

**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 15, Paragraphs 15.109(a) and 15.209(a); 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.

Testing Start Date: 08 June 2004

Testing End Date: 10 June 2004

simultaneously

- TÜV AMERICA, INC. -

Reviewing Engineer:



Jim Owen  
(EMC Manager)

Test Engineer:



Alan Laudani  
(EMC Engineer)

## Emissions Test Conditions: SPURIOUS RADIATED EMISSIONS

Roof (small open area test site)  
SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber (Prescans)

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

### Test Equipment Used:

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Date Cal'ed
HP8566B	744	Spectrum Analyzer	Hewlett Packard	2618A02913	01/04
AMF-5D-010180-35-10P	719	PreAmp	TUV America	549460	NCR*
3115	453	Antenna, Horn	Electro Mechanics Co	3564	02/04
FF6549-1	778	900 MHz High Pass Filter	Sage	005	NCR*
FF6549-2	783	900 MHz High Pass Filter	ABES	008	NCR*
12A-18	6377	Horn Antenna	MI Technologies	21554MB	NCR*
1 Meter Prescan 30 MHz - 1000 MHz Equipment List					
CBL6111	461	Bilog Antenna	Chase Electronics Li	1291	NCR*
E4440A	6814	Spectrum Analyzer	Hewlett Packard	MY42510441	08/03

**Remarks:** One year calibration cycle for all test equipment and sites. (\*) No Calibration Required.  
No emissions detected between 30 MHz to 1000 MHz. See Appendix for prescans.

**Technical Documentation**

**Test Data Sheets**

**and**

**Test Setups**

**Kyocera Substitution SC402509**

Model K7LE K454LC  
 6/19/04  
 Mode Transmit PCS FCC 24.238(a)

Frequency MHz	target level dBuV/m	Horn Gain dBi	cable loss dB	Signal Generator dBm	Total (EIRP) dBm	Spec dBm	Margin Subst. dBm
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No emissions needed substitution

Substitution Procedure:

1. Select emissions that pass with less than 20 dB margin, note the Target level -- reading on spectrum analyzer.
2. Duplicate this targeted reading with Signal Generator, allowing for antenna horn gain and cable insertion loss.
3. Compare calculated power output to specification.

Tested by A. Laudani  
 A. Laudani

REPORT No: SC402509 TESTER: A. Laudani SPEC: FCC Part 15 para 15.109(a)  
 CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters  
 E U T: K7LE1 Trimode Color Phantom Roof  
 K454LC sn 7A X----0W9L8V  
 EUT MODE: Receive CDMA rx Synth BICONICAL: N/A  
 DATE: June 9, 2004 LOG: N/A  
 NOTES: Temp. 16°C, RH = 67 % OTHER: 453  
 above 1GHz; RBW & VBW 1 MHz for PK; RBW 1MHz and VBW 10Hz for AVG

CF = Antenna Factor + Cable Loss - Preampifier Gain 900 MHz filler

FREQ (MHz)	VERTICAL (dBuV)		HORIZONTAL (dBuV)		CF (dBm)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		Antenna Height	Notes
	pk	av	pk	av		pk	av	pk	av	pk	av		
1739.4	47.0	34.9	46.1	35.2	-9.1	37.9	26.1	74	54	-36.1	-27.9	1	noise floor
3478.8	44.9	33.8	45.3	34.1	-0.9	44.4	33.2	74	54	-29.6	-20.8	1	noise floor
5218.2	44.8	33.7	45.1	33.8	1.9	47.0	35.7	74	54	-27.0	-18.3	1	noise floor
6957.6	46.6	35.7	46.6	35.8	7.2	53.8	43.0	74	54	-20.2	-11.0	1	noise floor
8697.0	47.6	36.1	47.3	36.2	9.3	56.9	45.5	74	54	-17.1	-8.5	1	noise floor
10436.4	46.4	35.7	47.0	35.6	11.8	56.8	47.5	74	54	-15.2	-6.5	1	noise floor
12175.8	45.3	34.4	45.5	34.4	13.0	58.5	47.4	74	54	-15.5	-6.6	1	noise floor
13915.2	39.2	29.0	39.7	28.9	13.9	53.6	42.9	74	54	-20.4	-11.1	1	res bw = 100 kHz noise floor
15654.6	39.1	28.9	39.7	28.9	15.5	55.2	44.4	74	54	-18.8	-9.6	1	res bw = 100 kHz noise floor
17394.0	32.6	22.6	32.8	22.7	21.8	54.6	44.5	74	54	-19.4	-9.5	1	res bw = 30 kHz noise floor
1762.98	56.0	42.4	48.3	36.4	-8.9	47.1	33.5	74	54	-26.9	-20.5	1	noise floor
3525.96	44.8	33.8	44.5	33.9	-0.8	44.0	33.1	74	54	-30.0	-20.9	1	noise floor
5288.94	43.6	33.0	43.0	33.1	2.3	45.9	35.4	74	54	-28.1	-18.6	1	noise floor
7051.92	46.3	35.6	46.7	35.7	7.4	54.1	43.1	74	54	-19.9	-10.9	1	noise floor
8814.90	46.8	35.9	46.7	36.0	9.6	56.4	45.6	74	54	-17.6	-8.4	1	noise floor
10577.88	47.8	35.8	46.9	35.6	12.2	60.0	48.0	74	54	-14.0	-6.0	1	noise floor
12340.86	45.6	34.5	45.1	34.5	13.3	58.9	47.8	74	54	-15.1	-6.2	1	noise floor
14103.84	39.2	29.0	40.0	29.0	13.7	53.7	42.7	74	54	20.3	-11.3	1	res bw = 100 kHz noise floor
15866.82	39.6	28.9	38.9	28.9	15.5	55.1	44.4	74	54	-18.9	-9.6	1	res bw = 100 kHz noise floor
17629.80	32.8	23.0	32.6	23.1	23.0	55.8	46.1	74	54	-18.2	-7.9	1	res bw = 30 kHz noise floor
1786.62	54.8	35.0	50.2	36.0	-8.8	46.0	27.2	74	54	-28.0	-26.8	1	noise floor
3573.24	44.6	33.9	47.5	35.0	-0.7	46.8	34.3	74	54	-27.2	-19.7	1	noise floor
5353.86	42.5	32.2	42.4	32.3	2.8	45.3	35.1	74	54	-28.7	-18.9	1	noise floor
7146.48	46.4	35.8	46.4	35.7	7.5	53.9	43.3	74	54	-20.1	-10.7	1	noise floor
8933.10	47.0	36.2	46.2	36.3	9.8	56.8	46.1	74	54	-17.2	-7.9	1	noise floor
10719.72	45.9	35.3	46.3	35.3	12.5	58.8	47.8	74	54	-15.2	-6.2	1	noise floor
12506.34	37.7	28.6	37.5	28.7	13.6	51.3	42.3	74	54	-22.7	-11.7	1	res bw = 100 kHz noise floor
14292.96	40.4	28.9	37.7	28.8	14.0	54.4	42.9	74	54	-19.6	-11.1	1	res bw = 100 kHz noise floor
16079.58	38.0	29.1	38.9	29.0	15.4	54.3	44.5	74	54	-19.7	-9.5	1	res bw = 100 kHz noise floor
17866.20	33.0	23.5	33.8	23.3	23.3	57.1	46.8	74	54	-16.9	-7.2	1	res bw = 30 kHz noise floor

REPORT No: SC402509 TESTER: A. Laudani SPEC: FCC Part 22 para 22.917(b)(2)

CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters

E U T: K7LE1Trimode Color Phantom Roof  
K454LC sn 7A-X---0W9L8V

EUT MODE: Transmit CDMA Tx harmonics BICONICAL: N/A

DATE: June 9, 2004 ERP Factor 7 LOG: N/A

NOTES: Temp. 18°C, RH = 67 % HORN: 453

Part 22 - RBW 30 KHz

CF = Antenna Factor + Cable Loss - Preamplifier Gain 900 MHz Filter

FREQ (MHz)	VERTICAL (dBuV) pk	HORIZONTAL (dBuV) pk	CF (dBm)	MAX LEVEL (dBm) pk	SPEC LIMIT (dBm) pk	MARGIN (dB) pk	EUT Rotation	Antenna Height	Notes
824.7									Fundamental (Low Band)
1649.4	50.8	52.0	-9.6	-55.0	-13.0	-42.0	245	1.4	
2474.1	41.1	41.0	-5.8	-62.0	-13.0	-49.0		1	noise floor
3296.8	45.4	45.3	-1.5	-53.5	-13.0	-40.5		1	noise floor
4123.5	46.0	45.7	-0.5	-51.9	-13.0	-38.9		1	noise floor
4948.2	44.7	44.7	0.3	-52.4	-13.0	-39.4		1	noise floor
5772.9	43.4	46.7	4.8	-45.8	-13.0	-32.8		1	noise floor
6597.6	47.5	47.5	6.3	-43.5	-13.0	-30.5		1	noise floor
7422.3	47.4	46.8	7.8	-42.2	-13.0	-29.2		1	noise floor
8247.0	47.6	47.6	8.6	-41.2	-13.0	-28.2		1	noise floor
836.49									
1672.98	50.5	52.6	-9.5	-54.3	-13.0	-41.3		12	Fundamental (Mid Band)
2509.47	48.4	45.9	-5.6	-54.6	-13.0	-41.6		1	noise floor
3345.96	44.7	44.8	-1.4	-53.9	-13.0	-40.9		1	noise floor
4182.45	45.6	45.5	-0.7	-52.5	-13.0	-39.5		1	noise floor
5018.94	44.0	44.7	0.6	-52.0	-13.0	-39.0		1	noise floor
5855.43	47.7	47.9	5.2	-44.3	-13.0	-31.3		1	noise floor
6691.92	47.2	47.2	6.6	-43.6	-13.0	-30.6		1	noise floor
7528.41	47.2	47.4	7.9	-42.0	-13.0	-29.0		1	noise floor
8364.90	47.3	47.0	8.7	-41.4	-13.0	-28.4		1	noise floor
846.31									
1696.62	50.1	49.6	-9.3	-56.6	-13.0	-43.6		10	Fundamental (High Band)
2544.93	52.3	47.1	-5.4	-50.5	-13.0	-37.5		1	noise floor
3393.24	45.5	51.1	-1.2	-47.4	-13.0	-34.4		1	noise floor
4241.55	47.2	46.2	-0.9	-51.1	-13.0	-38.1		1	noise floor
5089.86	44.3	44.5	1.1	-51.8	-13.0	-38.8		1	noise floor
5938.17	48.2	48.5	5.5	-43.3	-13.0	-30.3		1	noise floor
6786.48	47.4	47.6	6.8	-43.0	-13.0	-30.0		1	noise floor
7634.79	46.9	46.5	8.0	-42.4	-13.0	-29.4		1	noise floor
8483.10	46.6	47.5	8.8	-41.1	-13.0	-28.1		1	noise floor

REPORT No: SC402509 TESTER: Alan Laudani SPEC: FCC Part 15 para 15.109(a)

CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters

E U T: K7LE Trimode Color Phantom "K454LC" sn 7A-X--0WL8V TEST SITE: Roof

EUT MODE: Receive FM rx Synth BICONICAL: N/A

DATE: June 10, 2004 LOG: N/A

NOTES: Temp. 17°C, RH = 69 % OTHER: 453

above 1GHz; RBW & VBW 1 MHz for PK; RBW 1MHz and VBW 10Hz for AVG

CF = Antenna Factor + Cable Loss + Preamp/Filter Gain 900 MHz Filter

FREQ (MHz)	VERTICAL (dBuV)		HORIZONTAL (dBuV)		CF (dBm)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height	Notes
	pk	av	pk	av		pk	av	pk	av	pk	av			
1738.104	45.0	24.6	45.8	34.9	-9.1	36.7	25.8	74	54	-37.3	-28.2		1	noise floor
3476.208	45.4	33.7	45.1	33.9	-0.9	44.5	33.0	74	54	-29.5	-21.0		1	noise floor
5214.312	44.7	33.9	45.0	34.0	1.9	46.9	35.9	74	54	-27.1	-18.1		1	noise floor
6952.416	46.9	35.5	47.1	35.6	7.2	54.3	42.8	74	54	-19.7	-11.2		1	noise floor
8690.520	47.5	36.2	46.7	36.2	9.3	56.8	45.5	74	54	-17.2	-8.5		1	noise floor
10428.624	46.9	35.5	46.2	35.5	11.8	58.7	47.3	74	54	-15.3	-6.7		1	noise floor
12166.728	44.6	34.3	44.3	34.3	13.0	57.6	47.3	74	54	-16.4	-6.7		1	noise floor
13904.832	38.8	28.6	38.5	28.7	13.9	52.7	42.6	74	54	-21.3	-11.4		1	res bw = 100 kHz noise floor
15642.936	38.4	28.6	39.0	28.7	15.5	54.5	44.2	74	54	-19.5	-9.8		1	res bw = 100 kHz noise floor
17381.040	32.6	23.2	33.9	23.1	-21.7	55.6	44.9	74	54	-18.4	-9.1		1	res bw = 30 kHz noise floor
1763.004	62.0	39.9	55.2	37.9	-8.9	53.1	31.0	74	54	-20.9	-23.0		1	noise floor
3526.008	43.4	33.2	44.0	33.2	-0.8	43.2	32.4	74	54	-30.8	-21.6		1	noise floor
5289.012	44.1	32.5	43.6	32.7	2.3	46.4	35.0	74	54	-27.6	-19.0		1	noise floor
7052.016	46.3	35.5	46.4	35.5	7.4	53.8	42.9	74	54	-20.2	-11.1		1	noise floor
8815.020	47.0	36.0	47.3	36.0	9.6	56.9	45.6	74	54	-17.1	-8.4		1	noise floor
10578.024	46.1	35.6	46.2	35.5	12.2	60.3	47.8	74	54	-13.7	-6.2		1	noise floor
12341.028	45.7	34.4	44.8	34.3	13.3	59.0	47.7	74	54	-15.0	-6.3		1	noise floor
14104.032	38.1	28.6	38.4	28.7	13.7	52.1	42.4	74	54	-21.9	-11.6		1	res bw = 100 kHz noise floor
15867.036	39.0	28.6	38.6	28.8	15.5	54.5	44.3	74	54	-19.5	-9.7		1	res bw = 100 kHz noise floor
17630.040	33.8	23.1	32.3	23.4	23.0	56.8	46.4	74	54	-17.2	-7.6		1	res bw = 30 kHz noise floor
1787.964	48.9	35.7	48.5	36.2	-8.8	40.1	27.4	74	54	-33.9	-26.6		1	noise floor
3575.928	43.7	33.2	47.4	33.8	-0.7	46.7	33.1	74	54	-27.3	-20.9		1	noise floor
5363.892	42.8	31.8	42.9	31.5	2.8	45.7	34.6	74	54	-28.3	-19.4		1	noise floor
7151.856	46.0	35.5	46.6	35.5	7.5	54.1	43.0	74	54	-19.9	-11.0		1	noise floor
8939.820	46.6	36.2	47.2	36.2	9.9	57.1	46.1	74	54	-16.9	-7.9		1	noise floor
10727.784	46.1	35.2	46.6	35.2	12.5	59.1	47.7	74	54	-14.9	-6.3		1	noise floor
12515.748	40.3	28.4	39.0	28.4	13.6	53.9	42.0	74	54	-20.1	-12.0		1	res bw = 100 kHz noise floor
14303.712	39.7	28.6	38.6	28.6	14.0	53.7	42.6	74	54	-20.3	-11.4		1	res bw = 100 kHz noise floor
16091.676	38.4	28.7	38.8	28.6	15.4	54.2	44.1	74	54	-19.8	-9.9		1	res bw = 100 kHz noise floor
17879.640	33.5	23.2	32.4	23.3	23.3	56.8	46.6	74	54	-17.2	-7.4		1	res bw = 30 kHz noise floor



REPORT No: SC402509 TESTER: A. Laudani SPEC: FCC Part 22 para 22.917(b)(2)  
 CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters  
 E U T: K7LE Trimode Color Phantom Roof  
 "K454LC" sn 7A-X--0W9L8V TEST SITE:  
 EUT MODE: Transmit FM 1x harmonics BICONICAL: N/A  
 DATE: June 10, 2004 ERP Factor 7 LOG: N/A  
 NOTES: Temp. 16°C, RH = 81 % HORN: 453  
 Part 22 - RBW 30 kHz

