

## **TEST REPORT**

Report Number: 100934762ATL-001

November 30, 2012

**Product Name: Onyx EZ** 

**Product Model Number: XEZ1** 

Standard: FCC Part 15, Subpart B, Unintentional radiator ICES-003 Issue 4

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 reviewed by: Report prepared by:

Troy Ihle

2 slile

Project Engineer

Richard Bianco **EMC Team Leader** 

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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 verbatum 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
3.0	Description of Equipment Under Test		
4.0	System setup including cable interconnection details, support equipment and simplified block diagram.		
5.0	Transmitter Information for equipment operating under Parts 11, 15 and 18 of the rules (Transmitter Info -		PASS
6.0	§ 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions		PASS
7.0	§ 15.109(a) Unintentional Radiated Emissions		PASS
8.0	Test Equipment List		
9.0	Revision History		

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## 3.0 Description of Equipment Under Test

	Equipment Under Test									
Description	Manufacturer	Model Number	Serial Number							
Onyx EZ Radio	SIRIUS XM Satellite Radio	XEZ1	ENRNR2CC							
Home Cradle	SIRIUS XM Satellite Radio	XDPHD1	1044							
Antenna	SIRIUS XM Satellite Radio	None	None							
AC Power Supply	PHIHONG	PSM08A-052	None							
Onyx EZ Radio	SIRIUS XM Satellite Radio	XEZ1	5G5PR2RR							
Satellite Antenna	SIRIUS XM Satellite Radio	1236	NA							
Cassette Adapter	SIRIUS XM Satellite Radio	2159	NA							
DC Adapter	SIRIUS XM Satellite Radio	SXDPIP1	U434C42033D6J01							
V-Dock	SIRIUS XM Satellite Radio	XDPIV2	1243							
FM Direct Adapter	SIRIUS XM Satellite Radio	FMDA25	19124							

Manufacturer	Model Number	Serial Number
SIRIUS XM Satellite Radio	XEZ1	5G5PR2RR
SIRIUS XM Satellite Radio	1236	NA
SIRIUS XM Satellite Radio	2159	NA
SIRIUS XM Satellite Radio	SXDPIP1	U434C42033D6J01
SIRIUS XM Satellite Radio	XDPIV2	1243

EUT receive date:	November 9, 2012
EUT receive condition:	Good

### Description of EUT provided by Client:

Sirius Hardware Features

- Revolutionary SiriusXM *Power*Connect<sup>TM</sup> FM Transmitter works through your vehicle's radio\* with easy Do-It-Yourself Installation. The color-coded Vehicle Dock makes it simple to connect.
- 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<sup>™</sup> 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 your favorite channels.
- Lock and unlock channels with easy-to-use parental controls.
- Complete *Power*Connect Vehicle Kit included.
- Universal docking capability add accessories for your home, office, additional vehicles or even outdoors.

## <u>Description of EUT exercising:</u>

The EUT was powered with at 120Vac, 60Hz during testing. The satellite signal was amplified and retransmitted into the emissions chamber to the radio under test. The radio then transmitted (max audio output level) the music to the speakers.

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 Cassette adapter or the vehicle FM antenna.

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Mode of Operation	Frequency Range (MHz)	Number of Channels	Channel Separation (kHz)
Home cradle	NA	NA	NA
FM Direct Adapter	NA	NA	NA
Cassette Adapter	NA	NA	NA

## 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

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

## Method:

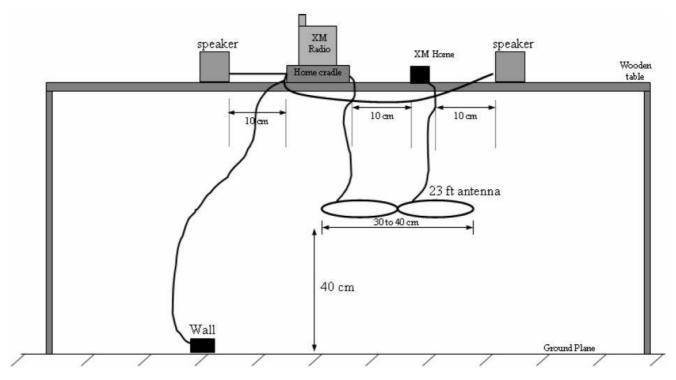
Record the details of EUTcabling, document the support equipment, and show the interconnections in a block diagram.

