

TEST NUMBER - 268-00

FEDERAL COMMUNICATIONS COMMISSION
PART 15.249 CERTIFICATION TESTING 902 - 928 MHz
Subpart C - Intentional Radiators

for

Akoo.com
2500 North Harlem Avenue
Elmwood Park, IL 60707
202-418-2470

of

Kima

900 MHz base unit

FCCID#: 05UKS110B

on

July 19, 2000

Tested by

Clifton P. Brick

Reviewed by

Larry K. Stillings

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TEST DESCRIPTION

1. TEST OBJECTIVE

To test the Kima 900 MHz base unit to FCC Part 15.249, Subpart C limits and write a report.

2. E.U.T. DESCRIPTION

GENERAL

The Kima 900 MHz base unit is a transmitter that connects to the audio out port of a sound card on a PC. The purpose of this is to allow transmission of MP3 music technology to the remote receiver in the 902-928 MHz band.

SERIAL NUMBERS:

Pre-Production Prototype.

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TEST RESULTS AND CONCLUSIONS

PRODUCT TESTED - Kima

MODEL NUMBER - 900 MHz base unit

RADIATED TEST RESULTS

The test results show that the emissions radiated from this equipment are in compliance with FCC Rules, Part 15, Subpart C, Section 15.209.

OCCUPIED BANDWIDTH & OUTPUT POWER

The test results show that the occupied bandwidth and output power of this equipment are in compliance with FCC Rules, Part 15, Subpart C, Section 15.239.

CONDUCTED TEST RESULTS

The test results show that the emissions conducted through the power line from this equipment are in compliance with FCC Rules, Part 15, Subpart C, Section 15.207.

ANALYSIS AND CONCLUSIONS

Based upon the radiated and conducted measurements we find that this equipment is within the limits of the FCC Rules, Part 15, Subpart C.

NOTES (Special conditions unique to this test)

NONE.

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TEST PROCEDURES

1. TEST EQUIPMENT

- A. HP 8546A (9 kHz - 6.5 GHz) EMI Receiver w/ RF Filter Section, S/N 3704A00323 / 3650A00360. Calibration Date 7-18-2000, calibrated annually.
- B. HP 8593E (9 kHz - 26.5 GHz) Spectrum Analyzer, S/N 3829A03887. Calibration Date 9-3-1999, calibrated annually.
- C. Electro-Metrics BiConical Antenna, Model EM6912A, S/N 149. Calibration Date 2-22-2000, calibrated annually.
- D. Electro-Metrics Log Periodic Antenna, Model EM-6950, S/N 1017. Calibration Date: 2-22-2000, calibrated annually.
- E. Com-Power Corporation Horn Antenna, Model AH-118, S/N 10078. Calibration Date: 8-16-1999, calibrated annually.
- F. HP 1 - 26.5 GHz Preamplifier, Model 08449B, S/N 3008A01323. Calibration Date: 9-29-1999, calibrated annually.
- G. LISN, Compliance Worldwide, Model 50 μ H / 50 ohm, S/N 100. Calibration Date 2-22-2000, calibrated annually.

2. FREQUENCY RANGE TO BE SCANNED.

- A. Radiated Test from 30 MHz to 40 GHz (or the 10th harmonic of the highest frequency whichever is lower).
- B. Conducted Test from 450 kHz to 30 MHz.

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3. TEST PROCEDURES.

Radiated test procedure

The EUT, associated cables and peripheral devices are placed on the supporting table and any support equipment is placed off the site. The EUT is turned on and any necessary operating or test software installed and allowed to warm up. The frequency band from 30 MHz to 40 GHz is scanned. When an emission is found the emission is maximized by varying the bundle position of the connecting cables, the antenna height, the antenna polarization (vertical and horizontal) and the table orientation (360 degrees). The maximum reading is recorded and the next signal is searched for.

Conducted test procedure

The power line of the EUT is connected to the LISN (Line Impedance Stabilization Network). A measurement of the emissions are made from the power line for both phase and neutral on the analyzer in the frequency range from 450 kHz to 30 MHz. The maximum readings are recorded for each phase.

All measurements are made according to the procedures defined in: "ANSI C63.4-1992 Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz, American National Standard for (ISBN 1-55937-215-5).

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PART 15 SUBPART C TEST LIMITS

1. 15.209, 15.235 & 15.249 Radiation Limits (Quasi-Peak):

Frequency MHz	Distance meters	Limit dBμV/m	Limit μV/m
1.705 - 30	30	29.5*	30*
30 - 88	3	40.0	100
49.82 - 49.90	3	80.0*	10,000*
88 - 216	3	43.5	150
216 - 960	3	46.0	200
902 - 928	3	94.0*	50,000*
960 - 1000	3	54.0	500
1000 - 40000	3	54.0*	500*

*NOTE: Average Limits

2. 15.207 Conduction Limits (Quasi-Peak):

