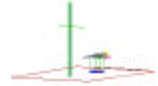




PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA
Tel. 410.290.6652 / Fax 410.290.6554
http://www.pctestlab.com



CERTIFICATE OF COMPLIANCE FCC Part 15.239 / IC RSS-210 Certification

Applicant Name:
Sirius XM Satellite Radio, Inc.
3161 S.W. 10th Street
Deerfield Beach, FL 33442

Attn: Beejay Jolayemi
202-680-4288

Date of Testing:
November 9-18, 2009
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0911162098.RS2


FCC ID:	RS2XPVD1
IC Cert. No.:	5697A-XPVD1
APPLICANT:	Sirius XM Satellite Radio, Inc.

EUT Type: PowerConnect XMp3i Vehicle Dock
Frequency Range: 88 – 108MHz (FM Band)
FCC Classification: Part 15 Low Power Transceiver, Rx Verified
FCC Rule Part(s): FCC Part 15 Subpart C (15.239)
IC Rule Part(s): RSS-210

The device bearing the FCC Identifier specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and has been tested in accordance with the measurement procedures specified in ANSI C63.4-2003 (See Test Report). These measurements were performed with no deviation from the standards. Test results reported herein relate only to the item(s) tested.

I authorize and attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

NVLAP accreditation does not constitute any product endorsement by NVLAP or any agency of the United States Government. PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.


 Randy Ortanez
 President







FCC ID: RS2XPVD1		FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0911162098.RS2	Test Dates: November 9-18, 2009	EUT Type: PowerConnect XMp3i Vehicle Dock	Page 1 of 37	

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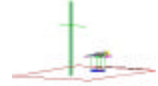
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MEASUREMENT REPORT

FCC Part 15.239 / IC RSS-210

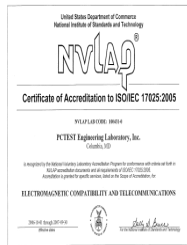


§ 2.1033 General Information



APPLICANT: Sirius XM Satellite Radio, Inc.
APPLICANT ADDRESS: 3161 S.W. 10th Street
 Deerfield Beach, FL 33442,
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S): Part 15 Subpart C (15.239)
IC RULE PART(S): RSS-210
MODEL : XPVD1
Test Device Serial No.: N/A Production Pre-Production Engineering
FCC CLASSIFICATION: Part 15 Low Power Transceiver, Rx Verified
DATE(S) OF TEST: November 9-18, 2009
TEST REPORT S/N: 0911162098.RS2

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.



- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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1.0 INTRODUCTION

1.1 Evaluation Procedure

The evaluation of the Sirius XM PowerConnect XMp3i Vehicle Dock was performed as described in the Sirius XM New Product Certification test plan dated November 2, 2009. The measurement procedure described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) was used in the measurement of the **Sirius XM PowerConnect XMp3i Vehicle Dock FCC ID: RS2XPVD1 / IC Cert. No.: 5697A-XPVD1.**

Deviation from measurement procedureNone

1.2 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.3 PCTEST Test Location

The map at the right shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (see Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 27, 2006 and Industry Canada.

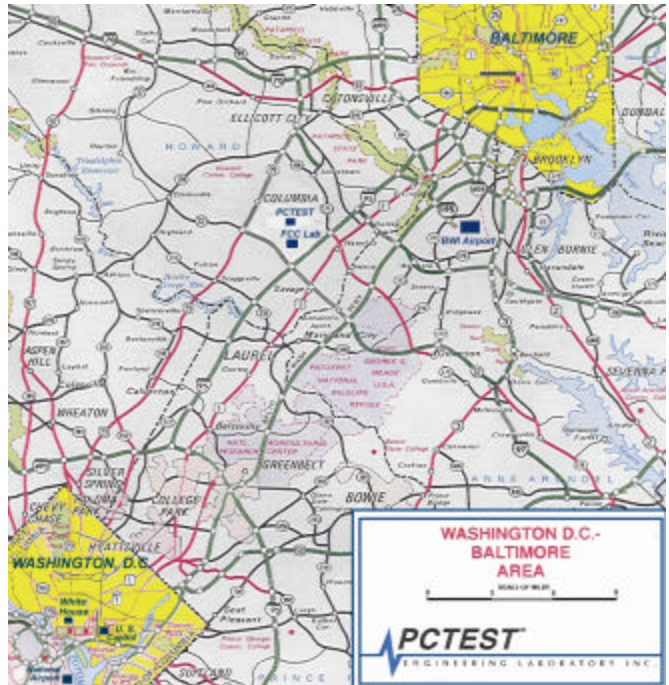


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sirius XM PowerConnect XMp3i Vehicle Dock FCC ID: RS2XPVD1**. The FM Transmitter covered by the test data contained in this report is located in the car cradle portion of the XMp3i Car Kit. The test data contained in this report pertains only to the emissions due to the FM band transmitter of the EUT.

Manufacturer / Model	Description
Pioneer Sirius XM / Model: XPVD1	PowerConnect XMp3i Vehicle Dock

Table 2-1. EUT Equipment Description

2.2 Operation Mode

The Sirius XM PowerConnect XMp3i Vehicle Dock FCC ID: RS2XPVD1 was set to transmit in the FM band. Please see Section 7.0 for more information on the test setup.



2.3 Test Configuration Descriptions

The Sirius XM PowerConnect XMp3i Vehicle Dock was tested in a total of 7 different configurations for unintentional and intentional emission compliance to FCC and IC standards. Below is a brief list of each configuration set-up. Test results for test configurations 1 – 3 can be found in a separate FCC Part 15 verification test report.

Test Configuration #	Emissions Tested	Description
1	Unintentional	XMp3i and FM Direct Adapter (See separate Part 15B report)
2	Unintentional	XMp3i and Cassette Adapter (See separate Part 15B report)
3	Unintentional	XMp3i and XM Antenna and Ear Buds (See separate Part 15B report)
4	Intentional	XMp3i and FEA (FM Extender Antenna)
5	Intentional	XMp3i and iFMCLA Power Adapter
6	Intentional (In-Situ)	XMp3i and Dodge Caravan, Nissan Altima, and Ford Focus
7	Occupied Bandwidth	XMp3i and FM Direct

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 DESCRIPTION OF TEST

3.1 Radiated Emissions

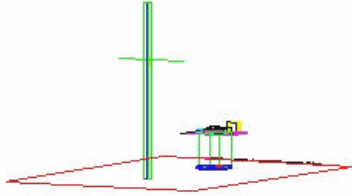


Figure 3-1. 3-Meter Test Site

Preliminary measurements were made indoors at 3-meter using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, and turntable azimuth with respect to the antenna was noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using a biconilog antenna. Above 1 GHz, linearly polarized double ridge horn antennas were used.

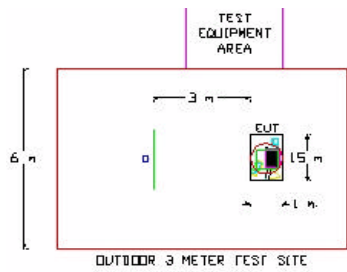


Figure 3-2. Dimensions of Outdoor Test Site

Final measurements were made outdoors at 3-meter test range using a broadband biconilog or horn antennas. The EUT was placed on an 0.8 meter high 1.5m x 1m wooden turn-table. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The detector function was set to CISPR quasi-peak mode, peak, or average mode as appropriate. The bandwidth of the spectrum analyzer was set to 120kHz for frequencies below 1GHz or 1MHz for frequencies above 1GHz. Above 1GHz the detector function was set to average mode (RBW = 1MHz, VBW = 10Hz). Exact measurements and settings are reported with the test data in Section 7.

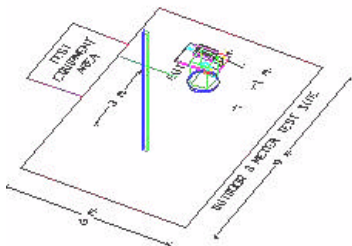


Figure 3-3. Turntable and System Setup

The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. The turntable containing the system was rotated and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission.

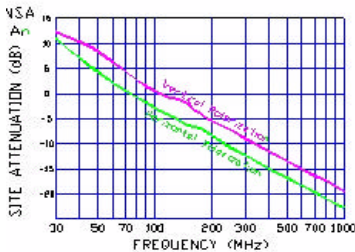


Figure 3-4. Normalized Site Attenuation Curves (H&V)

The EUT was tested in several configurations for showing compliance with the applicable FCC rules and IC requirements. Each setup is unique and individually described in the appropriate test section. In-situ testing was also performed using three different types of vehicles. Testing for in-situ was performed on all 4 sides of the vehicle and while tuned to 3 different FM stations. Prior to selecting the FM transmit station a scan of the ambient in the FM band was performed to determine the best stations (i.e. lowest ambient FM signal) to select for performing the test.