Support Equipment - Home Cradle							
Description Manufacturer Model Number Serial Number							
Speakers	Micro Innovations	Unknown	MM600DB02708				

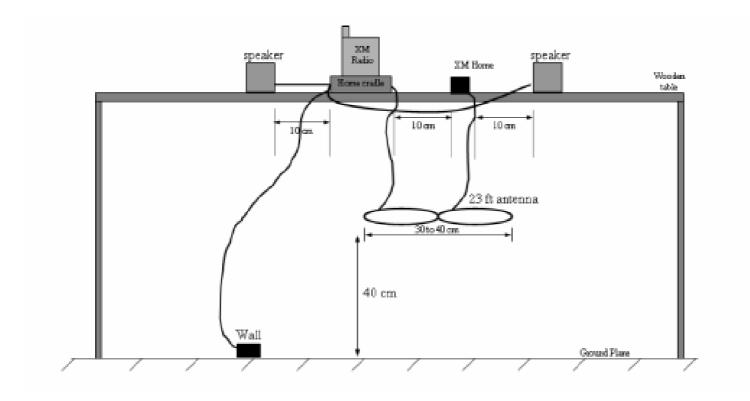
Support Equipment - Cassette Adapter and FM Direct Adapter								
Description	Manufacturer	Model Number	Serial Number					
Battery	Werker	WKA12-80C	NA					

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

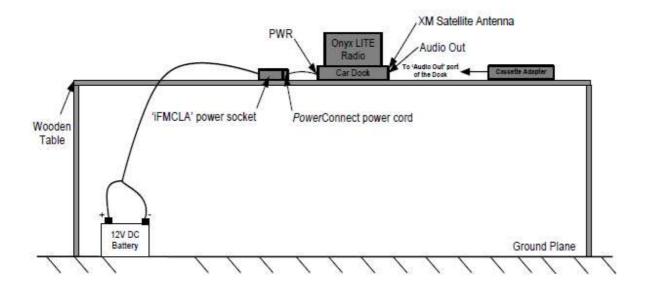
# **Configuration Diagram – Conducted Emissions – Home Cradle**



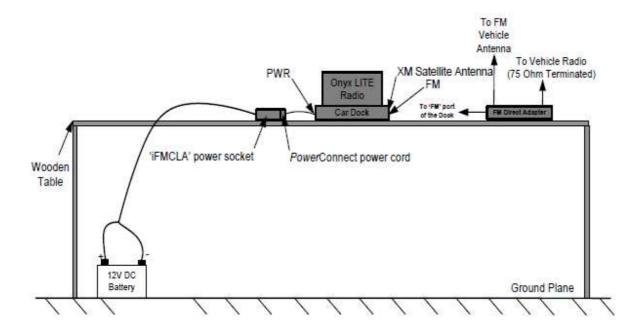
# **Configuration Diagram – Radiated Emissions – Home Cradle**



