



TEST REPORT

Report Number: 100410240ATL-001

June 27, 2011

Product Name: Sirius Starmate 8 (Sirius onyX)

Product Model Number: SST8

Standard: FCC Part 15, Subpart C, Intentional Radiators (15.239)
RSS-210, Issue 7 (Annex A2.8)

Tested by:
Intertek Testing Services NA Inc.
1950 Evergreen Blvd., Suite 100
Duluth, GA 30096

Client:
SIRIUS XM Radio Inc
1500 Eckington PL NE
Washington, DC 20002
Contact: Beejay Jolayemi
Phone: 202.680.4288
Fax: 202.380.4091

Report prepared by:

Richard Bianco
EMC Project Engineer

Report reviewed by:

Jeremy O. Pickens
Department Manager - EMC

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1.0 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 3.0. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested complies with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Refer to the Test Summary for the specific details.

2.0 Test Summary

Section	Test Full Name	Test Date	Result
4.0	System setup including cable interconnection details, support equipment and simplified block diagram. (System		PASS
5.0	Transmitter Information for equipment operating under Parts 11, 15 and 18 of the rules (Transmitter Info -		PASS
6.0	Occupied Bandwidth (FCC 15C - 15.239 (a))		PASS
7.0	§ 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions – Home Cradle		PASS
8.0	§ 15.109(a) Unintentional Radiated Emissions – Home Cradle		PASS
9.0	§ 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FM Direct		PASS
10.0	§ 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – Cassette Adapter		PASS
11.0	§ 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FEA Unit		PASS
12.0	§ 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – PowerConnect		PASS
13.0	Test Equipment List		
14.0	Revision History		

3.0 Description of Equipment Under Test

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Sirius Starmate 8 (Sirius onyX)	SIRIUS XM Satellite Radio	SST8	1119

EUT receive date:	June 1, 2011
EUT receive condition:	Good

Description of EUT provided by Client:

onyX Hardware Features

- Revolutionary SiriusXM *PowerConnect*™ FM Transmitter works through your vehicle's radio* with easy Do-It-Yourself Installation. The color-coded Vehicle Dock makes it simple to connect.
- Customize your display by choosing the backlight color theme that matches your mood or vehicle dash lights.
- Personalize your radio by choosing the trim ring that reflects your taste or complements your vehicle interior.
- View artist name, song title, and channel information on the large color display.
- Browse programs, artists, and songs playing on other channels without having to change the channel.
- One-Touch Jump™ to traffic and weather of the 20 most congested cities, or to the previous channel to which you were listening.
- Save and enjoy fast access to up to 10 of your favorite channels.
- Lock and unlock channels with easy-to-use parental controls.
- Complete *PowerConnect* Vehicle Kit included.
- Universal docking capability - add accessories for your home, office, additional vehicles or even outdoors.

Description of EUT exercising:

The EUT was powered with a 12Vdc battery supplied to the dock. The satellite signal was amplified and retransmitted into the emissions chamber to the radio under test. The radio then transmitted the music on the FM channel being investigated. The channels tested were 88.1, 96.9, and 107.9MHz.

Mode of Operation	Frequency Range (MHz)	Number of Channels	Channel Separation (kHz)
FM	88.1-107.9	100	200

Applicant Information:

XM Radio Inc.
1500 Eckington PI, NE
Washington, DC 20002

Manufacturer Information:

WNC (Kunshan) Corp.
NO. 88 Central Avenue, Area B, Kunshan Export Processing Zone
Kunshan City, Jiangsu, China

4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Method:

Record the details of EUT cabling, document the support equipment, and show the interconnections in a block diagram.

Description	Manufacturer	Model Number	Serial Number
Indoor/Outdoor Antenna	Sirius XM	Not Labeled	9K309457M
Homedock	Sirius XM	SUPH1	1009
AC/DC Switching Supply	DVE	DSA-15P-05/US	NA

Support Equipment - Cassette Configuration			
Description	Manufacturer	Model Number	Serial Number
PowerConnect Dock	Sirius XM	SDPIV1	1117
Cassette	Sirius XM	XMTT200257	NA
Cigarette Lighter Socket w/ Sirius Vehicle Antenna	Sirius XM	NA	NA
Vehicle Power Adapter	Sirius XM	UCA-DOT	U412B1800D4BJ01
Cigarette Lighter Socket w/ 12V AGM Battery	Sirius XM	SXDPIP1	1117
	Sirius XM	NA	NA
	Werker	WKA12-80C/FR	NA

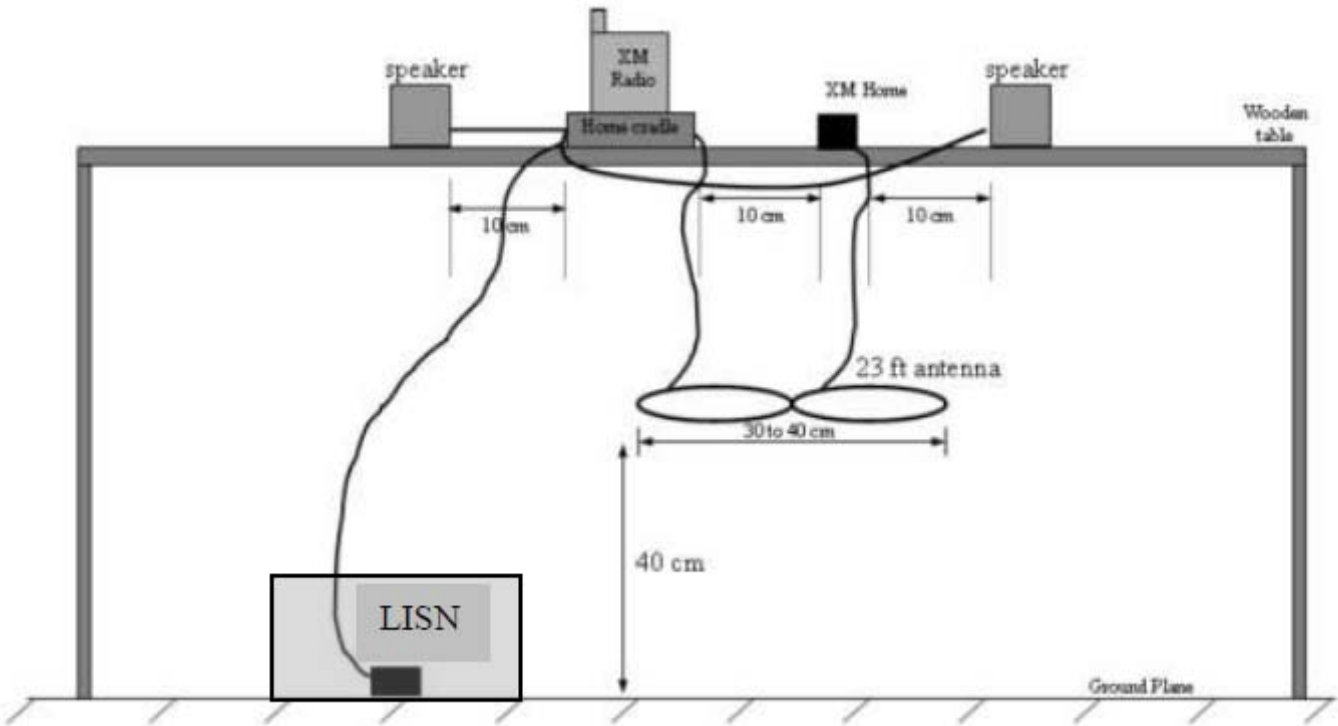
Support Equipment - FEA Configuration			
Description	Manufacturer	Model Number	Serial Number
PowerConnect Dock	Sirius XM	SDPIV1	1117
FM Extender Antenna (FEA)	Sirius XM	FEA25	NA
Cigarette Lighter Socket w/ Sirius Vehicle Antenna	Sirius XM	NA	NA
Vehicle Power Adapter	Sirius XM	UCA-DOT	U412B1800D4BJ01
Cigarette Lighter Socket w/ 12V AGM Battery	Sirius XM	SXDPIP1	1117
	Sirius XM	NA	NA
	Werker	WKA12-80C/FR	NA

Support Equipment - FM Direct Configuration			
Description	Manufacturer	Model Number	Serial Number
PowerConnect Dock	Sirius XM	SDPIV1	1117
FM Direct Adapter	Sirius XM	FMDA25	NA
Auxiliary Cable	Sirius XM	VZCC-A4B9090-LP4	NA
Extendable Monopole	NA	NA	NA
Cigarette Lighter Socket w/ Sirius Vehicle Antenna	Sirius XM	NA	NA
Vehicle Power Adapter	Sirius XM	UCA-DOT	U412B1800D4BJ01
Cigarette Lighter Socket w/ Twisted Pair Cable	Sirius XM	SXDPIP1	1117
	Sirius XM	NA	NA
	Werker	WKA12-80C/FR	NA

