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

Date of Testing:
October 1-14, 2008
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0809261430-R2.RS2

FCC ID:	**RS2SPRCI**
IC Cert. No.:	**5697A-SPRCI**
APPLICANT:	**Sirius XM Satellite Radio, Inc.**

EUT Type:	Satellite Radio Receiver with FM Transmitter
EUT Name:	Sportster RCI (iPnP)
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.

***This revised test report (S/N:0809261430-R2.RS2) supersedes and replaces the previously issued test report on the same subject EUT for the same type of testing as indicated. Please discard and destroy the previously issued test report (S/N: 0809261430-R1.RS2) and dispose of it accordingly.**

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

NVLAP Lab Code 100431-0

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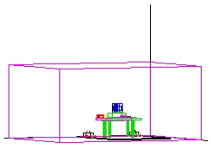

MEASUREMENT REPORT
FCC Part 15.239 / IC RSS-210

§ 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:	SXMIR1
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
FCC CLASSIFICATION:	Part 15 Low Power Transceiver, Rx Verified
DATE(S) OF TEST:	October 1-14, 2008
TEST REPORT S/N:	0809261430-R2.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 Radio Satellite Radio Receiver with FM Transmitter was performed as described in the XM New Product Certification test plan dated August 12, 2008. 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 Radio Satellite Radio Receiver with FM Transmitter**
FCC ID: RS2SPRCI / IC Cert. No.: 5697A-SPRCI.

Deviation from measurement procedure…….....None

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 are, 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.

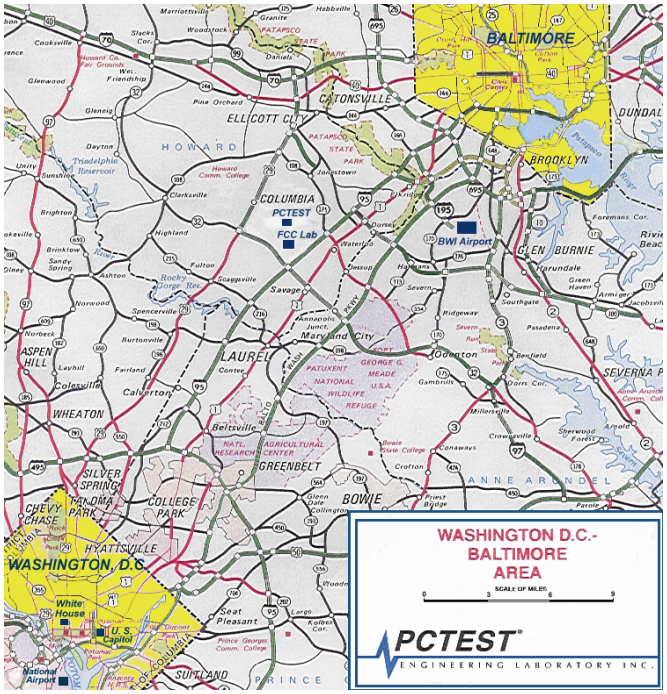

Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sirius XM Radio Satellite Radio Receiver with FM Transmitter FCC ID: RS2SPRCI**. The FM transmitter is located within the satellite broadcast receiver but is only capable of FM transmission (i.e. Vehicle Mode) while docked in the car cradle. The test data contained in this report pertains only to the emissions due to the FM band transmitter of the EUT.

Manufacturer / Model	Product Name	Description
Sirius XM Radio / Model: SXMIR1	Sportster iPnP	Satellite Radio Receiver with FM Transmitter

Table 2-1. EUT Equipment Description

2.2 Operation Mode

The Sirius XM Radio Satellite Radio Receiver with FM Transmitter FCC ID: RS2SPRCI was set to transmit in the FM band while receiving live satellite broadcast. The EUT was tested while receiving XM and Sirius satellite broadcasts. Please see Section 7.0 for more information on the test setup.

2.3 Test Configuration Descriptions

The Sirius XM Radio Satellite Radio Receiver with FM Transmitter was tested in a total of eleven different configurations for unintentional and intentional emission compliance to FCC and IC standards. Below is a brief list of each configuration set-up. A detailed list of each set-up can be found in Section 7.0. Test results for test configurations 1 – 5 can be found in a separate FCC Part 15 verification test report.

Test Configuration #	Emissions Tested	Description
1 & 2	Unintentional	iPNP with Home Cradle (See separate Part 15B report)
3	Unintentional	iPNP RCI and FM Direct Adapter (See separate Part 15B report)
4	Unintentional	iPNP and Cassette Adapter (See separate Part 15B report)
5	Unintentional	iPNP and Audio Out Cable (See separate Part 15B report)
6	Occupied Bandwidth	iPNP and FM Direct
7	Intentional	iPNP and SureConnect with Whip Antenna
8	Intentional	iPNP and SureConnect with Vehicle Glass (Industry Canada Only)
9	Intentional (In-Situ)	iPNP in Lincoln Navigator with SureConnect
10	Intentional (In-Situ)	iPNP in Chevy Impala with SureConnect
11	Intentional (In-Situ)	iPNP in Pontiac G6 with SureConnect

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

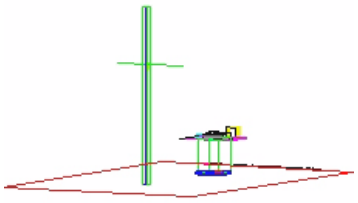

Figure 3-1. 3-Meter Test Site

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.

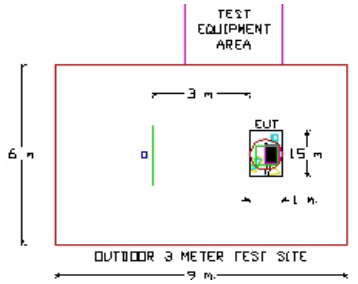

Figure 3-2. Dimensions of Outdoor Test Site

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.

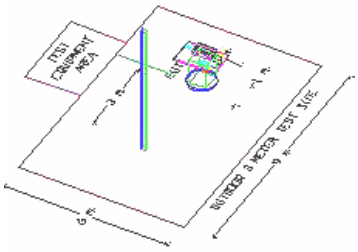

Figure 3-3. Turntable and System Setup

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.

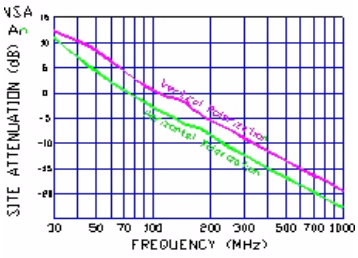

Figure 3-4. Normalized Site Attenuation Curves (H&V)

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 μV/m = 40.0 dBμV/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:

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

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

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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	Calibration Date	Cal Interval	Calibration Due	Serial No.
-	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	12/13/07	Annual	12/13/08	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	12/13/07	Annual	12/12/08	3008A00985
Agilent	85650A	Quasi-Peak Adapter	3/13/08	Annual	3/13/09	2043A00301
Agilent	8566B	(100Hz–22GHz) Spectrum Analyzer	12/13/07	Annual	12/13/08	3638A08713
Agilent	8566B	Opt. 462 Impulse Bandwidth	12/13/07	Annual	12/12/08	3701A22204
Agilent	E4407B	ESA Spectrum Analyzer	3/13/08	Annual	3/13/09	US39210313
Agilent	E4448A	(3Hz-50GHz) Spectrum Analyzer	1/24/08	Annual	1/24/09	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/8/07	Biennial	3/8/09	MY45470194
Compliance Design	Roberts	Dipole Set	11/9/07	Biennial	11/8/09	146
Compliance Design	Roberts	Dipole Set	11/9/07	Biennial	11/8/09	147
Emco	6502	Active Loop Antenna (10k - 30 MHz)	11/6/07	Annual	11/5/08	267
Emco	3121C-DB4	Dipole Antenna	1/23/07	Biennial	1/22/09	00023951
Pasternack	PE7000-6	6 dB Attenuator	N/A		N/A	
Solar Electronics	8012-50-R-24-BNC	LISN	11/8/07	Biennial	11/8/09	0310233
Sunol	JB5	Bi-Log 3m Antenna (>1GHz)	5/25/07	Biennial	5/24/09	A051107

Table 5-1. Annual Test Equipment Calibration Schedule

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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: RS2SPRCI

IC Cert. No.: 5697A-SPRCI

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)	In-Band Emissions	< 250µV/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	< 1000µV/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	N/A*	N/A	N/A
RECEIVER MODE (Rx) / DIGITAL DEVICE						
15.107	RSS-Gen	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.107 limits or < RSS-Gen table 2 limits	CONDUCTED	PASS	Part 15B Test Report
15.109	RSS-Gen	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.109 limits or < RSS-Gen limits [Section 6; Table1]	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Part 15B Test Report

Table 7-1 Summary of Test Results

***** Note: This test is not applicable as the unit is powered via the battery of the vehicle.

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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 only frequencies allowed by the EUT. 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 while receiving live XM service and again while receiving live Sirius service. The 20dB OBW was also measured with the device in the song saver playback mode. 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	Sirius	163.00	Pass
96.9	Sirius	172.00	Pass
107.9	Sirius	164.00	Pass
88.1	XM	155.60	Pass
96.9	XM	167.20	Pass
107.9	XM	139.80	Pass
88.1	Song Saver	148.00	Pass
96.9	Song Saver	135.00	Pass
107.9	Song Saver	140.00	Pass

