

FCC CERTIFICATION
On Behalf of
Zonoki Electronics Manufacturer Co.,Ltd.

Vehicle FM Transmitter With Power Charger for ipod
Model No.: Z-1300i

FCC ID: S6XFMZ1300

Prepared for : Zonoki Electronics Manufacturer Co.,Ltd.
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Report Number : ATE20061895
Date of Test : September 18, 2006
Date of Report : September 21, 2006

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APPENDIX I (TEST CURVES) (15pages)

Test Report Certification

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.239: 2006

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.239 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :

September 18, 2006

Prepared by :

sky Wang

(Engineer)

Reviewer:

Spaul(-)

(Quality Manager)

Approved & Authorized Signer :

Martin h

(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Vehicle FM Transmitter With Power Charger For ipod
Model Number : Z-1300i

Power Supply : DC 12V

Port : DC Input, 30pin Connector, Line in

Applicant : Zonoki Electronics Manufacturer Co.,Ltd.

Address : Room 1617, Pacific Business Building, No.4028 Jiabin
Road, Luohu District, Shenzhen, Guangdong, P.R.China

Manufacturer : Zonoki Electronics Manufacturer Co.,Ltd.

Address : Xiawei Village Industrial Zone, Baoan Town, Henggang,
Longgang District, Shenzhen, Guangdong, P.R.China

Date of sample received : September 16, 2006

Date of Test : September 18, 2006

1.2. Description of Test Facility

| | |
|---------------|---|
| EMC Lab | : Accredited by TUV Rheinland Shenzhen, May 10, 2004 |
| | Accredited by FCC, May 10, 2004 |
| | The Certificate Registration Number is 253065 |
| | Accredited by Industry Canada, May 18, 2004 |
| | The Certificate Registration Number is IC 5077 |
| Name of Firm | : ACCURATE TECHNOLOGY CO. LTD |
| Site Location | : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China |

1.3. Measurement Uncertainty

Conducted emission expanded uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 4.12dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

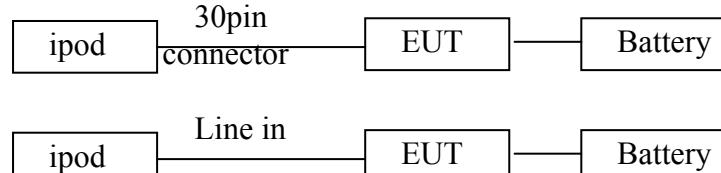
Table 1: List of Test and Measurement Equipment

| Kind of equipment | Manufacturer | Type | S/N | Calibrated until |
|-------------------|---------------|----------|-------------|------------------|
| EMI Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | 03.31.2007 |
| EMI Test Receiver | Rohde&Schwarz | ESI26 | 838786/013 | 01.02.2007 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 9163-194 | 03.31.2007 |
| Bilog Antenna | Chase | CBL6112B | 2591 | 03.31.2007 |
| Horn Antenna | Rohde&Schwarz | HF906 | 100013 | 01.02.2007 |
| Spectrum Analyzer | Anritsu | MS2651B | 6200238856 | 03.31.2007 |
| Pre-Amplifier | Agilent | 8447D | 2944A10619 | 03.31.2007 |
| iPod | Apple | 60GB | JQ543GF95ZA | N/A |

3. RADIATED EMISSION FOR FCC PART 15 SECTION 15.239(C)

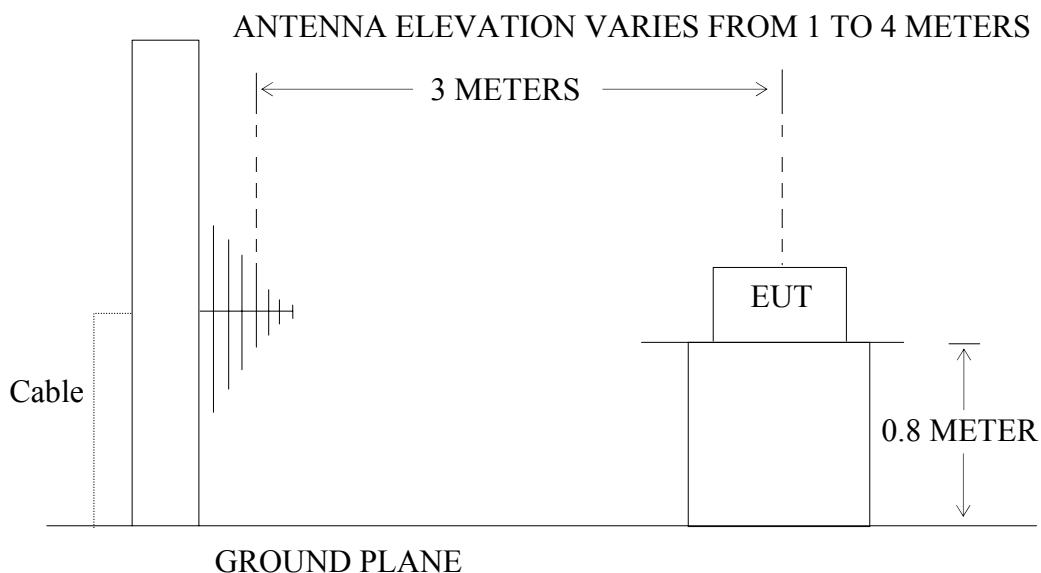
3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



(EUT: Vehicle FM Transmitter With Power Charger For ipod)

3.1.2. Anechoic Chamber Test Setup Diagram



(EUT: Vehicle FM Transmitter With Power Charger For ipod)

3.2. The Emission Limit for section 15.239(c)

- 3.2.1 The field strength of any emissions radiated on any frequency outside of the specified 200kHz band shall not exceed the general radiated emission limits in section 15.209

Radiation Emission Measurement Limits According to Section 15.209

| Frequency (MHz) | Limit, | | |
|--------------------|---|---|---|
| | Field Strength of Quasi-peak Value (microvolts/m) | Field Strength of Quasi-peak Value (dB μ V/m) | The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector. |
| 30 - 88 | 100 | 40 | |
| 88 - 216 | 150 | 43.5 | |
| 216 - 960 | 200 | 46 | |
| Above 960 | 500 | 54 | |

3.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.3.1. Vehicle FM Transmitter With Power Charger For ipod (EUT)

Model Number : Z-1300i
 Serial Number : N/A
 Manufacturer : Zonoki Electronics Manufacturer Co.,Ltd.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

Let the EUT work in TX modes [Plug iPod to EUT 30pin Connector and ipod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz. We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

3.4.3. Turn on the power of all equipment.

Let the EUT work in TX modes [Connect iPod audio output to EUT line in port, and ipod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz. We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

Note: The EUT is connected to ipod by the base interface of ipod. The input signal of EUT is controlled by ipod. so the volume control of ipod was set to maximum during the test. It means that the test was performed with the maximum audio input.

3.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 120KHz in 30-1000MHz; Set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 1100MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

3.6. The Field Strength of Radiation Emission Measurement Results

PASS.

The frequency range 30MHz to 1100MHz is investigated.

| | | | |
|---------------|--|----------------|--------|
| Date of Test: | November 1, 2006 | Temperature: | 27°C |
| EUT: | Vehicle FM Transmitter With Power Charger For ipod | Humidity: | 55% |
| Model No.: | Z-1300i | Power Supply: | DC 12V |
| Test Mode: | TX 88.1MHz[30pin connector Input typical audio signal(music song) with the maximum audio input] | Test Engineer: | Andy |

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 176.200 | 26.7 | 8.1 | 34.8 | 43.5 | 8.7 |
| Horizontal | 264.240 | 23.5 | 10.8 | 34.3 | 46.0 | 11.7 |
| Horizontal | 352.370 | 15.1 | 14.0 | 29.1 | 46.0 | 16.9 |
| Horizontal | 440.480 | 15.8 | 15.9 | 31.7 | 46.0 | 14.3 |
| Horizontal | 528.470 | 14.7 | 17.5 | 32.2 | 46.0 | 13.8 |
| Horizontal | 616.540 | 7.7 | 18.8 | 26.5 | 46.0 | 19.5 |
| Horizontal | 704.690 | 12.6 | 20.0 | 32.6 | 46.0 | 13.4 |
| Horizontal | 792.830 | 10.0 | 21.0 | 31.0 | 46.0 | 15.0 |
| Horizontal | 880.830 | 10.5 | 21.9 | 32.4 | 46.0 | 13.6 |
| Horizontal | 968.950 | 11.8 | 22.8 | 34.6 | 54.0 | 19.4 |
| Vertical | 176.180 | 25.2 | 8.4 | 33.6 | 43.5 | 9.9 |
| Vertical | 264.260 | 21.8 | 10.2 | 32.0 | 46.0 | 14.0 |
| Vertical | 352.390 | 17.5 | 14.0 | 31.5 | 46.0 | 14.5 |
| Vertical | 440.440 | 20.4 | 16.4 | 36.8 | 46.0 | 9.2 |
| Vertical | 528.480 | 16.3 | 18.3 | 34.6 | 46.0 | 11.4 |
| Vertical | 616.620 | 9.9 | 20.0 | 29.9 | 46.0 | 16.1 |
| Vertical | 704.760 | 12.7 | 21.3 | 34.0 | 46.0 | 12.0 |
| Vertical | 792.940 | 10.1 | 22.6 | 32.7 | 46.0 | 13.3 |
| Vertical | 880.880 | 9.4 | 23.7 | 33.1 | 46.0 | 12.9 |
| Vertical | 969.320 | 12.9 | 24.6 | 37.5 | 54.0 | 16.5 |
| Vertical | 1056.980 | 9.6 | 25.0 | 34.6 | 54.0 | 19.4 |

