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APPLICATION CERTIFICATION On Behalf of 3SIXTY INDUSTRIES INC

Active Floorstanding Loudspeaker System Model No.: EXAT33-CR, EXAT30-BK-CR, EXAT31-BK, EXAT32-CR-BK

FCC ID: 2ADC5EXAT33-CR

Prepared for : 3SIXTY INDUSTRIES INC

Address : 1150 W. CENTRAL AVENUE BLDG C BREA,

CALIFORNIA 92821 USA

Prepared by : ACCURATE TECHNOLOGY CO., LTD

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Guangdong P.R. China

Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number : ATE20141960
Date of Test : Oct 08-20, 2014
Date of Report : Oct 20, 2014

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Test Report Certification

Applicant : 3SIXTY INDUSTRIES INC

Manufacturer : 3SIXTY INDUSTRIES INC

EUT Description : Active Floorstanding Loudspeaker System

(A) MODEL NO.: EXAT33-CR, EXAT30-BK-CR, EXAT31-BK, EXAT32-CR-BK

(B) Trade Name: /

(C) POWER SUPPLY: AC 120V/60Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.4- 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test:	Oct 08 - Oct 20, 2014
Prepared by :	7 in Zhang
	(Tim.zhang, Engineer)
Approved & Authorized Signer:	Lemil
	(Sean Liu, Manager)





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1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : Active Floorstanding Loudspeaker System
Model Number : EXAT33-CR, EXAT30-BK-CR, EXAT31-BK,

EXAT32-CR-BK

Frequency Band : 2402MHz-2480MHz

Number of Channels : 79

Modulation type : GFSK, $\Pi/4$ -DQPSK, 8DPSK

Antenna Gain : 0dBi

Antenna type : PCB Antenna

Bluetooth version : Bluetooth V2.1+EDR

Power Supply : AC 120V/60Hz

Applicant : 3SIXTY INDUSTRIES INC

Address : 1150 W. CENTRAL AVENUE BLDG C BREA,

CALIFORNIA 92821 USA

Manufacturer : 3SIXTY INDUSTRIES INC

Address : 1150 W. CENTRAL AVENUE BLDG C BREA,

CALIFORNIA 92821 USA

Date of sample received: Oct 08, 2014
Date of Test: Oct 08-20, 2014

1.2. Accessory and Auxiliary Equipment

N/A



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1.3.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2

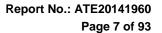
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)





2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2014	Jan. 10, 2015
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2014	Jan. 10, 2015
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2014	Jan. 10, 2015
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2014	Jan. 10, 2015
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2014	Jan. 14, 2015
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 15, 2014	Jan. 14, 2015
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2014	Jan. 10, 2015
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2014	Jan. 10, 2015
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 11, 2014	Jan. 10, 2015
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 11, 2014	Jan. 10, 2015





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3. OPERATION OF EUT DURING TESTING

3.1. Operating Mode

The mode is used: Transmitting mode

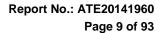
Low Channel: 2402MHz Middle Channel: 2441MHz High Channel: 2480MHz

Hopping

3.2. Configuration and peripherals

EUT

(EUT: Active Floorstanding Loudspeaker System)





4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Power Line Conducted Emission	Compliant
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant

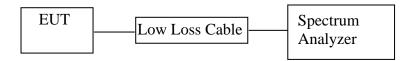




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5. 20DB BANDWIDTH TEST

5.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

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5.5.Test Procedure

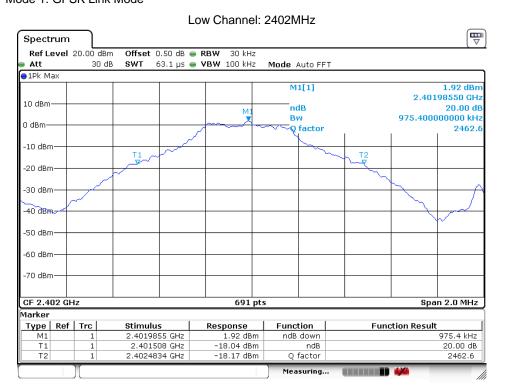
- 5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 5.5.2.Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz.
- 5.5.3.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.6.Test Result

	E	GFSK	∏/4-DQPSK	8DPSK	
Channel	Frequency (MHz)	20dB Bandwidth	20dB Bandwidth	20dB Bandwidth	Result
	(IVIIIZ)	(MHz)	(MHz)	(MHz)	
Low	2402	0.975	1.285	1.256	Pass
Middle	2441	0.897	1.274	1.268	Pass
High	2480	0.929	1.274	1.256	Pass

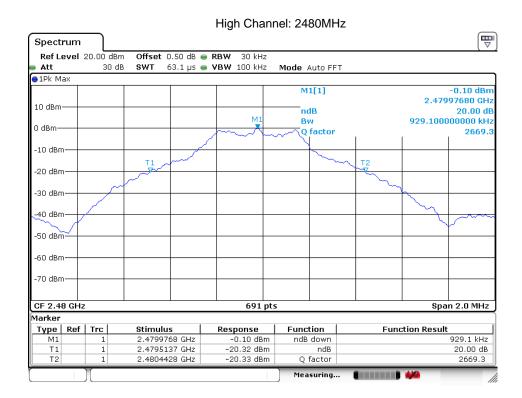
The spectrum analyzer plots are attached as below.

Mode 1: GFSK Link Mode



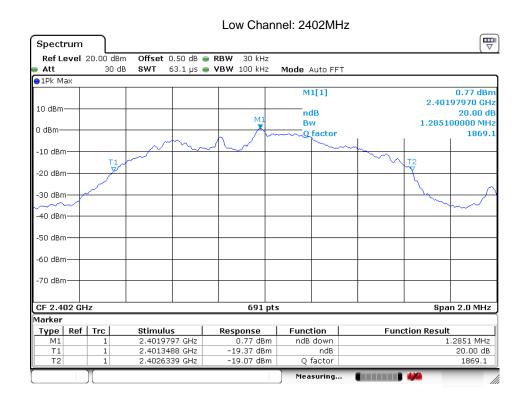


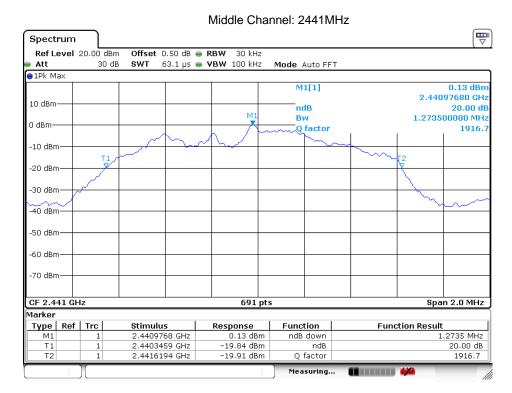
Middle Channel: 2441MHz Spectrum Ref Level 20.00 dBm Offset 0.50 dB • RBW 30 kHz 30 dB SWT 63.1 μs 🁄 **VBW** 100 kHz Mode Auto FFT ●1Pk Max M1[1] 1.34 dBn 2.44097680 GHz 10 dBm ndB 20.00 dB 897.300000000 kHz Bw 0 dBm-Q factor 2720.5 10 dBm **T**1 -20 dBm -30 dBm 40 dBm -50 dBm--60 dBm -70 dBm 691 pts CF 2.441 GHz Span 2.0 MHz Marker Type | Ref | Trc Stimulus Response Function **Function Result** 2.4409768 GHz 2.440534 GHz M1 T1 1.34 dBm -18.53 dBm ndB down 897.3 kHz 20.00 dB ndB 2.4414313 GHz -18.54 dBm





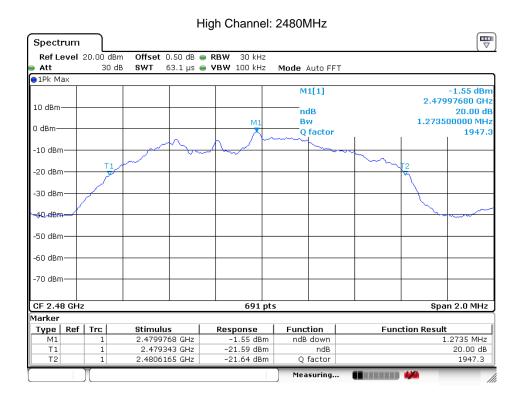
Mode 2: $\pi/4$ DQPSK Link Mode



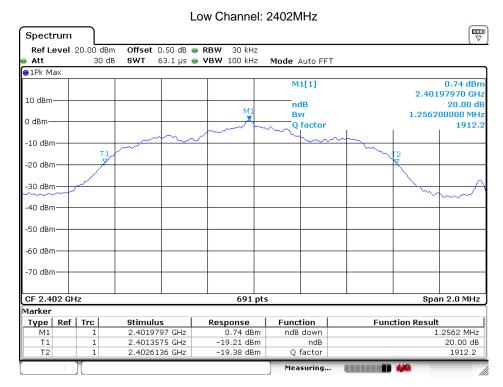




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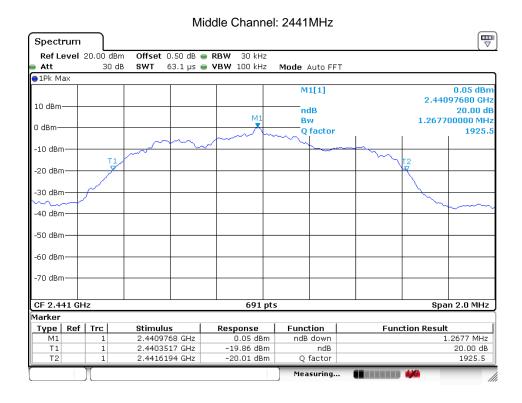


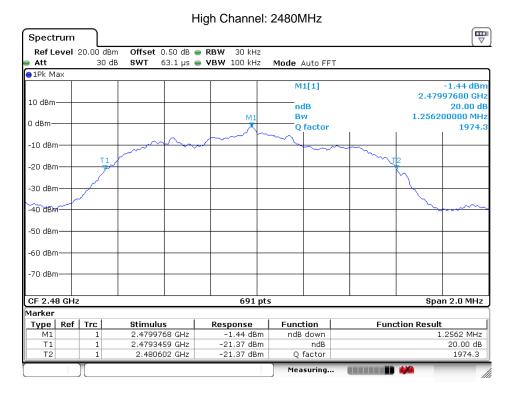
Mode 3: 8DPSK Link Mode





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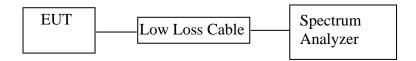


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6. CARRIER FREQUENCY SEPARATION TEST

6.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

- 6.4.1. Setup the EUT and simulator as shown as Section 6.1.
- 6.4.2. Turn on the power of all equipment.
- 6.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

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6.5. Test Procedure

- 6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- $6.5.2. Set\ RBW$ of spectrum analyzer to $100\ kHz$ and VBW to $300\ kHz.$ Adjust Span to $3\ MHz.$
- 6.5.3.Set the adjacent channel of the EUT maxhold another trace.
- 6.5.4. Measurement the channel separation

6.6.Test Result

GFSK

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402 2403	1.0058	25KHz or 20dB bandwidth	PASS
Middle	2440 2441	1.0029	25KHz or20dB bandwidth	PASS
High	2479 2480	1.0029	25KHz or 20dB bandwidth	PASS

∏/4-DQPSK

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.0029	25KHz or 2/3*20dB	PASS
Low	2403	1.0027	bandwidth	17100
Middle	2440	1.0029	25KHz or 2/3*20dB	PASS
Middle	2441	1.0029	bandwidth	LASS
High	2479	1.0029	25KHz or 2/3*20dB	PASS
	2480	1.0029	bandwidth	rass

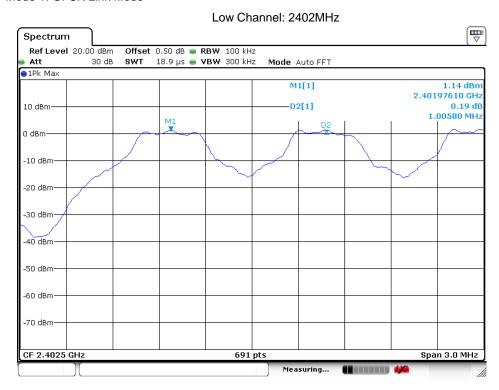
8DPSK

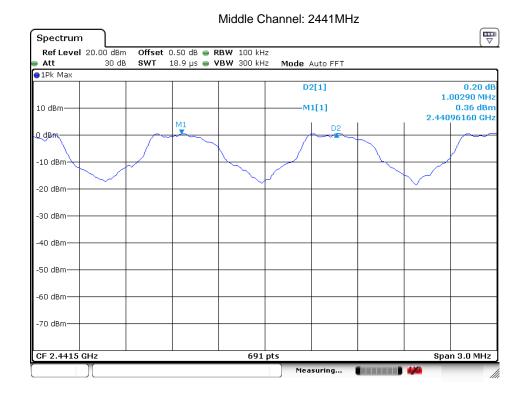
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.0029	25KHz or 2/3*20dB	PASS
Low	2403	1.0029	bandwidth	rass
Middle	2440	1.0029	25KHz or 2/3*20dB	PASS
Middle	2441	1.0029	bandwidth	rass
High	2479	1.0029	25KHz or 2/3*20dB	PASS
	2480	1.0029	bandwidth	rass

The spectrum analyzer plots are attached as below.



