



Engineering and Testing for EMC and Safety Compliance



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Certification Application Report FCC Part 15 Subpart B

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FCC ID	RS2SDSV6	Test Report Date	August 17, 2009
EUT	Stratus 6	RTL Work Order Number	2009221
Model #	SDSV6	RTL Quote Number	QRTL09-334
FCC Classification	Part 15 Low Power Transceiver, Rx Verified		
FCC Rule Part(s)	FCC Part 15 Subpart B, Rule Section 15.209		
Industry Canada Standard	RSS-210 Issue 7 June 2007: Low Power License-Exempt Radio Communication Devices (All Frequency Bands)		
Receiver Information	Receiver was found to be compliant		
Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
88 – 108 (FM Band)	N/A	N/A	N/A

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. Modifications made to the equipment during testing in order to achieve compliance with these standards are listed in the report.

Furthermore, there was no deviation from, additions to, or exclusions from the applicable part of FCC Part 15 and ANSI C63.4.

Signature: 

Date: August 17, 2009

Typed/Printed Name: Desmond A. Fraser

Position: President

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1 General Information

1.1 Scope

FCC Rules Part 15 Subpart B, rule section 15.209

RSS-210 Issue 7 June 2007: Low Power License-Exempt Radio Communication Devices (All Frequency Bands)

1.2 Modifications

N/A

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Rhein Tech Laboratories (RTL), 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

2 Product Information

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sirius XM Radio Stratus 6 FM Transmitter, Model # SDSV6, FCC ID: RS2SDSV6**. The FM transmitter is located within the satellite broadcast receiver but is only capable of FM transmissions in the Vehicle Mode while docked in the car cradle. The test data contained in this report pertains only to the equipment tested.

2.2 Operation Mode

The Sirius XM Radio Stratus 6 FM Transmitter was set to transmit in the FM band while receiving live satellite broadcast. The EUT was tested while receiving live satellite broadcast.

2.3 Test Configuration Descriptions

The **Sirius XM Radio Stratus 6 FM Transmitter** was tested in a total of six different configurations for unintentional and intentional emissions compliance to FCC rules and regulations and IC standards. Each test configuration is shown in the test information section.

3 Test Information

3.1 Test Justification

The FM transmitter is located within the Stratus 6 housing and is only capable of FM transmission. The test data contained in this report pertains only to the emissions due to the FM band transmitter of the EUT.

The test procedure document used for this report was Sirius XM Satellite Radio Document: SOW1 and SOW2; dated July 10, 2009. It should be noted that the Stratus 6 uses the following connection methods: Standalone injected FM Cigarette Lighter Adapter (CLA), FM Direct, Cassette, and FM Extender Antenna (FEA). This report contains all but the standalone configuration which can be found in report 2009221 Sirius XM Stratus 6 FCC 15.239 IC RSS-210.

3.2 Exercising the EUT

The EUT was tested with the FM modulator enabled while receiving live satellite broadcast. The EUT was tested using 89.1 MHz, 97.7 MHz and 106.3 MHz. There were no deviations from the test standard(s) and/or methods. The EUT was tested using frequencies from the low, mid, and high bands across its frequency tuning range 88.1 MHz-107.9 MHz. The lowest and highest tuning frequencies, namely, 88.1 MHz and 107.9 MHz, were not used during testing due to very strong local ambient that prevented their use. The tuning range of the Stratus 6 was verified during testing to be between 88.1 and 107.9 MHz, any other frequencies outside this tuning range was prohibited by the unit's software content.

3.3 Test Result Summary

Table 3.3-1: Test Result Summary with FCC Rules and Regulations

FCC Part Section	Test Description	Test Limit	Pass/Fail
15.239(a)	Bandwidth	< 200 kHz	Pass
15.109(a)	Out-of-Band Emissions	Emissions outside of the specified band must meet the radiated limits detailed in 15.209	Pass
15.107(a)	Conducted Emissions	Emissions must meet conducted emissions limits detailed in 15.107(a)	Pass

3.4 Test System Details

The test sample was received on July 13, 2009. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system, are shown in the table below.

Table 3.4-1: Equipment under Test (EUT)

Part	Manufacturer	Model	Serial Number	Cable Description	RTL Bar Code
Stratus 6	Sirius XM	SDSV6	U99J924A0036J01	N/A	019086
Vehicle Cradle	Sirius XM	SUPV1B	0121501000	N/A	019092
Vehicle Cradle	Sirius XM	SDPIV1	N/A	N/A	019085
Vehicle Cradle	Sirius XM	UC8	90.UPA14.001	N/A	019168
Power Adapter (to cradle SDPIV1)	Sirius XM	SXDPIP1	SCDPIP1 U434927A000fJ01	unshielded with ferrite	019089
Power Adapter (to cradle)	Sirius XM	N/A	N/A	unshielded	019083
Antenna	Sirius XM	UCA-DOT	U17792400EBDJ01	Shielded	019088
FM Extender Antenna (FEA)	Sirius XM	N/A	N/A	Unshielded	019103
Home Cradle	Sirius XM	SUPH1	90.UPA10.001	N/A	019094
Home Antenna	Sirius XM	N/A	9D306072M	Shielded	019096
5.2VDC/AC Adapter for Home Kit	Sirius XM	EGH12-52015SPA	N/A	Unshielded	019095
CLA Power Adapter (socket)	Sirius XM	N/A	N/A	Unshielded	019122
Cassette Adapter	Sirius XM	Cassette Adapter	N/A	Unshielded	019073
Car Aerial Antenna	Radio Shack	N/A	N/A	Shielded	019074
12V battery	Valucraft	N/A	N/A	N/A	N/A

4 Radiated Emissions – FCC 15.209

4.1 Conducted Emissions FCC 15.207(a)

4.1.1 Test Configuration 1: Stratus 6 w/ Home Cradle

The EUT was configured as shown in Test Configuration 1. The spurious radiated emissions were measured at a distance of three meters. The EUT was powered by the AC adapter. The audio level was set to the maximum audio level. The EUT was configured to receive live satellite broadcast.

The data was recorded using a RBW of 9 kHz and a VBW of 100 kHz. The data was recorded using a Quasi Peak and Average detector.

