		1.0	Pass	
11452.50	46.57	44.47	13.1	-35.6	-13.0	-22.6		1.0	Pass	noise floor
13361.25	41.52	41.48	18.4	-35.3	-13.0	-22.3		1.0	Pass	noise floor
15270.00	40.81	41.33	22.5	-31.4	-13.0	-18.4		1.0	Pass	noise floor
17178.75	39.19	39.59	27.7	-28.0	-13.0	-15.0		1.0	Pass	noise floor
19087.50	32.53	31.58	34.8	-27.9	-13.0	-14.9		1.0	Pass	noise floor rbw = 100kHz

Set Up Photos

Qualcomm Omni-Express Antenna CV90-53293



Qualcomm Centurion T2 Antenna CV90-J6595





Section 10. Frequency Stability

Para. No.: 2.1055

Test Performed By:	Date of Test:
---------------------------	----------------------

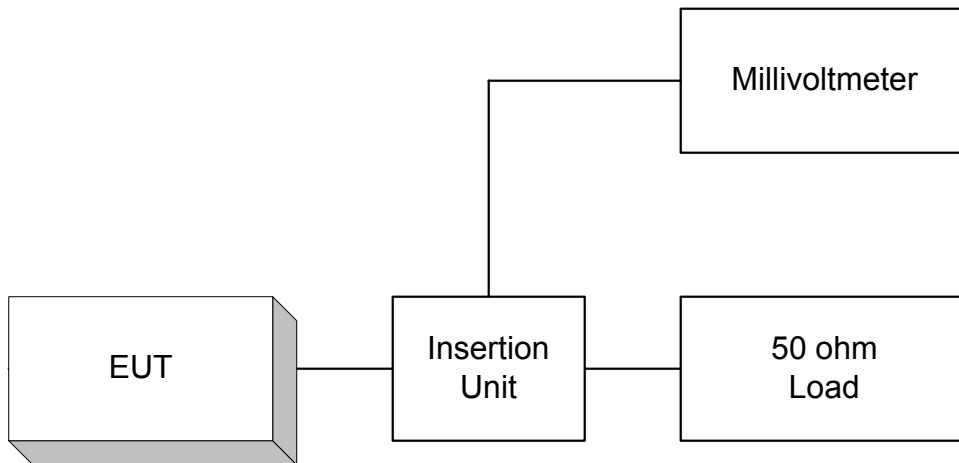
Minimum Standard: Para. No. 22.355; 24.235.

Test Results: Not applicable, per customer's instructions.

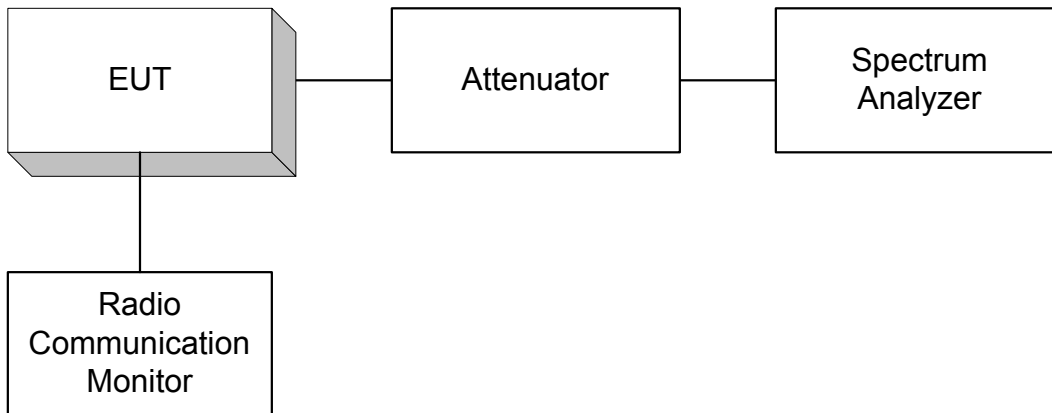
Measurement Data: Standard Test Frequency: _____ MHz
Standard Test Voltage: _____ Vdc

