

FCC REPORT

Applicant: SHENZHEN LOFTYNN INTELLIGENCE TECHNOLOGY CO., LTD.

Address of Applicant: Room 301, Xindongxing Commercial Centre, Liuxian 2nd Road, Baoan, Shenzhen, GD 518101

Equipment Under Test (EUT)

Product Name: Baby Monitor

Model No.: E660R

Trade mark: Axxue, Lanman

FCC ID: 2AJD6-660R

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 20 Apr., 2017

Date of Test: 20 Apr., to 05 May, 2017

Date of report issued: 08 May, 2017

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang

Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	08 May, 2017	Original

Prepared by:

Mike.ou

Date:

08 May, 2017

Test Engineer

Reviewed by:

Ryan.lee

Date:

08 May, 2017

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	SHENZHEN LOFTYNN INTELLIGENCE TECHNOLOGY CO., LTD.
Address of Applicant:	Room 301, Xindongxing Commercial Centre, Liuxian 2nd Road, Baoan, Shenzhen, GD 518101
Manufacturer/Factory:	SHENZHEN LOFTYNN INTELLIGENCE TECHNOLOGY CO., LTD.
Address of Manufacturer/Factory:	Room 301, Xindongxing Commercial Centre, Liuxian 2nd Road, Baoan, Shenzhen, GD 518101

5.2 General Description of E.U.T.

Product Name:	Baby Monitor
Model No.:	E660R
Operation Frequency:	2410MHz~2468MHz
Transfer rate:	1 Mbits/s
Number of channel:	15
Modulation type:	GFSK
Modulation technology:	FHSS
Antenna Type:	Monopole Antenna
Antenna gain:	0 dBi
Power supply:	Rechargeable Li-ion Battery DC3.6V-800mAh
AC adapter:	Model: P5 0750500 Input: AC100-240V 50/60Hz 250mA Output: DC 7.5V, 500mA

Channel List			
Channel	Frequency	Channel	Frequency
0	2410.875MHz	8	2444.625MHz
1	2414.250MHz	9	2448.000MHz
2	2417.625MHz	10	2451.375MHz
3	2424.375Hz	11	2458.125MHz
4	2427.750MHz	12	2461.500MHz
5	2431.125MHz	13	2464.875MHz
6	2434.500MHz	14	2468.250MHz
7	2441.250MHz		
Remark: Channel 0, 7 &14 selected for test.			

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation
<p>The sample was placed 0.8m above the ground plane of 3m chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working with a fresh battery, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

5.4 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC - Registration No.: 817957 Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012. ● IC - Registration No.: 10106A-1 The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L6048 Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.
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5.5 Laboratory Location

<p>Shenzhen Zhongjian Nanfang Testing Co., Ltd. Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282 Fax: +86-755-23116366</p>

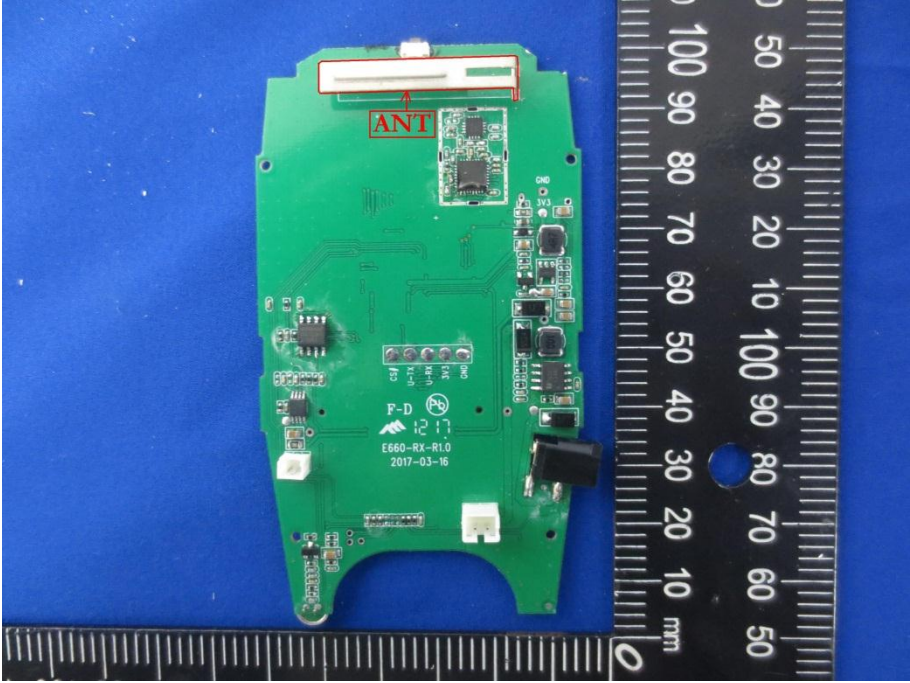
5.6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	02-25-2017	02-24-2018
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	02-25-2017	02-24-2018
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	02-25-2017	02-24-2018
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	02-25-2017	02-24-2018
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	02-25-2017	02-24-2018
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	02-25-2017	02-24-2018
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	02-25-2017	02-24-2018
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018
10	Loop antenna	Laplace instrument	RF300	EMC0701	02-25-2017	02-24-2018
11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
12	Coaxial Cable	N/A	N/A	CCIS0018	02-25-2017	02-24-2018
13	Coaxial Cable	N/A	N/A	CCIS0020	02-25-2017	02-24-2018

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	08-23-2014	08-22-2017
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	02-25-2017	02-24-2018
3	LISN	CHASE	MN2050D	CCIS0074	02-25-2017	02-24-2018
4	Coaxial Cable	CCIS	N/A	CCIS0086	02-25-2017	02-24-2018
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement

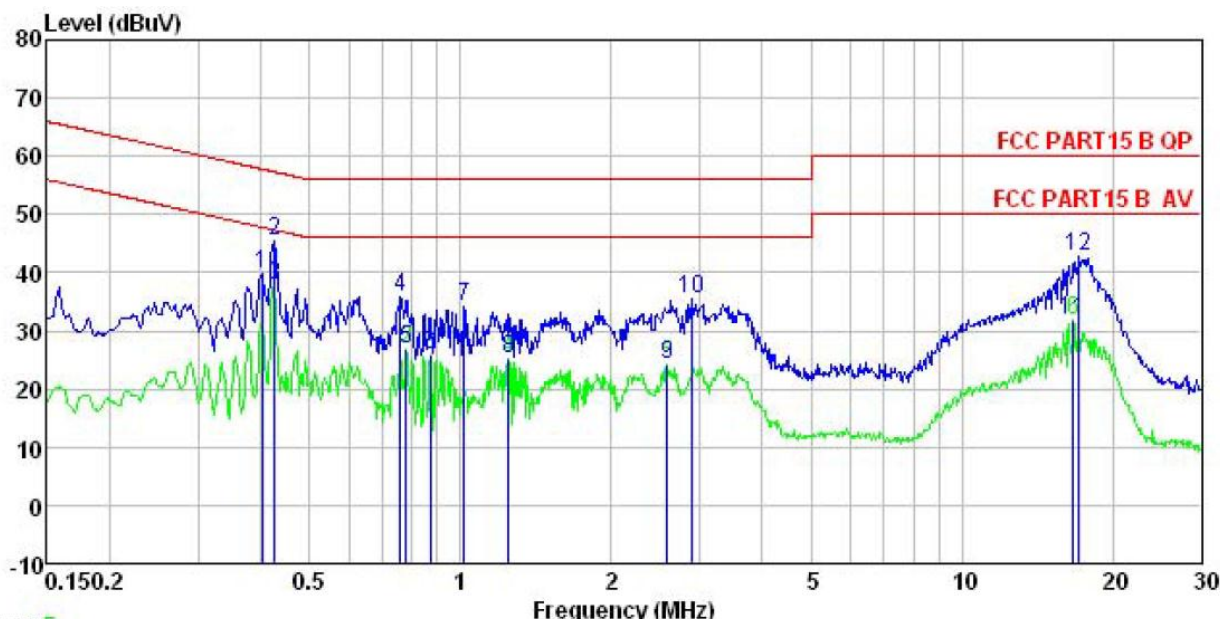
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<p>15.203 requirement: <i>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p> <p>15.247(c) (1)(i) requirement: <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</i></p>	
E.U.T Antenna:	
<p>The EUT antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 0 dBi.</p>	
	

6.2 Conducted Emissions

Test Requirement:	FCC Part 15 C Section 15.207		
Test Method:	ANSI C63.4:2014		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test setup:	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>		
Test procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. 		
Test Instruments:	Refer to section 5.7 for details		
Test mode:	Bluetooth (Continuous transmitting) mode		
Test results:	Pass		

Measurement Data:

Line:



Trace: 5

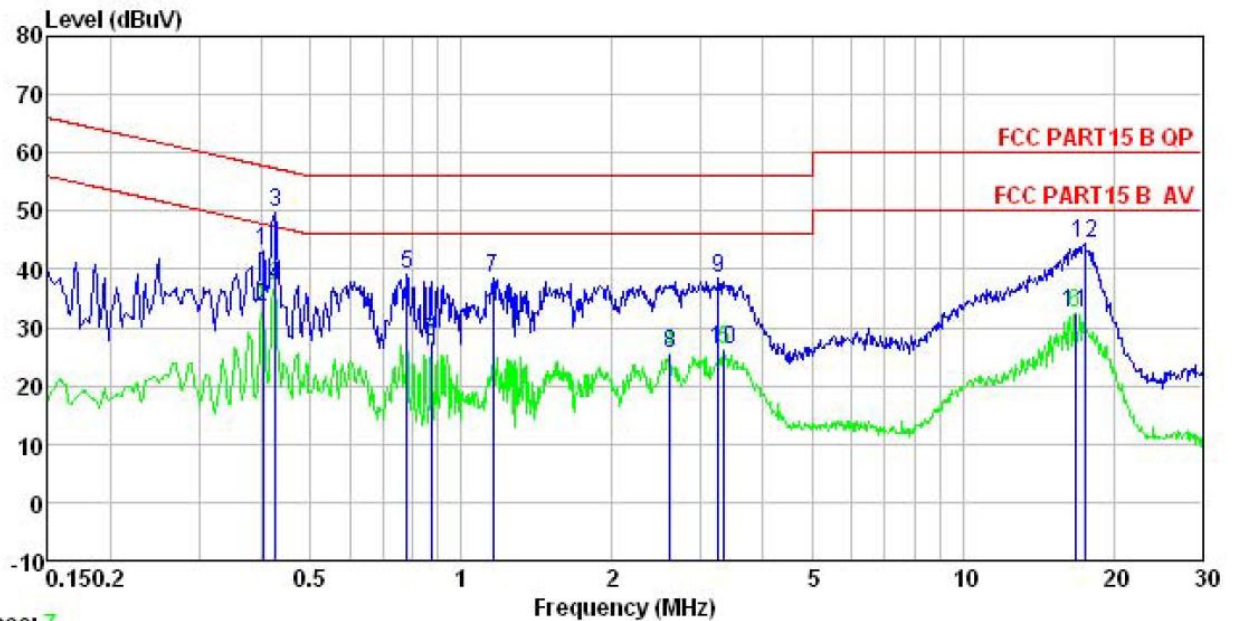
Site : CCIS Shielding Room
 Condition : FCC PART15 B QP LISN LINE
 EUT : Baby Monitor
 Model : E660R
 Test Mode : RX mode
 Power Rating : AC 120/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: Mike
 Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.402	28.86	0.24	10.72	39.82	57.81	-17.99	QP
2	0.426	34.43	0.24	10.73	45.40	57.33	-11.93	QP
3	0.426	26.77	0.24	10.73	37.74	47.33	-9.59	Average
4	0.759	24.70	0.31	10.80	35.81	56.00	-20.19	QP
5	0.779	15.84	0.30	10.80	26.94	46.00	-19.06	Average
6	0.871	14.81	0.28	10.83	25.92	46.00	-20.08	Average
7	1.016	23.14	0.26	10.87	34.27	56.00	-21.73	QP
8	1.249	14.07	0.28	10.90	25.25	46.00	-20.75	Average
9	2.581	13.02	0.33	10.93	24.28	46.00	-21.72	Average
10	2.884	24.12	0.33	10.92	35.37	56.00	-20.63	QP
11	16.661	20.53	0.28	10.91	31.72	50.00	-18.28	Average
12	17.109	31.58	0.29	10.91	42.78	60.00	-17.22	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

Neutral:



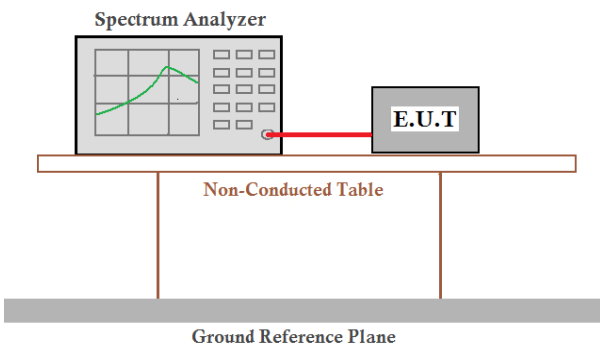
Trace: 7
 Site : CCIS Shielding Room
 Condition : FCC PART15 B QP LISN NEUTRAL
 EUT : Baby Monitor
 Model : E660R
 Test Mode : RX mode
 Power Rating : AC 120/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: Mike
 Remark :

	Read Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.402	32.20	0.23	10.72	43.15	57.81	-14.66	QP
2	0.402	22.47	0.23	10.72	33.42	47.81	-14.39	Average
3	0.426	38.83	0.23	10.73	49.79	57.33	-7.54	QP
4	0.426	26.36	0.23	10.73	37.32	47.33	-10.01	Average
5	0.779	28.12	0.31	10.80	39.23	56.00	-16.77	QP
6	0.871	16.31	0.29	10.83	27.43	46.00	-18.57	Average
7	1.160	27.39	0.26	10.89	38.54	56.00	-17.46	QP
8	2.608	14.31	0.29	10.93	25.53	46.00	-20.47	Average
9	3.258	27.33	0.32	10.91	38.56	56.00	-17.44	QP
10	3.346	15.04	0.32	10.91	26.27	46.00	-19.73	Average
11	16.750	21.44	0.27	10.91	32.62	50.00	-17.38	Average
12	17.475	33.18	0.27	10.91	44.36	60.00	-15.64	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

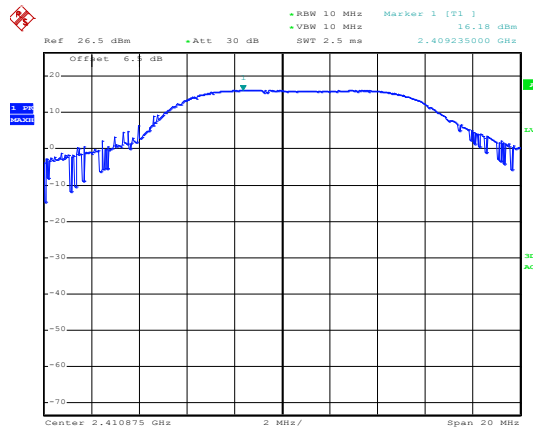
6.3 Conducted Output Power

Test Requirement:	FCC Part 15 C Section 15.247 (b)(1)
Test Method:	ANSI C63.10:2013 and DA00-705
Receiver setup:	RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤ 1 MHz) RBW=3MHz, VBW=10MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz)
Limit:	125 mW(21 dBm)
Test setup:	 <p>The diagram shows a Spectrum Analyzer on the left and an E.U.T. (Equipment Under Test) on the right. They are connected by a red cable. Both are placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

Measurement Data

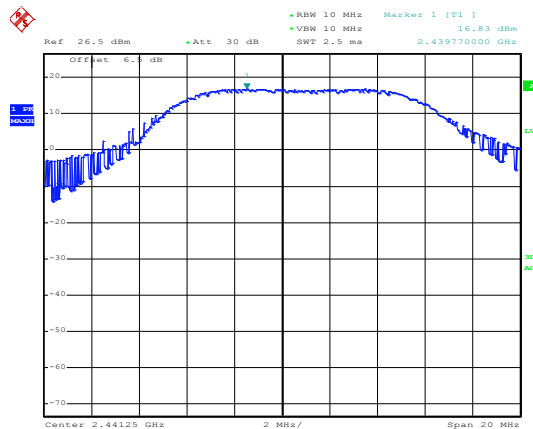
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	16.18	21.00	Pass
Middle	16.83	21.00	Pass
Highest	17.07	21.00	Pass

Test plot as follows:



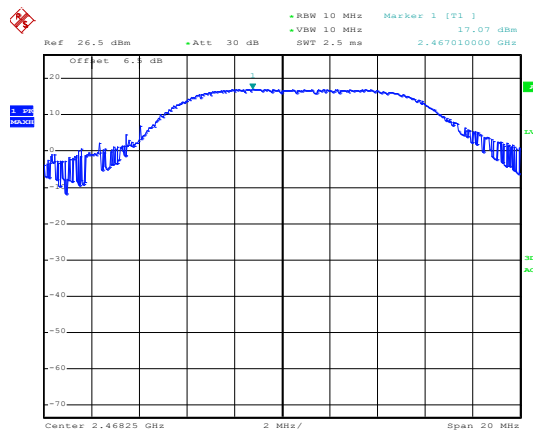
Date: 2.MAY.2017 23:44:04

Lowest channel



Date: 2.MAY.2017 23:41:32

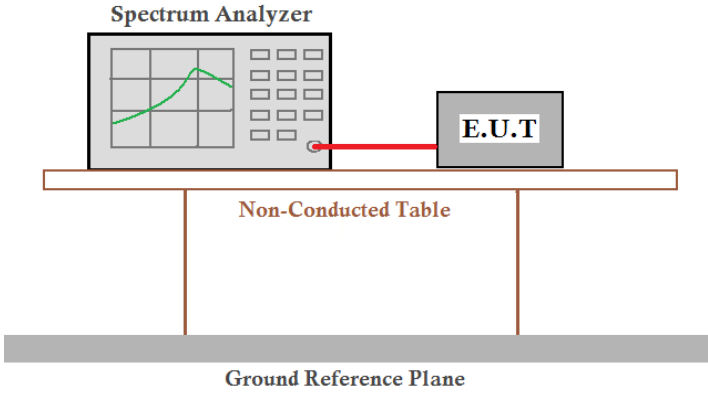
Middle channel



Date: 2.MAY.2017 23:45:54

Highest channel

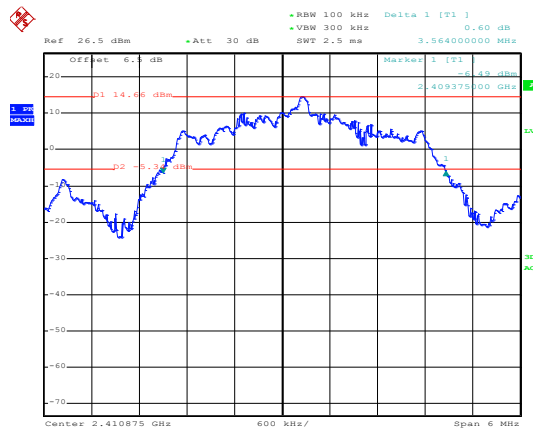
6.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013 and DA00-705
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak
Limit:	NA
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

Measurement Data:

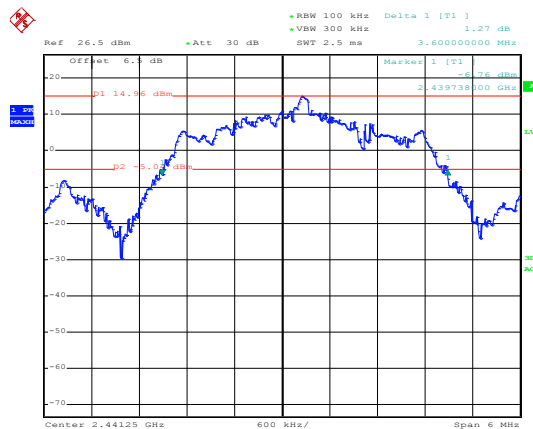
Test channel	20dB Occupy Bandwidth (kHz)
Lowest	3564
Middle	3600
Highest	3600

Test plot as follows:



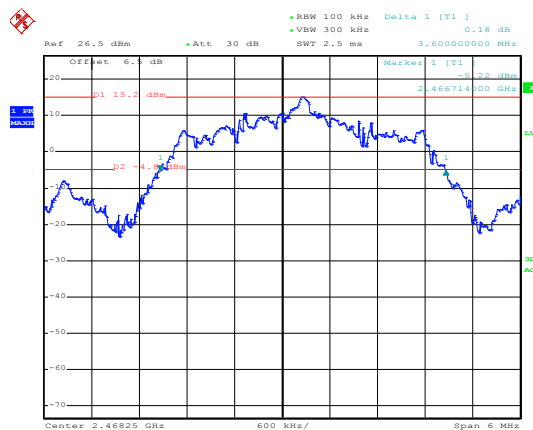
Date: 2.MAY.2017 23:56:27

Lowest channel



Date: 2.MAY.2017 23:51:05

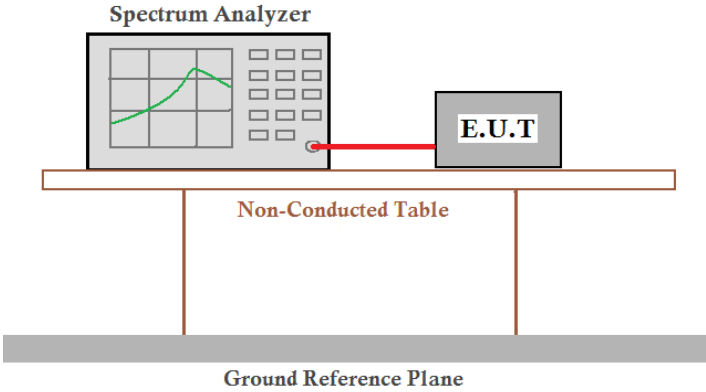
Middle channel



Date: 2.MAY.2017 23:53:39

Highest channel

6.5 Carrier Frequencies Separation

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

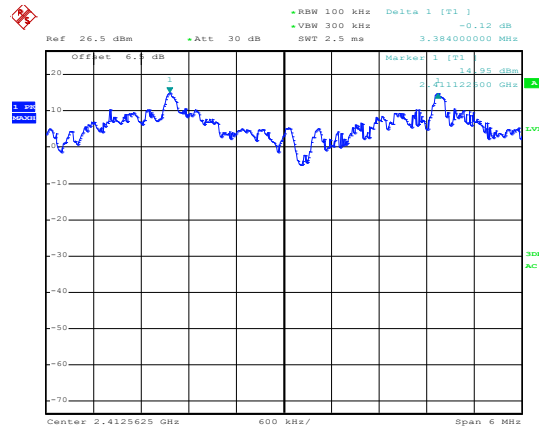
Measurement Data:

Test Frequencies(MHz)	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result
2410	3384	2400.00	Pass
2417	6740	2400.00	Pass
2434	6780	2400.00	Pass
2441	3384	2400.00	Pass
2451	6760	2400.00	Pass
2468	3372	2400.00	Pass

Note: According to section 6.3

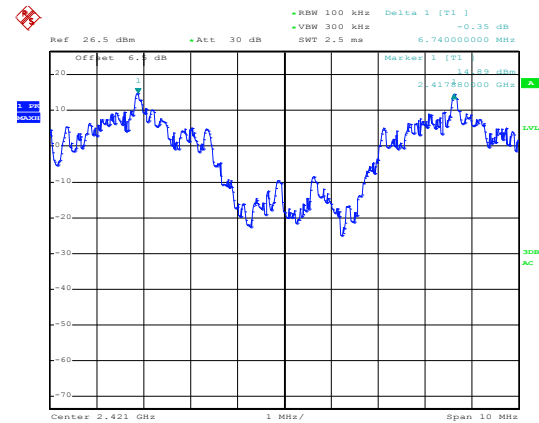
Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
GFSK	3600	2400.00

Test plot as follows:



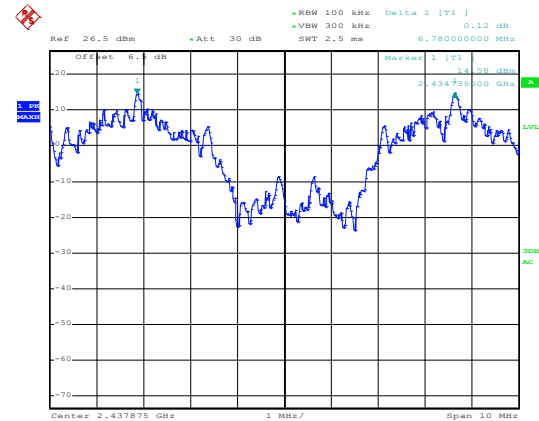
Date: 2.MAY.2017 22:57:39

2410MHz



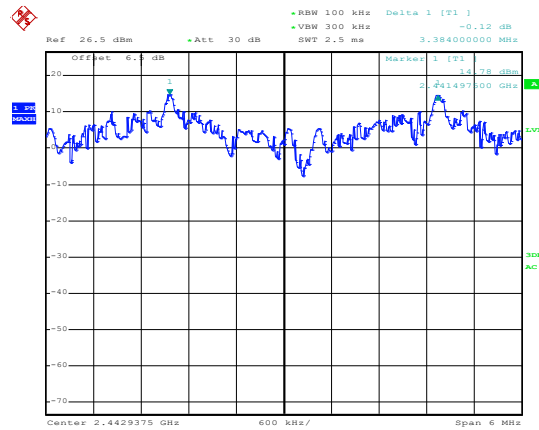
Date: 2.MAY.2017 23:10:57

2417MHz



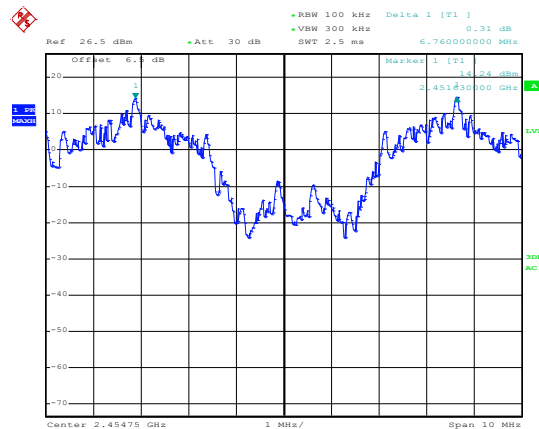
Date: 2.MAY.2017 23:16:53

2434MHz



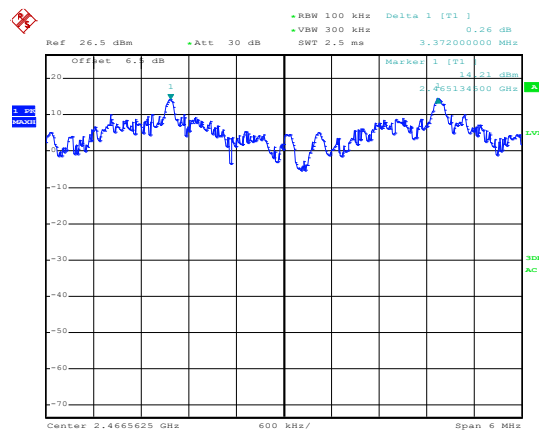
Date: 2.MAY.2017 23:01:35

2441MHz



Date: 2.MAY.2017 23:21:03

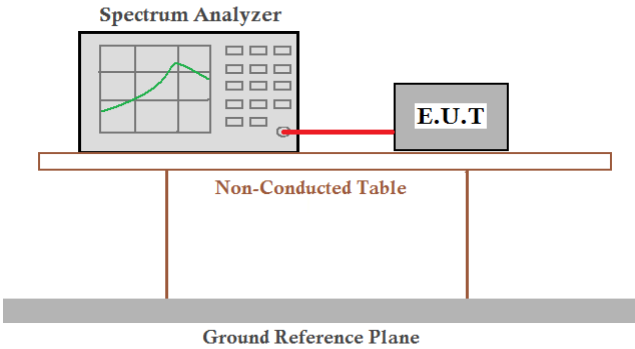
2451MHz



Date: 2.MAY.2017 23:05:40

2468MHz

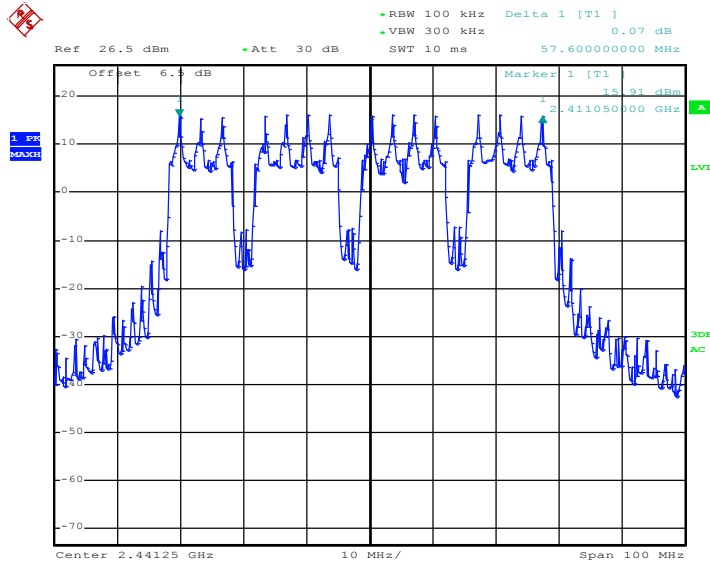
6.6 Hopping Channel Number

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

Measurement Data:

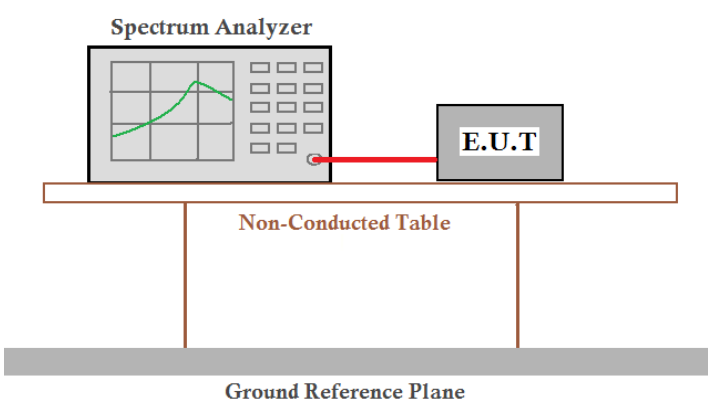
Hopping channel numbers	Limit	Result
15	≥15	Pass

Test plot as follows:



Date: 26.APR.2017 18:45:24

6.7 Dwell Time

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013 and KDB DA00-705
Receiver setup:	RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak
Limit:	0.4 Second
Test setup:	 <p>The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

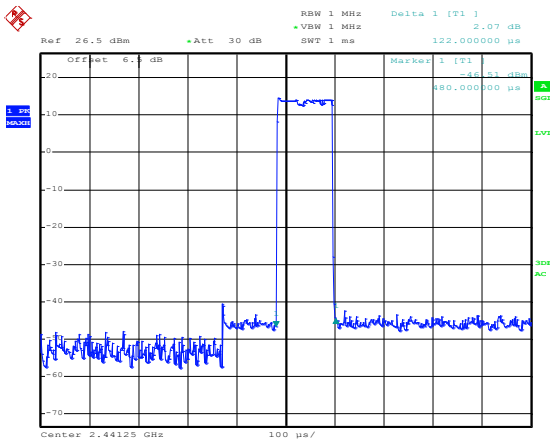
Measurement Data (Worse case)

Dwell time per hop (Second)	Hopping numbers	Dwell time in one period (Second)	Limit (Second)	Result
0.000122	58	0.007076	0.4	Pass

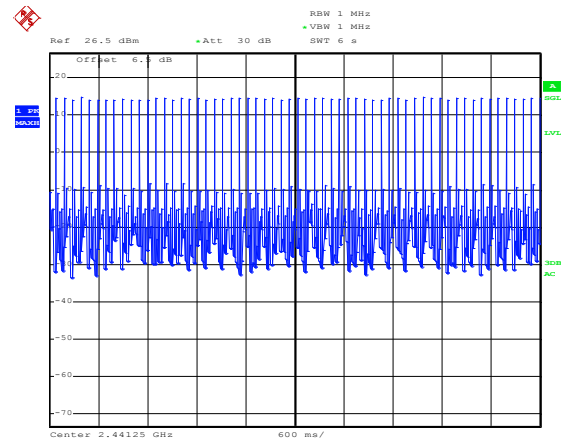
Remark:

The test period: $T = 0.4 \text{ Second/Channel} \times 15 \text{ Channel} = 6 \text{ s}$

Test plot as follows:



Date: 2.MAY.2017 22:51:31



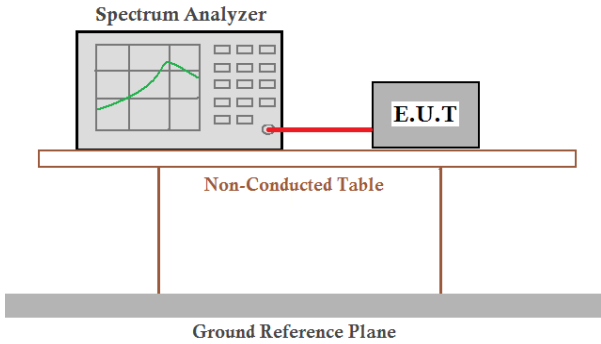
Date: 3.MAY.2017 18:11:11

6.8 Pseudorandom Frequency Hopping Sequence

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1) requirement:
<p><i>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.</i></p> <p><i>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 Pseudorandom 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.</i></p>	
EUT Pseudorandom Frequency Hopping Sequence	
<p><i>The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONES; i.e. the shift register is initialized with nine ones.</i></p> <ul style="list-style-type: none"> • Number of shift register stages: 9 • Length of pseudo-random sequence: $2^9 - 1 = 511$ bits • Longest sequence of zeros: 8 (non-inverted signal) <div data-bbox="248 846 1289 987" style="text-align: center;"> </div> <p style="text-align: center;"><i>Linear Feedback Shift Register for Generation of the PRBS sequence</i></p> <p><i>An example of Pseudorandom Frequency Hopping Sequence as follow:</i></p> <p><i>Each frequency used equally on the average by each transmitter.</i></p> <p><i>The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.</i></p>	

