

RADIATED EMISSIONS
DATA
FOR
KYOCERA WIRELESS CORPORATION
10300 Campus Point Drive
San Diego, CA 92121

Prepared by
TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912

Measurement Requirements (CFR 47 Part 2, Paragraph 2.1053; Part 22 Paragraph 22.917(b)(2) and Part 24, Paragraph 24.238

The measurements which follow were performed by TÜV Product Service. To the best of my knowledge these tests were conducted in accordance with the procedures outlined in Part 2 of the Commission's Rules and Regulations. The data presented below demonstrates compliance with the appropriate technical standards.

A handwritten signature in black ink that reads 'F R Fleury'.

Floyd R. Fleury
EMC Manager

Emissions Test Conditions: SPURIOUS RADIATED EMISSIONS

Roof (small open area test site), San Diego

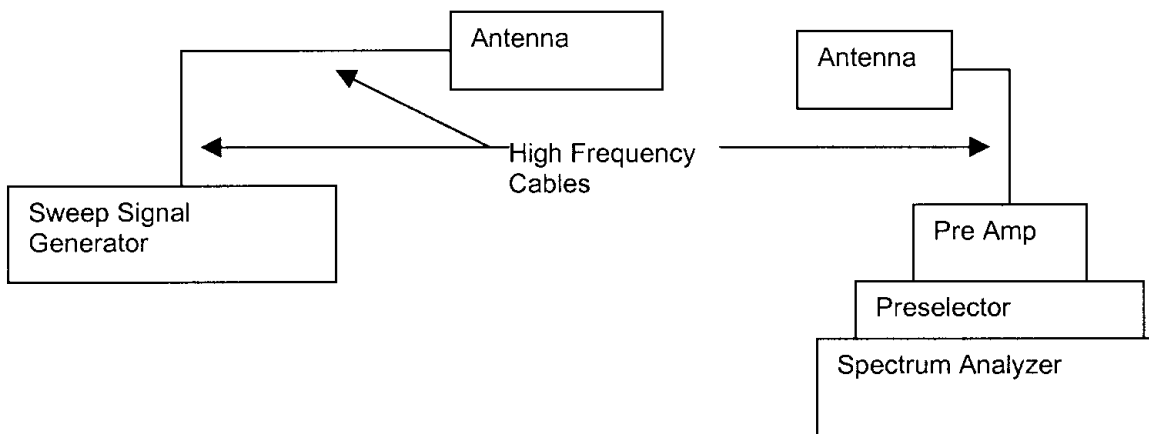
The *Spurious Radiated Emissions* measurements were performed using the following equipment:

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
85660B	402	Spectrum Analyzer & Display	Hewlett Packard	2311A02209	02/02
3146	244	Antenna	EMCO	1063	02/02
3115	251	Double Ridge Antenna	EMCO	9412-4363	10/01
FF6549-2	781/777	High Pass Filter	Sage Laboratories	007	N/A*
FF6549-1	732	900 MHz HPF	Sage	006	N/A*
AA-190-10.00.0	730	High frequency cable	United Microwave Pro	--	*
AA-190-30.00.0	733	High frequency cable	United Microwave Pro	--	*
AA.190.06.00.0	657	High Frequency Cable	United Microwave Pro	--	N/A*
11975A	716	Preamplifier	Hewlett Packard	2517A00639	N/A*
3115	453	Antenna	EMCO	9412-4364	10/01
AMF-3D-010180-35-10P	752	Preamplifier	Miteq	61433	**
85660B	407	Spectrum Analyzer	Hewlett Packard	2311A02209	02/02
HP83640B	791	Sweep Signal Generator	Hewlett Packard	3844A00726	03/02

Remarks: (*) Verified

Test Setup for Signal Substitution Method



FCC Part 2, Paragraph 2.1053; Part 22, Paragraph 22.917(b)(2) and Part 24, Paragraph 24.238