Table 7-2. 200kHz Bandwidth Measurements – Test Configuration #4

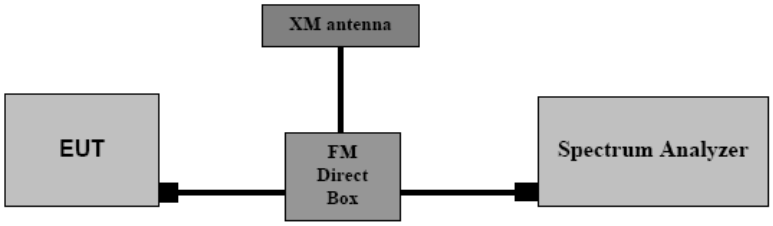

Figure 7-1. Test Instrument & Measurement Setup

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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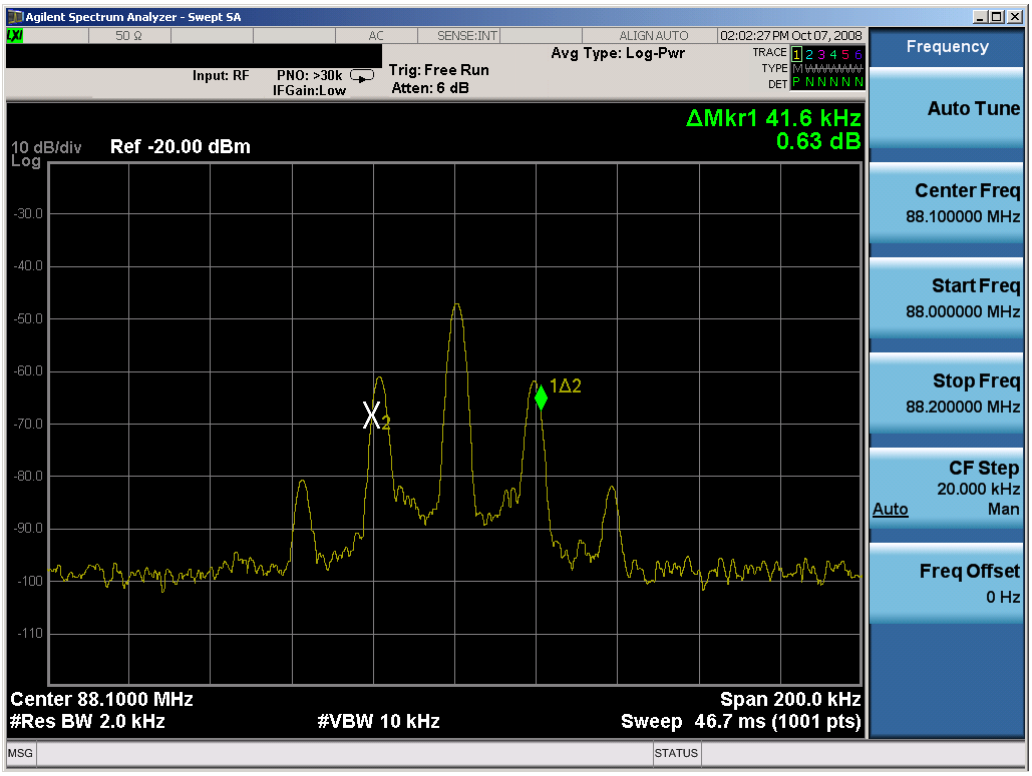
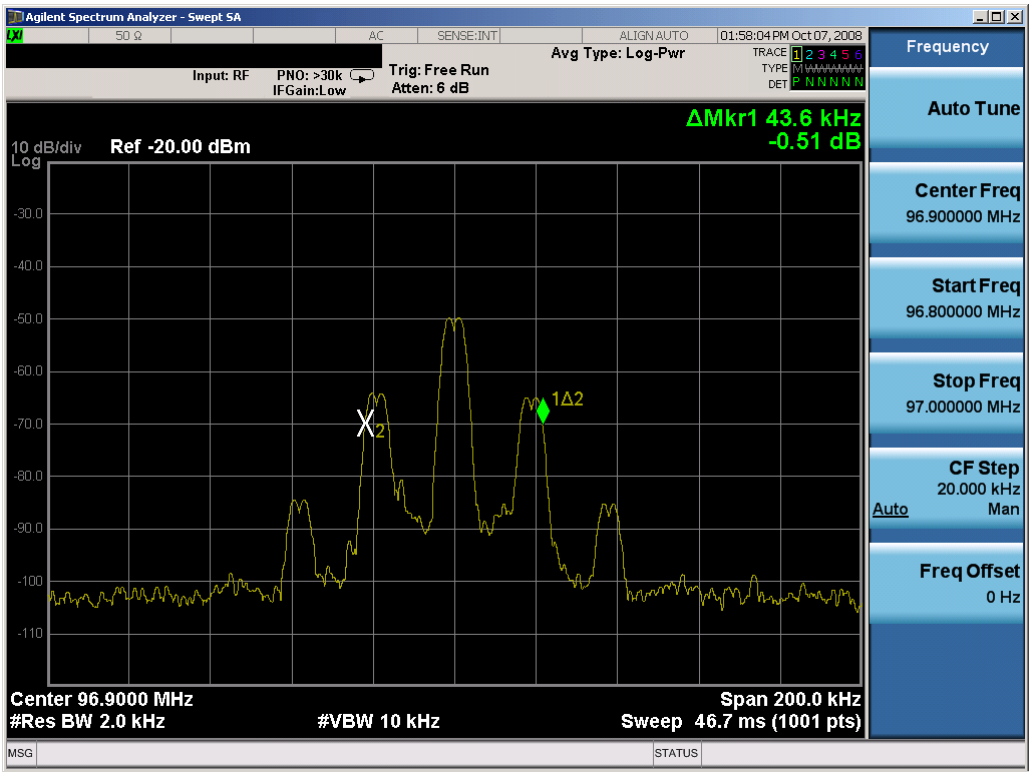


Plot 7-1. Bandwidth Plot at 88.1MHz with No Modulation



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

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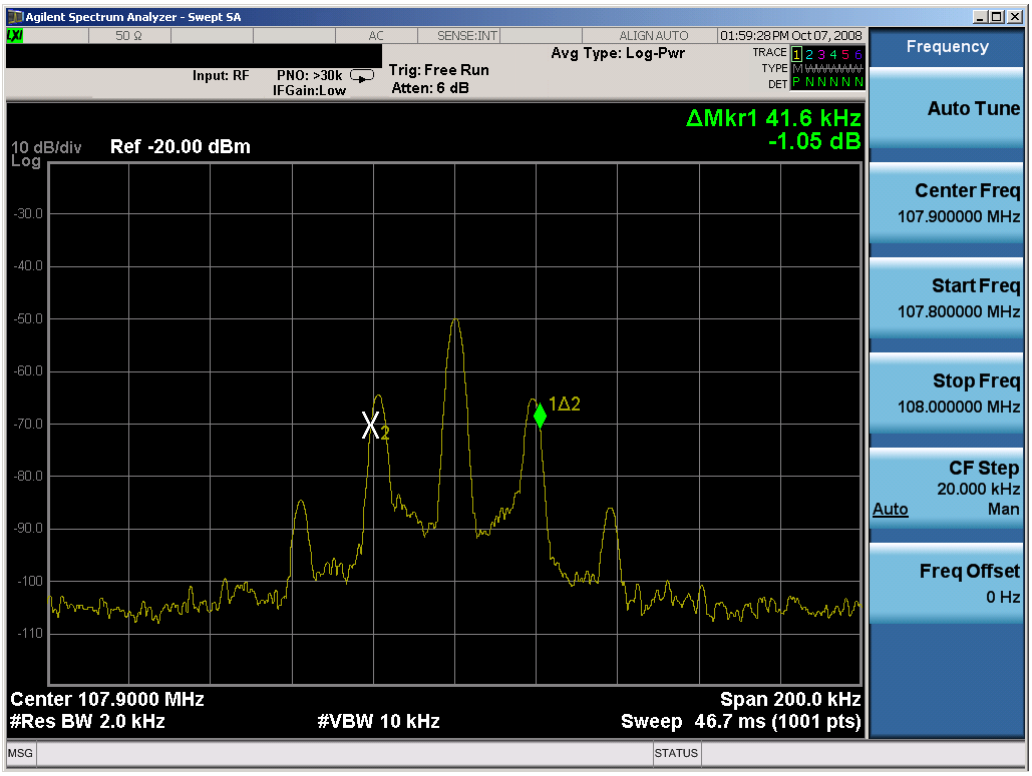

Plot 7-3. Bandwidth Plot at 107.9MHz with No Modulation

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

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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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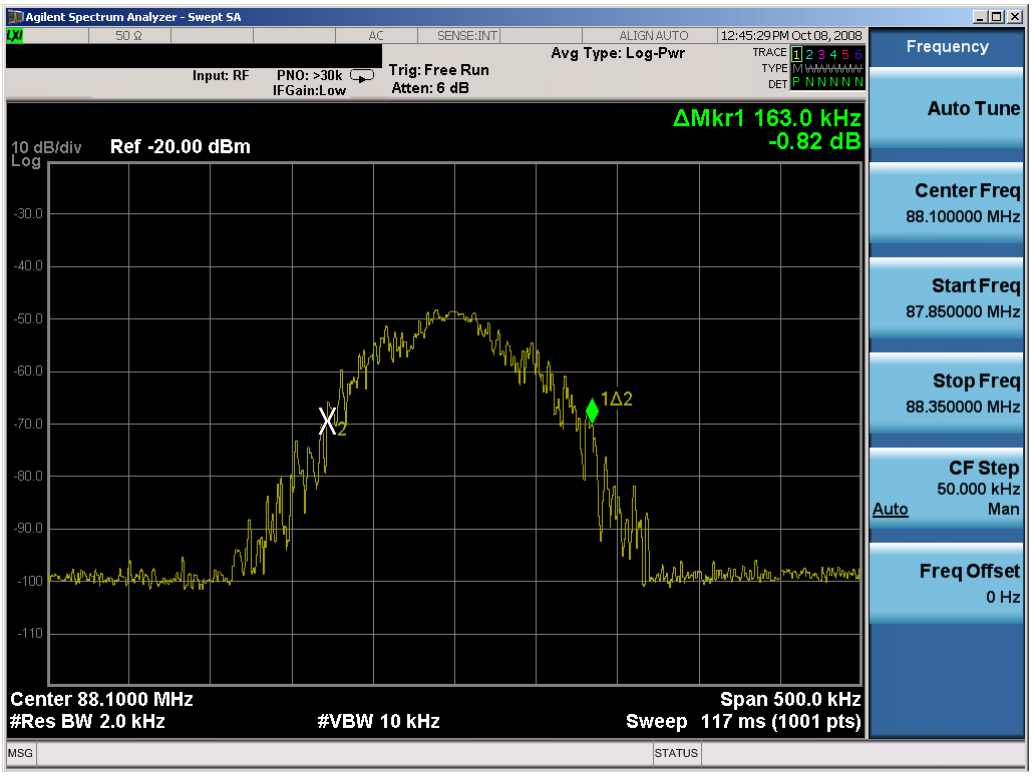
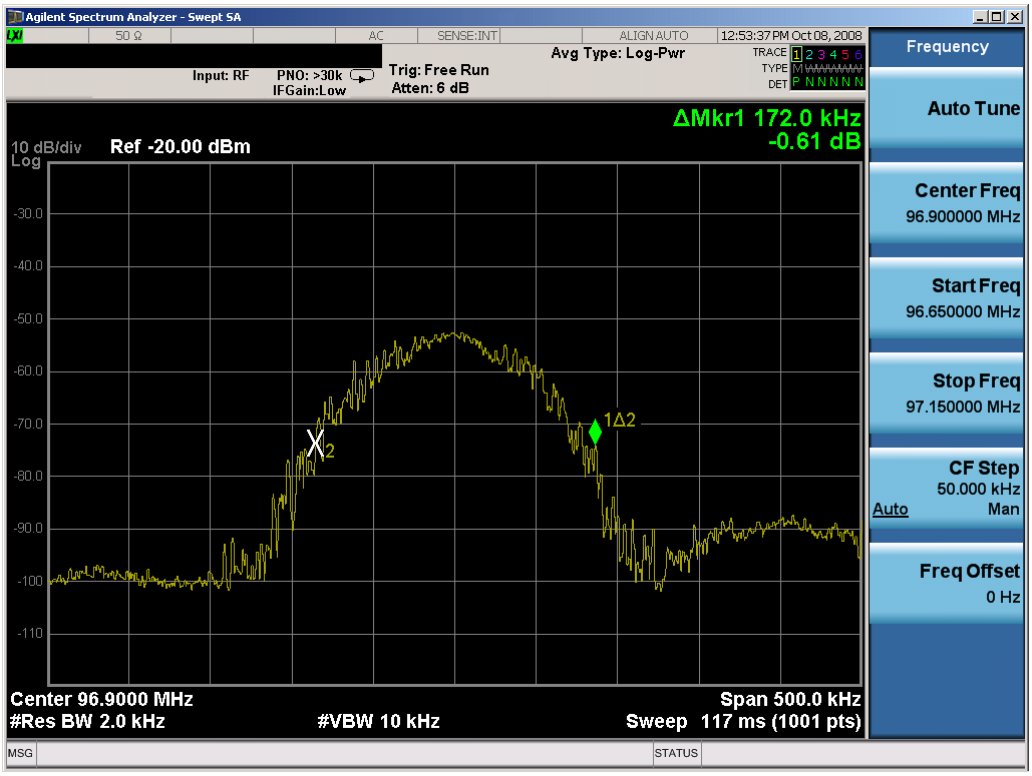