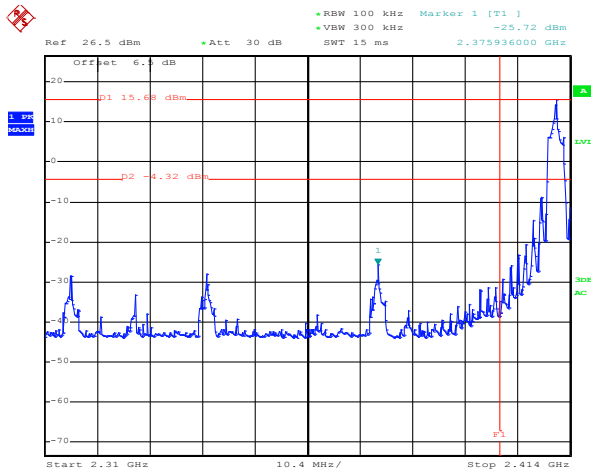
6.9 Band Edge

6.9.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Detector=Peak
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two legs. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode and hopping mode
Test results:	Pass

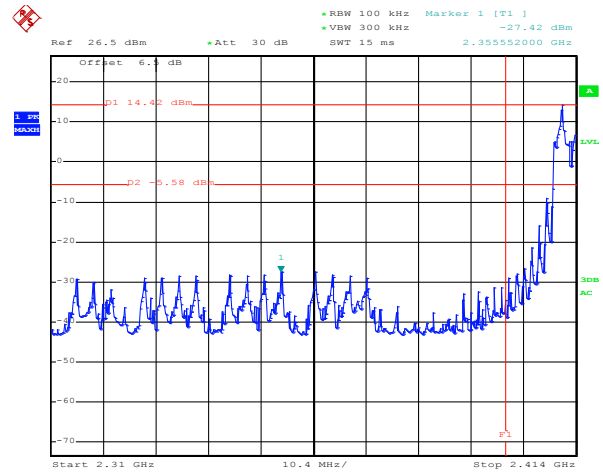
Test plot as follows:

Lowest Channel



Date: 26.APR.2017 17:14:51

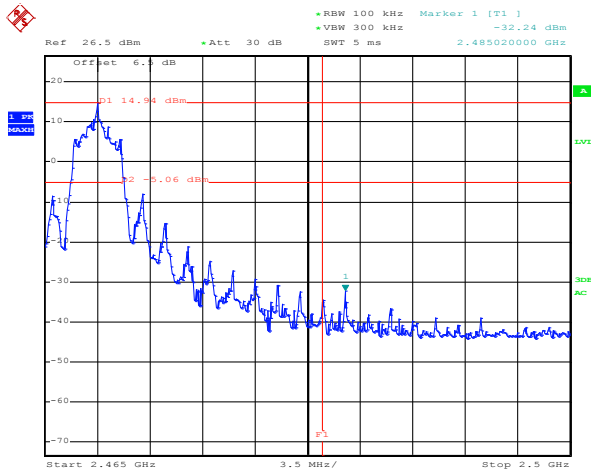
No-hopping mode



Date: 2.MAY.2017 23:26:16

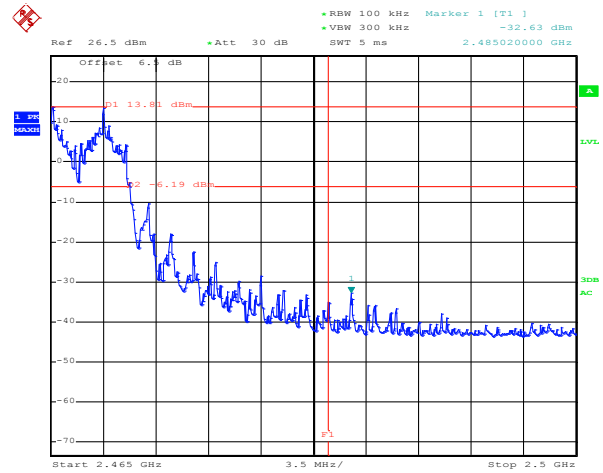
Hopping mode

Highest Channel



Date: 3.MAY.2017 00:01:46

No-hopping mode



Date: 2.MAY.2017 23:30:52

Hopping mode

6.9.2 Radiated Emission Method

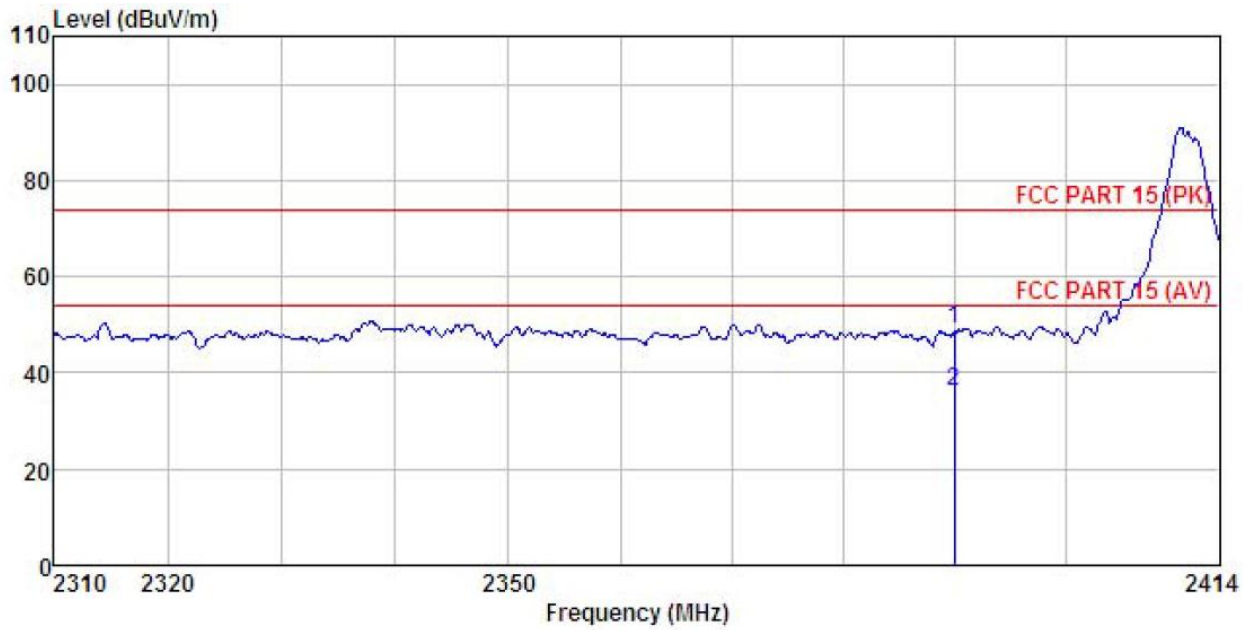
Test Requirement:	FCC Part 15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	2.3GHz to 2.5GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	Above 1GHz		54.00		Average Value
			74.00		Peak Value
Test setup:					
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Non-hopping mode				
Test results:	Passed				

Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.

Test channel: Lowest

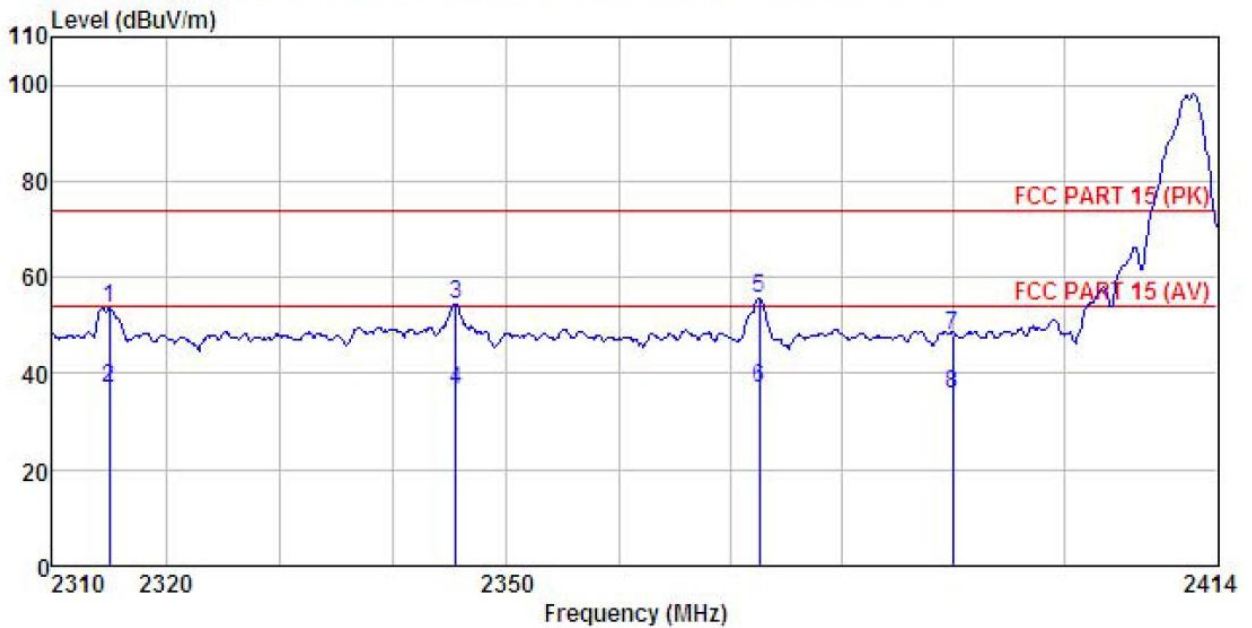
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 EUT : Baby Monitor
 Model : E660R
 Test mode : L Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Mike
 REMARK :