QCP 2135 Cellular Phone

Operating Mode: FM Transmit; CDMA Transmit; PCS Transmit

**RADIATED SPURIOUS - EMISSIONS
SIGNAL SUBSTITUTION METHOD**

Test Report #: SC103704 Test Area: Roof
 Test Method: Substitution Date: 6-27-01
 EUT Model #: QCP 2135 EUT POWER: 230 Vac/50 Hz 120 Vac/60 Hz
 Other: _____ Temperature: _____ °C
 EUT Description: _____ Air Pressure: _____ kPa
 NOTES: _____ Relative Humidity: _____ %



Frequency (MHz)	Signal Generator (dBm)	Gain of Antenna - (CABLE)	Total (EIRP)	Limit	Margin (dB)
1648	-43.5	2.6	-40.9	-13	-27.9
1672.98	-62.8	2.7	-65.5	-13	-52.5
1697.94	-48.3	2.7	-45.6	-13	-32.6
3760	-29.5	2.0	-27.5	-13	-14.5
3817.5	-26.7	1.0	-25.7	-13	-12.7
5726.25	-21.5	0.3	-21.2	-13	-8.2

Tested By: A. Laudani Printed A. Laudani Signature

NOTES: The above measurements are the six highest signals
as measured on the OATS. They are taken from the
low, mid & High measurements data shown on the follow-
pages.

REPORT No: SC103704 TESTED BY: A. Laudani *ALC* SPEC: Part 22.917(b)(2)
 CUSTOMER: Kyrocera TEST DIST: 3 Meters
 EUT: QCP 2135 TEST SITE: 3
 EUT MODE: FM Transmit BICONICAL: N/A
 DATE: Apr 26, 2001 LOG: 244
 NOTES: Duty Cycle= 100% OTHER: 251
 SA #402, PreAmp #716 Filter #777
 Freq under 1 GHz RBW, VBW = 100kHz
 Freq over 1 GHz RBW, VBW - 1 MHz

FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		Rotatio	EUT	Antenna Height
	pk	av	pk	av		pk	av	pk	av	pk	av			
824	102	102	89.1	89.1	26.3	127.9	###							
1648	23.5	23.5	13.2	13.2	29.7	53.2	53.2	84.4		-31.2	53			
2472	9.5	9.5	9.7	9.7	33.8	43.5	43.5	84.4		-40.9	43			
836.49	100	100	88.9	88.9	26.3	126.7	###							
1672.98	9.6	9.6	9.3	9.3	29.9	39.5	39.5	84.4		-44.9	39			
2509.47	6.9	6.9	7.9	7.9	33.9	41.8	41.8	84.4		-42.6	42			
3345.96	9.7	9.7	9.8	9.8	35.8	45.6	45.6	84.4		-38.8	46			
4182.45	10.4	10.4	8.5	8.5	38.4	48.8	48.8	84.4		-35.6	49			
5018.94	8.3	8.3	8.2	8.2	39.7	48.0	48.0	84.4		-36.4	48			
5855.43	7.2	7.2	8.9	8.9	40.6	49.5	49.5	84.4		-34.9	49			
848.97	99.8	99.8	88.6	88.6	26.5	126.3	###							
1697.94	19.6	19.6	12.1	12.1	30.0	49.6	49.6	84.4		-34.8	50			
2546.91	8.3	8.3	9.2	9.2	34.0	43.2	43.2	84.4		-41.2	43			
3395.88	10.3	10.3	11.4	11.4	35.9	47.3	47.3	84.4		-37.1	47			
4244.85	10.5	10.5	10.5	10.5	38.3	48.8	48.8	84.4		-35.6	49			
5093.82	8.4	8.4	8.5	8.5	39.7	48.2	48.2	84.4		-36.2	48			
5942.79	10	10	9.2	9.2	40.8	50.8	50.8	84.4		-33.6	51			
6791.76	12.4	12.4	10.3	10.3	41.0	53.4	53.4	84.4		-31	53			
7640.73	7.8	7.8	7.4	7.4	42.7	50.5	50.5	84.4		-33.9	51			

NOTE: Limit derived from the 43 + LOG(P) formula.