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4.0 SAMPLE CALCULATIONS

4.1 Radiated Emission Measurement Sample Calculation



@ 66.7 MHz

Class B limit	=	100 mV/m = 40.0 dBmV/m
Reading	=	- 76.0 dBm (calibrated level)
Convert to dBμV	=	- 76.0 + 107 = 31.0 dBμV
Antenna Factor + Cable Loss	=	5.8 dB/m
Total	=	36.8 dBμV/m
Margin	=	36.8 - 40.0 = - 3.2 dB
	=	3.2 dB below limit

Note:

$$\text{Level}_{[\text{dB}\mu\text{V}]} = 20 \log_{10} (\text{Level}_{[\mu\text{V}/\text{m}]})$$

$$\text{Level}_{[\text{dB}\mu\text{V}]} = \text{Level}_{[\text{dBm}]} + 107$$



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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	No.165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	11713A	Attenuation/Switch Driver	12/4/2008	Annual	12/4/2009	3439A02645
Agilent	8447D	Broadband Amplifier	N/A		N/A	1937A03348
Agilent	8447D	Broadband Amplifier	N/A		N/A	2443A01900
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/4/2008	Annual	12/4/2009	3008A00985
Agilent	85650A	Quasi-Peak Adapter	12/4/2008	Annual	12/4/2009	3303A01872
Agilent	85650A	Quasi-Peak Adapter	3/24/2009	Annual	3/24/2010	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	3/24/2009	Annual	3/24/2010	2618A02866
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	3/24/2009	Annual	3/24/2010	2542A11898
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	3638A08713
Agilent	E4407B	ESA Spectrum Analyzer	9/28/2009	Annual	9/28/2010	US39210313
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	10/1/2009	Annual	10/1/2010	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/25/2009	Biennial	3/25/2011	MY45470194
Emco	6502	Active Loop Antenna (10k - 30 MHz)	5/15/2009	Biennial	5/15/2011	267
Emco	3816/2	LISN	9/8/2008	Biennial	9/8/2010	9707-1077
Emco	3816/2	LISN	9/8/2008	Biennial	9/8/2010	9707-1079
Pasternack	PE7000-6	6 dB Attenuator	N/A		N/A	N/A
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/17/2009	Biennial	7/17/2011	A051107

Table 5-1. Annual Test Equipment Calibration Schedule



FCC ID: RS2XPVD1		FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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6.0 ENVIRONMENTAL CONDITIONS

The temperature is controlled within range of 15°C to 35°C.

The relative humidity is controlled within range of 10% to 75%.

The atmospheric pressure is controlled within the range 86-106kPa (860-1060mbar).

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7.0 TEST DATA

7.1 Summary

Company Name: Sirius XM Satellite Radio, Inc.
 FCC ID: RS2XPVD1
 IC Cert. No.: 5697A-XPVD1
 Frequencies Examined: 88.1MHz – 107.9MHz

FCC Part Section(s)	IC Section	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (Tx)						
15.239(a)	RSS-210 (A2.8)	Bandwidth	< 200 kHz	CONDUCTED	PASS	Section 7.2
15.239(a)	RSS-210 (A2.8)	Frequency of Operation	88 – 108 MHz		PASS	Section 7.2
15.239(b)	RSS-210 (A2.8(1))	In-Band Emissions	< 250 μ V/m within permitted 200 kHz band	RADIATED	PASS	Sections 7.4 and 7.6
N/A	RSS-210 (A2.8)	Emissions with In-Glass FM Antenna	< 1000 μ V/m within the permitted 200 kHz band		PASS	Section 7.5
15.239(c) 15.209	RSS-210 (2.7)	Out-of-Band Emissions	Emissions outside of the specified band must meet the radiated limits detailed in 15.209 (RSS-210 table 3 limits)		PASS	Sections 7.7 and 7.8
15.207	RSS-Gen	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	Battery Powered	N/A	N/A

Table 7-1 Summary of Test Results

FCC ID: RS2XPVD1		FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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7.2 200 kHz Bandwidth Measurement

§15.239 (a), RSS-210 (A2.8)

The FM transmitter was set to maximum audio output and was tuned between 88.1MHz and 107.9MHz. The bandwidth at 20dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the receive antenna of the EUT. The EUT's 20dB bandwidth was measured at three frequencies in the FM band and in each of two configurations: 1) while receiving a live XM signal and 2) while replaying saved songs. All measurements were made on the spectrum analyzer with the detector set to peak while max holding the trace. **The maximum permissible bandwidth is 200 kHz.**

It was verified that the FM transmitter only allowed selection of FM frequencies from 88.1 to 107.9 MHz in 200kHz increments.

Frequency [MHz]	Mode	200 kHz Bandwidth Test Results	
		[kHz]	Pass/Fail
88.1	Live	145.80	Pass
96.9	Live	143.10	Pass
107.9	Live	147.30	Pass
88.1	MP3	126.90	Pass
96.9	MP3	125.10	Pass
107.9	MP3	128.40	Pass