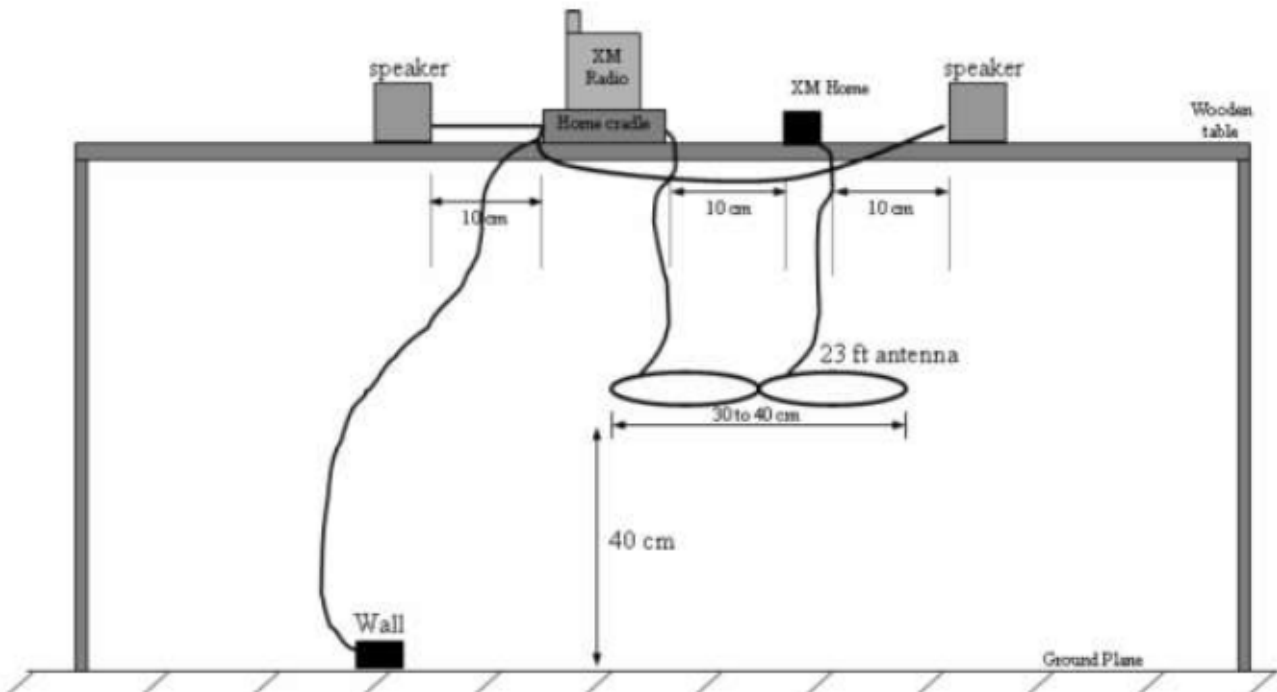
Support Equipment - PowerConnect Configuration			
Description	Manufacturer	Model Number	Serial Number
PowerConnect Dock	Sirius XM	SDPIV1	1117
Cigarette Lighter Socket w/ Sirius Vehicle Antenna	Sirius XM	NA	NA
Vehicle Power Adapter	Sirius XM	UCA-DOT	U412B1800D4BJ01
Cigarette Lighter Socket w/ 12V AGM Battery	Sirius XM	SXDPIP1	1117
	Sirius XM	NA	NA
	Werker	WKA12-80C/FR	NA

4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Configuration Diagram –Conducted Emissions (Home Dock)

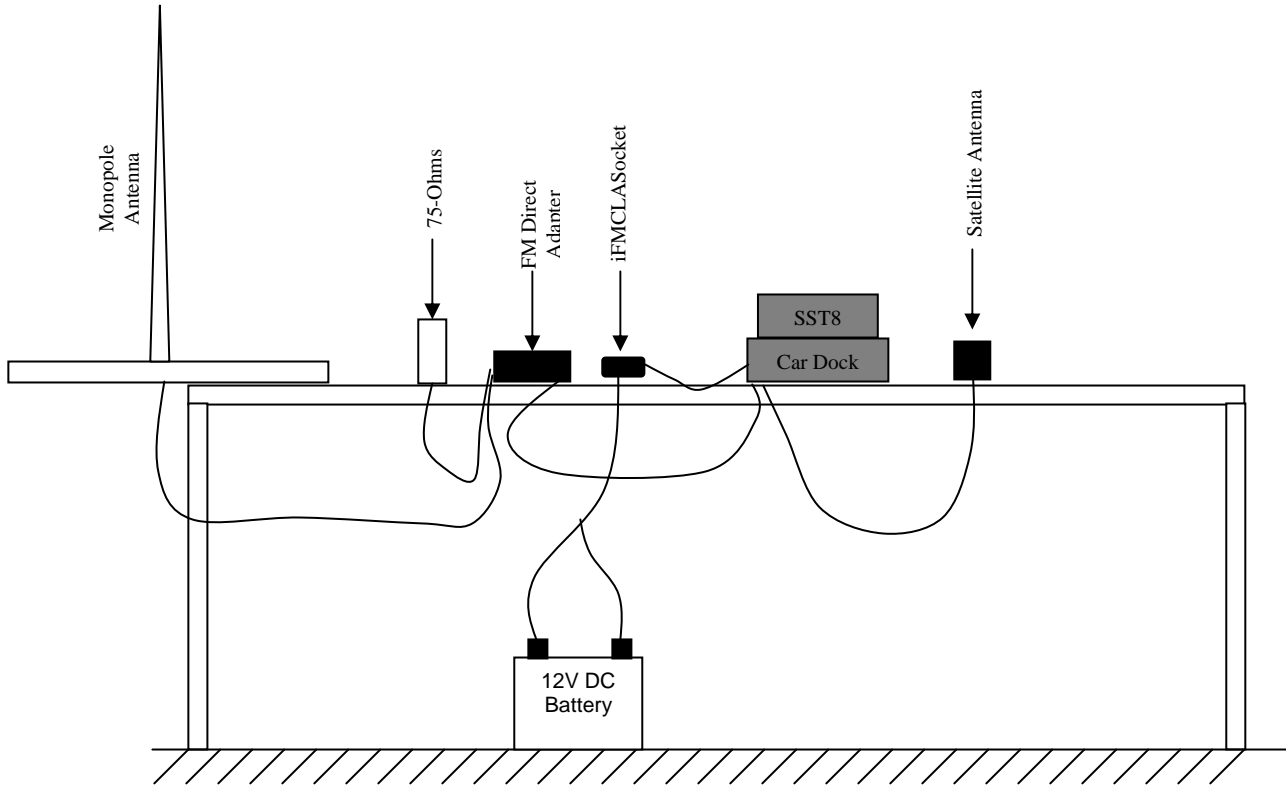


Configuration Diagram –Radiated Emissions (Home Dock)



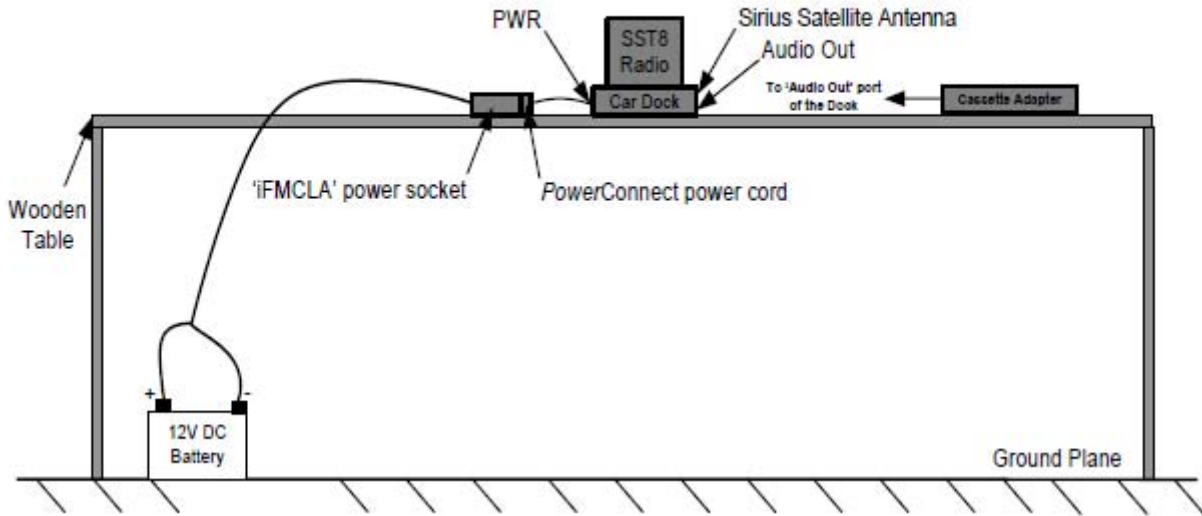
4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Configuration Diagram – FM Direct Configuration