REPORT No: SC103704 TESTED BY: A. Laudani ^{AAJ} SPEC: Part **22.917(b)(2)**
 CUSTOMER: Kyrocera TEST DIST: 3 Meters
 E U T: QCP 2135 TEST SITE: 3
 EUT MODE: CDMA Transmit BICONICAL: N/A
 DATE: **Apr** 26, 2001 LOG: 244
 NOTES: Duty Cycle= 100% OTHER: 251

SA #402, PreAmp #716 Filter #777
 Freq under 1 GHz RBW, VBW = 100kHz
 Freq over 1 GHz RBW, VBW - 1 MHz

FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotatio	Antenna Height
	pk	av	pk	av		pk	av	pk	av	pk	av		
824.7	100	100	88	88	26.3	126.3	###						
1649.4	6.5	6.5	3.2	3.2	29.7	36.2	36.2	84.4		-48.2	36		
2474.1	2.5	2.5	2.6	2.6	33.8	36.4	36.4	84.4		-48	36		
3298.8	4.7	4.7	3.6	3.6	35.7	40.4	40.4	84.4		-44	40		
4123.5	5.4	5.4	6.1	6.1	38.5	44.6	44.6	84.4		-39.8	45		
4948.2	3.9	3.9	3.5	3.5	39.5	43.4	43.4	84.4		-41	43		
836.49	98.9	98.9	88.4	88.4	26.3	125.2	###						
1672.98	11.8	11.8	11.7	11.7	29.9	41.7	41.7	84.4		-42.7	42		
2509.47	10.6	10.6	10.1	10.1	33.9	44.5	44.5	84.4		-39.9	45		
848.31	99.6	99.6	88.4	88.4	26.5	126.1	###						
1696.62	12.1	12.1	11.4	11.4	30.0	42.1	42.1	84.4		-42.3	42		
2544.93	11.4	11.4	11.6	11.6	34.0	45.6	45.6	84.4		-38.8	46		

NOTE: Limit derived from the 43 + LOG(P) formula.

REPORT No: SC103704 TESTED BY: A. Laudani ^{ALP} SPEC: Part 24.238
 CUSTOMER: Kyrocera TEST DIST: 3 Meters
 E U T: QCP 2135 TEST SITE: 3
 EUT MODE: PCS Transmit BICONICAL: N/A
 DATE: APR 26, 2001 LOG: 244
 NOTES: Duty Cycle= 100% OTHER: 251

SA #402, PreAmp #716 Filter #781
 Freq under 1 GHz RBW, VBW = 100kHz
 Freq over 1 GHz RBW, VBW = 1 MHz

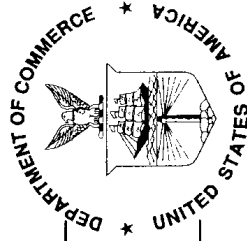
FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height
	pk	av	pk	av		pk	av	pk	av	pk	av		
1851.25	90.8	90.8	90.9	90.9	30.9	121.8	###						
3702.5	16.2	16.2	16.9	16.9	37.2	54.1	54.1	84.4		-30.3	54		
5553.75	17.2	17.2	16.3	16.3	39.9	57.1	57.1	84.4		-27.3	57		
7405	15.7	15.7	17.9	17.9	42.4	60.3	60.3	84.4		-24.1	60		
9256.25	7.2	7.2	9	9	45.2	54.2	54.2	84.4		-30.2	54		
11107.5	7.5	7.5	8.7	8.7	46.9	55.6	55.6	84.4		-28.8	56		
1880	91.6	91.6	91.9	91.9	31.0	122.9	###						
3760	18.1	18.1	28	28	37.5	65.5	65.5	84.4		-18.9	65		
5640	18.7	18.7	16.8	16.8	40.1	58.8	58.8	84.4		-25.6	59		
7520	12.1	12.1	18.6	18.6	42.7	61.3	61.3	84.4		-23.1	61		
9400	7	7	9.5	9.5	45.0	54.5	54.5	84.4		-29.9	54		
11280	9.9	9.9	9.2	9.2	46.8	56.7	56.7	84.4		-27.7	57		
1908.75	90.5	90.5	92.4	92.4	31.2	123.6	###						
3817.5	22.6	22.6	29.1	29.1	37.8	66.9	66.9	84.4		-17.5	67		
5726.25	29.3	29.3	18.9	18.9	40.3	69.6	69.6	84.4		-14.8	70		
7635	20.2	20.2	19.8	19.8	42.7	62.9	62.9	84.4		-21.5	63		
9543.75	7.6	7.6	12.3	12.3	44.8	57.1	57.1	84.4		-27.3	57		
11452.5	9	9	8.2	8.2	46.7	55.7	55.7	84.4		-28.7	56		