The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

Date of Test: November 1, 2006 Temperature: 27°C
 EUT: Vehicle FM Transmitter With Power Charger For ipod
 Model No.: Z-1300i Humidity: 55%
TX 98.1MHz[30pin connector
Input typical audio signal(music song) with the maximum audio
 Test Mode: input] Power Supply: DC 12V
 Test Engineer: Andy

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 196.200 | 27.5 | 9.6 | 37.1 | 43.5 | 6.4 |
| Horizontal | 294.270 | 18.7 | 12.4 | 31.1 | 46.0 | 14.9 |
| Horizontal | 392.350 | 18.1 | 14.9 | 33.0 | 46.0 | 13.0 |
| Horizontal | 490.440 | 21.4 | 16.8 | 38.2 | 46.0 | 7.8 |
| Horizontal | 588.540 | 17.9 | 18.4 | 36.3 | 46.0 | 9.7 |
| Horizontal | 686.650 | 14.4 | 19.8 | 34.2 | 46.0 | 11.8 |
| Horizontal | 784.710 | 14.3 | 20.9 | 35.2 | 46.0 | 10.8 |
| Horizontal | 882.820 | 18.1 | 21.9 | 40.0 | 46.0 | 6.0 |
| Horizontal | 980.850 | 13.9 | 22.9 | 36.8 | 54.0 | 17.2 |
| Horizontal | 1078.910 | 10.0 | 23.2 | 33.2 | 54.0 | 20.8 |
| Vertical | 196.180 | 26.1 | 9.0 | 35.1 | 43.5 | 8.3 |
| Vertical | 294.272 | 20.9 | 12.1 | 33.0 | 46.0 | 12.6 |
| Vertical | 392.348 | 21.8 | 15.2 | 37.0 | 46.0 | 8.9 |
| Vertical | 490.500 | 21.9 | 17.5 | 39.4 | 46.0 | 7.3 |
| Vertical | 588.530 | 21.0 | 19.4 | 40.4 | 46.0 | 6.2 |
| Vertical | 686.660 | 14.0 | 21.1 | 35.1 | 46.0 | 10.5 |
| Vertical | 784.750 | 14.8 | 22.5 | 37.3 | 46.0 | 8.4 |
| Vertical | 882.820 | 14.9 | 23.7 | 38.6 | 46.0 | 7.0 |
| Vertical | 980.880 | 14.1 | 24.9 | 39.0 | 54.0 | 14.7 |
| Vertical | 1079.130 | 10.0 | 25.1 | 35.1 | 54.0 | 18.9 |

The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

Date of Test: November 1, 2006 Temperature: 27°C
 EUT: Vehicle FM Transmitter With Power Charger For ipod
 Model No.: Z-1300i Humidity: 55%
 TX 107.9MHz[30pin connector
 Input typical audio signal(music song) with the maximum audio
 Test Mode: input] Power Supply: DC 12V
 Test Engineer: Andy

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 215.828 | 27.1 | 9.7 | 36.8 | 43.5 | 6.7 |
| Horizontal | 323.690 | 20.3 | 13.2 | 33.5 | 46.0 | 12.5 |
| Horizontal | 431.610 | 19.0 | 15.7 | 34.7 | 46.0 | 11.3 |
| Horizontal | 539.440 | 21.0 | 17.7 | 38.7 | 46.0 | 7.3 |
| Horizontal | 647.310 | 20.5 | 19.3 | 39.8 | 46.0 | 6.2 |
| Horizontal | 755.170 | 14.0 | 20.6 | 34.6 | 46.0 | 11.4 |
| Horizontal | 863.110 | 17.0 | 21.8 | 38.8 | 46.0 | 7.2 |
| Horizontal | 970.890 | 18.6 | 22.8 | 41.4 | 54.0 | 12.6 |
| Vertical | 215.770 | 28.3 | 8.9 | 37.2 | 43.5 | 6.3 |
| Vertical | 323.652 | 21.2 | 13.1 | 34.3 | 46.0 | 11.7 |
| Vertical | 431.536 | 23.0 | 16.2 | 39.2 | 46.0 | 6.8 |
| Vertical | 539.440 | 22.1 | 18.5 | 40.6 | 46.0 | 5.4 |
| Vertical | 647.350 | 18.8 | 20.4 | 39.2 | 46.0 | 6.8 |
| Vertical | 755.240 | 11.7 | 22.1 | 33.8 | 46.0 | 12.2 |
| Vertical | 863.040 | 15.4 | 23.5 | 38.9 | 46.0 | 7.1 |
| Vertical | 971.120 | 20.1 | 24.8 | 44.9 | 54.0 | 9.1 |

The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

| | | | |
|---------------|---|----------------|--------|
| Date of Test: | November 1, 2006 | Temperature: | 27°C |
| EUT: | Vehicle FM Transmitter With Power Charger For ipod | Humidity: | 55% |
| Model No.: | Z-1300i | Power Supply: | DC 12V |
| Test Mode: | TX 88.1MHz[Line in typical audio signal(music song) with the maximum audio input] | Test Engineer: | Andy |

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 176.210 | 29.1 | 7.9 | 37.0 | 43.5 | 6.5 |
| Horizontal | 264.274 | 28.3 | 11.0 | 39.3 | 46.0 | 6.7 |
| Horizontal | 352.380 | 24.0 | 14.0 | 38.0 | 46.0 | 8.0 |
| Horizontal | 440.492 | 23.2 | 15.9 | 39.1 | 46.0 | 6.9 |
| Horizontal | 528.552 | 20.7 | 17.5 | 38.2 | 46.0 | 7.8 |
| Horizontal | 616.584 | 11.5 | 18.8 | 30.3 | 46.0 | 15.7 |
| Horizontal | 704.750 | 14.1 | 20.0 | 34.1 | 46.0 | 11.9 |
| Horizontal | 792.740 | 12.0 | 21.0 | 33.0 | 46.0 | 13.0 |
| Horizontal | 880.820 | 13.1 | 21.9 | 35.0 | 46.0 | 11.0 |
| Horizontal | 969.140 | 13.0 | 22.8 | 35.8 | 54.0 | 18.2 |
| Vertical | 176.216 | 28.6 | 8.4 | 37.0 | 43.5 | 6.5 |
| Vertical | 264.374 | 27.0 | 10.2 | 37.2 | 46.0 | 8.8 |
| Vertical | 352.360 | 18.5 | 14.0 | 32.5 | 46.0 | 13.5 |
| Vertical | 440.564 | 18.3 | 16.4 | 34.7 | 46.0 | 11.3 |
| Vertical | 528.498 | 13.9 | 18.3 | 32.2 | 46.0 | 13.8 |
| Vertical | 704.760 | 9.9 | 21.3 | 31.2 | 46.0 | 14.8 |
| Vertical | 792.860 | 10.5 | 22.6 | 33.1 | 46.0 | 12.9 |
| Vertical | 880.920 | 10.5 | 23.7 | 34.2 | 46.0 | 11.8 |
| Vertical | 969.160 | 12.3 | 24.7 | 37.0 | 54.0 | 17.0 |

The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

Date of Test: November 1, 2006 Temperature: 27°C
 EUT: Vehicle FM Transmitter With
Power Charger For ipod Humidity: 55%
 Model No.: Z-1300i Power Supply: DC 12V
 TX 98.1MHz[Line in typical audio
signal(music song) with the
Test Mode: maximum audio input] Test Engineer: Andy