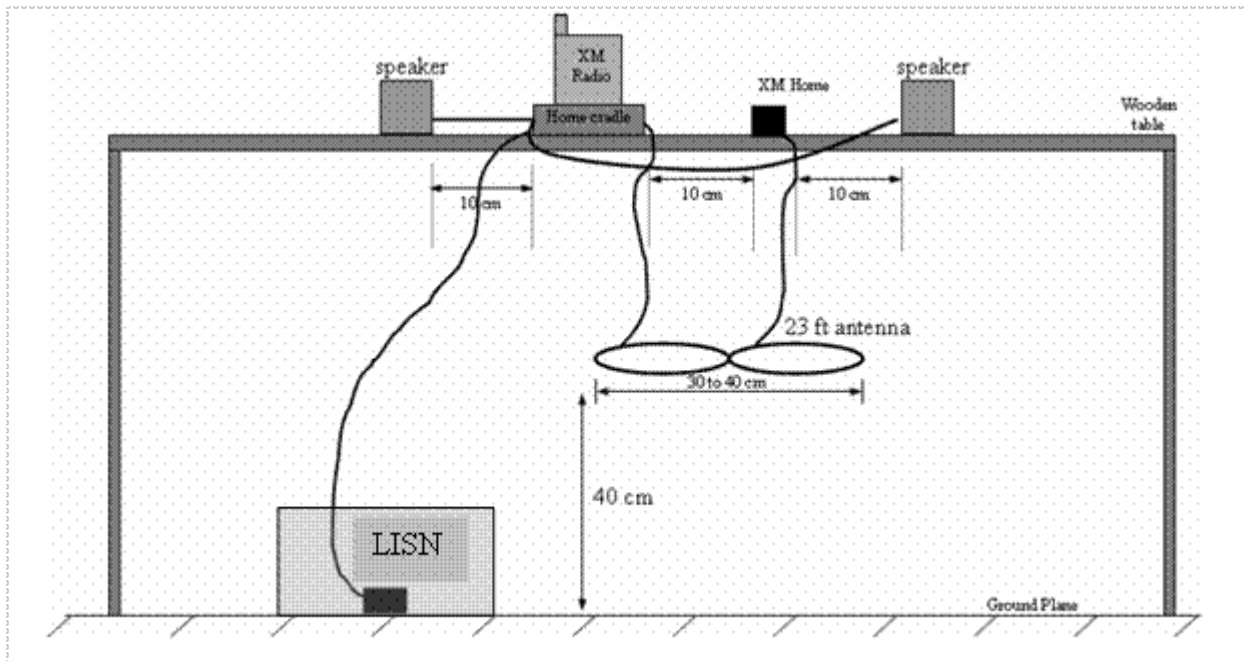


Figure 4.1-1: Test Configuration 1 – Home Cradle Conducted Emissions Setup

4.1.2 Conducted Emissions Test Data

Temperature: 77°F Humidity: 46%

Table 4.1-1: Conducted Emissions 120 Vac Phase

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC B QP Limit (dBuV)	FCC B QP Margin (dBuV)	FCC B AV Limit (dBuV)	FCC B AV Margin (dBuV)	Pass/Fail
0.150	Av	25.9	0.2	26.1			56.0	-29.9	Pass
0.150	Qp	44.8	0.2	45.0	66.0	-21.0			Pass
0.199	Av	30.6	0.2	30.8			53.7	-22.9	Pass
0.199	Qp	46.8	0.2	47.0	63.7	-16.7			Pass
0.248	Av	27.5	0.1	27.6			51.8	-24.2	Pass
0.248	Qp	46.7	0.1	46.8	61.8	-15.0			Pass
0.300	Av	30.5	0.3	30.8			50.2	-19.4	Pass
0.300	Qp	47.1	0.3	47.4	60.2	-12.8			Pass
0.399	Av	24.4	0.3	24.7			47.9	-23.2	Pass
0.399	Qp	45.5	0.3	45.8	57.9	-12.1			Pass
0.447	Av	26.5	0.2	26.7			46.9	-20.2	Pass
0.447	Qp	45.0	0.2	45.2	56.9	-11.7			Pass
1.025	Av	18.1	0.4	18.5			46.0	-27.5	Pass
1.025	Qp	41.2	0.4	41.6	56.0	-14.4			Pass
1.276	Av	17.1	0.5	17.6			46.0	-28.4	Pass
1.276	Qp	40.3	0.5	40.8	56.0	-15.2			Pass
1.853	Av	21.7	0.7	22.4			46.0	-23.6	Pass
1.854	Qp	46.0	0.7	46.7	56.0	-9.3			Pass
1.906	Av	19.0	0.7	19.7			46.0	-26.3	Pass
1.906	Qp	46.9	0.7	47.6	56.0	-8.4			Pass
9.560	Pk	44.3	1.6	45.9			50.0	-4.1	Pass
23.000	Pk	42.1	2.4	44.5			50.0	-5.5	Pass

Table 4.1-2: Conducted Emissions 120 Vac Neutral

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC B QP Limit (dBuV)	FCC B QP Margin (dBuV)	FCC B AV Limit (dBuV)	FCC B AV Margin (dBuV)	Pass/Fail
0.151	Qp	29.9	0.2	30.1	65.9	-35.8			Pass
0.151	Av	29.9	0.2	30.1			55.9	-25.8	Pass
0.200	Av	33.8	0.2	34.0			53.6	-19.6	Pass
0.200	Qp	49.7	0.2	49.9	63.6	-13.7			Pass
0.250	Av	27.4	0.1	27.5			51.8	-24.3	Pass
0.250	Qp	47.5	0.1	47.6	61.8	-14.2			Pass
0.301	Av	32.3	0.3	32.6			50.2	-17.6	Pass
0.301	Qp	52.3	0.3	52.6	60.2	-7.6			Pass
0.350	Av	21.0	0.2	21.2			49.0	-27.8	Pass
0.350	Qp	38.4	0.2	38.6	59.0	-20.4			Pass
0.402	Av	23.3	0.3	23.6			47.8	-24.2	Pass
0.402	Qp	44.0	0.3	44.3	57.8	-13.5			Pass
0.450	Av	24.5	0.2	24.7			46.9	-22.2	Pass
0.450	Qp	47.6	0.2	47.8	56.9	-9.1			Pass
0.545	Av	19.1	0.2	19.3			46.0	-26.7	Pass
0.545	Qp	46.1	0.2	46.3	56.0	-9.7			Pass
1.025	Av	19.6	0.4	20.0			46.0	-26.0	Pass
1.025	Qp	47.3	0.4	47.7	56.0	-8.3			Pass
1.325	Av	18.4	0.5	18.9			46.0	-27.1	Pass
1.325	Qp	44.6	0.5	45.1	56.0	-10.9			Pass
1.906	Av	19.1	0.7	19.8			46.0	-26.2	Pass
1.906	Qp	45.2	0.7	45.9	56.0	-10.1			Pass
2.930	Av	22.4	1.0	23.4			46.0	-22.6	Pass
2.930	Qp	44.9	1.0	45.9	56.0	-10.1			Pass
6.190	Pk	47.1	1.4	48.5			50.0	-1.5	Pass
13.440	Pk	44.5	2.0	46.5			50.0	-3.5	Pass
23.130	Pk	41.6	2.4	44.0			50.0	-6.0	Pass

4.2 Unintentional Radiated Emissions 15.209(a)

4.2.1 Test Configuration 2: Stratus 6 w/ Home Cradle

The EUT was configured as shown in Test Configuration 2. The conducted emissions were measured on the 120 Vac Line and Neutral power leads. The EUT was powered by the AC adapter. The audio level was set to the maximum audio level. The EUT was configured to receive a live satellite broadcast. The test configuration is shown below.

The data was recorded using a RBW of 120 kHz and a VBW of 300 kHz. The data was recorded using a Quasi Peak detector.

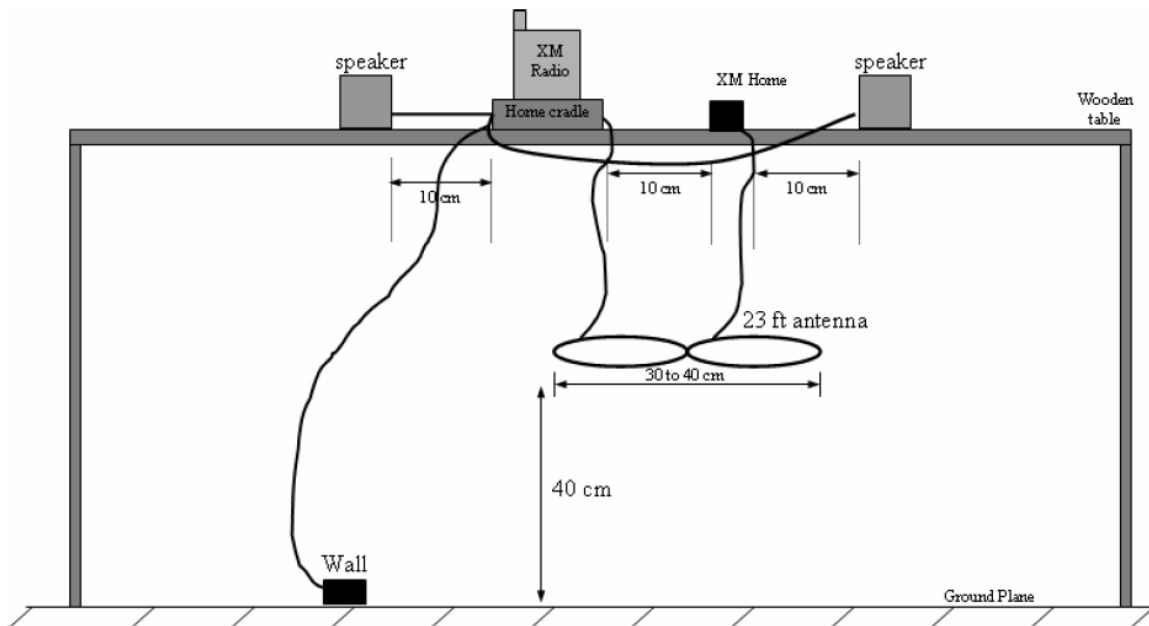


Figure 4.2-1: Test Configuration 2 – Stratus 6 w/ Home Cradle

4.2.2 Radiated Measurement Data for Stratus 6 w/ Home Cradle (15.209(a))

Table 4.2-1: Radiated Measurement Data

Temperature: 86°F Humidity: 46%

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC/ IC Limit (dBuV/m)	FCC/ IC Margin (dB)	Pass/ Fail
31.750	Qp	V	30	1.0	40.7	-18.2	22.5	40.0	-17.5	Pass
72.421	Qp	V	180	1.0	27.6	-28.7	-1.1	40.0	-41.1	Pass
84.750	Qp	V	140	1.0	39.5	-27.4	12.1	40.0	-27.9	Pass
112.000	Qp	V	90	1.0	37.1	-21.4	15.7	43.5	-27.8	Pass
142.000	Qp	H	180	2.0	39.3	-21.7	17.6	43.5	-25.9	Pass
144.125	Qp	V	120	1.0	48.2	-21.7	26.5	43.5	-17.0	Pass
144.375	Qp	V	120	1.0	48.9	-21.7	27.2	43.5	-16.3	Pass
204.000	Qp	H	350	1.8	37.6	-20.7	16.9	43.5	-26.6	Pass
255.000	Qp	H	180	1.4	35.9	-18.9	17.0	46.0	-29.0	Pass
408.000	Qp	V	90	1.0	33.6	-13.1	20.5	46.0	-25.5	Pass