CF = Antenna Factor + Cable Loss - Preamp/Filter Gain 900 MHz Filter

v.betel.a

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
824.04									Fundamental (Low Band)
1648.08	48.8	51.5	-9.7	-55.5	-13.0	-42.5	220	1.4	
2472.12	42.7	42.4	-5.8	-60.5	-13.0	-47.5		1	noise floor
3296.16	46.8	46.4	-1.5	-52.1	-13.0	-39.1		1	noise floor
4120.2	46.7	47.3	-0.5	-50.6	-13.0	-37.6		1	noise floor
4944.24	45.5	45.6	0.2	-51.5	-13.0	-38.5		1	noise floor
5768.28	44.4	47.1	4.8	-45.4	-13.0	-32.4		1	noise floor
6592.32	48.1	47.2	6.3	-42.9	-13.0	-29.9		1	noise floor
7416.36	47.2	46.7	7.8	-42.4	-13.0	-29.4		1	noise floor
8240.40	48.0	47.9	8.6	-40.8	-13.0	-27.8		1	noise floor
836.49									
1672.98	48.8	49.0	-9.5	-57.9	-13.0	-44.9		1	Fundamental (Mid Band)
2509.47	47.7	46.1	-5.6	-55.3	-13.0	-42.3	375	1	
3345.96	45.5	45.5	-1.4	-53.2	-13.0	-40.2		1	noise floor
4182.45	46.3	46.4	-0.7	-51.7	-13.0	-38.7		1	noise floor
5018.94	44.9	44.7	0.6	-51.8	-13.0	-38.8		1	noise floor
5855.43	47.7	48.0	5.2	-44.2	-13.0	-31.2		1	noise floor
6691.92	46.9	47.4	6.6	-43.4	-13.0	-30.4		1	noise floor
7528.41	46.7	47.1	7.9	-42.3	-13.0	-29.3		1	noise floor
8364.90	48.9	48.4	8.7	-39.8	-13.0	-26.8		1	noise floor
848.97									
1697.94	47.8	50.3	-9.3	-56.4	-13.0	-43.4	220	1.4	Fundamental (High Band)
2546.91	47.6	45.6	-5.4	-56.2	-13.0	-42.2		1	noise floor
3395.88	45.5	46.5	-1.2	-52.0	-13.0	-39.0		1	noise floor
4244.85	46.4	46.6	-0.9	-51.7	-13.0	-38.7		1	noise floor
5093.82	45.2	45.8	1.1	-50.5	-13.0	-37.5		1	noise floor
5942.79	46.8	47.5	5.6	-43.8	-13.0	-30.8		1	noise floor
6791.76	46.8	48.0	6.8	-42.6	-13.0	-29.6		1	noise floor
7640.73	47.4	46.9	8.0	-41.9	-13.0	-28.9		1	noise floor
8489.70	47.6	46.8	8.8	-41.0	-13.0	-28.0		1	noise floor

REPORT No: SC402509 TESTER: Alan Laudani SPEC: FCC Part 15 para 15.109(a)  
 CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters  
 E U T: K7LE Trimode Color Phantom Roof  
 K454LC sn 7A-X---0W9L8V  
 EUT MODE: Receive PCS rx Synth BICONICAL: N/A  
 DATE: June 9, 2004 LOG: N/A  
 NOTES: Temp. 17°C, RH = 67 % OTHER: 463  
 above 1GHz: RBW & VBW 1 MHz for Pk; RBW 1MHz and VBW 10Hz for AVG

CF = Antenna Factor + Cable Loss - Preamp/Filter Gain 2000 MHz Filter

FREQ (MHz)	VERTICAL (dBuV)		HORIZONTAL (dBuV)		CF (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height	Notes
	pk	av	pk	av		pk	av	pk	av	pk	av			
1716.667	45.0	33.9	45.5	33.9	-9.2	36.3	24.7	74	54	-37.7	-29.3		1	noise floor
3433.333	45.5	34.0	44.6	34.0	-1.0	44.5	33.0	74	54	-29.5	-21.0		1	noise floor
5150.000	44.7	34.1	44.6	34.0	1.5	46.2	35.6	74	54	-27.8	-18.4		1	noise floor
6866.666	47.4	36.9	47.2	36.5	7.0	54.4	43.9	74	54	-19.6	-10.1		1	noise floor
8583.333	47.4	36.6	47.8	36.6	9.0	56.8	45.6	74	54	-17.2	-8.4		1	noise floor
10300.000	46.5	35.5	46.1	35.5	11.4	57.9	46.9	74	54	-16.1	-7.1		1	noise floor
12016.666	46.2	34.9	45.5	34.9	12.7	58.9	47.6	74	54	-15.1	-6.4		1	noise floor
13733.333	38.1	29.1	38.1	29.2	14.6	52.7	43.8	74	54	-21.3	-10.2		1	res bw = 100 kHz noise floor
15449.999	35.9	29.0	36.6	29.0	15.6	52.2	44.8	74	54	-21.8	-9.4		1	res bw = 100 kHz noise floor
17166.666	32.0	22.7	32.4	22.8	20.9	53.3	43.7	74	54	-20.7	-10.3		1	res bw = 30 kHz noise floor
1742.222	44.4	33.7	44.6	33.6	-9.0	35.6	24.7	74	54	-38.4	-29.3		1	noise floor
3484.444	45.4	33.7	44.4	33.6	-0.9	44.5	32.8	74	54	-29.5	-21.2		1	noise floor
5226.667	44.9	33.2	44.9	33.2	2.0	46.9	35.2	74	54	-27.1	-18.8		1	noise floor
6968.889	47.0	35.7	46.9	35.7	7.2	54.2	42.9	74	54	-19.8	-11.1		1	noise floor
8711.111	47.1	36.1	47.0	36.1	9.3	56.4	45.4	74	54	-17.6	-8.6		1	noise floor
10453.333	46.9	35.6	46.8	35.7	11.9	58.8	47.6	74	54	-15.2	-6.4		1	noise floor
12195.555	46.0	34.4	45.3	34.4	13.1	59.1	47.5	74	54	-14.9	-6.5		1	noise floor
13937.778	39.1	28.8	38.2	28.7	13.8	52.9	42.6	74	54	-21.1	-11.4		1	res bw = 100 kHz noise floor
15680.000	38.9	28.7	39.0	28.7	15.5	54.5	44.2	74	54	-19.5	-9.8		1	res bw = 100 kHz noise floor
17422.222	33.2	22.9	33.4	22.8	21.9	55.3	44.8	74	54	-18.7	-9.2		1	res bw = 30 kHz noise floor
1767.777	43.9	33.5	44.6	33.5	-8.9	35.7	24.6	74	54	-38.3	-29.4		1	noise floor
3535.554	44.9	33.9	45.1	33.8	-0.8	44.3	33.1	74	54	-29.7	-20.9		1	noise floor
5303.331	40.2	32.9	40.1	32.9	2.4	42.6	35.3	74	54	-31.4	-18.7		1	noise floor
7071.108	46.2	35.7	46.2	35.8	7.4	53.6	43.2	74	54	-20.4	-10.8		1	noise floor
8838.885	47.5	36.2	46.6	36.2	9.6	57.1	45.8	74	54	-16.9	-8.2		1	noise floor
10606.662	46.3	35.3	46.4	35.3	12.2	58.6	47.5	74	54	-15.4	-6.5		1	noise floor
12374.439	45.7	34.4	45.9	34.4	13.4	59.3	47.8	74	54	-14.7	-6.2		1	noise floor
14142.216	39.8	28.7	39.2	28.9	13.7	53.5	42.6	74	54	-20.5	-11.4		1	res bw = 100 kHz noise floor
15909.993	38.8	28.9	39.3	29	15.4	54.7	44.4	74	54	-19.3	-9.6		1	res bw = 100 kHz noise floor
17677.77	33.2	22.8	33.4	22.9	23.3	56.7	46.2	74	54	-17.3	-7.8		1	res bw = 30 kHz noise floor