# **Configuration Diagram – Radiated Emissions (Cassette Mode)**



# **Configuration Diagram – Radiated Emissions (FM Direct Mode)**



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

FCC Rule Part			
		Company Name:	Sirius XM Satellite Radio, Inc.
		Address:	3161 S.W. 10th Street,
	Applicant	Address:	Deerfield Beach, FL 33442
		Phone:	202-680-4288
2.1033(b)(1)		Contact Name:	Beejay Jolayemi
		Company Name:	Same
	Manufacturer	Address:	Same
	Manuracturer	Phone:	Same
		Contact Name:	Same
		FCC ID:	RS2XEZ1
2.1033(b)(2)	Equipment	EUT Model Number:	XEZ1
		EUT Serial Number:	NA
2.1033(b)(3)		User Manual	Attach as separate exhibit.
2.1033(b)(4)	Brief de	escription of circuit functions	Attach as separate exhibit.
2.1033(b)(5)	Block diagram sho	wing frequency of oscillators	Attach as separate exhibit.
2.1033(b)(6)		Test report	Incorporated with this document
2.1033(b)(7)	Inter	nal and external photographs	Attach as separate exhibit.
2.1033(b)(8)	Peripheral Equipment	Can be used?	N/A
2.1000(b)(0)	r cripherar Equipment	Comercially available?	N/A
2.1033(b)(9)		Transition rules apply?	
2.1033(b)(10)		Scanning receiver?	
2.1033(b)(11)	Tra	nsmitter in 59-64 GHz band?	
2.1033(b)(12)		Software defined radio?	No

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## 6.0 § 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions

### 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 be 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.

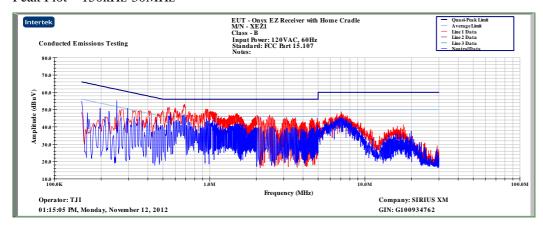
## MEASUREMENT UNCERTAINTY

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.

## 6.0 § 15.107(a) / RSS-Gen 7.2.2 Conducted Emissions

Peak Plot – 150kHz-30MHz



Tabular Data

Frequency Range (MHz): 0.15-30

Input power: 120VAC, 60Hz Limit: CISPR Class B

Modifications for compliance (y/n): n В  $\mathbf{C}$ D Ε F G Η LISN LISN Ins. Cable Number **Detector** Reading Loss Loss Net Limit Margin Frequency dBuV 1.2 (P,QP,A)**MHz** dB dBdBuV dBuV dB 1 QP 0.150 42.3 0.2 0.3 42.7 66.0 23.3 0.150 16.4 0.2 0.3 16.8 56.0 -39.2 1 A QP 0.274 48.3 0.2 0.2 48.6 -12.51 61.1 1 A 0.274 37.6 0.2 0.2 37.9 51.1 -13.21 OP 0.497 46.4 0.2 0.1 46.6 56.1 -9.5 0.497 32.9 0.2 0.1 33.1 -13.0 1 A 46.1 49.2 QP 0.550 0.2 0.1 49.4 56.0 -6.6 0.550 35.7 0.2 0.1 35.9 46.0 -10.1 1 A 49.9 QP 0.681 0.2 0.0 50.1 56.0 -5.9 1 0.0 46.0 -9.0 1 Α 0.681 36.8 0.2 37.0 OP 0.953 47.2 0.2 0.0 47.4 56.0 -8.6 1 0.2 32.0 0.953 31.8 0.0 46.0 -14.0A 2 OP 44.7 0.2 0.5 45.3 -20.7 0.150 66.0 0.150 17.2 0.2 0.5 17.8 56.0 -38.2 A QP 0.270 41.8 0.2 0.4 42.3 -18.8 2 61.1 2 0.270 28.3 0.2 0.4 28.8 51.1 -22.3 A 0.497 2 OP 0.2 0.2 39.0 -17.238.6 56.1 2 0.497 22.8 0.2 0.2 23.2 46.1 -23.0 A 2 OP 0.550 42.1 0.2 0.2 42.5 56.0 -13.6 2 0.550 26.1 0.2 0.2 26.5 46.0 -19.6 A 2 QP 0.673 44.4 0.2 0.1 44.7 -11.3 56.0

0.2

0.2

0.2

0.1

0.1

0.1

30.8

40.3

22.6

46.0

56.0

46.0

-15.2

-15.8

-23.5

Note: Peak measurements are compared to the average limit.