Table 7-2. 200kHz Bandwidth Measurements – Test Configuration #7

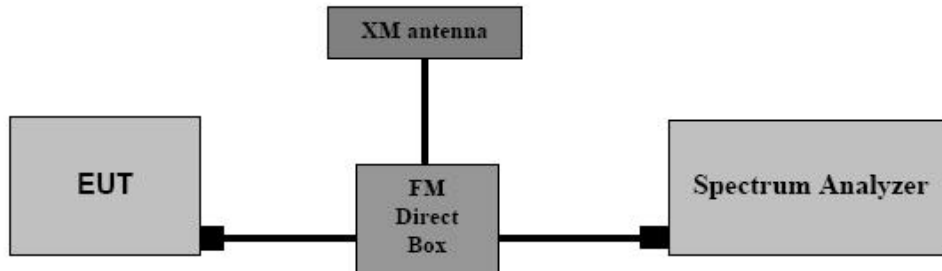


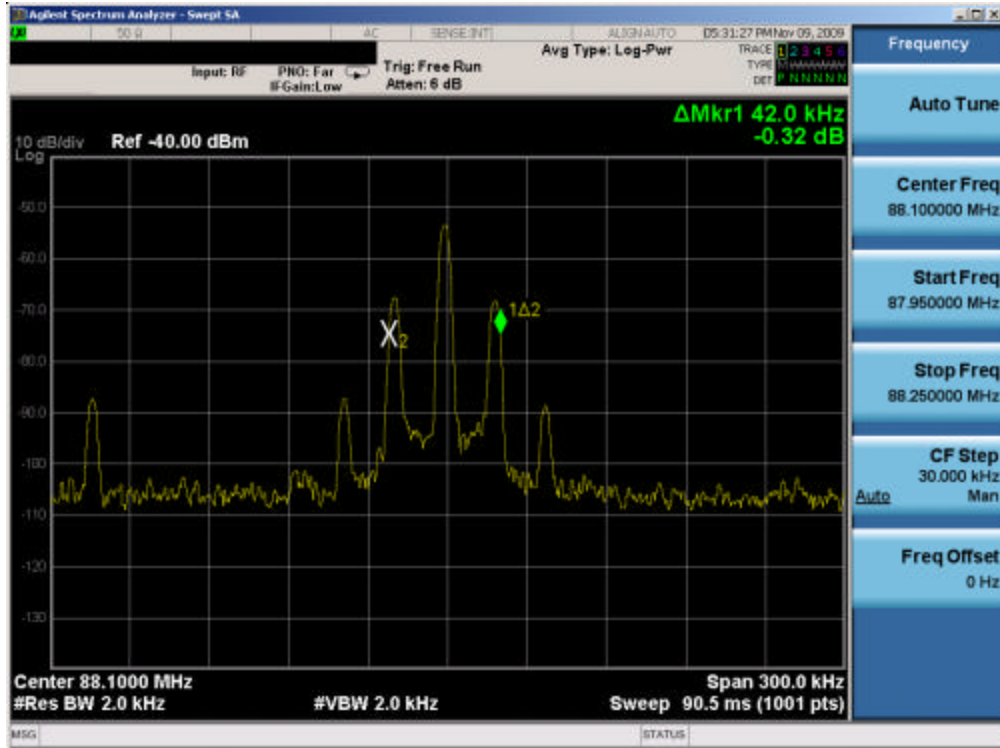


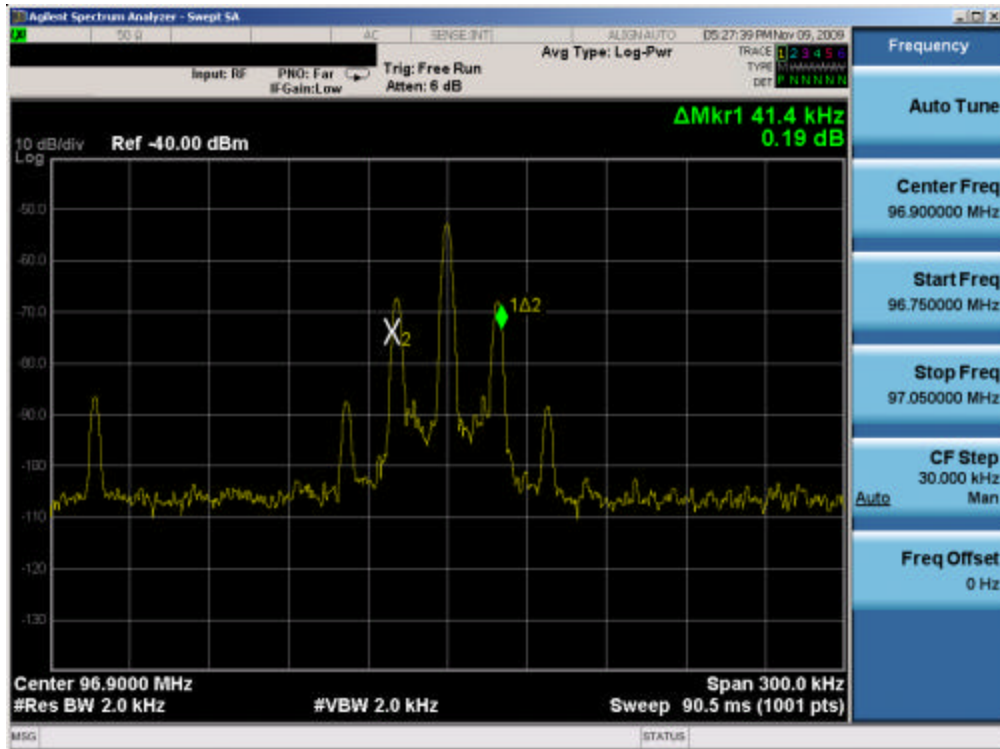
Figure 7-1. Test Instrument & Measurement Setup

The following figures are plots of the emission bandwidth both with modulation and without modulation. These plots are obtained with the spectrum analyzer set to Peak Detector mode and Max Hold as indicated in the top right box under the test date. The “TYPE” is “M” indicating max hold and the “DET” is “P” indicating Peak Detector. The information pertaining to “Avg. Type” and “Avg. Hold” is not applicable to these plots and would only be applicable if an average measurement were being performed.

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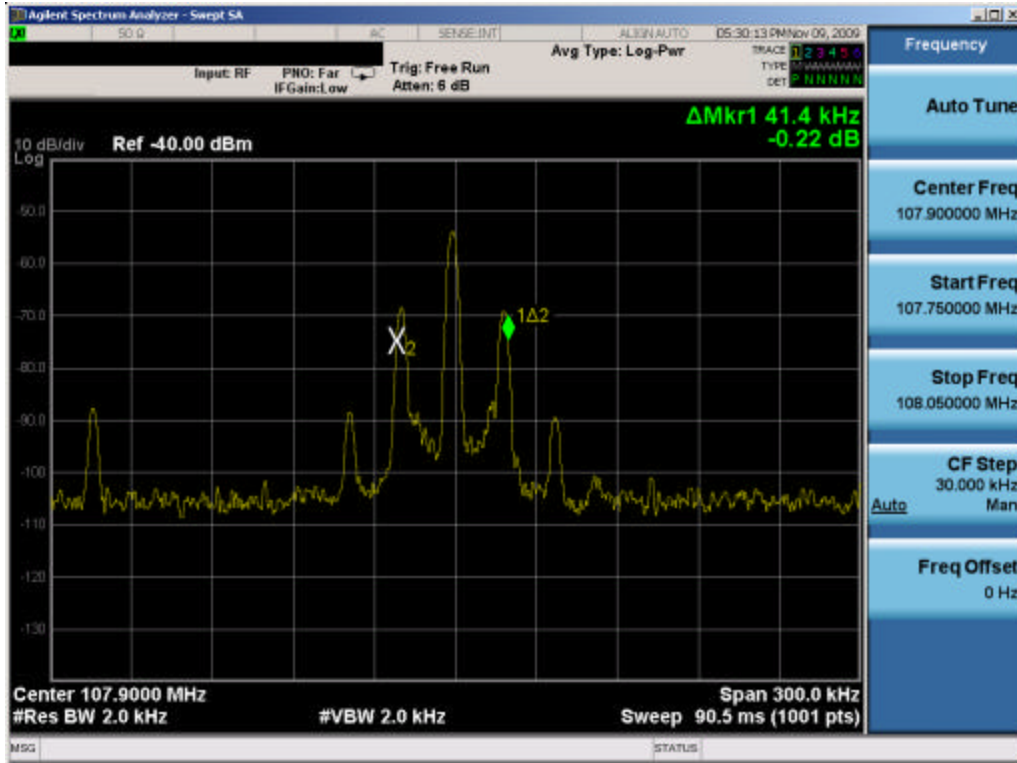


Plot 7-1. Bandwidth Plot at 88.1MHz with No Modulation

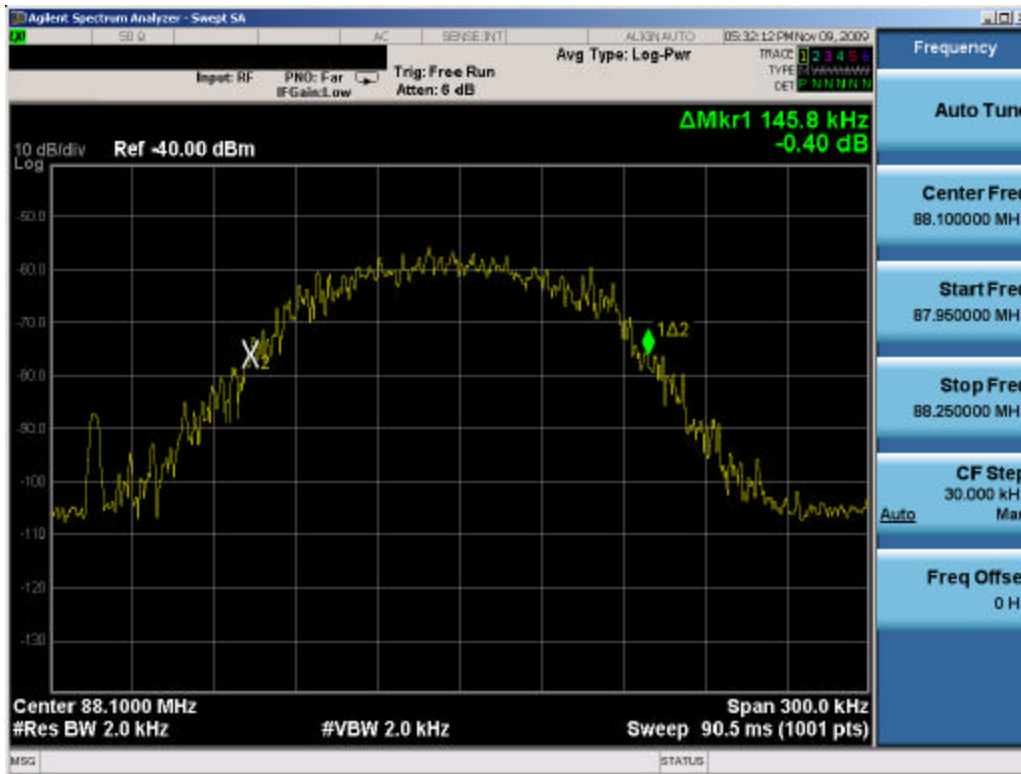


Plot 7-2. Bandwidth Plot at 96.9MHz with No Modulation

FCC ID: RS2XPVD1	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)	SIRIUS XM XMV	Reviewed by: Quality Manager
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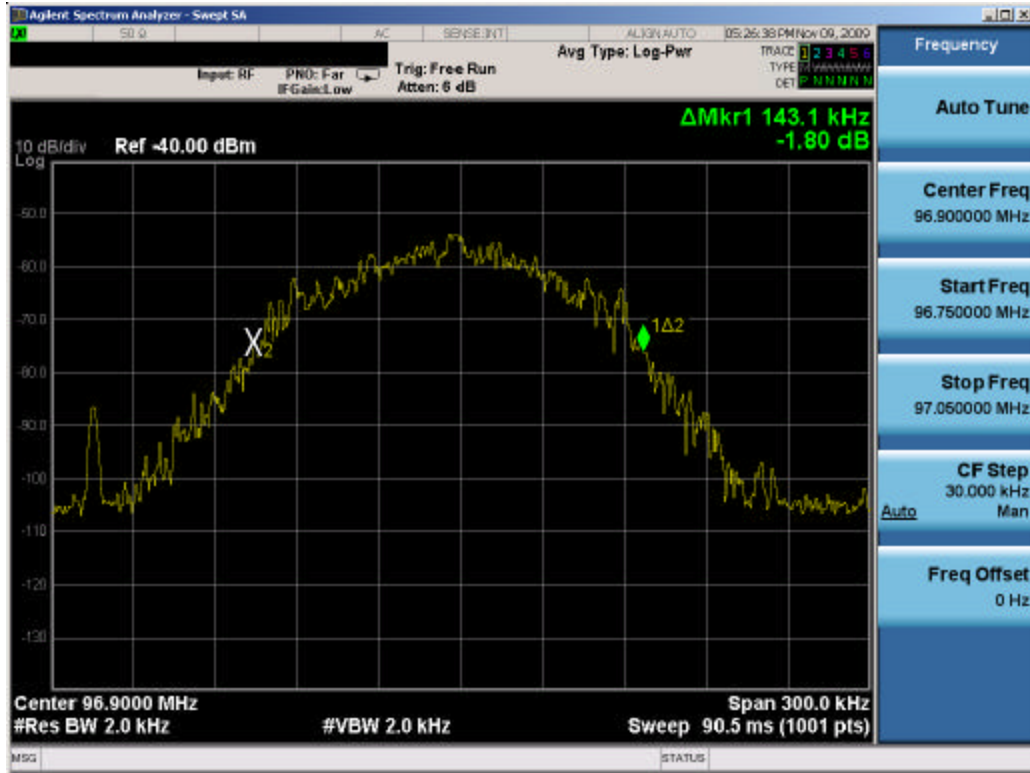