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 196.210 | 28.2 | 9.6 | 37.8 | 43.5 | 5.7 |
| Horizontal | 294.320 | 27.4 | 12.4 | 39.8 | 46.0 | 6.2 |
| Horizontal | 392.360 | 22.2 | 14.9 | 37.1 | 46.0 | 8.9 |
| Horizontal | 490.490 | 19.7 | 16.8 | 36.5 | 46.0 | 9.5 |
| Horizontal | 588.600 | 16.8 | 18.4 | 35.2 | 46.0 | 10.8 |
| Horizontal | 686.720 | 14.4 | 19.8 | 34.2 | 46.0 | 11.8 |
| Horizontal | 784.770 | 13.4 | 20.9 | 34.3 | 46.0 | 11.7 |
| Horizontal | 882.940 | 14.4 | 22.0 | 36.4 | 46.0 | 9.6 |
| Horizontal | 981.110 | 11.2 | 22.9 | 34.1 | 54.0 | 19.9 |
| Horizontal | 1079.050 | 8.0 | 23.2 | 31.2 | 54.0 | 22.8 |
| Vertical | 196.220 | 27.2 | 9.0 | 36.2 | 43.5 | 7.3 |
| Vertical | 294.304 | 24.4 | 12.1 | 36.5 | 46.0 | 9.5 |
| Vertical | 392.332 | 20.6 | 15.1 | 35.7 | 46.0 | 10.3 |
| Vertical | 490.464 | 19.1 | 17.5 | 36.6 | 46.0 | 9.4 |
| Vertical | 588.520 | 15.1 | 19.4 | 34.5 | 46.0 | 11.5 |
| Vertical | 686.632 | 11.2 | 21.1 | 32.3 | 46.0 | 13.7 |
| Vertical | 784.732 | 13.0 | 22.5 | 35.5 | 46.0 | 10.5 |
| Vertical | 882.840 | 13.3 | 23.7 | 37.0 | 46.0 | 9.0 |
| Vertical | 980.840 | 11.2 | 24.9 | 36.1 | 54.0 | 17.9 |
| Vertical | 1079.124 | 10.1 | 25.1 | 35.2 | 54.0 | 18.8 |

The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

Date of Test: November 1, 2006 Temperature: 27°C
 EUT: Vehicle FM Transmitter With Power Charger For ipod
 Model No.: Z-1300i Humidity: 55%
 TX 107.9MHz[Line in typical audio signal(music song) with the
 Test Mode: maximum audio input] Power Supply: DC 12V
 Test Engineer: Andy

| Polarization | Frequency (MHz) | Reading(dB μ V/m) QP | Factor Corr.(dB) | Result(dB μ V/m) QP | Limits(dB μ V/m) QP | Margin(dB μ V/m) QP |
|--------------|-----------------|-----------------------------|-------------------|----------------------------|----------------------------|----------------------------|
| Horizontal | 215.822 | 27.9 | 9.6 | 37.5 | 43.5 | 6.0 |
| Horizontal | 323.674 | 25.1 | 13.2 | 38.3 | 46.0 | 7.7 |
| Horizontal | 431.580 | 23.5 | 15.8 | 39.3 | 46.0 | 6.7 |
| Horizontal | 539.500 | 22.5 | 17.6 | 40.1 | 46.0 | 5.9 |
| Horizontal | 647.390 | 15.9 | 19.2 | 35.1 | 46.0 | 10.9 |
| Horizontal | 755.270 | 11.2 | 20.6 | 31.8 | 46.0 | 14.2 |
| Horizontal | 863.200 | 14.3 | 21.8 | 36.1 | 46.0 | 9.9 |
| Horizontal | 971.130 | 16.5 | 22.8 | 39.3 | 54.0 | 14.7 |
| Horizontal | 1079.010 | 8.4 | 23.2 | 31.6 | 54.0 | 22.4 |
| Vertical | 215.818 | 27.7 | 8.9 | 36.6 | 43.5 | 6.9 |
| Vertical | 323.704 | 22.8 | 13.1 | 35.9 | 46.0 | 10.1 |
| Vertical | 431.602 | 20.3 | 16.2 | 36.5 | 46.0 | 9.5 |
| Vertical | 539.441 | 18.7 | 18.5 | 37.2 | 46.0 | 8.8 |
| Vertical | 647.410 | 14.4 | 20.4 | 34.8 | 46.0 | 11.2 |
| Vertical | 755.210 | 11.1 | 22.1 | 33.2 | 46.0 | 12.8 |
| Vertical | 863.210 | 14.0 | 23.5 | 37.5 | 46.0 | 8.5 |
| Vertical | 971.020 | 14.5 | 24.8 | 39.3 | 54.0 | 14.7 |
| Vertical | 1078.900 | 10.4 | 25.1 | 35.5 | 54.0 | 18.5 |

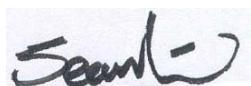
The spectral diagrams in appendix I display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

Reviewer :

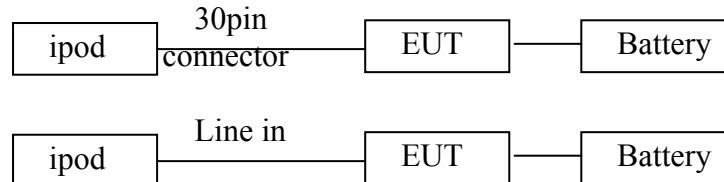


4. FUNDAMENTAL RADIATED EMISSION FOR FCC PART 15

SECTION 15.239(B)

4.1. Block Diagram of Test Setup

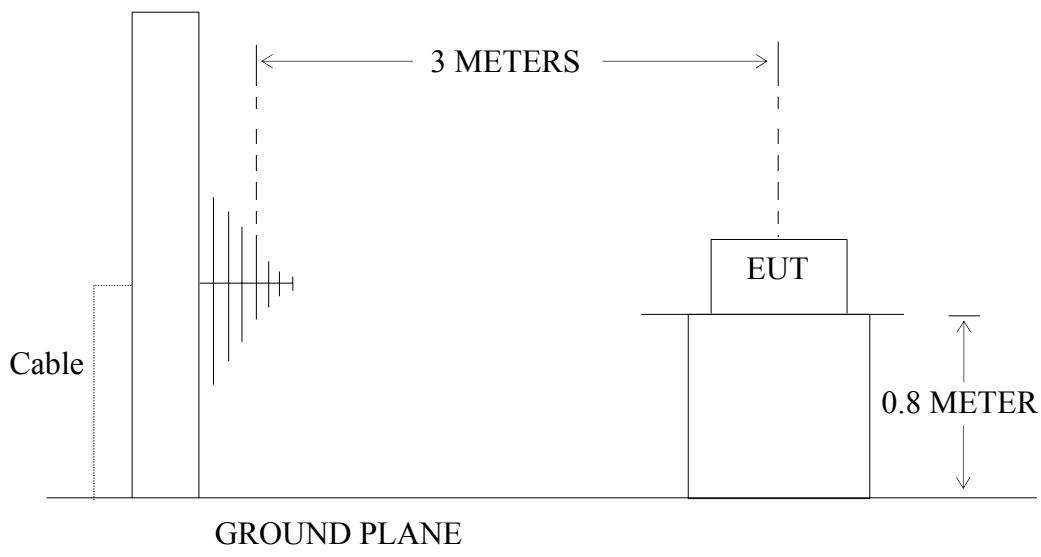
4.1.1. Block diagram of connection between the EUT and simulators



(EUT: Vehicle FM Transmitter With Power Charger For ipod)

4.1.2. Anechoic Chamber Test Setup Diagram

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



(EUT: Vehicle FM Transmitter With Power Charger For ipod)

4.2. The Emission Limit For Section 15.239(b)

4.2.1 The field strength of any emission within the permitted 200kHz band shall not exceed 250microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.

4.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1.Vehicle FM Transmitter With Power Charger For ipod (EUT)

Model Number : Z-1300i
 Serial Number : N/A
 Manufacturer : Zonoki Electronics Manufacturer Co.,Ltd.

4.4.Operating Condition of EUT

4.4.1.Setup the EUT and simulator as shown as Section 4.1.

4.4.2.Turn on the power of all equipment.

Let the EUT work in TX modes [Plug iPod to EUT 30pin Connector and ipod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz.We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

4.4.3.Turn on the power of all equipment.

Let the EUT work in TX modes [Connect iPod audio output to EUT line in port, and ipod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz.We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

Note: The EUT is connected to ipod by the base interface of ipod. The input signal of EUT is controlled by ipod. so the volume control of ipod was set to maximum during the test. It means that the test was performed with the maximum audio input.

4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

4.6.The Emission Measurement Result

PASS.

| | | | |
|---------------|--|----------------|--------|
| Date of Test: | November 1, 2006 | Temperature: | 27°C |
| EUT: | Vehicle FM Transmitter With Power Charger For ipod | Humidity: | 55% |
| Model No.: | Z-1300i | Power Supply: | DC 12V |
| | TX [30pin connector Input typical audio signal(music song) with the maximum audio input] | | |
| Test Mode: | | Test Engineer: | Andy |

Fundamental Radiated Emissions

| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------------|-------------------------------------|
| | | 88.1MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) AV | (dB μ V/m)/(μ V/m) PEAK |
| | Horizontal | 39.6/95 | 43.0/141 |
| | Vertical | 33.9/48 | 37.6/76 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------------|-------------------------------------|
| | | 98.1MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) AV | (dB μ V/m)/(μ V/m) PEAK |
| | Horizontal | 40.4/105 | 44.2/162 |
| | Vertical | 40.2/102 | 41.9/124 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------------|-------------------------------------|
| | | 107.9MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) AV | (dB μ V/m)/(μ V/m) PEAK |
| | Horizontal | 43.0/141 | 46.6/214 |
| | Vertical | 42.8/138 | 46.5/211 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

| | | | |
|---------------|--|----------------|--------|
| Date of Test: | November 1, 2006 | Temperature: | 27°C |
| EUT: | Vehicle FM Transmitter With Power Charger For ipod | Humidity: | 55% |
| Model No.: | Z-1300i | Power Supply: | DC 12V |
| Test Mode: | TX [Line in typical audio signal(music song) with the maximum audio input] | Test Engineer: | Andy |

Fundamental Radiated Emissions

| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------|-----------------------------|
| | | 88.1MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) | (dB μ V/m)/(μ V/m) |
| | Horizontal | 36.6/68 | 40.3/104 |
| | Vertical | 33.1/45 | 36.9/70 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

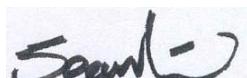
| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------|-----------------------------|
| | | 98.1MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) | (dB μ V/m)/(μ V/m) |
| | Horizontal | 39.8/98 | 43.3/146 |
| | Vertical | 36.3/65 | 40.1/101 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

| Test conditions | | Fundamental Frequency | |
|-------------------------|------------|------------------------------|-----------------------------|
| | | 107.9MHz | |
| T _{nom} (25°C) | Unit | (dB μ V/m)/ (μ V/m) | (dB μ V/m)/(μ V/m) |
| | Horizontal | 42.5/133 | 46.1/202 |
| | Vertical | 40.3/104 | 44.1/160 |
| | limit | 48/250 | 68/2500 |

Note: Measurement was performed with modulated signal with average detector and peak detector.