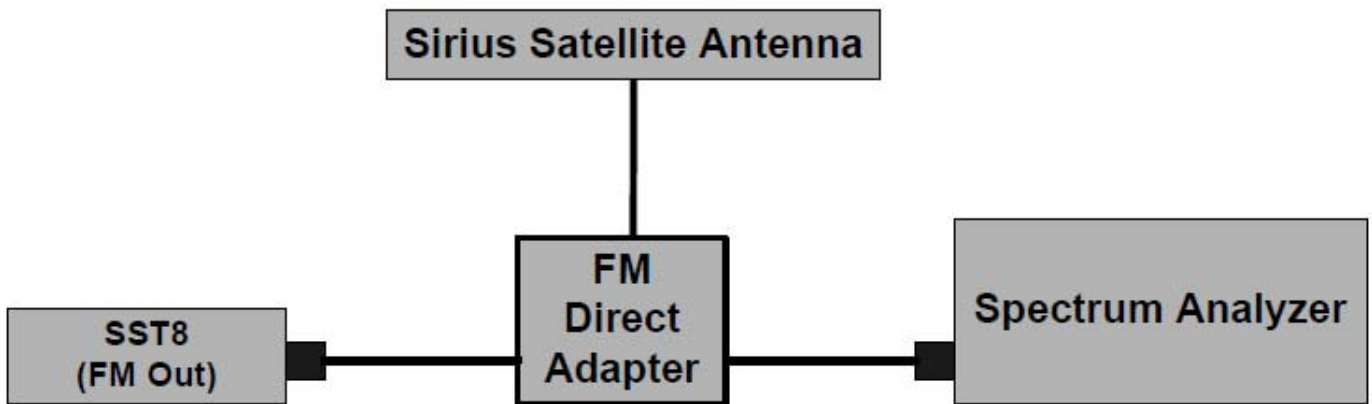


4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Configuration Diagram – Cassette Adapter Configuration

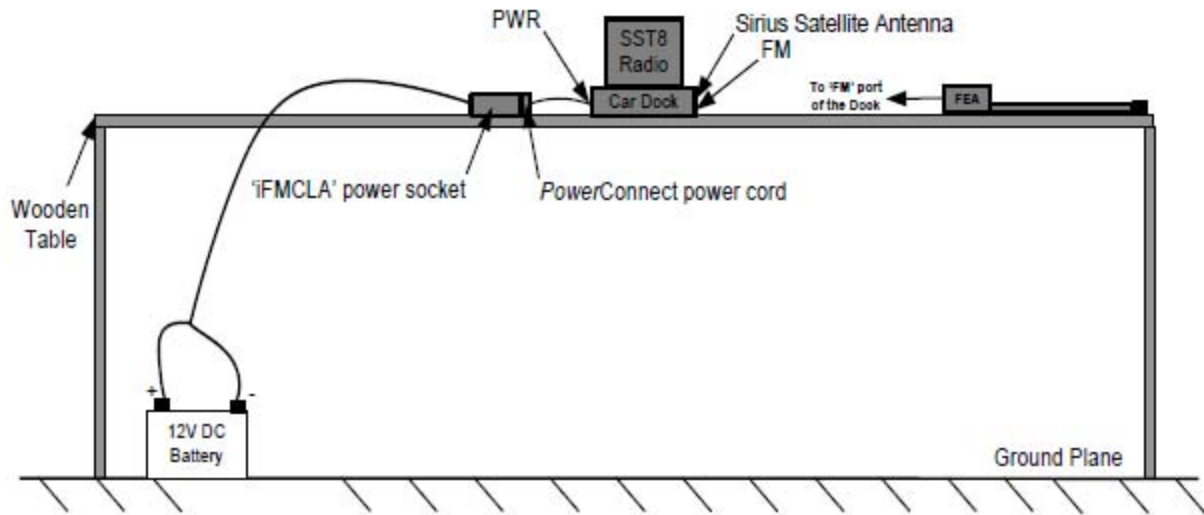


Configuration Diagram – FM Direct OBW Configuration

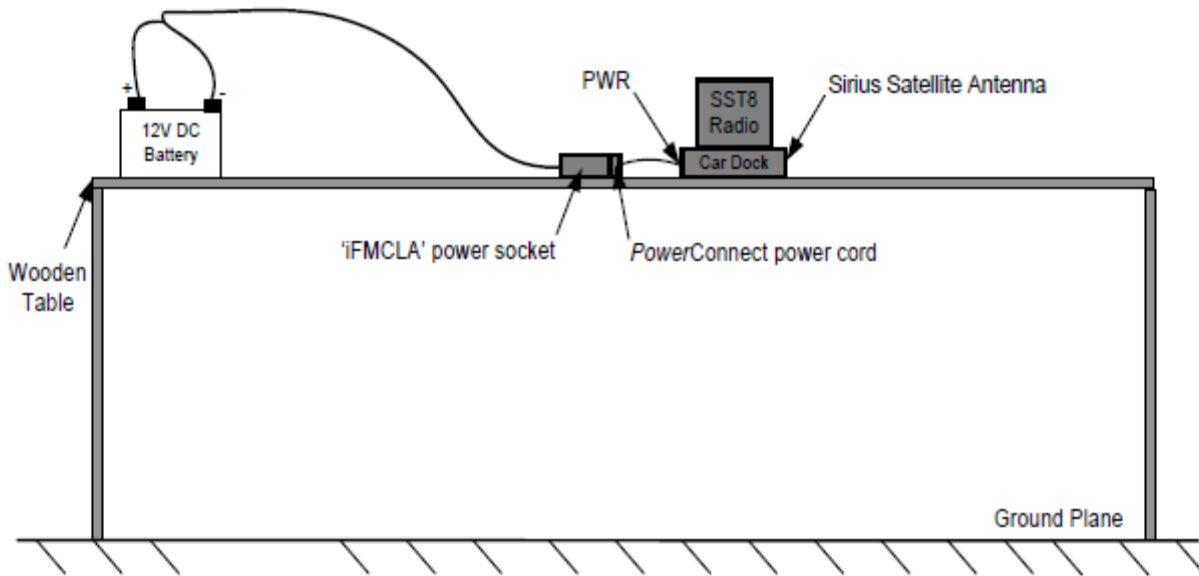


4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Configuration Diagram – FEA Configuration



Configuration Diagram – PowerConnect Configuration



5.0 Transmitter Information for equipment operating under Parts 11, 15 and 18 of the rules (Transmitter Info - Unlicensed)

FCC Rule Part			
2.1033(b)(1)	Applicant	Company Name:	Sirius XM Satellite Radio, Inc.
		Address:	3161 S.W. 10th Street, Deerfield Beach, FL 33442
		Phone:	202-680-4288
		Contact Name:	Beejay Jolayemi
	Manufacturer	Company Name:	Same
		Address:	Same
		Phone:	Same
		Contact Name:	Same
2.1033(b)(2)	Equipment	FCC ID:	RS2SST8
		EUT Model Number:	SST8
		EUT Serial Number:	1119
2.1033(b)(3)	User Manual	Attach as separate exhibit.	
2.1033(b)(4)	Brief description of circuit functions	Attach as separate exhibit.	
2.1033(b)(5)	Block diagram showing frequency of oscillators	Attach as separate exhibit.	
2.1033(b)(6)	Test report	Incorporated with this document	
2.1033(b)(7)	Internal and external photographs	Attach as separate exhibit.	
2.1033(b)(8)	Peripheral Equipment	Can be used?	N/A
		Comercially available?	N/A
2.1033(b)(9)	Transition rules apply?	No	
2.1033(b)(10)	Scanning receiver?	No	
2.1033(b)(11)	Transmitter in 59-64 GHz band?	No	
2.1033(b)(12)	Software defined radio?	No	

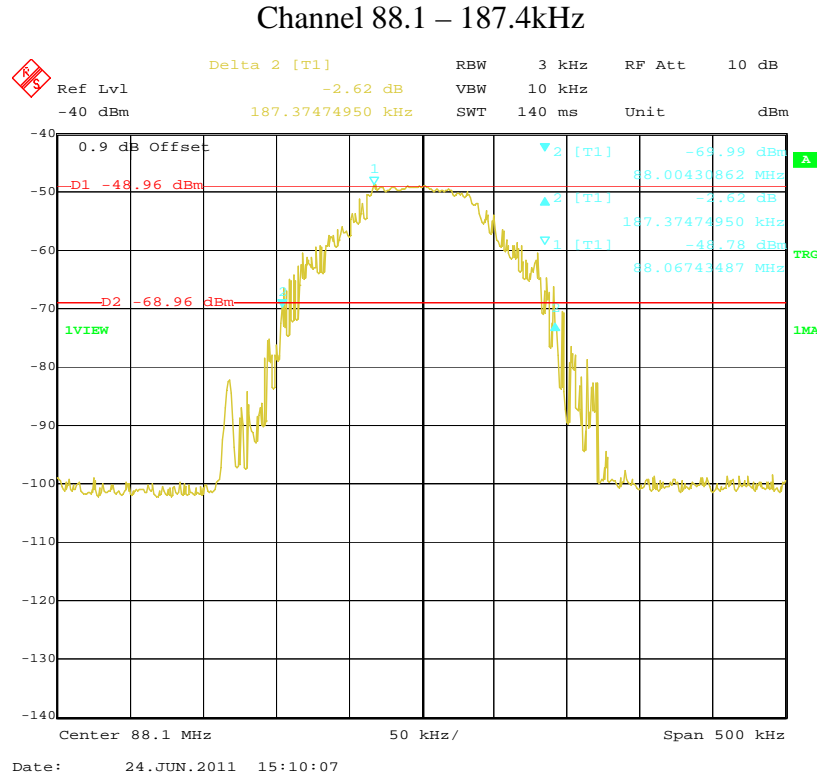
6.0 Occupied Bandwidth (FCC 15C - 15.239 (a))

Method:

Test Requirement: Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

Test Procedure: ANSI C63.4: 2003, Section 13.1.7 and Annex H.6

Results: The sample tested was found to Comply



Lower Channel – 88.1MHz

7.0 § 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions – Home Cradle

Method:

Equipment setup for conducted disturbance tests shall follow the guidelines of ANSI C63.4.