Plot 7-3. Bandwidth Plot at 107.9MHz with No Modulation

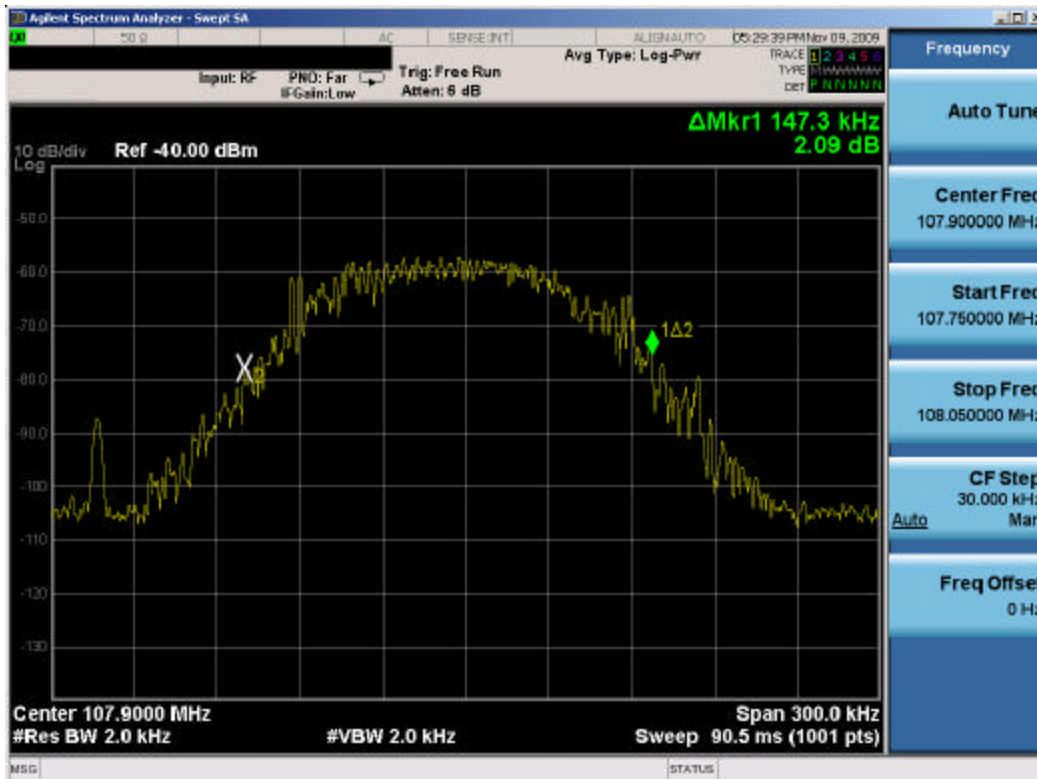


Plot 7-4. Bandwidth Plot at 88.1MHz with Modulation (Live XM Signal)

FCC ID: RS2XPVD1	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)	SIRIUS XM	Reviewed by: Quality Manager
Test Report S/N: 0911162098.RS2	Test Dates: November 9-18, 2009	EUT Type: PowerConnect XMP3i Vehicle Dock		Page 13 of 37

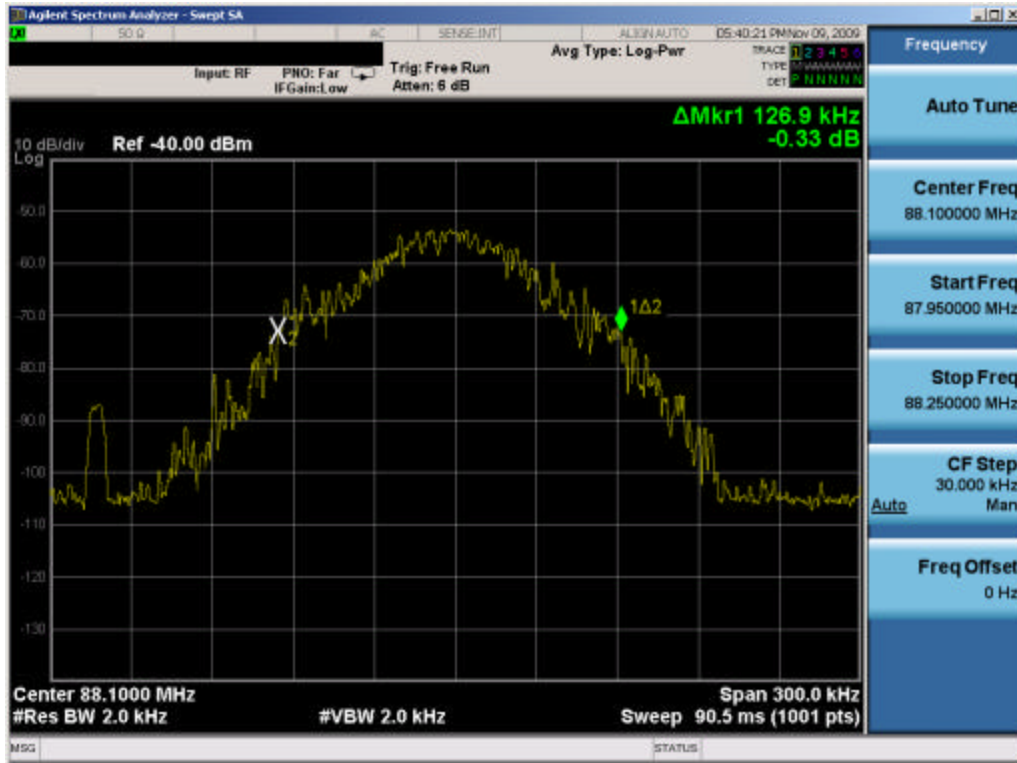


Plot 7-5. Bandwidth Plot at 96.9MHz with Modulation (Live XM Signal)

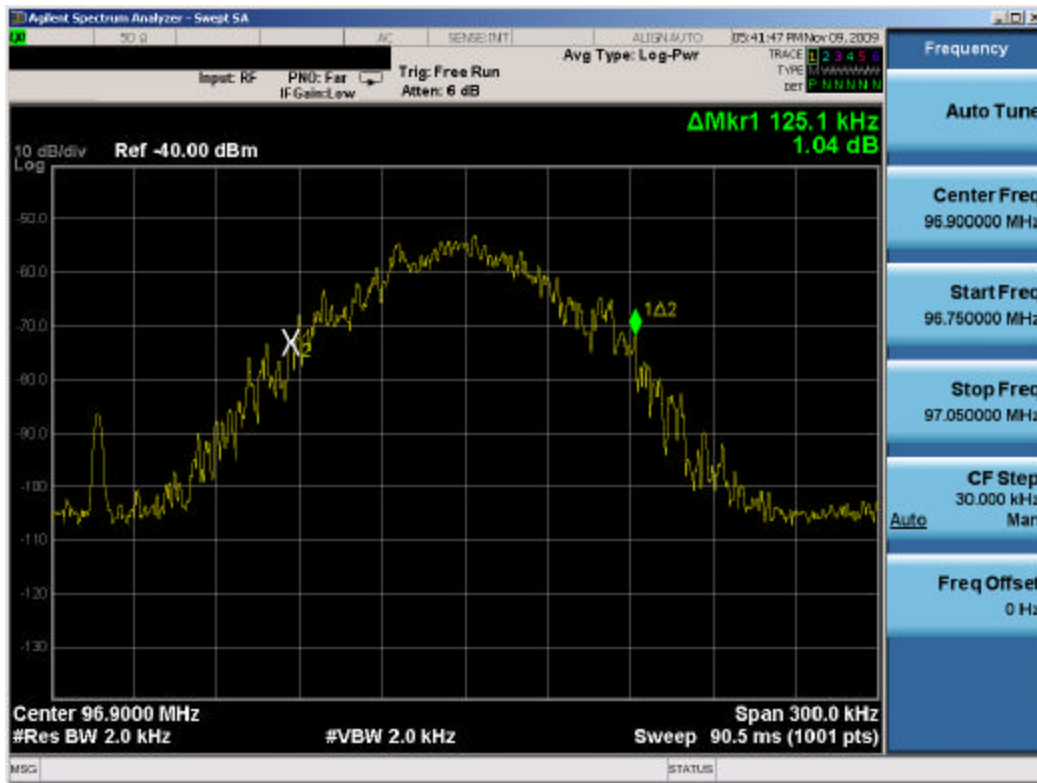


Plot 7-6. Bandwidth Plot at 107.9MHz with Modulation (Live XM Signal)