Reviewer :



5. OCCUPIED BANDWIDTH FOR FCC PART 15 SECTION

15.239(A)

5.1. The Requirement For Section 15.239(a)

5.1.1. Emission from the device shall be confined within a band 200kHz wide centered on the operating frequency. The 200kHz band shall lie wholly within the frequency range of 88-108MHz.

5.2. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.2.1. Vehicle FM Transmitter With Power Charger For ipod (EUT)

| | | |
|---------------|---|--|
| Model Number | : | Z-1300i |
| Serial Number | : | N/A |
| Manufacturer | : | Zonoki Electronics Manufacturer Co.,Ltd. |

5.3. Operating Condition of EUT

5.3.1. Setup the EUT and simulator as shown as Section 4.1.

5.3.2. Turn on the power of all equipment.

Let the EUT work in TX modes [Plug iPod to EUT 30pin Connector and iPod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz. We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

Note: The EUT is connected to iPod by the base interface of iPod. The input signal of EUT is controlled by iPod. so the volume control of iPod was set to maximum during the test. It means that the test was performed with the maximum audio input.

5.4. Test Procedure

The zero level was set without modulation. A small sample of the transmitter output was fed into the spectrum analyzer and above photo was taken. The vertical scale is set to 10dB per division; the horizontal scale is set to 20kHz per division.

5.5. Test Result

The EUT does meet the FCC requirement.

Input signal : play typical audio signal(music song)

FM 88.1MHz

26dB bandwidth = 162.4kHz

FM 98.1MHz

26dB bandwidth = 123.2kHz

FM 107.9MHz

26dB bandwidth = 125.6kHz

Reviewer : Sean -J

6. TUNING RANGE

6.1. The Requirement For Section 15.239

88-108MHz

6.2. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.2.1. Vehicle FM Transmitter With Power Charger For ipod (EUT)

Model Number : Z-1300i
 Serial Number : N/A
 Manufacturer : Zonoki Electronics Manufacturer Co.,Ltd.

6.3. Operating Condition of EUT

6.3.1. Setup the EUT and simulator as shown as Section 4.1.

6.3.2. Turn on the power of all equipment.

Let the EUT work in TX modes [Plug iPod to EUT 30pin Connector and iPod playing typical audio signal(music song) with maximum audio level] measure it. The transmit frequency are 88.1-107.9MHz. We are select 88.1M, 98.1M, 107.9MHz TX frequency to transmitted.

Note: The EUT is connected to iPod by the base interface of iPod. The input signal of EUT is controlled by iPod. so the volume control of iPod was set to maximum during the test. It means that the test was performed with the maximum audio input.

6.4. Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set the EUT working on the lowest frequency.
3. Set EMI test receiver center frequency = working frequency, RBW, VBW= 10KHz, Span=200KHz.
4. Measuring the working frequency. And check the measuring result with the EUT display.
3. Set the EUT working on the mid frequency. Repeat step 3 and 4.
4. Set the EUT working on the high frequency. Repeat step 3 and 4.
5. Press the “◀” and “▶” to select the transmission frequency, from the low to high frequency. And check the working frequency display on the screen. The working frequency should be inside 88-108MHz.

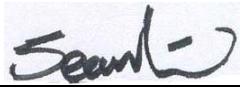
6.5. Test Result

The EUT does meet the FCC requirement.

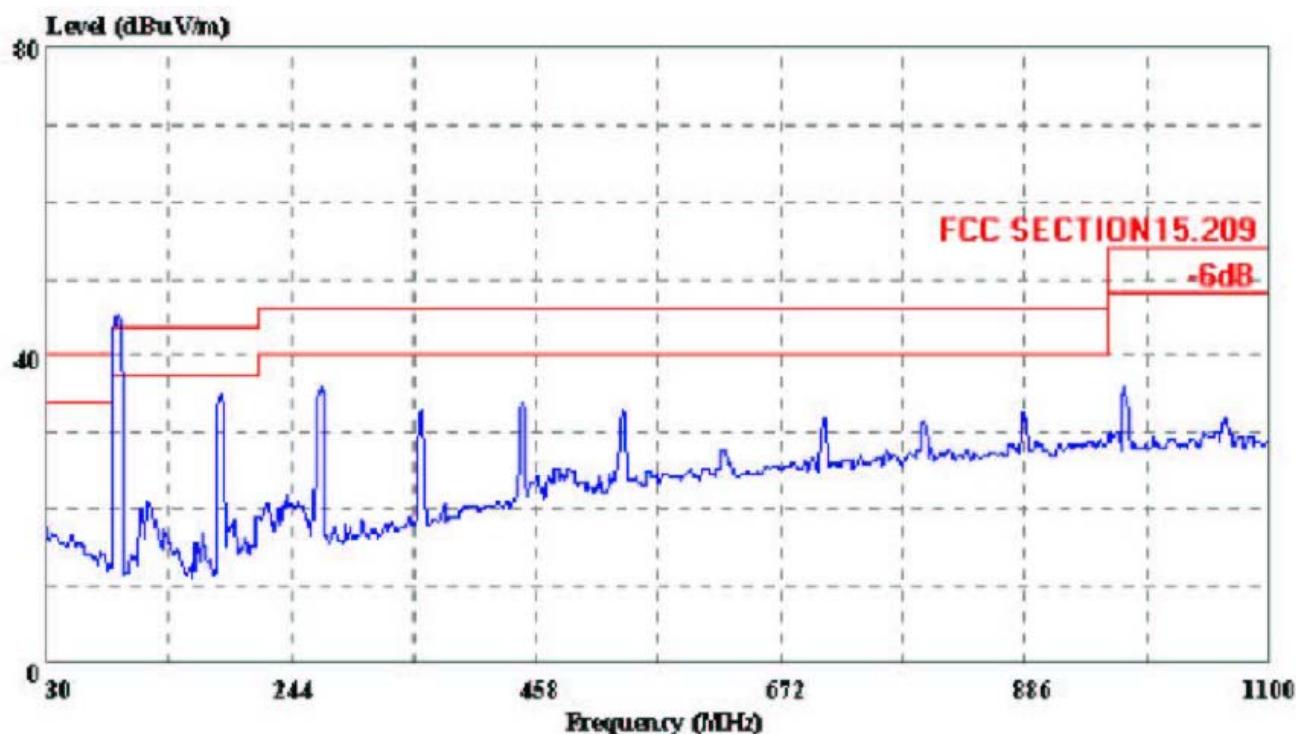
| | |
|---------------------------|-----------------------------|
| Low Frequency= 88.0956MHz | EUT screen display 88.1MHz |
| Mid Frequency= 98.0964MHz | EUT screen display 98.1MHz |
| High Frequency=107.894MHz | EUT screen display 107.9MHz |

The working frequency range is from 88.1 to 107.9MHz.