Section 11. Block Diagrams

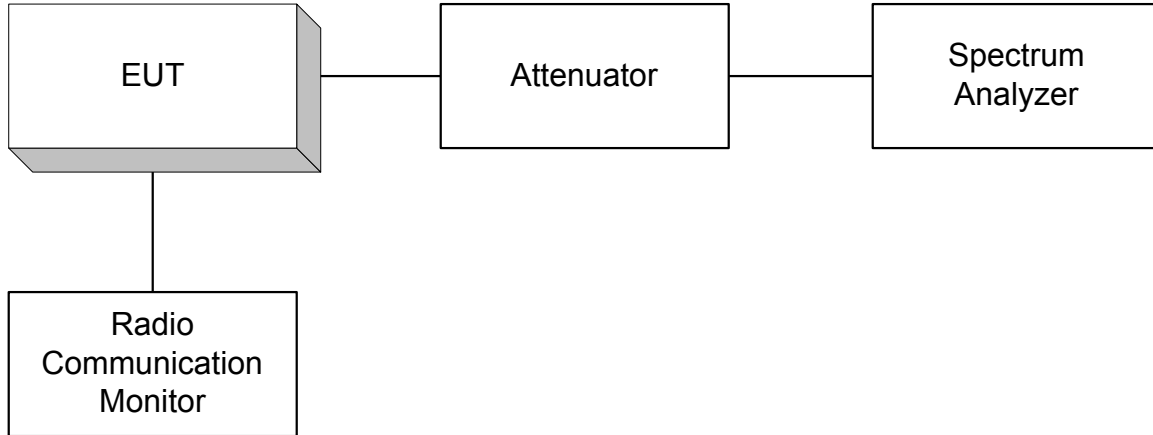
Para. No. 2.1046 - R.F. Power Output



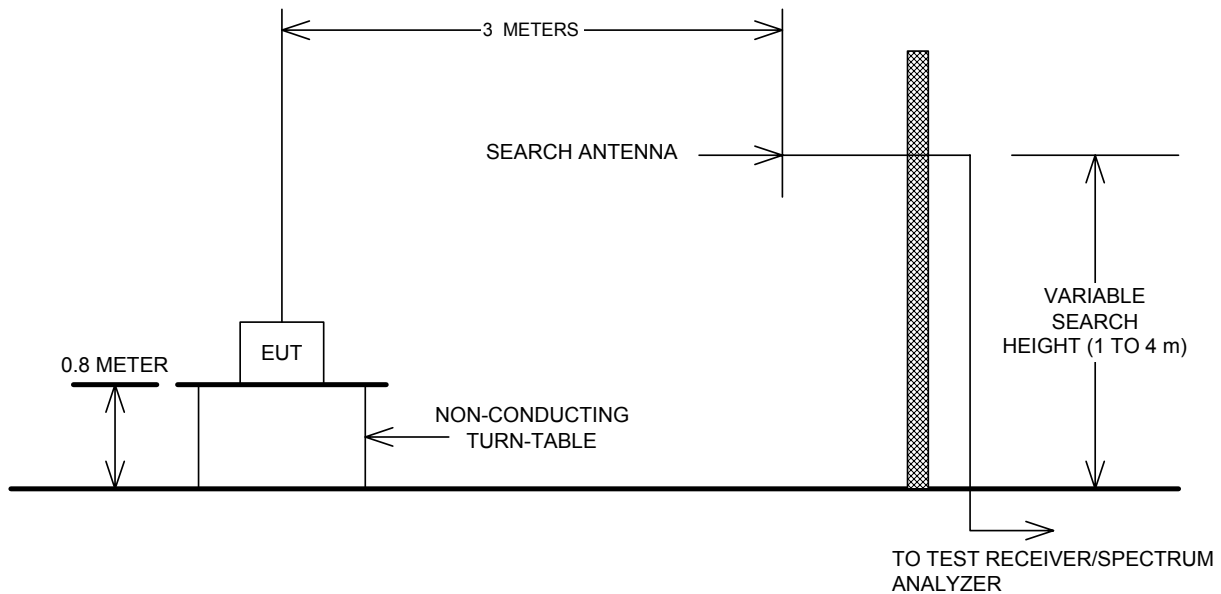
Para. No. 2.1049 - Occupied Bandwidth



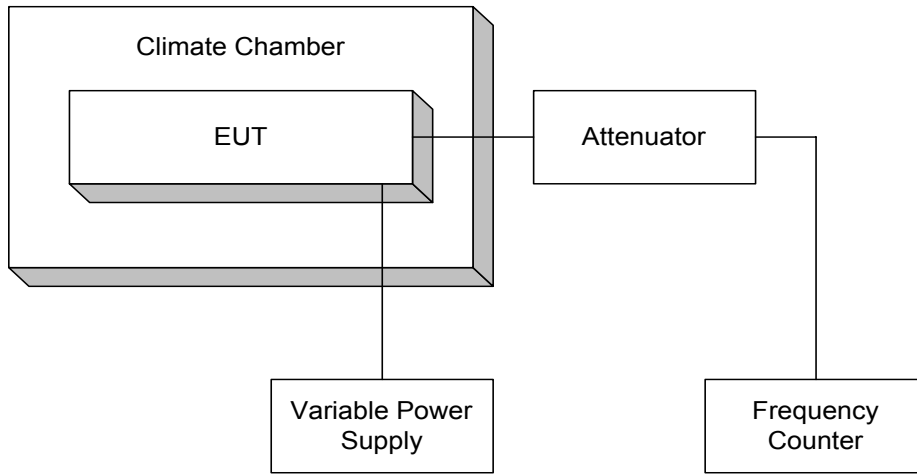
Para. No. 2.1051 Spurious Emissions at Antenna Terminals



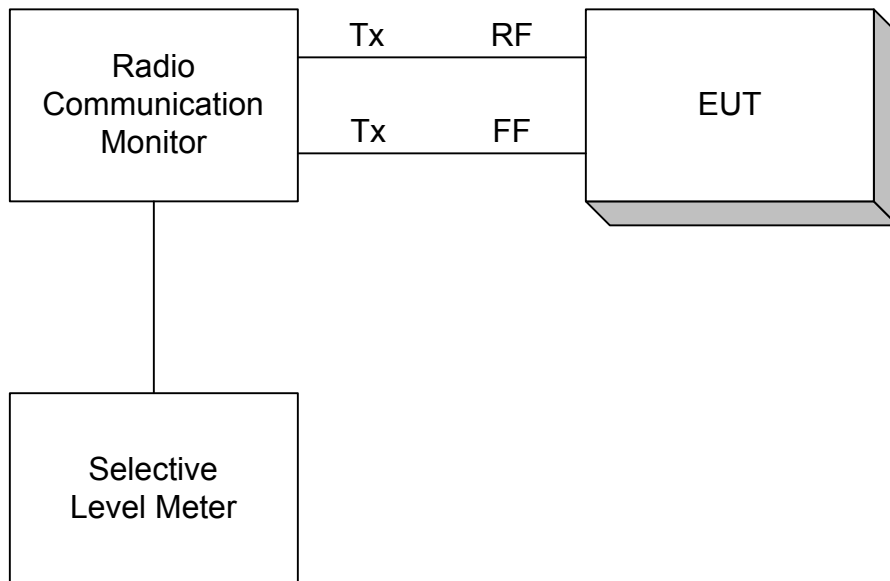
Para. No. 2.1053 - Field Strength of Spurious Radiation



Para. No. 2.1055 - Frequency Stability



Para. No. 2.1045 – Audio Frequency Response, Audio Low Pass Filter Response And Modulation Limiting



Section 13. Test Equipment List

Emissions Test Equipment						
Client	Kyocera Wireless		EUT Name	Terrestrial Mobile Communications Terminal		
PAN #	24-611-KYO		EUT Model	TCU2		
<i>Device Type</i>	<i>Model #</i>	<i>MFG</i>	<i>Asset #</i>	<i>SN</i>	<i>Cal Due</i>	
OATS #1 (North)						
Spectrum Analyzer	1088.3494.30	R & S	835	830320/002	12-30-05	
Antenna, Ridged Guide	3115	EMCO	529	2505	11-19-05	
Antenna, Ridged Guide	3115	EMCO	752	9609-4943	12-19-05	
Signal Generator	1018	Gigatronics	440	314104	9/22/2005	
Dipole Set	3121C	EMCO	756	1215	8-27-05	
Antenna, LPA	3146	EMCO	112	9101-2988	9-19-05	

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