Frequency MHz	Limit dBμV/m	Limit μV/m
0.450 - 30.0	48.0	250



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TEST FACILITY DESCRIPTION

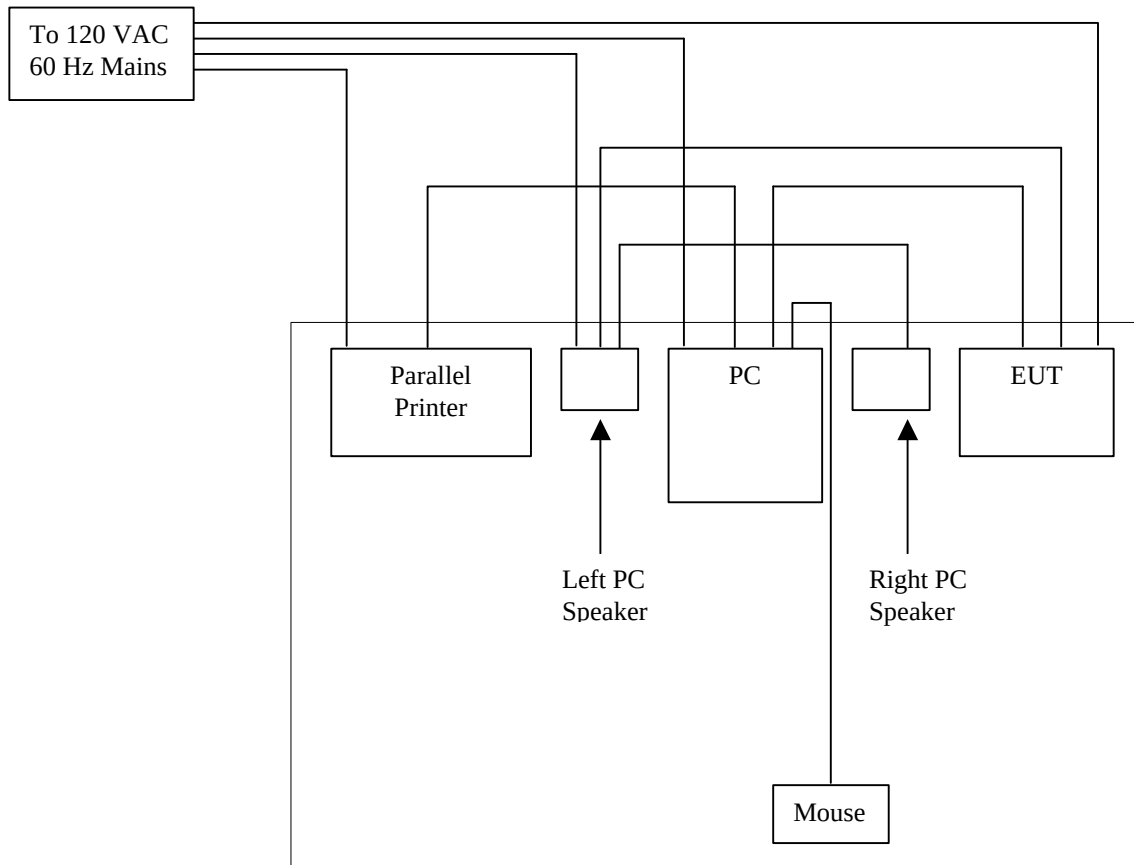
In keeping with the requirements of Section 2.948 of the Federal Communications Commission's Rules, Compliance Worldwide has filed a Test Facility Description with the F.C.C.

Anyone wishing to review this Test Facility Description is referred to registration number 96392. This is currently on file at the FCC's Authorization and Evaluation Lab in Columbia, Maryland, U.S.A.

DATE ON FILE: March 6, 2000

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**TEST SET UP
AND
PERIPHERAL CONNECTION INFORMATION**



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PLEASE NOTE - EUT (equipment under test) is Kima.

The cables directly connected to this equipment are listed below.
Please see below for a complete list of FCC ID's etc. on the
supporting equipment.

Connection Descriptions

1. Power Cable
(description)
Kima
(from device)
AC Mains via 6VDC 100mA Class 2 Power Supply
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED U
2. Power Cable
(description)
PC FCC ID# CJ6UK436
(from device)
AC Mains
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED U
3. Power Cable
(description)
PC Speakers Harman/Kardon model 02320
(from device)
AC Mains via class 2 DC Power Supply
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED U

Connection Descriptions (Continued)

4. Stereo Cable
(description)
PC FCC ID# CJ6UK436
(from device)
Kima (EUT)
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED S
5. Stereo Cable
(description)
PC Speakers Harman/Kardon model 02320
(from device)
Kima (EUT)
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED U
6. Parallel Cable
(description)
PC FCC ID# CJ6UK436
(from device)
Parallel Printer FCC ID# AA08W726-1280
(to device)
CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED S
7. Mouse Cable
(description)
Mouse FCC ID# DZL211029
(from device)
PC FCC ID# CJ6UK436
(to device)
CABLE LENGTH 1.5M (S) SHIELDED or (U) UNSHIELDED S



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Connection Descriptions (Continued)

8. 18 Gauge 2 conductor cord
(description)

Left PC Speaker Harman/Kardon model 02320
(from device)

Right PC Speaker Harman/Kardon model 02320
(to device)

CABLE LENGTH 2M (S) SHIELDED or (U) UNSHIELDED U

9 Power Cable
(description)

Printer FCC ID# AA08W726-1280
(from device)

PC FCC ID# CJ6UK436
(to device)