Reviewer :



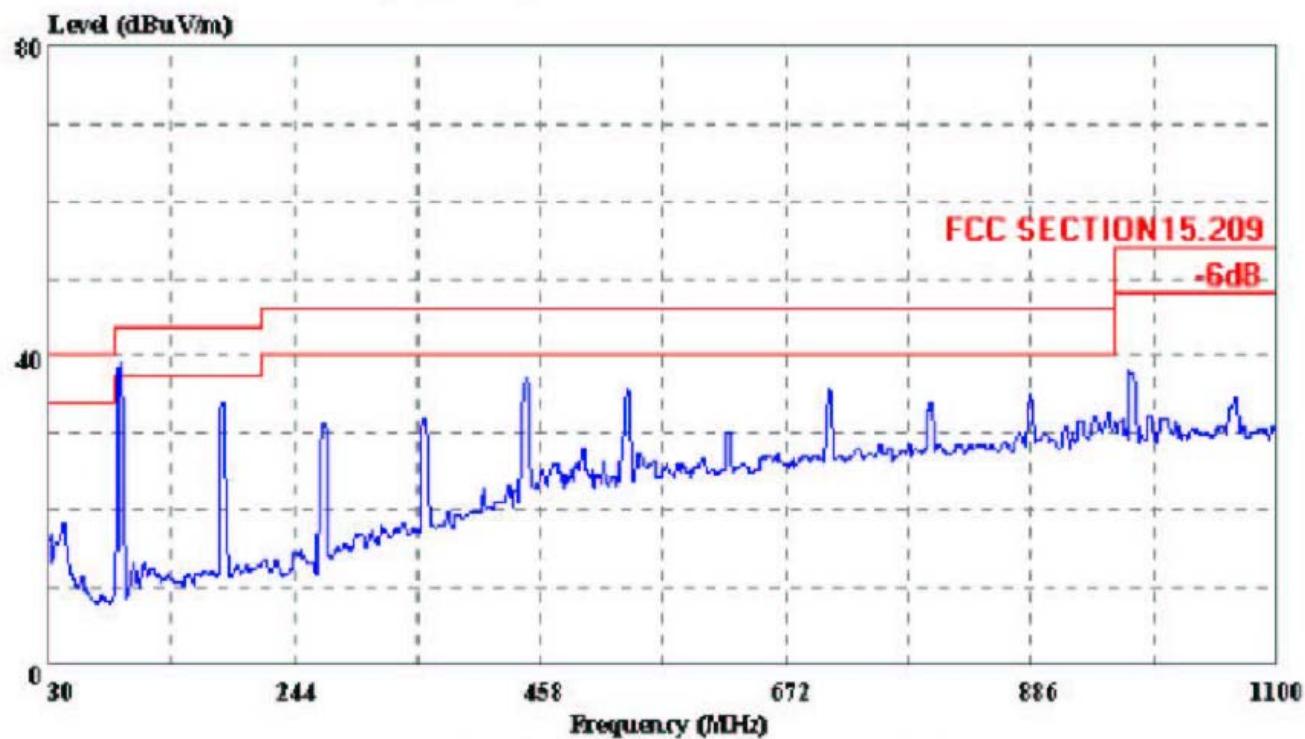
APPENDIX I (Test Curves)



Trace:

Ref Trace:

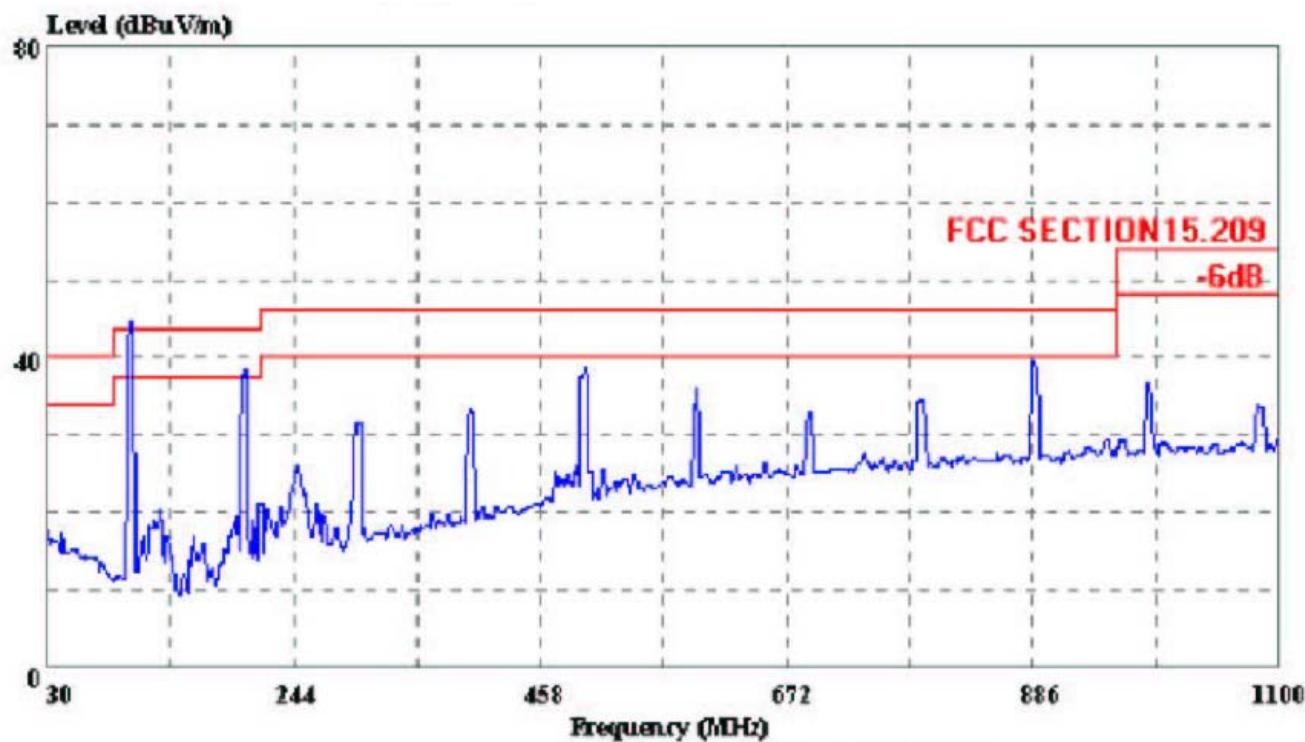
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 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 88.1MHz (30Pin input)
 manuf : ZONOKI
 sample no.: 063019



Trace:

Ref Trace:

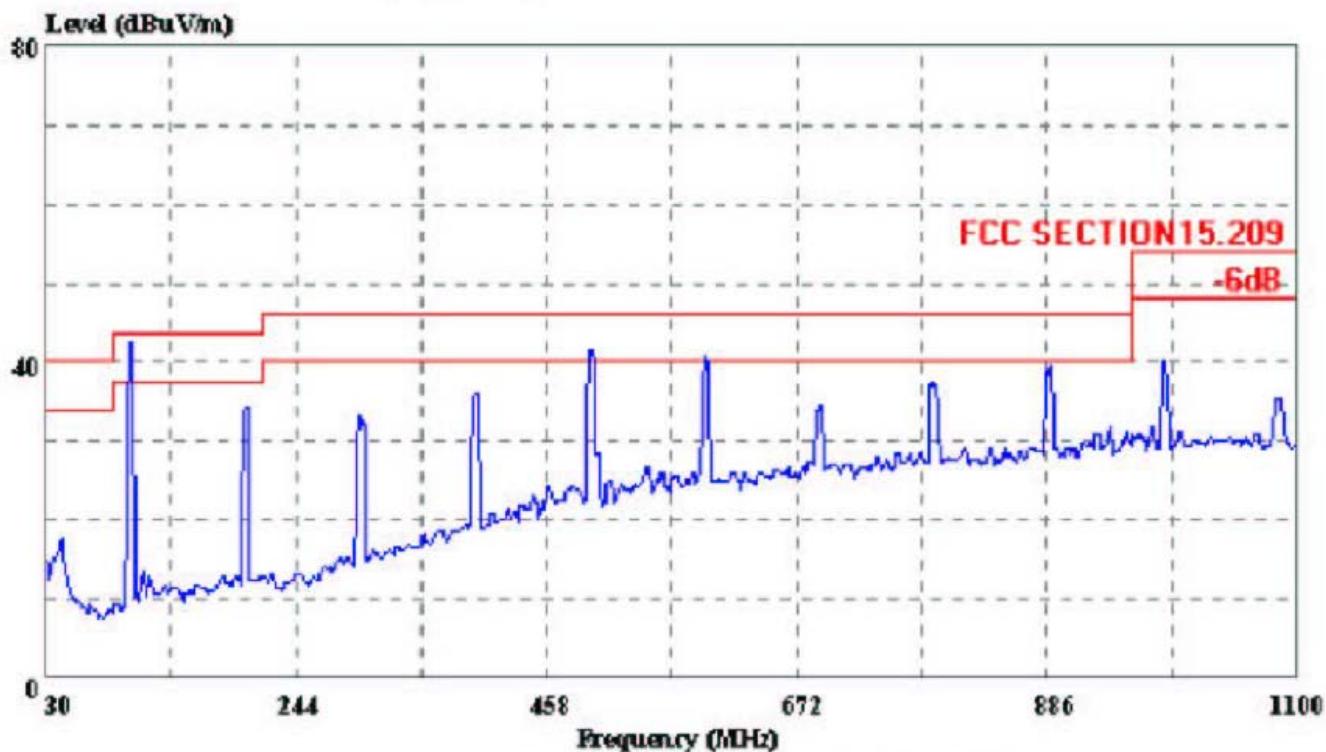
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 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 88.1MHz (30Pin input)
 manuf : ZONOKI
 sample no.: 063019



Trace:

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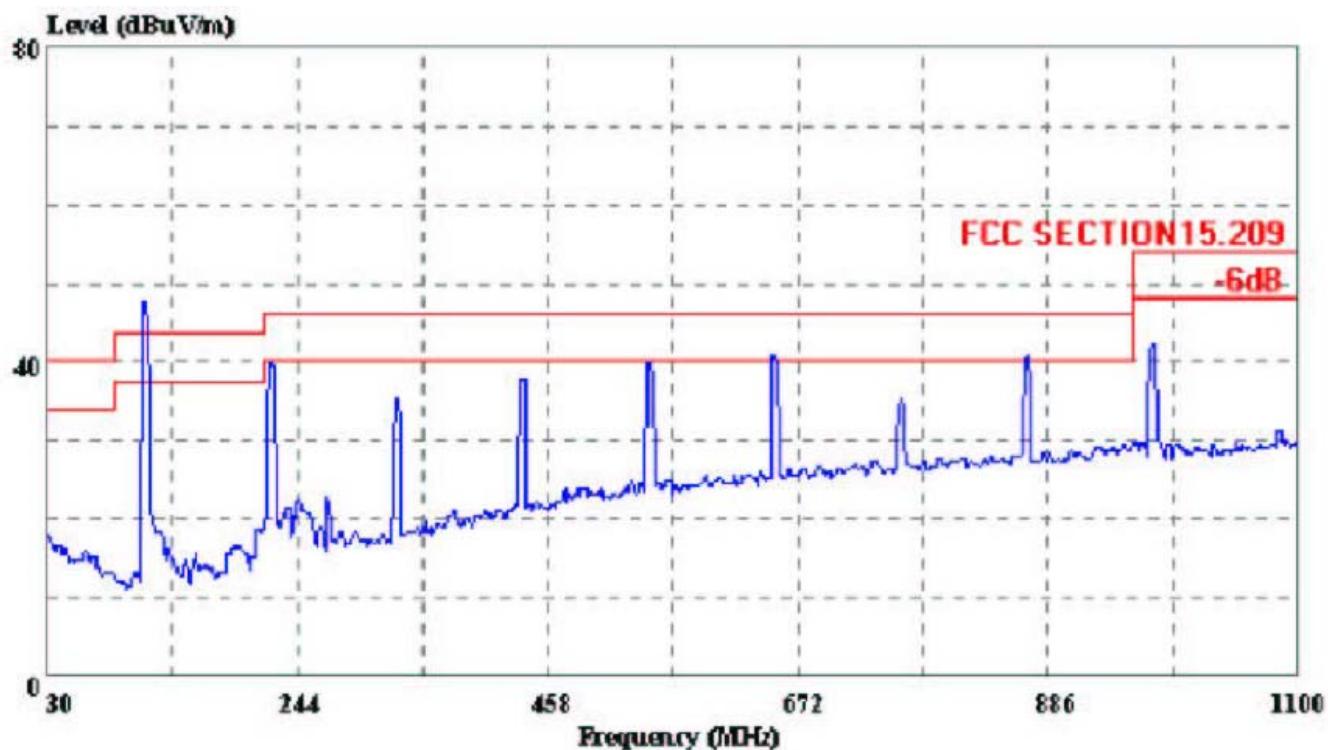
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 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-13001
 power : DC 12.0V
 memo : TX 98.1MHz (30Pin input)
 manuf : ZONOKI
 sample no.: 063019



Trace:

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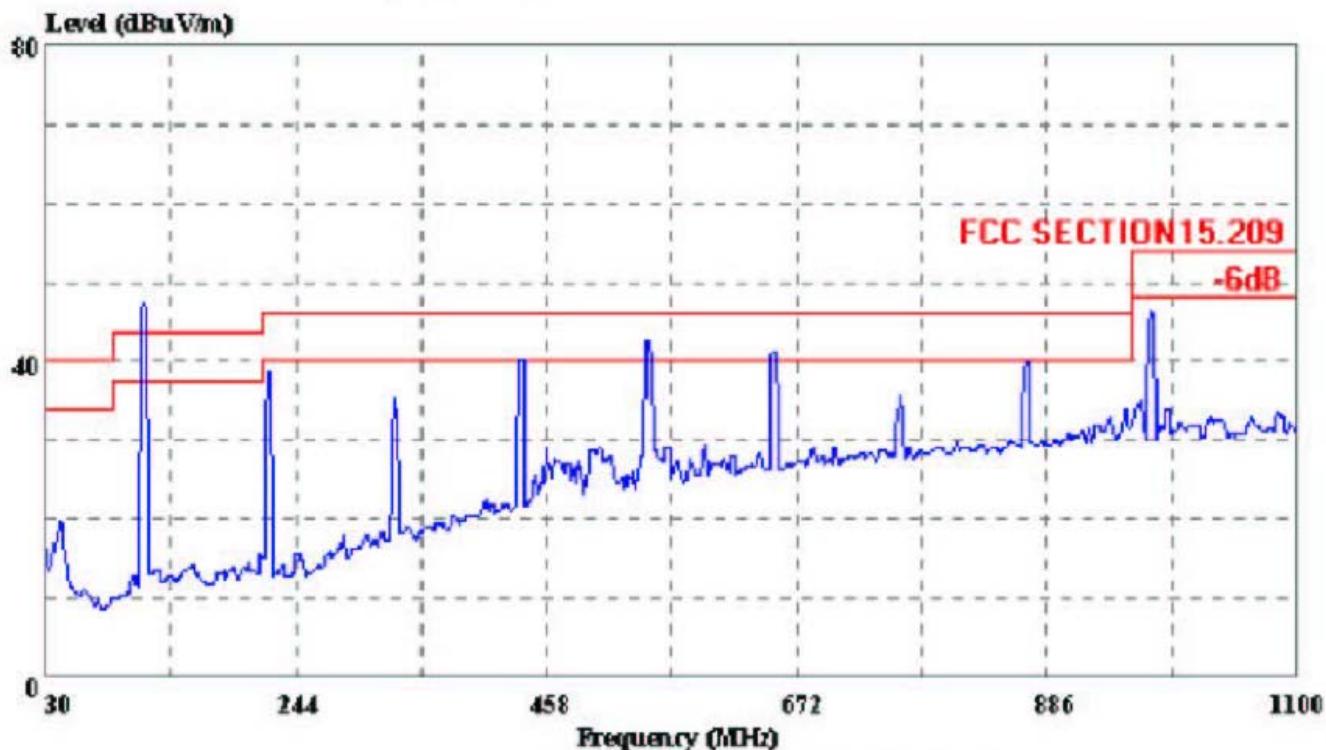
Condition: FCC SECTION15.209 3m ATC FCC15C ANTENNA VERTICAL
 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 98.1MHz {30Pin input}
 manuf : ZONOKI
 sample no.: 063019



Trace:

Ref Trace:

Condition: FCC SECTION15.209 3m ATC FCC15C ANTENNA HORIZONTAL
 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 107.9MHz (30Pin input)
 manuf : ZONOKI
 sample no. : 063019



Trace:

Ref Trace:

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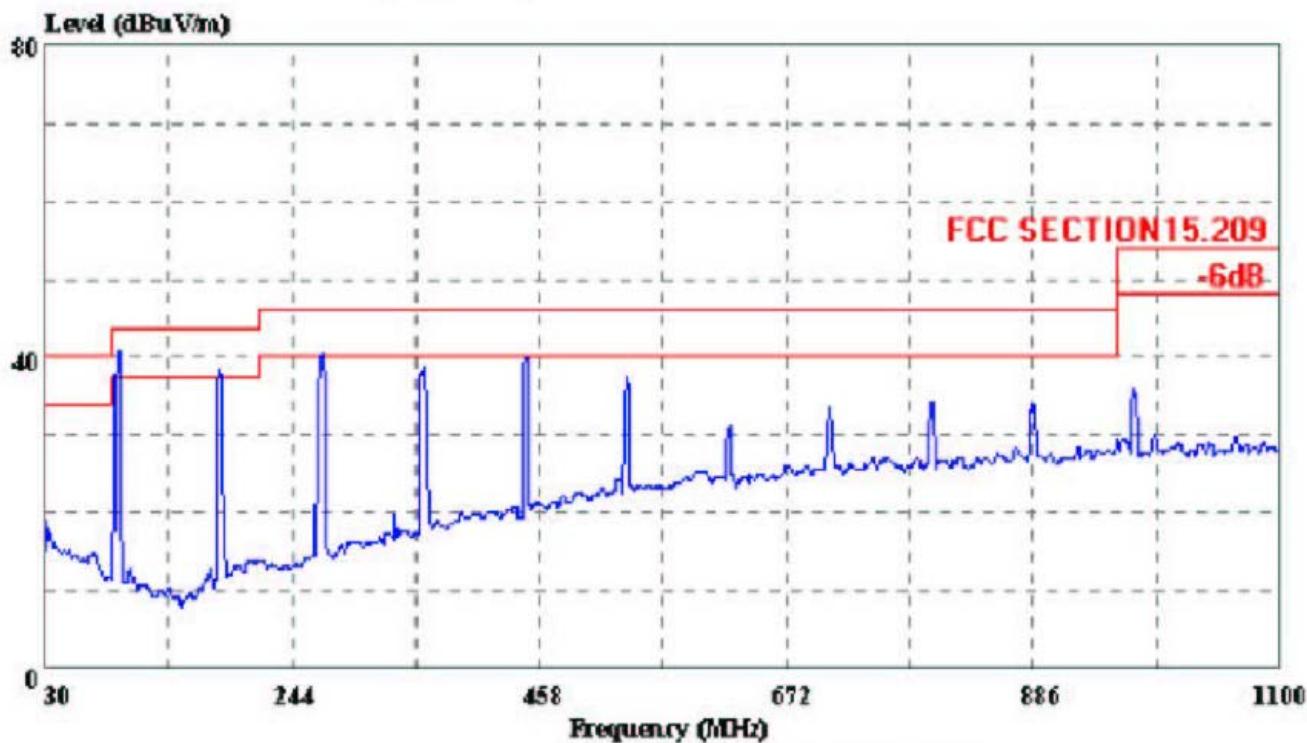
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 : Charger for iPod m/n:Z-1300i