	Read	Antenna	Cable	Preamp	Level	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	20.58	23.68	4.69	0.00	48.95	74.00	-25.05 Peak
2	2390.000	7.57	23.68	4.69	0.00	35.94	54.00	-18.06 Average

Vertical:

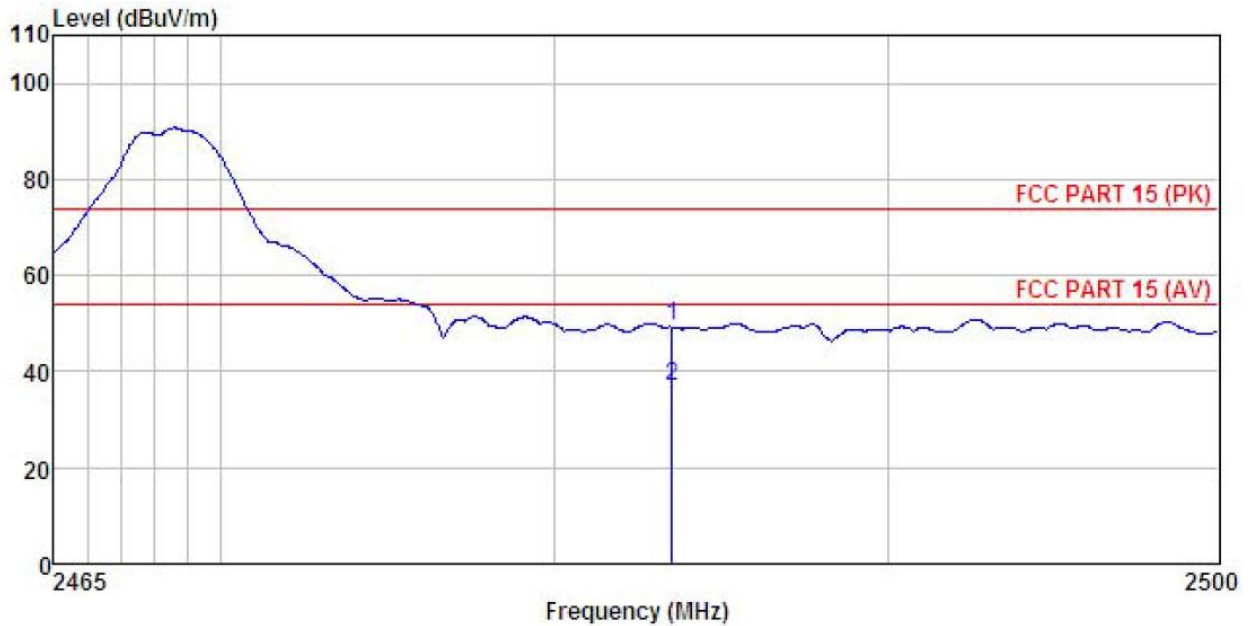


Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 EUT : Baby Monitor
 Model : E660R
 Test mode : L Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Mike
 REMARK :

	Read	Antenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark		
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2314.990	25.48	23.66	4.61	0.00	53.75	74.00	-20.25	Peak
2	2314.990	8.77	23.66	4.61	0.00	37.04	54.00	-16.96	Average
3	2345.467	26.21	23.67	4.65	0.00	54.53	74.00	-19.47	Peak
4	2345.467	8.21	23.67	4.65	0.00	36.53	54.00	-17.47	Average
5	2372.581	27.43	23.68	4.67	0.00	55.78	74.00	-18.22	Peak
6	2372.581	8.72	23.68	4.67	0.00	37.07	54.00	-16.93	Average
7	2390.000	19.48	23.68	4.69	0.00	47.85	74.00	-26.15	Peak
8	2390.000	7.52	23.68	4.69	0.00	35.89	54.00	-18.11	Average

Test channel: Highest

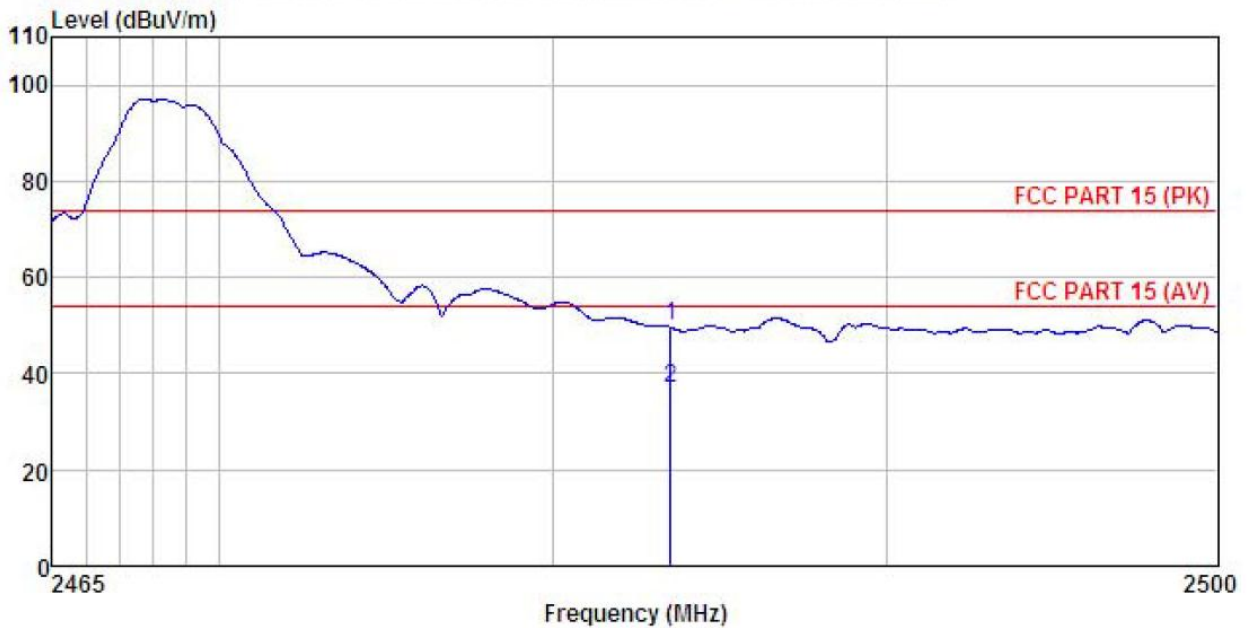
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 EUT : Baby Monitor
 Model : E660R
 Test mode : H Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Mike
 REMARK :

	Read	Antenna	Cable	Preamp	Level	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	20.81	23.70	4.81	0.00	49.32	74.00	-24.68 Peak
2	2483.500	8.23	23.70	4.81	0.00	36.74	54.00	-17.26 Average

Vertical:

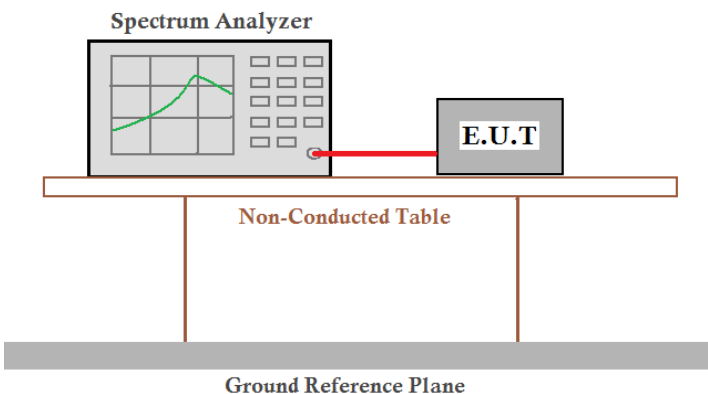


Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 EUT : Baby Monitor
 Model : E660R
 Test mode : H Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Mike
 REMARK :