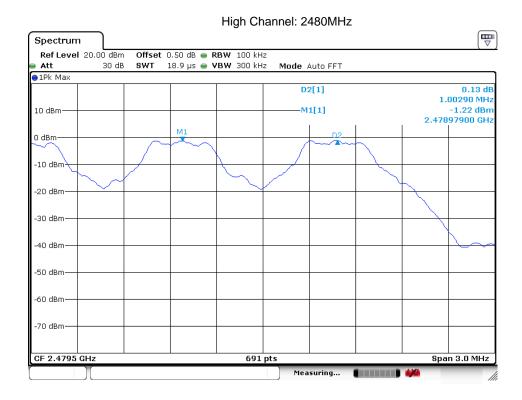
Mode 1: GFSK Link Mode



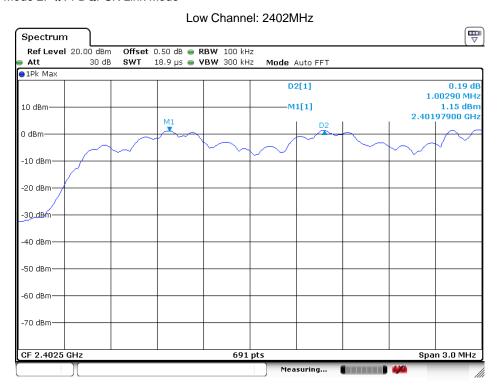




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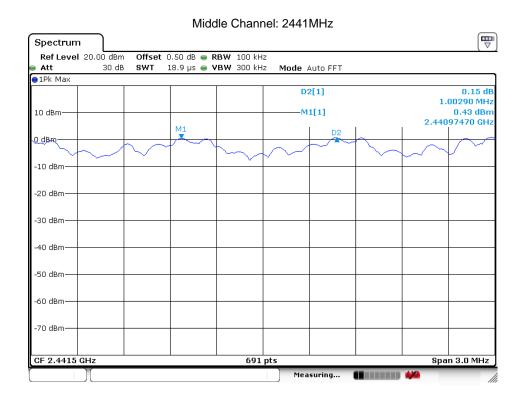


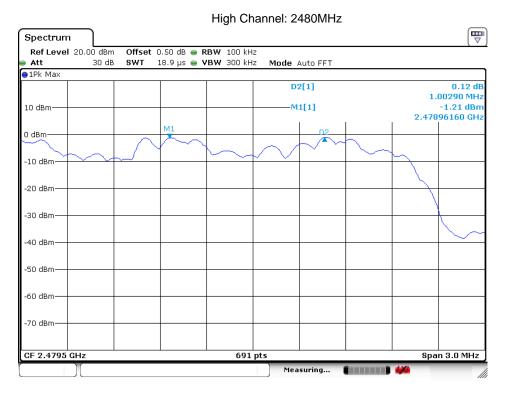
Mode 2: π /4 DQPSK Link Mode





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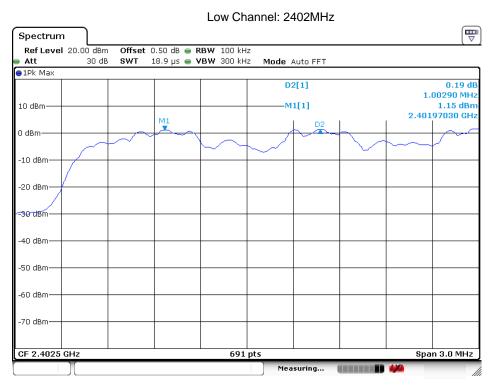


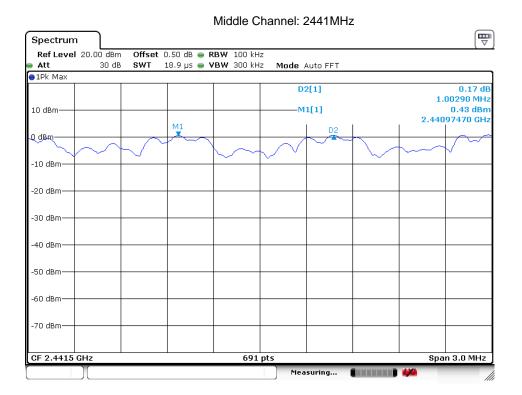




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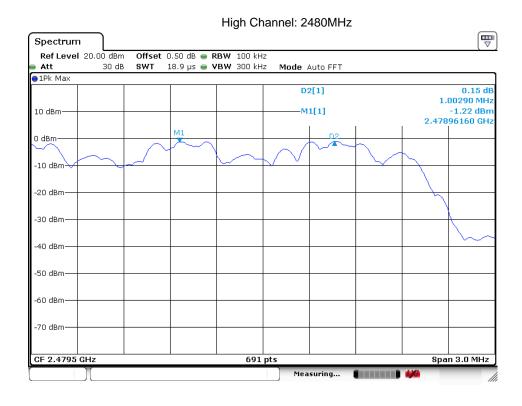
Mode 3: 8DPSK Link Mode

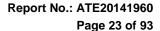






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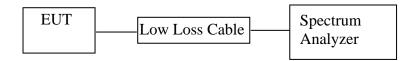






7. NUMBER OF HOPPING FREQUENCY TEST

7.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

- 7.4.1. Setup the EUT and simulator as shown as Section 7.1.
- 7.4.2. Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX (Hopping on) modes measure it.

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7.5.Test Procedure

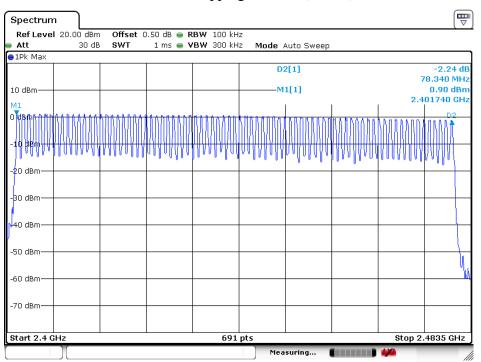
- 7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 7.5.2.Set the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.
- 7.5.3.Max hold, view and count how many channel in the band.

7.6.Test Result

Total number of	Measurement result(CH)	Limit(CH)
hopping channel	79	≥15

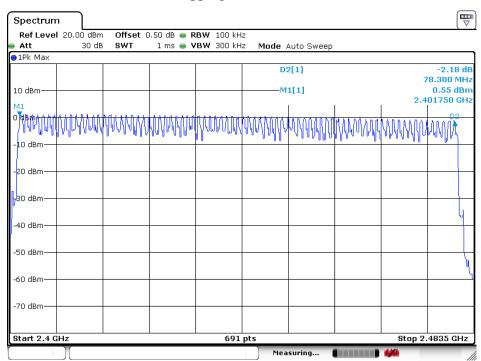
The spectrum analyzer plots are attached as below.

Number of hopping channels(GFSK)

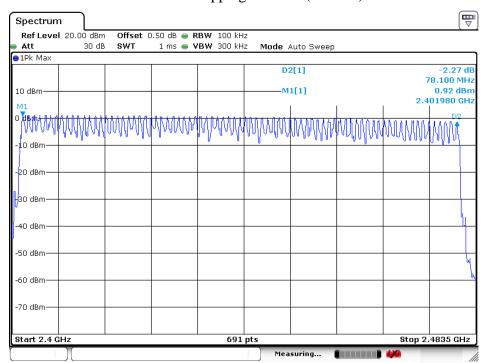




Number of hopping channels ($\Pi/4$ -DQPSK)



Number of hopping channels(8DPSK)



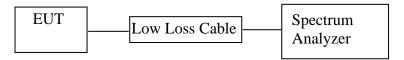


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8. DWELL TIME TEST

8.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

- 8.4.1. Setup the EUT and simulator as shown as Section 8.1.
- 8.4.2. Turn on the power of all equipment.
- 8.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

8.5. Test Procedure

- 8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 8.5.2.Set center frequency of spectrum analyzer = operating frequency.
- 8.5.3.Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz, Adjust Sweep=5ms, 10ms, 15ms. Get the pulse time.



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8.5.4.Repeat above procedures until all frequency measured were complete.

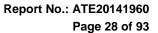
8.6.Test Result

GFSK Mode

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)		
	2402	0.5362	171.58	400		
DH1	2441	0.5290	169.28	400		
	2480	0.5362	171.58	400		
A period to	ransmit time = $0.4 \times 79 =$	31.6 Dwell time = pt	alse time \times (1600/(2*)	79))×31.6		
	2402	1.8261	292.18	400		
DH3	2441	1.8116	289.86	400		
	2480	1.8116	289.86	400		
A period to	ransmit time = $0.4 \times 79 =$	31.6 Dwell time = pt	ulse time \times (1600/(4*'	79))×31.6		
	2402	3.0725	327.73	400		
DH5	2441	3.0725	327.73	400		
	2480	3.0725	327.73	400		
A period transr	A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$					

$\Pi/4$ -DQPSK

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)			
	2402	0.5507	176.22	400			
DH1	2441	0.5507	176.22	400			
	2480	0.5435	173.92	400			
A period to	ransmit time = $0.4 \times 79 =$	31.6 Dwell time = pt	alse time \times (1600/(2*)	79))×31.6			
	2402	1.8261	292.18	400			
DH3	2441	1.8261	292.18	400			
	2480	1.8043	288.69	400			
A period to	ransmit time = 0.4×79 =	31.6 Dwell time = pt	alse time \times (1600/(4*)	79))×31.6			
	2402	3.0435	324.64	400			
DH5	2441	3.0652	326.95	400			
	2480	2.9783	317.69	400			
A period transr	$mit time = 0.4 \times 79 = 31.6$	5 Dwell time = pulse t	A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$				

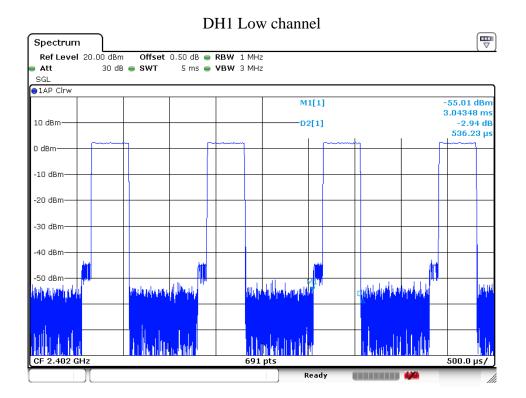




8DPSK Mode

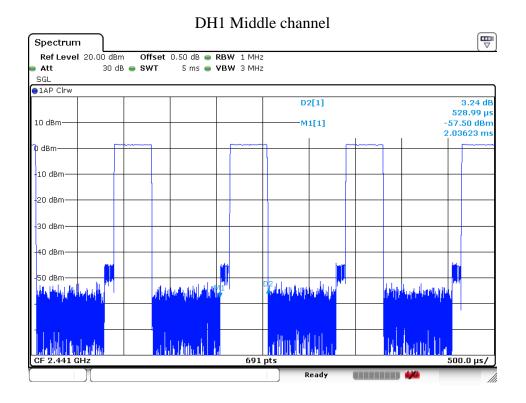
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2402	0.5435	173.92	400
	2441	0.5435	173.92	400
	2480	0.5435	173.92	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(2*79)) \times 31.6$				
DH3	2402	1.8188	291.01	400
	2441	1.8188	291.01	400
	2480	1.8188	291.01	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(4*79)) \times 31.6$				
DH5	2402	3.0797	328.50	400
	2441	3.0580	326.19	400
	2480	3.0797	328.50	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$				

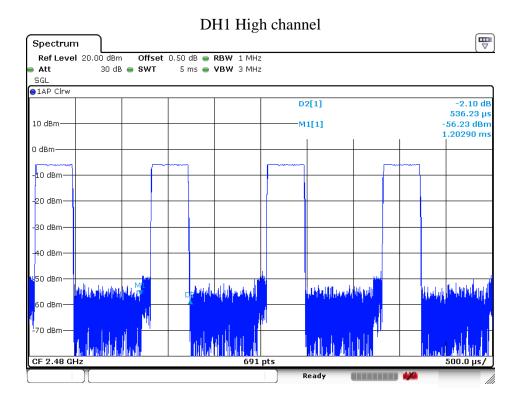
The spectrum analyzer plots are attached as below.