Plot 7-7. Bandwidth Plot at 88.1MHz with Modulation (Live Sirius Signal)



Plot 7-8. Plot at 96.9MHz with Modulation (Live Sirius Signal)

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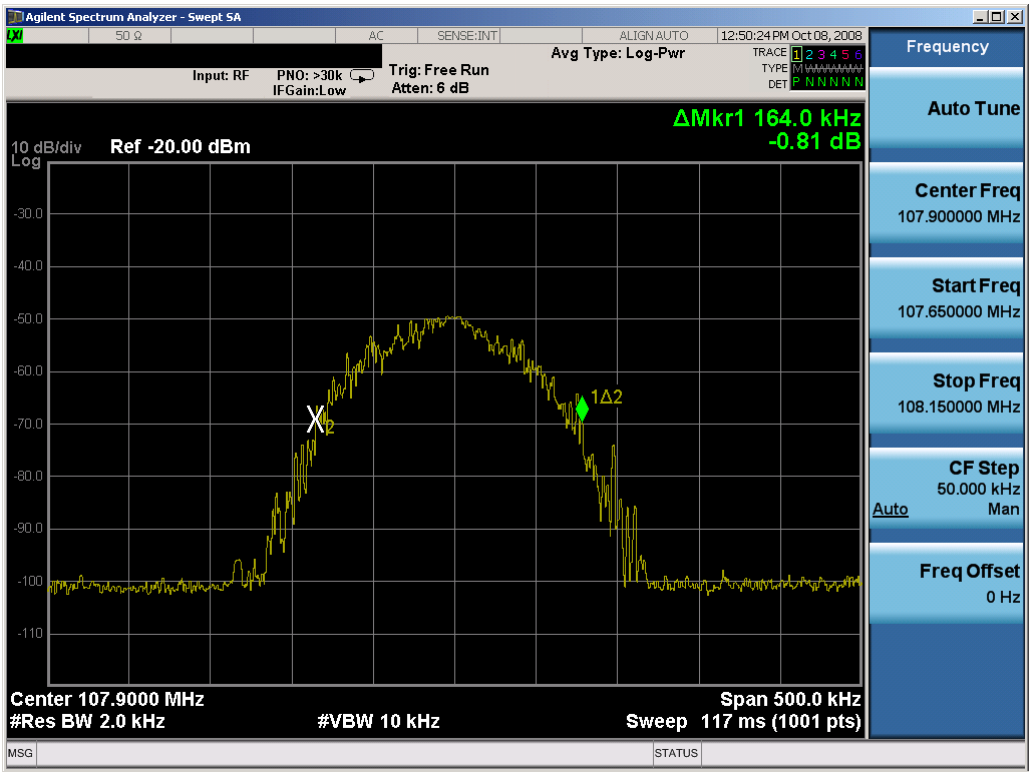
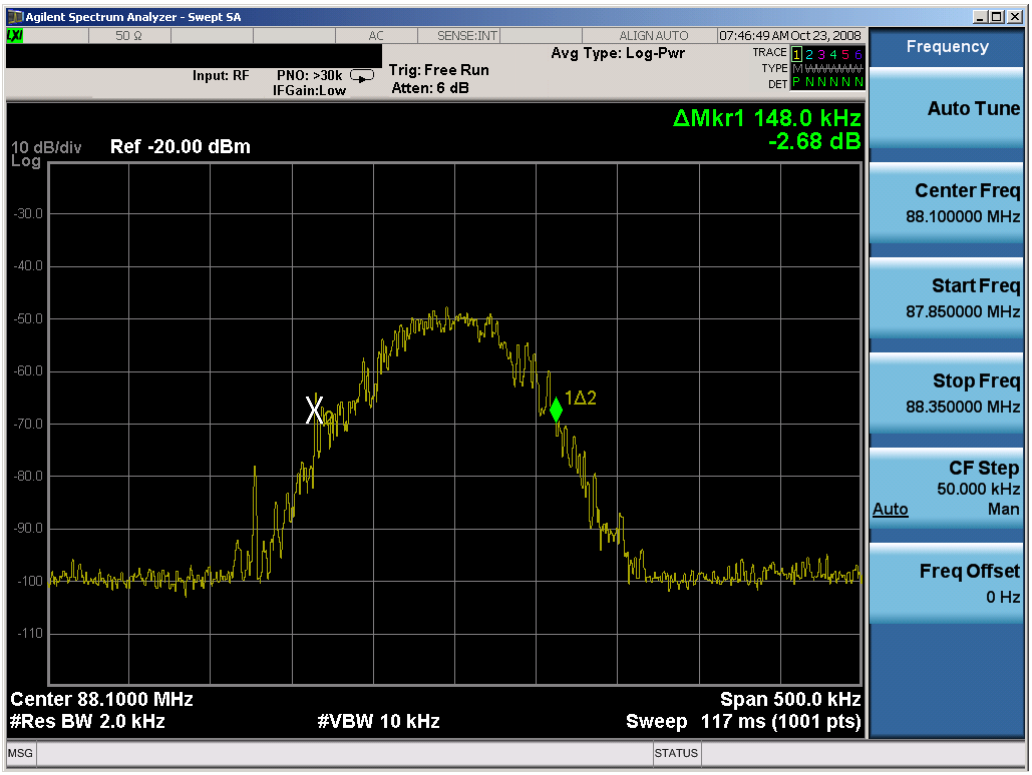


Plot 7-9. Plot at 107.9MHz with Modulation (Live Sirius Signal)



Plot 7-10. Bandwidth Plot at 88.1MHz with Modulation (Song Saver Mode)

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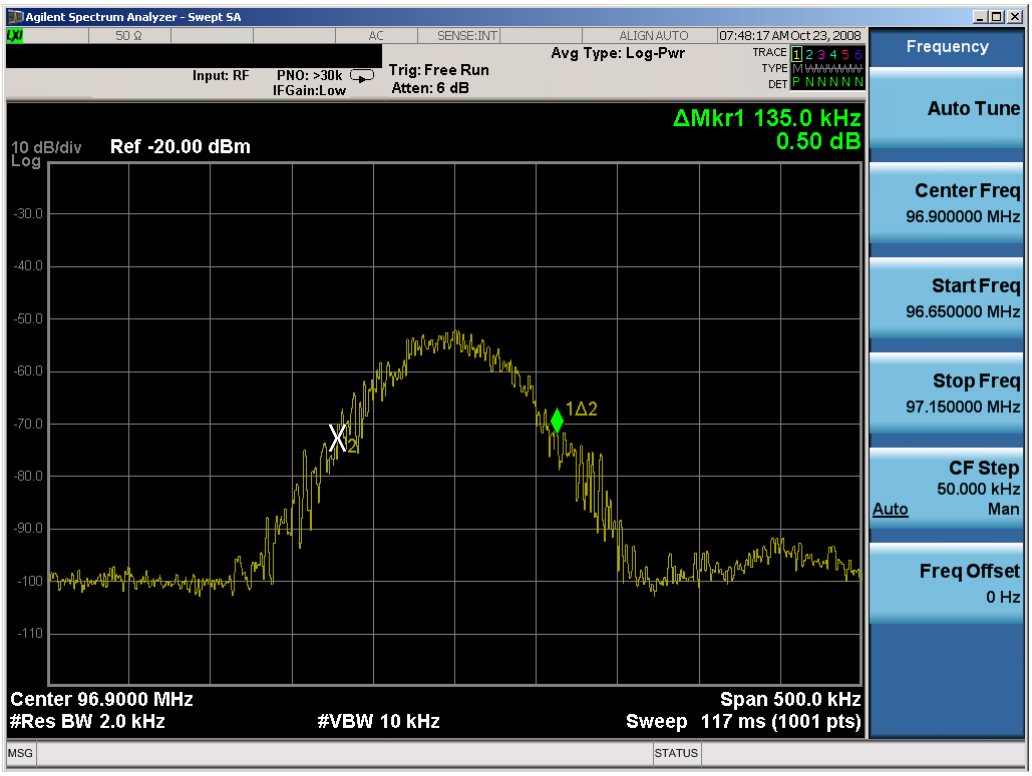
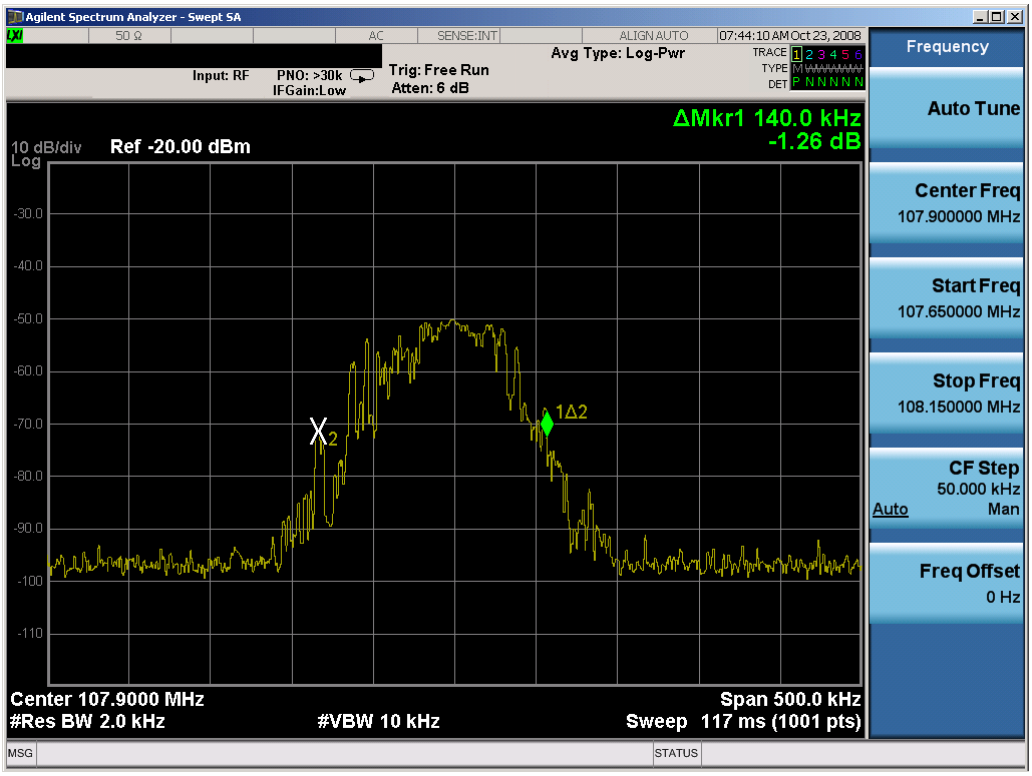


