CKC LABORATORIES, INC.
Testing the Future

EXHIBIT D

CKC TEST REPORT

5473A CLOUDS REST • MARIPOSA, CALIFORNIA 95338 • (209) 966-5240 • FAX (209) 966-4257

FCC ID: C3KRTS

CKC LABORATORIES, INC. Testing the Future

ACCREDITED

CERTIFICATION TEST REPORT

FOR THE

ACTIMATES RADIO CARTRIDGE

FCC PART 15 SUBPART C

COMPLIANCE

DATE OF ISSUE: OCTOBER 20, 1998

PREPARED FOR:

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052

P.O. No: 293200
W.O. No: 69,492

Report No: **FC98-026**

PREPARED BY:

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5473A Clouds Rest
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Date of test: October 5 - 7, 1998

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	October 5 - 7, 1998
PURPOSE OF TEST:	To demonstrate the compliance of the ActiMates Radio Cartridge, with the requirements for FCC Part 15, Subpart C devices.
MANUFACTURER:	Microsoft Corporation One Microsoft Way Redmond, WA 98052
REPRESENTATIVE:	Ata Zadehgol
TEST LOCATION:	CKC Laboratories, Inc. 22105 Wilson River Hwy Tillamook, OR 97141
TEST PERSONNEL:	Mike Wilkinson
TEST METHOD:	ANSI C63.4 1992
FREQUENCY RANGE TESTED:	9kHz - 1000MHz
EQUIPMENT UNDER TEST:	**ActiMates Radio Cartridge** Manuf: Microsoft Corporation Model: ActiMates Radio Cartridge Serial: DVT001 RF Module 49MHz FCC ID: C3KRT5

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SUMMARY OF RESULTS

The Microsoft Corporation ActiMates Radio Cartridge, was tested in accordance with ANSI C63.4 1992 for compliance with the FCC Part 15, Subpart C requirements.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15, Subpart C rules. The results in this report apply only to the items tested, as identified herein.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The ActiMates Radio Cartridge will be used not only in Teletubbies but other Microsoft ActiMates products. For testing purposes, the radio cartridge/module was housed in one of the Teletubbies (Po).

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ±4dB measurement uncertainty.

EUT OPERATING FREQUENCY

The EUT was operating at 49.86MHz.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

PERIPHERAL DEVICES

There are no peripheral devices associated with the EUT.

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REPORT OF MEASUREMENTS

The following tables reports the highest emissions levels recorded during the tests performed on the ActiMates Radio Cartridge. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Six Highest Fundamental Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
49.856	89.1	8.8	-27.3	1.1	71.7	80.0	-8.3	Horiz. side position w/left side on table
49.858	89.0	8.8	-27.3	1.1	71.6	80.0	-8.4	Horiz. side position w/left side on table
49.858	84.0	8.8	-27.3	1.1	66.6	80.0	-13.4	Horiz. position w/back on the table
49.858	83.7	8.8	-27.3	1.1	66.3	80.0	-13.7	Vertical Position
49.861	86.4	8.8	-27.3	1.1	69.0	80.0	-11.0	Horiz. position w/back on the table
49.862	93.5	8.8	-27.3	1.1	76.1	80.0	-3.9	Vertical Position

Test Method: ANSI C63.4 1992
Spec Limit : 15.235 (a)
Test Distance: 3 Meters

NOTES: N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

The readings in the table above are peak readings

COMMENTS: The EUT is placed on the test table in 3 orthogonal positions as noted in the data sheet for each reading. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The peak reading with the EUT and measurement antenna in the vertical position was averaged by measuring the pulsed transmitter duty cycle over .1 sec.span, which = 20ms/100ms then 20log(.2)= -13.98dB, then 76.1 – 13.98 = 62.12 average corrected reading or 17.88 dB margin.

