FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

Mattel Bluetooth Low Energy Module
MODEL NUMBER: 1100153650

FCC ID: CCT-CBV76-14

REPORT NUMBER: 4787949040-1

ISSUE DATE: May 3, 2017

Prepared for

Fisher-Price Inc.
636 Girard Avenue, East Aurora, NY 14052, USA.

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/03/2016	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	Radiated Band Edges and Spurious Emission	FCC 15.247 (d) FCC 15.209 FCC 15.205	Complied
2	Conducted Emission Test For AC Power Port	FCC 15.207	Complied

Note: The Mattel Bluetooth Low Energy Module already applied for FCC ID and the ID number is CCT-CBV76-14. The DLX RNP Sleeper FPH46 only changed the host, so we only add Radiated Band Edges, Spurious Emission and Conducted Emission Test for AC Power Port tests and applied C2PC base on the Module.

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Fisher-Price Inc.
Address:	636 Girard Avenue, East Aurora, NY 14052, USA.

Manufacturer Information

Company Name:	Fisher Price Brands, A division of Matel Asia Pacific Sourcing
Address:	Room 1301, South Tower, World Finance Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

Factory Information

Company Name:	N/A
Address:	N/A

EUT Description

Product Name	Mattel Bluetooth Low Energy Module
Brand Name	MATTEL
Model No.	1100153650
Host Name	DLX RNP Sleeper
Host No.	DPV51/FBR66/FBR67/FCF09/FHB89/FPH46
Date Tested	April 24, 2017 ~ May 2, 2017

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C Section 15.247	PASS

Tested By:

Chris Zhong

Chris Zhong
Project Engineer

Check By:

Terry Hou

Terry Hou
Project Engineer

Approved By:

Victor Yan

Victor Yan

Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

Test Location	Dongguan Dongdian Testing Service Co., Ltd
Address	No. 17, Zongbu Road 2, Songshan Lake Sci&Tech Park, Dongguan City, Guangdong Province, 523808, China
Accreditation Certificate	Dongguan Dongdian Testing Service Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until January 31, 2018. Dongguan Dongdian Testing Service 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 our files. Registration 270092, Renewal date March 11, 2015, valid time is until March 11, 2018. The 3m Alternate Test Site of Dongguan Dongdian Testing Service Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 10288A on April 23, 2015, valid time is until April 23, 2018.

Note: The test anechoic chamber in Dongguan Dongdian Testing Service Co., Ltd had been calibrated and compared to the open field sites.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Uncertainty for Conduction emission test	3.32dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	4.10dB(1-6GHz)
	4.40dB (6GHz-18Gz)
	3.54dB (18GHz-26Gz)
Bandwidth	1.1%
Stop Transmitting Time Test	0.6%
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Description	Operation Frequency	2402 MHz ~ 2480 MHz	
	Modulation Type		Data Rate
	GFSK		1Mbps
Bluetooth Version	BT 4.0+BLE		
Adapter	Input: AC 100~240V, 50/60Hz, 9W Output: DC 8V, 700mA		

5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency(MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	11	2424	22	2446	33	2468
01	2404	12	2426	23	2448	34	2470
02	2406	13	2428	24	2450	35	2472
03	2408	14	2430	25	2452	36	2474
04	2410	15	2432	26	2454	37	2476
05	2412	16	2434	27	2456	38	2478
06	2414	17	2436	28	2458	39	2480
07	2416	18	2438	29	2460		
08	2418	19	2440	30	2462		
09	2420	20	2442	31	2464		
10	2422	21	2444	32	2466		

5.3. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 00, CH 19, CH 39	2402MHz, 2440MHz, 2480MHz

5.4. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software Version		SmartRF Studio 7		
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 00	CH 19	CH 39
GFSK	1	Default	Default	Default

5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2402-2480	PCB Antenna	3.4

Test Mode	Transmit and Receive Mode	Description
GFSK	☒1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.