4.3 Radiated Spurious Emission Measurements - Test Configuration 3: Vehicle Cradle SDPIV1 and FM Direct Adapter

The EUT was configured as shown in the configuration below. The car aerial antenna was mounted to a 4' by 3' aluminum plate to simulate the antenna being mounted to a vehicle. The FM direct adapter (output to radio) was terminated with a 75Ω termination. The out-of-band radiated emissions were measured at a distance of three meters. The EUT was powered by a fully charged 12 VDC car battery. The FM Modulator was enabled and the audio level set to the maximum audio level. The EUT was configured to receive a live satellite broadcast. The cables were manipulated to produce the highest emission level. The EUT was tested using the harmonics of the following frequencies: 89.1 MHz, 97.7 MHz and 106.3 MHz. Data was recorded for the ten harmonics of each fundamental frequency. Data was taken for both horizontal and vertical antenna polarizations.

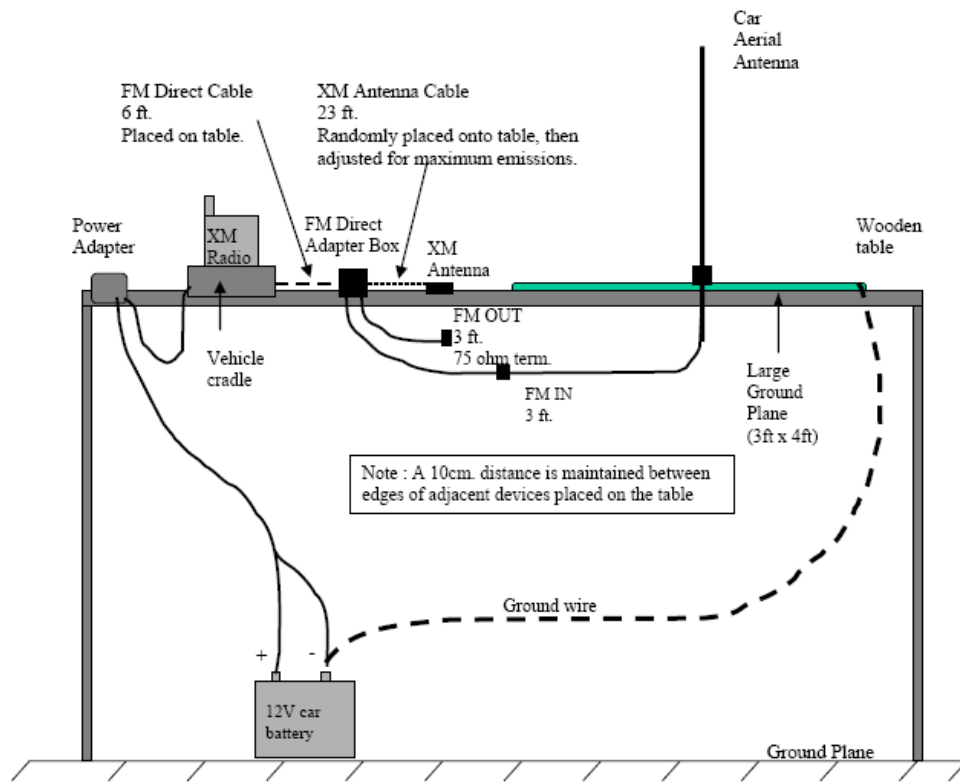


Figure 4.3-1: Test Configuration 3: Stratus 6 with FM Direct Adapter Radiated Emissions Setup

4.3.1 15.109(a) Radiated Emission Measurements –Out-of-Band

Table 4.3-1: FM Direct Adapter with Vehicle Cradle SDPIV1 – 89.5 MHz

Temperature: 85°F Humidity: 51%										
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC/IC Limit (dBuV/m)	FCC/IC Margin (dB)	Pass/Fail
179.000	Qp	H	185	3.5	41.7	-20.6	21.1	43.5	-22.4	Pass
179.000	Qp	V	25	1.0	41.9	-20.6	21.3	43.5	-22.2	Pass
268.500	Qp	H	90	3.0	39.7	-16.8	22.9	46.0	-23.1	Pass
268.500	Qp	V	260	1.0	37.5	-16.8	20.7	46.0	-25.3	Pass
358.000	Qp	H	120	2.5	38.4	-14.0	24.4	46.0	-21.6	Pass
358.000	Qp	V	180	1.0	38.9	-14.0	24.9	46.0	-21.1	Pass
447.500	Qp	H	260	2.0	41.0	-11.8	29.2	46.0	-16.8	Pass
447.500	Qp	V	210	1.0	38.6	-11.8	26.8	46.0	-19.2	Pass
537.000	Qp	H	280	1.5	37.9	-9.6	28.3	46.0	-17.7	Pass
537.000	Qp	V	255	1.2	35.4	-9.6	25.8	46.0	-20.2	Pass
626.500	Qp	H	270	1.5	38.5	-8.3	30.2	46.0	-15.8	Pass
626.500	Qp	V	40	1.0	40.2	-8.3	31.9	46.0	-14.1	Pass
716.000	Qp	H	290	2.0	30.7	-6.7	24.0	46.0	-22.0	Pass
716.000	Qp	V	110	1.0	38.2	-6.7	31.5	46.0	-14.5	Pass
805.500	Qp	H	195	1.2	35.8	-5.2	30.6	46.0	-15.4	Pass
805.500	Qp	V	190	1.0	35.4	-5.2	30.2	46.0	-15.8	Pass
895.000	Qp	H	165	1.2	36.1	-4.2	31.9	46.0	-14.1	Pass
895.000	Qp	V	190	1.2	37.4	-4.2	33.2	46.0	-12.8	Pass
984.500	Qp	H	220	1.0	36.6	-2.7	33.9	54.0	-20.1	Pass
984.500	Qp	V	100	1.0	36.4	-2.7	33.7	54.0	-20.3	Pass

Table 4.3-2: FM Direct Adapter with Vehicle Cradle SDPIV1 – 97.7 MHz

Temperature: 85°F Humidity: 51%										
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC/IC Limit (dBuV/m)	FCC/IC Margin (dB)	Pass/Fail
195.400	Qp	H	10	3.0	43.5	-20.1	23.4	43.5	-20.1	Pass
195.400	Qp	V	270	1.0	42.2	-20.1	22.1	43.5	-21.4	Pass
293.100	Qp	H	270	3.2	37.7	-16.5	21.2	46.0	-24.8	Pass
293.100	Qp	V	280	1.0	38.3	-16.5	21.8	46.0	-24.2	Pass
390.800	Qp	H	345	2.5	37.9	-13.3	24.6	46.0	-21.4	Pass
390.800	Qp	V	45	1.0	36.5	-13.3	23.2	46.0	-22.8	Pass
488.500	Qp	H	0	2.0	41.5	-10.5	31.0	46.0	-15.0	Pass
488.500	Qp	V	65	1.0	35.1	-10.5	24.6	46.0	-21.4	Pass
586.200	Qp	H	45	2.0	35.3	-8.9	26.4	46.0	-19.6	Pass
586.200	Qp	V	260	1.0	41.9	-8.9	33.0	46.0	-13.0	Pass
683.900	Qp	H	50	1.5	36.7	-7.3	29.4	46.0	-16.6	Pass
683.900	Qp	V	15	1.2	36.1	-7.3	28.8	46.0	-17.2	Pass
781.600	Qp	H	90	1.5	36.2	-5.9	30.3	46.0	-15.7	Pass
781.600	Qp	V	90	1.0	35.5	-5.9	29.6	46.0	-16.4	Pass
879.300	Qp	H	95	1.0	36.8	-4.5	32.3	46.0	-13.7	Pass
879.300	Qp	V	95	1.0	35.2	-4.5	30.7	46.0	-15.3	Pass
977.000	Qp	H	120	1.0	36.2	-2.9	33.3	54.0	-20.7	Pass
977.000	Qp	V	265	1.0	36.5	-2.9	33.6	54.0	-20.4	Pass