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Table 2: Six Highest Radiated Emission Levels (9kHz – 1000MHz)

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
598.365	42.4	19.6	-27.9	5.8		39.9	46.0	-6.1	H
698.028	40.1	20.4	-27.9	6.5		39.1	46.0	-6.9	H
747.981	37.1	22.1	-27.6	6.7		38.3	46.0	-7.7	H
797.791	38.2	21.5	-27.7	6.9		38.9	46.0	-7.1	H
897.528	38.9	22.7	-27.5	7.3		41.4	46.0	-4.6	VQ
947.374	40.2	24.1	-27.4	7.7		44.6	46.0	-1.4	VQ

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.209
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: The table above was compiled from a combination of the following test conditions:

- The EUT is placed on the test table in the horizontal position with the back on the table. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz.
- The EUT is placed on the test table in the horizontal side position with the left side on the table. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz.
- The EUT is placed on the test table in the vertical position. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz

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Table 3: Six Highest Radiated Emission Levels (Receive Mode)									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
52.294	36.5	7.7	-27.3	1.2		18.1	40.0	-21.9	V
74.956	36.1	6.9	-27.1	1.6		17.5	40.0	-22.5	V
82.526	32.4	7.9	-27.1	1.8		15.0	40.0	-25.0	V
100.008	44.9	10.3	-27.1	2.0		30.1	43.5	-13.4	V
200.048	32.8	8.9	-26.6	3.1		18.2	43.5	-25.3	V
269.956	31.4	12.8	-26.4	3.6		21.4	46.0	-24.6	V

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.109
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: The EUT is placed on the test table in its typical configuration (horizontal position with the back on the table). EUT is in the receive only mode. The temperature was 67 Degrees Fahrenheit and the humidity was 60%

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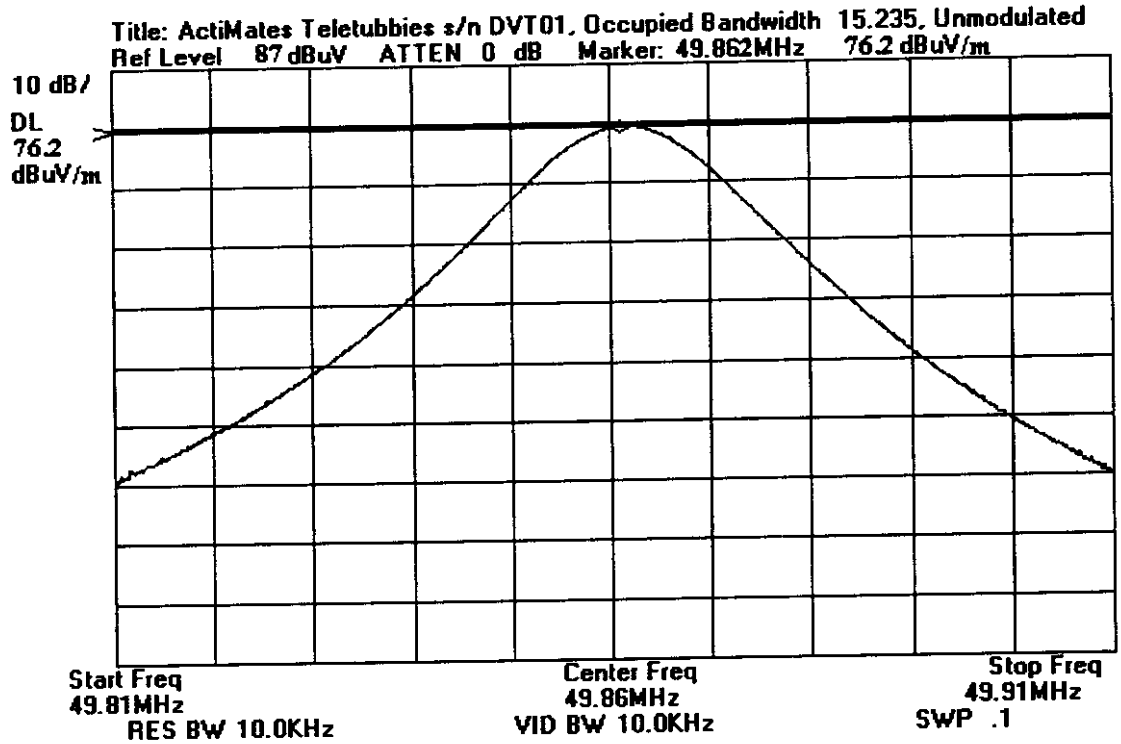
Referenced Unmodulated Plot 15.235