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Plot 7-7. Bandwidth Plot at 88.1MHz with Modulation (MP3 Mode)



Plot 7-8. Plot at 96.9MHz with Modulation (MP3 Mode)

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Plot 7-9. Plot at 107.9MHz with Modulation (MP3 Mode)

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7.3 Radiated Spurious Emission Measurements

§15.239 (b)(c) / §15.209 / RSS-210 (A2.8)

The EUT was tested from 9kHz up to the 10th harmonic of the highest in-band frequency of the transmitter. All measurements were recorded with a spectrum analyzer employing an average detector. Above 1 GHz, a linearly polarized horn antenna was used for measurements. All out-of-band emissions must not exceed the limits shown in Table 7-3 per Section 15.209.

Frequency	Field Strength [mV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3



Table 7-3. Radiated Limits

Sample Calculation

- Field Strength Level [dB_{μV/m}] = Analyzer Level [dBm] + 107 + AFCL [dB]

Notes:

- AFCL = Antenna Factor [dB] + Cable Loss [dB]

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7.4 In-Band Radiated Spurious Emission Measurements – FM Extender Antenna §15.239 (b) / §15.209, RSS-210 (A2.8)

Mode: Live XM Signal

Measurement Distance: 3 Meters

Frequencies Tested: 88.1, 96.9, 107.9MHz

Test Configuration 4 Details:

- ⌚ Car Cradle is placed on the back edge of the wooden testing table.
- ⌚ Car Cradle's 'FM Out' port is connected to FEA unit.
- ⌚ Car cradle's 'Audio' port populated with RCA audio cable.
- ⌚ Car cradle powered by 5V iFMCLA power adapter and twisted pair CLA socket.
- ⌚ Car Cradle's 'Ant In' port connected to the XM satellite antenna.
- ⌚ Receiver configured to receive live XM service.
- ⌚ Receiver configured for Max audio output level.
- ⌚ 12 VDC car battery placed on the floor underneath the table.

The following diagram depicts the test setup for Configuration #4. Photographs of equipment and cable placement can be found in the Test Setup Photographs.

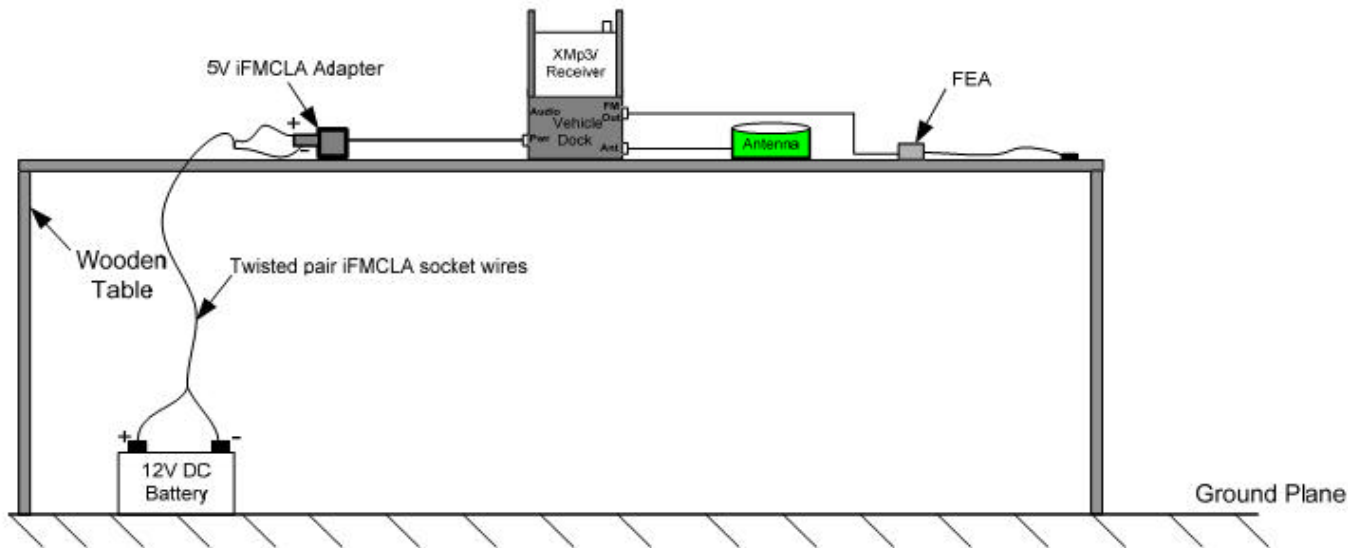


Figure 7-2. Test Setup Configuration #4



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Frequency [MHz]	Average Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
88.10	-81.01	11.13	V	37.12	47.96	-10.84
96.90	-84.04	11.37	V	34.33	47.96	-13.63
107.90	-77.60	11.91	V	41.31	47.96	-6.65

Table 7-4. In-Band Radiated Measurements– Test Configuration #4

NOTES:

1. All measurements were recorded using a spectrum analyzer employing an average detector with RBW equal to 120kHz and VBW equal to 100Hz. Peak levels were within 20dB of recorded average levels.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The EUT was supplied with a fully-recharged 12V battery.

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7.5 In-Band Radiated Spurious Emission Measurements – iFMCLA Power Adapter §15.239 (b) / §15.209, RSS-210 (A2.8)

Mode: Live XM Signal

Measurement Distance: 3 Meters

Frequencies Tested: 88.1, 96.9, 107.9MHz

Test Configuration 5 Details:

- ⌚ Car Cradle is placed on the back edge of the wooden testing table.
- ⌚ Car Cradle's 'FM Out' port is left open.
- ⌚ Car cradle's 'Audio' port populated with RCA audio cable.
- ⌚ 12 VDC car battery is placed on top of the table.
- ⌚ Car cradle powered by 5V iFMCLA power adapter and twisted pair CLA socket.
- ⌚ Car Cradle's 'Ant In' port connected to the XM satellite antenna.
- ⌚ Receiver configured to receive live XM service.
- ⌚ Receiver configured for Max audio output level.

The following diagram is for the test setup configuration #5. Photographs of equipment and cable placement can be found in the Test Setup Photographs.

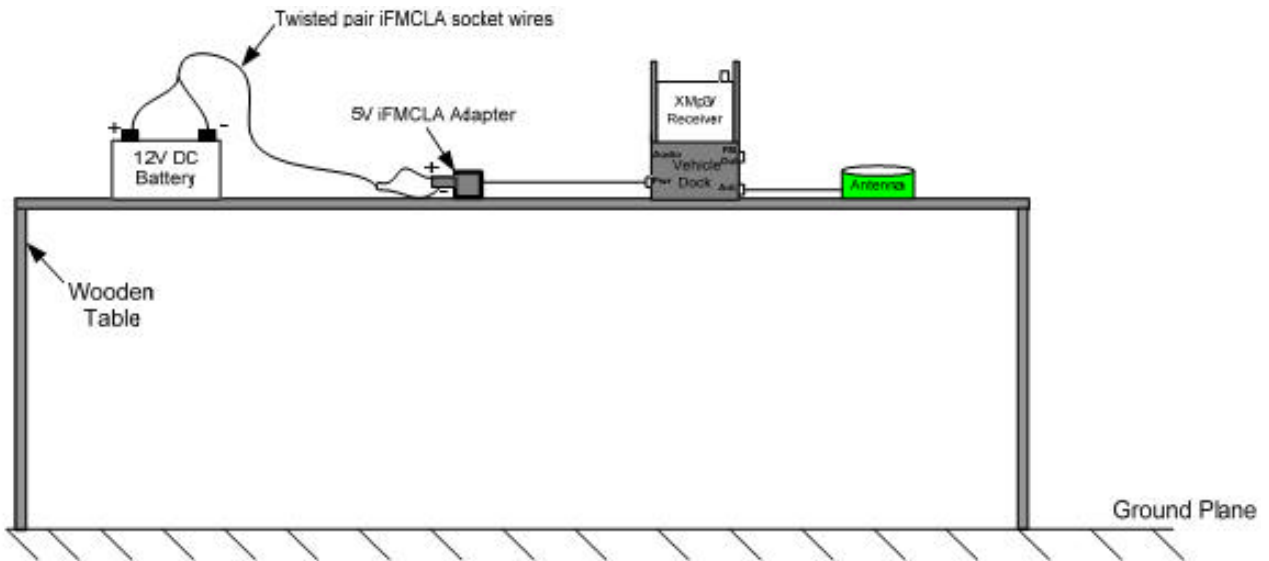




Figure 7-3. Test Setup Configuration #5



FCC ID: RS2XPVD1		FCC Pt. 15.239 / IC RSS-210 MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Frequency [MHz]	Average Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
88.10	-71.41	11.13	H	46.72	48.00	-1.28
96.90	-73.64	11.37	H	44.73	48.00	-3.27
107.90	-74.20	11.91	H	44.71	48.00	-3.29

Table 7-5. In-Band Radiated Measurements – Test Configuration #5

NOTES:

1. All measurements were recorded using a spectrum analyzer employing an average detector with RBW equal to 120kHz and VBW equal to 100Hz. Peak levels were within 20dB of recorded average levels.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The EUT was supplied with a fully-recharged 12V battery.
4. Results listed above for Test Configuration #5 are according to setup details prescribed by Sirius XM.