CABLE LENGTH 1.5M (S) SHIELDED or (U) UNSHIELDED S

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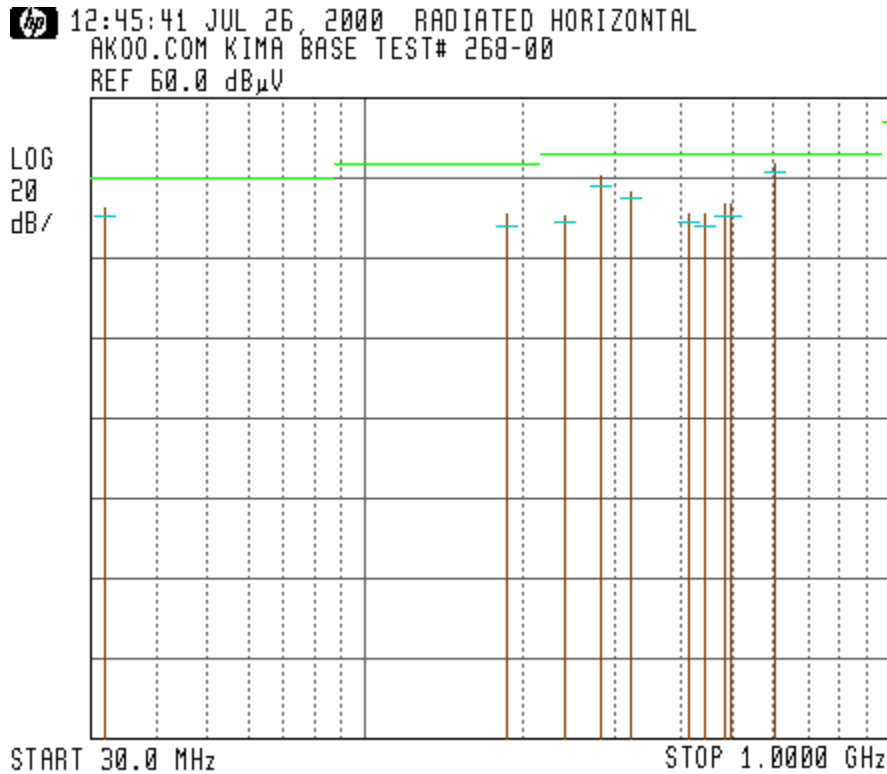
RADIATED TEST RESULTS

Frequency Range: 30 - 9280 MHz.
Measurement Distance: 3.0 Meters.
Bandwidth: 120 kHz, Per ANSI C63.4-1992.*
Detector Functions: Peak, Quasi Peak, Average
Video Filter: 300 kHz
Table Height: 0.8 meters
Antenna Height Variation: 1 - 4 Meters.
Horizontal and Vertical Polarization Measurements Taken.

*Measurement Bandwidth is 1 MHz above 1 GHz

PLEASE SEE NEXT PAGE FOR RADIATED TEST DATA

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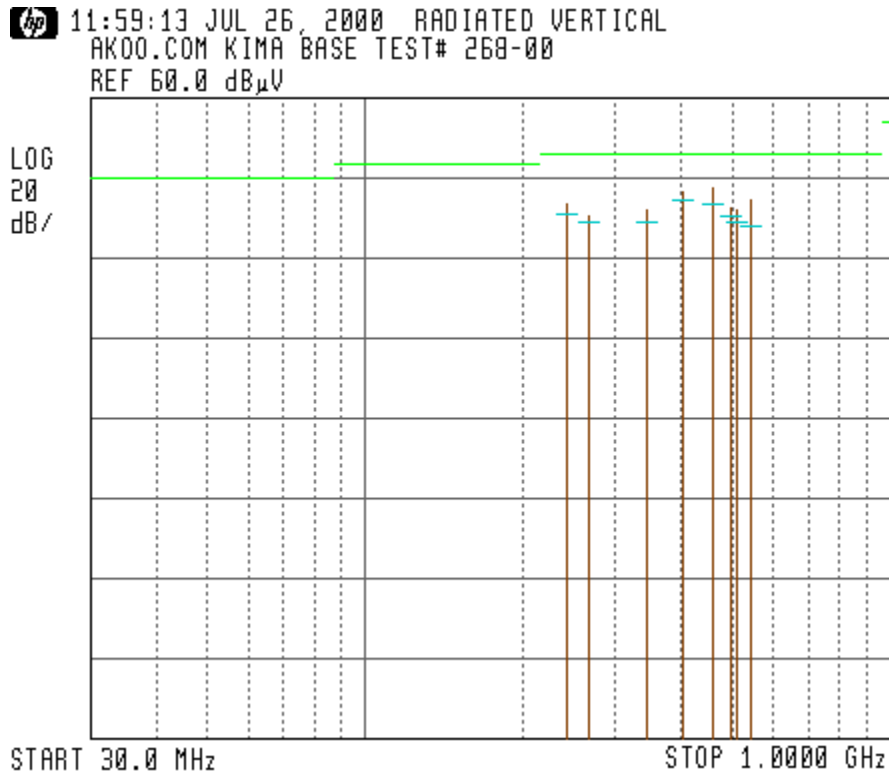


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Radiated Horizontal Tabular Data

Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuv)	Quasi Peak Amplitude (dBuV)	Quasi Peak Limit (dBuV)	Margin (dB)
32.01	1	2.9	33.4	31.0	40.0	-9.0
185.40	177	2.3	31.3	28.4	43.5	-15.1
239.98	132	1.7	30.9	29.3	46.0	-16.7
280.62	126	1.6	40.5	38.2	46.0	-7.8
320.71	202	1.6	37.3	35.5	46.0	-10.5
410.90	223	1.6	31.9	29.0	46.0	-17.0
440.96	316	1.0	31.2	28.7	46.0	-17.3
479.96	94	1.0	33.9	30.9	46.0	-15.1
496.11	93	1.0	33.7	30.8	46.0	-15.3
599.94	111	1.0	44.3	41.8	46.0	-4.2

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Radiated Vertical Tabular Data

Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV)	Quasi Peak Amplitude (dBuV)	Quasi Peak Limit (dBuV)	Margin (dB)
240.52	222	2.3	33.8	31.7	46.0	-14.3
265.57	173	2.6	31.1	28.8	46.0	-17.2
341.95	2	1.5	32.5	29.3	46.0	-16.7
400.88	337	1.5	36.8	34.9	46.0	-11.1
456.00	177	1.8	37.9	34.1	46.0	-11.9
496.07	146	1.4	33.5	30.9	46.0	-15.1
506.12	122	1.0	31.9	29.2	46.0	-16.8
539.99	70	1.2	34.5	28.6	46.0	-17.4

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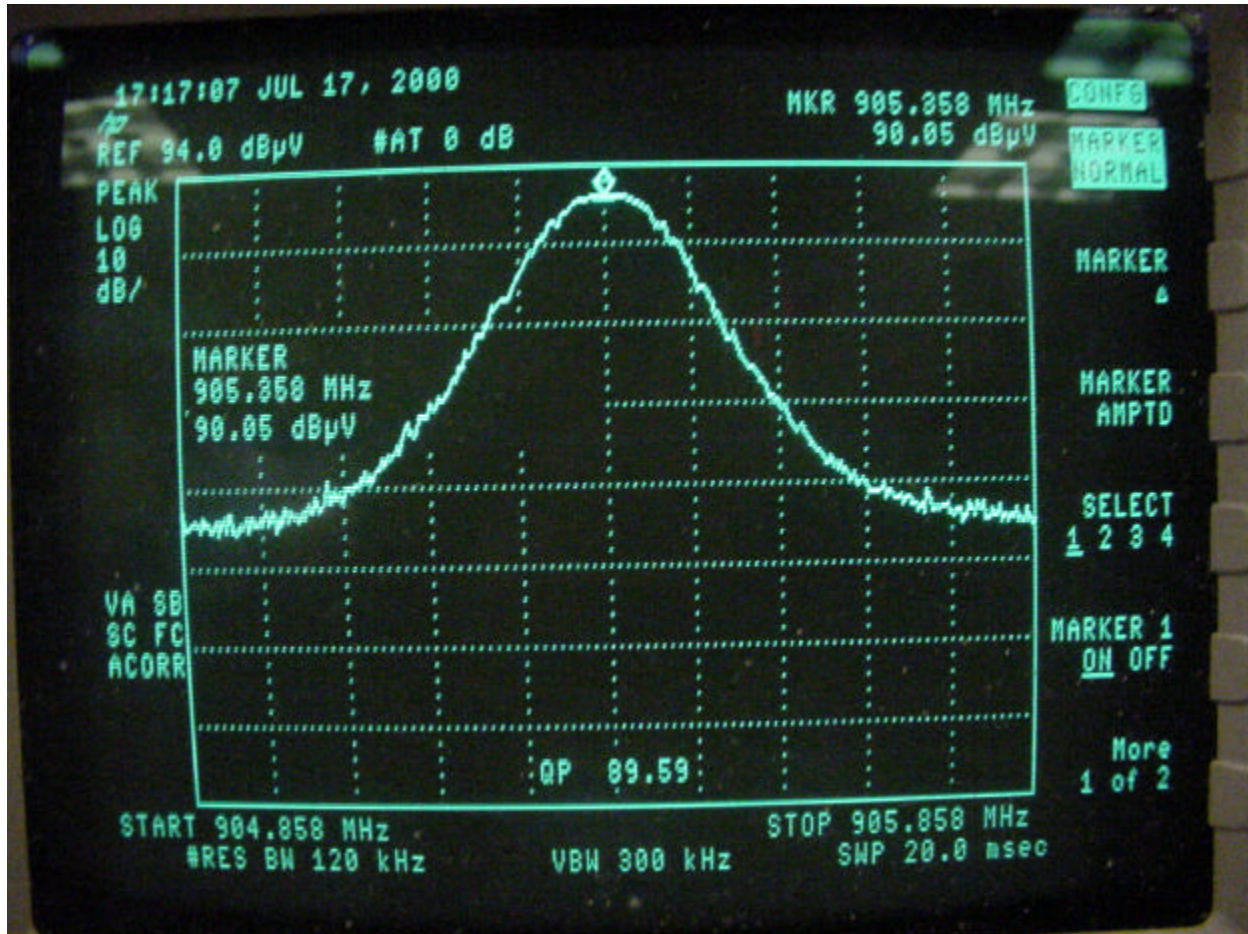
RADIATED OUTPUT POWER & OCCUPIED BANDWIDTH TEST RESULTS

Frequency Range: 902 - 928 MHz.
Measurement Distance: 3.0 Meters.
Bandwidth: 120 kHz, Per ANSI C63.4-1992.
Detector Functions: Peak, Quasi Peak, Average.
Video Filter: 300 kHz
Table Height: 0.8 meters
Antenna Height Variation: 1 - 4 Meters.
Horizontal and Vertical Polarization Measurements Taken.