0.673

0.964

0.964

30.5

40.0

22.3

G=D+E+F

A QP

A

Calculations

2

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## 7.0 § 15.109(a) Unintentional Radiated Emissions

#### 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

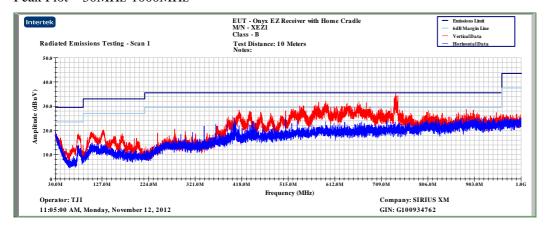
VCCI Registration Number: R-2570
MEASUREMENT UNCERTAINTY

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.

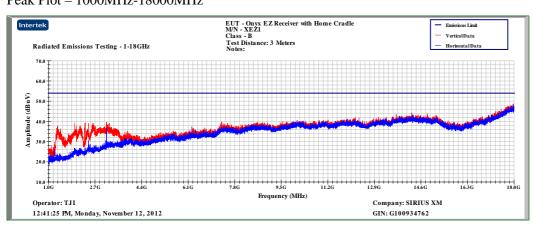
30 MHz to 1000 MHz at 3 meters: +/- 3.9 dB 30 MHz to 1000 MHz at 10 meters: +/- 3.6 dB 1 GHz to 18 GHz at 3 meters: +/- 4.2 dB

# 7.0 § 15.109(a) Unintentional Radiated Emissions – Home Cradle

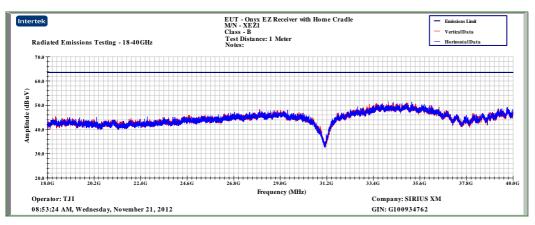
Peak Plot - 30MHz-1000MHz



Peak Plot - 1000MHz-18000MHz



Peak Plot - 18000MHz-40000MHz



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# 7.0 § 15.109(a) Unintentional Radiated Emissions – Home Cradle