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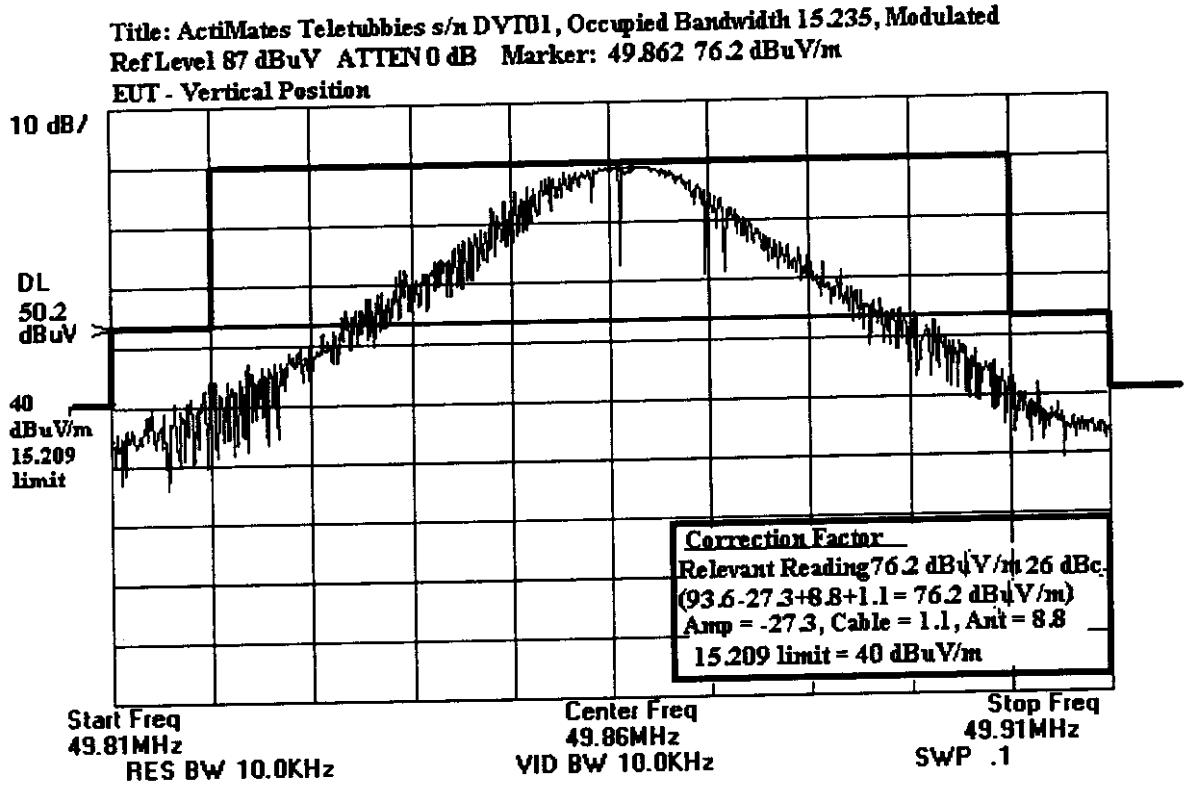
Occupied Bandwidth Plot 15.235



Notes:

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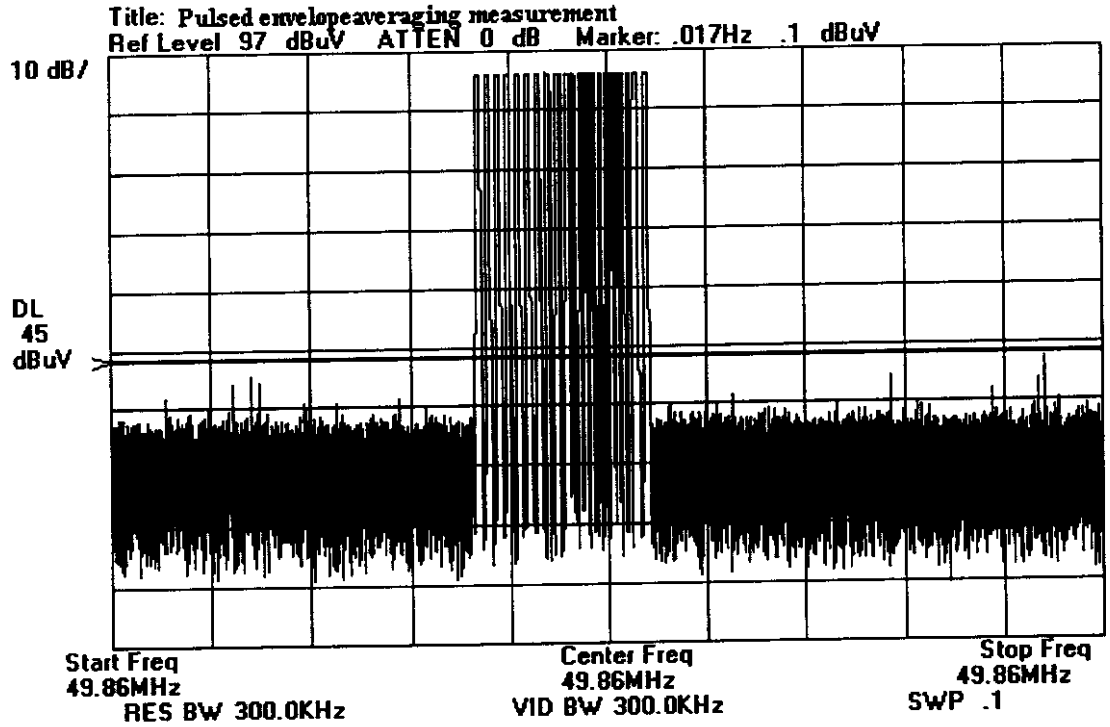
Pulsed Envelope Averaging Measurement