Measurements in the frequency range of 150kHz to 30 MHz shall be performed with a quasi-peak or average detector instrument that meets the requirements of Section One of CISPR 16. An AMN shall be used to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN defined in CISPR 16 shall be used.

In the frequency range of 150 kHz to 30 MHz, a resolution/video bandwidth of 9kHz/30kHz or greater shall be used.

The EUT shall be located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.

If a flexible mains cord is provided by the manufacturer that is in excess of 1m, the excess cable shall be folded back and forth as far as possible to form a bundle not exceeding 0.4m in length.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Conducted disturbance shall be measured between each current carrying conductor and the reference ground. Each measured values shall be reported.

If EUT is intended for tabletop use, the EUT shall be placed on a table whose top is 0.8m above the ground plane. A vertical, metal reference plane is placed 0.4m from the EUT. The vertical metal reference-plane is at least 2m by 2m. The EUT shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the floor standing EUT shall be placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material. The metal ground plane shall extend at least 0.5m beyond the boundaries of the EUT and had minimum dimensions of 2m by 2m.

TEST SITE

The test site for conducted emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. The VCCI Registration Number for this site is C-2818.

MEASUREMENT UNCERTAINTY

Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes. The values given are the measurement uncertainty values with an expanded uncertainty of $k=2$.

150 kHz to 30 MHz: +/- 2.8 dB

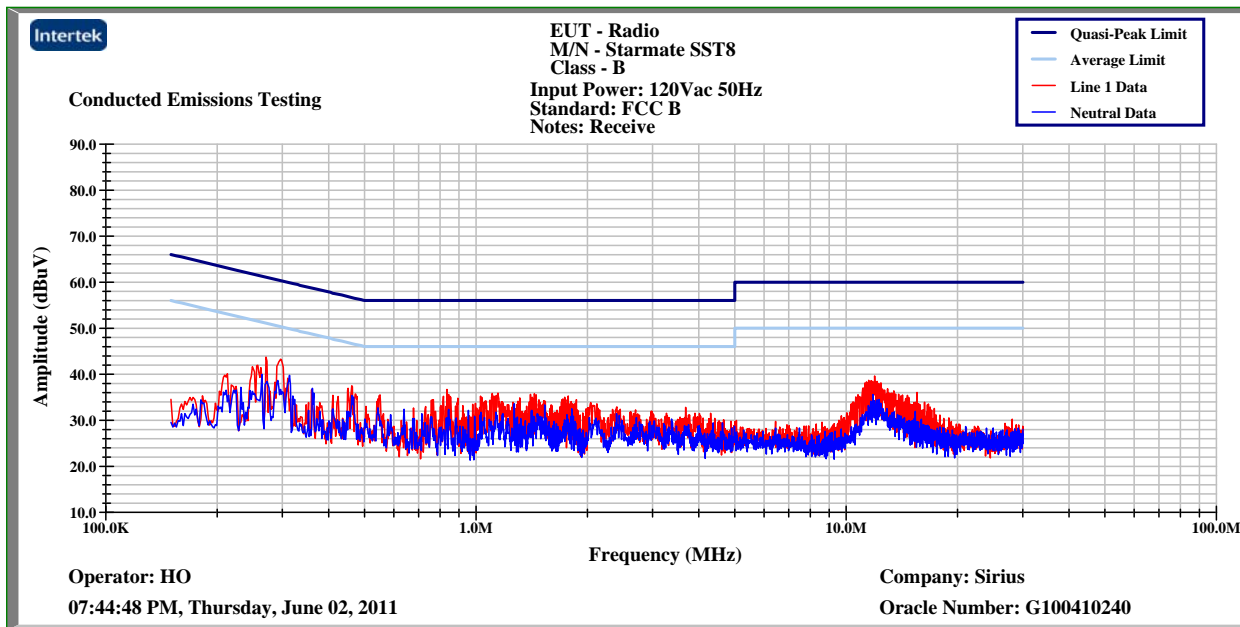
Results: The sample tested was found to Comply.

Specific Setup Details

- Home cradle connected to Home Sirius Satellite Antenna
- Home cradle connected to speaker set with supplied RCA audio cables
- Home cradle powered by AC home plug adapter
- Receiver configured to receive live Sirius Satellite programming
- Receiver configured for the Max audio output level.

7.0 § 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions – Home Cradle

Peak Plot – 150kHz-30MHz



Tabular Data

Date: 6/2/11

Frequency Range (MHz): .150-30Mhz

Limit: CISPR Class B

Input power: 120Vac 50Hz

Modifications for compliance (y/n): n

A	B	C	D	E	F	G	H	I
LISN Number	Detector (P,QP, A)	Frequency MHz	Reading dBuV	Cable Loss dB	LISN Ins. Loss dB	Net dBuV	Limit dBuV	Margin dB
1	p	0.269	27.1	10.2	6.0	43.3	51.3	-8.0
1	p	0.294	27.2	10.2	6.0	43.3	50.5	-7.2
1	p	0.838	20.2	10.2	5.9	36.2	46.0	-9.8
1	p	1.144	20.0	10.2	5.9	36.0	46.0	-10.0
1	p	1.771	18.3	10.2	5.9	34.4	46.0	-11.6
1	p	11.838	24.4	9.9	5.9	40.2	50.0	-9.8
2	P	0.273	25.4	10.2	6.0	41.5	51.1	-9.6
2	p	0.297	24.5	10.2	5.9	40.5	50.4	-9.9
2	p	0.316	23.5	10.2	5.9	39.5	49.8	-10.3
2	p	0.361	20.5	10.2	5.9	36.5	48.7	-12.2
2	p	1.273	18.0	10.2	5.9	34.0	46.0	-12.0
Calculations		G=D+E+F		I=G-H				

Note: Peak measurements are compared to the average limit.

8.0 § 15.109(a) Unintentional Radiated Emissions – Home Cradle

Method:

Measurements in the frequency range of 30 MHz to 1000 MHz shall be performed with a quasi-peak detector instrument that meets the requirements of Section One of CISPR 16. Above 1000 MHz, a peak detector shall be used. Peak values converted to average by applying the duty cycle correction factor, when applicable. When an average detector is used, it shall meet the requirements of Section One of CISPR 16. The measuring antenna shall correlate to a balanced dipole.

Bandwidths:

30 MHz to 1000 MHz: 120 kHz RBW and 1 MHz VBW

Above 1000 MHz: 1 MHz RBW and 3 MHz VBW

Measurements of the radiated field are made with the antenna located at a distance of 3 or 10 meters from the EUT. The limit applied to the measurement shall be appropriate for the test distance. The test distance shall be indicated in the results section.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Exploratory tests should be carried out while varying the cable positions to determine the maximum or near-maximum emission level. During manipulation, cables shall not be placed under or on top of the system test components unless such placement is required by the inherent equipment design.

The antenna shall be adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.

The antenna-to-EUT azimuth shall be varied during the measurement to find the maximum field-strength readings.

The antenna-to-EUT polarization (horizontal and vertical) shall be varied during the measurements to find the maximum field-strength readings.

If the EUT is intended for tabletop use, it shall be placed on a table whose top is 0.8m above the ground plane. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the EUT was placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material.

Equipment setup for radiated disturbance tests shall follow the guidelines of ANSI C63.4.

TEST SITE

The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. It is a 10 meter semi-anechoic chamber manufactured by Panashield. Embedded in the floor is a 3 meter diameter turntable.

A2LA: 1455.01

IC: 2077-1

VCCI Registration Number: R-2570

MEASUREMENT UNCERTAINTY

Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes. The values given are the measurement uncertainty values with an expanded uncertainty of $k=2$.