Tabular Data

Frequency Range (MHz): 30-1000 Test Distance (m): 10

Input power: 120VAC, 60Hz

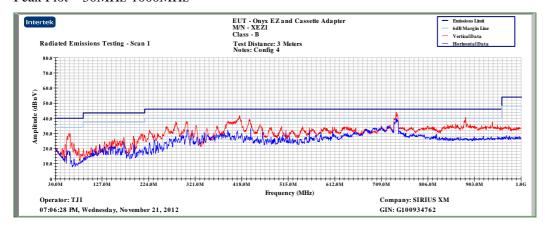
Limit: FCC15 Class B-10m

Modifications for compliance (v/n): n

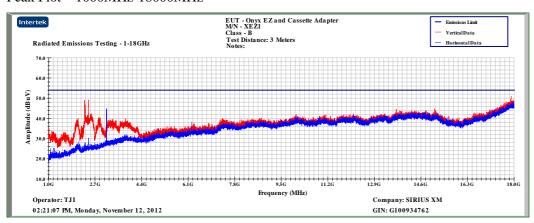
A	В	С	D	Е	F	G	Н	I	J
Ant.			Antenna	Cable	Pre-amp		10m		Detectors /
Pol.	Frequency	Reading	Factor	Loss	Factor	Net	Limit	Margin	Bandwidths
(V/H)	MHz	dB(uV)	dB(1/m)	dB	dB	dB(uV/m)	dB(uV/m)	dB	Det/RBW/VBW
v	77.445	43.4	7.1	1.4	37.2	14.8	29.5	-14.7	QP/120k/300k
v	128.900	39.8	11.9	1.8	37.1	16.4	33.0	-16.6	QP/120k/300k
v	414.125	44.2	16.2	3.3	37.1	26.7	35.5	-8.8	QP/120k/300k
v	546.125	39.7	17.9	3.9	36.9	24.6	35.5	-10.9	QP/120k/300k
v	570.750	38.6	18.5	4.0	36.9	24.2	35.5	-11.3	QP/120k/300k
v	593.750	39.7	19.0	4.0	36.9	25.9	35.5	-9.6	QP/120k/300k
v	636.750	39.2	18.7	4.2	36.8	25.3	35.5	-10.2	QP/120k/300k
v	660.000	40.5	19.0	4.3	36.8	27.0	35.5	-8.5	QP/120k/300k
v	661.275	41.3	19.0	4.3	36.8	27.8	35.5	-7.7	QP/120k/300k
v	741.000	44.7	19.4	4.6	36.6	32.1	35.5	-3.4	QP/120k/300k
v	888.000	33.4	20.5	5.2	36.3	22.8	35.5	-12.7	QP/120k/300k
Calculations		G=C+	D+E-F	I=C	G-H		<u> </u>		·

# 7.0 § 15.109(a) Unintentional Radiated Emissions – Cassette Adapter

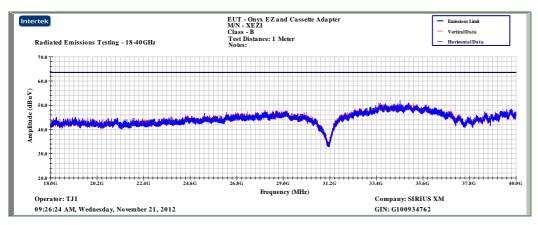
Peak Plot - 30MHz-1000MHz



Peak Plot - 1000MHz-18000MHz



Peak Plot - 18000MHz-40000MHz



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# 7.0 § 15.109(a) Unintentional Radiated Emissions – Cassette Adapter

Tabular Data

Frequency Range (MHz): 30-1000Mhz Test Distance (m): 3

**Input power:** 12V Configuration 4 **Limit:** FCC15 Class B-3m

**Modifications for compliance (y/n):** N

A	В	С	D	Е	F	G	Н	I	J
Ant.			Antenna	Cable	Pre-amp		3m		Detectors /
Pol.	Frequency	Reading	Factor	Loss	Factor	Net	Limit	Margin	Bandwidths
(V/H)	MHz	dB(uV)	dB(1/m)	dB	dB	dB(uV/m)	dB(uV/m)	dB	Det/RBW/VBW
V	59.900	54.8	6.4	1.5	37.2	25.5	40.0	-14.5	QP/120/300
V	279.900	51.0	13.8	3.3	37.1	31.0	46.0	-15.0	QP/120/300
V	302.100	52.8	14.3	3.4	37.1	33.5	46.0	-12.5	QP/120/300
V	387.600	50.2	16.3	3.8	37.1	33.2	46.0	-12.8	QP/120/300
V	413.300	52.5	17.3	3.9	37.1	36.7	46.0	-9.3	QP/120/300
V	434.200	48.9	17.4	4.0	37.0	33.3	46.0	-12.7	QP/120/300
V	742.100	43.6	20.4	5.5	36.6	32.8	46.0	-13.2	QP/120/300
Calculations		G=C+	D+E-F	I=C	7-H		-	-	

Frequency Range (MHz): 1000-18000 Test Distance (m): 3

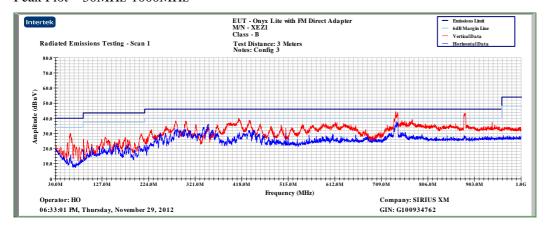
Input power: 12VDC Limit: FCC15 Class B-3m