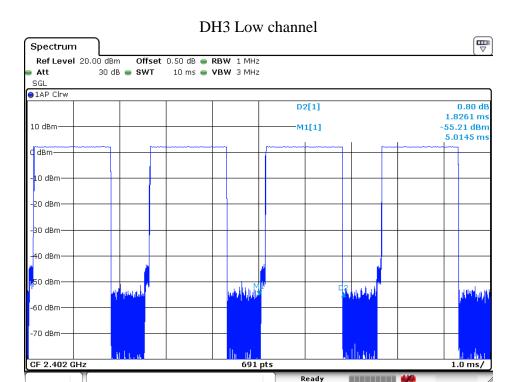


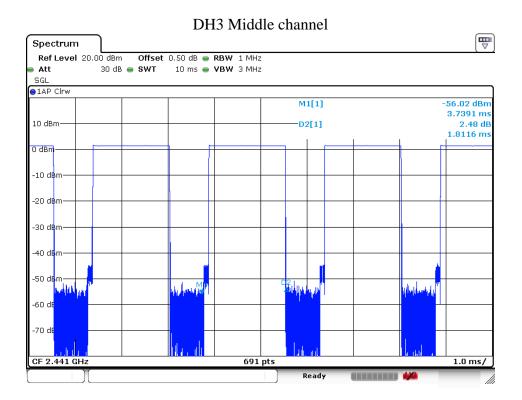
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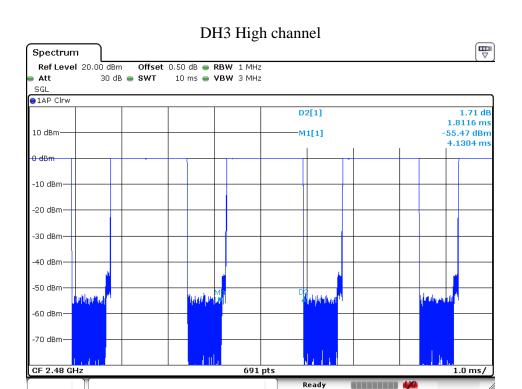


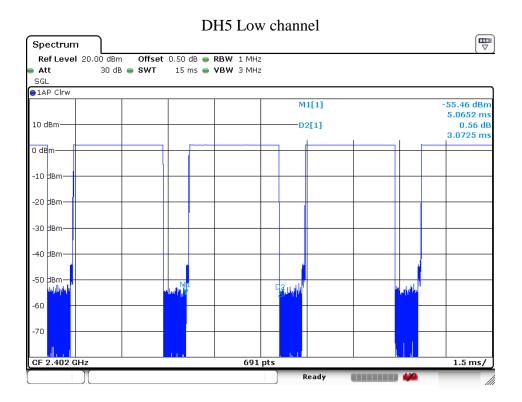






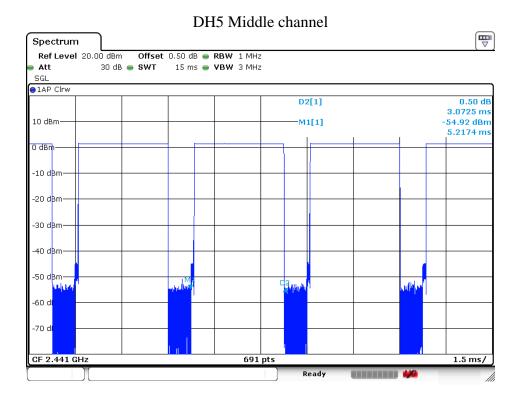


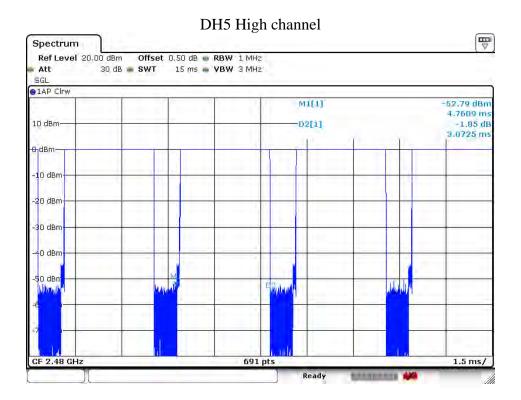






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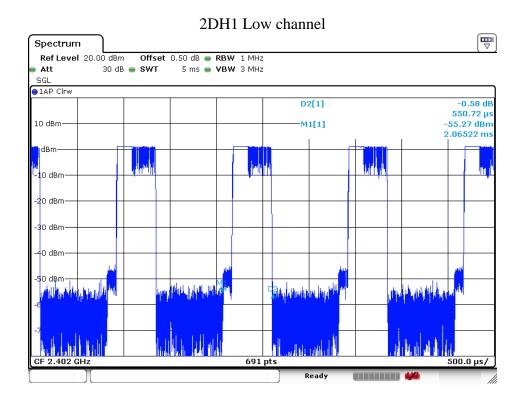


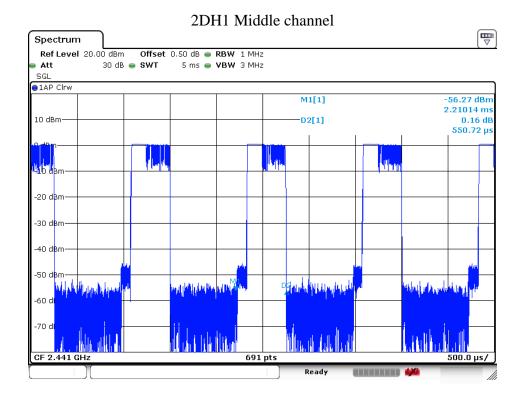


FCC ID: 2ADC5EXAT33-CR

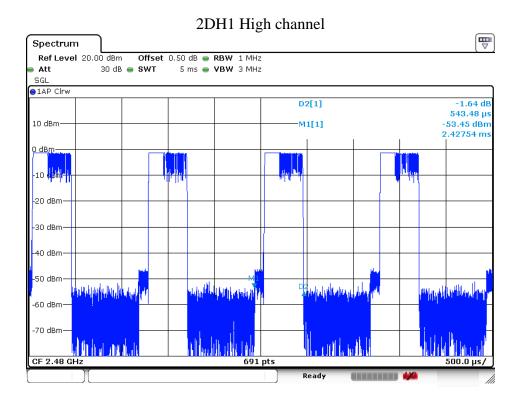


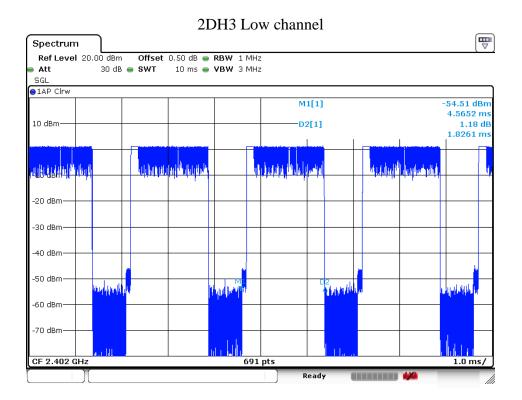
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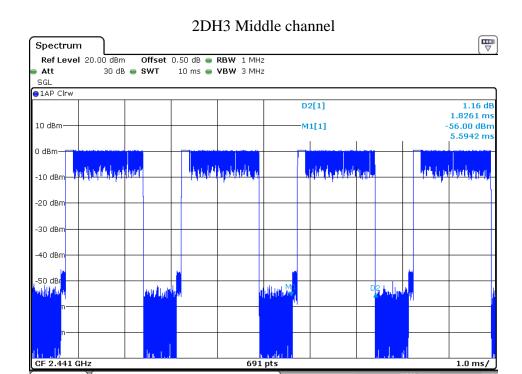


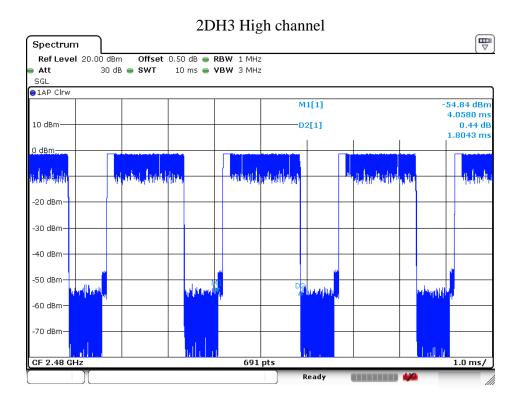






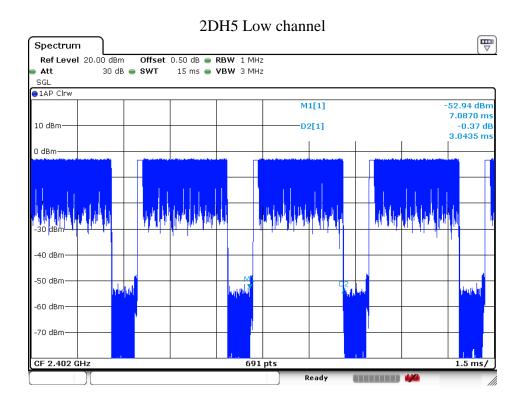


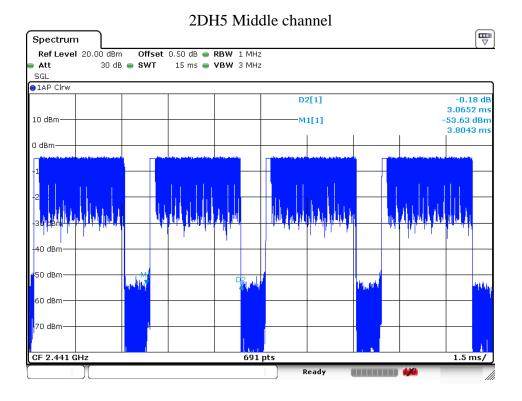




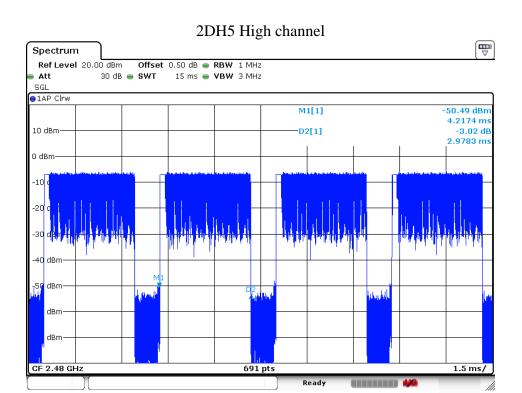


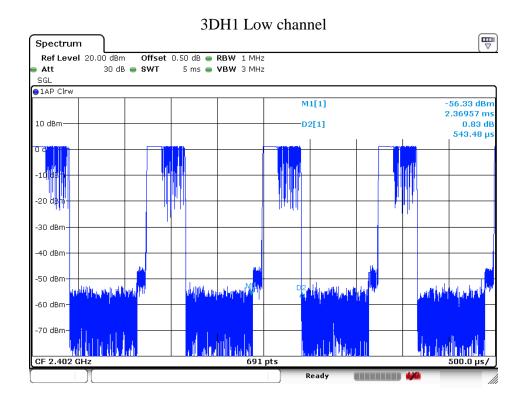
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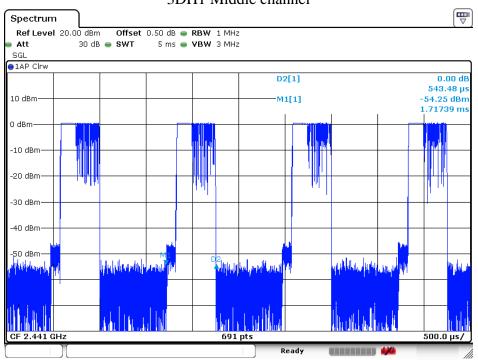