Notes: The pulsed transmitter duty cycle over .1 sec.span, which = 20ms/100ms then 20log(.2)= -13.98dB, then 76.1 – 13.98 = 62.12 average corrected reading or 17.88 dB margin.

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TABLE A

LIST OF TEST EQUIPMENT

1. EMI Receiver System, Hewlett Packard, Model No. 8574A, S/N 3010A01076
2. Preamp, Hewlett Packard, Model No. 8447D, S/N 2727A05392.
3. Preamp, Hewlett Packard, Model No. 83017A, S/N 3123A00283.
4. Bilog Antenna, Chase, Model No. CBL6111C, S/N 2455.
5. Rod Antenna, EMCO, Model No. 3301 B, S/N 9207-3275.
6. Tillamook A site calibration date: November 18, 1997. Tillamook A site calibration due date: November 18, 1998.
7. Test software, EMI Test 2.91.

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EUT SETUP

The equipment under test (EUT) listed was setup in a manner that represented its normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Table 1 for fundamental radiated emissions, Table 2 & 3 for radiated emissions.

During radiated emissions testing, the EUT was inserted into the host character, which was then mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect the radiated emissions data for the ActiMates Radio Cartridge. For radiated measurements between 9 kHz - 30 MHz the rod antenna was used. For frequencies between 30 MHz - 1000 MHz, the bilog antenna was used. All antennas were located at a distance of 3 meters from the edge of the EUT.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBμV, and a vertical scale of 10 dB per division were used unless otherwise specified.

TABLE B : ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz

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SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in Tables 1, 2 and 3 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in Table 1, Table 2 or Table 3. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the ActiMates Radio Cartridge.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP 85650A Quasi-Peak Adapter for the HP 8568B Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

When the frequencies exceed 1 GHz, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

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TEST METHODS

The radiated emissions data of the ActiMates Radio Cartridge, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the "Sample Calculations". The corrected data was then compared to the FCC Part 15, Subpart C emissions limits to determine compliance.

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

Radiated Emissions Testing

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode facing the antenna. For frequencies below 30 MHz the rod antenna was used. The frequency range of 30 MHz - 88 MHz was then scanned with the bilog antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks which were at or near the limit were recorded. The frequency range of 100 - 1000 MHz was scanned with the bilog antenna in the same manner, and the peaks recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The bilog antenna was changed to the horizontal polarity and the above steps were repeated. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, the equipment was again positioned facing the antenna. A thorough scan of all frequencies was manually made using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation, antenna height and configuration of the EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor while the EUT was being moved and rearranged on the EUT table for maximum emissions. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

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FCC Part 15.235 - Operation Within The Band 49.82-49.90 MHz

The field strength of all emissions within the band of 49.82 – 49.90MHz did not exceed 10,000 microvolts/meter at 3 meters. The emission limits were based on the measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

The field strength of the emissions appearing between the band edges and up to 10 kHz above and below the band edges were attenuated at least 26 dB below the level of the unmodulated carrier. The field strength of the emissions removed by more than 10 kHz from the band edges did not exceed the general radiated emission limits in §15.209. All signals exceeding 20 microvolts/meter at 3 meters were reported in the data sheets contained in Appendix B.