Table 4.3-3: FM Direct Adapter with Vehicle Cradle SDPIV1 – 106.3 MHz

Temperature: 85°F Humidity: 51%										
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC/IC Limit (dBuV/m)	FCC/IC Margin (dB)	Pass/Fail
212.600	Qp	H	240	4.0	41.2	-20.4	20.8	43.5	-22.7	Pass
212.600	Qp	V	80	1.0	38.2	-20.4	17.8	43.5	-25.7	Pass
318.900	Qp	H	275	2.2	36.8	-15.3	21.5	46.0	-24.5	Pass
318.900	Qp	V	335	1.5	39.1	-15.3	23.8	46.0	-22.2	Pass
425.200	Qp	H	20	1.5	38.7	-12.0	26.7	46.0	-19.3	Pass
425.200	Qp	V	100	1.0	37.0	-12.0	25.0	46.0	-21.0	Pass
531.500	Qp	H	70	2.0	42.7	-9.7	33.0	46.0	-13.0	Pass
531.500	Qp	V	150	1.0	37.0	-9.7	27.3	46.0	-18.7	Pass
637.800	Qp	H	100	1.5	36.0	-8.4	27.6	46.0	-18.4	Pass
637.800	Qp	V	90	1.0	36.0	-8.4	27.6	46.0	-18.4	Pass
744.100	Qp	H	190	1.5	38.0	-6.2	31.8	46.0	-14.2	Pass
744.100	Qp	V	190	1.0	34.7	-6.2	28.5	46.0	-17.5	Pass
850.400	Qp	H	270	1.0	36.2	-4.7	31.5	46.0	-14.5	Pass
850.400	Qp	V	190	1.0	36.0	-4.7	31.3	46.0	-14.7	Pass
956.700	Qp	H	260	1.0	35.3	-3.3	32.0	46.0	-14.0	Pass
956.700	Qp	V	250	1.0	36.2	-3.3	32.9	46.0	-13.1	Pass
1063.000	Pk	H	355	1.0	35.3	-2.1	33.2	74.0	-40.8	Pass
1063.000	Pk	V	280	1.0	35.3	-2.1	33.2	74.0	-40.8	Pass
1063.000	Av	H	355	1.0	23.5	-2.1	21.4	54.0	-31.7	Pass
1063.000	Av	V	280	1.0	23.4	-2.1	21.3	54.0	-32.7	Pass

4.4 Radiated Spurious Emission Measurements - Test Configuration 4: Cassette Adapter

The EUT was configured as shown in Test Configuration 4. The out-of-band radiated emissions were measured at a distance of three meters. The EUT was powered by a fully charged 12 VDC car battery. The FM Modulator was disabled and the audio level was set to the maximum audio level. The EUT was configured to receive a live satellite broadcast. The cables were manipulated to produce the highest emission level. Data was taken for both horizontal and vertical antenna polarizations. The test configuration is shown below.

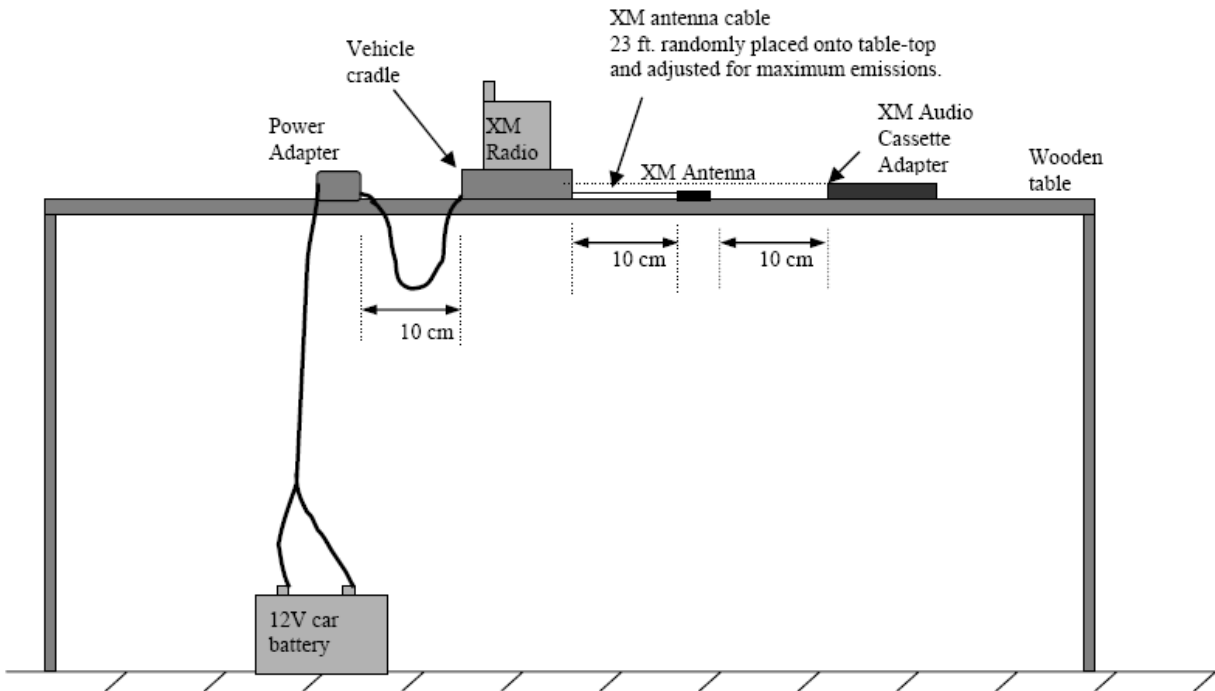


Figure 4.4-1: Test Configuration 4: Stratus 6 with Cassette Adapter Out-of-Band Radiated Emissions

4.4.1 15.109(a) Radiated Emission Measurements Out-of-Band (FM Modulator Off)

Temperature: 78°F Humidity: 66%

Table 4.4-1: Cassette Adapter with Vehicle Cradle SDPIV1

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC/IC Limit (dBuV/m)	FCC/IC Margin (dB)	Pass/Fail
54.300	Qp	H	35	3.0	40.6	-24.2	16.4	40.0	-23.6	Pass
83.400	Qp	H	90	3.0	40.0	-23.9	16.1	40.0	-23.9	Pass
258.000	Qp	V	100	1.0	38.5	-17.6	20.9	46.0	-25.1	Pass
430.100	Qp	H	185	2.0	38.5	-12.0	26.5	46.0	-19.5	Pass
502.900	Qp	V	290	1.0	36.8	-10.4	26.4	46.0	-19.6	Pass
624.100	Qp	V	45	1.0	38.4	-8.3	30.1	46.0	-15.9	Pass
830.300	Qp	V	190	1.0	37.6	-4.7	32.9	46.0	-13.1	Pass

4.5 200 kHz Bandwidth Measurement FCC 15.239(a) – Test Configuration 5: Vehicle Cradle SDPIV1 and FM Direct Adapter

The FM transmitter audio level was set to maximum. The EUT was setup as shown in Test Configuration 5 below. The 200 kHz bandwidth measurements were made at 88.1 MHz, 96.9 MHz and 107.9 MHz. The bandwidth at 20 dB down from the highest in-band spectral density was measured with the spectrum analyzer connected to the audio output port on the SDPIV1. The 20 dB bandwidth was measured with the EUT receiving a live satellite broadcast. The 20 dB bandwidth measurements were made with modulation. All measurements were made with the spectrum analyzer in max hold. The test results are shown in Table 4.7-1. The plots of the bandwidth measurements are shown in plots 4.7-1 through 4.7-6 below.