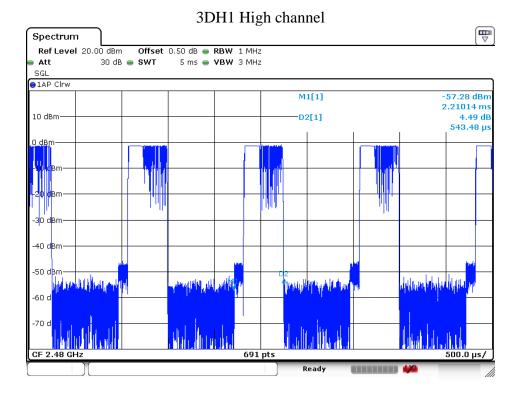




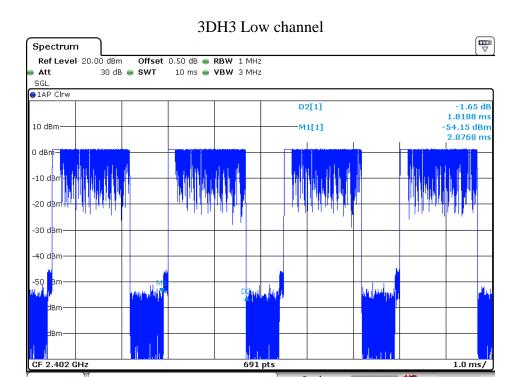


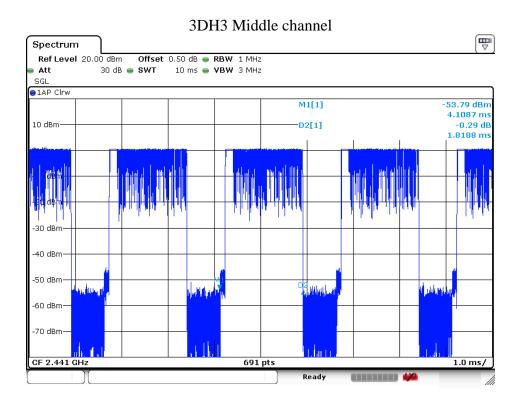
3DH1 Middle channel



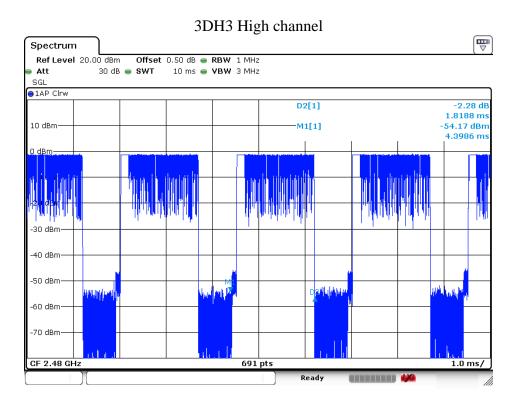


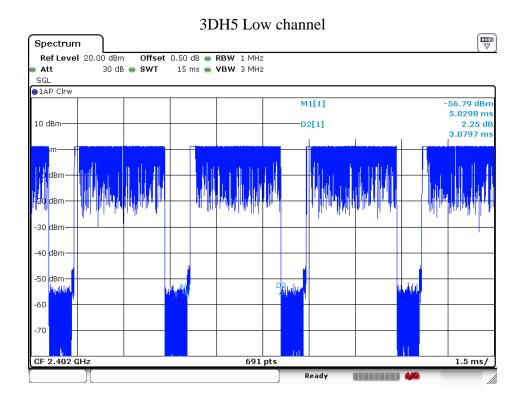




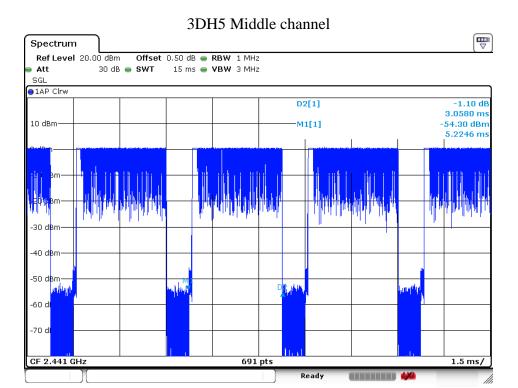


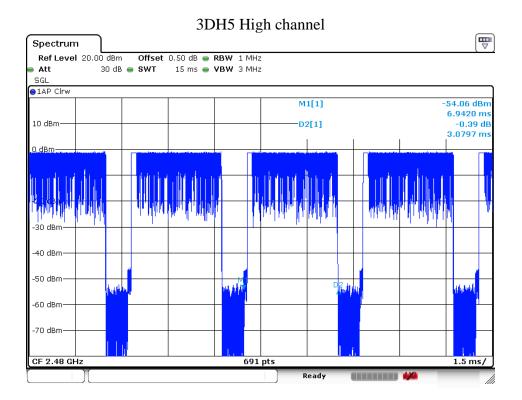












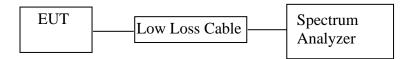


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9. MAXIMUM PEAK OUTPUT POWER TEST

9.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4. Operating Condition of EUT

- 9.4.1. Setup the EUT and simulator as shown as Section 9.1.
- 9.4.2. Turn on the power of all equipment.
- 9.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

9.5.Test Procedure

- 9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 9.5.2.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz for GFSK mode
- 9.5.3.Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz for other mode
- 9.5.4. Measurement the maximum peak output power.



9.6.Test Result

GFSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	2.31/0.0017	30 / 1.0
Middle	2441	1.65/0.0015	30 / 1.0
High	2480	-1.02/0.0008	30 / 1.0

Π /4-DQPSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	1.98/0.0016	21 / 0.125
Middle	2441	1.23/0.0013	21 / 0.125
High	2480	-0.45/0.0009	21 / 0.125

8DPSK Mode

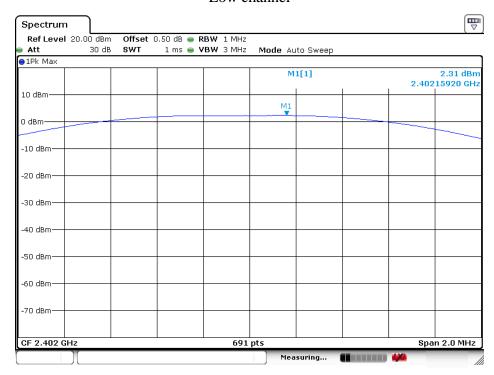
Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits dBm / W
Low	2402	2.11/0.0016	21 / 0.125
Middle	2441	1.42/0.0014	21 / 0.125
High	2480	-0.24/0.0009	21 / 0.125

The spectrum analyzer plots are attached as below.

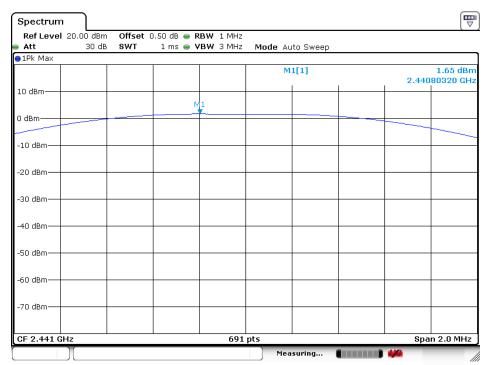


GFSK Mode

Low channel



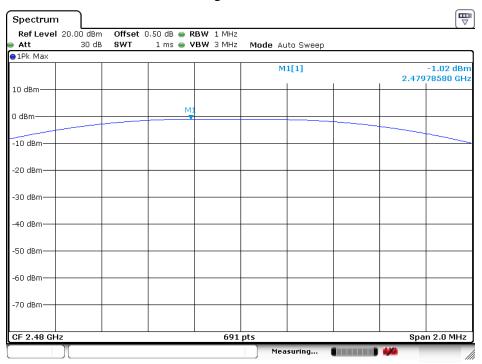
Middle channel



FCC ID: 2ADC5EXAT33-CR

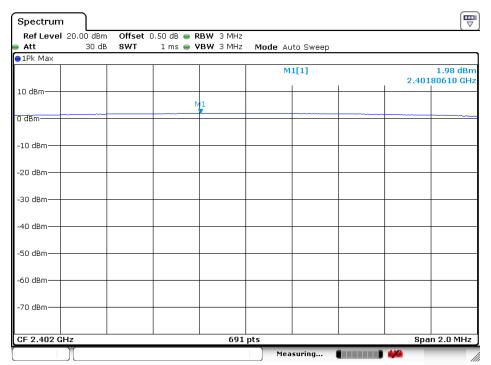


High channel



∏/4-DQPSK Mode

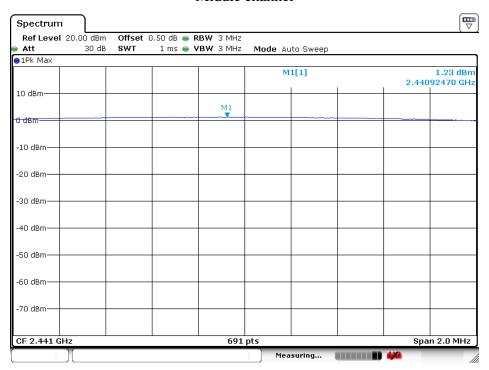
Low channel



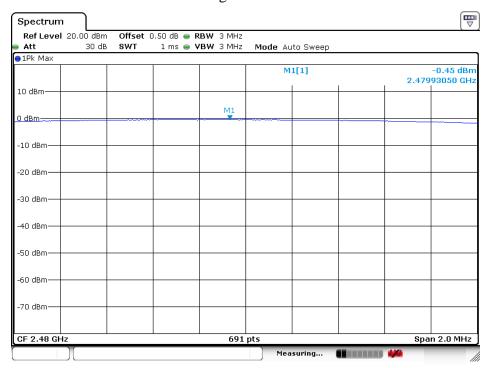


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Middle channel



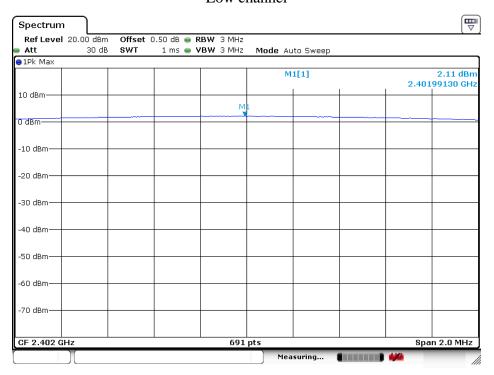
High channel



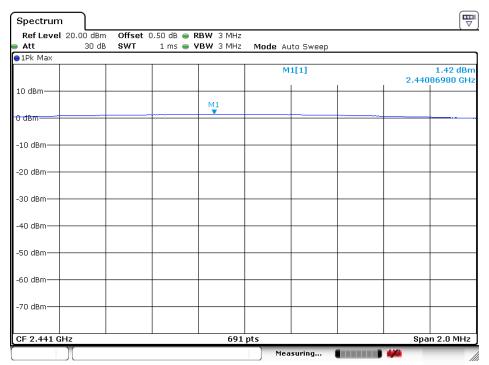


8DPSK Mode

Low channel



Middle channel

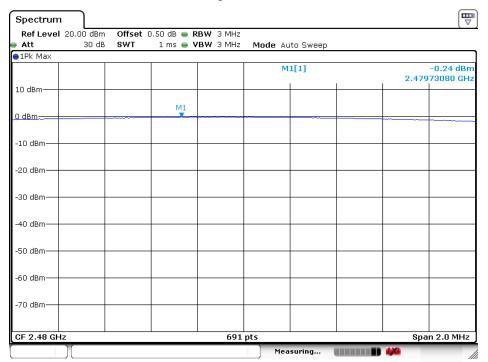


FCC ID: 2ADC5EXAT33-CR



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High channel





10. RADIATED EMISSION TEST

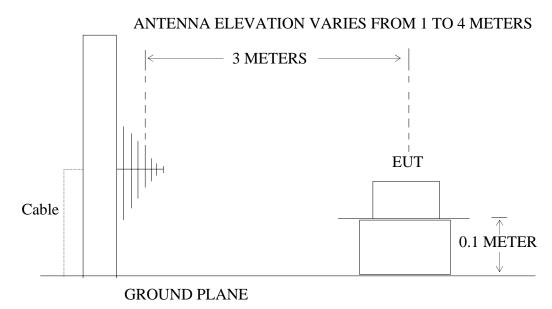
10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and simulators



(EUT: Active Floorstanding Loudspeaker System)

10.1.2. Anechoic Chamber Test Setup Diagram



10.2. The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).



10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	$(^2)$
13.36-13.41			

Until February 1, 1999, this restricted band shall be 0.490-0.510

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4. Configuration of EUT on Measurement

The equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

²Above 38.6



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10.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.1 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4- 2009 on radiated emission measurement.

The frequency range from 30MHz to 25000MHz is checked.

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

10.6. The Field Strength of Radiation Emission Measurement Results

Note: 1.We tested GFSK mode, $\Pi/4$ -DQPSK Mode & 8DPSK mode and recorded the worst case data (GFSK mode) for all test mode.

2. The 18-25GHz emissions are not reported, because the levels are too low against the limit.



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Below 1GHz



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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2014 #1517

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz EXAT33-CR Model: Manufacturer: 3SIXTY

Note:

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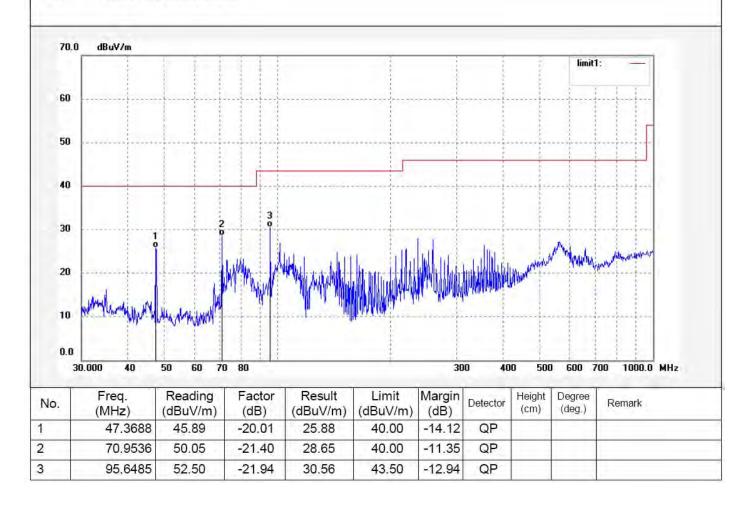
Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 14/28/49

Engineer Signature: STAR

Distance: 3m





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Job No.: star2014 #1518

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker

Mode: TX 2402MHz Model: EXAT33-CR Manufacturer: 3SIXTY

Report No.:ATE20141960 Note:

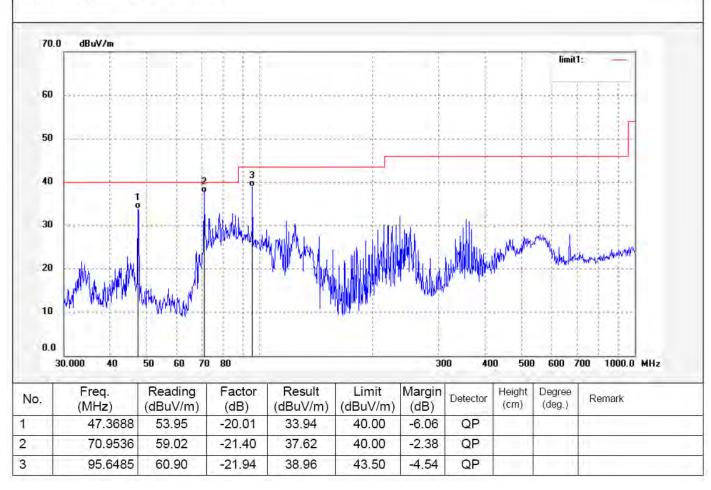
Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 14/30/01

Engineer Signature: STAR

Distance: 3m







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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

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Job No.: star2014 #1521 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