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SAMPLE CALCULATIONS

The basic spectrum analyzer reading was converted using correction factors as shown in the emissions readings in Tables 1, 2 and 3. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula:

Meter reading (dBμV)
+ Antenna Factor (dB)
+ Cable Loss (dB)
- Distance Correction (dB)
- Pre-amplifier Gain (dB)

= Corrected Reading(dBμV/m)

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq MHz	Rdng dBuV	Cable	Amp-A	Bilog	Rod	Dist	Corr dBuV/m	Spec	Margin	Polar

means reading number
Freq MHz is the frequency in MHz of the obtained reading.
Rdng dBuV is the reading obtained on the spectrum analyzer in dBμV.
Amp-A is short for the preamplifier factor or gain in dB.
Bilog is the biconical antenna factor in dB.
Rod is the rod antenna factor in dB.
Cable is the cable loss in dB of the coaxial cable on the OATS.
Dist is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.
Corr dBμV/m is the corrected reading which is now in dBμV/m (field strength).
Spec is the specification limit (dB) stated in the agency's regulations.
Margin is the closeness to the specified limit in dB; + is over and - is under the limit.
Polar is the Polarity of the antenna with respect to earth.

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APPENDIX A

INFORMATION ABOUT THE EQUIPMENT UNDER TEST

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INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	**RPPAD**
CRT was displaying:	**N/A**
Power Supply Manufacturer:	**N/A**
Power Supply Part Number:	**N/A**
AC Line Filter Manufacturer:	**N/A**
AC Line Filter Part Number:	**N/A**
Line voltage used during testing:	**N/A**

CRYSTAL OSCILLATORS	
Type	Freq In MHz
Fundamental, parallel	10 MHz

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
Main board	Po, Laa-Laa, rev. DVT	10 MHz	2	Chassis
Display board	Same as above	N/A	2	Chassis
Radio board	DVT	10 MHz	4	Radio module

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APPENDIX B

MEASUREMENT DATA SHEETS

5473A CLOUDS REST • MARIPOSA, CALIFORNIA 95338 • (209) 966-5240 • FAX (209) 966-4257

Test Location: CKC LABORATORIES INC. • 22105 Wilson River Hwy, Site A • Tillamook, Oregon 97141 • (800) 500-4EMC

Customer: **MICROSOFT CORPORATION**
Specification: **FCC15.235(a) Fundamental**
Test Type: **Radiated Scan**
Equipment: **RF Module**
Manufacturer: Microsoft
Model: ActiMates Radio Cartridge
S/N: DVT01

Date: Oct-07-98
Time: 12:59
Sequence#: 6

Tested By: Mike Wilkinson

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
RF Module for Teletubbies Doll*	Microsoft	ActiMates Radio Cartridge	DVT01
Radio Cartridge	Microsoft	ActiMates 49MHz	None

Support Devices:

Function	Manufacturer	Model #	S/N
None			

Test Conditions / Notes:

The EUT is placed on the test table in 3 orthogonal positions as noted in the data sheet for each reading. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The peak reading with the EUT and measurement antenna in the vertical position was averaged by measuring the pulsed transmitter duty cycle over .1 sec.span, which = 20ms/100ms then 20log(.2)= -13.98dB, then 76.1 – 13.98 = 62.12 average corrected reading or 17.88 dB margin.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A dB	Bilog dB	Cable dB	dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	49.862	93.5	-27.3	+8.8	+1.1		+0.0	76.1	80.0	-3.9	Vert
	Vertical position										
2	49.856	89.1	-27.3	+8.8	+1.1		+0.0	71.7	80.0	-8.3	Vert
	Hoz. side postion w/ left side on table										
3	49.858	89.0	-27.3	+8.8	+1.1		+0.0	71.6	80.0	-8.4	Horiz
	Hoz. side postion w/ left side on table										
4	49.861	86.4	-27.3	+8.8	+1.1		+0.0	69.0	80.0	-11.0	Horiz
	Horizontal position w/back on the table										
5	49.858	84.0	-27.3	+8.8	+1.1		+0.0	66.6	80.0	-13.4	Vert
	Horizontal position w/back on the table										

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6	49.858	83.7	-27.3	+8.8	+1.1		+0.0	66.3	80.0	-13.7	Horiz