30 MHz to 1000 MHz at 3 meters: +/- 3.9 dB

30 MHz to 1000 MHz at 10 meters: +/- 3.6 dB

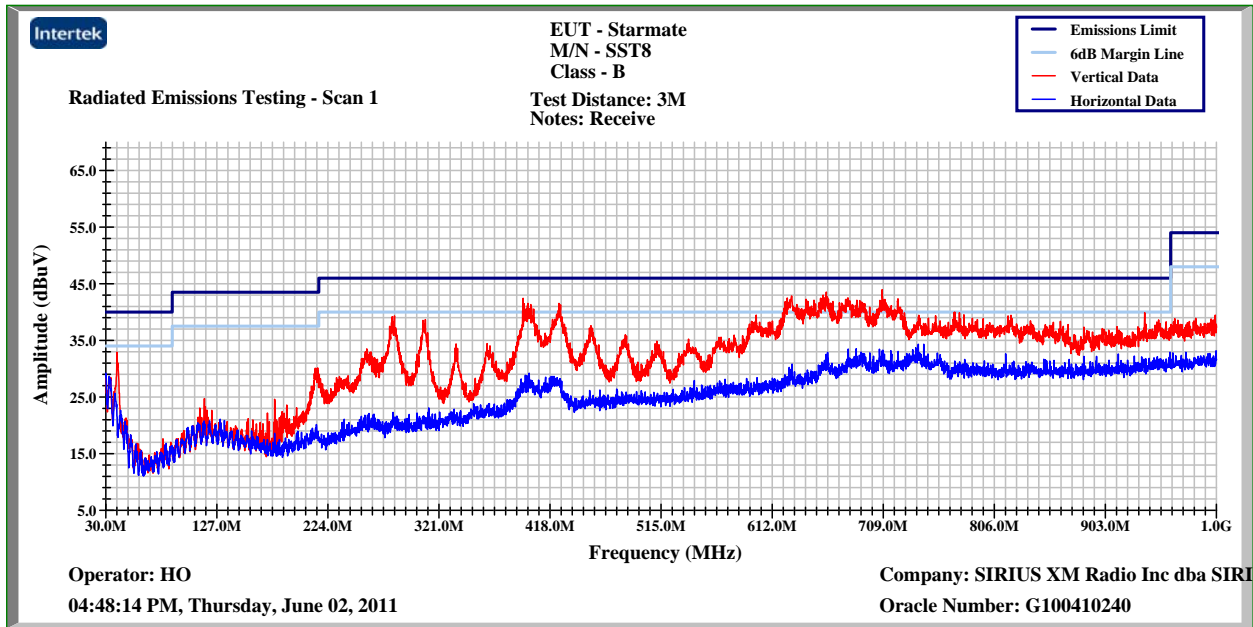
1 GHz to 18 GHz at 3 meters: +/- 4.2 dB

Specific Setup Details

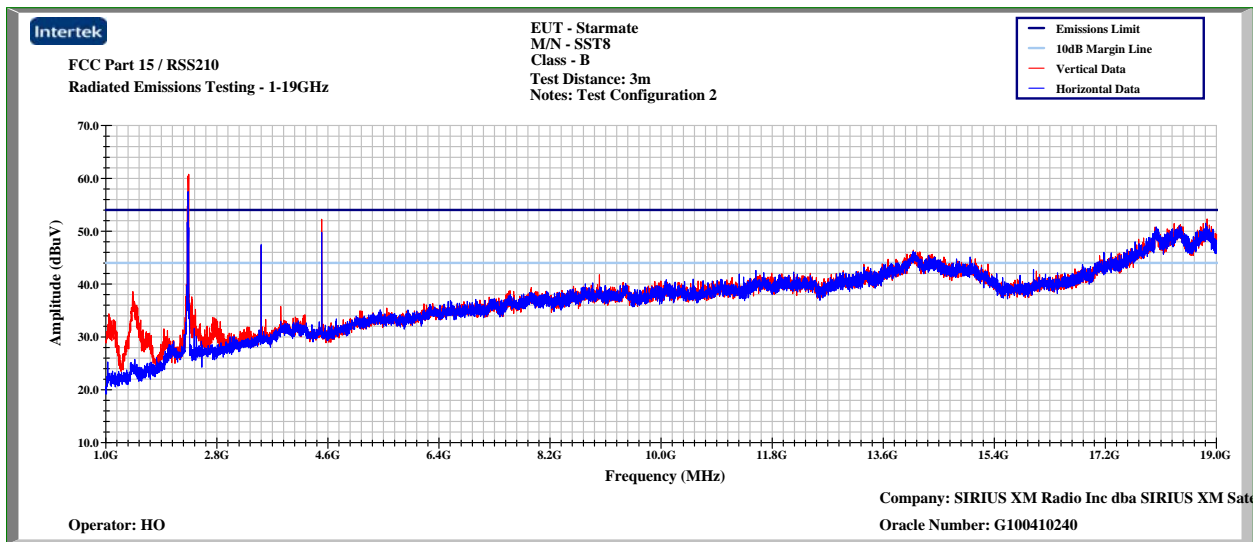
- Home cradle connected to Home Sirius Satellite Antenna
- Home cradle connected to speaker set with supplied RCA audio cables
- Home cradle powered by AC home plug adapter
- Receiver configured to receive live Sirius Satellite Programming
- Receiver configured for the Max audio output level

8.0 § 15.109(a) Unintentional Radiated Emissions – Home Cradle

Peak Plot – 30MHz-1000MHz



Peak Plot – 1000MHz-19000MHz



Note: Peaks above the limit between 2.2 and 2.5GHz are signals transmitted into the chamber with the satellite signal and are not related to the DUT.

8.0 § 15.109(a) Unintentional Radiated Emissions – Home Cradle

Tabular Data

Date: 6/2/11

Test Distance (m): 3m

Frequency Range (MHz): 1000-19000

Limit: FCC15 Class B-3m

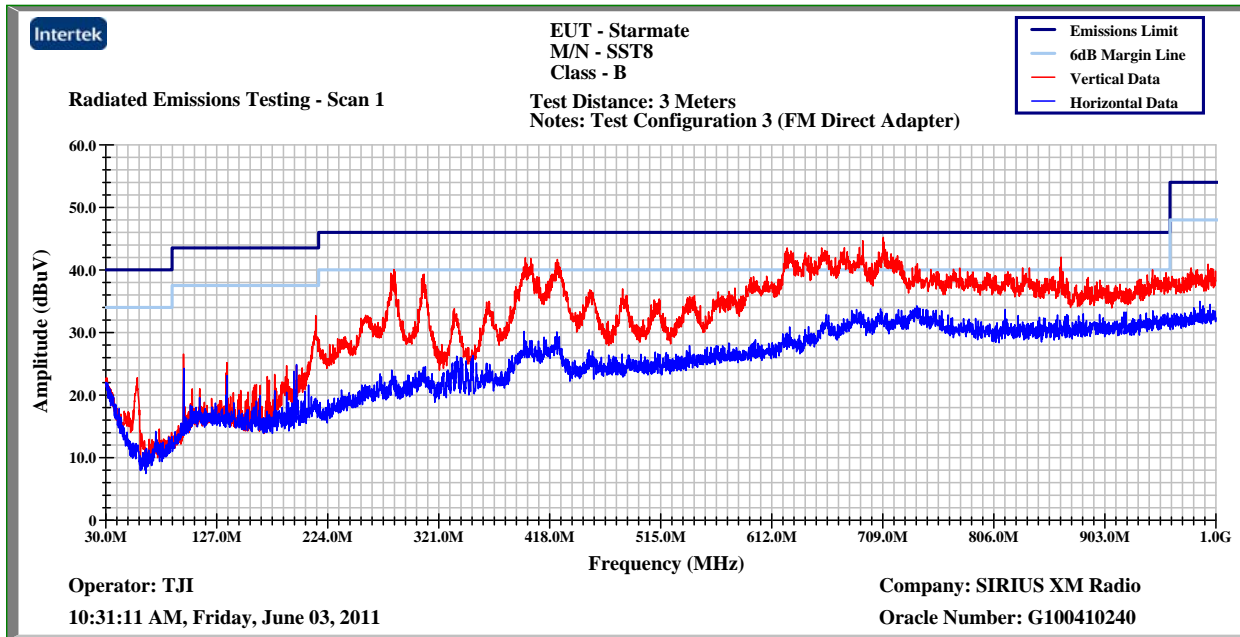
Input power: 120Vac 60Hz

Modifications for compliance (y/n): N

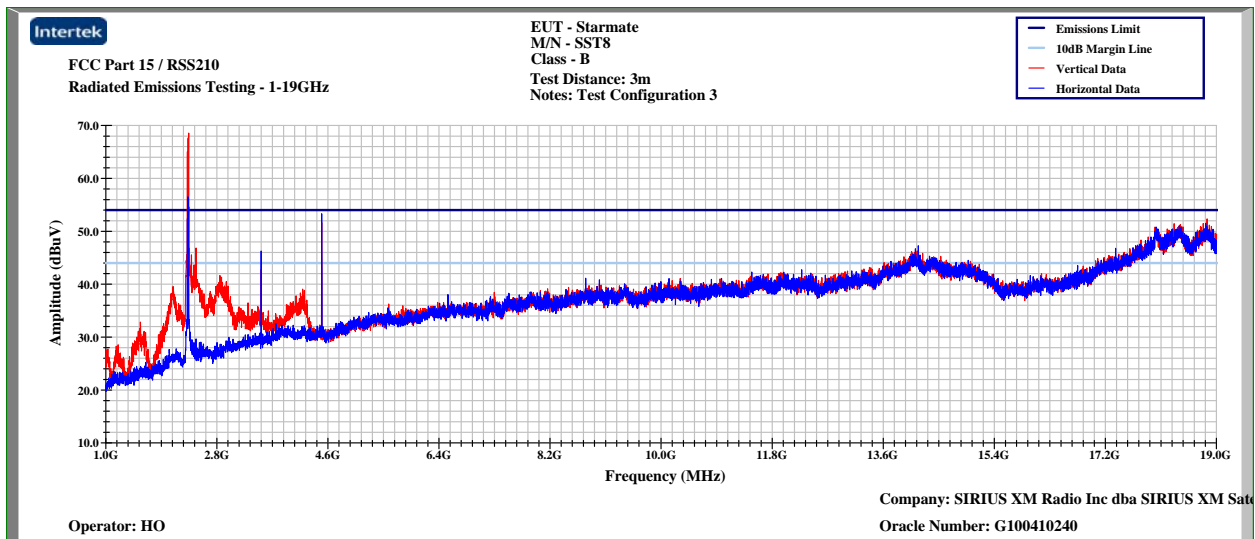
A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
v	39.000	41.6	14.4	1.4	29.9	27.4	40.0	-12.6	QP/120k/300k
v	281.000	49.8	13.6	3.5	29.9	37.0	46.0	-9.0	QP/120k/300k
v	400.300	47.8	16.7	4.2	29.8	38.9	46.0	-7.1	QP/120k/300k
v	425.850	47.3	17.2	4.4	29.8	39.0	46.0	-7.0	QP/120k/300k
v	628.800	46.3	19.7	5.5	29.7	41.8	46.0	-4.2	QP/120k/300k
v	657.300	45.1	19.9	5.7	29.7	41.0	46.0	-5.0	QP/120k/300k
v	709.400	40.8	19.8	6.0	29.7	36.9	46.0	-9.1	QP/120k/300k
h	3518.632	49.6	31.3	3.0	33.7	50.2	54.0	-3.8	Avg/1M/3M
v	4499.514	39.1	32.2	12.9	33.9	50.3	54.0	-3.7	Avg/1M/1.6Hz
h	4499.514	39.5	32.1	12.9	33.9	50.6	54.0	-3.4	Avg/1M/1.6Hz
Calculations		G=C+D+E-F			I=G-H				

9.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FM Direct

Peak Plot – 30MHz-1000MHz



Peak Plot – 1000MHz-19000MHz



Note: Peaks above the limit between 2.2 and 2.5GHz are signals transmitted into the chamber with the satellite signal and are not related to the DUT.