Table 4.5-1: 200 kHz Bandwidth Measurements

Frequency (MHz)	Mode	200 kHz Bandwidth Test Results	
		(kHz)	Pass / Fail
88.1	With Modulation	152.5	Pass
96.9	With Modulation	181.9	Pass
107.9	With Modulation	175.6	Pass
88.1	No Modulation	43.1	Pass
96.9	No Modulation	43.8	Pass
107.9	No Modulation	43.8	Pass

The EUT was configured as shown in Test Configuration 5. The Occupied Bandwidth emissions were measured with a delta marker showing 20 dB down from the peak emission of the carrier, both modulated and unmodulated modes. The test configuration is shown below.

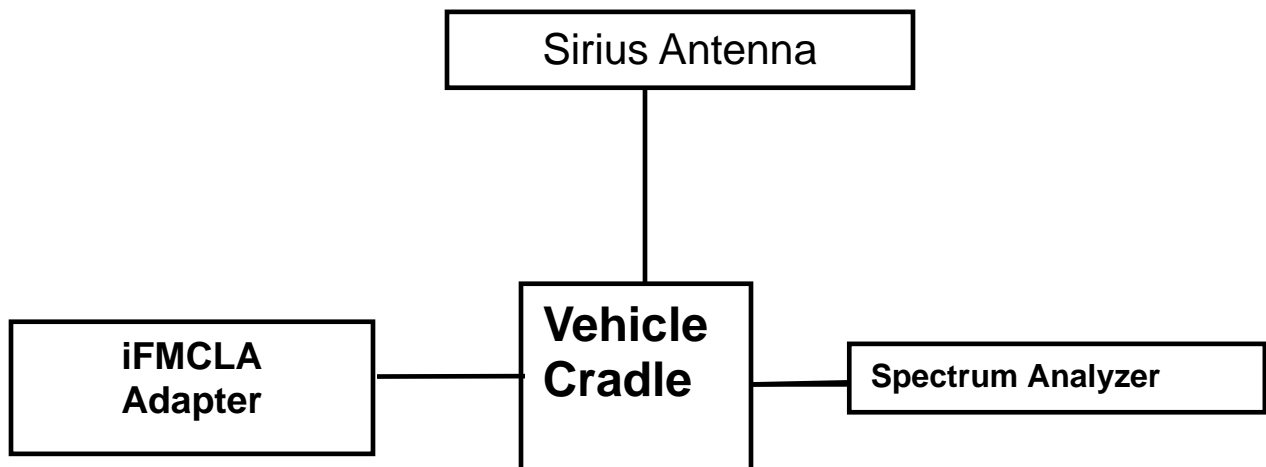
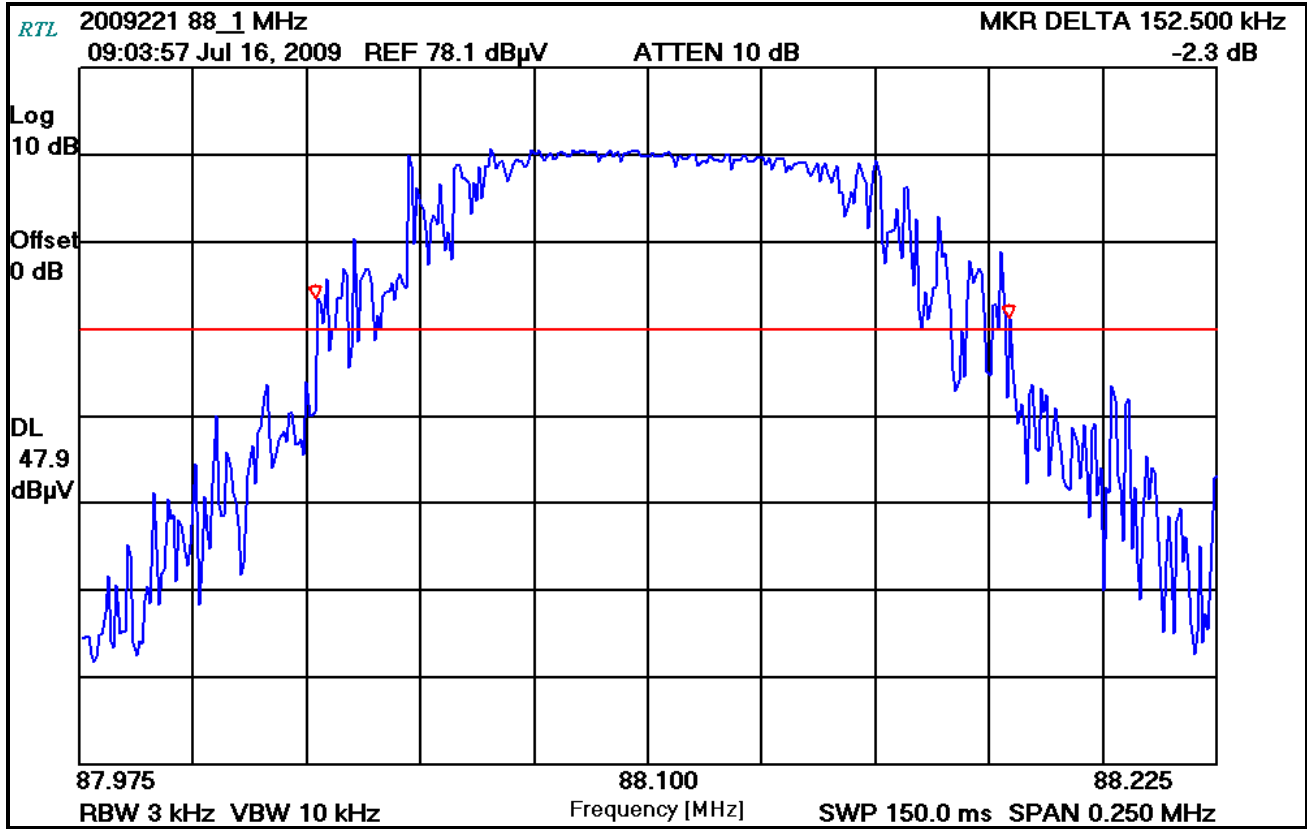
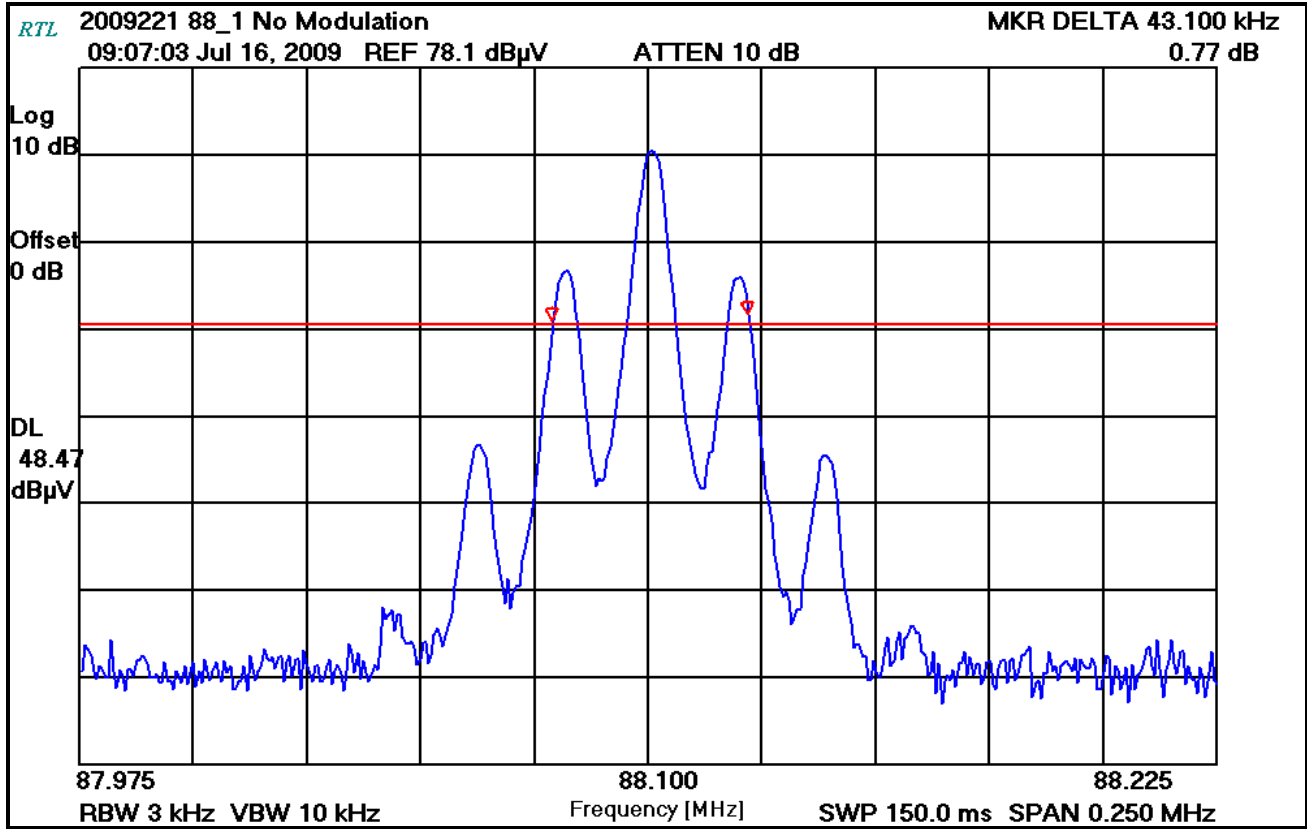