PLEASE SEE NEXT PAGE(S) FOR OCCUPIED BANDWIDTH RADIATED TEST DATA

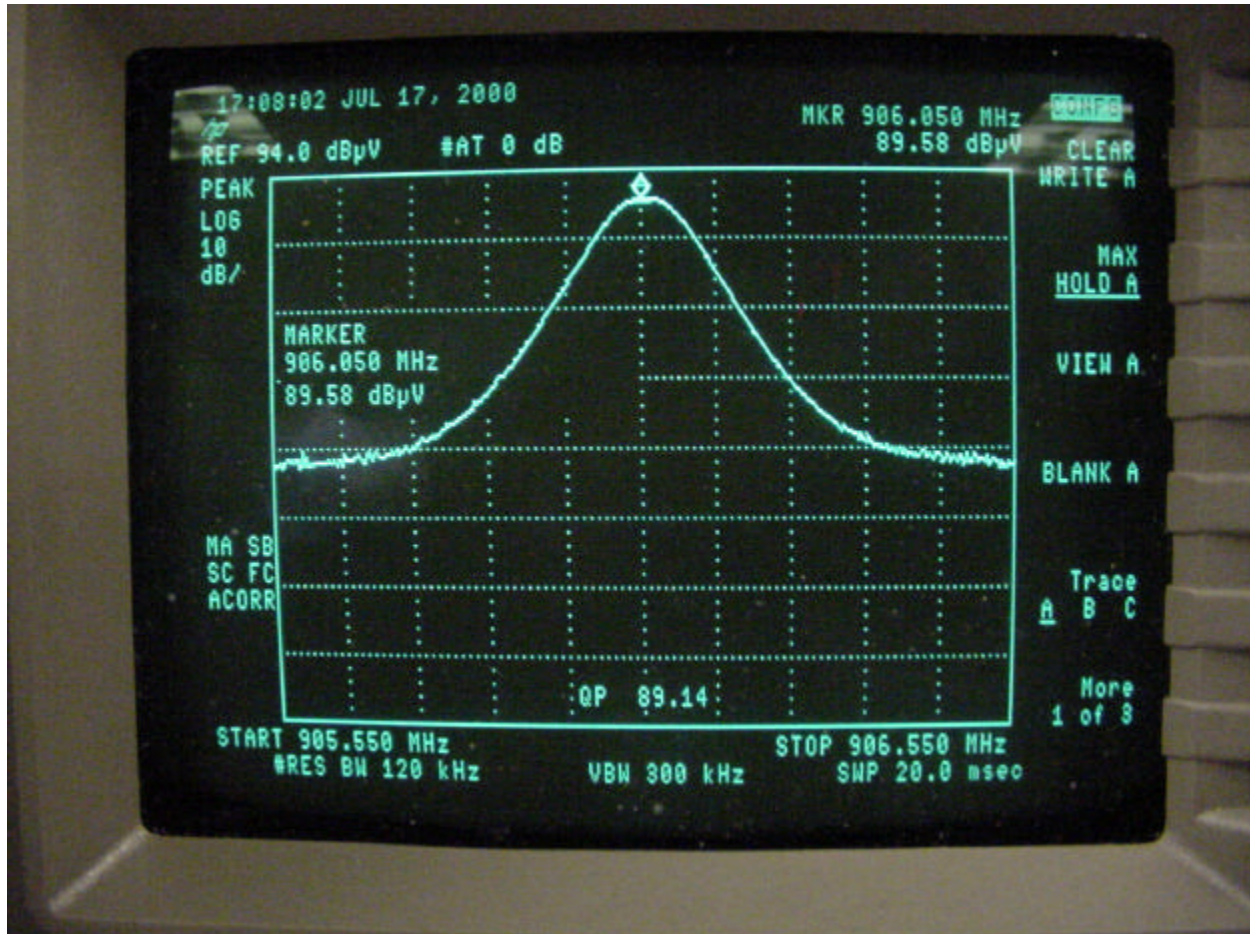
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Channel A