REPORT No: SC402509 TESTER: Alan Laudani SPEC: FCC Part 15 para 15.209(a)  
 CUSTOMER: Kyocera Wireless Corporation TEST DIST: 3 Meters  
 E U T: K7LE Trimode Color Phantom Roof  
 "K454LC" sn 7A-X---0W9L8V  
 EUT MODE: Transmit PCS tx Synth BICONICAL: N/A  
 DATE: June 8, 2004 LOG: N/A  
 NOTES: Temp: 18°C RH 70% OTHER: 453  
 above 1GHz; RBW & VBW 1 MHz for Pk; RBW 1MHz and VBW 10Hz for AVG

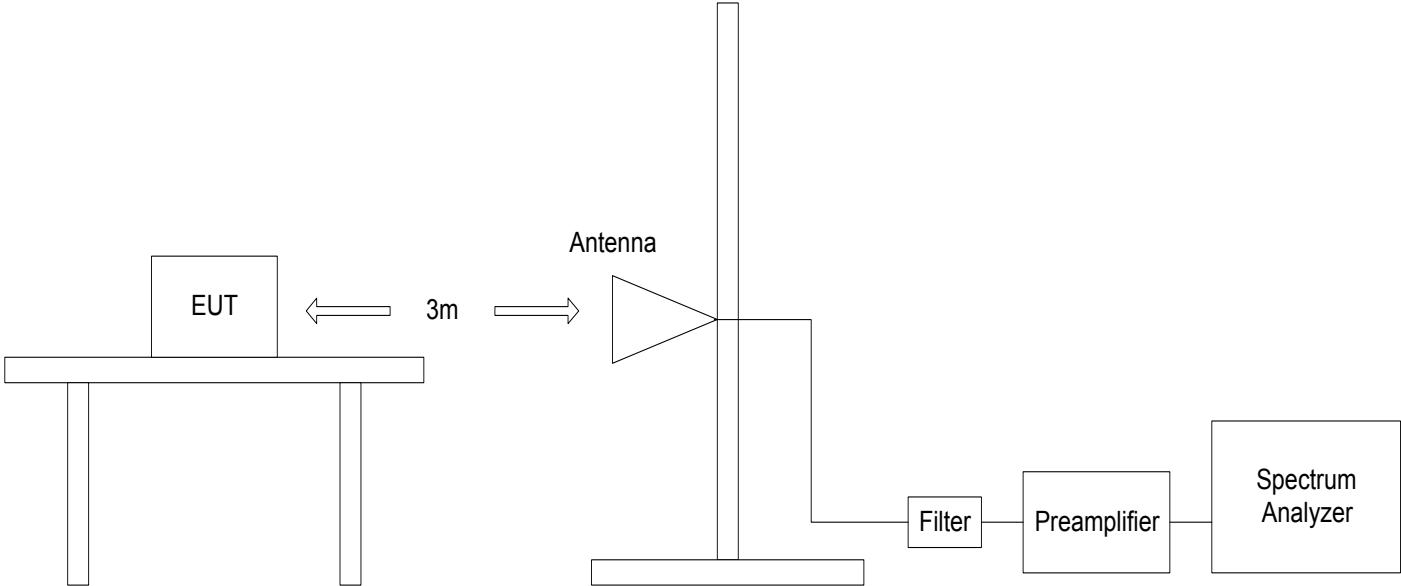
CF = Antenna Factor + Cable Loss - Preamp/Filter Gain 2000 MHz Filter

FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CF (dBm)		MAX LEVEL (dBuv/m)		SPEC LIMIT (dBuv/m)		MARGIN (dB)		EUT Rotation	Antenna Height	Notes
	pk	av	pk	av	pk	av	pk	av	pk	av	pk	av			
1481	41.8	35.5	46.3	35.5	-10.8	35.5	24.7	74	54	-38.5	-29.3		1	noise floor	
2962	44.9	34.0	45.0	34.0	-2.8	42.2	31.2	74	54	-31.8	-22.8		1	noise floor	
4443	45.0	34.3	44.8	34.3	-1.6	43.4	32.7	74	54	-30.6	-21.3		1	noise floor	
5924	47.8	36.9	47.6	36.0	5.5	53.3	42.4	74	54	-20.7	-11.6		1	noise floor	
7405	47.1	35.7	46.4	35.9	7.8	54.9	43.7	74	54	-19.1	-10.3		1	noise floor	
8886	47.1	36.6	46.6	36.7	9.7	56.8	46.4	74	54	-17.2	-7.6		1	noise floor	
10367	46.9	35.2	45.9	35.7	11.6	58.5	47.3	74	54	-15.5	-6.7		1	noise floor	
11848	45.9	35.2	45.0	35.2	12.8	58.7	48.0	74	54	-15.3	-6.0		1	noise floor	
13329	39.6	29.4	39.5	29.2	14.5	54.1	43.9	74	54	-19.9	-10.1		1	res bw = 100 kHz noise floor	
14810	39.3	29.0	39.2	28.9	15.2	54.5	44.2	74	54	-19.5	-9.8		1	res bw = 100 kHz noise floor	
1504	45.8	35.4	46.6	35.5	-10.6	36.0	24.9	74	54	-38.0	-29.1		1	noise floor	
3008	45.2	33.7	44.6	33.6	-2.6	42.6	31.1	74	54	-31.4	-22.9		1	noise floor	
4512	45.1	34.5	45.7	34.5	-1.7	44.0	32.8	74	54	-30.0	-21.2		1	noise floor	
6016	47.9	36.8	47.8	36.8	5.8	53.7	42.6	74	54	-20.3	-11.4		1	noise floor	
7520	48.9	39.2	47.5	36.3	7.9	56.8	47.1	74	54	-17.2	-6.9		1	noise floor	
9024	47.7	36.5	48.0	36.5	10.0	58.0	46.5	74	54	-16.0	-7.5		1	noise floor	
10528	46.3	35.7	46.2	35.7	12.1	58.4	47.8	74	54	-15.6	-6.2		1	noise floor	
12032	45.7	35.0	45.6	35.0	12.8	58.5	47.8	74	54	-15.5	-6.2		1	noise floor	
13536	39.3	28.8	39.4	28.9	15.4	54.8	44.3	74	54	-19.2	-9.7		1	res bw = 100 kHz noise floor	
15040	40.6	29.4	40.3	29.4	15.8	56.4	45.2	74	54	-17.6	-8.8		1	res bw = 100 kHz noise floor	
1527	45.6	35.4	47.5	35.3	-10.4	37.1	25.0	74	54	-36.9	-29.0		1	noise floor	
3054	45.8	34.4	45.9	34.4	-2.4	43.5	32.0	74	54	-30.5	-22.0		1	noise floor	
4581	45.7	35.2	45.8	35.1	-1.4	44.4	33.8	74	54	-29.6	-20.2		1	noise floor	
6108	47.3	36.8	48.1	36.8	5.9	54.0	42.7	74	54	-20.0	-11.3		1	noise floor	
7635	50.6	40.8	52.4	42.6	8.0	60.4	50.6	74	54	-13.6	-3.4	175	1	noise floor	
9182	47.9	36.6	48.7	36.5	9.7	58.4	46.3	74	54	-15.6	-7.7		1	noise floor	
10689	46.5	35.6	46.5	35.6	12.4	58.9	48.0	74	54	-15.1	-6.0		1	noise floor	
12216	45.7	34.7	45.1	34.6	13.1	58.8	47.8	74	54	-15.2	-6.2		1	noise floor	
13743	39.4	29.3	39.7	29.3	14.6	54.3	43.9	74	54	-19.7	-10.1		1	res bw = 100 kHz noise floor	
15270	39.6	29.0	38.6	28.9	15.7	55.3	44.7	74	54	-18.7	-9.3		1	res bw = 100 kHz noise floor	

REPORT No: SC402509      TESTER: Alan Laudani      SPEC: FCC Part 24 para 24.238(a)  
 CUSTOMER: Kyocera Wireless Corporation      TEST DIST: 3 Meters  
 E U T: K7LE Trimode Color Phantom      TEST SITE: Roof  
 "K454LC" sn 7A-X---0W9L8V      BICONICAL: N/A  
 EUT MODE: Transmit PCS tx harmonics      LOG: N/A  
 DATE: June 8, 2004      EIRP Factor: 5.5      HORN: 453  
 NOTES: Temp. 17°C, RH = 70 %