Plot 7-11. Plot at 96.9MHz with Modulation (Song Saver Mode)



Plot 7-12. Plot at 107.9MHz with Modulation (Song Saver 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 [µV/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 $_{[dB\mu V/m]}$ = 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 Aerial Antenna

§15.239 (b) / §15.209, RSS-210 (A2.8)

Modes:	Live XM Signal Live Sirius Signal Song Saver Mode
Measurement Distance:	3 Meters
Frequencies Tested:	88.1, 96.9, 107.9MHz

The XM SXMIR1 FCC ID: RS2SPRCI was powered by a 12V battery through a cigarette lighter vehicle adapter. The vehicle cradle was connected to an XM antenna through a SureConnect FM coupler splitter box. The EUT is coupled to an FM antenna through the splitter box. The FM antenna was placed on a 3'x4' ground plane which was used in the setup to replicate the conditions in which an FM antenna is installed in a vehicle. The EUT was tested with a maximum audio output level while receiving live XM service and again while receiving live Sirius service. The EUT was tested on a turn-table while maintaining a distance of 10 cm between the edges of all items on the setup table.

The following diagram depicts the test setup for Configuration #7. Photographs of equipment and cable placement can be found in the Test Setup Photographs.

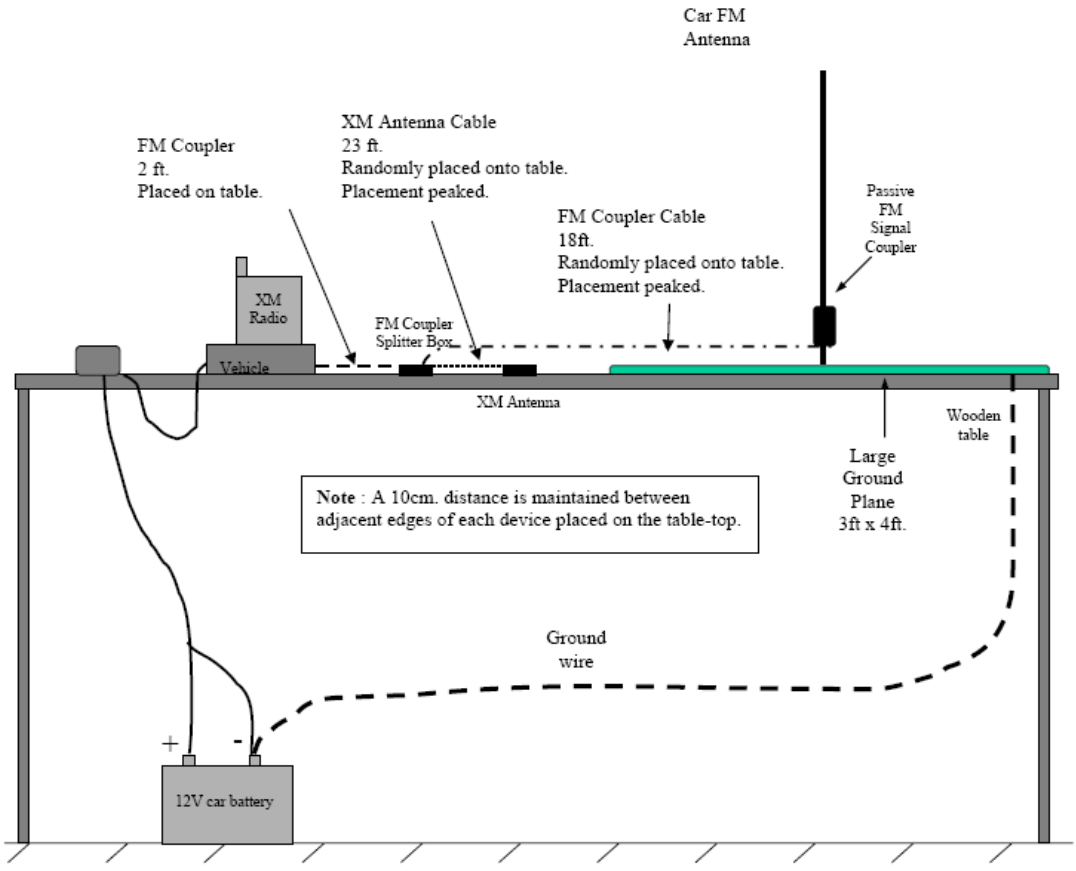

Figure 7-2. Test Setup Configuration #7

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Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	FCC Margin [dB]	IC Margin [dB]
88.10	-77.11	11.18	V	1.3	30	41.07	113.05	-6.89	-18.93
96.90	-78.00	11.43	V	1.5	70	40.43	105.04	-7.53	-19.57
107.90	-76.79	11.99	V	1.5	0	42.20	128.83	-5.76	-17.80

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

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	FCC Margin [dB]	IC Margin [dB]
88.10	-76.81	11.18	V	1.3	80	41.37	117.02	-6.63	-18.63
96.90	-76.65	11.43	V	1.3	210	41.78	122.70	-6.22	-18.22
107.90	-75.79	11.99	V	1.6	150	43.20	144.55	-4.80	-16.80

Table 7-5. In-Band Radiated Measurements (Live Sirius Signal) – Test Configuration #7

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	FCC Margin [dB]	IC Margin [dB]
88.10	-78.31	11.18	V	1.3	180	39.87	98.46	-8.13	-20.13
96.90	-77.05	11.43	V	1.5	225	41.38	117.18	-6.62	-18.62
107.90	-76.19	11.99	V	1.5	225	42.80	138.05	-5.20	-17.20

Table 7-6. In-Band Radiated Measurements (Song Saver Mode) – Test Configuration #7

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. Within the permitted band of 88 – 108MHz the FCC radiated limit is 250 μV/m (47.96 dBμ/m) at 3 meters.
5. For IC the permitted field strength limit at 3m for the frequency band 88 – 108 MHz is 1000 μV/m (60 dBμ/m).

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7.5 In-Band Radiated Spurious Emission Measurements – Industry Canada

RSS-210 (A2.8)

Modes:	Live XM Signal Live Sirius Signal
Measurement Distance:	3 Meters
Frequencies Tested:	88.1, 96.9, 107.9MHz

The XM SXMIR1 FCC ID: RS2SPRCI was powered by a 12V battery through a cigarette lighter vehicle adapter. A vehicle window with a built-in FM antenna was used to couple the EUT to the FM antenna by means of the SureConnect FM splitter box. The FM antenna was coupled to the EUT in five different locations along the FM antenna path on the vehicle window in order to maximize the emissions. The window was set up in a holder set on top of a 3' x 4' ground plane which was used in the setup to replicate the conditions in which an FM antenna is installed in a vehicle. The EUT was tested with a maximum audio output level while receiving live XM service and again while receiving live Sirius service. A distance of 10 cm was maintained between the edges of all items on the setup table.

The following diagram is for the test setup configuration #8. Photographs of equipment and cable placement can be found in the Test Setup Photographs.

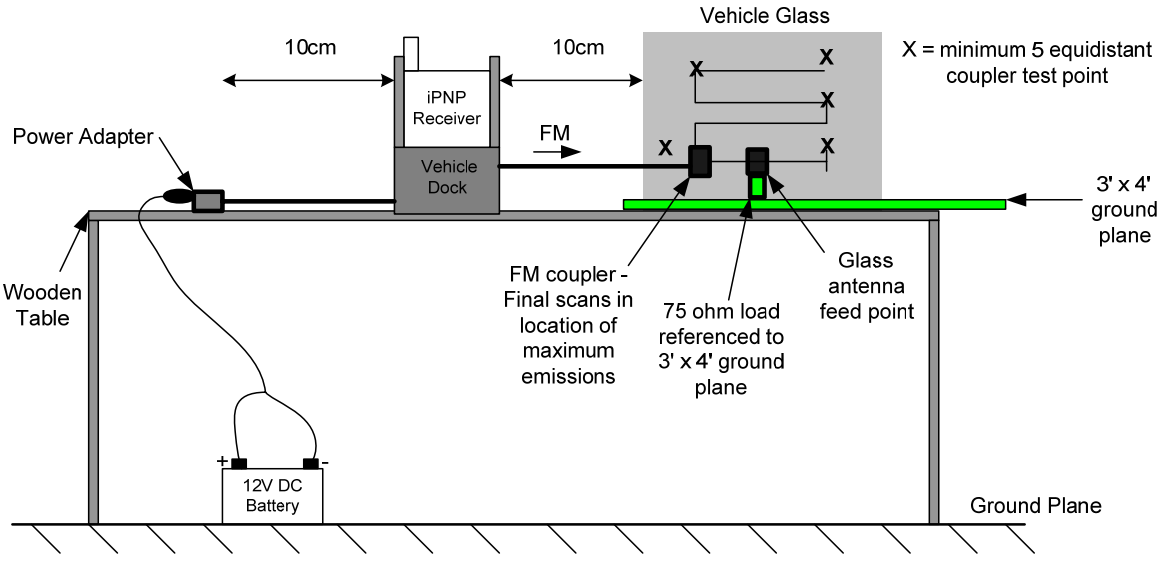

Figure 7-3. Test Setup Configuration #8

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Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	IC Margin [dB]
88.10	-84.51	11.14	V	1.4	0	33.63	48.03	-26.37
96.90	-87.05	11.38	V	1.5	320	31.33	36.86	-28.67
107.90	-86.59	11.94	V	1.6	120	32.35	41.45	-27.65

Table 7-7. In-Band Radiated Measurements (I.C.) – Test Configuration #8 – XM

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
88.10	-84.31	11.14	V	1.1	90	33.83	49.15	-26.17
96.90	-86.25	11.38	V	1.3	20	32.13	40.41	-27.87
107.90	-86.09	11.94	V	1.4	110	32.85	43.90	-27.15

Table 7-8. In-Band Radiated Measurements (I.C.) – Test Configuration #8 – Sirius

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. Within the permitted band of 88 – 108MHz the radiated limit is 1000 μV/m (60 dBμ/m) at 3 meters.