5.6. WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BLE	DTS	GFSK	1Mbit/s

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	FCC ID
1	Laptop	ThinkPad	T410	N/A
2	TI Control board	N/A	N/A	N/A

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	DC In	DC	Unshielded	0.90	N/A

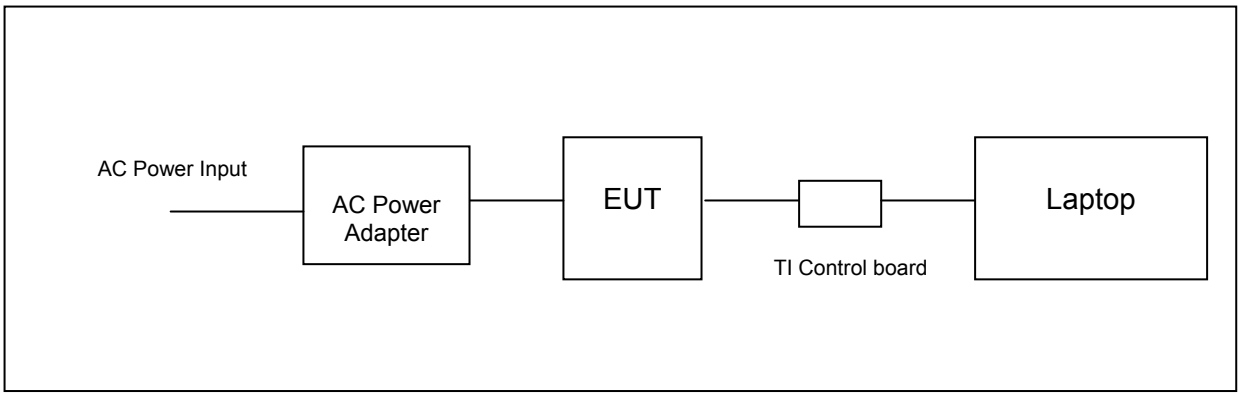
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	Power Adapter	N/A	PS06B-0800700U	Input: AC 100~240V, 50/60Hz, 9W Output: DC 8V, 700mA

TEST SETUP

The EUT can work in an engineer mode with a software through a Laptop.

SETUP DIAGRAM FOR TESTS



5.8. MEASURING INSTRUMENT AND SOFTWARE USED

Instrument (Conducted for RF Port)						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Spectrum Analyzer	R&S	FSU26	1166.1660.26	2016/10/16	1 Year
Instrument (Radiated Tests)						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Expired date
☑	EMI Test Receiver	R&S	ESU8	100316	2016/10/16	1 Year
☑	Spectrum analyzer	R&S	FSU26	1166.1660.26	2016/10/16	1 Year
☑	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2016/10/27	1 Year
☑	Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	2016/10/27	1 Year
☑	Double Ridged Horn Antenna	R&S	HF907	100276	2016/10/12	1 Year
☑	High Gain Horn Antenna	ETS-LINDGERN	3160-09	SEL0076	2016/10/16	1 Year
☑	Pre-amplifier	A.H.	PAM-0118	360	2016/10/16	1 Year
☑	RF Cable	HUBSER	CP-X2	W11.03	2016/10/16	1 Year
☑	RF Cable	HUBSER	CP-X1	W12.02	2016/10/16	1 Year
☑	MI Cable	HUBSER	C10-01-01-1M	1091629	2016/10/16	1 Year
☑	Test software	Audix	E3	V 6.11111b	N/A	N/A
Instrument (Line Conducted Emission (AC Main))						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Expired date
☑	Test Receiver	R&S	ESU8	100316	2016/10/16	1 Year
☑	LISN 1	R&S	ENV216	101109	2016/10/16	1 Year
☑	LISN 2	R&S	ESH2-Z5	100309	2016/10/16	1 Year
☑	Pulse Limiter	R&S	ESH3-Z2	101242	2016/10/16	1 Year
☑	CE Cable 1	HUBSER	ESU8/RF2	W10.01	2016/10/16	1 Year
☑	Test software	Audix	E3	V 6.11111b	N/A	N/A

6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	Out-of-band emissions in non-restricted bands	KDB 558074 D01 v04	11.0
2	Out-of-band emissions in restricted bands	KDB 558074 D01 v04	12.1
3	Band-edge	KDB 558074 D01 v04	13.3.2
4	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	7.3

