

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.

Floyd R. Fleury EMC Manager

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Page 2 of 16



Emissions Test Conditions: SPURIOUS RADIATED EMISSIONS

Roof (small open area test site), San Diego

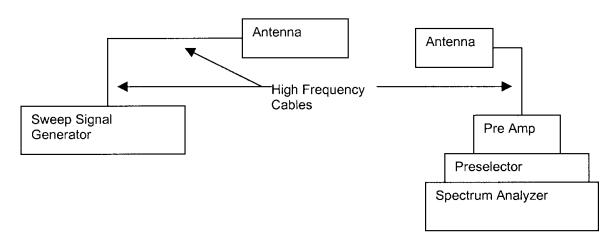
The Spurious Radiated Emissions measurements were performed using the following equipment:

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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
<u>Н</u> Р83640В	791	Sweep Signal Generator	Hewlett Packard	3844A00726	03/02

Remarks: (*) Verified

Test Setup for Signal Substituion 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

	RADIA SIGNA	TED SPURIO AL SUBSTITU	TION MET	HOD	
est Report #: Sci	0 3 7 0 4	Test Area: Roof		T	
est Method Subs		Date: 6-27-61		PROI	OUCT SERVICE
A 1	P 2135	EUT POWER: ☐ 230 Vac/50 Hz ☐ 120) Vac/60 Hz Tempe	erature	_°C
		Other:	··	essure:	kPa
EUT Description:			Relativ	/e	
NOTES:			Humid	lity:	%
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	- 5z,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	-8.7
-					
-			_		
			1		
Tested By: A.	Laudani		AL	- Janda Signature	ــــــــــــــــــــــــــــــــــــــ
NOTES:	above meas	surements are	The six A	righest Sig	lean the
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low	med &	on the OATS High MEASUREN	newto dala	SMUNG	7.
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REPORT No: SC103704 TESTED BY: A. Laudani

SPEC:

Part 22,917(b)(a)

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)		TICAL		(dBuv) FACTOR		(dBuV/m)		(dBuV/m)		MARGIN (dB)		EUT Rotatio	Height
(141112)	pk	av	pk	av	(dB/m)	pk	av	pk	av	pk	av	₽, ,	7
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		
		l]									Ļ	_
848.97	99.8	99.8	88.6	88.6	26.5	126.3						<u> </u>	
1697.94	19.6	19.6	12.1	12.1	30.0	49.6	49.6	84.4		-34.8	50	<u> </u>	_
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		L
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	ļ	_
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NOTE: Limit derived from the 43 + LOG(P) formula.



REPORT No: SC103704 TESTED BY: A. Laudani

SPEC:

Part 22.917(b)(2)

CUSTOMER: Kyrocera

TEST DIST: 3 Meters

EUT:

QCP 2135

TEST SITE: 3

EUT MODE: CDMA Transmit

BICONICAL: N/A

DATE:

A PR 26, 2001

LOG: 244

NOTES:

Duty Cycle= 100%

OTHER:

251

Filter #777 SA #402, PreAmp #716

Freq under 1 GHz RBW, VBW = 100kHz

Freq over 1 GHz RBW, VBW - 1 MHz

	VEDI	TICAL	UAPIZO	TAL	CORRECTION	MAX L	EVEL	SPEC	IMIT	MAR	GIN	20	_ ;
FREQ	(dB		(dB		FACTOR	(dBu		(dBu)		(dE		EUT Rotatio	Heig
(MHz)	pk (GB	av,	pk	av	(dB/m)	pk	av	pk	av	pk \	av	tio T	Height
	F		-					•					
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		
	ļ				ļ						-34-3	ļ	_
836.49	98.9	98.9	88.4	88.4	26.3	125.2					- 40	-	
1672.98	11.8	11.8	11.7	11.7	29.9	41.7	41.7	84.4		-42.7	42	<u> </u>	
2509.47	10.6	10.6	10.1	10.1	33.9	44.5	44.5	84.4		-39.9	45	<u> </u>	
040.04	99.6	99.6	88.4	88.4	26.5	126.1	####	 	-			┧	-
848.31	12.1	12.1-		11.4	30.0	42.1	42.1	84.4		-42.3	42	}	-
1696.62 2544.93	11.4	11.4	11.6	11.6	34.0	45.6	45.6	84.4		-38.8	46	 	\vdash
2544.93	11,4	11.4	11.6	11.0	34.0	45.0	75.0	04.4	 	-50.6			-
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NOTE: Limit derived from the 43 + LOG(P) formula.