9.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FM Direct

Tabular Data

Date: 6/3/2011

Test Distance (m): 3

Frequency Range (MHz): 30-19000

Limit: FCC15 Class B-3m

Input power: 12VDC

Modifications for compliance (y/n): n

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
v	280.250	43.6	13.6	3.4	27.8	32.8	46.0	-13.2	QP/120k/300k
v	308.650	43.2	14.2	3.6	27.8	33.2	46.0	-12.8	QP/120k/300k
v	397.750	42.3	16.6	4.2	27.7	35.3	46.0	-10.7	QP/120k/300k
v	426.300	41.4	17.2	4.4	27.7	35.3	46.0	-10.7	QP/120k/300k
v	626.750	41.4	19.7	5.5	27.6	38.9	46.0	-7.1	QP/120k/300k
v	658.850	40.2	19.9	5.7	27.6	38.2	46.0	-7.8	QP/120k/300k
v	674.600	39.7	19.8	5.8	27.6	37.7	46.0	-8.3	QP/120k/300k
v	690.700	39.9	19.8	5.9	27.6	38.0	46.0	-8.0	QP/120k/300k
v	709.500	40.4	19.8	6.0	27.6	38.6	46.0	-7.4	QP/120k/300k
v	864.870	36.9	21.5	6.6	27.4	37.6	46.0	-8.4	QP/120k/300k
h	3518.703	47.6	31.4	3.0	33.7	48.2	54.0	-5.8	Avg/1M/3M
v	4499.514	37.9	32.2	12.9	33.9	49.1	54.0	-4.9	Avg/1M/1.6Hz
h	4499.514	39.9	32.1	12.9	33.9	51.0	54.0	-3.0	Avg/1M/1.6Hz
Calculations		G=C+D+E-F		I=G-H					

10.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – Cassette Adapter

Method:

Testing was performed using the emissions test methods described in the previous section

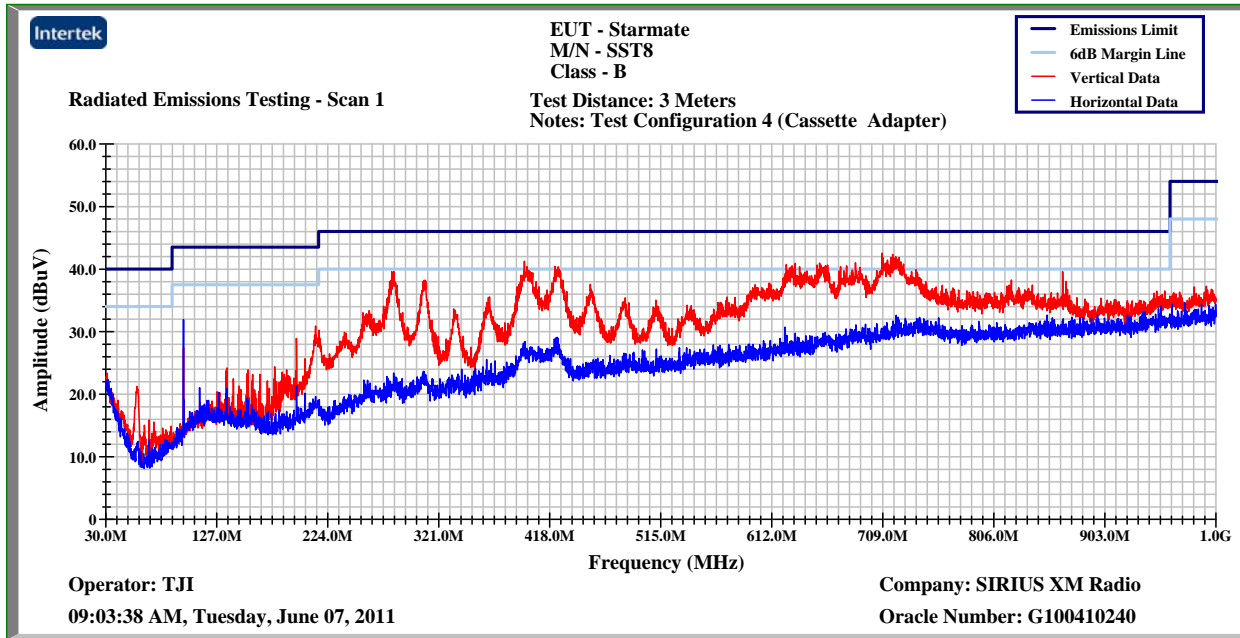
Results: The sample tested was found to Comply.

Specific Setup Details

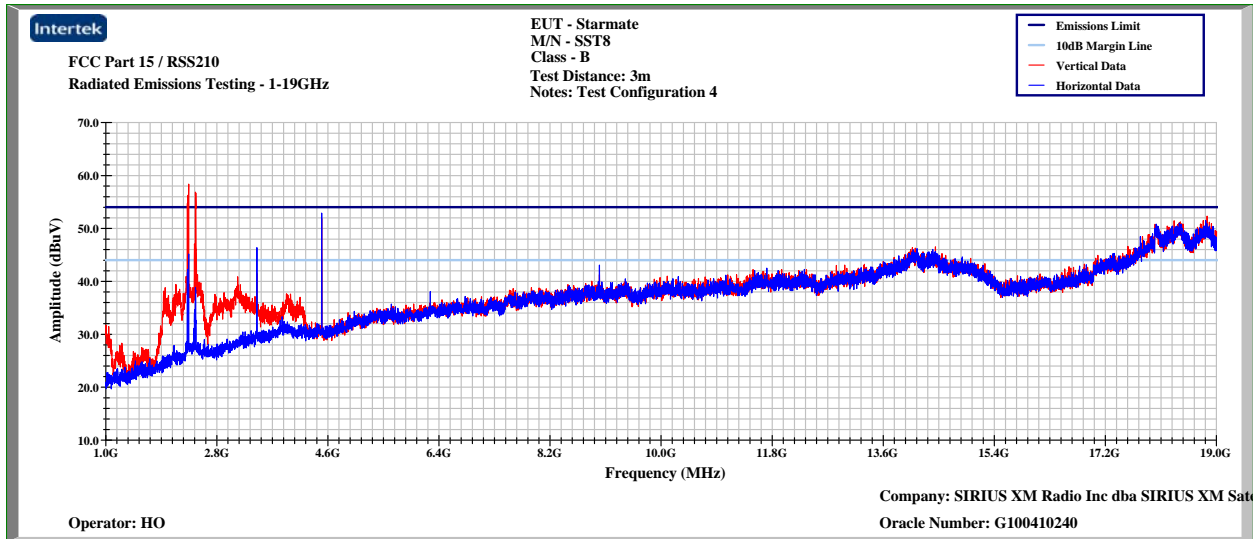
- Sirius onyX is powered by its 5V PowerConnect adapter via a 12V DC battery placed on the floor and an 'iFMCLA' power socket.
- Sirius satellite antenna is connected to the Sirius onyX's 'Antenna' port.
- Sirius onyX is configured to receive live **XM** programming service.
- Sirius onyX is configured for Max audio level outputs.
- Sirius onyX's FM Modulator is disabled via the Sirius onyX's menu button.
- Sirius onyX is connected to the cassette adapter through its 'Audio' port.
- Sirius onyX is configured to receive live **XM** programming service.
- Sirius onyX is configured for Max audio level output.

10.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – Cassette Adapter

Peak Plot – 30MHz-1000MHz



Peak Plot – 1000MHz-19000MHz



Note: Peaks above the limit between 2.2 and 2.5GHz are signals transmitted into the chamber with the satellite signal and are not related to the DUT.