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

Please refer to FCC §15.205 and §15.209

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

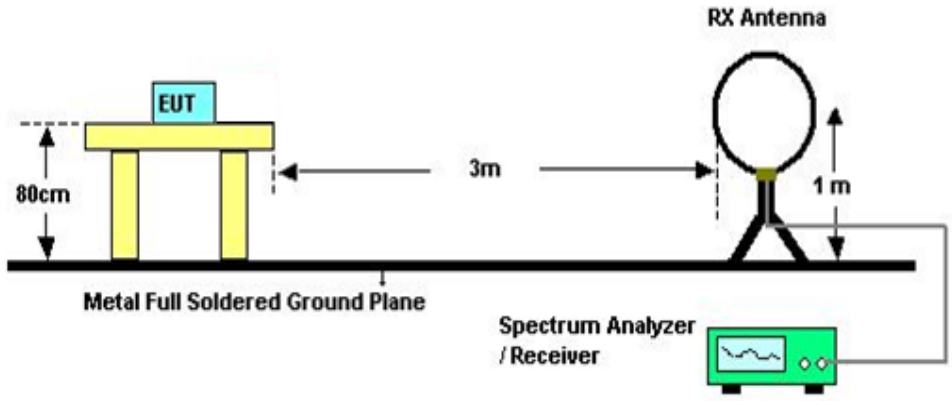
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

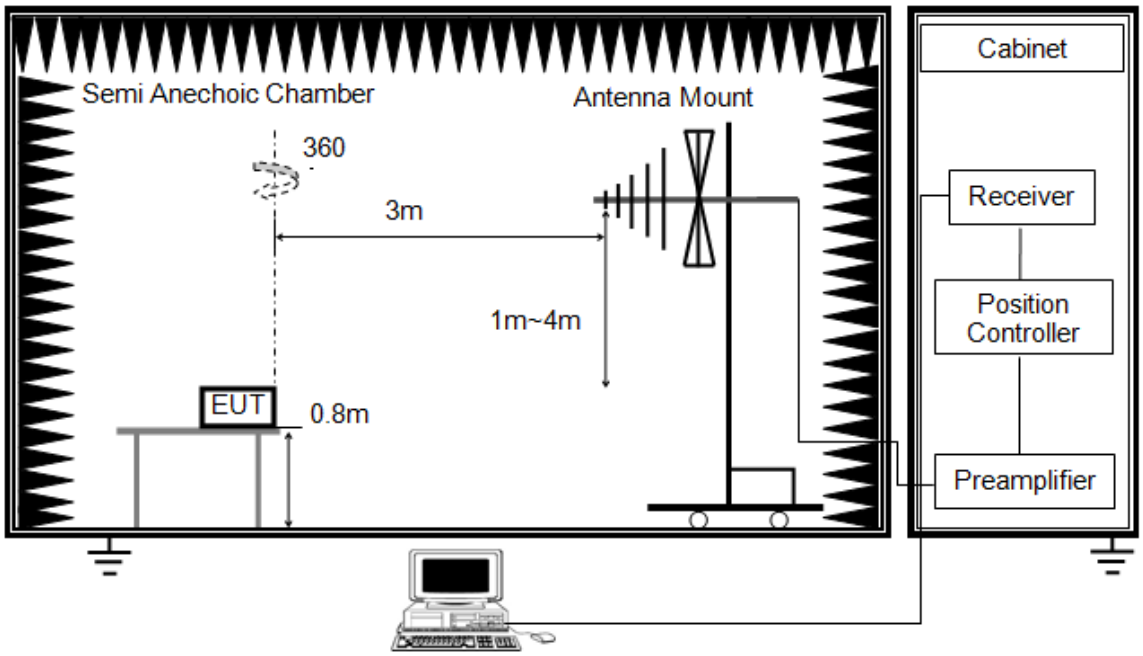
3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 0.8 meter above ground.