Figure 4.5-1: Test Configuration 5: Occupied Bandwidth Setup Stratus 6 with FM Direct Adapter

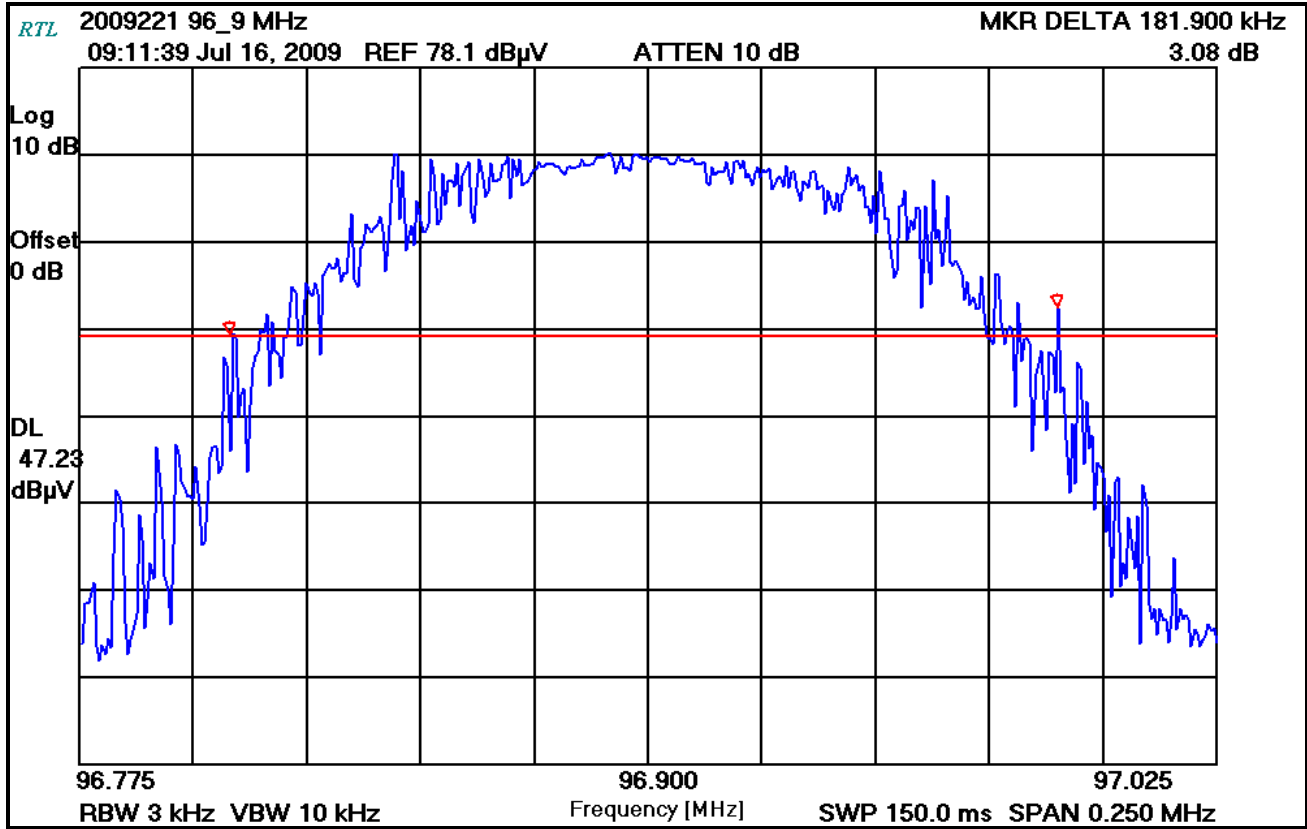
Plot 4.5-1: Bandwidth Plot at 88.1 MHz with Modulation



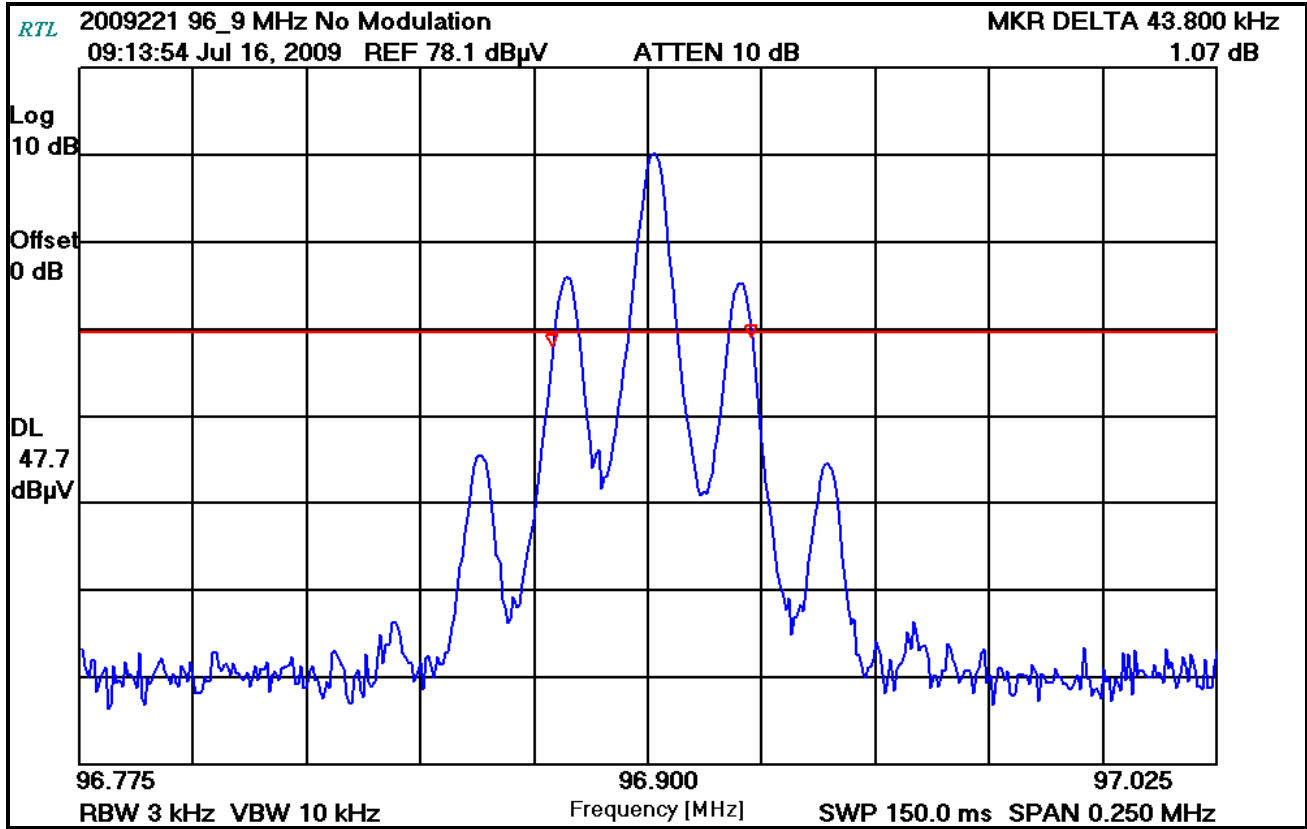
Plot 4.5-2: Bandwidth Plot at 88.1 MHz without Modulation