10.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – Cassette Adapter

Tabular Data

Date: 6/7/2011

Test Distance (m): 3

Frequency Range (MHz): 30-1000

Limit: FCC15 Class B-3m

Input power: 12VDC

Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
H	97.900	47.2	12.0	2.0	27.9	33.2	43.5	-10.3	QP/120k/300k
V	281.100	44.7	13.6	3.5	27.8	34.0	46.0	-12.0	QP/120k/300k
V	308.000	43.7	14.2	3.6	27.8	33.7	46.0	-12.3	QP/120k/300k
V	398.600	41.1	16.6	4.2	27.7	34.2	46.0	-11.8	QP/120k/300k
V	426.000	40.6	17.2	4.4	27.7	34.5	46.0	-11.5	QP/120k/300k
V	627.600	36.2	19.7	5.5	27.6	33.7	46.0	-12.3	QP/120k/300k
V	709.700	38.3	19.8	6.0	27.6	36.5	46.0	-9.5	QP/120k/300k
V	722.800	37.7	20.0	6.0	27.6	36.1	46.0	-9.9	QP/120k/300k
V	835.300	26.8	21.3	6.5	27.5	27.1	46.0	-18.9	QP/120k/300k
h	3518.741	49.4	31.4	3.0	33.7	50.0	54.0	-4.0	Avg/1M/3M
v	4499.514	37.5	32.2	12.9	33.9	48.7	54.0	-5.3	Avg/1M/3M
h	4499.514	39.5	32.1	12.9	33.9	50.6	54.0	-3.4	Avg/1M/3M
Calculations		G=C+D+E-F		I=G-H					

11.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FEA Unit

Method:

Testing was performed using the emissions test methods described in the previous section

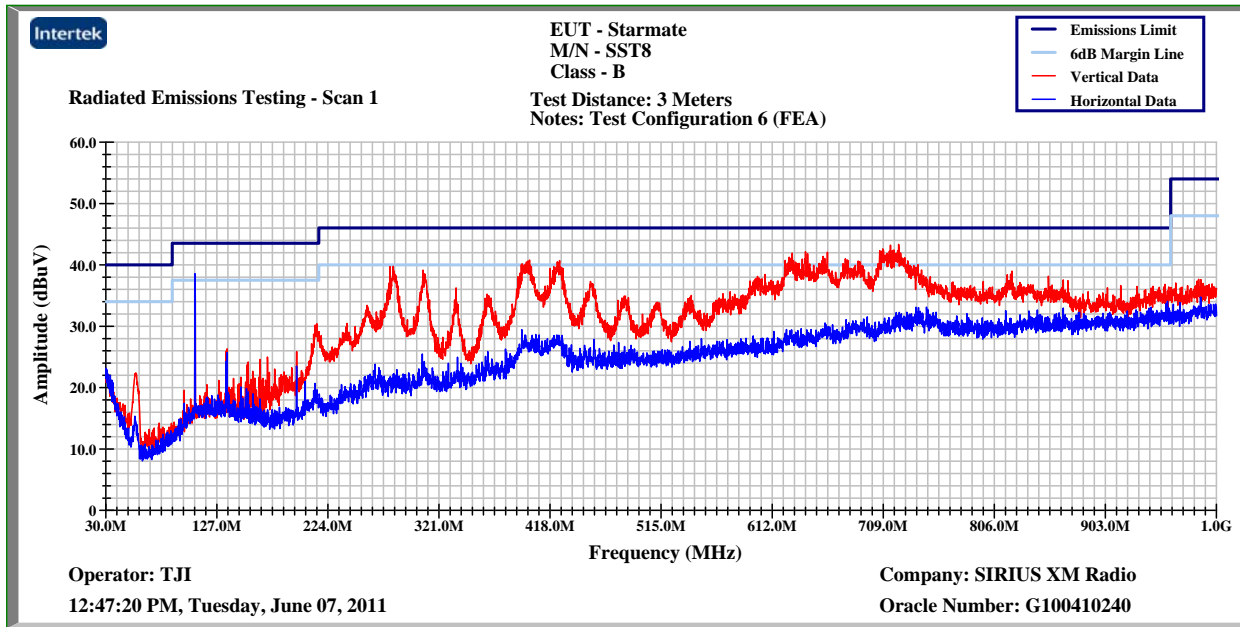
Results: The sample tested was found to Comply.

Specific Setup Details

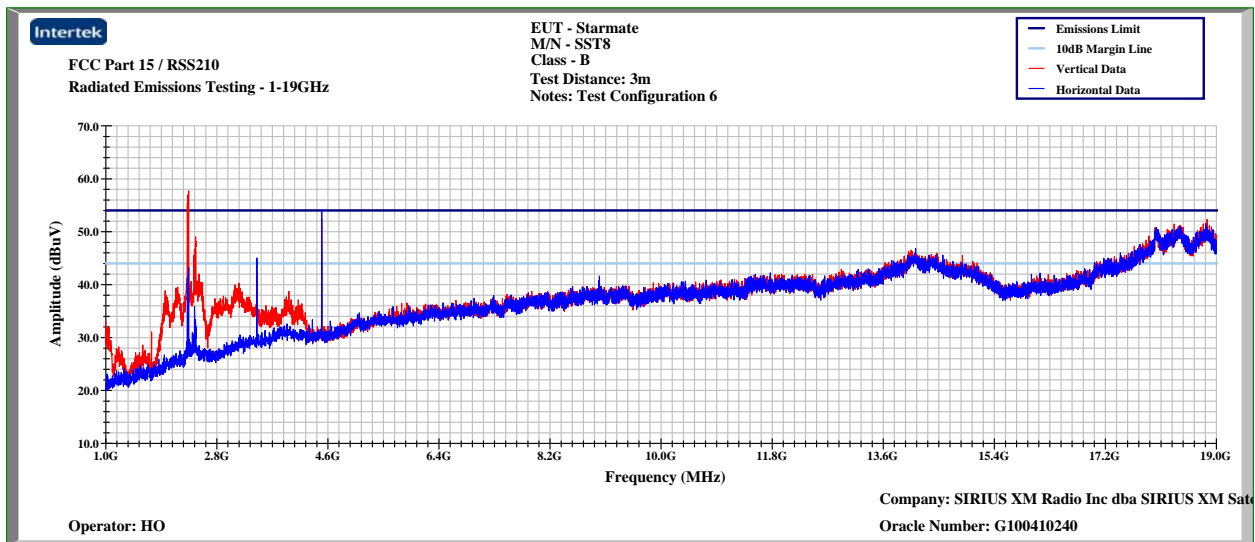
- The Sirius onyX is positioned in a vertical position with at the back edge of the wooden testing table.
- The FEA unit is connected to the Sirius onyX's dock 'FM' port with its cable spread out all over the testing table.
- Sirius onyX is powered by its 5V PowerConnect adapter via a 12V DC battery placed on the floor and an 'iFMCLA' power socket.
- The Sirius satellite antenna is connected to the Sirius onyX's 'Antenna' port.
- The 'Audio' port of the Sirius onyX is terminated with its 'Aux-In' audio cable.
- The FM Modulator button should be used to enable the FM signal from the RSR.
- The Sirius onyX is configured to receive live *Sirius* programming service.
- The Sirius onyX is configured for Max audio output level.

11.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FEA Unit

Peak Plot – 30MHz-1000MHz



Peak Plot – 1000MHz-19000MHz



Note: Peaks above the limit between 2.2 and 2.5GHz are signals transmitted into the chamber with the satellite signal and are not related to the DUT.

11.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – FEA Unit

Tabular Data

Date: 6/7/2011

Test Distance (m): 3

Frequency Range (MHz): 30-1000

Limit: FCC15 Class B-3m

Input power: 12VDC

Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
H	107.000	50.2	12.9	2.1	27.9	37.3	43.5	-6.2	QP/120k/300k
V	281.500	44.3	13.6	3.5	27.8	33.6	46.0	-12.4	QP/120k/300k
V	308.400	43.7	14.2	3.6	27.8	33.7	46.0	-12.3	QP/120k/300k
V	395.400	42.1	16.4	4.2	27.7	35.0	46.0	-11.0	QP/120k/300k
V	426.000	41.5	17.2	4.4	27.7	35.4	46.0	-10.6	QP/120k/300k
V	628.700	39.2	19.7	5.5	27.6	36.8	46.0	-9.2	QP/120k/300k
V	658.200	38.7	19.9	5.7	27.6	36.7	46.0	-9.3	QP/120k/300k
V	722.200	38.4	19.9	6.0	27.6	36.8	46.0	-9.2	QP/120k/300k
V	838.600	30.0	21.3	6.5	27.5	30.3	46.0	-15.7	QP/120k/300k
h	3518.706	49.4	31.4	3.0	33.7	50.0	54.0	-4.0	Avg/1M/3M
v	4499.514	36.2	32.2	12.9	33.9	47.4	54.0	-6.6	Avg/1M/1.6Hz
h	4499.514	39.4	32.1	12.9	33.9	50.5	54.0	-3.5	Avg/1M/1.6Hz
Calculations		G=C+D+E-F		I=G-H					

12.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – PowerConnect**Method:**

Testing was performed using the emissions test methods described in the previous section