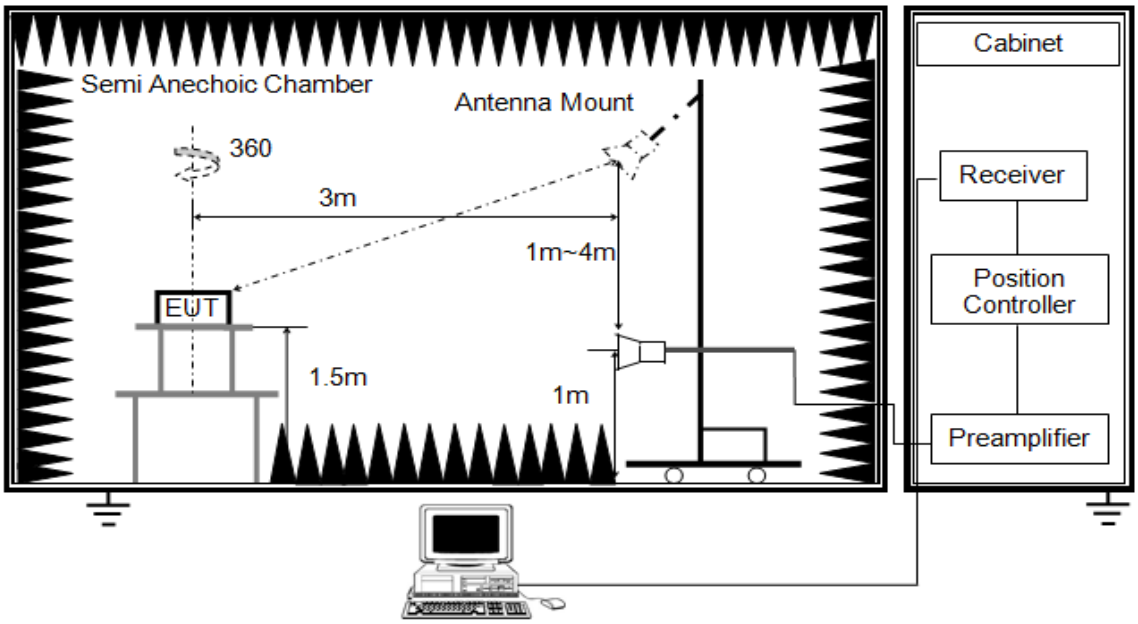
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

ABOVE 1G



The setting of the spectrum analyser

RBW	1M
VBW	3M
Sweep	Auto
Detector	Peak and CISPR Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