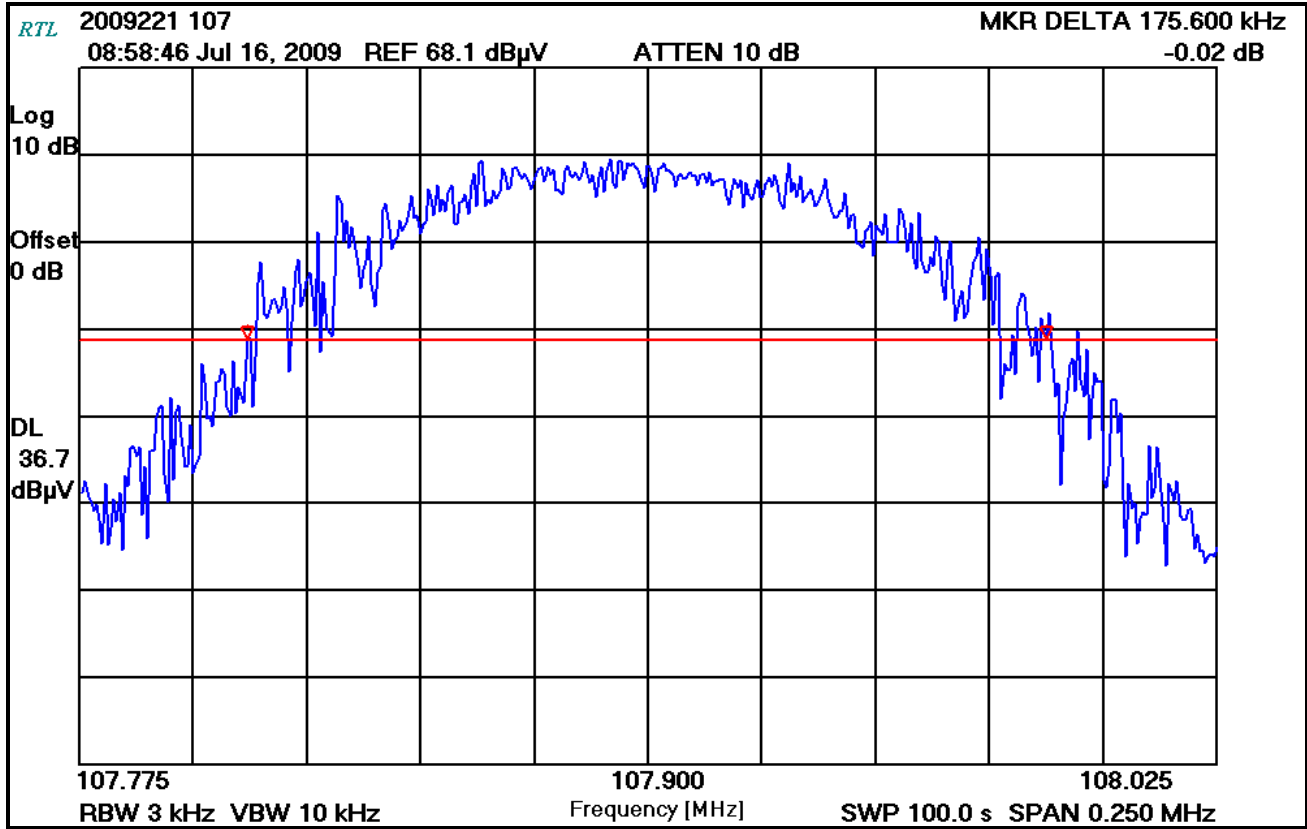
Plot 4.5-3: Bandwidth Plot at 96.9 MHz with Modulation



Plot 4.5-4: Bandwidth Plot at 96.9 MHz without Modulation



Plot 4.5-5: Bandwidth Plot at 107.9 MHz with Modulation



Plot 4.5-6: Bandwidth Plot at 107.9 MHz without Modulation

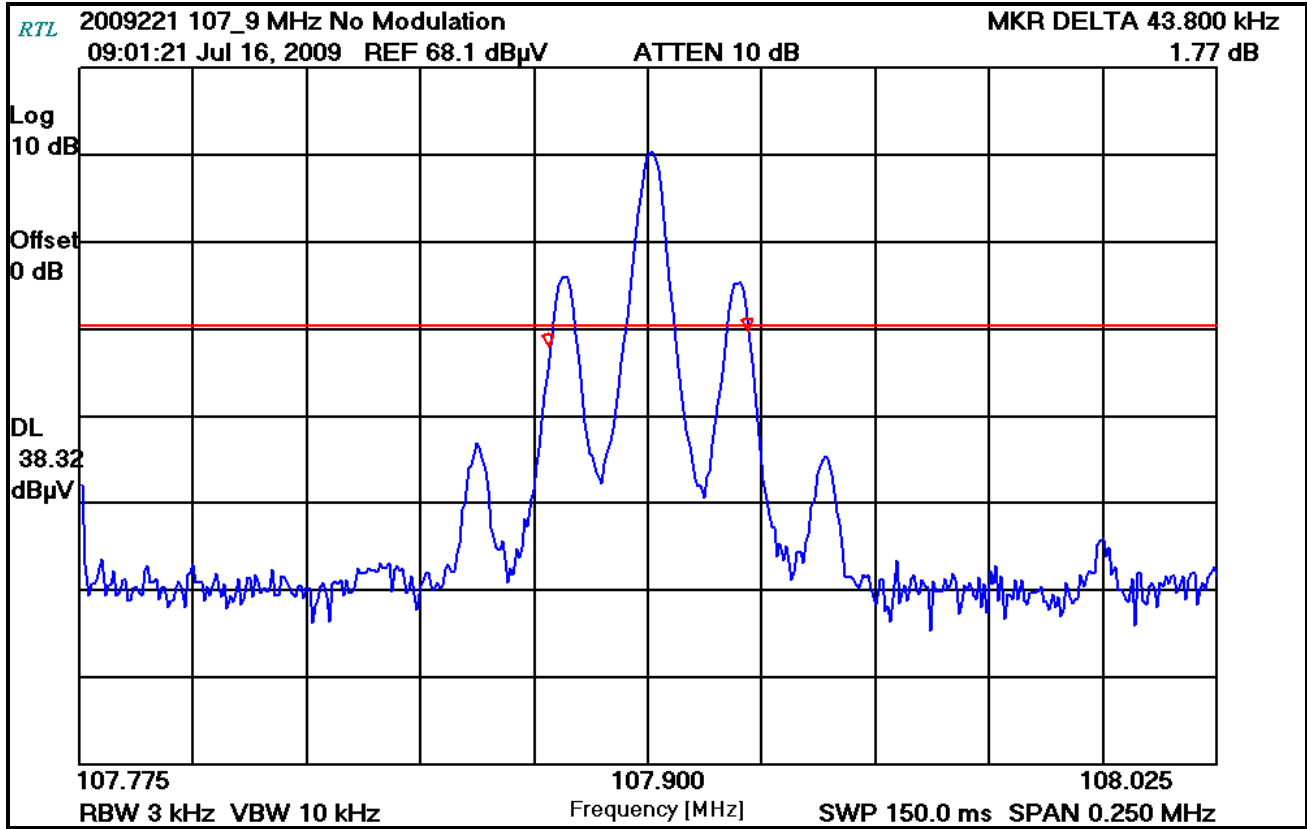


Table 4.5-2: Bandwidth Equipment List

Part Type	Manufacturer	Model	Serial Number	Barcode	Calibration Due Date
EMI Receiver RF Section, (9 KHz - 6.5 GHz)	Hewlett Packard	85462A	3325A00159	900913	4/15/2010
RF Filter Section, (100 KHz to 6.5 GHz)	Hewlett Packard	85460A	3330A00107	900914	4/15/2010

4.6 Radiated Spurious Emission Measurements - Test Configuration 6: FEA

The EUT was configured as shown in the configuration below. The out-of-band radiated emissions were measured at a distance of three meters. The EUT was powered by a fully charged 12 Vdc car battery. The FM Modulator was enabled and the audio level was set to the maximum audio level. The EUT was configured to receive a live satellite broadcast. The cables were manipulated to produce the highest emission level. The EUT was tested using the harmonics of the following frequencies: 89.1 MHz, 97.7 MHz and 106.3 MHz. Data was taken for both horizontal and vertical antenna polarizations with the worst case levels recorded.