Vertical position

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Test Location: CKC LABORATORIES INC. • 22105 Wilson River Hwy, Site A • Tillamook, Oregon 97141 • (800) 500-4EMC

Customer: **MICROSOFT CORPORATION**
Specification: **FCC15.209**
Test Type: **Radiated Scan**
Equipment: **RF Module**
Manufacturer: Microsoft
Model: ActiMates Radio Cartridge
S/N: DVT01

Date: Oct-07-98
Time: 13:00
Sequence#: 7

Tested By: Mike Wilkinson

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
RF Module for Teletubbies Doll*	Microsoft	ActiMates Radio Cartridge	DVT01
Radio Cartridge	Microsoft	ActiMates 49MHz	None

Support Devices:

Function	Manufacturer	Model #	S/N
None			

Test Conditions / Notes:

The EUT is placed on the test table in the horizontal position with the back on the table. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq	Rdng dBµV	Amp-A dB	Bilog dB	Cable dB	dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	947.387M Quasi Peak	38.9	-27.4	+24.1	+7.7		+0.0	43.3	46.0	-2.7	Vert
2	897.528M Quasi Peak	38.9	-27.5	+22.7	+7.3		+0.0	41.4	46.0	-4.6	Vert
3	897.549M	37.4	-27.5	+22.7	+7.3		+0.0	39.9	46.0	-6.1	Horiz
4	747.967M	35.8	-27.6	+22.1	+6.7		+0.0	37.0	46.0	-9.0	Vert
5	947.414M Quasi Peak	31.3	-27.4	+24.1	+7.7		+0.0	35.7	46.0	-10.3	Horiz
6	548.508M	38.6	-27.9	+19.2	+5.4		+0.0	35.3	46.0	-10.7	Vert
7	598.348M Quasi Peak	36.7	-27.9	+19.6	+5.8		+0.0	34.2	46.0	-11.8	Horiz
8	199.500M	42.6	-26.6	+8.9	+3.1		+0.0	28.0	43.5	-15.5	Vert
9	99.735M	42.4	-27.1	+10.3	+2.0		+0.0	27.6	43.5	-15.9	Vert

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10	200.016M	39.3	-26.6	+8.9	+3.1	+0.0	24.9	43.5	-18.6	Vert
11	102.000k	63.1	+0.0	+0.0	+0.0	+0.0	63.1	107.4	-44.3	Horiz

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Test Location: CKC LABORATORIES INC. • 22105 Wilson River Hwy, Site A • Tillamook, Oregon 97141 • (800) 500-4EMC

Customer: **MICROSOFT CORPORATION**
Specification: **FCC15.209**
Test Type: **Radiated Scan**
Equipment: **RF Module**
Manufacturer: Microsoft
Model: ActiMates Radio Cartridge
S/N: DVT01

Date: Oct-07-98
Time: 13:02
Sequence#: 8

Tested By: Mike Wilkinson

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
RF Module for Teletubbies Doll*	Microsoft	ActiMates Radio Cartridge	DVT01
Radio Cartridge	Microsoft	ActiMates 49MHz	None

Support Devices:

Function	Manufacturer	Model #	S/N
None			

Test Conditions / Notes:

The EUT is placed on the test table in the horizontal side position with the left side on the table. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq	Rdng dBµV	Amp-A dB	Bilog dB	Cable dB	dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	947.374M Quasi Peak	40.2	-27.4	+24.1	+7.7		+0.0	44.6	46.0	-1.4	Vert
2	947.376M Quasi Peak	35.7	-27.4	+24.1	+7.7		+0.0	40.1	46.0	-5.9	Horiz
3	598.365M	42.4	-27.9	+19.6	+5.8		+0.0	39.9	46.0	-6.1	Horiz
4	897.564M	37.1	-27.5	+22.7	+7.3		+0.0	39.6	46.0	-6.4	Horiz
5	698.028M	40.1	-27.9	+20.4	+6.5		+0.0	39.1	46.0	-6.9	Horiz
6	797.791M	38.2	-27.7	+21.5	+6.9		+0.0	38.9	46.0	-7.1	Horiz
7	698.116M	39.3	-27.9	+20.4	+6.5		+0.0	38.3	46.0	-7.7	Vert
8	747.981M	37.1	-27.6	+22.1	+6.7		+0.0	38.3	46.0	-7.7	Horiz
9	99.160k	63.1	+0.0	+0.0	+0.0		+0.0	63.1	107.7	-44.6	Vert

