RADIATED EMISSIONS

DATA

FOR

KYOCERA WIRELESS
10300 Campus Point Drive
San Diego, CA 92121

Prepared by

TÜV AMERICA
10040 Mesa Rim Road
San Diego, CA 92121-2912

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

The following measurements were performed by TÜV America. 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

TÜV AMERICA, INC. 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 858 546 3999 FAX 858 546 0364

Emissions Test Conditions: SPURIOUS RADIATED EMISSIONS

Roof (small open area test site)

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

Test Equipment Used:

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
HP8566B	743	Spectrum Analyzer	Hewlett Packard	2618A02913	11/02
AMF-5D-010180-35-10P	719	PreAmplifier	Miteq	549460	NCR*
3115	251	Double Ridge Horn Antenna	EMCO	2495	12/02
3146	243	Log Periodic Antenna	EMCO	106X	04/02
Cable 1	6767	3' Cable	United Microwave Pro	--	NCR*
Cable 2	6789	30' Cable	United Microwave Pro	--	NCR*
Cable 3	6790	40' Cable	United Microwave Prod	--	NCR*
FF 6549-1	781	2000 MHz High Pass Filter	Sage	004	NCR*
FF6548-2	777	900 MHz High Pass Filter	Sage	006	NCR*
3115	453	Antenna, Horn	Electro Mechanics Co	3564	12/02
HP8350B	6706	Sweep Signal Generator	Hewlett Packard	2749A09420	NCR*
HP437B	572	Power Meter	Hewlett Packard	3125O19308	04/02
HP8566B	721	Spectrum Analyzer	Hewlett Packard	2542A12099	09/02
CBL6111	461	Bilog Antenna	Chase Electronics	1291	NCR*

Remarks: (*) No Calibration Required.

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Technical Documentation

Test Data Sheets

and

Test Setups

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Kyocera Substitution SC300739

Frequency MHz	target level dBuV/m	Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Spec dBm	Margin Subst. dBm
5018.94	63.6	10.8	9.7	-35.4	-34.3	-13	-21.3
5089.86	66.4	10.8	9.7	-31.9	-30.8	-13	-17.8
5640.00	60.3	10.8	9.2	-37.2	-35.6	-13	-22.6
5726.25	67.8	10.8	9.2	-29.7	-28.1	-13	-15.1

Input level verified with Power Meter 742: HP437B, Cal. Date due: 04/26/03
Location: TUV 3-meter roof site

Tested by A. Laudani

Reviewed by J. Owen

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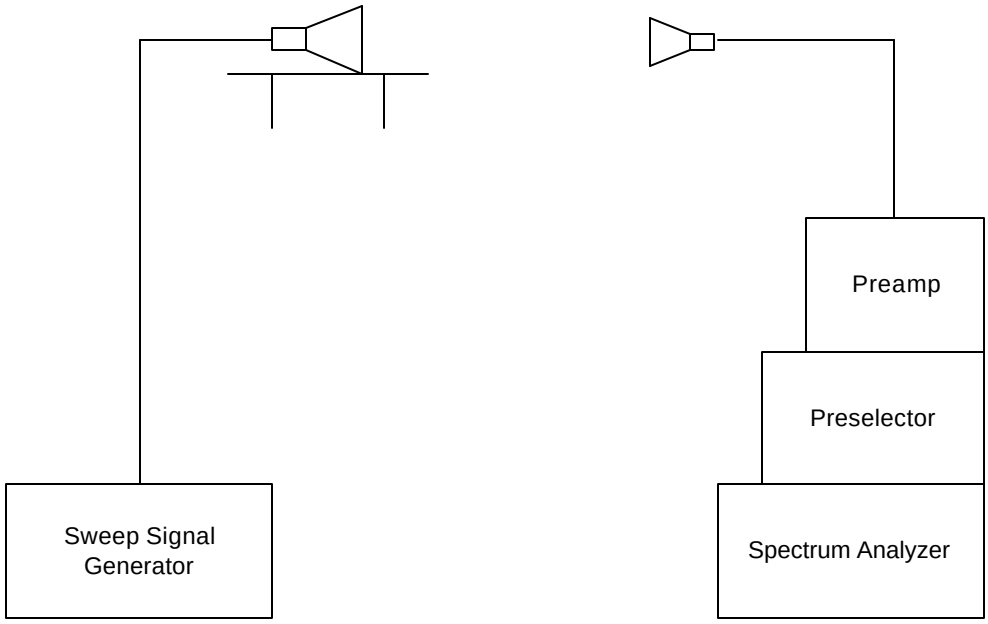
Test setup for Substitution Method