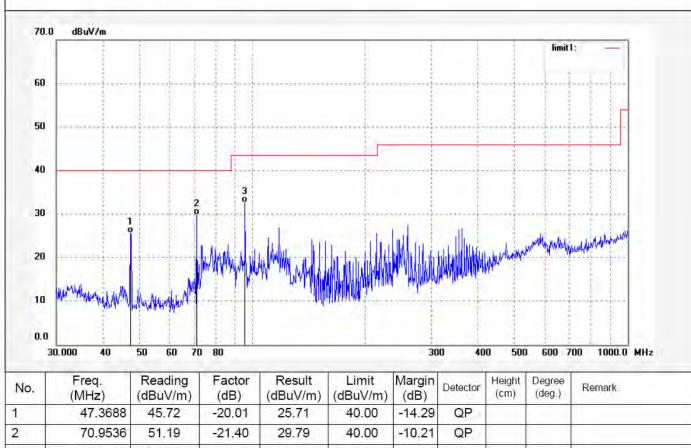
Test item: Radiation Test Date: 14/10/10/ Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/32/09

EUT: Active Floorstanding Loudspeaker Engineer Signature: STAR

Mode: TX 2441MHz Distance: 3m Model: EXAT33-CR

Note: Report No.:ATE20141960

Manufacturer: 3SIXTY



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	47.3688	45.72	-20.01	25.71	40.00	-14.29	QP			
2	70.9536	51.19	-21.40	29.79	40.00	-10.21	QP			
3	95.6485	54.57	-21.94	32.63	43.50	-10.87	QP			



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Job No.: star2014 #1520

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker

Mode: TX 2441MHz EXAT33-CR Model: Manufacturer: 3SIXTY

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 14/30/35

Engineer Signature: STAR

Distance: 3m

Report No.:ATE20141960 Note: 70.0 dBuV/m

40			2	3				
30	4 4 4 4 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1		ndimak JM	4	I make	Al Control	u.W
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	47.3688	54.56	-20.01	34.55	40.00	-5.45	QP				- 1
2	70.9536	59.36	-21.40	37.96	40.00	-2.04	QP				
3	95.6485	60.41	-21.94	38.47	43.50	-5.03	QP				



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Report No.: ATE20141960

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Job No.: star2014 #1522 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

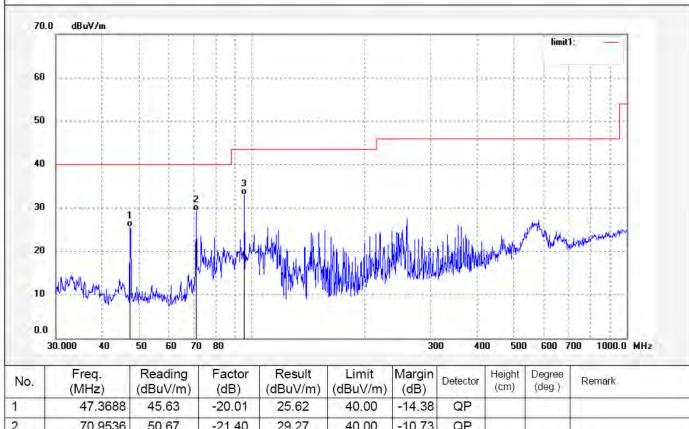
Test item: Radiation Test Date: 14/10/10/ Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/33/22

EUT: Active Floorstanding Loudspeaker Engineer Signature: STAR

Mode: TX 2480MHz Distance: 3m Model: EXAT33-CR

Note: Report No.:ATE20141960

Manufacturer: 3SIXTY



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	47.3688	45.63	-20.01	25.62	40.00	-14.38	QP		-		
2	70.9536	50.67	-21.40	29.27	40.00	-10.73	QP		-		
3	95.6485	54.93	-21.94	32.99	43.50	-10.51	QP		- 1		



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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2014 #1523

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker

Mode: TX 2480MHz Model: EXAT33-CR Manufacturer: 3SIXTY

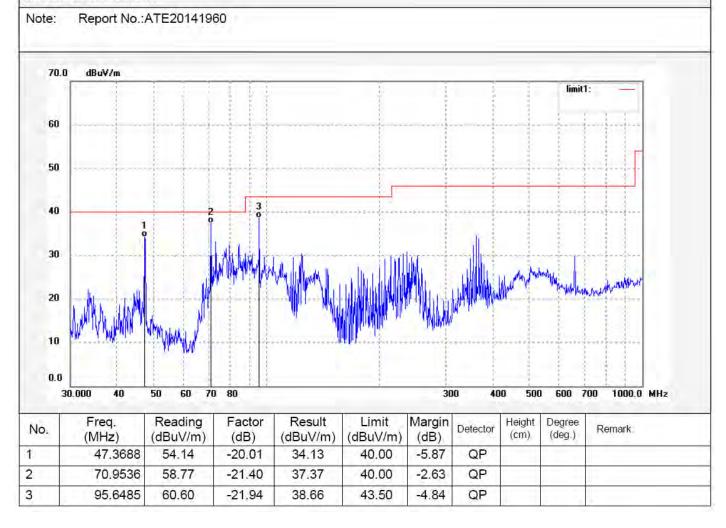
Polarization: Vertical

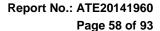
Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 14/34/11

Engineer Signature: STAR

Distance: 3m







Above 1GHz



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Job No.: alen #3722

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

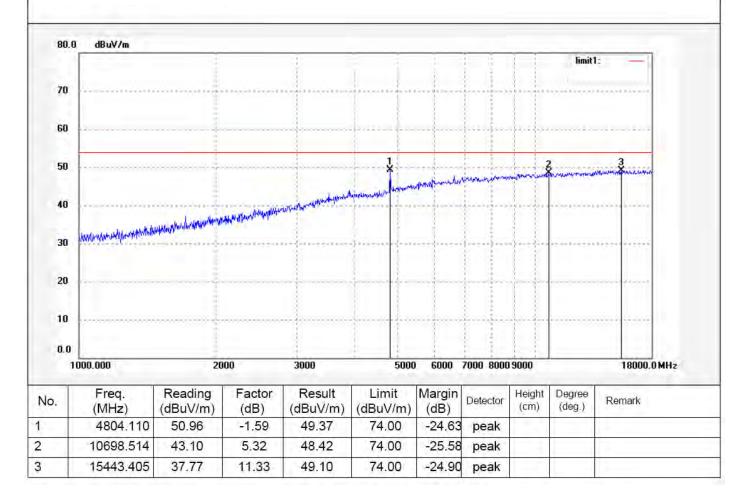
Mode: TX 2402MHz Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

Polarization: Horizontal
Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/28/00

Engineer Signature: Distance: 3m





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Job No.: alen #3723

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz Model: EXAT33-CR Manufacturer: 3SIXTY

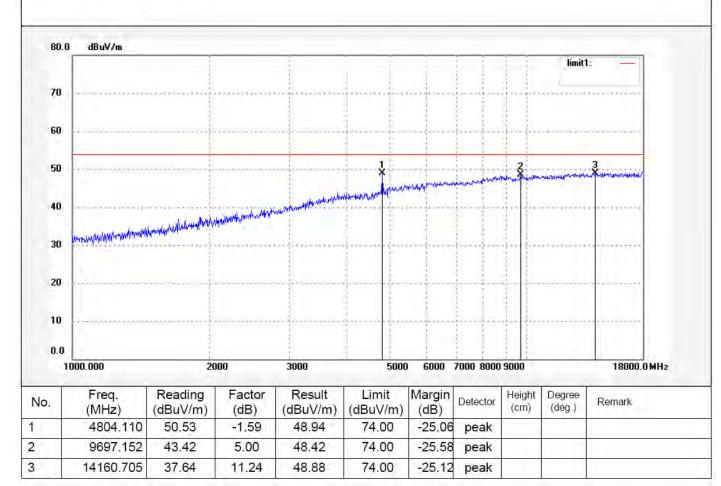
s B 3M Radiated Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/29/29 Engineer Signature:

Polarization: Vertical

Distance: 3m

Note: Report No.:ATE20141960







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Distance: 3m

Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

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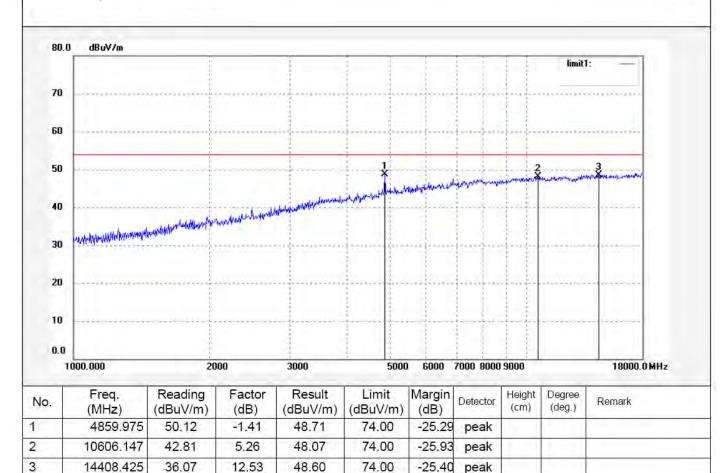
Job No.: alen #3725 Polarization: Horizontal

Standard: FCC Class B 3M Radiated Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 14/10/10/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 9/31/20
EUT: Active Floorstanding Loudspeaker System Engineer Signature:

Mode: TX 2441MHz
Model: EXAT33-CR
Manufacturer: 3SIXTY

Note: Report No.:ATE20141960





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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396



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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/30/27

Engineer Signature:

Distance: 3m

Job No.: alen #3724

Standard: FCC Class B 3M Radiated

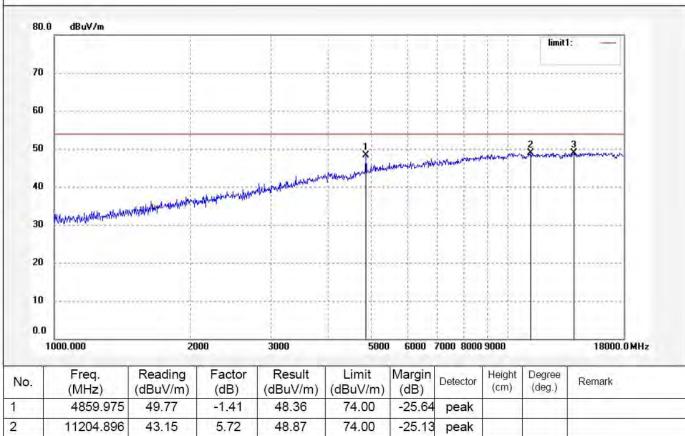
Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2441MHz EXAT33-CR Model: Manufacturer: 3SIXTY

Note: Report No.:ATE20141960



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	4859.975	49.77	-1.41	48.36	74.00	-25.64	peak				
2	11204.896	43.15	5.72	48.87	74.00	-25.13	peak				
3	13997.929	38.50	10.40	48.90	74.00	-25.10	peak				



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Job No.: alen #3726

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz
Model: EXAT33-CR
Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

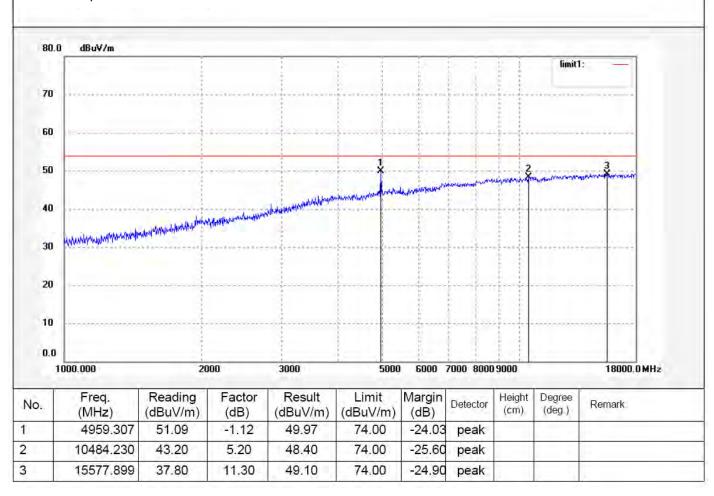
Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/32/37

Engineer Signature:

Distance: 3m





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Job No.: alen #3727

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz Model: EXAT33-CR Manufacturer: 3SIXTY

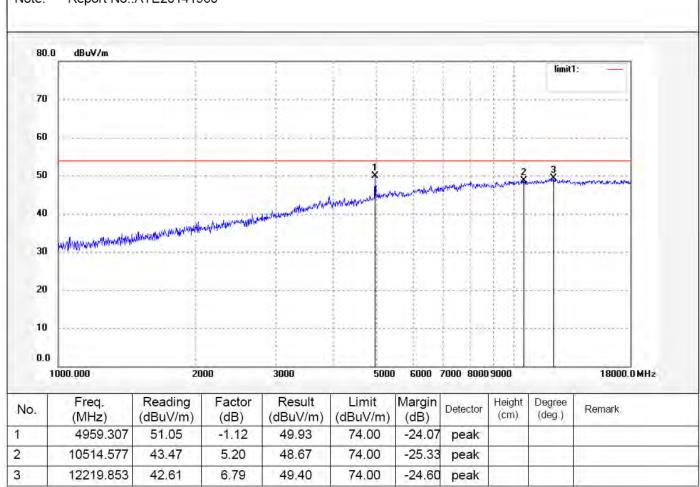
Note: Report No.:ATE20141960

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/33/48 Engineer Signature:

Distance: 3m



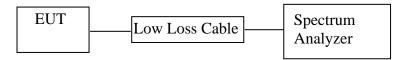


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11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

11.2. The Requirement For Section 15.247(d)

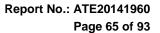
Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4. Operating Condition of EUT

- 11.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 11.4.2. Turn on the power of all equipment.
- 11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.