**Modifications for compliance (y/n):** n

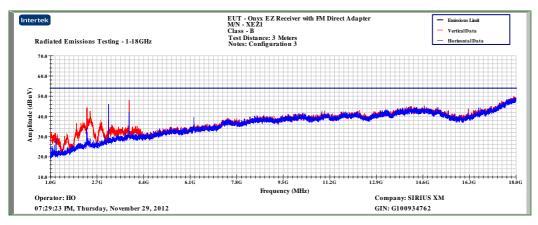
A	В	С	D	Е	F	G	Н	I	J
Ant.			Antenna	Cable	Pre-amp		3m		Detectors /
Pol.	Frequency	Reading	Factor	Loss	Factor	Net	Limit	Margin	Bandwidths
(V/H)	MHz	dB(uV)	dB(1/m)	dB	dB	dB(uV/m)	dB(uV/m)	dB	Det/RBW/VBW
V	2323.349	53.3	27.9	2.3	37.6	45.9	54.0	-8.1	Avg/1M/3M
v	2457.404	46.7	28.4	2.4	37.6	39.9	54.0	-14.1	Avg/1M/3M
h	3118.376	49.3	30.4	2.8	37.8	44.7	54.0	-9.3	Avg/1M/3M
v	13699.679	30.2	40.5	5.6	36.7	39.5	54.0	-14.5	Avg/1M/3M
v	15090.384	30.8	40.3	6.1	38.2	39.0	54.0	-15.0	Avg/1M/3M
V	17895.737	30.3	45.6	6.7	36.6	46.0	54.0	-8.0	Avg/1M/3M
Calculations		G=C+	D+E-F	I=C	G-H				

# 7.0 § 15.109(a) Unintentional Radiated Emissions – FM Direct Adapter

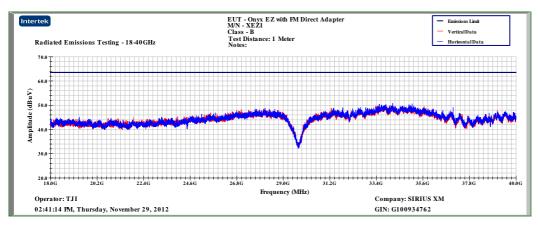
Peak Plot - 30MHz-1000MHz



Peak Plot - 1000MHz-18000MHz



Peak Plot - 18000MHz-40000MHz



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# 7.0 § 15.109(a) Unintentional Radiated Emissions – FM Direct Adapter

Tabular Data

Frequency Range (MHz): 30-1000Mhz Test Distance (m): 3

Input power: 12V Battery

Limit: FCC15 Class B-3m

**Modifications for compliance (y/n):** n

A	В	С	D	Е	F	G	Н	I	J
Ant.			Antenna	Cable	Pre-amp		3m		Detectors /
Pol.	Frequency	Reading	Factor	Loss	Factor	Net	Limit	Margin	Bandwidths
(V/H)	MHz	dB(uV)	dB(1/m)	dB	dB	dB(uV/m)	dB(uV/m)	dB	Det/RBW/VBW
V	61.450	53.0	6.3	1.5	37.2	23.6	40.0	-16.4	QP/120/300
V	129.200	35.5	12.9	2.2	37.1	13.5	43.5	-30.0	QP/120/300
V	169.900	43.9	10.7	2.5	37.1	20.0	43.5	-23.5	QP/120/300
V	180.600	45.5	10.1	2.6	37.1	21.1	43.5	-22.4	QP/120/300
V	208.800	46.3	10.9	2.8	37.1	22.9	43.5	-20.6	QP/120/300
V	218.400	44.9	10.8	2.9	37.1	21.5	46.0	-24.5	QP/120/300
V	281.200	52.3	13.8	3.3	37.1	32.3	46.0	-13.7	QP/120/300
V	413.500	48.3	17.3	3.9	37.1	32.5	46.0	-13.5	QP/120/300
V	742.500	44.0	20.4	5.5	36.6	33.2	46.0	-12.8	QP/120/300
V	883.200	48.8	21.7	6.0	36.3	40.3	46.0	-5.7	QP/120/300
Calculations		G=C+	D+E-F	I=C	G-H				· · · · · · · · · · · · · · · · · · ·