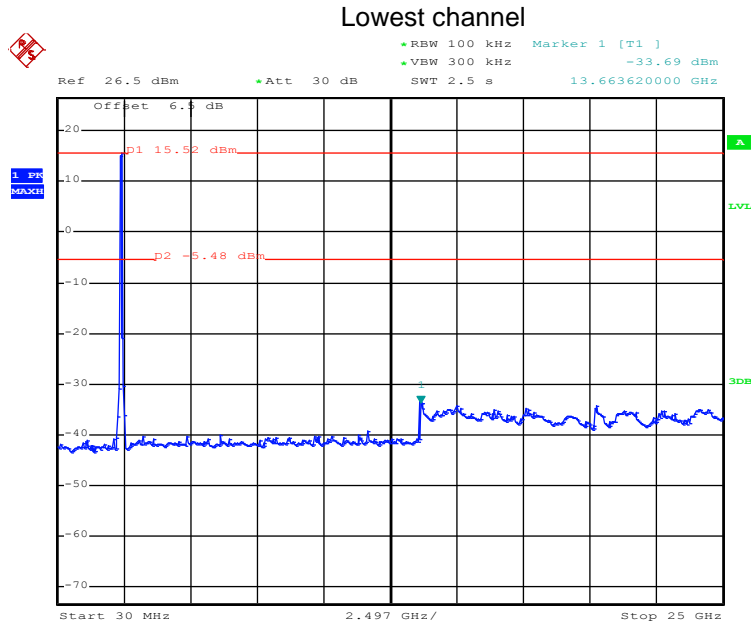
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	21.24	23.70	4.81	0.00	49.75	74.00	-24.25	Peak
2	2483.500	8.23	23.70	4.81	0.00	36.74	54.00	-17.26	Average

6.10 Spurious Emission

6.10.1 Conducted Emission Method

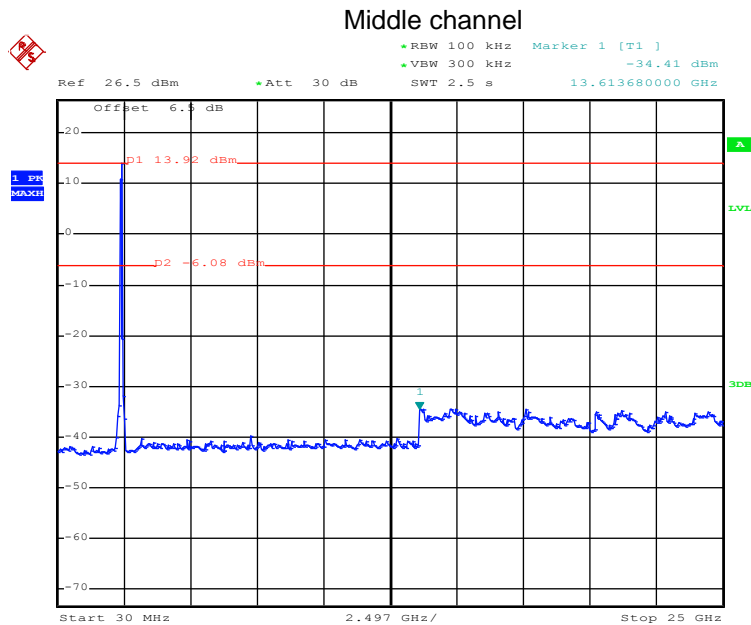
Test Requirement:	FCC Part 15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and DA00-705
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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.
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

Test plot as follows:



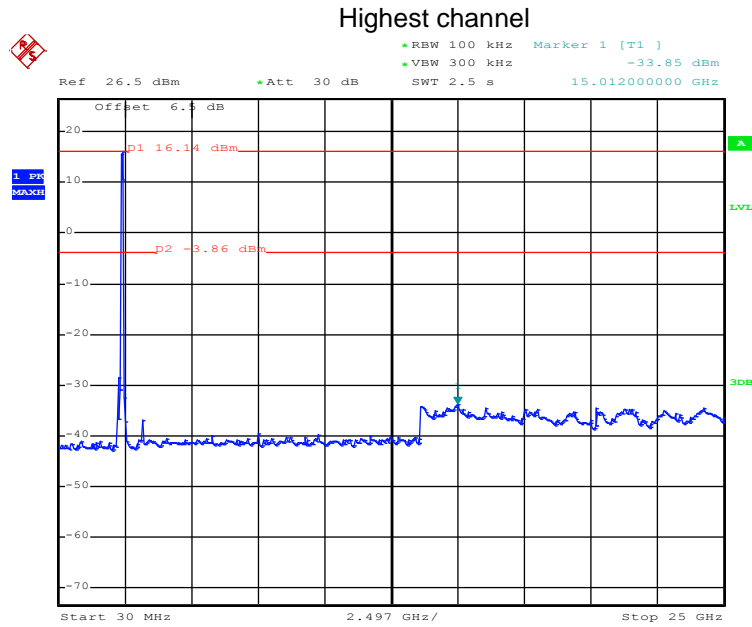
Date: 1.MAY.2017 23:55:31

30MHz~25GHz



Date: 2.MAY.2017 00:00:32

30MHz~25GHz



Date: 25.APR.2017 17:27:50

30MHz~25GHz

6.10.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	9 kHz to 25 GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
74.0			Peak Value		
Test setup:	Below 1GHz				
Test setup:	Above 1GHz				

Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

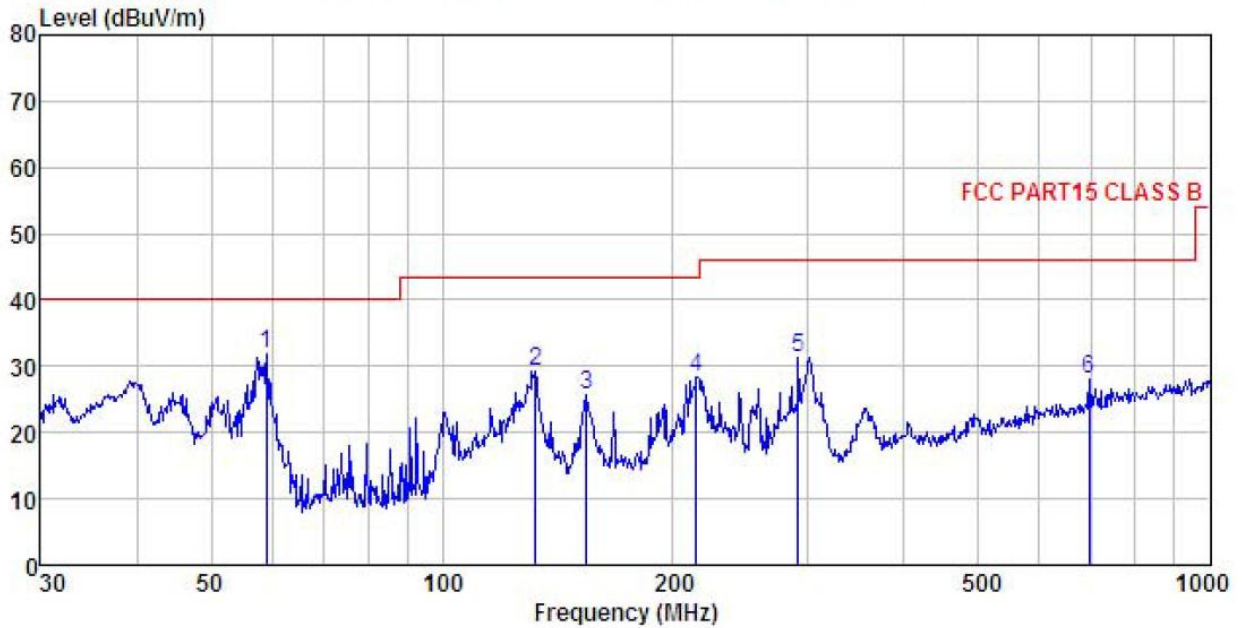
Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.
2. 9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report.

Measurement data:

Below 1GHz

Vertical:

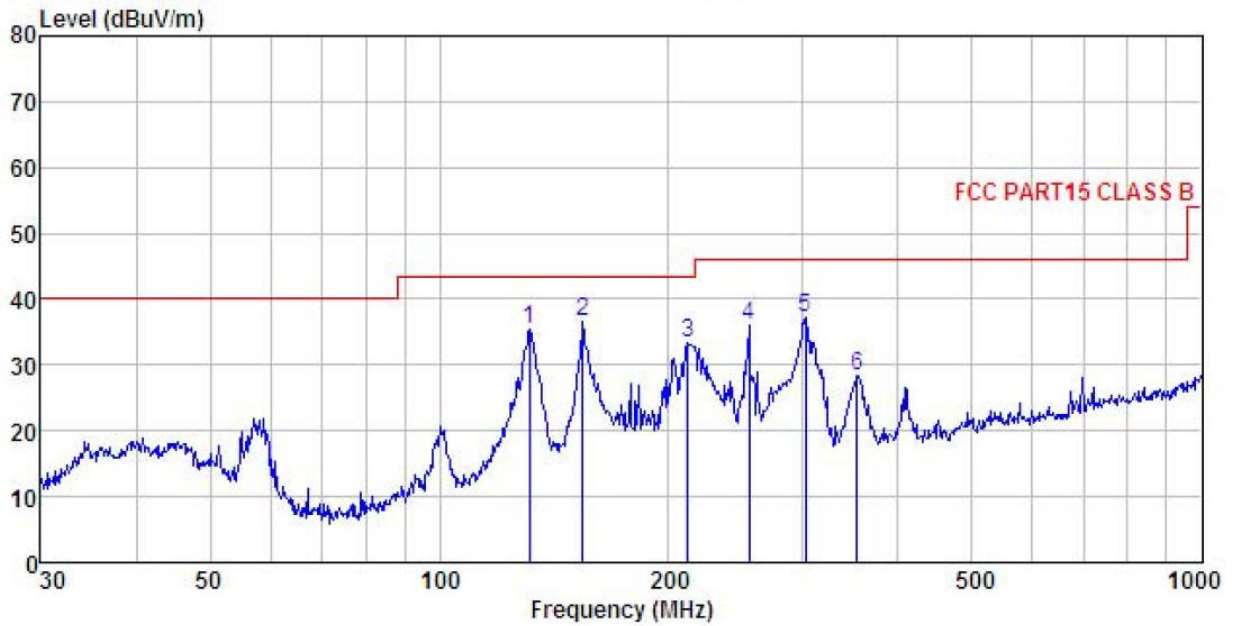


```

Site       : 3m chamber
Condition  : FCC PART15 CLASS B 3m VULB9163(30M3G) VERTICAL
EUT        : Baby Monitor
Model      : E660R
Test mode  : RX Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: Mike
REMARK     :
    
```