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

§15.239 (b) / §15.209

Modes:	Live XM Signal Live Sirius Signal
Measurement Distance:	3 Meters
Frequencies Tested:	88.1, 96.9, 107.9MHz

The XM SXMIR1 and receiver were installed in and powered by the cigarette lighter jack of three different vehicles: a Lincoln Navigator, a Chevy Impala, and a Pontiac G6. These vehicles each contain an in-glass FM antenna system.

The vehicle cradle was connected to an XM antenna through an FM coupler splitter box. The EUT is coupled to the FM antenna on the vehicle's rear window through the splitter box with a SureConnect FM coupler. The FM coupler position was varied along the path of the in-glass FM antenna to find the coupler placement that produced the highest emissions.

The EUT was configured to receive live XM broadcast signal and was configured for a maximum audio output level. The antenna mast was rolled along each side of the vehicle along a track that maintained a distance of 3 meters from the periphery of the vehicle. At the emission peak, the antenna mast height was adjusted between 1 to 4 meters to maximize the emission. Frequencies were chosen in each setup where local FM signals were weakest.

Testing was performed with the receive antenna positioned both vertically and horizontally. All in-situ measurements were performed with the RBW set to 120kHz and the VBW set to 300kHz for peak measurements and then with the VBW set to 100Hz for the average measurements.

The process described above was repeated for each side of the vehicle and at the three FM frequencies listed above. Testing was also repeated with the EUT receiving live Sirius broadcast.

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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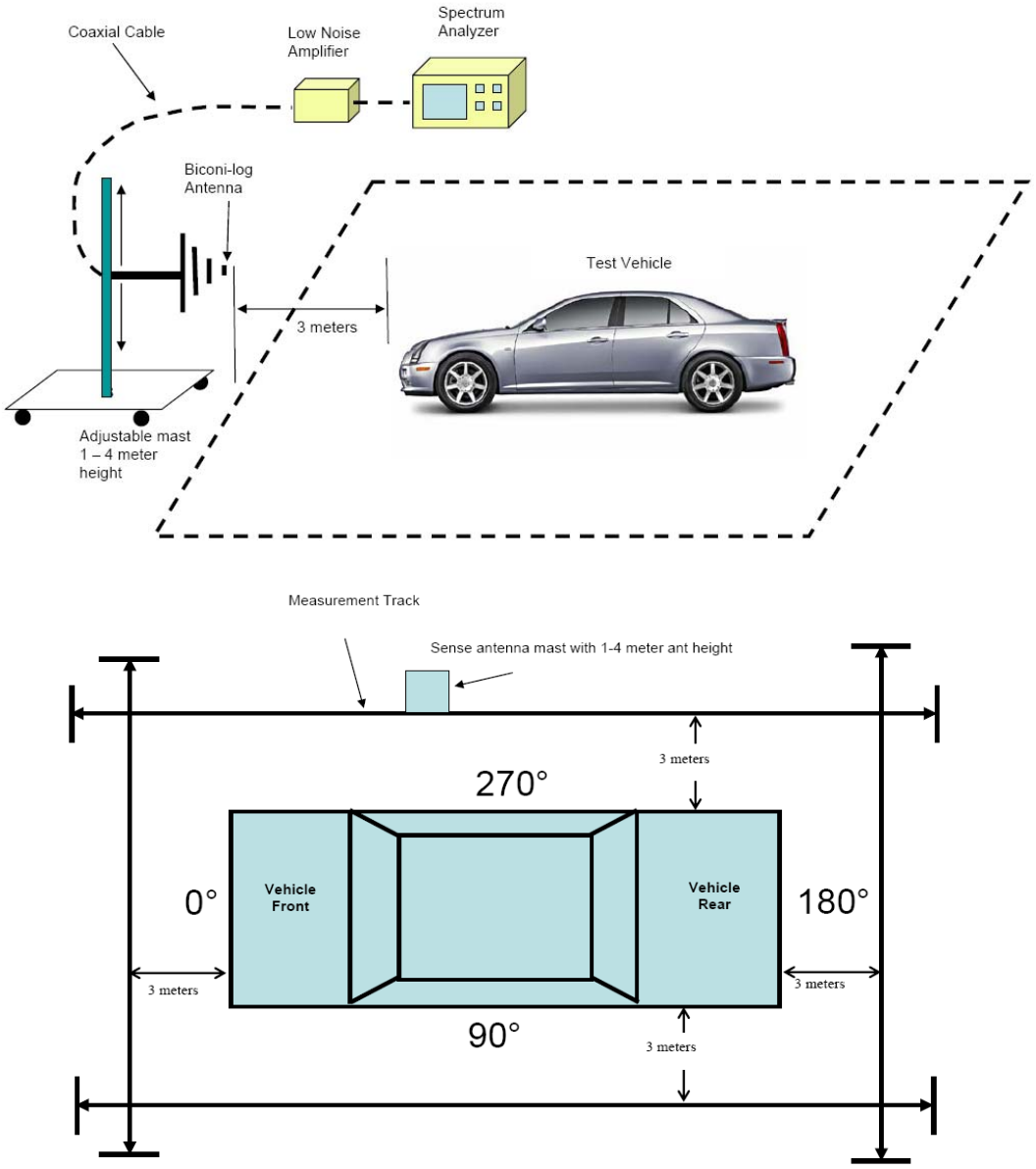

Figure 7-4. In-Situ Test Setup Diagram

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7.6.1 Radiated Measurement Data for Lincoln Navigator

§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	-85.18	Avg	11.21	V	33.03	47.96	-14.93
91.70	-82.76	Peak	11.21	V	35.45	67.96	-32.51
98.30	-93.45	Avg	11.44	V	24.99	47.96	-22.97
98.30	-85.85	Peak	11.44	V	32.59	67.96	-35.37
107.50	-96.39	Avg	11.82	V	22.43	47.96	-25.53
107.50	-86.79	Peak	11.82	V	32.03	67.96	-35.93
91.70	-87.46	Avg	11.21	H	30.75	47.96	-17.21
91.70	-81.46	Peak	11.21	H	36.75	67.96	-31.21
98.30	-90.50	Avg	11.44	H	27.94	47.96	-20.02
98.30	-81.80	Peak	11.44	H	36.64	67.96	-31.32
107.50	-93.29	Avg	11.82	H	25.53	47.96	-22.43
107.50	-86.69	Peak	11.82	H	32.13	67.96	-35.83

Table 7-9. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Front Side – 0 degrees) – XM Mode

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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	-81.46	Avg	11.21	V	36.75	47.96	-11.21
91.70	-74.37	Peak	11.21	V	43.84	67.96	-24.12
98.30	-85.25	Avg	11.44	V	33.19	47.96	-14.77
98.30	-79.25	Peak	11.44	V	39.19	67.96	-28.77
105.30	-80.80	Avg	11.82	V	38.02	47.96	-9.94
105.30	-76.09	Peak	11.82	V	42.73	67.96	-25.23
91.70	-80.16	Avg	11.21	H	38.05	47.96	-9.91
91.70	-74.66	Peak	11.21	H	43.55	67.96	-24.41
98.30	-81.95	Avg	11.44	H	36.49	47.96	-11.47
98.30	-74.05	Peak	11.44	H	44.39	67.96	-23.57
105.30	-81.19	Avg	11.82	H	37.63	47.96	-10.33
105.30	-74.59	Peak	11.82	H	44.23	67.96	-23.73

Table 7-10. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Rear Side – 180 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-88.56	Avg	11.21	V	29.65	47.96	-18.31
91.70	-83.96	Peak	11.21	V	34.25	67.96	-33.71
98.30	-94.25	Avg	11.44	V	24.19	47.96	-23.77
98.30	-84.18	Peak	11.44	V	34.26	67.96	-33.70
107.50	-81.69	Avg	11.82	V	37.13	47.96	-10.83
107.50	-72.49	Peak	11.82	V	46.33	67.96	-21.63
91.70	-91.06	Avg	11.21	H	27.15	47.96	-20.81
91.70	-84.09	Peak	11.21	H	34.12	67.96	-33.84
98.30	-93.05	Avg	11.44	H	25.39	47.96	-22.57
98.30	-84.85	Peak	11.44	H	33.59	67.96	-34.37
107.50	-87.14	Avg	11.82	H	31.68	47.96	-16.28
107.50	-78.11	Peak	11.82	H	40.71	67.96	-27.25

Table 7-11. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Driver Side – 90 degrees) – XM Mode

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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	-78.66	Avg	11.21	V	39.55	47.96	-8.41
91.70	-68.08	Peak	11.21	V	50.13	67.96	-17.83
98.30	-84.25	Avg	11.44	V	34.19	47.96	-13.77
98.30	-75.35	Peak	11.44	V	43.09	67.96	-24.87
105.30	-82.09	Avg	11.82	V	36.73	47.96	-11.23
105.30	-72.75	Peak	11.82	V	46.07	67.96	-21.89
91.70	-81.70	Avg	11.21	H	36.51	47.96	-11.45
91.70	-74.93	Peak	11.21	H	43.28	67.96	-24.68
98.30	-83.55	Avg	11.44	H	34.89	47.96	-13.07
98.30	-78.85	Peak	11.44	H	39.59	67.96	-28.37
105.30	-86.55	Avg	11.82	H	32.27	47.96	-15.69
105.30	-76.08	Peak	11.82	H	42.74	67.96	-25.22