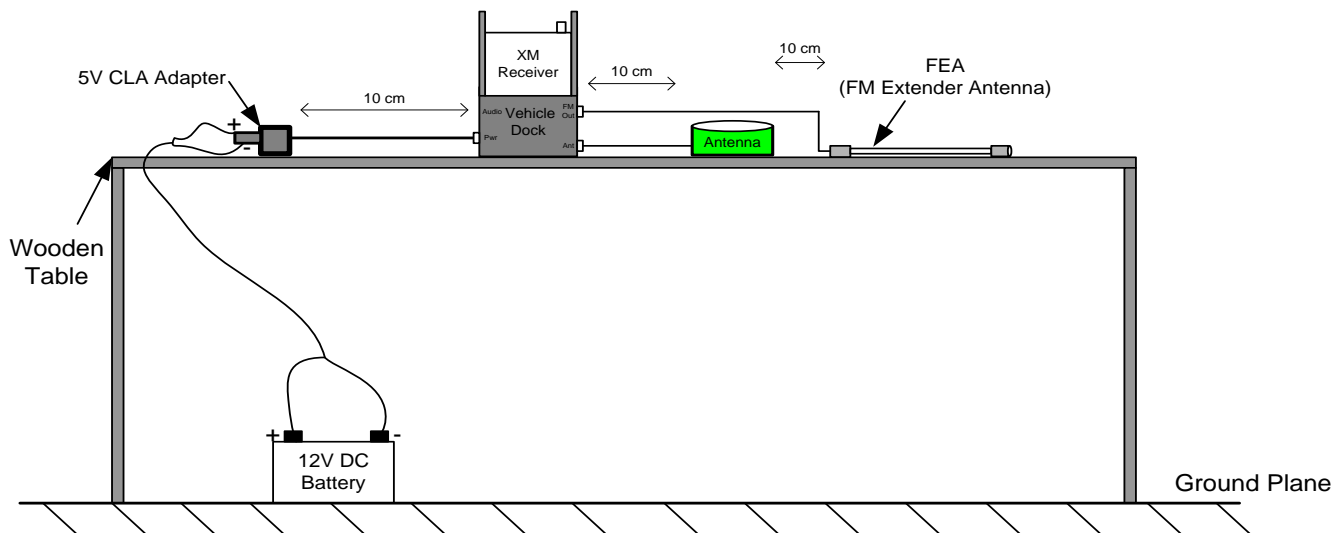


Figure 4.6-1: Test Configuration 6 - Car Cradle with FEA (FM Extender Antenna) Radiated Emissions

4.6.1 15.209(a) Radiated Emission Measurements

Temperature: 87°F Humidity: 43%

Table 4.6-1: FEA Adapter SDPIV1 Cradle - In-Band

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC Limit (dBuV/m)	FCC Margin (dB)	IC Limit (dBuV/m)	IC Margin (dB)	Pass/Fail
89.100	Qp	H	80	2.0	63.7	-26.0	37.7	48.0	-10.3	60.0	-22.3	Pass
89.100	Qp	V	0	2.4	56.3	-26.0	30.3	48.0	-17.7	60.0	-29.7	Pass
97.700	Qp	H	150	1.8	64.6	-23.2	41.4	48.0	-6.6	60.0	-18.6	Pass
97.700	Qp	V	0	2.5	58.8	-23.2	35.6	48.0	-12.4	60.0	-24.4	Pass
106.300	Qp	H	180	2.5	66.7	-21.8	44.9	48.0	-3.1	60.0	-15.1	Pass
106.300	Qp	V	270	4.0	59.6	-21.8	37.8	48.0	-10.2	60.0	-22.2	Pass

Based on the operational mode of this test setup, 15.239 emission limits apply to the above data table.

Note: There were no out of band emissions found for all frequencies.

Table 4.6-2: FEA Adapter UC8 Cradle - In-Band

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC Limit (dBuV/m)	FCC Margin (dB)	IC Limit (dBuV/m)	IC Margin (dB)	Pass/Fail
89.100	Qp	H	110	1.8	69.3	-26.0	43.3	48.0	-4.7	60.0	-16.7	Pass
89.100	Qp	V	30	3.0	62.0	-26.0	36.0	48.0	-12.0	60.0	-24.0	Pass
97.700	Qp	H	100	3.0	68.2	-23.2	45.0	48.0	-3.0	60.0	-15.0	Pass
97.700	Qp	V	330	3.0	58.8	-23.2	35.6	48.0	-12.4	60.0	-24.4	Pass
106.300	Qp	H	180	1.5	66.3	-21.8	44.5	48.0	-3.5	60.0	-15.5	Pass
106.300	Qp	V	90	4.0	57.9	-21.8	36.1	48.0	-11.9	60.0	-23.9	Pass

Based on the operational mode of this test setup, 15.239 emission limits apply to the above data table

Note: There were no out of band emissions found for all frequencies.

Table 4.6-3: FEA Adapter SUPV1 Cradle - In-Band

Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	FCC Limit (dBuV/m)	FCC Margin (dB)	IC Limit (dBuV/m)	IC Margin (dB)	Pass/Fail
89.100	Qp	H	80	1.8	68.8	-26.0	42.8	48.0	-5.2	60.0	-17.2	Pass
89.100	Qp	V	330	3.0	61.4	-26.0	35.4	48.0	-12.6	60.0	-24.6	Pass
97.700	Qp	H	260	1.6	68.3	-23.2	45.1	48.0	-2.9	60.0	-14.9	Pass
97.700	Qp	V	0	4.0	60.3	-23.2	37.1	48.0	-10.9	60.0	-22.9	Pass
106.300	Qp	H	120	1.9	66.4	-21.8	44.6	48.0	-3.4	60.0	-15.4	Pass
106.300	Qp	V	40	4.0	58.7	-21.8	36.9	48.0	-11.1	60.0	-23.1	Pass

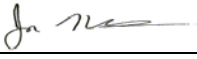

Based on the operational mode of this test setup, 15.239 emission limits apply to the above data table

Note: There were no out of band emissions found for all frequencies.

Table 4.6-4: Emissions Equipment List

Part Type	Manufacturer	Model	Serial Number	Barcode	Calibration Due Date
Conducted Emissions					
Spectrum Analyzer (100 Hz - .15 GHz)	Hewlett Packard	8567A	2602A00160	900968	9/8/2009
Spectrum Analyzer Display Section	Hewlett Packard	85662A	2542A11239	900970	9/8/2009
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00743	900339	9/11/2009
Filter	Solar	8130	947306	900729	8/19/2009
16A LISN	AFJ International	LS16/110VAC	16010020081	901083	10/23/2009
Emissions testing software	Quantum Change	Tile!	4.0.A.8	N/A	N/A
Radiated Emissions (OATS1)					
Amplifier (20 MHz – 2 GHz)	Rhein Tech Laboratories, Inc.	PR-1040	900905	900905	6/2/2010
Bi-Log Antenna (20 MHz – 2 GHz)	Schaffner Chase	CBL6112B	2099	900791	12/12/2010
EMI Receiver RF Section, (9 KHz - 6.5 GHz)	Hewlett Packard	85462A	3325A00159	900913	4/15/2010
RF Filter Section, (100 KHz - 6.5 GHz)	Hewlett Packard	85460A	3330A00107	900914	4/15/2010
Emissions testing software	Rhein Tech Laboratories, Inc.	Automated Emission Tester	Rev. 14.0.2	N/A	N/A

Test Personnel:

Jon Wilson EMC Engineer	 Signature	July 13, 14, 2009 Dates of Tests
Dan Baltzell EMC Engineer	 Signature	July 15, 16, 2009 Dates of Tests

5 Sample Calculations

5.1 Radiated Emissions Measurement Sample Calculation

$$\text{Limit} = 150 \mu\text{V}/\text{m} = 20 * \log (150\mu\text{V}/1\mu\text{V}) = 43.5 \text{ dB}\mu\text{V}/\text{m}$$

$$\text{Field Strength Level}_{(\text{dB}\mu\text{V}/\text{m})} = \text{Analyzer Level}_{(\text{dB}\mu\text{V})} + \text{Site Correction Factor}_{(\text{dB})}$$

Where:

$$\text{Site Correction Factor}_{(\text{dB})} = \text{Antenna Correction Factor}_{(\text{dB})} + \text{Cable Loss}_{(\text{dB})} - \text{Preamp Gain}_{(\text{dB})}$$

$$\text{Margin}_{(\text{dB})} = \text{Field Strength Level} - \text{Limit}$$

6 Conclusion

The data in this test report demonstrates that the **Sirius XM Radio Stratus 6 FM Transmitter, Model # SDSV6, FCC ID: RS2SDSV6**, is in compliance with the requirements specified within FCC Part 15 Subpart B and IC RSS-210.