11.5.Test Procedure

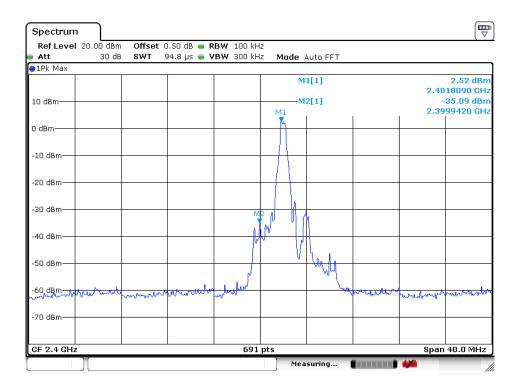
- 11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.
- 11.5.3. The band edges was measured and recorded.

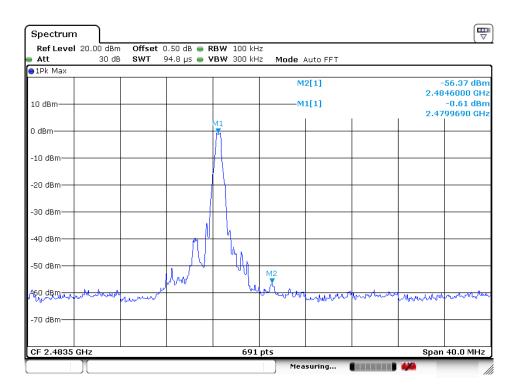
11.6.Test Result

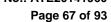
Frequency	Result of Band Edge	Limit of Band Edge									
(MHz)	(dBc)	(dBc)									
	GFSK										
2399.942	37.61	> 20dBc									
2484.600	55.76	> 20dBc									
	П/4-DQPSK Mode										
2399.520	39.75	> 20dBc									
2490.400	55.79	> 20dBc									
	8DPSK										
2398.920	39.62	> 20dBc									
2485.300	55.29	> 20dBc									



GFSK

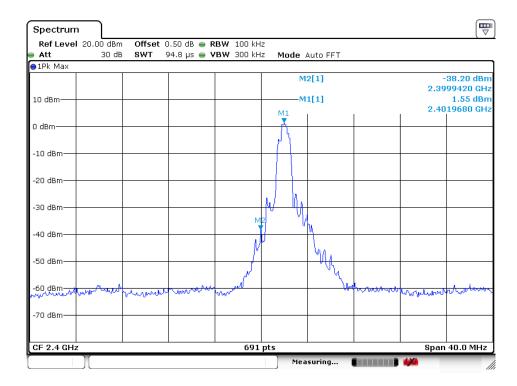


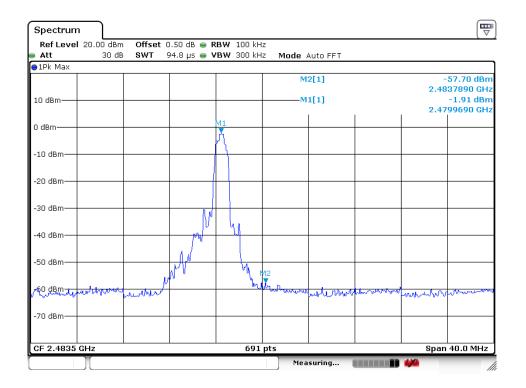




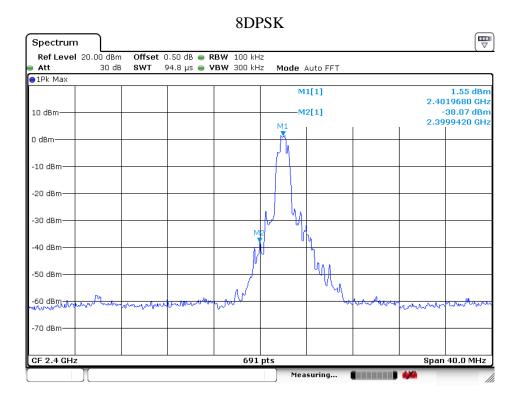


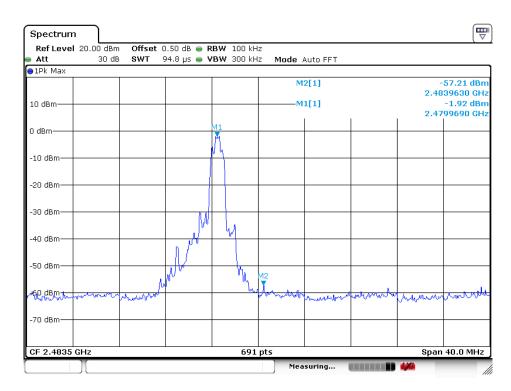
∏/4-DQPSK Mode











FCC ID: 2ADC5EXAT33-CR



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Radiated Band Edge Result

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 0.1 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it. We select 2402MHz, 2480MHz TX frequency to transmit(Hopping off mode). We select 2402-2480MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.



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Non-hopping mode



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Job No.: alen #3604 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(GFSK)

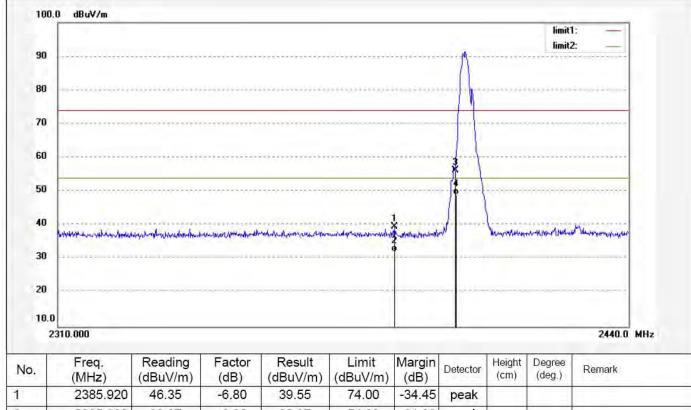
Model: EXAT33-CR Manufacturer: 3SIXTY Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/53/59 Engineer Signature:

Distance: 3m

Note: Report No.:ATE20141960



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2385.920	46.35	-6.80	39.55	74.00	-34.45	peak				
2	2385.920	38.87	-6.80	32.07	54.00	-21.93	peak				
3	2400.000	63.08	-6.76	56.32	74.00	-17.68	peak				- 1
4	2400.000	55.78	-6.76	49.02	54.00	-4.98	peak				- 1

Note: Average measurement with peak detection at No.2&4





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Job No.: alen #3605

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(GFSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

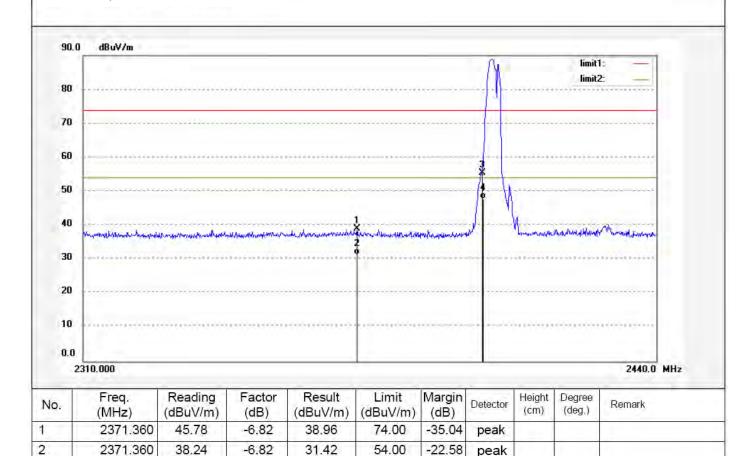
Note: Report No.:ATE20141960

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/55/03 Engineer Signature:

Distance: 3m



74.00

54.00

-18.57

-6.19

peak

peak

Note: Average measurement with peak detection at No.2&4

-6.76

-6.76

55.43

47.81

62.19

54.57

2400.000

2400.000

3

4



B

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Job No.: alen #3602 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(GFSK)

Model: EXAT33-CR
Manufacturer: 3SIXTY

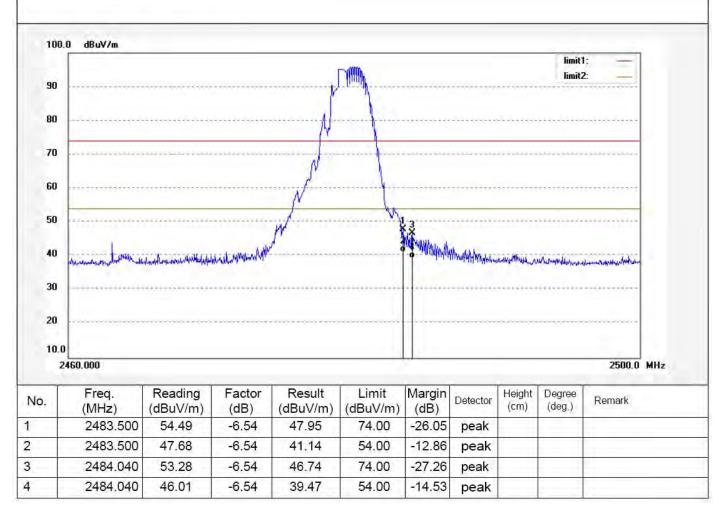
Note: Report No.:ATE20141960

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/50/41 Engineer Signature:

Distance: 3m



Note: Average measurement with peak detection at No.2&4





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Job No.: alen #3603 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(GFSK)

Model: EXAT33-CR Manufacturer: 3SIXTY Polarization: Vertical

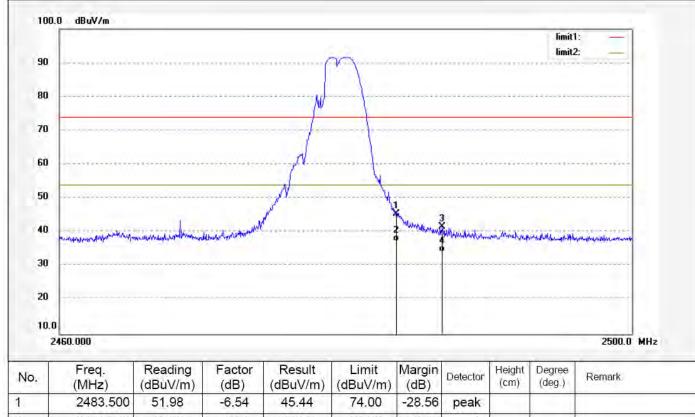
Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/52/11

Engineer Signature:

Distance: 3m

Note: Report No.:ATE20141960



2 2483.500 43.89 -6.5437.35 54.00 -16.65peak 3 2486.720 48.23 -6.53 41.70 74.00 -32.30 peak 4 2486.720 40.68 -6.5334.15 54.00 -19.85peak



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Report No.: ATE20141960

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Job No.: alen #3626 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(pi/4DQPSK)

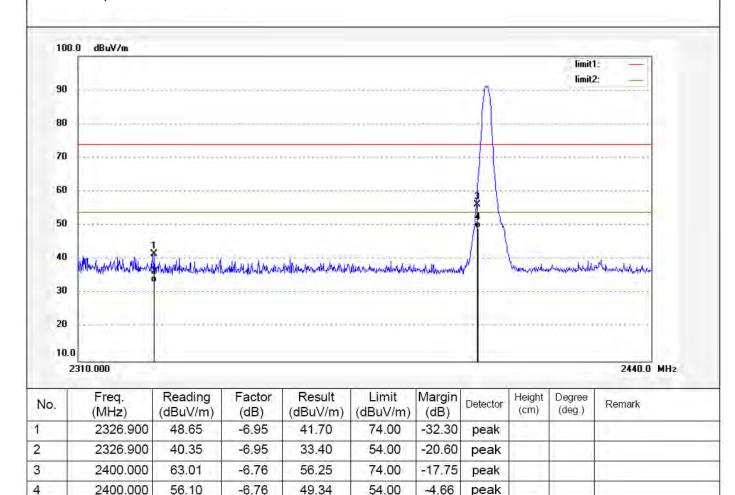
Model: EXAT33-CR
Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/05/12 Engineer Signature: Distance: 3m





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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/04/05 Engineer Signature:

Distance: 3m

Job No.: alen #3625 Standard: FCC PK Test item: Radiation Test

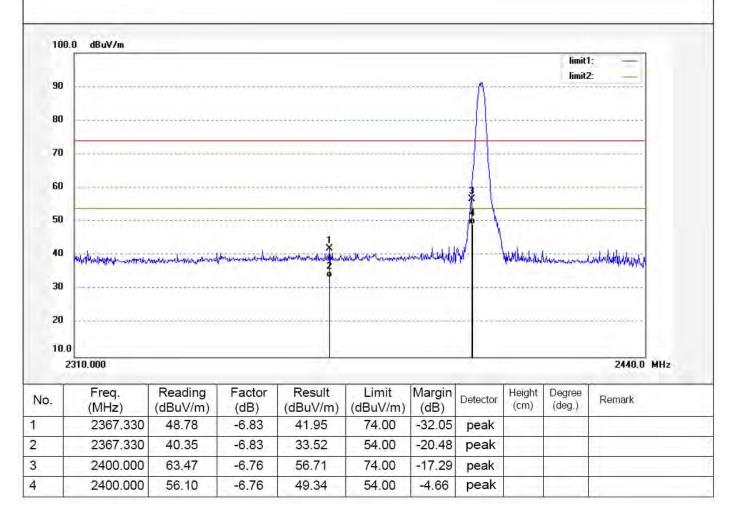
Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(pi/4DQPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960