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
1851.25									Fundamental (Low Band)
3702.50	51.9	51.9	-0.5	-43.9	-13.0	-30.9	157	1	
5553.75	43.7	43.2	3.9	-47.6	-13.0	-34.6		1	noise floor
7405.00	47.2	46.8	7.8	-40.3	-13.0	-27.3		1	noise floor
9256.25	47.9	47.3	9.5	-37.9	-13.0	-24.9		1	noise floor
11107.50	46.7	46.3	13.1	-35.5	-13.0	-22.5		1	noise floor
12958.75	49.9	49.9	12.5	-32.9	-13.0	-19.9		1	noise floor
14810.00	49.7	49.6	15.2	-30.3	-13.0	-17.3		1	noise floor
16661.25	49.4	49.5	18.2	-27.6	-13.0	-14.6		1	noise floor
18512.50	50.0	38.5	21.1	-24.2	-13.0	-11.2		1	noise floor
1880									Fundamental (Mid Band)
3760	53.9	50.2	-0.4	-41.8	-13.0	-28.8	243	1.2	
5640	43.6	43.0	4.3	-47.4	-13.0	-34.4		1	noise floor
7520	48.8	48.0	7.9	-38.5	-13.0	-25.5	180	1	
9400	48.4	49.2	9.2	-36.9	-13.0	-23.9		1	noise floor
11280	47.6	46.9	13.0	-34.6	-13.0	-21.6		1	noise floor
13160	50.4	50.3	13.4	-31.4	-13.0	-18.4		1	noise floor
15040	50.1	50.2	15.8	-29.3	-13.0	-16.3		1	noise floor
16920	50.2	50.2	19.7	-25.3	-13.0	-12.3		1	noise floor
18800	52.3	52.0	23.7	-19.3	-13.0	-6.3		1	noise floor
1908.75									Fundamental (High Band)
3817.50	51.7	51.2	-0.4	-43.9	-13.0	-30.9	337	1.2	
5726.25	47.7	46.2	4.7	-42.9	-13.0	-29.9	200	1	
7635.00	52.0	50.2	8.0	-35.2	-13.0	-22.2	214	1	
9543.75	47.5	47.7	9.1	-38.4	-13.0	-25.4		1	noise floor
11452.50	46.7	45.2	13.0	-35.6	-13.0	-22.6		1	noise floor
13361.25	49.7	49.5	14.7	-30.9	-13.0	-17.9		1	noise floor
15270.00	49.6	49.3	15.7	-30.0	-13.0	-17.0		1	noise floor
17178.75	49.6	50.1	20.9	-24.2	-13.0	-11.2		1	noise floor
19087.50	46.9	46.0	26.1	-22.2	-13.0	-9.2		1	res bw 100 kHz -- noise floor

Test Setup for Spurious Radiated Emissions

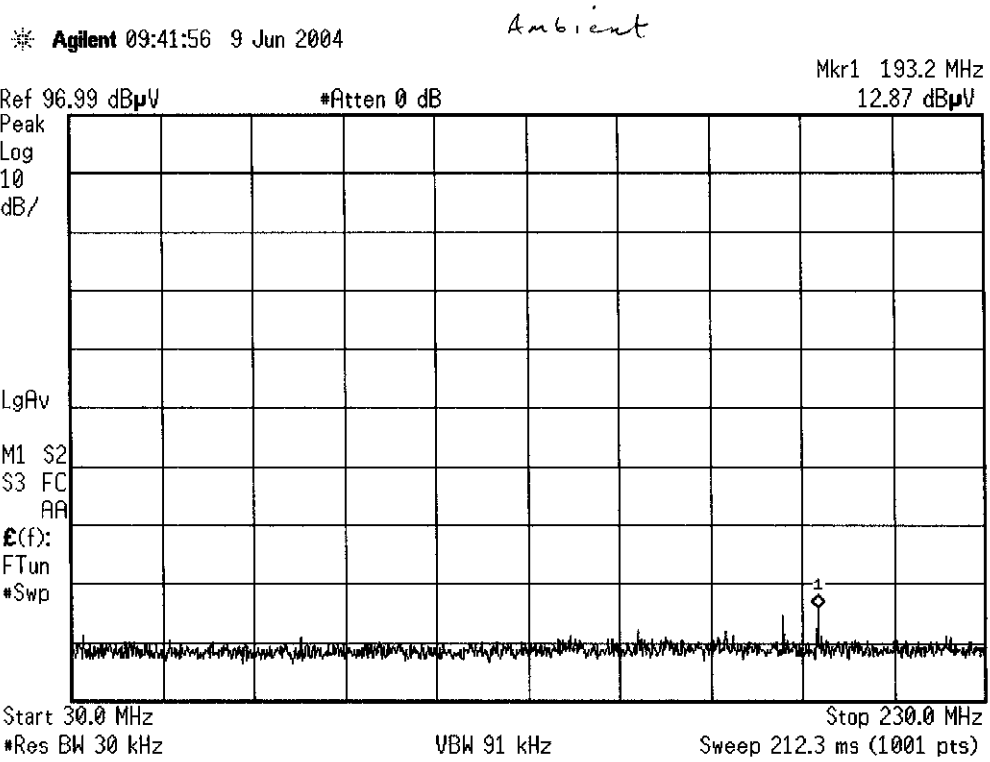


Photograph of Test Setup

Photograph not available. See Test Setup Diagram page 13.