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REPORT No: SC300739 TESTER: Alan Laudani SPEC: FCC Part 22 para 22.917(b)/(2)

CUSTOMER: Kyocera Wireless TEST DIST: 3 Meters

E U T: KWC-5135 R9LW TEST SITE: Roof

EUT MODE: Transmit FM BICONICAL: N/A

DATE: February 14, 2003 ERP/EIRP Factor 7 LOG: 243

NOTES: Part 22 - RBW 30 kHz HORN: 251

CF = Antenna Factor + Cable Loss - Preamplifier Gain

v.beta1a

FREQ (MHz)	VERTICAL (dBuv) pk	HORIZONTAL (dBuv) pk	CF (dB/m)	MAX LEVEL (dBm) pk	SPEC LIMIT (dBm) pk	MARGIN (dB) pk	EUT Rotation	Antenna Height	Notes	dBuV/m	dBuV/m
824.04	98	92.7	22.9	**23.5**	-13.0	-38.1	137	1.2	Fundamental (Low Band)	**120.9**	**22.9**
1648.08	55.5	50.8	-9.3	**-51.1**	-13.0	-38.1	230	1.1		**46.2**	**-9.3**
2472.12	54.5	49.7	-4.6	**-47.5**	-13.0	-34.5	179	1.1		**49.9**	**-4.6**
3296.16	49.8	47.9	-1.7	**-49.3**	-13.0	-36.3	88	1.4		**48.1**	**-1.7**
4120.2	50.3	61.3	0.2	**-35.9**	-13.0	-22.9	219	1.3		**61.5**	**0.2**
4944.24	61.8	60.0	0.6	**-35.0**	-13.0	-22.0	279	1.2		**62.4**	**0.6**
5768.28	46.6	45.3	5.1	**-45.7**	-13.0	-32.7	200	1.1		**51.7**	**5.1**
6592.32	43.4	43.4	5.8	**-48.2**	-13.0	-35.2			noise floor	**49.2**	**5.8**
7416.36	43.5	43.2	8.2	**-45.6**	-13.0	-32.6			noise floor	**51.7**	**8.2**
8240.4	44.2	43.3	9.4	**-43.7**	-13.0	-30.7			noise floor	**53.6**	**9.4**
836.49	98.4	94.2	22.8	**23.9**			130	1.1	Fundamental (Mid Band)	**121.2**	**22.8**
1672.98	55.6	49.7	-9.1	**-50.8**	-13.0	-37.8	127	1.1		**46.5**	**-9.1**
2509.47	46.3	45.9	-4.5	**-55.5**	-13.0	-42.5				**41.8**	**-4.5**
3345.96	49.8	47	-1.6	**-49.1**	-13.0	-36.1	312	1.3		**48.2**	**-1.6**
4182.45	55.4	56	0.0	**-41.3**	-13.0	-28.3	352	1.3		**56.0**	**0.0**
5018.94	60.9	57.6	0.8	**-35.6**	-13.0	-22.6	200	1.1		**61.7**	**0.8**
5855.43	44.0	43.7	5.3	**-48.1**	-13.0	-35.1			noise floor	**49.3**	**5.3**
6691.92	43.4	44.7	6.1	**-46.5**	-13.0	-33.5			noise floor	**50.8**	**6.1**
7528.41	43.4	43.2	8.4	**-45.5**	-13.0	-32.5			noise floor	**51.8**	**8.4**
8364.9	42.2	42.8	9.7	**-44.9**	-13.0	-31.9			noise floor	**52.5**	**9.7**
848.97	97.6	93.3	23.2	**23.4**			134	1.2	Fundamental (High Band)	**120.8**	**23.2**
1697.94	55.3	50	-8.9	**-51.0**	-13.0	-38	175	1.3		**46.4**	**-8.9**
2546.91	50.1	49	-4.3	**-51.6**	-13.0	-38.6	130	1.2		**45.8**	**-4.3**
3395.88	50.3	49	-1.4	**-48.4**	-13.0	-35.4	120	1.4		**48.9**	**-1.4**
4244.85	61.6	61.3	-0.1	**-35.8**	-13.0	-22.8	200	1.4		**61.5**	**-0.1**
5093.82	54.4	57.3	1.4	**-38.7**	-13.0	-25.7	87	1.3		**58.7**	**1.4**
5942.79	43.6	43.7	5.5	**-48.1**	-13.0	-35.1			noise floor	**49.2**	**5.5**
6791.76	43.5	44.5	6.5	**-46.4**	-13.0	-33.4	320	1.1		**51.0**	**6.5**
7640.73	42.0	42	8.5	**-46.8**	-13.0	-33.8			noise floor	**50.5**	**8.5**
8489.7	41.4	41.9	10.0	**-45.5**	-13.0	-32.5			noise floor	**51.9**	**10.0**