6. For measurement above 1GHz, the emission measurement will be measured by the peak detector and the AV detector.

7. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

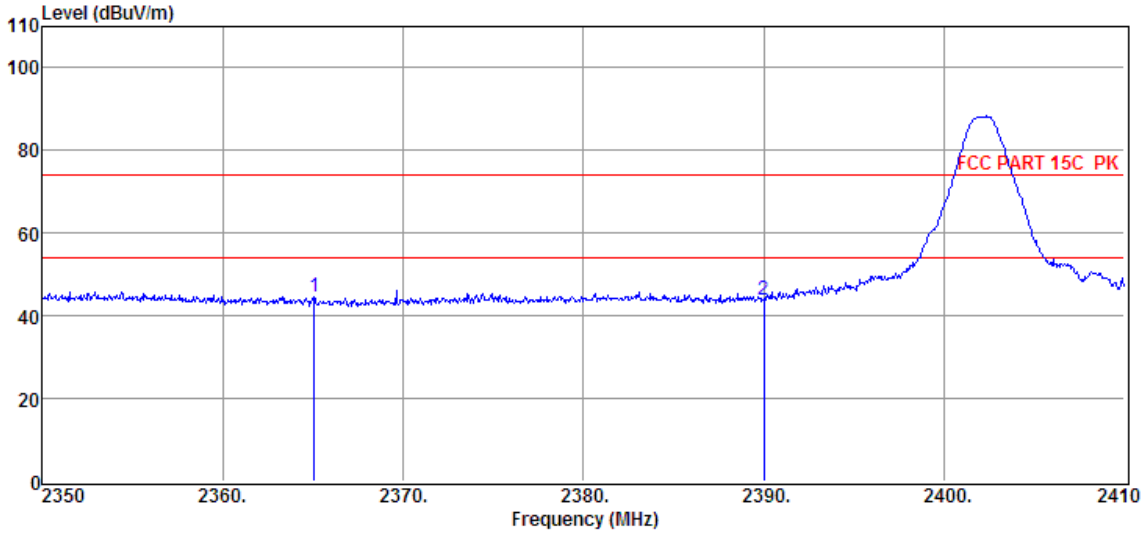
TEST CONDITIONS

Temperature: 25.6°C
Relative Humidity: 45.0%
Test Voltage: AC 120V/60Hz

7.2. RESTRICTED BANDEDGE

7.2.1. GFSK MODE

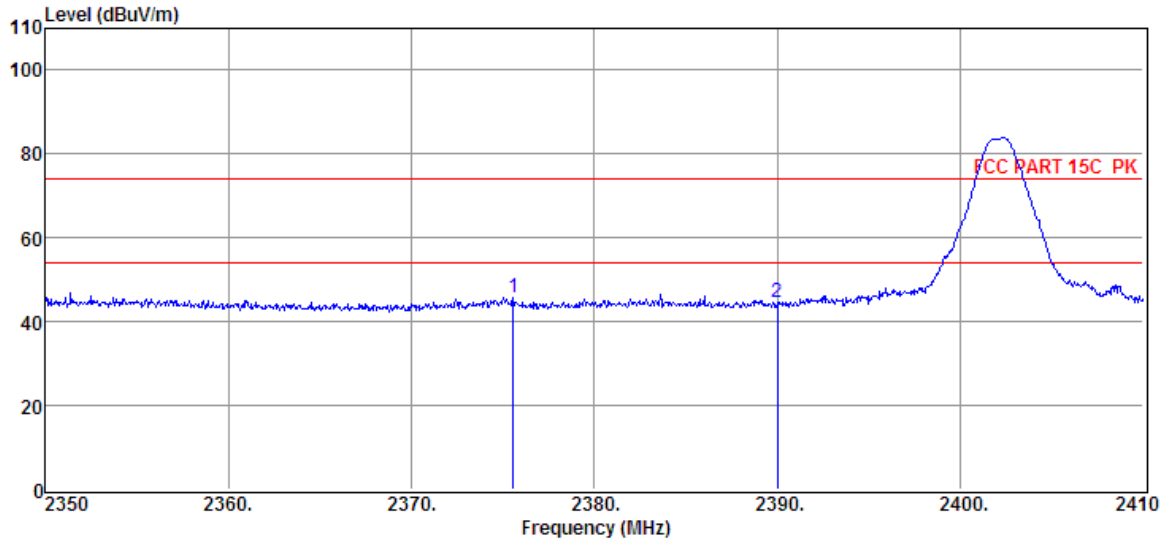
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	2365.06	38.18	29.68	29.37	5.98	44.47	74.00	-29.53	Peak	HORIZONTAL
2	2390.00	37.56	29.78	29.41	6.01	43.94	74.00	-30.06	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

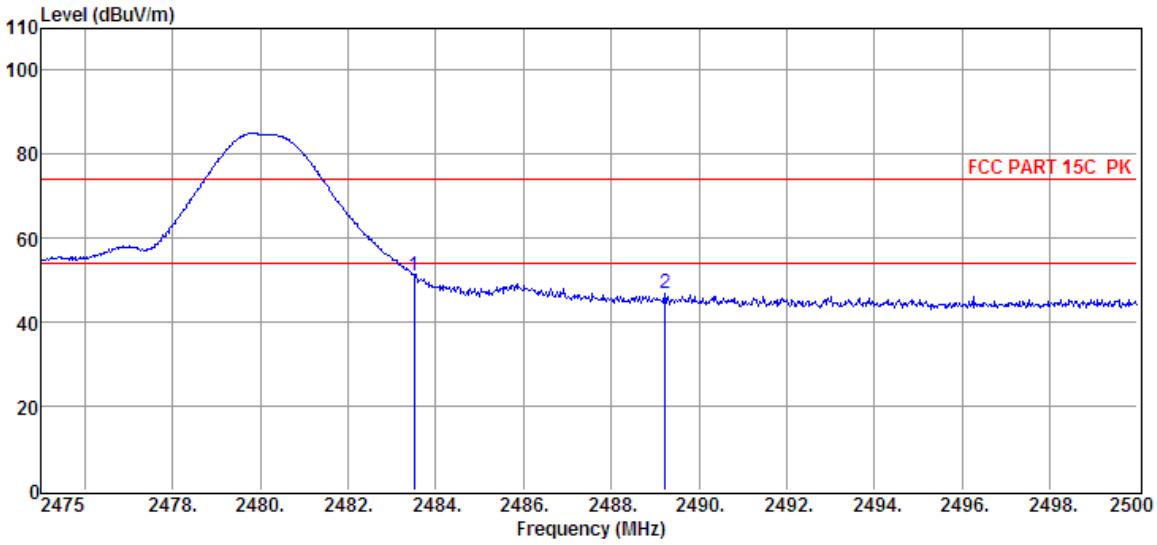
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	2375.56	39.39	29.72	29.38	6.01	45.74	74.00	-28.26	Peak	VERTICAL
2	2390.00	38.21	29.78	29.41	6.01	44.59	74.00	-29.41	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