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Report No.: ATE20141960

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Job No.: alen #3627 Polarization: Horizontal

Standard: FCC PK Power Source: AC 120V/60Hz
Test item: Radiation Test Date: 14/10/10/

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(pi/4DQPSK)

Time: 9/06/39

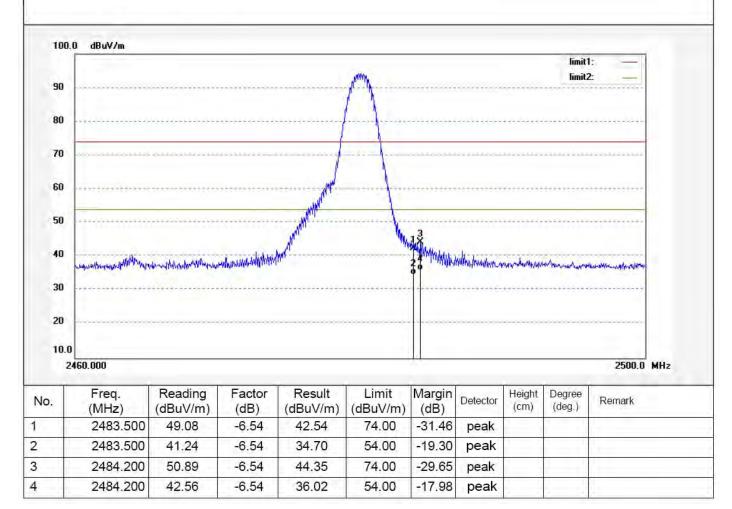
Engineer Signature:

Distance: 3m

Mode: TX 2480MHz(pi/4DQPSK) D
Model: EXAT33-CR

Model: EXAT33-CR
Manufacturer: 3SIXTY

Note: Report No.:ATE20141960







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Report No.: ATE20141960

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Job No.: alen #3628

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(pi/4DQPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

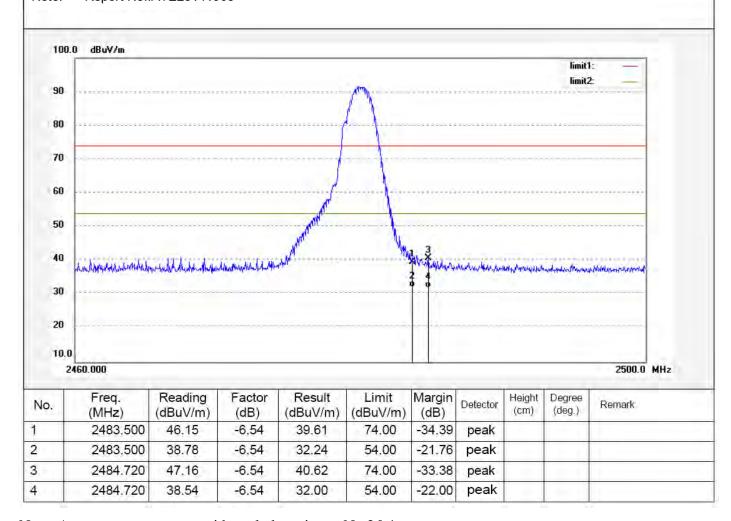
Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 9/08/06

Engineer Signature:

Distance: 3m







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Job No.: alen #3618 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/43/01

Engineer Signature:

Distance: 3m

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30 20 10.	2310.000 Freq.					Margin (dB)	Detector peak	Height	Degree	
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Standard: FCC PK

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Job No.: alen #3617 Polarization: Vertical

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2402MHz(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/41/27

Engineer Signature:

Distance: 3m

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30 20 10.		Marine and pharmace	ind himmen de indiv	history shirts from the self-shirt connecting		ordonospropistos		Mygdannauk	ericatus breis	2440.	O MHz
30 20 10.	0	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	2440 ,	О мна
30 20 10,1	0 2310.000 Freq.	Reading		And the state of t		Margin (dB)	Detector peak	Height (cm)			О мна
30 20 10,1	0 2310.000 Freq. (MHz)	Reading (dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector	Height (cm).			о мна
30 20 10,1	o 2310.000 Freq. (MHz) 2375.000	Reading (dBuV/m) 49.62	(dB) -6.83	(dBuV/m) 42.79	(dBuV/m) 74.00	(dB) -31.21	peak	Height (cm)			о мна



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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20141960

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Job No.: alen #3619 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

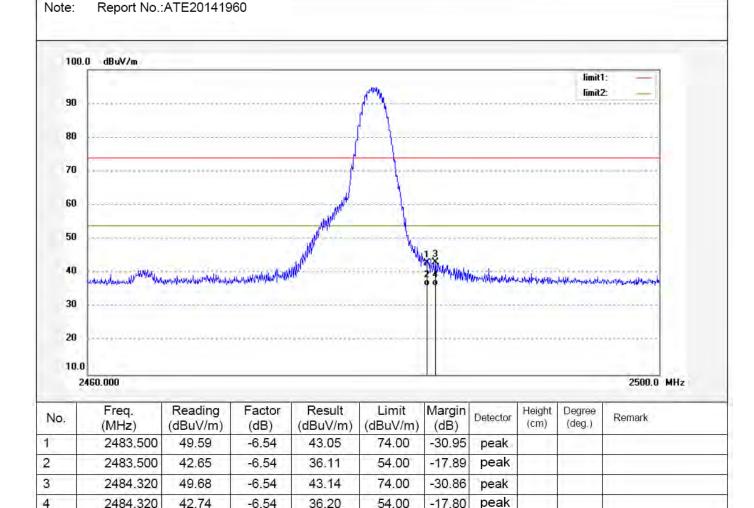
Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/44/57

Engineer Signature:

Distance: 3m





ATC

Standard: FCC PK

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Report No.: ATE20141960

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Job No.: alen #3620

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

Temp.(0)/Tidiff.(70) 25 07 55 70

EUT: Active Floorstanding Loudspeaker System

Mode: TX 2480MHz(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

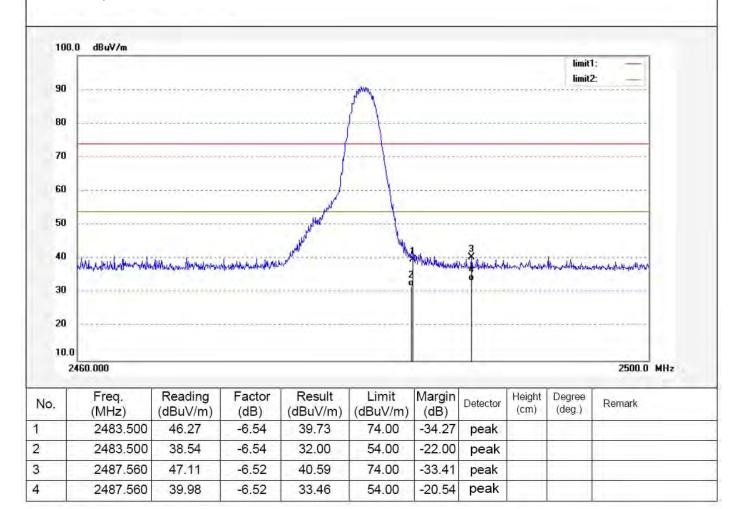
Note: Report No.:ATE20141960

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/46/20 Engineer Signature:

Distance: 3m





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Site: 1# Chamber

Hopping mode



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n Rd, Tel:+86-0755-26503290 R.China Fax:+86-0755-26503396

Job No.: alen #3608 Polarization: Horizontal

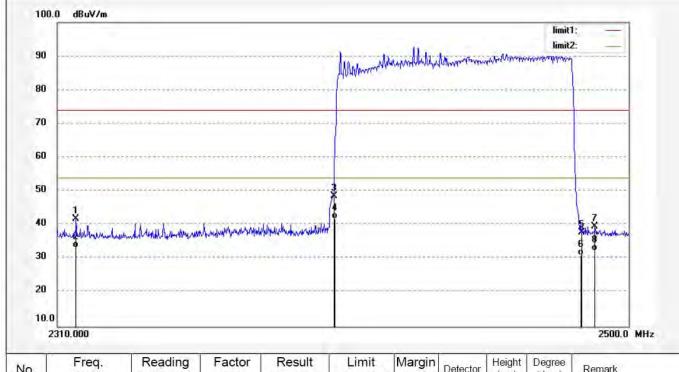
Standard: FCC PK Power Source: AC 120V/60Hz
Test item: Radiation Test Date: 14/10/10/

Temp.(C)/Hum.(%) 25 C / 55 % Time: 15/38/05
EUT: Active Floorstanding Loudspeaker System Engineer Signature:

Mode: Hopping TX(GFSK) Distance: 3m

Model: EXAT33-CR
Manufacturer: 3SIXTY

Note: Report No.:ATE20141960



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2316.080	48.79	-6.97	41.82	74.00	-32.18	peak				
2	2316.080	40.35	-6.97	33.38	54.00	-20.62	peak		- 1		- 11
3	2400.000	55.37	-6.76	48.61	74.00	-25.39	peak				- 10
4	2400.000	48.65	-6.76	41.89	54.00	-12.11	peak			The second second	
5	2483.660	44.29	-6.54	37.75	74.00	-36.25	peak				
6	2483.660	37.65	-6.54	31.11	54.00	-22.89	peak				
7	2488.500	46.03	-6.52	39.51	74.00	-34.49	peak	1	+		
8	2488.500	38.87	-6.52	32.35	54.00	-21.65	peak		1		



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Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3607

Test item: Radiation Test

Standard: FCC PK

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: Hopping TX(GFSK)

Model: EXAT33-CR
Manufacturer: 3SIXTY

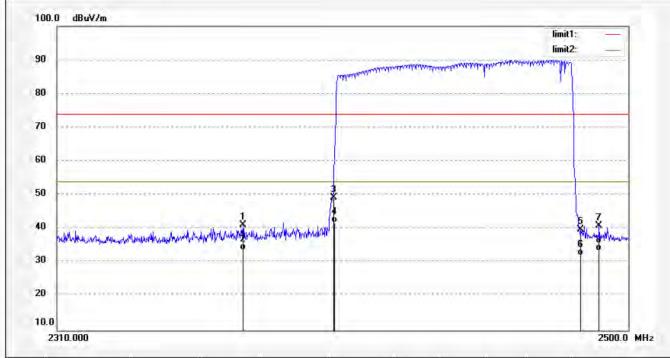
Note: Report No.:ATE20141960

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 15/33/06 Engineer Signature:

Distance: 3m



Reading Factor Result Freq. Limit Margin Height Degree Detector No. Remark (cm) (deg.) (MHz) (dBuV/m) (dB) (dBuV/m) (dBuV/m) (dB) 1 2370.420 47.96 -6.8341.13 74.00 -32.87peak 2 2370.420 40.57 -6.8333.74 54.00 -20.26peak 3 2400.000 56.11 -6.7649.35 74.00 -24.65 peak 4 48.68 41.92 54.00 2400.000 -6.76-12.08peak 5 2483.500 46.40 -6.5439.86 74.00 -34.14peak 6 2483,500 38.78 -6.54 32.24 54.00 -21.76 peak 7 2490.120 47.55 -6.5241.03 74.00 -32.97peak 8 2490.120 40.12 -6.5233,60 54.00 -20.40peak



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Science & Industry Park, Nanshan Shenzhen, P.R. China

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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: alen #3623 Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: Hopping TX(pi/4DQPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

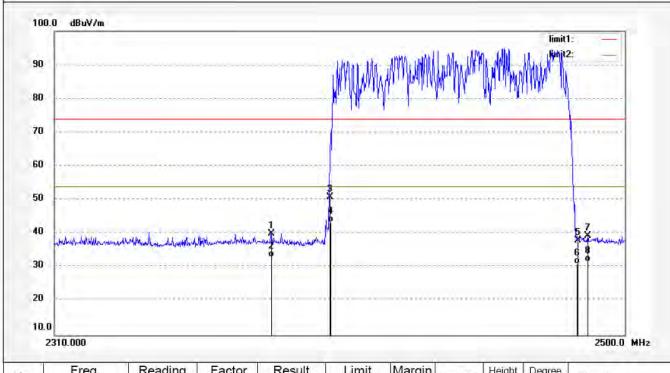
Note: Report No.:ATE20141960

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/59/45 Engineer Signature:

Distance: 3m



Reading Factor Result Limit Margin Freq. Height Degree Detector No. Remark (cm) (deg.) (dBuV/m) (dB) (dBuV/m) (MHz) (dBuV/m) (dB) 46.89 -6.81 1 2380.680 40.08 74.00 -33.92peak 2 2380.680 39.87 -6.8133.06 54.00 -20.94peak 3 2400.000 57.64 -6.7650.88 74.00 -23.12 peak 4 2400.000 50.24 -6.7643.48 54.00 peak -10.525 2483.500 44.55 -6.5438.01 74.00 -35.99peak 6 2483.500 37.65 -6.5431.11 54.00 -22.89 peak 7 2487.270 45.86 -6.5339.33 74.00 -34.67peak 8 2487.270 38.28 -6.5331.75 54.00 -22.25peak



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Job No.: alen #3624 Polarization: Vertical