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7.6 In-Band Radiated Spurious Emission Measurements – In-Situ

§15.239 (b) / §15.209

Mode:	<u>Live XM Signal</u>
Measurement Distance:	<u>3 Meters</u>
Frequencies Tested:	<u>91.7, 98.3, 105.3MHz</u>

The XM XPVD1 and receiver were installed in and powered by the cigarette lighter jack of three different vehicles: a Dodge Caravan, a Nissan Altima, and a Ford Focus. The FM signal is injected through the CLA.



Test Configuration 6 Details:

- ⌚ Receiver connected to the vehicle cradle powered by the 5V iFMCLA power cable adapter via the vehicles CLA outlet for three different sized vehicles, i.e. small, medium and large.
- ⌚ Vehicle cradle connected to an XM antenna.
- ⌚ Antenna mast should be rolled along each side of the vehicle, along a track that maintains a distance of 3 meters from the periphery of the vehicle.
- ⌚ At each emission peak, the antenna's mast height should be adjusted between 1 & 4 meters to maximize the emissions.
- ⌚ Frequencies should be chosen for each setup where the local FM signals are the weakest.
- ⌚ Testing should be performed with the receive antenna positioned both vertically and horizontally.
- ⌚ All peak measurements should be performed with the RBW set to 120KHz and the VBW set to 300KHz; then with the VBW set to 100Hz for average measurements.
- ⌚ EUT should be configured to receive live XM broadcast channels.
- ⌚ Receiver should be configured for Max audio output levels.
- ⌚ The process described above should be repeated for each side of the vehicle i.e. 0°, 90°, 180°, 270°.

The process described above was repeated for each side of the vehicle and at the three FM frequencies.

A diagram of the in-situ test setup is shown in Figure 7-4.

Photographs of equipment and each vehicle can be found in the Test Setup Photographs Exhibit.

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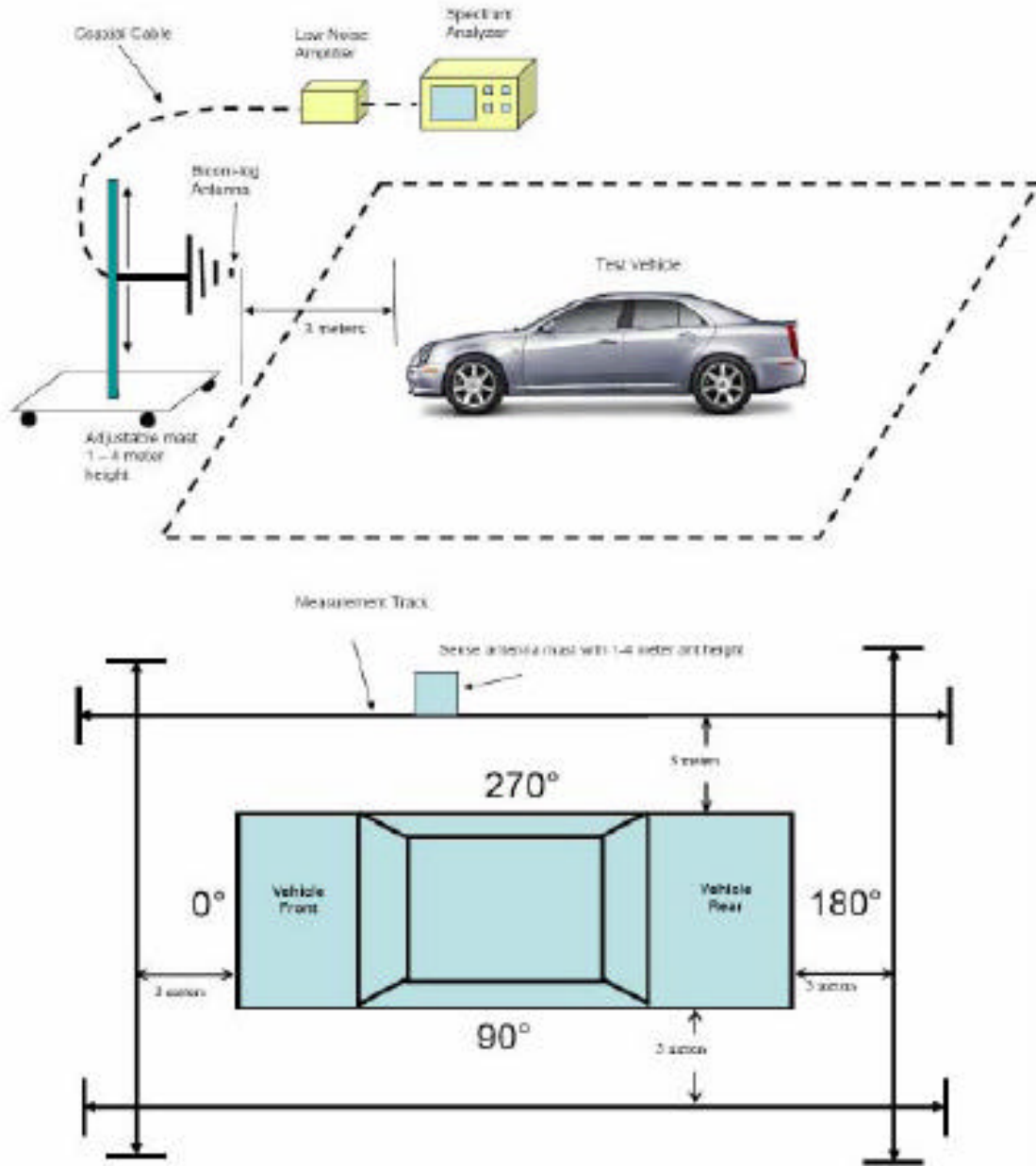


Figure 7-4. In-Situ Test Setup Diagram

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7.6.1 Radiated Measurement Data for Dodge Caravan
§15.239 (b) / §15.209

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-72.36	Avg	11.42	V	46.06	47.96	-1.90
91.70	-67.26	Peak	11.42	V	51.16	67.96	-16.80
98.30	-74.15	Avg	11.66	V	44.51	47.96	-3.45
98.30	-70.55	Peak	11.66	V	48.11	67.96	-19.85
105.30	-72.59	Avg	12.13	V	46.54	47.96	-1.42
105.30	-70.29	Peak	12.13	V	48.84	67.96	-19.12
91.70	-74.16	Avg	11.42	H	44.26	47.96	-3.70
91.70	-71.06	Peak	11.42	H	47.36	67.96	-20.60
98.30	-76.25	Avg	11.66	H	42.41	47.96	-5.55
98.30	-71.35	Peak	11.66	H	47.31	67.96	-20.65
105.30	-80.69	Avg	12.13	H	38.44	47.96	-9.52
105.30	-76.59	Peak	12.13	H	42.54	67.96	-25.42

Table 7-6. In-Band Radiated Measurements (Dodge Caravan Front Side – 0 degrees)

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-77.16	Avg	11.42	V	41.26	47.96	-6.70
91.70	-74.06	Peak	11.42	V	44.36	67.96	-23.60
98.30	-80.25	Avg	11.66	V	38.41	47.96	-9.55
98.30	-76.75	Peak	11.66	V	41.91	67.96	-26.05
105.30	-81.79	Avg	12.13	V	37.34	47.96	-10.62
105.30	-75.59	Peak	12.13	V	43.54	67.96	-24.42
91.70	-75.46	Avg	11.42	H	42.96	47.96	-5.00
91.70	-72.96	Peak	11.42	H	45.46	67.96	-22.50
98.30	-81.25	Avg	11.66	H	37.41	47.96	-10.55
98.30	-77.25	Peak	11.66	H	41.41	67.96	-26.55
105.30	-84.19	Avg	12.13	H	34.94	47.96	-13.02
105.30	-80.69	Peak	12.13	H	38.44	67.96	-29.52

Table 7-7. In-Band Radiated Measurements (Dodge Caravan Rear Side – 180 degrees)