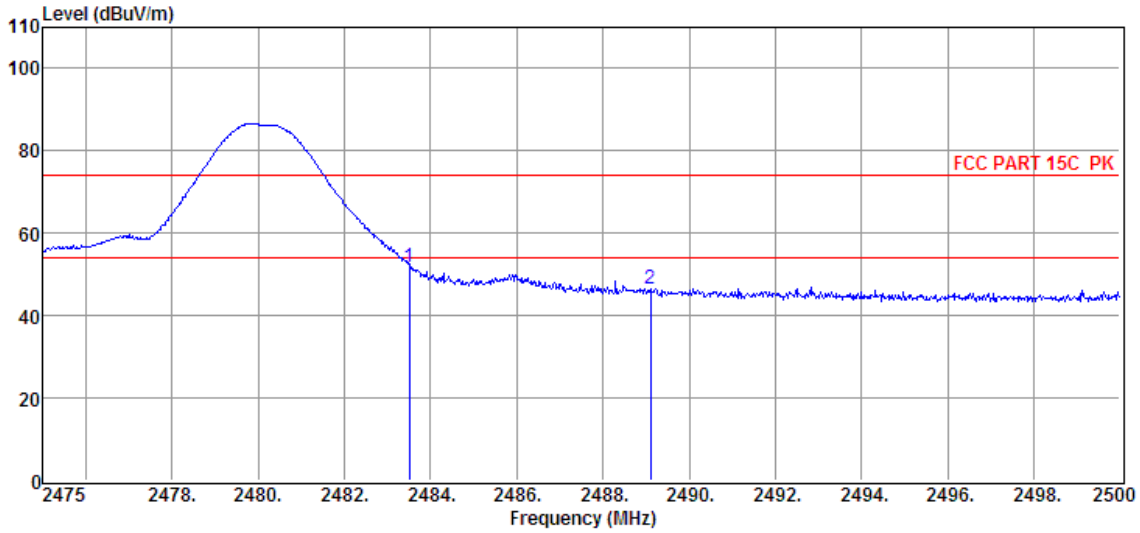
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	44.28	30.14	29.71	6.15	50.86	74.00	-23.14	Peak	HORIZONTAL
2	2489.23	40.20	30.16	29.73	6.15	46.78	74.00	-27.22	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	45.34	30.14	29.71	6.15	51.92	74.00	-22.08	Peak	VERTICAL
2	2489.10	40.05	30.16	29.73	6.15	46.63	74.00	-27.37	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

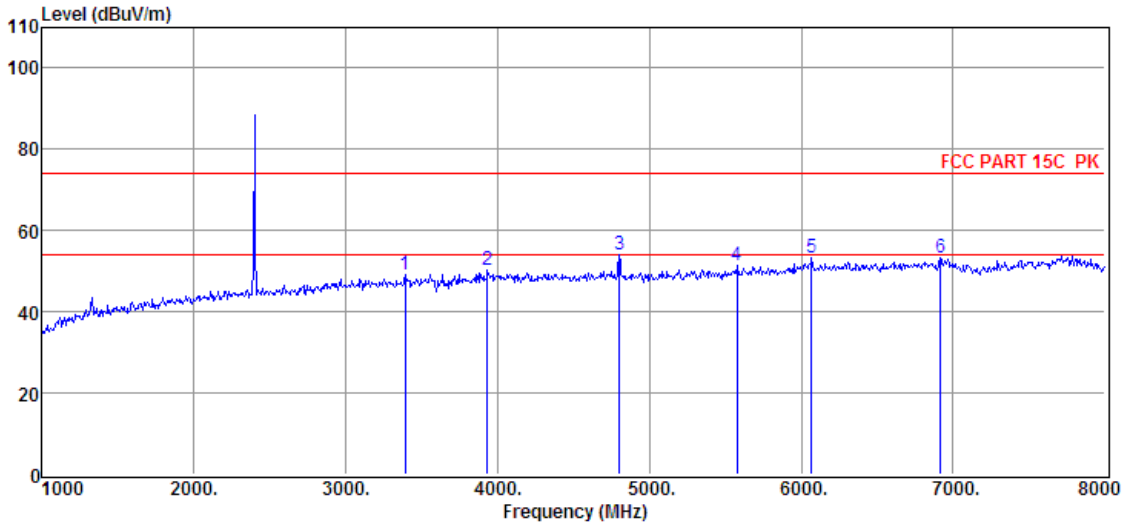
Note: EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