Table 7-12. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Passenger Side – 270 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-87.46	Avg	11.21	V	30.75	47.96	-17.21
91.70	-83.16	Peak	11.21	V	35.05	67.96	-32.91
98.30	-95.85	Avg	11.44	V	22.59	47.96	-25.37
98.30	-87.65	Peak	11.44	V	30.79	67.96	-37.17
107.50	-95.79	Avg	11.82	V	23.03	47.96	-24.93
107.50	-89.74	Peak	11.82	V	29.08	67.96	-38.88
91.70	-88.56	Avg	11.21	H	29.65	47.96	-18.31
91.70	-82.06	Peak	11.21	H	36.15	67.96	-31.81
98.30	-90.05	Avg	11.44	H	28.39	47.96	-19.57
98.30	-84.35	Peak	11.44	H	34.09	67.96	-33.87
107.50	-96.09	Avg	11.82	H	22.73	47.96	-25.23
107.50	-85.19	Peak	11.82	H	33.63	67.96	-34.33

Table 7-13. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Front Side – 0 degrees) – Sirius Mode

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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	-78.76	Avg	11.21	V	39.45	47.96	-8.51
91.70	-74.16	Peak	11.21	V	44.05	67.96	-23.91
98.30	-86.05	Avg	11.44	V	32.39	47.96	-15.57
98.30	-78.86	Peak	11.44	V	39.58	67.96	-28.38
105.30	-81.19	Avg	11.82	V	37.63	47.96	-10.33
105.30	-77.49	Peak	11.82	V	41.33	67.96	-26.63
91.70	-79.50	Avg	11.21	H	38.71	47.96	-9.25
91.70	-76.06	Peak	11.21	H	42.15	67.96	-25.81
98.30	-81.38	Avg	11.44	H	37.06	47.96	-10.90
98.30	-76.35	Peak	11.44	H	42.09	67.96	-25.87
105.30	-81.59	Avg	11.82	H	37.23	47.96	-10.73
105.30	-74.09	Peak	11.82	H	44.73	67.96	-23.23

Table 7-14. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Rear Side – 180 degrees) – Sirius Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-89.76	Avg	11.21	V	28.45	47.96	-19.51
91.70	-80.86	Peak	11.21	V	37.35	67.96	-30.61
98.30	-94.45	Avg	11.44	V	23.99	47.96	-23.97
98.30	-85.85	Peak	11.44	V	32.59	67.96	-35.37
107.50	-82.09	Avg	11.82	V	36.73	47.96	-11.23
107.50	-72.09	Peak	11.82	V	46.73	67.96	-21.23
91.70	-92.29	Avg	11.21	H	25.92	47.96	-22.04
91.70	-84.76	Peak	11.21	H	33.45	67.96	-34.51
98.30	-90.55	Avg	11.44	H	27.89	47.96	-20.07
98.30	-81.75	Peak	11.44	H	36.69	67.96	-31.27
107.50	-88.59	Avg	11.82	H	30.23	47.96	-17.73
107.50	-78.19	Peak	11.82	H	40.63	67.96	-27.33

Table 7-15. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Driver Side – 90 degrees) – Sirius Mode

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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	-79.56	Avg	11.21	V	38.65	47.96	-9.31
91.70	-71.46	Peak	11.21	V	46.75	67.96	-21.21
98.30	-87.25	Avg	11.44	V	31.19	47.96	-16.77
98.30	-80.05	Peak	11.44	V	38.39	67.96	-29.57
105.30	-81.19	Avg	11.82	V	37.63	47.96	-10.33
105.30	-73.09	Peak	11.82	V	45.73	67.96	-22.23
91.70	-79.16	Avg	11.21	H	39.05	47.96	-8.91
91.70	-76.96	Peak	11.21	H	41.25	67.96	-26.71
98.30	-84.55	Avg	11.44	H	33.89	47.96	-14.07
98.30	-79.05	Peak	11.44	H	39.39	67.96	-28.57
105.30	-87.59	Avg	11.82	H	31.23	47.96	-16.73
105.30	-77.29	Peak	11.82	H	41.53	67.96	-26.43

Table 7-16. In-Band Radiated Measurements (Lincoln Navigator) – Test Configuration #9 (Passenger Side – 270 degrees) – Sirius Mode

7.6.2 Radiated Measurement Data for Chevy Impala

§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	-80.36	Avg	11.21	V	37.85	47.96	-10.11
91.70	-75.86	Peak	11.21	V	42.35	67.96	-25.61
98.30	-80.05	Avg	11.44	V	38.39	47.96	-9.57
98.30	-77.85	Peak	11.44	V	40.59	67.96	-27.37
105.30	-85.39	Avg	11.82	V	33.43	47.96	-14.53
105.30	-81.79	Peak	11.82	V	37.03	67.96	-30.93
91.70	-85.36	Avg	11.21	H	32.85	47.96	-15.11
91.70	-81.26	Peak	11.21	H	36.95	67.96	-31.01
98.30	-91.15	Avg	11.44	H	27.29	47.96	-20.67
98.30	-84.65	Peak	11.44	H	33.79	67.96	-34.17
105.30	-97.69	Avg	11.82	H	21.13	47.96	-26.83
105.30	-91.79	Peak	11.82	H	27.03	67.96	-40.93

Table 7-17. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Front Side – 0 degrees) – XM Mode

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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	-80.26	Avg	11.21	V	37.95	47.96	-10.01
91.70	-77.56	Peak	11.21	V	40.65	67.96	-27.31
98.30	-90.35	Avg	11.44	V	28.09	47.96	-19.87
98.30	-83.55	Peak	11.44	V	34.89	67.96	-33.07
105.30	-87.89	Avg	11.82	V	30.93	47.96	-17.03
105.30	-83.39	Peak	11.82	V	35.43	67.96	-32.53
91.70	-90.76	Avg	11.21	H	27.45	47.96	-20.51
91.70	-85.06	Peak	11.21	H	33.15	67.96	-34.81
98.30	-88.95	Avg	11.44	H	29.49	47.96	-18.47
98.30	-84.75	Peak	11.44	H	33.69	67.96	-34.27
105.30	-92.19	Avg	11.82	H	26.63	47.96	-21.33
105.30	-85.59	Peak	11.82	H	33.23	67.96	-34.73

Table 7-18. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Rear Side – 180 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-91.46	Avg	11.21	V	26.75	47.96	-21.21
91.70	-84.56	Peak	11.21	V	33.65	67.96	-34.31
98.30	-89.25	Avg	11.44	V	29.19	47.96	-18.77
98.30	-83.95	Peak	11.44	V	34.49	67.96	-33.47
105.30	-92.59	Avg	11.82	V	26.23	47.96	-21.73
105.30	-87.69	Peak	11.82	V	31.13	67.96	-36.83
91.70	-84.36	Avg	11.21	H	33.85	47.96	-14.11
91.70	-80.56	Peak	11.21	H	37.65	67.96	-30.31
98.30	-82.75	Avg	11.44	H	35.69	47.96	-12.27
98.30	-79.25	Peak	11.44	H	39.19	67.96	-28.77
105.30	-94.29	Avg	11.82	H	24.53	47.96	-23.43
105.30	-86.09	Peak	11.82	H	32.73	67.96	-35.23

Table 7-19. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Driver Side – 90 degrees) – XM Mode

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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	-87.66	Avg	11.21	V	30.55	47.96	-17.41
91.70	-83.66	Peak	11.21	V	34.55	67.96	-33.41
98.30	-93.85	Avg	11.44	V	24.59	47.96	-23.37
98.30	-89.45	Peak	11.44	V	28.99	67.96	-38.97
105.30	-90.89	Avg	11.82	V	27.93	47.96	-20.03
105.30	-85.79	Peak	11.82	V	33.03	67.96	-34.93
91.70	-87.26	Avg	11.21	H	30.95	47.96	-17.01
91.70	-81.76	Peak	11.21	H	36.45	67.96	-31.51
98.30	-81.05	Avg	11.44	H	37.39	47.96	-10.57
98.30	-79.25	Peak	11.44	H	39.19	67.96	-28.77
105.30	-95.59	Avg	11.82	H	23.23	47.96	-24.73
105.30	-88.79	Peak	11.82	H	30.03	67.96	-37.93

Table 7-20. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Passenger Side – 270 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-81.16	Avg	11.21	V	37.05	47.96	-10.91
91.70	-76.46	Peak	11.21	V	41.75	67.96	-26.21
98.30	-77.85	Avg	11.44	V	40.59	47.96	-7.37
98.30	-76.25	Peak	11.44	V	42.19	67.96	-25.77
105.30	-86.39	Avg	11.82	V	32.43	47.96	-15.53
105.30	-81.89	Peak	11.82	V	36.93	67.96	-31.03
91.70	-86.26	Avg	11.21	H	31.95	47.96	-16.01
91.70	-80.46	Peak	11.21	H	37.75	67.96	-30.21
98.30	-91.65	Avg	11.44	H	26.79	47.96	-21.17
98.30	-85.05	Peak	11.44	H	33.39	67.96	-34.57
105.30	-91.89	Avg	11.82	H	26.93	47.96	-21.03
105.30	-83.59	Peak	11.82	H	35.23	67.96	-32.73

Table 7-21. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Front Side – 0 degrees) – Sirius Mode

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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	-80.96	Avg	11.21	V	37.25	47.96	-10.71
91.70	-77.96	Peak	11.21	V	40.25	67.96	-27.71
98.30	-89.35	Avg	11.44	V	29.09	47.96	-18.87
98.30	-84.75	Peak	11.44	V	33.69	67.96	-34.27
105.30	-86.09	Avg	11.82	V	32.73	47.96	-15.23
105.30	-81.69	Peak	11.82	V	37.13	67.96	-30.83
91.70	-90.16	Avg	11.21	H	28.05	47.96	-19.91
91.70	-85.16	Peak	11.21	H	33.05	67.96	-34.91
98.30	-91.35	Avg	11.44	H	27.09	47.96	-20.87
98.30	-87.55	Peak	11.44	H	30.89	67.96	-37.07
105.30	-93.89	Avg	11.82	H	24.93	47.96	-23.03
105.30	-87.09	Peak	11.82	H	31.73	67.96	-36.23