## Appendix

### Supplemental Information

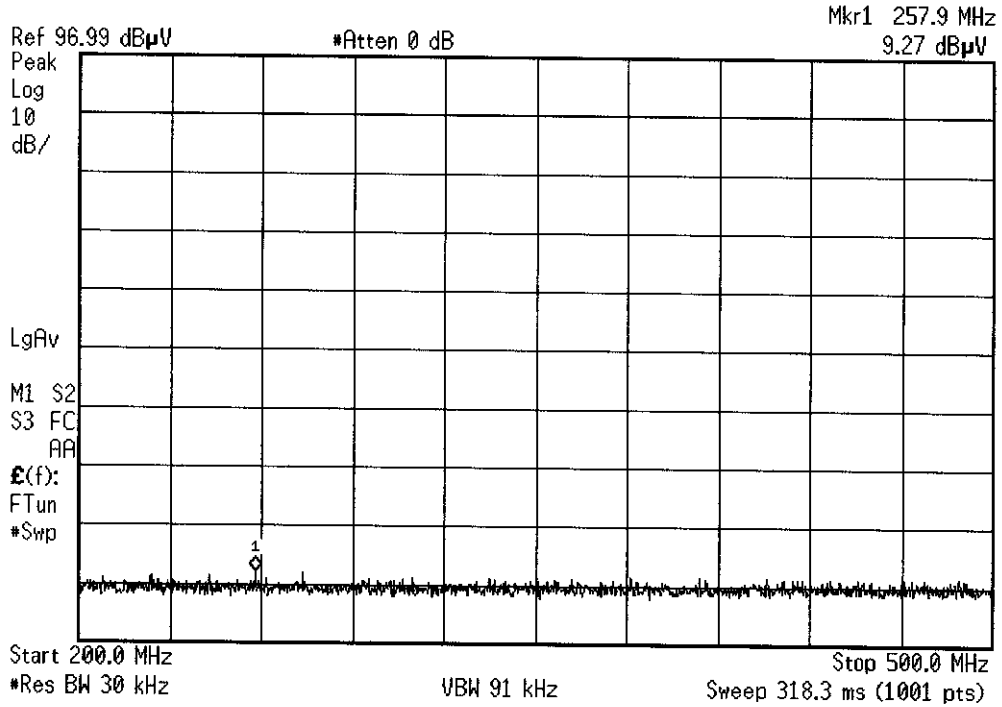


*SR3 - AAS  
1 meter Prescan*



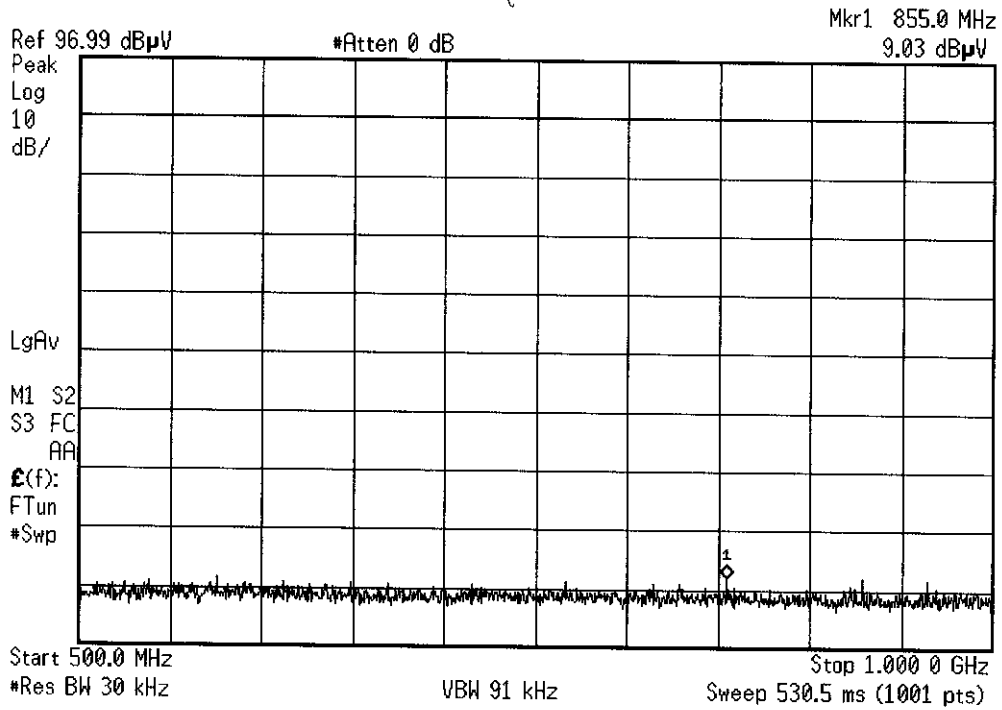
\* Agilent 09:41:32 9 Jun 2004

*Ambient*



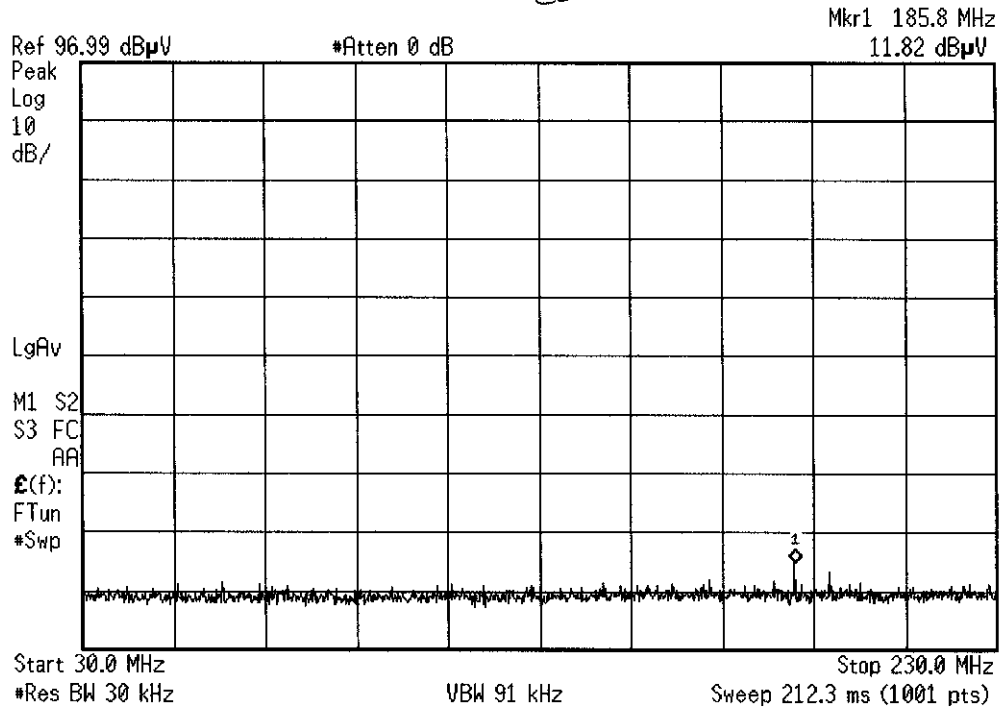
※ Agilent 09:40:55 9 Jun 2004

*Ambient*



\* Agilent 09:48:13 9 Jun 2004

*CDMA - mit channel*

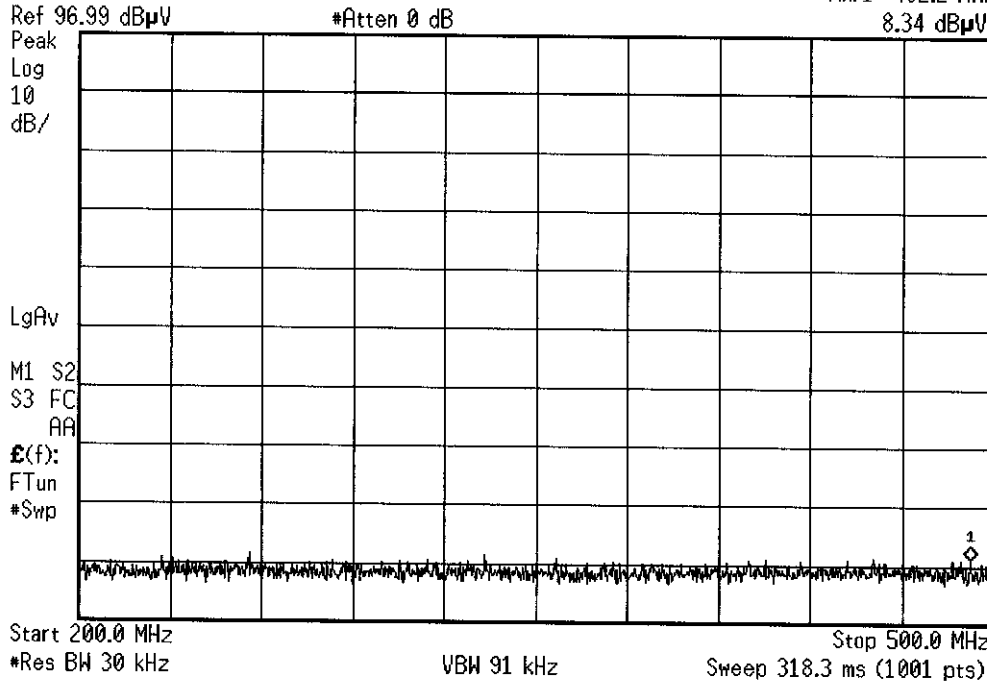


*K 454 LC  
Tri mode Phantom  
Receive  
1 - meter Frescan  
SR3 - AA*

\* Agilent 09:47:33 9 Jun 2004

*CDMA - inidchannel*

Mkr1 492.2 MHz  
8.34 dB $\mu$ V

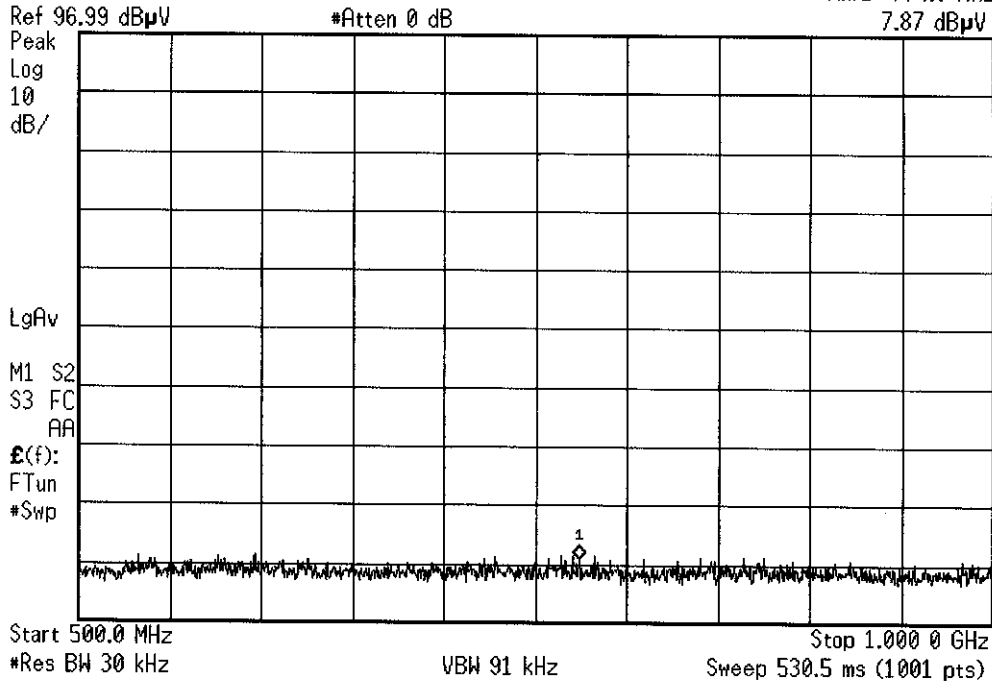


*K454LC  
Trimode Phantom  
Receive  
1-meter Prescan  