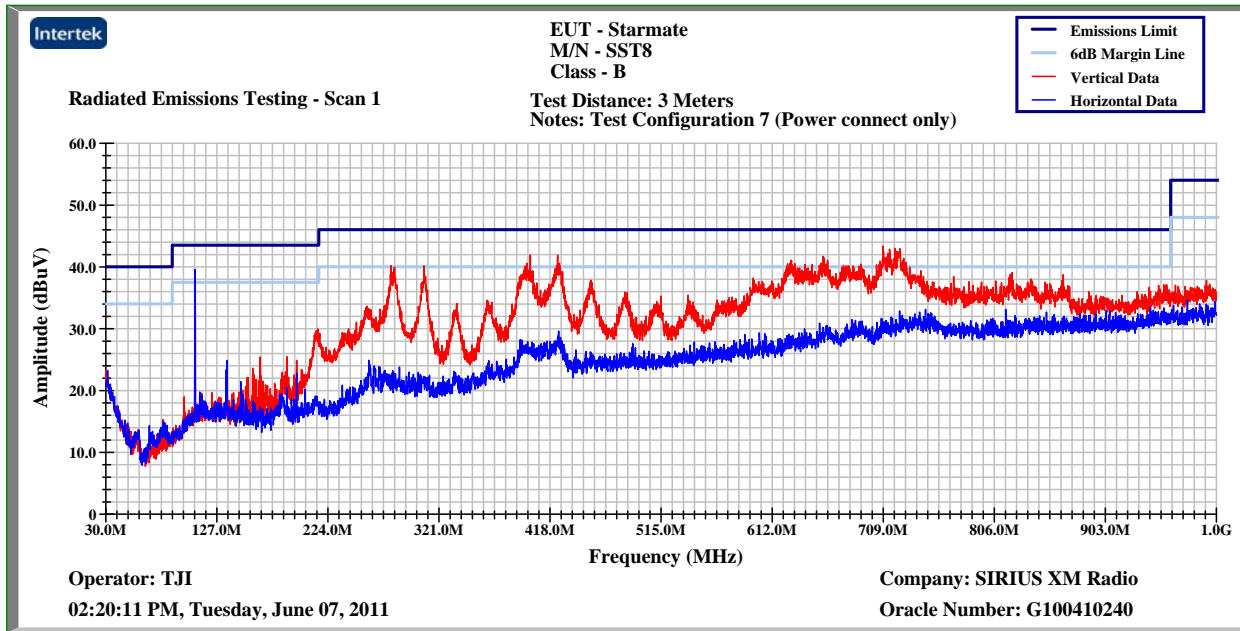
Results: The sample tested was found to Comply.

Specific Setup Details

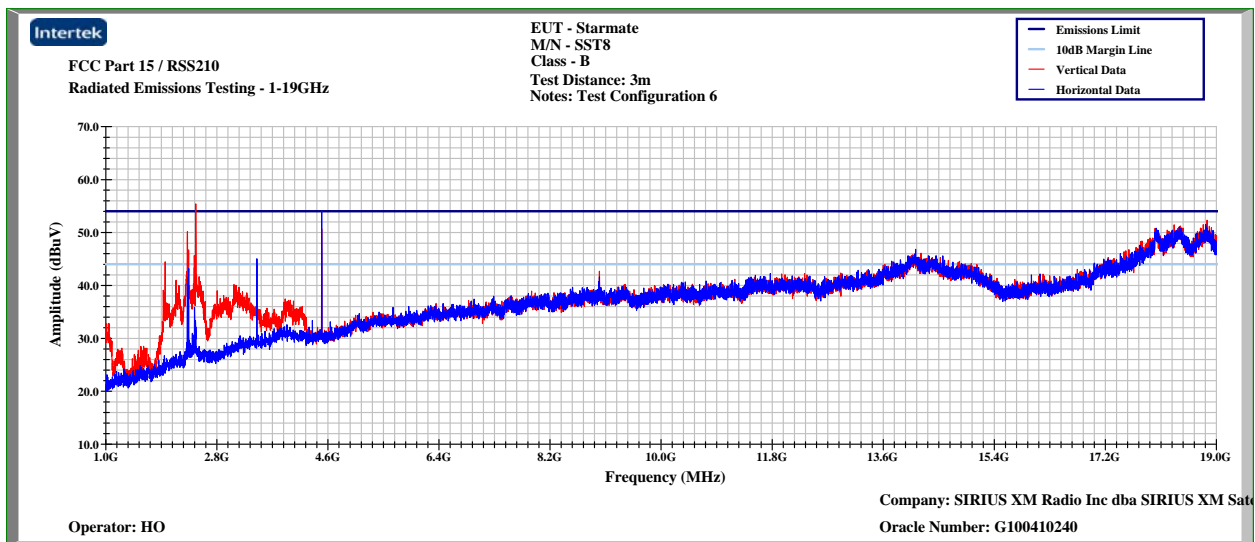
- The Sirius onyX is positioned in a vertical position with at the back edge of the wooden testing table.
- Sirius onyX is powered by its 5V PowerConnect adapter via a 12V DC battery placed on the testing table and an 'iFMCLA' power adapter.
- The Sirius satellite antenna is connected to the Sirius onyX's 'Antenna' port.
- The 'Audio' port of the Sirius onyX's dock is terminated with its 'Aux-In' audio cable.
- The FM Modulator menu should be used to enable the FM signal from the Sirius onyX.
- The Sirius onyX is configured to receive live Sirius programming service.
- The Sirius onyX is configured for Max audio output level.

12.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – PowerConnect

Peak Plot – 30MHz-1000MHz



Peak Plot – 1000MHz-19000MHz



Note: Peaks above the limit between 2.2 and 2.5GHz are signals transmitted into the chamber with the satellite signal and are not related to the DUT.

12.0 § 15.239(b) / (c) Field strength requirements (FCC 15C - 15.239 (b)) – PowerConnect

Tabular Data

Date: 6/7/2011

Test Distance (m): 3

Frequency Range (MHz): 30-1000

Limit: FCC15 Class B-3m

Input power: 12VDC

Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Net dB(uV/m)	3m Limit dB(uV/m)	Margin dB	Detectors / Bandwidths Det/RBW/VBW
H	107.900	51.2	13.0	2.1	27.9	38.3	43.5	-5.2	QP/120k/300k
V	281.300	44.3	13.6	3.5	27.8	33.6	46.0	-12.4	QP/120k/300k
V	308.200	43.0	14.2	3.6	27.8	33.0	46.0	-13.0	QP/120k/300k
V	397.400	42.1	16.5	4.2	27.7	35.1	46.0	-10.9	QP/120k/300k
V	425.700	41.3	17.2	4.4	27.7	35.2	46.0	-10.8	QP/120k/300k
V	628.600	39.4	19.7	5.5	27.6	37.0	46.0	-9.0	QP/120k/300k
V	658.200	37.6	19.9	5.7	27.6	35.6	46.0	-10.4	QP/120k/300k
V	710.200	40.0	19.8	6.0	27.6	38.2	46.0	-7.8	QP/120k/300k
V	722.800	39.2	20.0	6.0	27.6	37.6	46.0	-8.4	QP/120k/300k
V	865.000	28.7	21.5	6.6	27.4	29.4	46.0	-16.6	QP/120k/300k
h	3518.766	50.5	31.4	3.0	33.7	51.1	54.0	-2.9	Avg/1M/3M
v	4499.514	37.1	32.2	12.9	33.9	48.3	54.0	-5.7	Avg/1M/1.6Hz
h	4499.514	37.6	32.1	12.9	33.9	48.7	54.0	-5.3	Avg/1M/1.6Hz
Calculations		G=C+D+E-F		I=G-H					

13.0 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal Due
Bilog Antenna	Chase	CBL6112A	2622	10/13/2011
Cable E205	Megaphase	TM18 NKNK 118	9053201 003	05/12/2012
Cable E206	Megaphase	TM18 NKNK 118	9053201 004	05/12/2012
Cable MP3	Megaphase	G919-NKNK-394	MP3	05/12/2012
Cable ST-3	Storm Products Co.	PR90-195-7MTR	09-07-601	08/19/2011
Cable E401	Megaphase	TR40	E401	06/18/2011
Cable E402	Megaphase	TR40	E402	06/18/2011
Cable E403	Megaphase	TR40	E403	06/18/2011
Cable TT4	Andrews	TT4	TT4	05/24/2012
EMI Receiver	Hewlett Packard	8546A	213109	10/26/2011
EMI Receiver RF Preselector	Hewlett Packard	85460A	213108	10/26/2011
Horn Antenna (1-18GHz)	EMCO	3115	9208-3919	05/07/2012
Horn Antenna (18-40GHz)	EMCO	3116	9310-2222	06/08/2011
LISN	Fischer	FCC-LISN-50-50-M	2019	11/12/2011
Preamplifier, 10 MHz to 2000 MHz	Mini-Circuits	ZKL-2	D052005	08/16/2011
Preamplifier (1-18GHz)	Miteq	AMF-4D-001180-24-10P	1020106	10/04/2011
Preamplifier (18-40GHz)	Miteq	JS4	965178	10/06/2011
Preamplifier (18-40GHz)	Miteq	JS4	818197	04/26/2011
Spectrum Analyzer	Rohde & Schwartz	FSEK30	100253	10/22/2011

14.0 Revision History

Revision Level	Date	Report Number	Notes
Original issue	June 15, 2011	100410240ATL-001	--
1	June 22, 2011	100410240ATL-001	Added clarification statements to high frequency and bandwidth plots.
2	June 27, 2011	100410240ATL-001	Added corrected Bandwidth measurements to Section 6. Removed Section 7 containing RSS-210 BW measurements and renumbered other sections accordingly