power : DC 12.0V

memo : TX 107.9MHz (30Pin input)

manuf : ZONOKI

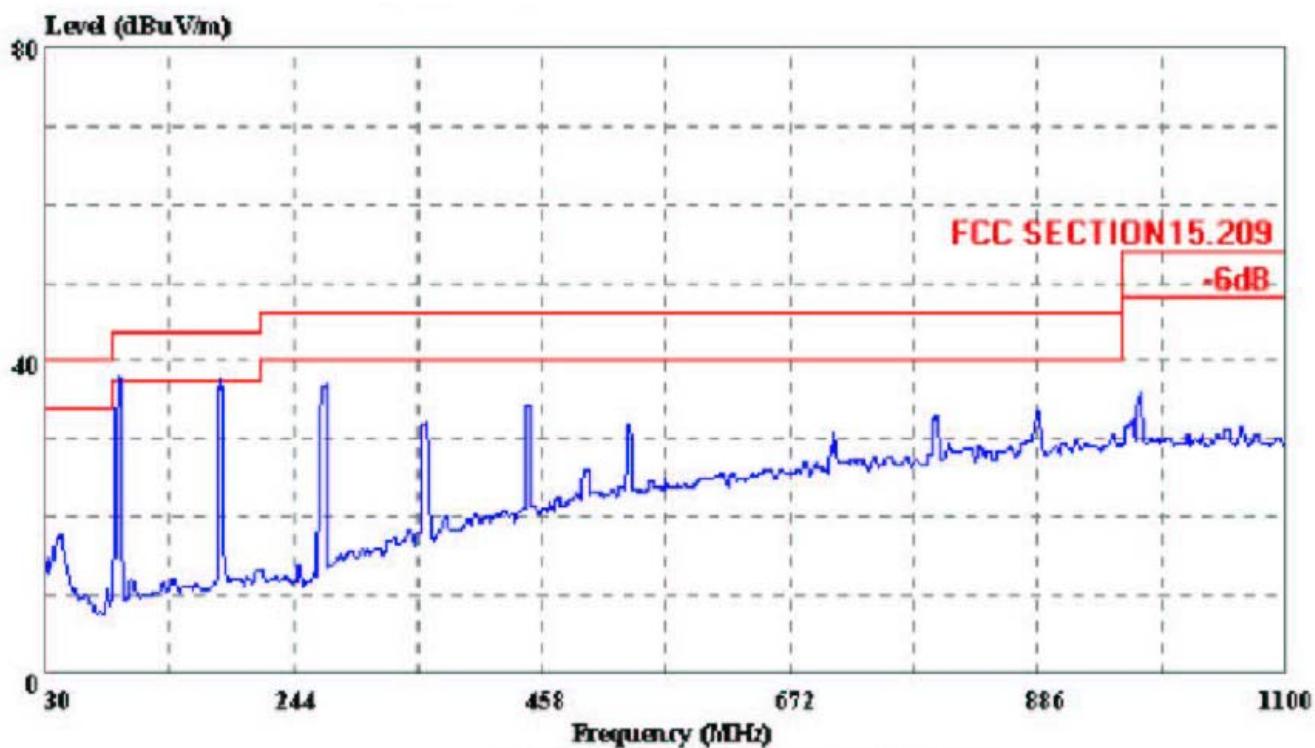
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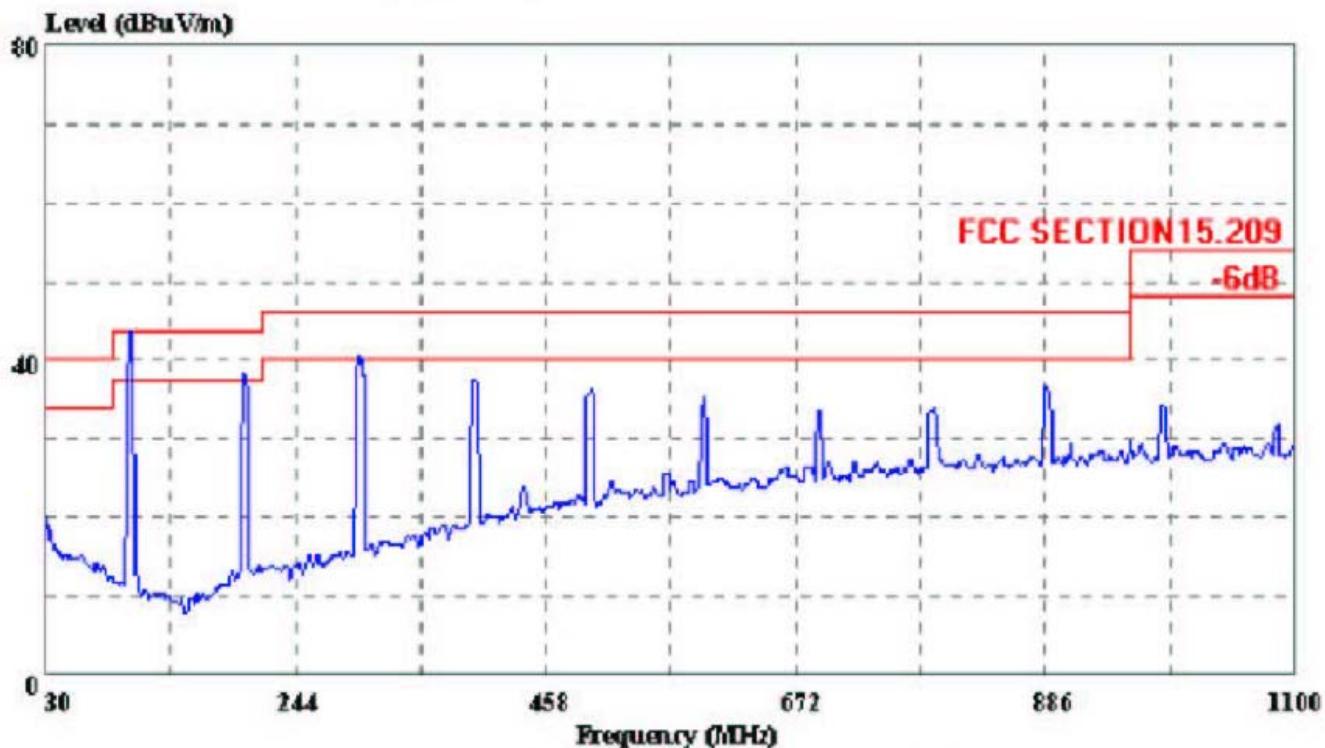
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 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 88.1MHz {Line in}
 manuf : ZONOKI
 sample no.: 063019



Trace:

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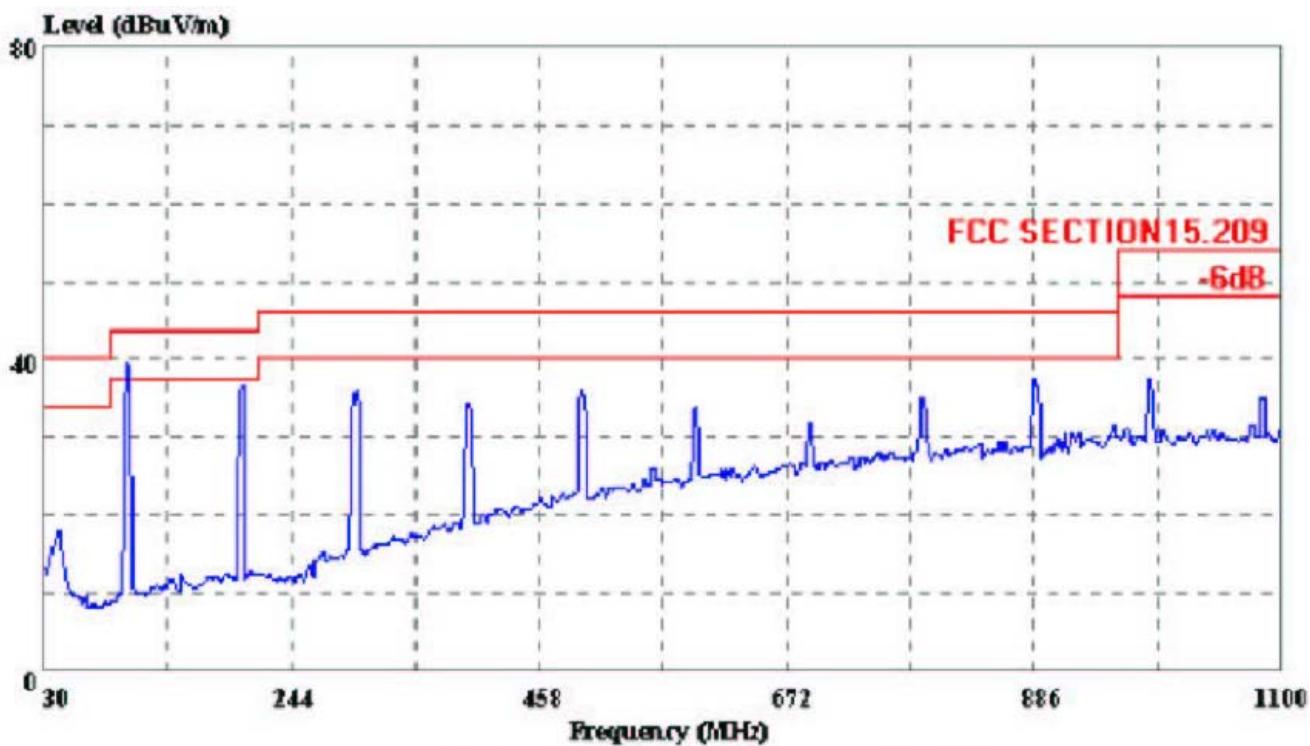
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 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 88.1MHz {Line in}
 manuf : ZONOKI
 sample no. : 063019



Trace:

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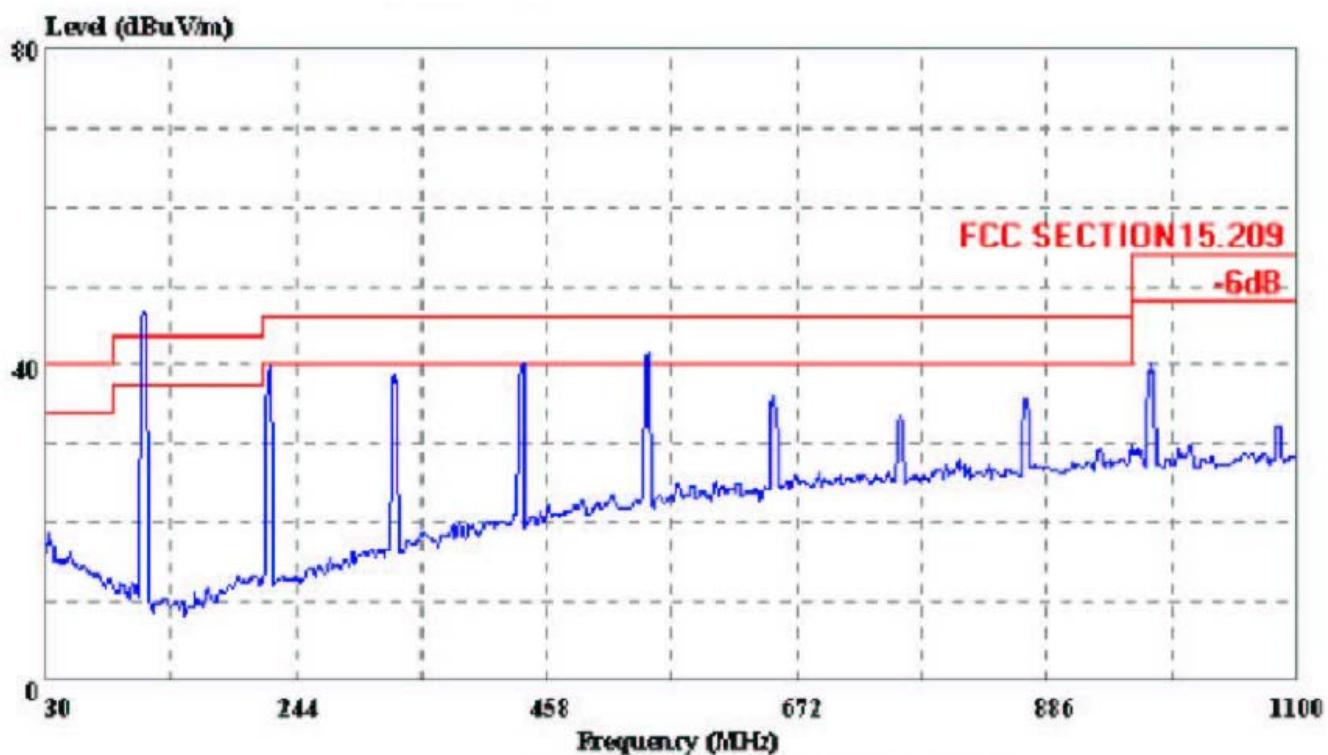
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 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 98.1MHz (Line in)
 manuf : ZONOKI
 sample no.: 063019



Trace:

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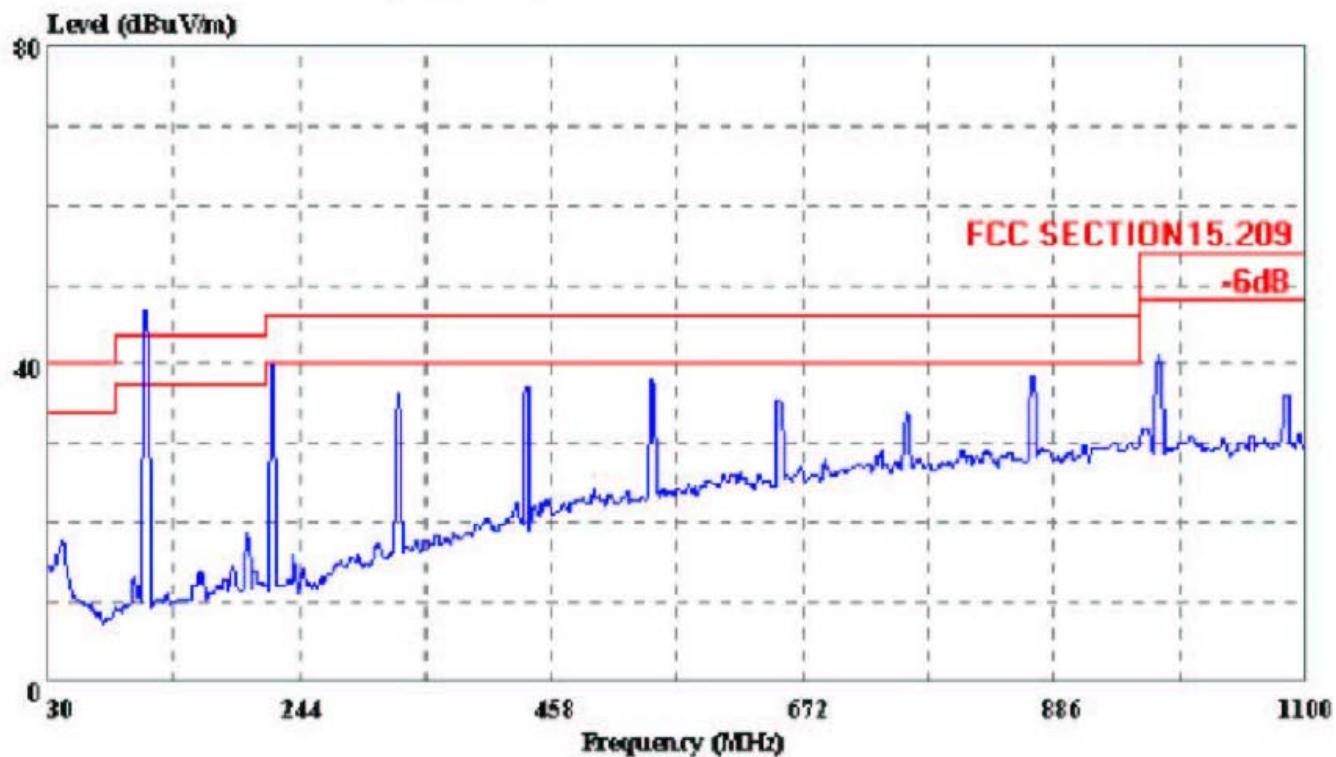
Condition: FCC SECTION15.209 3m ATC FCC15C ANTENNA VERTICAL
 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 98.1MHz (Line in)
 manuf : ZONOKI
 sample no.: 063019



Trace:

Ref Trace:

Condition: FCC SECTION15.209 3m ATC FCC15C ANTENNA HORIZONTAL
 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 107.9MHz {Line in}
 manuf : ZONOKI
 sample no.: 063019



Trace:

Ref Trace:

Condition: FCC SECTION15.209 3m ATC FCC15C ANTENNA VERTICAL
 eut : Vehicle FM transmitter with Power
 : Charger for iPod m/n:Z-1300i
 power : DC 12.0V
 memo : TX 107.9MHz {Line in}
 manuf : ZONOKI
 sample no.: 063019