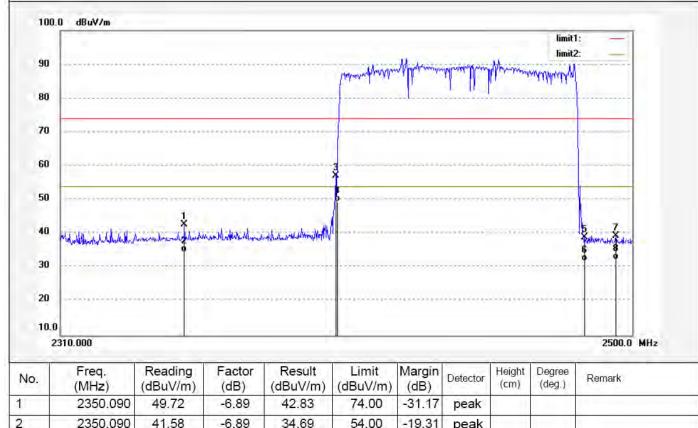
Standard: FCC PK Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 14/10/10/ Temp.(C)/Hum.(%) 25 C / 55 % Time: 9/02/36 EUT: Active Floorstanding Loudspeaker System Engineer Signature: Distance: 3m

Hopping TX(pi/4DQPSK) Mode:

EXAT33-CR Model: Manufacturer: 3SIXTY

Note: Report No.:ATE20141960



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2350.090	49.72	-6.89	42.83	74.00	-31.17	peak		1		-11
2	2350.090	41.58	-6.89	34.69	54.00	-19.31	peak		1		- 11
3	2400.000	63.97	-6.76	57.21	74.00	-16.79	peak		1		-11
4	2400.000	56.21	-6.76	49.45	54.00	-4.55	peak		1 = 11		-11
5	2483.500	45.38	-6.54	38.84	74.00	-35.16	peak				
6	2483.500	38.54	-6.54	32.00	54.00	-22.00	peak				-7
7	2494.300	45.90	-6.50	39.40	74.00	-34.60	peak				
8	2494.300	38.87	-6.50	32.37	54.00	-21.63	peak				



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Job No.: alen #3622 Po Standard: FCC PK Po

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: Hopping TX(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

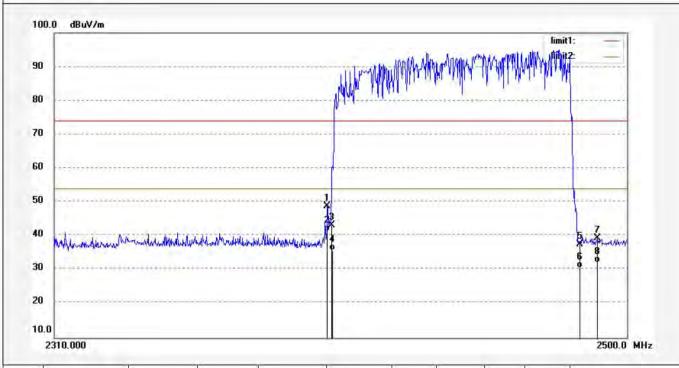
Note: Report No.:ATE20141960

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/55/36 Engineer Signature:

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2398.920	55.67	-6.76	48.91	74.00	-25.09	peak			
2	2398.920	48.21	-6.76	41.45	54.00	-12.55	peak			
3	2400.000	49.91	-6.76	43.15	74.00	-30.85	peak			
4	2400.000	42.57	-6.76	35.81	54.00	-18.19	peak			
5	2483.500	44.18	-6.54	37.64	74.00	-36.36	peak			
6	2483.500	37.17	-6.54	30.63	54.00	-23.37	peak			
7	2490.120	45.90	-6.52	39.38	74.00	-34.62	peak			
8	2490.120	38.78	-6.52	32.26	54.00	-21.74	peak			



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Site: 1# Chamber Tel:+86-0755-26503290

Fax:+86-0755-26503396



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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 14/10/10/ Time: 8/50/53 Engineer Signature:

Distance: 3m

Job No.: alen #3621 Standard: FCC PK

Test item: Radiation Test

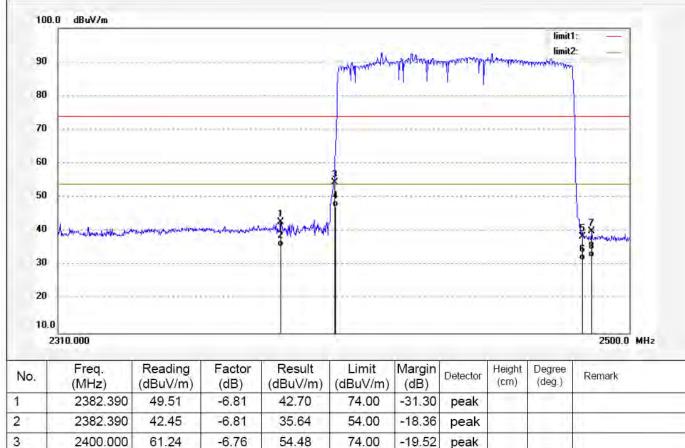
Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Active Floorstanding Loudspeaker System

Mode: Hopping TX(8DPSK)

Model: EXAT33-CR Manufacturer: 3SIXTY

Note: Report No.:ATE20141960



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2382,390	49.51	-6.81	42.70	74.00	-31.30	peak				
2	2382,390	42.45	-6.81	35.64	54.00	-18.36	peak		1 1	1	
3	2400.000	61.24	-6.76	54.48	74.00	-19.52	peak				
4	2400.000	54.01	-6.76	47.25	54.00	-6.75	peak				
5	2483.500	45.07	-6.54	38.53	74.00	-35.47	peak				
6	2483.500	38.01	-6.54	31.47	54.00	-22.53	peak				
7	2487.080	46.52	-6.53	39.99	74.00	-34.01	peak				
8	2487.080	38.89	-6.53	32.36	54.00	-21.64	peak				

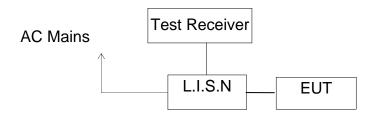
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12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

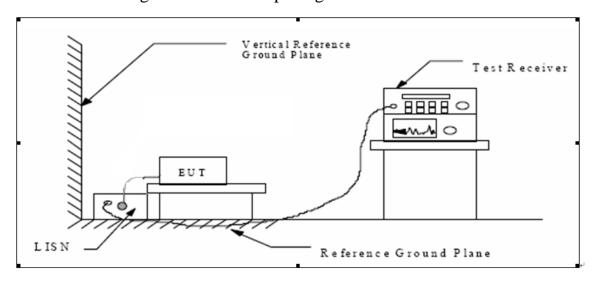
15 SECTION 15.207(A)

12.1.Block Diagram of Test Setup



(EUT: Active Floorstanding Loudspeaker System)

12.2. Shielding Room Test Setup Diagram



12.3.The Emission Limit

12.3.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency	Limit dB(μV)					
(MHz)	Quasi-peak Level	Average Level				
0.15 - 0.50	66.0 - 56.0 *	56.0 – 46.0 *				
0.50 - 5.00	56.0	46.0				
5.00 - 30.00	60.0	50.0				

^{*} Decreases with the logarithm of the frequency.

FCC ID: 2ADC5EXAT33-CR



Report No.: ATE20141960

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12.4.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

12.5. Operating Condition of EUT

- 12.5.1. Setup the EUT and simulator as shown as Section 12.1.
- 12.5.2. Turn on the power of all equipment.
- 12.5.3.Let the EUT work in test mode and measure it.

12.6.Test Procedure

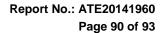
The EUT is put on the plane 0.1m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

12.7. Power Line Conducted Emission Measurement Results

PASS.



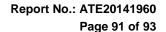


The frequency range from 150kHz to 30MHz is checked.

Test mode : Cha	arging&B	T Commu	ınicating)			
MEASUREMENT	RESULT	: "TSTO	07_fir	1"			
10/10/2014 2:							
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000 0.210000 0.365000	61.30 51.60 35.40	10.5 10.5 10.6	63	11.6	ÕР	L1 L1 L1	GND GND GND
MEASUREMENT	RESULT	: "TST0	07_fin	n2"			
10/10/2014 2: Frequency MHz		Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.155000 0.255000 0.390000	29.70 13.30 3.60	10.5 10.6 10.7	52	38.3	AV	L1 L1 L1	GND GND GND
MEASUREMENT	RESULT	: "TSTO	08_fir	1"			
10/10/2014 2:							
Frequency MHz	Level dBµV		Limit dBµV	_	Detector	Line	PE
0.150000 0.215000 0.365000	61.20 50.70 35.30		63		~	N N N	GND GND GND
MEASUREMENT	RESULT	: "TST0	08_fir	n2"			
10/10/2014 2: Frequency MHz		Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000 0.215000 0.365000	30.50 21.00 15.70	10.5 10.5 10.6	56 53 49		AV	N N N	GND GND GND

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.





CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Active Floorstanding Loudspeaker System M/N:EXAT33-CR

Manufacturer: 3SIXTY

Operating Condition: BT Operation 1#Shielding Room Test Site:

Operator: star

Test Specification: N 120V/60Hz

Report No.:ATE20141960 Comment: Start of Test: 10/10/2014 / 2:11:00PM

SCAN TABLE: "V 150K-30MHz fin"

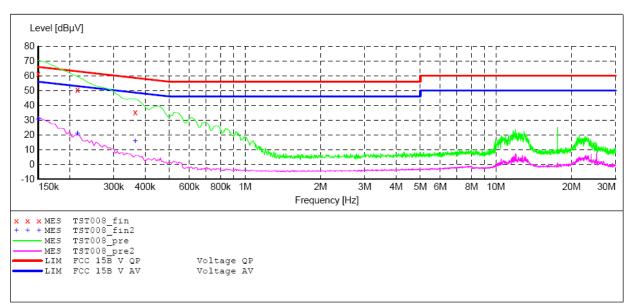
_SUB_STD_VTERM2 1.70 Short Description:

Start Stop Step Detector Meas. ΙF Transducer

Frequency Frequency 150.0 kHz 30.0 MHz Width Time Bandw.

QuasiPeak 1.0 s NSLK8126 2008 4.5 kHz 9 kHz

Average



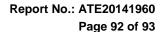
MEASUREMENT RESULT: "TST008 fin"

10/10/2014 2:	14PM						
Frequency			Limit	Margin	Detector	Line	PΕ
MHz	dBµV	dB	dΒμV	dB			
0 150000	C1 20	10 5		4 0	O.D.	NT.	CNID
0.150000	61.20	10.5	66	4.8	QP	N	GND
0.215000	50.70	10.5	63	12.3	QP	N	GND
0.365000	35.30	10.6	59	23.3	QP	N	GND

MEASUREMENT RESULT: "TST008 fin2"

10/10/2014 2:	14PM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
MHz	dΒμV	dB	dΒμV	dB			
0.150000	30.50	10.5	56	25.5	7/17	N	GND
						IA	GND
0.215000	21.00	10.5	53	32.0	AV	N	GND
0.365000	15.70	10.6	49	32.9	AV	N	GND

FCC ID: 2ADC5EXAT33-CR ACCURATE TECHNOLOGY CO. LTD





CONDUCTED EMISSION STANDARD FCC PART 15B

Active Floorstanding Loudspeaker System M/N:EXAT33-CR

Manufacturer: 3SIXTY

Operating Condition: BT Operation Test Site: 1#Shielding Room

Operator: star

Test Specification: L 120V/60Hz

Report No.:ATE20141960 Comment: 10/10/2014 / 2:07:31PM Start of Test:

SCAN TABLE: "V 150K-30MHz fin"

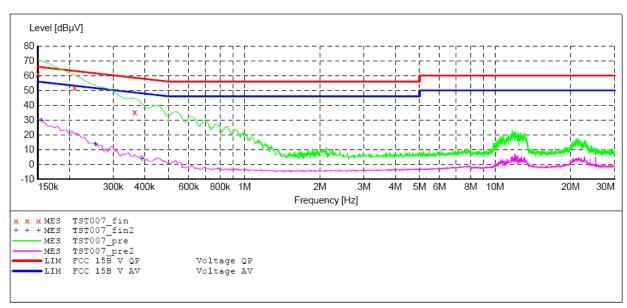
_SUB_STD_VTERM2 1.70 Short Description:

ΙF Detector Meas. Transducer Start Stop Step

Time Bandw.

Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



MEASUREMENT RESULT: "TST007 fin"

10/10/2	014 2:1	0PM						
Freq	uency	Level	Transd	Limit	Margin	Detector	Line	PΕ
	MHz	dΒμV	dB	dΒμV	dB			
0.1	50000	61.30	10.5	66	4.7	QP	L1	GND
0.2	10000	51.60	10.5	63	11.6	QP	L1	GND
0.3	65000	35.40	10.6	59	23.2	OP	L1	GND

MEASUREMENT RESULT: "TST007 fin2"

10/10/2014 2: Frequency MHz			Limit dBµV	Margin dB	Detector	Line	PE
0.155000 0.255000	29.70 13.30	10.5 10.6				L1 T.1	GND GND
0.390000		10.7	~ -	44 5		T.1	GND

FCC ID: 2ADC5EXAT33-CR ACCURATE TECHNOLOGY CO. LTD



13.ANTENNA REQUIREMENT

13.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

13.2. Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement. Therefore, the equipment complies with the antenna requirement of Section 15.203.