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	59.025	49.55	10.70	1.38	29.78	31.85	40.00 -8.15 QP
2	132.221	43.98	12.16	2.32	29.32	29.14	43.50 -14.36 QP
3	154.279	41.97	10.30	2.55	29.18	25.64	43.50 -17.86 QP
4	214.514	43.30	11.02	2.85	28.74	28.43	43.50 -15.07 QP
5	291.036	44.61	12.30	2.92	28.47	31.36	46.00 -14.64 QP
6	696.857	33.26	19.18	4.16	28.68	27.92	46.00 -18.08 QP

Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) HORIZONTAL
 EUT : Baby Monitor
 Model : E660R
 Test mode : RX Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: Mike
 REMARK :

	ReadAntenna	Cable	Preamp		Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	131.297	50.22	12.19	2.30	29.32	35.39	43.50	-8.11	QP
2	154.279	52.84	10.30	2.55	29.18	36.51	43.50	-6.99	QP
3	211.527	48.63	10.78	2.86	28.76	33.51	43.50	-9.99	QP
4	254.728	50.00	11.81	2.82	28.53	36.10	46.00	-9.90	QP
5	302.481	50.01	12.78	2.95	28.45	37.29	46.00	-8.71	QP
6	352.943	39.61	14.22	3.10	28.57	28.36	46.00	-17.64	QP

Above 1GHz:

Test channel:		Lowest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4821.75	51.39	35.99	6.80	41.81	52.37	74.00	-21.63	Vertical
4821.75	48.66	35.99	6.80	41.81	49.64	74.00	-24.36	Horizontal

Test channel:		Lowest			Level:		Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4821.75	41.31	35.99	6.80	41.81	42.29	54.00	-11.71	Vertical
4821.75	38.56	35.99	6.80	41.81	39.54	54.00	-14.46	Horizontal

Test channel:		Middle			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.50	48.58	36.38	6.86	41.84	49.98	74.00	-24.02	Vertical
4882.50	48.27	36.38	6.86	41.84	49.67	74.00	-24.33	Horizontal

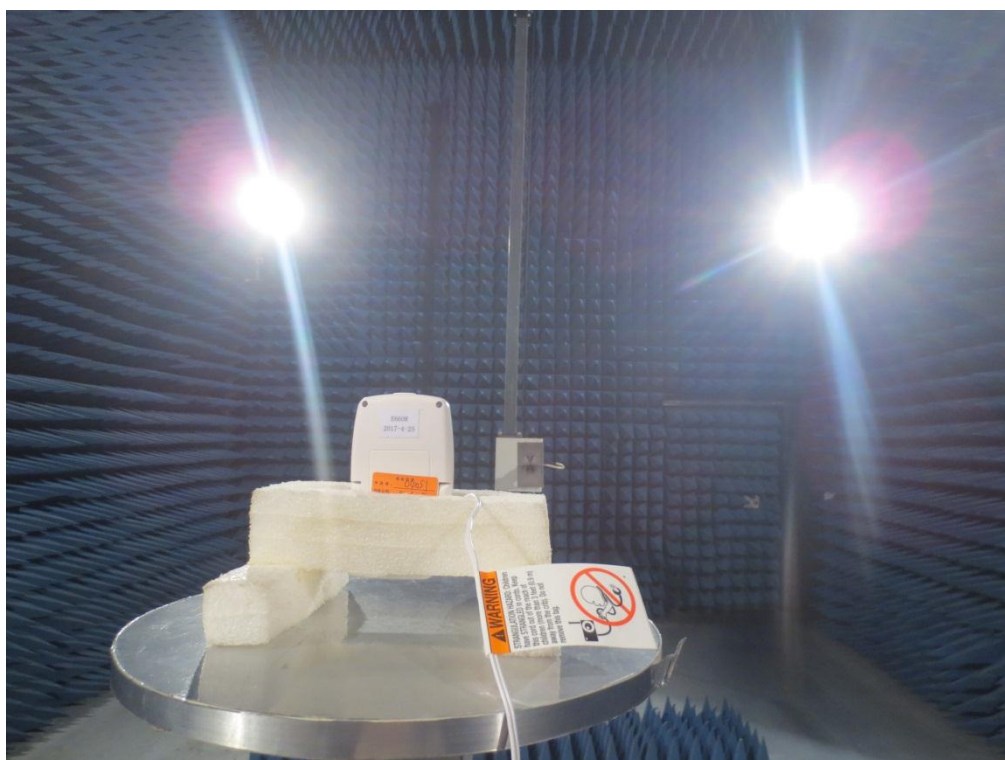
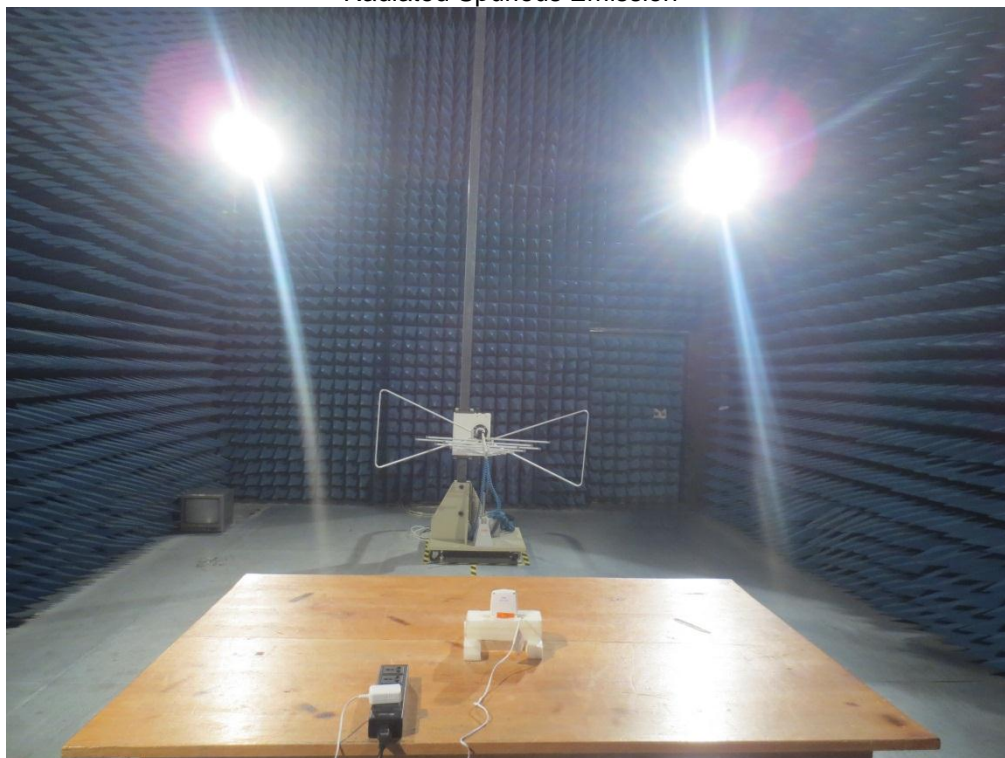
Test channel:		Middle			Level:		Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.50	38.62	36.38	6.86	41.84	40.02	54.00	-13.98	Vertical
4882.50	38.72	36.38	6.86	41.84	40.12	54.00	-13.88	Horizontal

Test channel:		Highest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4936.50	51.84	36.71	6.91	41.87	53.59	74.00	-20.41	Vertical
4936.50	53.47	36.71	6.91	41.87	55.22	74.00	-18.78	Horizontal

Test channel:		Highest			Level:		Average	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4936.50	41.02	36.71	6.91	41.87	42.77	54.00	-11.23	Vertical
4936.50	42.15	36.71	6.91	41.87	43.90	54.00	-10.10	Horizontal

7 Test Setup Photo

Radiated Spurious Emission



Conducted Emission