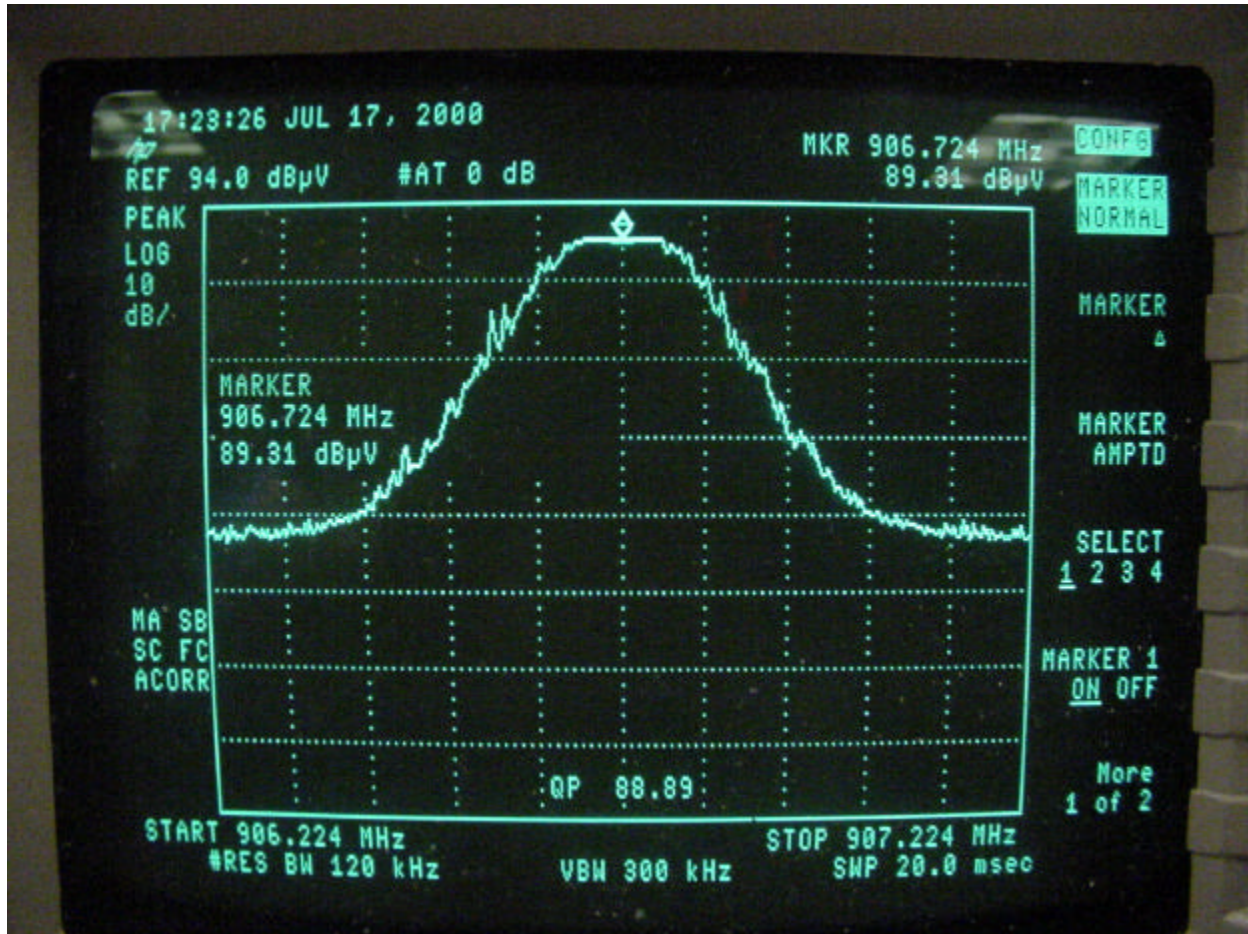
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Channel B



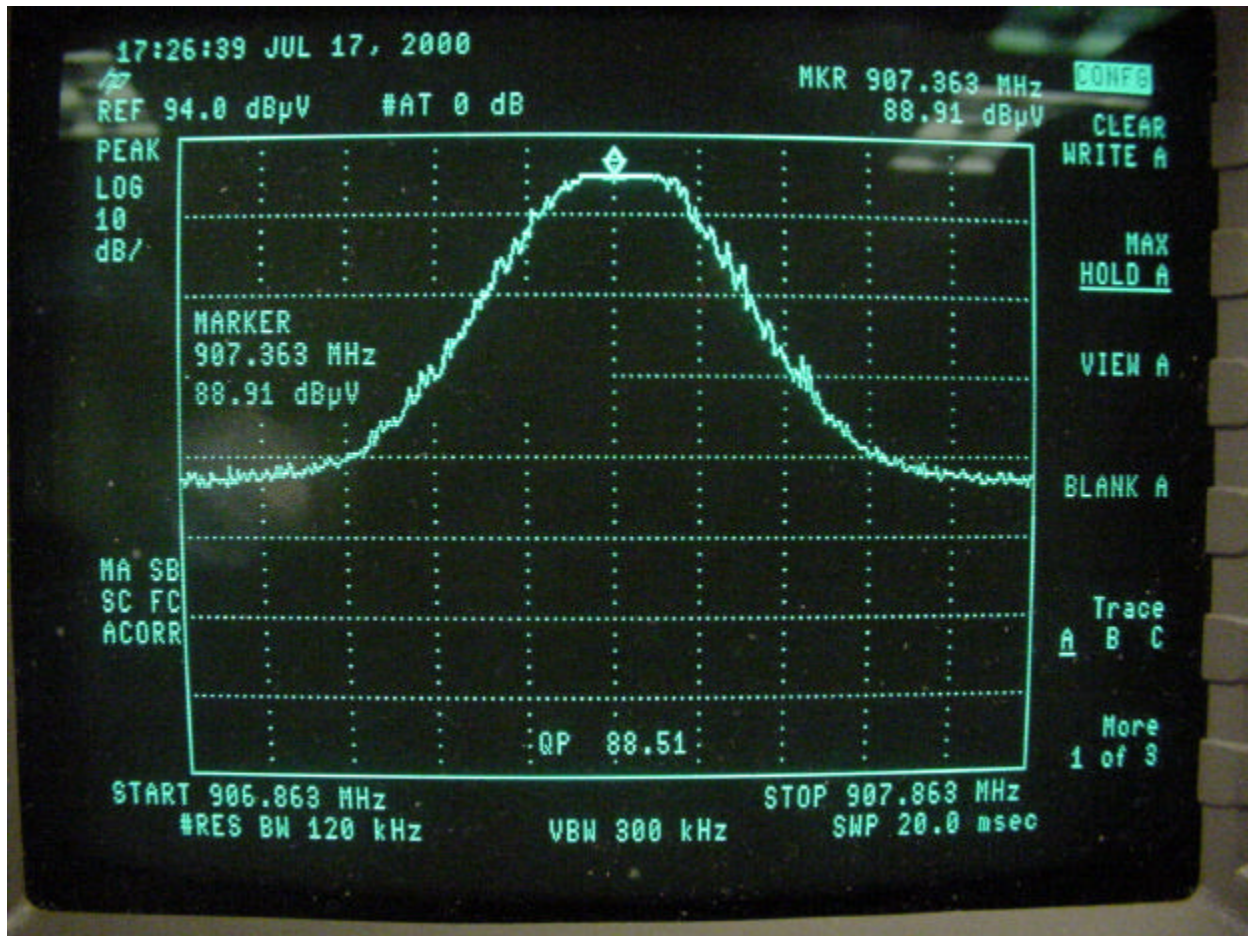
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Channel C