Table 7-22. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Rear Side – 180 degrees) – Sirius Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-92.96	Avg	11.21	V	25.25	47.96	-22.71
91.70	-85.56	Peak	11.21	V	32.65	67.96	-35.31
98.30	-88.09	Avg	11.44	V	30.35	47.96	-17.61
98.30	-83.55	Peak	11.44	V	34.89	67.96	-33.07
105.30	-92.99	Avg	11.82	V	25.83	47.96	-22.13
105.30	-87.49	Peak	11.82	V	31.33	67.96	-36.63
91.70	-84.36	Avg	11.21	H	33.85	47.96	-14.11
91.70	-80.66	Peak	11.21	H	37.55	67.96	-30.41
98.30	-84.35	Avg	11.44	H	34.09	47.96	-13.87
98.30	-79.95	Peak	11.44	H	38.49	67.96	-29.47
105.30	-96.79	Avg	11.82	H	22.03	47.96	-25.93
105.30	-89.79	Peak	11.82	H	29.03	67.96	-38.93

Table 7-23. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Driver Side – 90 degrees) – Sirius Mode

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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	-90.66	Avg	11.21	V	27.55	47.96	-20.41
91.70	-84.16	Peak	11.21	V	34.05	67.96	-33.91
98.30	-95.55	Avg	11.44	V	22.89	47.96	-25.07
98.30	-89.25	Peak	11.44	V	29.19	67.96	-38.77
105.30	-89.49	Avg	11.82	V	29.33	47.96	-18.63
105.30	-85.29	Peak	11.82	V	33.53	67.96	-34.43
91.70	-86.26	Avg	11.21	H	31.95	47.96	-16.01
91.70	-79.76	Peak	11.21	H	38.45	67.96	-29.51
98.30	-85.35	Avg	11.44	H	33.09	47.96	-14.87
98.30	-80.85	Peak	11.44	H	37.59	67.96	-30.37
105.30	-95.19	Avg	11.82	H	23.63	47.96	-24.33
105.30	-88.69	Peak	11.82	H	30.13	67.96	-37.83

Table 7-24. In-Band Radiated Measurements (Chevy Impala) – Test Configuration #10 (Passenger Side – 270 degrees) – Sirius Mode

7.6.3 Radiated Measurement Data for Pontiac G6

§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	-91.46	Avg	11.21	V	26.75	47.96	-21.21
91.70	-85.56	Peak	11.21	V	32.65	67.96	-35.31
98.30	-90.15	Avg	11.44	V	28.29	47.96	-19.67
98.30	-87.15	Peak	11.44	V	31.29	67.96	-36.67
105.30	-82.79	Avg	11.82	V	36.03	47.96	-11.93
105.30	-78.49	Peak	11.82	V	40.33	67.96	-27.63
91.70	-93.16	Avg	11.21	H	25.05	47.96	-22.91
91.70	-86.96	Peak	11.21	H	31.25	67.96	-36.71
98.30	-92.55	Avg	11.44	H	25.89	47.96	-22.07
98.30	-86.55	Peak	11.44	H	31.89	67.96	-36.07
105.30	-91.69	Avg	11.82	H	27.13	47.96	-20.83
105.30	-83.59	Peak	11.82	H	35.23	67.96	-32.73

Table 7-25. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Front Side – 0 degrees) – XM Mode

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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	-84.86	Avg	11.21	V	33.35	47.96	-14.61
91.70	-81.36	Peak	11.21	V	36.85	67.96	-31.11
98.30	-82.95	Avg	11.44	V	35.49	47.96	-12.47
98.30	-78.35	Peak	11.44	V	40.09	67.96	-27.87
105.30	-84.19	Avg	11.82	V	34.63	47.96	-13.33
105.30	-81.09	Peak	11.82	V	37.73	67.96	-30.23
91.70	-93.26	Avg	11.21	H	24.95	47.96	-23.01
91.70	-87.16	Peak	11.21	H	31.05	67.96	-36.91
98.30	-90.55	Avg	11.44	H	27.89	47.96	-20.07
98.30	-82.45	Peak	11.44	H	35.99	67.96	-31.97
105.30	-92.39	Avg	11.82	H	26.43	47.96	-21.53
105.30	-86.79	Peak	11.82	H	32.03	67.96	-35.93

Table 7-26. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Rear Side – 180 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-90.16	Avg	11.21	V	28.05	47.96	-19.91
91.70	-86.36	Peak	11.21	V	31.85	67.96	-36.11
98.30	-92.15	Avg	11.44	V	26.29	47.96	-21.67
98.30	-87.25	Peak	11.44	V	31.19	67.96	-36.77
105.30	-90.49	Avg	11.82	V	28.33	47.96	-19.63
105.30	-85.89	Peak	11.82	V	32.93	67.96	-35.03
91.70	-91.06	Avg	11.21	H	27.15	47.96	-20.81
91.70	-86.66	Peak	11.21	H	31.55	67.96	-36.41
98.30	-91.65	Avg	11.44	H	26.79	47.96	-21.17
98.30	-86.65	Peak	11.44	H	31.79	67.96	-36.17
105.30	-84.99	Avg	11.82	H	33.83	47.96	-14.13
105.30	-82.09	Peak	11.82	H	36.73	67.96	-31.23

Table 7-27. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Driver Side – 90 degrees) – XM Mode

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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	-84.56	Avg	11.21	V	33.65	47.96	-14.31
91.70	-80.86	Peak	11.21	V	37.35	67.96	-30.61
98.30	-93.85	Avg	11.44	V	24.59	47.96	-23.37
98.30	-85.55	Peak	11.44	V	32.89	67.96	-35.07
105.30	-89.19	Avg	11.82	V	29.63	47.96	-18.33
105.30	-84.39	Peak	11.82	V	34.43	67.96	-33.53
91.70	-86.16	Avg	11.21	H	32.05	47.96	-15.91
91.70	-81.76	Peak	11.21	H	36.45	67.96	-31.51
98.30	-90.45	Avg	11.44	H	27.99	47.96	-19.97
98.30	-86.25	Peak	11.44	H	32.19	67.96	-35.77
105.30	-92.29	Avg	11.82	H	26.53	47.96	-21.43
105.30	-85.59	Peak	11.82	H	33.23	67.96	-34.73

Table 7-28. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Passenger Side – 270 degrees) – XM Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
91.70	-91.26	Avg	11.21	V	26.95	47.96	-21.01
91.70	-84.96	Peak	11.21	V	33.25	67.96	-34.71
98.30	-91.45	Avg	11.44	V	26.99	47.96	-20.97
98.30	-83.85	Peak	11.44	V	34.59	67.96	-33.37
105.30	-83.19	Avg	11.82	V	35.63	47.96	-12.33
105.30	-80.29	Peak	11.82	V	38.53	67.96	-29.43
91.70	-93.96	Avg	11.21	H	24.25	47.96	-23.71
91.70	-87.66	Peak	11.21	H	30.55	67.96	-37.41
98.30	-92.15	Avg	11.44	H	26.29	47.96	-21.67
98.30	-86.95	Peak	11.44	H	31.49	67.96	-36.47
105.30	-91.39	Avg	11.82	H	27.43	47.96	-20.53
105.30	-86.19	Peak	11.82	H	32.63	67.96	-35.33

Table 7-29. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Front Side – 0 degrees) – Sirius Mode

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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	-84.66	Avg	11.21	V	33.55	47.96	-14.41
91.70	-80.76	Peak	11.21	V	37.45	67.96	-30.51
98.30	-84.05	Avg	11.44	V	34.39	47.96	-13.57
98.30	-79.15	Peak	11.44	V	39.29	67.96	-28.67
105.30	-86.59	Avg	11.82	V	32.23	47.96	-15.73
105.30	-80.69	Peak	11.82	V	38.13	67.96	-29.83
91.70	-93.36	Avg	11.21	H	24.85	47.96	-23.11
91.70	-86.76	Peak	11.21	H	31.45	67.96	-36.51
98.30	-91.25	Avg	11.44	H	27.19	47.96	-20.77
98.30	-83.35	Peak	11.44	H	35.09	67.96	-32.87
105.30	-93.39	Avg	11.82	H	25.43	47.96	-22.53
105.30	-87.49	Peak	11.82	H	31.33	67.96	-36.63

Table 7-30. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Rear Side – 180 degrees) – Sirius Mode

Frequency [MHz]	Level [dBm]	Detector	AFCL [dB]	Pol [H/V]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
91.70	-89.36	Avg	11.21	V	28.85	47.96	-19.11
91.70	-86.26	Peak	11.21	V	31.95	67.96	-36.01
98.30	-91.25	Avg	11.44	V	27.19	47.96	-20.77
98.30	-86.65	Peak	11.44	V	31.79	67.96	-36.17
105.30	-90.29	Avg	11.82	V	28.53	47.96	-19.43
105.30	-86.19	Peak	11.82	V	32.63	67.96	-35.33
91.70	-89.96	Avg	11.21	H	28.25	47.96	-19.71
91.70	-86.06	Peak	11.21	H	32.15	67.96	-35.81
98.30	-90.55	Avg	11.44	H	27.89	47.96	-20.07
98.30	-85.45	Peak	11.44	H	32.99	67.96	-34.97
105.30	-84.29	Avg	11.82	H	34.53	47.96	-13.43
105.30	-81.59	Peak	11.82	H	37.23	67.96	-30.73

Table 7-31. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Driver Side – 90 degrees) – Sirius Mode

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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	-86.46	Avg	11.21	V	31.75	47.96	-16.21
91.70	-80.26	Peak	11.21	V	37.95	67.96	-30.01
98.30	-93.25	Avg	11.44	V	25.19	47.96	-22.77
98.30	-85.25	Peak	11.44	V	33.19	67.96	-34.77
105.30	-88.29	Avg	11.82	V	30.53	47.96	-17.43
105.30	-84.59	Peak	11.82	V	34.23	67.96	-33.73
91.70	-86.06	Avg	11.21	H	32.15	47.96	-15.81
91.70	-81.26	Peak	11.21	H	36.95	67.96	-31.01
98.30	-90.45	Avg	11.44	H	27.99	47.96	-19.97
98.30	-84.05	Peak	11.44	H	34.39	67.96	-33.57
105.30	-92.59	Avg	11.82	H	26.23	47.96	-21.73
105.30	-86.69	Peak	11.82	H	32.13	67.96	-35.83

Table 7-32. In-Band Radiated Measurements (Pontiac G6) – Test Configuration #11 (Passenger Side – 270 degrees) – Sirius Mode

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) Lincoln Navigator, (2) Chevy Impala, and (3) Pontiac G6.

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 μV/m (47.96 dBμ/m) at 3 meters.

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7.7 Out-of-Band Radiated Spurious Emission Measurements

§15.239 (c) / §15.209

Mode: Live XM Signal

Measurement Distance: 3 Meters

Operating Frequency: 88.5MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Field Strength [µV/m]	Margin [dB]
176.20	-111.01	14.08	V	1.0	80	10.07	3.19	-33.45
264.30	-115.10	14.13	V	1.2	200	6.03	2.00	-39.99
352.40	-116.30	17.06	H	1.2	150	7.76	2.44	-38.26
440.50	-108.75	18.98	V	1.5	210	17.23	7.27	-28.79
528.60	-135.00	20.57	H	1.0	0	-7.43	0.43	-53.45
616.70	-135.00	21.99	V	1.0	0	-6.01	0.50	-52.03

Table 7-33. Radiated Measurements (Live XM Signal) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM aerial antenna.