7.3. SPURIOUS EMISSIONS (1~25GHz)

7.3.1. GFSK MODE

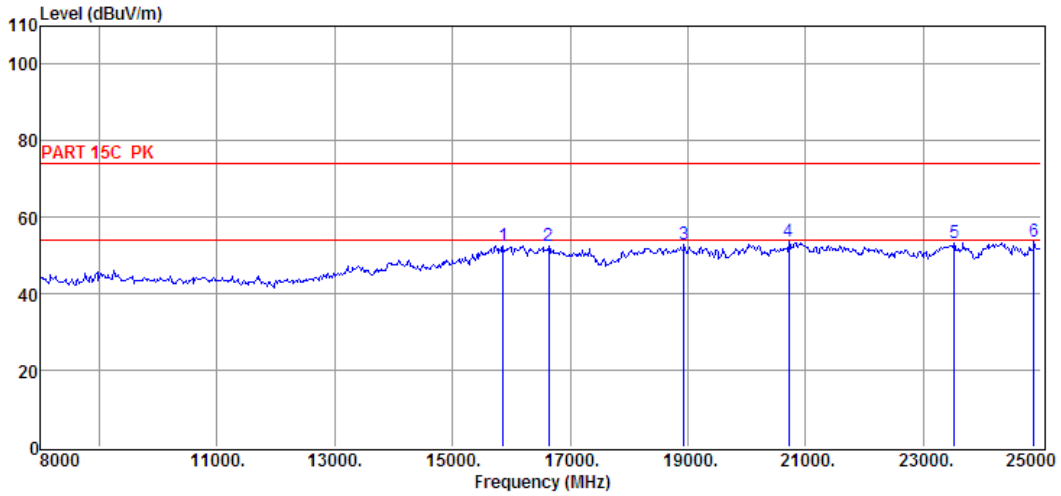
HARMONICS AND SPURIOUS EMISSIONS

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Horizontal
Test Mode:	GFSK Mode Low Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	3394.00	39.77	31.86	29.79	7.19	49.03	74.00	-24.97	Peak	HORIZONTAL
2	3933.00	38.61	33.21	29.07	7.57	50.32	74.00	-23.68	Peak	HORIZONTAL
3	4801.00	41.08	33.74	29.32	8.46	53.96	74.00	-20.04	Peak	HORIZONTAL
4	5578.00	36.71	34.75	29.24	9.27	51.49	74.00	-22.51	Peak	HORIZONTAL
5	6068.00	37.71	35.11	29.24	9.72	53.30	74.00	-20.70	Peak	HORIZONTAL
6	6915.00	37.03	36.13	30.33	10.35	53.18	74.00	-20.82	Peak	HORIZONTAL