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Channel D



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Radiated Output Power Tabular Data

Channel	Frequency (MHz)	Azimuth (Degrees)	Antenna Height (Meters)	Peak Amplitude (dBuV)	Quasi Peak Amplitude (dBuV)	Quasi Peak Limit (dBuV)	Margin (dB)
A	904.9	22	1.2	90.1	89.6	94.0	-4.4
B	906.0	23	1.1	89.6	89.1	94.0	-4.9
C	906.7	24	1.2	89.3	88.9	94.0	-5.1
D	907.3	23	1.1	88.9	88.5	94.0	-5.5

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CONDUCTED TEST RESULTS

Frequency Range:	450 kHz to 30.0 MHz.
Bandwidth:	9 kHz per ANSI C63.4-1992.
Detector Functions:	Peak, Quasi-Peak, Average
Table Height:	0.8 meters
Video Bandwidth:	30 kHz.

Phase and Neutral Measurements Taken.

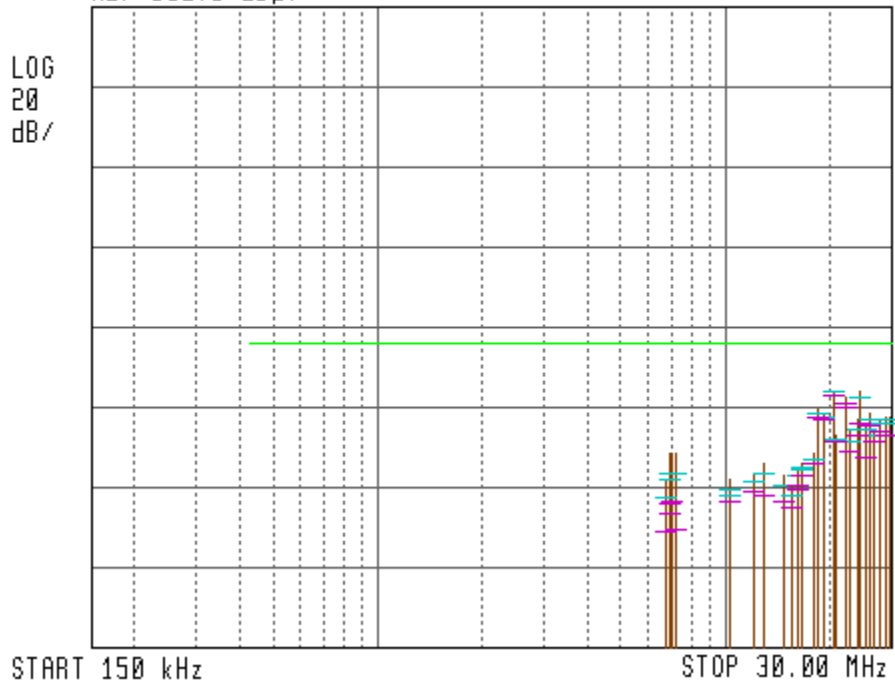
PLEASE SEE NEXT PAGE FOR CONDUCTED TEST DATA

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13:04:34 JUL 25, 2000
AKOO.COM KIMA BASE CONDUCTED PHASE TEST#268-00
REF 132.0 dB μ V



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Conducted Phase Tabular Data