REPORT No: SC300739 TESTER: Alan Laudani SPEC: FCC Part 22 para 22.917(b)(2)

CUSTOMER: Kyocera Wireless TEST DIST: 3 Meters

E U T: KWC 5135 sn R9LW TEST SITE: Roof

EUT MODE: Transmit CDMA BICONICAL: N/A

DATE: February 14, 2003 ERP/EIRP Factor 7 LOG: 243

NOTES: Part 22 - RBW 30 kHz for fundamental, CF = Ant. Factor + Cable loss HORN: 251

RBW & VBW = 1 MHz for Peak, RBW = 1 MHz & VBW =10 Hz for Ave

CF = Antenna Factor + Cable Loss - Preamplifier Gain

v.beta1a

FREQ (MHz)	VERTICAL (dBuv) pk	HORIZONTAL (dBuv) pk	CF (dB/m)	MAX LEVEL (dBm) pk	SPEC LIMIT (dBm) pk	MARGIN (dB) pk	EUT Rotation	Antenna Height	Notes	dBuV/m	dBuV/m
824.7	96.3	94.9	22.9	21.8			204	1.6	Fundamental (Low Band)	119.2	22.9
1649.4	59.7	53.0	-9.3	-46.9	-13.0	-33.9	174	1.1		50.4	-9.3
2474.1	42.7	41.1	-4.6	-59.3	-13.0	-46.3			noise floor	38.1	-4.6
3298.8	49.4	48.9	-1.7	-49.7	-13.0	-36.7	220	1.2		47.7	-1.7
4123.5	61.4	63.2	0.2	-34.0	-13.0	-21	223	1.3		63.4	0.2
4948.2	62.7	60.8	0.6	-34.1	-13.0	-21.1	278	1.1		63.3	0.6
5772.9	45.5	45.9	5.1	-46.4	-13.0	-33.4			noise floor	51.0	5.1
6597.6	43.3	44.1	5.8	-47.5	-13.0	-34.5			noise floor	49.9	5.8
7422.3	42.9	43.7	8.2	-45.4	-13.0	-32.4			noise floor	51.9	8.2
8247	42.4	41.9	9.4	-45.5	-13.0	-32.5			noise floor	51.8	9.4
836.49	97	96.1	22.8	22.5			164	1.3	Fundamental (Mid Band)	119.8	22.8
1672.98	47.4	46.7	-9.1	-59.0	-13.0	-46	140	1.2		38.3	-9.1
2509.47	58.4	55.5	-4.5	-43.4	-13.0	-30.4	296	1.5		53.9	-4.5
3345.96	49.1	47.0	-1.6	-49.8	-13.0	-36.8	257	1.0		47.5	-1.6
4182.45	58.7	56.9	0.0	-38.6	-13.0	-25.6	177	1.7		58.7	0.0
5018.94	63.6	60.4	0.8	-32.9	-13.0	-19.9	208	1.5		64.4	0.8
5855.43	43.8	44.1	5.3	-48.0	-13.0	-35			noise floor	49.4	5.3
6691.92	42.9	43.6	6.1	-47.6	-13.0	-34.6			noise floor	49.7	6.1
7528.41	43.5	43.8	8.4	-45.1	-13.0	-32.1			noise floor	52.2	8.4
8364.9	43.7	43	9.7	-44.0	-13.0	-31			noise floor	53.4	9.7
848.31	97.6	93.7	23.1	23.4			129	1.3	Fundamental (High Band)	120.7	23.1
1696.62	58.7	52.6	-8.9	-47.6	-13.0	-34.6	166	1.1		49.8	-8.9
2544.93	50.4	57	-4.3	-44.7	-13.0	-31.7	144	1.4		52.7	-4.3
3393.24	52.4	49.5	-1.4	-46.3	-13.0	-33.3	155	1.4		51.0	-1.4
4241.55	61.1	56.5	-0.1	-36.3	-13.0	-23.3	178	1.3		61.0	-0.1
5089.86	66.4	63.6	1.3	-29.6	-13.0	-16.6	188	1.1		67.7	1.3
5938.17	43.3	44.5	5.5	-47.3	-13.0	-34.3			noise floor	50.0	5.5
6786.48	43.1	43.4	6.5	-47.5	-13.0	-34.5			noise floor	49.9	6.5
7634.79	42.6	42.8	8.5	-46.0	-13.0	-33			noise floor	51.3	8.5
8483.1	41.8	42.1	10.0	-45.3	-13.0	-32.3			noise floor	52.1	10.0