SR3 - AAR*

\* Agilent 09:47:12 9 Jun 2004

CDMA - midchannel

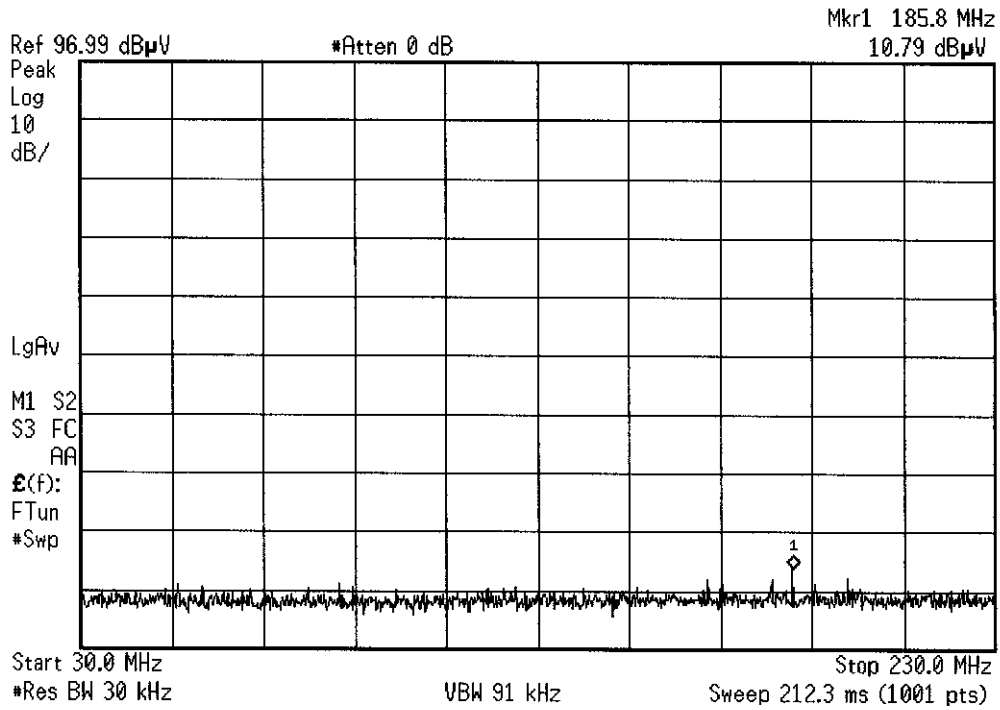
Mkr1 774.0 MHz  
7.87 dB $\mu$ V



K 454 LC  
Trimode Phantom  
Receiver  
1 - meter present  
SR3 - AA

\* Agilent 09:51:27 9 Jun 2004

*fm - mid channel*

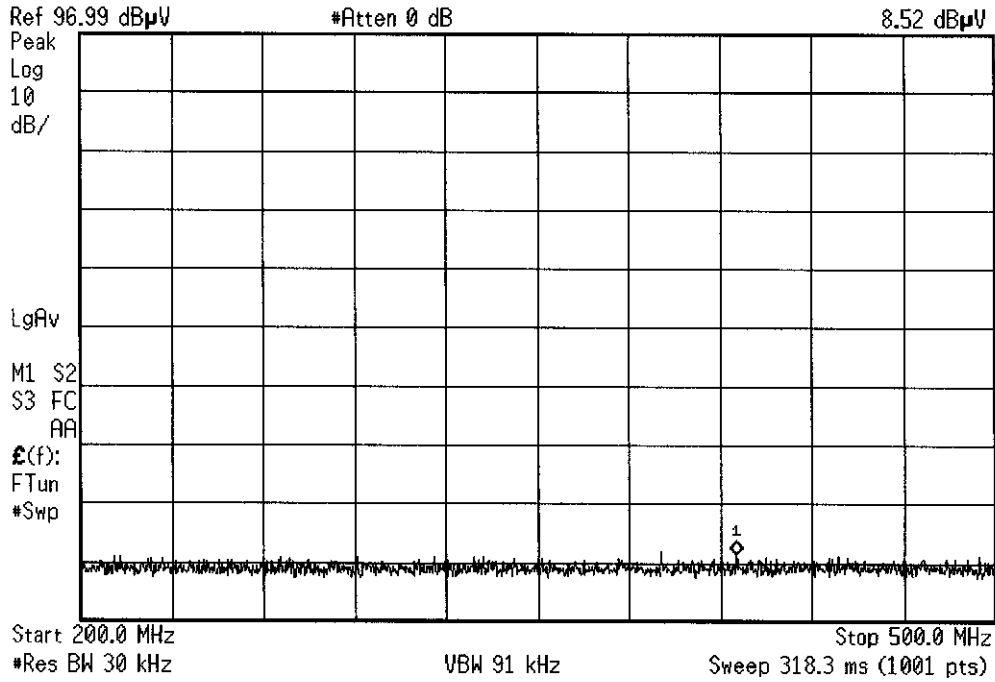


*K454LC  
Triode Phantom  
Receiver  
1-meter Prescan  
SR3 - AAJ*

\* Agilent 09:51:52 9 Jun 2004

*F m - mit channel*

Mkr1 415.1 MHz  
8.52 dBμV

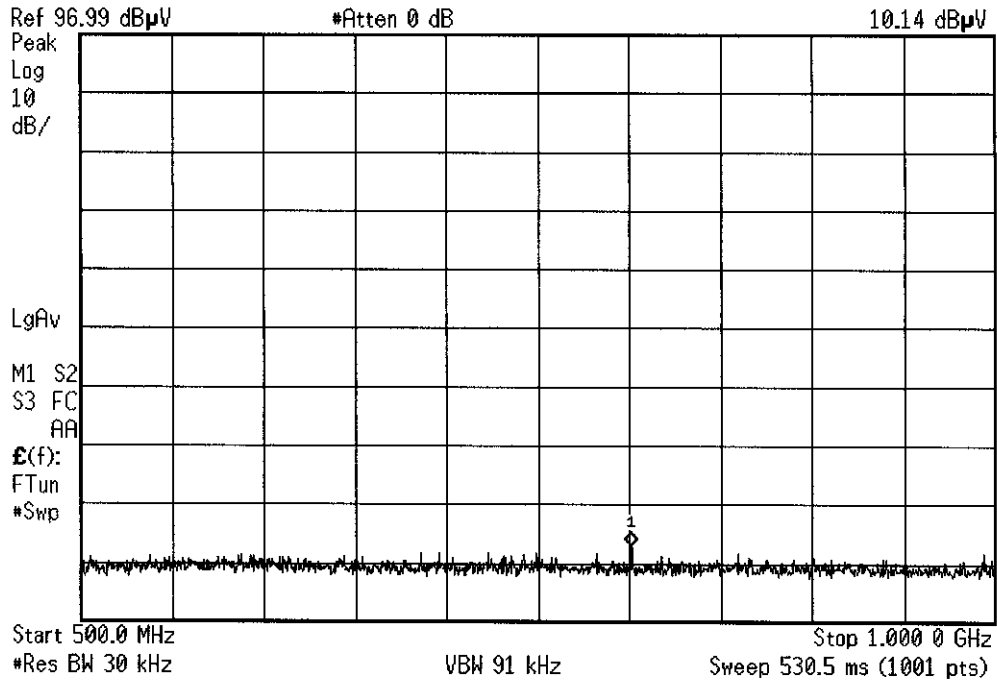


*K 454 LC  
Tri-mode Phantom  
Receiver  
1 meter Prescan  
SR3 - AAF*

\* Agilent 09:52:27 9 Jun 2004

FM mid channel

Mkr1 801.0 MHz  