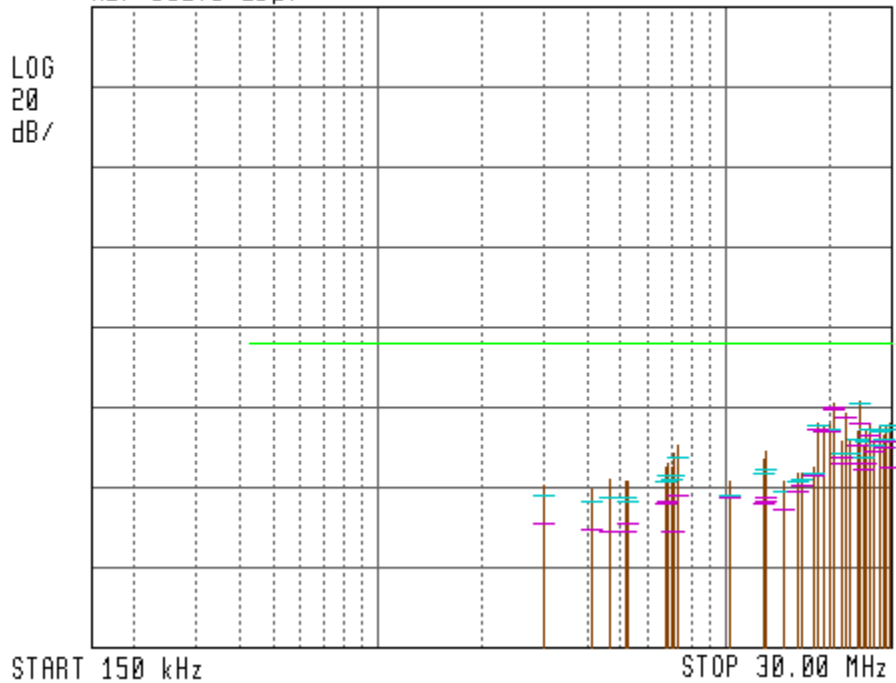
Frequency (MHz)	Peak Amplitude (dBuV)	Quasi Peak Amplitude (dBuV)	Quasi Peak Limit (dBuV)	Margin (dB)
6.92	20.5	16.4	48.0	-31.6
7.20	21.0	16.1	48.0	-31.9
10.18	14.0	11.9	48.0	-36.1
12.02	15.9	14.0	48.0	-34.0
12.86	18.2	16.4	48.0	-31.6
16.00	16.9	15.7	48.0	-32.3
17.87	20.6	19.4	48.0	-28.6
18.37	31.9	31.0	48.0	-17.0
19.04	31.1	30.3	48.0	-17.7
20.21	36.4	36.0	48.0	-12.0
22.04	34.5	33.4	48.0	-14.6
22.71	26.6	23.7	48.0	-24.4
24.00	36.5	35.2	48.0	-12.8
25.05	28.4	26.7	48.0	-21.3
25.72	30.2	28.9	48.0	-19.1
26.55	26.5	25.4	48.0	-22.6
26.39	26.4	25.2	48.0	-22.8
27.56	29.4	28.2	48.0	-19.8
29.39	30.1	29.2	48.0	-18.8

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12:36:05 JUL 25, 2000
AKOO.COM KIMA BASE CONDUCTED NUETRAL TEST#268-00
REF 132.0 dB μ V



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Conducted Neutral Tabular Data

Frequency (MHz)	Peak Amplitude (dBuV)	Quasi Peak Amplitude (dBuV)	Quasi Peak Limit (dBuV)	Margin (dB)
3.01	13.4	10.5	48.0	-37.6
4.09	12.3	9.1	48.0	-38.9
5.18	13.9	9.4	48.0	-38.6
4.64	14.6	9.9	48.0	-38.1
5.17	13.8	9.6	48.0	-38.4
6.68	17.3	14.1	48.0	-33.9
6.81	18.5	15.2	48.0	-32.8
7.09	20.6	15.6	48.0	-32.4
6.96	17.4	14.8	48.0	-33.2
7.22	23.4	20.1	48.0	-27.9
10.19	13.8	10.7	48.0	-37.3
12.86	19.5	16.3	48.0	-31.7
13.02	18.2	16.7	48.0	-31.4
14.70	13.5	11.4	48.0	-36.6
16.53	16.2	14.5	48.0	-33.5
16.00	15.6	13.8	48.0	-34.2
16.53	16.5	14.6	48.0	-33.4
17.87	17.9	16.2	48.0	-31.8
18.37	28.4	27.8	48.0	-20.2
19.04	27.8	26.9	48.0	-21.1
19.71	28.0	26.7	48.0	-21.3
20.21	33.3	32.5	48.0	-15.5
21.47	23.9	20.6	48.0	-27.4
21.54	23.5	20.6	48.0	-27.4
22.04	31.0	30.0	48.0	-18.0
22.71	24.2	20.2	48.0	-27.8
23.88	26.5	24.8	48.0	-23.2
24.00	34.3	33.1	48.0	-15.0
24.88	22.6	20.4	48.0	-27.7
25.05	26.3	24.2	48.0	-23.8
25.72	27.9	26.8	48.0	-21.3
26.55	24.7	23.2	48.0	-24.8
26.39	24.3	23.1	48.0	-24.9
27.56	27.6	26.1	48.0	-21.9
28.56	28.1	27.1	48.0	-20.9
29.39	28.6	27.6	48.0	-20.4



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NOTES AND COMMENTS

(Special conditions unique to this test)

None.

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PHOTOGRAPHS

Radiated Test Setup (Front)

All photos removed from this copy of test report filed with the FCC to reduce file size for upload. See other uploaded files for photos.

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PHOTOGRAPHS

Radiated Test Setup (Rear)

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PHOTOGRAPHS

Conducted Test Setup (Front)



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PHOTOGRAPHS

Conducted Test Setup (Rear)



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PHOTOGRAPHS

Exterior Product Photographs (Rear)



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Exterior Product Photographs (Front)



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PHOTOGRAPHS

Interior Circuit Board Photographs (Top)



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Interior Circuit Board Photographs (Bottom)