REPORT No: SC300739 TESTER: Alan Laudani SPEC: FCC Part 24 para 24.238(a)

CUSTOMER: Kyocera Wireless TEST DIST: 3 Meters

E U T: KWC 5135 sn R9LW TEST SITE: Roof

EUT MODE: Transmit PCS BICONICAL: N/A

DATE: Feb. 14, 2003 ERP/EIRP Factor 5.5 LOG: N/A

NOTES: HORN: 251

Part 24 - RBW 1 MHz

CF = Antenna Factor + Cable Loss - Preamplifier Gain (Preamp not used for Fundamental Freq.)

v.beta1a

FREQ (MHz)	VERTICAL (dBuv) pk	HORIZONTAL (dBuv) pk	CF (dB/m)	MAX LEVEL (dBm) pk	SPEC LIMIT (dBm) pk	MARGIN (dB) pk	EUT Rotation	Antenna Height	Notes	dBuV/m	dBuV/m
1851.25	92.1	91.7	-7.8	**-11.0**			236	1.5	Fundamental (Low Band)	**84.3**	**-7.8**
3702.5	49.7	48.0	-0.4	**-46.0**	-13.0	-33.0	224	1.2		**49.3**	**-0.4**
5553.75	56.4	55.9	4.5	**-34.4**	-13.0	-21.4	225	1.1		**60.9**	**4.5**
7405	43.3	43.6	8.2	**-43.5**	-13.0	-30.5			noise floor	**51.8**	**8.2**
9256.25	43.1	42.8	10.4	**-41.8**	-13.0	-28.8			noise floor	**53.5**	**10.4**
11107.5	44.1	43.2	13.1	**-38.0**	-13.0	-25.0			noise floor	**57.2**	**13.1**
12958.75	50.0	49.5	12.7	**-32.5**	-13.0	-19.5			noise floor	**62.7**	**12.7**
14810	38.6	49.4	16.1	**-29.7**	-13.0	-16.7			noise floor	**65.5**	**16.1**
16661.25	50.3	49.0	18.5	**-26.5**	-13.0	-13.5			noise floor	**68.8**	**18.5**
1880	89.3	90.2	-7.6	**-12.7**			221	1.4	Fundamental (Mid Band)	**82.6**	**-7.6**
3760	50.0	49.6	-0.3	**-45.5**	-13.0	-32.5	130	1.4		**49.7**	**-0.3**
5640	60.3	56.7	4.7	**-30.3**	-13.0	-17.3	215	1.1		**65.0**	**4.7**
7520	43.2	43.9	8.4	**-42.9**	-13.0	-29.9			noise floor	**52.3**	**8.4**
9400	43.0	42.4	10.0	**-42.3**	-13.0	-29.3			noise floor	**53.0**	**10.0**
11280	42.8	42.0	13.2	**-39.3**	-13.0	-26.3			noise floor	**56.0**	**13.2**
13160	50.0	48.9	13.2	**-32.1**	-13.0	-19.1			noise floor	**63.2**	**13.2**
15040	51.5	49.9	17.0	**-26.7**	-13.0	-13.7			noise floor	**68.5**	**17.0**
16920	49.3	50.1	19.5	**-25.7**	-13.0	-12.7			noise floor	**69.6**	**19.5**
1908.75	90.5	88.2	-7.4	**-12.2**			245	2	Fundamental (High Band)	**83.1**	**-7.4**
3817.5	50.0	50.6	-0.1	**-44.8**	-13.0	-31.8	189	1.3		**50.5**	**-0.1**
5726.25	57.8	56.7	4.9	**-32.5**	-13.0	-19.5	218	1.1		**62.7**	**4.9**
7635	43.0	43.8	8.5	**-42.9**	-13.0	-29.9			noise floor	**52.3**	**8.5**
9543.75	43.7	43.7	9.8	**-41.8**	-13.0	-28.8			noise floor	**53.5**	**9.8**
11452.5	44.0	44.0	13.3	**-38.0**	-13.0	-25.0			noise floor	**57.3**	**13.3**
13361.25	49.3	49.2	14.0	**-32.0**	-13.0	-19.0			noise floor	**63.3**	**14.0**
15270	49.0	50.0	17.3	**-27.9**	-13.0	-14.9			noise floor	**67.3**	**17.3**
17178.75	50.7	49.5	21.1	**-23.4**	-13.0	-10.4			noise floor	**71.8**	**21.1**

Photograph of Test Setup

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Photograph of Test Setup

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