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Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-74.56	Avg	11.42	V	43.86	47.96	-4.10
91.70	-72.26	Peak	11.42	V	46.16	67.96	-21.80
98.30	-77.25	Avg	11.66	V	41.41	47.96	-6.55
98.30	-75.25	Peak	11.66	V	43.41	67.96	-24.55
105.30	-80.29	Avg	12.13	V	38.84	47.96	-9.12
105.30	-77.29	Peak	12.13	V	41.84	67.96	-26.12
91.70	-80.16	Avg	11.42	H	38.26	47.96	-9.70
91.70	-75.06	Peak	11.42	H	43.36	67.96	-24.60
98.30	-78.85	Avg	11.66	H	39.81	47.96	-8.15
98.30	-74.15	Peak	11.66	H	44.51	67.96	-23.45
105.30	-81.29	Avg	12.13	H	37.84	47.96	-10.12
105.30	-77.69	Peak	12.13	H	41.44	67.96	-26.52

Table 7-8. In-Band Radiated Measurements (Dodge Caravan - Driver Side – 90 degrees)

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-75.76	Avg	11.42	V	42.66	47.96	-5.30
91.70	-72.26	Peak	11.42	V	46.16	67.96	-21.80
98.30	-81.25	Avg	11.66	V	37.41	47.96	-10.55
98.30	-78.55	Peak	11.66	V	40.11	67.96	-27.85
105.30	-79.19	Avg	12.13	V	39.94	47.96	-8.02
105.30	-73.79	Peak	12.13	V	45.34	67.96	-22.62
91.70	-71.76	Avg	11.42	H	46.66	47.96	-1.30
91.70	-69.16	Peak	11.42	H	49.26	67.96	-18.70
98.30	-76.45	Avg	11.66	H	42.21	47.96	-5.75
98.30	-73.75	Peak	11.66	H	44.91	67.96	-23.05
105.30	-87.29	Avg	12.13	H	31.84	47.96	-16.12
105.30	-83.29	Peak	12.13	H	35.84	67.96	-32.12

Table 7-9. In-Band Radiated Measurements (Dodge Caravan - Passenger Side – 270 degrees)

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7.6.2 Radiated Measurement Data for Nissan Altima
§15.239 (b) / §15.209

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-76.06	Avg	11.42	V	42.36	47.96	-5.60
91.70	-72.66	Peak	11.42	V	45.76	67.96	-22.20
98.30	-73.15	Avg	11.66	V	45.51	47.96	-2.45
98.30	-71.15	Peak	11.66	V	47.51	67.96	-20.45
105.30	-72.49	Avg	12.13	V	46.64	47.96	-1.32
105.30	-68.49	Peak	12.13	V	50.64	67.96	-17.32
91.70	-83.16	Avg	11.42	H	35.26	47.96	-12.70
91.70	-79.96	Peak	11.42	H	38.46	67.96	-29.50
98.30	-78.05	Avg	11.66	H	40.61	47.96	-7.35
98.30	-74.85	Peak	11.66	H	43.81	67.96	-24.15
105.30	-85.19	Avg	12.13	H	33.94	47.96	-14.02
105.30	-79.09	Peak	12.13	H	40.04	67.96	-27.92

Table 7-10. In-Band Radiated Measurements (Nissan Altima - Front Side – 0 degrees)

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-73.96	Avg	11.42	V	44.46	47.96	-3.50
91.70	-71.96	Peak	11.42	V	46.46	67.96	-21.50
98.30	-76.25	Avg	11.66	V	42.41	47.96	-5.55
98.30	-72.75	Peak	11.66	V	45.91	67.96	-22.05
105.30	-76.09	Avg	12.13	V	43.04	47.96	-4.92
105.30	-74.89	Peak	12.13	V	44.24	67.96	-23.72
91.70	-83.16	Avg	11.42	H	35.26	47.96	-12.70
91.70	-76.76	Peak	11.42	H	41.66	67.96	-26.30
98.30	-84.25	Avg	11.66	H	34.41	47.96	-13.55
98.30	-78.75	Peak	11.66	H	39.91	67.96	-28.05
105.30	-85.99	Avg	12.13	H	33.14	47.96	-14.82
105.30	-74.09	Peak	12.13	H	45.04	67.96	-22.92

Table 7-11. In-Band Radiated Measurements (Nissan Altima - Rear Side – 180 degrees)



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Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-77.96	Avg	11.42	V	40.46	47.96	-7.50
91.70	-74.96	Peak	11.42	V	43.46	67.96	-24.50
98.30	-81.25	Avg	11.66	V	37.41	47.96	-10.55
98.30	-74.65	Peak	11.66	V	44.01	67.96	-23.95
105.30	-79.49	Avg	12.13	V	39.64	47.96	-8.32
105.30	-74.39	Peak	12.13	V	44.74	67.96	-23.22
91.70	-79.06	Avg	11.42	H	39.36	47.96	-8.60
91.70	-76.06	Peak	11.42	H	42.36	67.96	-25.60
98.30	-80.75	Avg	11.66	H	37.91	47.96	-10.05
98.30	-78.25	Peak	11.66	H	40.41	67.96	-27.55
105.30	-80.09	Avg	12.13	H	39.04	47.96	-8.92
105.30	-77.09	Peak	12.13	H	42.04	67.96	-25.92

Table 7-12. In-Band Radiated Measurements (Nissan Altima - Driver Side – 90 degrees)

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-78.16	Avg	11.42	V	40.26	47.96	-7.70
91.70	-75.16	Peak	11.42	V	43.26	67.96	-24.70
98.30	-84.65	Avg	11.66	V	34.01	47.96	-13.95
98.30	-78.15	Peak	11.66	V	40.51	67.96	-27.45
105.30	-81.09	Avg	12.13	V	38.04	47.96	-9.92
105.30	-79.09	Peak	12.13	V	40.04	67.96	-27.92
91.70	-82.16	Avg	11.42	H	36.26	47.96	-11.70
91.70	-75.06	Peak	11.42	H	43.36	67.96	-24.60
98.30	-82.05	Avg	11.66	H	36.61	47.96	-11.35
98.30	-78.15	Peak	11.66	H	40.51	67.96	-27.45
105.30	-81.69	Avg	12.13	H	37.44	47.96	-10.52
105.30	-74.69	Peak	12.13	H	44.44	67.96	-23.52

Table 7-13. In-Band Radiated Measurements (Nissan Altima - Passenger Side – 270 degrees)

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7.6.3 Radiated Measurement Data for Ford Focus
§15.239 (b) / §15.209

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-72.36	Avg	11.42	V	46.06	47.96	-1.90
91.70	-70.96	Peak	11.42	V	47.46	67.96	-20.50
98.30	-71.35	Avg	11.66	V	47.31	47.96	-0.65
98.30	-69.05	Peak	11.66	V	49.61	67.96	-18.35
105.30	-76.29	Avg	12.13	V	42.84	47.96	-5.12
105.30	-80.79	Peak	12.13	V	38.34	67.96	-29.62
91.70	-86.06	Avg	11.42	H	32.36	47.96	-15.60
91.70	-79.36	Peak	11.42	H	39.06	67.96	-28.90
98.30	-85.35	Avg	11.66	H	33.31	47.96	-14.65
98.30	-76.85	Peak	11.66	H	41.81	67.96	-26.15
105.30	-84.19	Avg	12.13	H	34.94	47.96	-13.02
105.30	-82.49	Peak	12.13	H	36.64	67.96	-31.32

Table 7-14. In-Band Radiated Measurements (Ford Focus - Front Side – 0 degrees)

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-76.36	Avg	11.42	V	42.06	47.96	-5.90
91.70	-74.06	Peak	11.42	V	44.36	67.96	-23.60
98.30	-81.75	Avg	11.66	V	36.91	47.96	-11.05
98.30	-75.55	Peak	11.66	V	43.11	67.96	-24.85
105.30	-83.29	Avg	12.13	V	35.84	47.96	-12.12
105.30	-76.39	Peak	12.13	V	42.74	67.96	-25.22
91.70	-77.06	Avg	11.42	H	41.36	47.96	-6.60
91.70	-75.66	Peak	11.42	H	42.76	67.96	-25.20
98.30	-90.15	Avg	11.66	H	28.51	47.96	-19.45
98.30	-82.85	Peak	11.66	H	35.81	67.96	-32.15
105.30	-88.89	Avg	12.13	H	30.24	47.96	-17.72
105.30	-85.09	Peak	12.13	H	34.04	67.96	-33.92

Table 7-15. In-Band Radiated Measurements (Ford Focus - Rear Side – 180 degrees)