Rev.No 1.0



REPORT No: SC103704 TESTED BY: A. Laudani

SPEC:

Part 24.238

CUSTOMER: Kyrocera

TEST DIST: 3 Meters

EUT:

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

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FREQ (MHz)	VER1 (dB pk	rical uv) av	HORIZO (dB pk		CORRECTION FACTOR (dB/m)	MAX L (dBu) pk		SPEC (dBu\ pk		MAR (di pk		EUT Rotatio	Height
												<u> </u>	
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	ļ	
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	T^{-}	
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	####	ļ		<u></u>		 -	ļ
3817.5	22.6	22.6	29.1	29.1	37.8	66.9	66.9	84.4	 	-17.5	67	1	
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		
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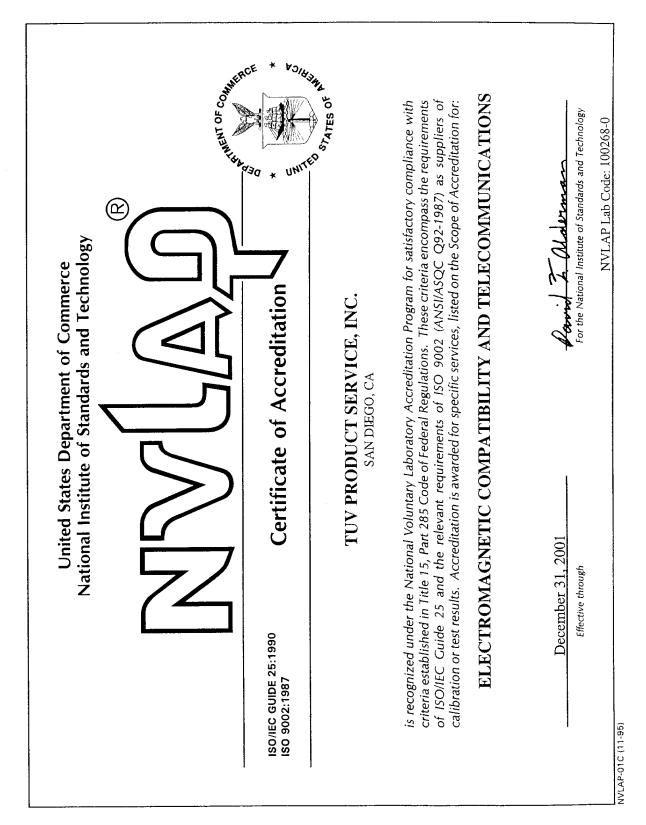
NOTE: Limit derived from the 43 + LOG(P) formula.



Testing Facilities

Certificates of Approval





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National Institute of Standards and Technology

National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990 ISO 9002:1987

Scope of Accreditation

* CALLES OF RELEASE

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

December 31, 2001

Effective through

land to mountain

For the National Institute of Standards and Technology

NVLAP-01S (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: 2 of 3

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 100268-0

TUV PRODUCT SERVICE, INC.

NVLAP Code Des

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

December 31, 2001

Effective through

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For the National Institute of Standards and Technology

NVLAP-01S (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: 3 of 3

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 100268-0

TUV PRODUCT SERVICE, INC.

NVLAP Code

Designation / Description

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)

December 31, 2001

Effective through

Pavid T. Alderman

For the National Institute of Standards and Technology

NVLAP-01S (11-95)













TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 858 546 3999 FAX 858 546 0364

Rev.No 1.0





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