NOTE: Limit derived from the 43 + LOG(P) formula.

Testing Facilities
Certificates of Approval

United States Department of Commerce
National Institute of Standards and Technology

NVLAP[®]



ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

TUV PRODUCT SERVICE, INC.
SAN DIEGO, CA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

December 31, 2001
Effective through

David E. Alderman

For the National Institute of Standards and Technology

NVLAP Lab Code: 100268-0

NVLAP-01C (11-95)

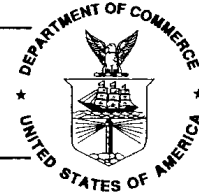
National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation



Page: 1 of 3

**ELECTROMAGNETIC COMPATIBILITY
AND TELECOMMUNICATIONS**

NVLAP LAB CODE 100268-0

TUV PRODUCT SERVICE, INC.

10040 Mesa Rim Road
San Diego, CA 92121-1034
Mr. R. Barry Wallen
Phone: 619-546-3999 Fax: 619-546-0364
E-Mail: bwallen@TUVps.com
URL: <http://www.tuvps.com>

NVLAP Code Designation / Description

Emissions Test Methods:

12/CIS22	IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a	IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b	CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01	FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a	Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b	Radiated Emissions

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Page: 2 of 3

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TUV PRODUCT SERVICE, INC.

NVLAP Code Designation / Description

12/T51 AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment

MIL-STD-462 : Conducted Emissions:

- 12/A01 MIL-STD-462 Method CE01
- 12/A04 MIL-STD-462 Method CE02
- 12/A06 MIL-STD-462 Method CE03
- 12/A08 MIL-STD-462 Method CE04
- 12/A10 MIL-STD-462 Method CE06
- 12/A12 MIL-STD-462 Method CE07

MIL-STD-462 : Conducted Susceptibility:


- 12/B01 MIL-STD-462 Method CS01
- 12/B02 MIL-STD-462 Method CS02
- 12/B04 MIL-STD-462 Method CS03/CS04/CS05/CS08
- 12/B05 MIL-STD-462 Method CS06

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Page: 3 of 3
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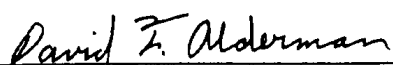
ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

TUV PRODUCT SERVICE, INC.

<i>NVLAP Code</i>	<i>Designation / Description</i>
12/B06	MIL-STD-462 Method CS07
12/B07	MIL-STD-462 Method CS09
MIL-STD-462 : Radiated Emissions:	
12/D01	MIL-STD-462 Method RE01
12/D02	MIL-STD-462 Method RE02
12/D03	MIL-STD-462 Method RE03
MIL-STD-462 : Radiated Susceptibility:	
12/E01	MIL-STD-462 Method RS01
12/E02	MIL-STD-462 Method RS02
12/E03	MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)
12/E04	MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available)

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Photograph of Test Setup



Photograph of Test Setup



Photograph of Test Setup



Photograph of Test Setup