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]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Field Strength [µV/m]	Margin [dB]
193.80	-113.90	14.16	V	1.3	50	7.27	2.31	-36.25
290.70	-115.23	15.30	H	1.4	160	7.07	2.26	-38.95
387.60	-119.44	17.88	V	1.2	160	5.44	1.87	-40.58
484.50	-135.00	19.79	V	1.0	0	-8.21	0.39	-54.23
581.40	-135.00	21.45	H	1.0	0	-6.55	0.47	-52.58
678.30	-135.00	22.86	V	1.0	0	-5.14	0.55	-51.16

Table 7-34. Radiated Measurements (Live XM Signal) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM aerial antenna.

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: 107.7MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
215.80	-114.14	13.94	V	1.3	20	6.80	2.19	-36.72
323.69	-114.96	16.34	V	1.2	0	8.38	2.62	-37.64
431.60	-118.66	18.80	V	1.2	80	7.14	2.27	-38.88
539.50	-135.00	20.76	V	1.0	0	-7.24	0.43	-53.26
647.40	-135.00	22.43	V	1.0	0	-5.57	0.53	-51.59
755.30	-135.00	23.85	V	1.0	0	-4.15	0.62	-50.17

Table 7-35. Radiated Measurements (Live XM Signal) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM aerial antenna.

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
§15.239 (c) / §15.209

Mode: Live Sirius Mode

Measurement Distance: 3 Meters

Operating Frequency: 88.5MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Field Strength [µV/m]	Margin [dB]
176.20	-114.11	14.08	V	1.3	150	6.97	2.23	-36.55
264.30	-114.50	14.13	V	1.2	20	6.63	2.15	-39.39
352.40	-119.70	17.06	H	1.1	0	4.36	1.65	-41.66
440.50	-135.00	18.98	V	1.0	0	-9.02	0.35	-55.05
528.60	-135.00	20.57	H	1.0	0	-7.43	0.43	-53.45
616.70	-135.00	21.99	H	1.0	0	-6.01	0.50	-52.03

Table 7-36. Radiated Measurements (Live Sirius Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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 Sirius Mode

Measurement Distance: 3 Meters

Operating Frequency: 96.9MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
193.80	-114.70	14.16	V	1.3	20	6.47	2.11	-37.05
290.70	-114.93	15.30	V	1.3	80	7.37	2.34	-38.65
387.60	-121.94	17.88	V	1.5	30	2.94	1.40	-43.08
484.50	-135.00	19.79	V	1.0	0	-8.21	0.39	-54.23
581.40	-135.00	21.45	V	1.0	0	-6.55	0.47	-52.58
678.30	-135.00	22.86	V	1.0	0	-5.14	0.55	-51.16

Table 7-37. Radiated Measurements (Live Sirius Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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 Sirius Mode

Measurement Distance: 3 Meters

Operating Frequency: 107.7MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
215.80	-113.89	13.94	V	1.3	49	7.05	2.25	-36.47
323.69	-114.56	16.34	V	1.2	0	8.78	2.75	-37.24
431.60	-122.26	18.80	V	1.5	80	3.54	1.50	-42.48
539.50	-135.00	20.76	V	1.0	0	-7.24	0.43	-53.26
647.40	-135.00	22.43	V	1.0	0	-5.57	0.53	-51.59
755.30	-135.00	23.85	V	1.0	0	-4.15	0.62	-50.17

Table 7-38. Radiated Measurements (Live Sirius Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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

§15.239 (c) / §15.209

Mode: Song Saver Mode

Measurement Distance: 3 Meters

Operating Frequency: 88.5MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Field Strength [µV/m]	Margin [dB]
176.20	-112.21	14.08	V	1.2	55	8.87	2.78	-34.65
264.30	-116.20	14.13	H	1.5	180	4.93	1.77	-41.09
352.40	-119.90	17.06	H	1.5	180	4.16	1.61	-41.86
440.50	-110.35	18.98	V	1.8	225	15.63	6.04	-30.39
528.60	-135.00	20.57	V	1.0	0	-7.43	0.43	-53.45
616.70	-135.00	21.99	V	1.0	0	-6.01	0.50	-52.03

Table 7-39. Radiated Measurements (Song Saver Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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: Song Saver Mode

Measurement Distance: 3 Meters

Operating Frequency: 96.9MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
193.80	-113.13	14.16	V	1.2	45	8.04	2.52	-35.48
290.70	-118.23	15.30	H	1.2	180	4.07	1.60	-41.95
387.60	-121.54	17.88	H	1.2	160	3.34	1.47	-42.68
484.50	-135.00	19.79	V	1.0	0	-8.21	0.39	-54.23
581.40	-135.00	21.45	V	1.0	0	-6.55	0.47	-52.58
678.30	-135.00	22.86	V	1.0	0	-5.14	0.55	-51.16

Table 7-40. Radiated Measurements (Song Saver Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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: Song Saver Mode

Measurement Distance: 3 Meters

Operating Frequency: 107.7MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
215.80	-115.04	13.94	V	1.2	45	5.90	1.97	-37.62
323.69	-114.56	16.34	H	1.5	180	8.78	2.75	-37.24
431.60	-119.56	18.80	H	1.5	180	6.24	2.05	-39.78
539.50	-135.00	20.76	V	1.0	0	-7.24	0.43	-53.26
647.40	-135.00	22.43	V	1.0	0	-5.57	0.53	-51.59
755.30	-135.00	23.85	V	1.0	0	-4.15	0.62	-50.17

Table 7-41. Radiated Measurements (Song Saver Mode) – Test Configuration #7

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set in song playback mode while coupled to the FM aerial antenna.

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 – Industry Canada RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters

Operating Frequency: 88.1MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Field Strength [µV/m]	Margin [dB]
176.20	-103.21	14.08	V	1.0	30	17.87	7.83	-25.65
264.30	-101.10	14.13	V	1.2	90	20.03	10.04	-25.99
352.40	-113.80	17.06	H	1.5	170	10.26	3.26	-35.76
440.50	-135.00	18.98	V	1.0	0	-9.02	0.35	-55.05
528.60	-135.00	20.57	V	1.0	0	-7.43	0.43	-53.45
616.70	-135.00	21.99	V	1.0	0	-6.01	0.50	-52.03

Table 7-42. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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 – Industry Canada (Cont'd)
RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters

Operating Frequency: 97.5MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
193.80	-104.20	14.16	V	1.0	70	16.97	7.05	-26.55
290.70	-103.93	15.30	V	1.2	30	18.37	8.29	-27.65
387.60	-111.04	17.88	H	1.3	120	13.84	4.92	-32.18
484.50	-135.00	19.79	V	1.0	0	-8.21	0.39	-54.23
581.40	-135.00	21.45	V	1.0	0	-6.55	0.47	-52.58
678.30	-135.00	22.86	V	1.0	0	-5.14	0.55	-51.16

Table 7-43. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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 – Industry Canada (Cont'd)

RSS-210 (2.7)

Mode: Live XM Signal

Measurement Distance: 3 Meters

Operating Frequency: 107.9MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
215.80	-99.84	13.94	V	1.0	300	21.10	11.35	-22.42
323.69	-101.66	16.34	V	1.0	0	21.68	12.13	-24.34
431.60	-96.86	18.80	V	1.2	240	28.94	27.99	-17.08
539.50	-135.00	20.76	V	1.0	0	-7.24	0.43	-53.26
647.40	-135.00	22.43	V	1.0	0	-5.57	0.53	-51.59
755.30	-135.00	23.85	V	1.0	0	-4.15	0.62	-50.17

Table 7-44. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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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7.9 Out-of-Band Radiated Spurious Emission Measurements – Industry Canada RSS-210 (2.7)

Mode: Live Sirius Signal

Measurement Distance: 3 Meters

Operating Frequency: 88.1MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
176.20	-104.61	14.08	V	1.3	0	16.47	6.66	-27.05
264.30	-103.00	14.13	V	1.1	20	18.13	8.07	-27.89
352.40	-107.73	17.06	V	1.3	150	16.33	6.56	-29.69
440.50	-135.00	18.98	V	1.0	0	-9.02	0.35	-55.05
528.60	-135.00	20.57	V	1.0	0	-7.43	0.43	-53.45
616.70	-135.00	21.99	V	1.0	0	-6.01	0.50	-52.03

Table 7-45. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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 – Industry Canada (Cont'd)

RSS-210 (2.7)

Mode: Live Sirius Signal

Measurement Distance: 3 Meters

Operating Frequency: 97.5MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
193.80	-104.10	14.16	V	1.4	0	17.07	7.13	-26.45
290.70	-103.93	15.30	V	1.2	50	18.37	8.29	-27.65
387.60	-109.74	17.88	V	1.4	80	15.14	5.72	-30.88
484.50	-135.00	19.79	V	1.0	0	-8.21	0.39	-54.23
581.40	-135.00	21.45	V	1.0	0	-6.55	0.47	-52.58
678.30	-135.00	22.86	V	1.0	0	-5.14	0.55	-51.16

Table 7-46. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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 – Industry Canada (Cont'd)

RSS-210 (2.7)

Mode: Live Sirius Signal

Measurement Distance: 3 Meters

Operating Frequency: 107.9MHz

Frequency [MHz]	Level [dBm]	AFCL [dB]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBμV/m]	Field Strength [μV/m]	Margin [dB]
215.80	-99.84	13.94	V	1.0	0	21.10	11.35	-22.42
323.69	-103.96	16.34	V	1.3	0	19.38	9.31	-26.64
431.60	-99.56	18.80	V	1.3	80	26.24	20.51	-19.78
539.50	-135.00	20.76	V	1.0	0	-7.24	0.43	-53.26
647.40	-135.00	22.43	V	1.0	0	-5.57	0.53	-51.59
755.30	-135.00	23.85	V	1.0	0	-4.15	0.62	-50.17

Table 7-47. Radiated Measurements (Industry Canada) – Test Configuration #8

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. The EUT was connected to a vehicle adapter which is connected to a SureConnect FM coupler splitter box. The unit is set to receive a live XM signal while coupled to the FM glass antenna.

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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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Sirius XM Radio Satellite Radio Receiver with FM Transmitter FCC ID: RS2SPRCI / IC Cert. No.: 5697A-SPRCI** 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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