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Test Location: CKC LABORATORIES INC. • 22105 Wilson River Hwy, Site A • Tillamook, Oregon 97141 • (800) 500-4EMC

Customer: **MICROSOFT CORPORATION**
Specification: **FCC15.209**
Test Type: **Radiated Scan**
Equipment: **RF Module**
Manufacturer: Microsoft
Model: ActiMates Radio Cartridge
S/N: DVT01

Date: Oct-06-98
Time: 12:28
Sequence#: 9

Tested By: Mike Wilkinson

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
RF Module for Teletubbies Doll*	Microsoft	ActiMates Radio Cartridge	DVT01

Support Devices:

Function	Manufacturer	Model #	S/N
None			

Test Conditions / Notes:

The EUT is placed on the test table in the vertical position. EUT is transmitting 3 times per second and displaying a test pattern plus saying a test phrase. The temperature was 59 Degrees Fahrenheit and the humidity was 65%. The frequency range tested was 9.0 kHz to 1000 MHz.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq	Rdng dBµV	Amp-A dB	Bilog dB	Cable dB	Rod A dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	947.391M Quasi Peak	35.1	-27.4	+24.1	+7.7	+0.0	+0.0	39.5	46.0	-6.5	Vert
2	947.414M Quasi Peak	35.0	-27.4	+24.1	+7.7	+0.0	+0.0	39.5	46.0	-6.5	Vert
3	698.075M Quasi Peak	38.6	-27.9	+20.4	+6.5	+0.0	+0.0	37.6	46.0	-8.4	Vert
4	897.533M Quasi Peak	34.7	-27.5	+22.7	+7.3	+0.0	+0.0	37.2	46.0	-8.8	Vert
^	897.582M	35.1	-27.5	+22.7	+7.3	+0.0	+0.0	37.6	46.0	-8.4	Vert
6	797.828M	36.2	-27.7	+21.5	+6.9	+0.0	+0.0	36.9	46.0	-9.1	Vert
7	548.518M	39.0	-27.9	+19.2	+5.4	+0.0	+0.0	35.7	46.0	-10.3	Vert
8	23.825M	32.7	+0.0	+0.0	+0.8	+7.7	+0.0	41.2	70.0	-28.8	Vert
9	101.010k	63.4	+0.0	+0.0	+0.0	+3.6	+0.0	67.0	107.5	-40.5	Vert

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Test Location: CKC LABORATORIES INC. • 22105 Wilson River Hwy, Site A • Tillamook, Oregon 97141 • (800) 500-4EMC

Customer: **MICROSOFT CORPORATION**
Specification: **FCC 15.109**
Test Type: **Radiated Scan**
Equipment: **RF Module**
Manufacturer: Microsoft
Model: ActiMates Radio Cartridge
S/N: DVT01

Date: Oct-05-98
Time: 16:52
Sequence#: 10

Tested By: Mike Wilkinson

Equipment Under Test **(* = EUT):**

Function	Manufacturer	Model #	S/N
RF Module for Teletubbies Doll*	Microsoft	ActiMates Radio Cartridge	DVT01

Support Devices:

Function	Manufacturer	Model #	S/N
None			

Test Conditions / Notes:

The EUT is placed on the test table in its typical configuration (horizontal position with the back on the table). EUT is in the receive only mode. The temperature was 67 Degrees Fahrenheit and the humidity was 60%

Measurement Data: Sorted by Margin — Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp-A dB	Bilog dB	Cable dB	dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	100.008	44.9	-27.1	+10.3	+2.0		+0.0	30.1	43.5	-13.4	Vert
2	52.294	36.5	-27.3	+7.7	+1.2		+0.0	18.1	40.0	-21.9	Vert
3	74.955	36.1	-27.1	+6.9	+1.6		+0.0	17.5	40.0	-22.5	Vert
4	269.956	31.4	-26.4	+12.8	+3.6		+0.0	21.4	46.0	-24.6	Vert
5	82.526	32.4	-27.1	+7.9	+1.8		+0.0	15.0	40.0	-25.0	Vert
6	200.048	32.8	-26.6	+8.9	+3.1		+0.0	18.2	43.5	-25.3	Vert
7	230.081	28.0	-26.5	+10.1	+3.3		+0.0	14.9	46.0	-31.1	Vert

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