10.14 dBμV

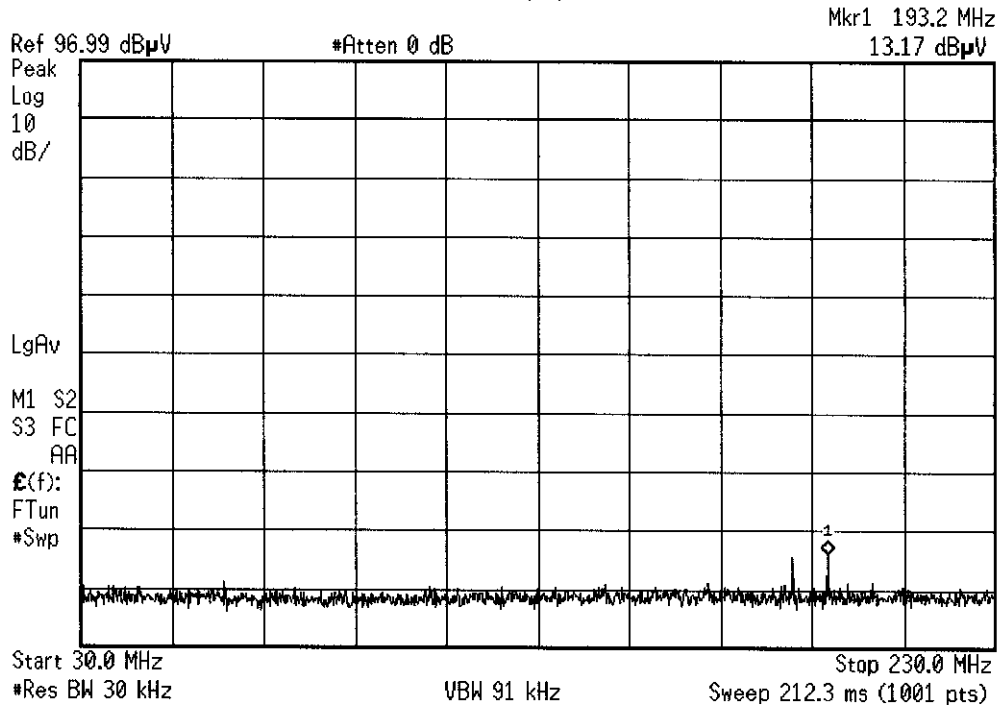


K454 LC  
Tr. mode Phantom  
Receiver  
1-meter Frescam  
SR3 - AAJ



\* Agilent 09:43:38 9 Jun 2004

PCS mid channel

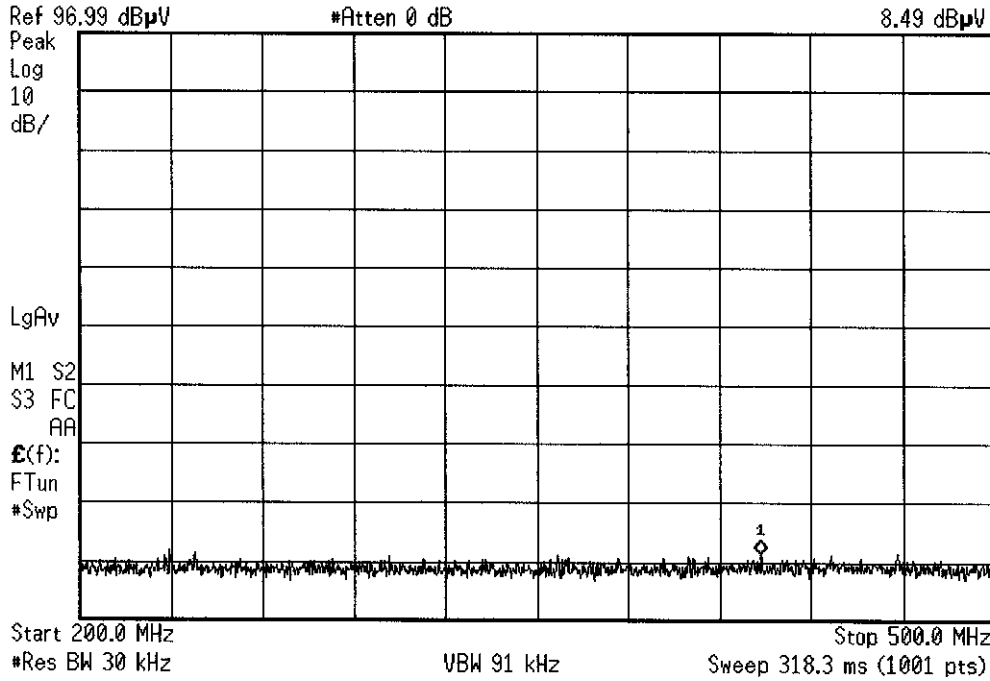


k454LC  
Trimode Phantom  
Receive  
1-meter precal  
SR3 - AA

Agilent 09:44:09 9 Jun 2004

*PCS - mid channel*

Mkr1 423.5 MHz  
8.49 dB $\mu$ V

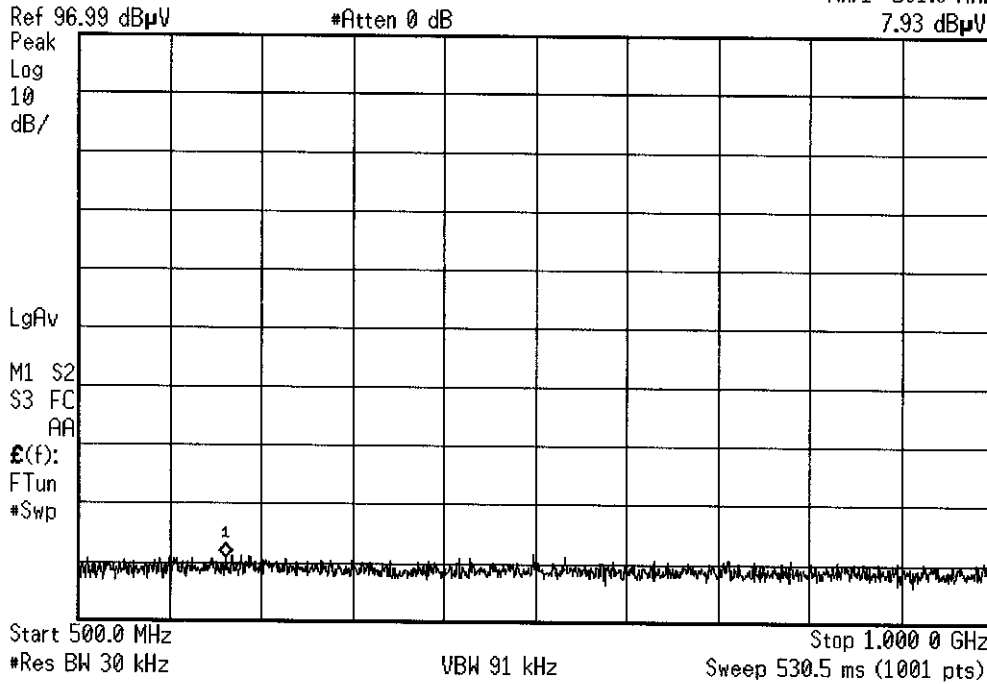


*K 454 LC  
Trimode Phantom  
Receive  
1-meter Proscan  
SR3 - AAZ*

Agilent 09:44:35 9 Jun 2004

*PCS - mid channel*

Mkr1 581.0 MHz  
7.93 dB $\mu$ V



*R454LC  
Trimode Phantom  
Receive  
1 - meter Prescan  
SR3 - AAS*