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Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-82.16	Avg	11.42	V	36.26	47.96	-11.70
91.70	-78.46	Peak	11.42	V	39.96	67.96	-28.00
98.30	-74.75	Avg	11.66	V	43.91	47.96	-4.05
98.30	-72.75	Peak	11.66	V	45.91	67.96	-22.05
105.30	-83.69	Avg	12.13	V	35.44	47.96	-12.52
105.30	-78.69	Peak	12.13	V	40.44	67.96	-27.52
91.70	-80.16	Avg	11.42	H	38.26	47.96	-9.70
91.70	-77.36	Peak	11.42	H	41.06	67.96	-26.90
98.30	-81.85	Avg	11.66	H	36.81	47.96	-11.15
98.30	-76.15	Peak	11.66	H	42.51	67.96	-25.45
105.30	-83.79	Avg	12.13	H	35.34	47.96	-12.62
105.30	-80.89	Peak	12.13	H	38.24	67.96	-29.72

Table 7-16. In-Band Radiated Measurements (Ford Focus - Driver Side – 90 degrees)



Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-79.06	Avg	11.42	V	39.36	47.96	-8.60
91.70	-75.06	Peak	11.42	V	43.36	67.96	-24.60
98.30	-76.25	Avg	11.66	V	42.41	47.96	-5.55
98.30	-73.35	Peak	11.66	V	45.31	67.96	-22.65
105.30	-87.19	Avg	12.13	V	31.94	47.96	-16.02
105.30	-75.59	Peak	12.13	V	43.54	67.96	-24.42
91.70	-75.56	Avg	11.42	H	42.86	47.96	-5.10
91.70	-73.06	Peak	11.42	H	45.36	67.96	-22.60
98.30	-83.25	Avg	11.66	H	35.41	47.96	-12.55
98.30	-79.15	Peak	11.66	H	39.51	67.96	-28.45
105.30	-85.19	Avg	12.13	H	33.94	47.96	-14.02
105.30	-82.29	Peak	12.13	H	36.84	67.96	-31.12

Table 7-17. In-Band Radiated Measurements (Ford Focus - Passenger Side – 270 degrees)

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NOTES:

1. All measurements were recorded using a spectrum analyzer employing a peak detector with RBW equal to 120kHz and VBW greater than or equal to RBW and with an average detector with RBW equal to 120kHz and VBW equal to 100Hz.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The test vehicles used were: (1) Dodge Caravan, (2) Nissan Altima, and (3) Ford Focus.
4. The EUT was powered through each vehicle's cigarette lighter jack.
5. Emissions were measured on all four sides of the vehicle at a distance of 3 meters from the periphery of the vehicle. FM coupler position was varied along the path of the in-glass FM antenna to maximize emissions.
6. Within the permitted band of 88 – 108MHz the radiated limit is 250 $\mu\text{V}/\text{m}$ (47.96 dB $\mu\text{V}/\text{m}$) at 3 meters.

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7.7 Out-of-Band Radiated Spurious Emission Measurements – with FEA

§15.239 (c) / §15.209

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 88.1 MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
176.20	-101.15	14.09	H	19.94	43.52	-23.59
264.30	-96.20	14.19	H	24.99	46.02	-21.03
352.40	-104.73	17.10	H	19.38	46.02	-26.64
440.50	-103.65	19.01	H	22.36	46.02	-23.66
528.60	-104.02	20.61	H	23.59	46.02	-22.43
176.20	-97.85	14.09	V	23.24	43.52	-20.29
264.30	-96.40	14.19	V	24.79	46.02	-21.23
352.40	-102.13	17.10	V	21.98	46.02	-24.04
440.50	-103.35	19.01	V	22.66	46.02	-23.36
528.60	-101.52	20.61	V	26.09	46.02	-19.93

Table 7-18. Radiated Measurements (Live XM Signal) – Test Configuration #4

NOTES:

1. All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The EUT was supplied with a fully-recharged 12V battery.
4. The FEA (FM Extender Antenna) was used in this test.
5. The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
6. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
7. The radiated limits at 3-meters are as specified above in Table 7-3.

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Out-of-Band Radiated Spurious Emission Measurements (Cont'd)

§15.239 (c) / §15.209

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 96.9MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
193.80	-98.26	14.16	H	22.90	43.52	-20.62
290.70	-96.71	15.30	H	25.59	46.02	-20.43
387.60	-104.64	17.88	H	20.24	46.02	-25.78
484.50	-104.46	19.79	H	22.33	46.02	-23.69
581.40	-104.16	21.45	H	24.29	46.02	-21.73
193.80	-102.56	14.16	V	18.60	43.52	-24.92
290.70	-98.91	15.30	V	23.39	46.02	-22.63
387.60	-102.04	17.88	V	22.84	46.02	-23.18
484.50	-101.26	19.79	V	25.53	46.02	-20.49
581.40	-103.06	21.45	V	25.39	46.02	-20.63

Table 7-19. Radiated Measurements (Live XM Signal) – Test Configuration #4

NOTES:

1. All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The EUT was supplied with a fully-recharged 12V battery.
4. The FEA (FM Extender Antenna) was used in this test.
5. The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
6. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
7. The radiated limits at 3-meters are as specified above in Table 7-3.

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Out-of-Band Radiated Spurious Emission Measurements (Cont'd)

§15.239 (c) / §15.209

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 107.9 MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
215.80	-102.77	13.95	H	18.17	43.52	-25.35
323.70	-103.32	16.32	H	20.00	46.02	-26.02
431.60	-104.75	18.78	H	21.04	46.02	-24.98
539.50	-103.31	20.74	H	24.43	46.02	-21.59
647.40	-103.48	22.42	H	25.93	46.02	-20.09
215.80	-97.17	13.95	V	23.77	43.52	-19.75
323.70	-99.42	16.32	V	23.90	46.02	-22.12
431.60	-97.45	18.78	V	28.34	46.02	-17.68
539.50	-98.71	20.74	V	29.03	46.02	-16.99
647.40	-99.68	22.42	V	29.73	46.02	-16.29

Table 7-20. Radiated Measurements (Live XM Signal) – Test Configuration #4

NOTES:

1. All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
2. Both horizontal and vertical polarities were measured with the worst case levels reported.
3. The EUT was supplied with a fully-recharged 12V battery.
4. The FEA (FM Extender Antenna) was used in this test.
5. The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
6. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
7. The radiated limits at 3-meters are as specified above in Table 7-3.

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7.8 Out-of-Band Radiated Spurious Emission Measurements – with iFMCLA §15.239 (c) / §15.209 / RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 88.1 MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
176.20	-98.05	14.09	V	23.04	43.52	-20.49
264.30	-101.90	14.19	V	19.29	46.02	-26.73
352.40	-103.73	17.10	V	20.38	46.02	-25.64
440.50	-103.25	19.01	V	22.76	46.02	-23.26
528.60	-102.72	20.61	H	24.89	46.02	-21.13

Table 7-21. Radiated Measurements – Test Configuration #5

NOTES:

- All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
- Both horizontal and vertical polarities were measured with the worst case levels reported.
- The EUT was supplied with a fully-recharged 12V battery.
- The unit is set to receive a live XM signal.
- The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- The radiated limits at 3-meters are as specified above in Table 7-3.

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Out-of-Band Radiated Spurious Emission Measurements – (Cont'd)

§15.239 (c) / §15.209 / RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 96.9 MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
193.80	-94.56	14.16	H	26.60	43.52	-16.92
290.70	-98.41	15.30	V	23.89	46.02	-22.13
387.60	-102.44	17.88	V	22.44	46.02	-23.58
484.50	-103.66	19.79	V	23.13	46.02	-22.89
581.40	-101.66	21.45	V	26.79	46.02	-19.23

Table 7-22. Radiated Measurements – Test Configuration #5

NOTES:

- All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
- Both horizontal and vertical polarities were measured with the worst case levels reported.
- The EUT was supplied with a fully-recharged 12V battery.
- The unit is set to receive a live XM signal.
- The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- The radiated limits at 3-meters are as specified above in Table 7-3.

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Out-of-Band Radiated Spurious Emission Measurements – (Cont'd)

§15.239 (c) / §15.209 / RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters



Operating Frequency: 107.9 MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
215.80	-92.97	13.95	V	27.97	43.52	-15.55
323.70	-98.32	16.32	H	25.00	46.02	-21.02
431.60	-102.05	18.78	V	23.74	46.02	-22.28
539.50	-102.21	20.74	V	25.53	46.02	-20.49
647.40	-103.18	22.42	H	26.23	46.02	-19.79

Table 7-23. Radiated Measurements – Test Configuration #5



NOTES:

- All measurements were recorded using a spectrum analyzer employing an with RBW equal to 100kHz and VBW equal to 100kHz.
- Both horizontal and vertical polarities were measured with the worst case levels reported.
- The EUT was supplied with a fully-recharged 12V battery.
- The unit is set to receive a live XM signal.
- The spectrum was measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- The radiated limits at 3-meters are as specified above in Table 7-3.

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Sirius XM PowerConnect Xmp3i Vehicle Dock FCC ID: RS2XPVD1 / IC Cert. No.: 5697A-XPVD1** has been tested to show compliance with the requirements specified in §15.239 of the FCC Rules and Annex A2 of RSS-210.

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