Frequency Range (MHz): 1000-18000 Test Distance (m): 3

Input power: 12VDC Limit: FCC15 Class B-3m

**Modifications for compliance (y/n):** n

A	В	С	D	Е	F	G	Н	I	J
Ant.			Antenna	Cable	Pre-amp		3m		Detectors /
Pol.	Frequency	Reading	Factor	Loss	Factor	Net	Limit	Margin	Bandwidths
(V/H)	MHz	dB(uV)	dB(1/m)	dB	dB	dB(uV/m)	dB(uV/m)	dB	Det/RBW/VBW
V	2332.800	50.5	27.9	1.7	37.6	42.5	54.0	-11.5	Av/1M/3M
V	2445.000	43.9	28.4	1.7	37.6	36.4	54.0	-17.6	Av/1M/3M
Н	3118.200	49.8	30.4	2.0	37.8	44.3	54.0	-9.7	Av/1M/3M
V	3869.600	44.9	32.5	2.2	37.9	41.7	54.0	-12.3	Av/1M/3M
V	6236.000	31.7	34.8	2.9	37.3	32.1	54.0	-21.9	Av/1M/3M
V	17938.800	31.6	45.7	4.7	36.4	45.5	54.0	-8.5	Av/1M/3M
Calculations		G=C+D+E-F		I=G-H			•	•	•

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# 8.0 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal Due
Bilog Antenna	Chase	CBL6112A	2228	02/21/2013
Cable E203	Megaphase	TM18 NKNK 118	9053201 002	05/07/2013
Cable E206	Megaphase	TM18 NKNK 118	9053201 004	05/07/2013
Cable MP3	Megaphase	G919-NKNK-394	MP3	05/07/2013
Cable ST-4	Storm Products Co.	A81-0303-275.6	12-07-001	07/25/2013
Cable E405	Megaphase	TM40 K1K1 80	E405	07/24/2013
Cable E402	Megaphase	TM40 K1K1 9	E402	07/24/2013
Cable E403	Megaphase	TM40 K1K1 9	E403	07/24/2013
Cable E11	Huber-Suhner	Sucoflex 104PEA	0582/4PEA	09/10/2013
Cable TW2	Andrews	Cable TW2	TW2	05/07/2013
EMI Receiver	Hewlett Packard	8546A	213109	12/29/2012
EMI Receiver RF Preselector	Hewlett Packard	85460A	213108	12/29/2012
Horn Antenna (1-18GHz)	EMCO	3115	9208-3919	07/19/2013
Horn Antenna (18-40GHz)	EMCO	3116	9310-2222	07/17/2013
LISN	Solar Electronics	8028-50-TS-24-BNC	921298	11/19/2013
Preamplifier, 10 MHz to 2000 MHz	Mini-Circuits	ZKL-2	D011105	07/19/2013
Preamplifier (1-18GHz)	A.H. Systems	PAM-0118	199	05/22/2013
Preamplifier (18-40GHz)	Miteq	JS4	965178	07/24/2013
Preamplifier (18-40GHz)	Miteq	JS4	818197	07/24/2013

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# 9.0 Revision History

Revision Level	Date	Report Number	Notes
Original issue	November 30, 2012	100934762ATL-001	
1	December 7, 2012	100934762ATL-001	Corrected EUT product description on page 3