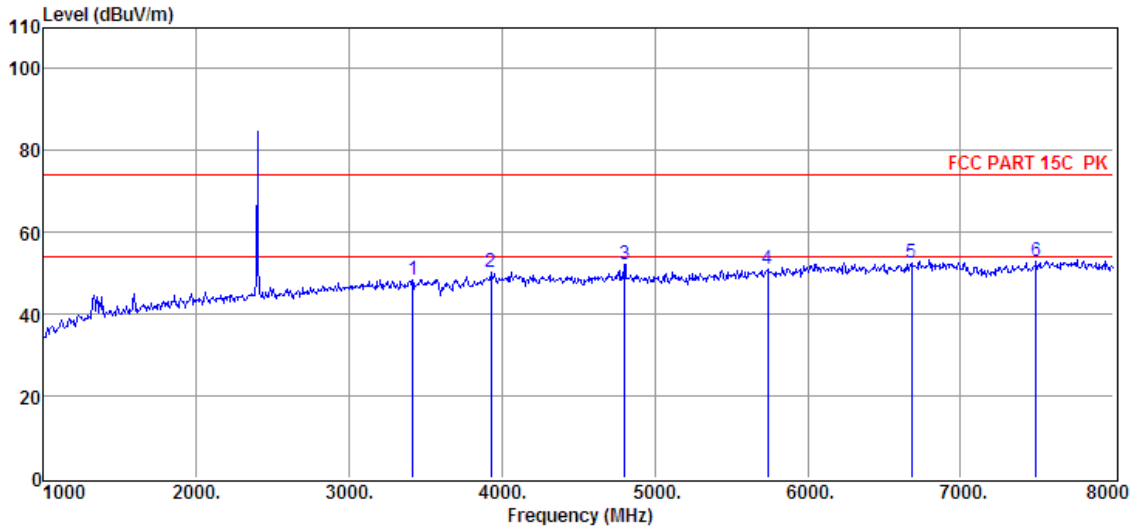
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	15854.00	27.42	43.64	35.52	16.90	52.44	74.00	-21.56	Peak	HORIZONTAL
2	16636.00	26.60	44.48	36.21	17.74	52.61	74.00	-21.39	Peak	HORIZONTAL
3	18931.00	26.20	44.70	37.71	19.72	52.91	74.00	-21.09	Peak	HORIZONTAL
4	20716.00	26.84	44.70	37.71	19.72	53.55	74.00	-20.45	Peak	HORIZONTAL
5	23521.00	26.71	44.70	37.71	19.72	53.42	74.00	-20.58	Peak	HORIZONTAL
6	24881.00	26.81	44.70	37.71	19.72	53.52	74.00	-20.48	Peak	HORIZONTAL

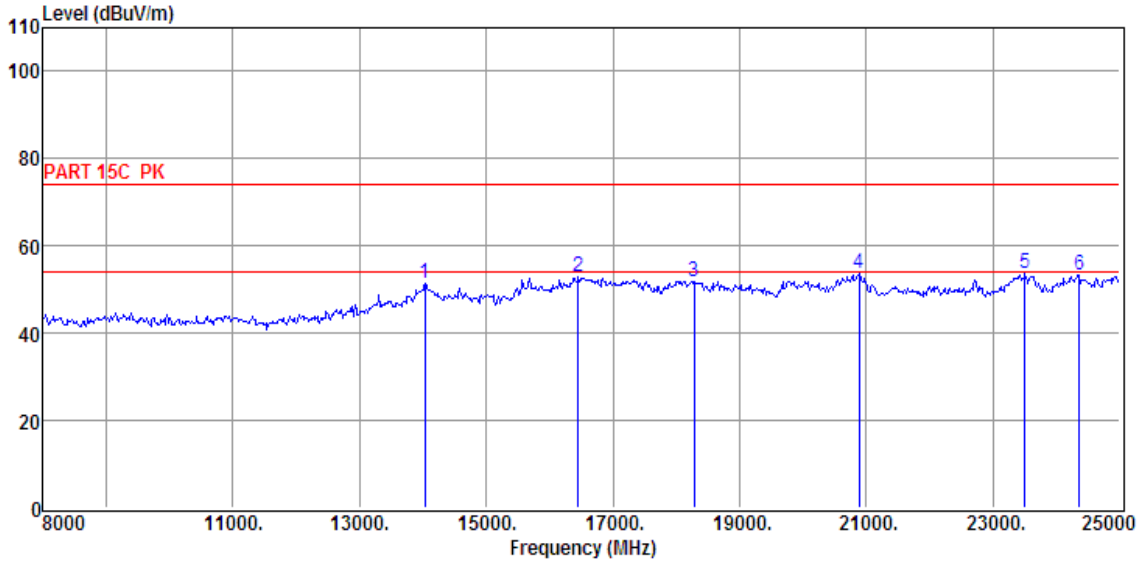
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Vertical
Test Mode:	GFSK Mode Low Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	3415.00	39.19	31.87	29.75	7.21	48.52	74.00	-25.48	Peak	VERTICAL
2	3926.00	38.71	33.19	29.08	7.57	50.39	74.00	-23.61	Peak	VERTICAL
3	4801.00	39.31	33.74	29.32	8.46	52.19	74.00	-21.81	Peak	VERTICAL
4	5739.00	35.78	34.85	29.21	9.43	50.85	74.00	-23.15	Peak	VERTICAL
5	6677.00	36.68	35.95	30.12	10.12	52.63	74.00	-21.37	Peak	VERTICAL
6	7496.00	36.14	36.60	30.78	10.84	52.80	74.00	-21.20	Peak	VERTICAL

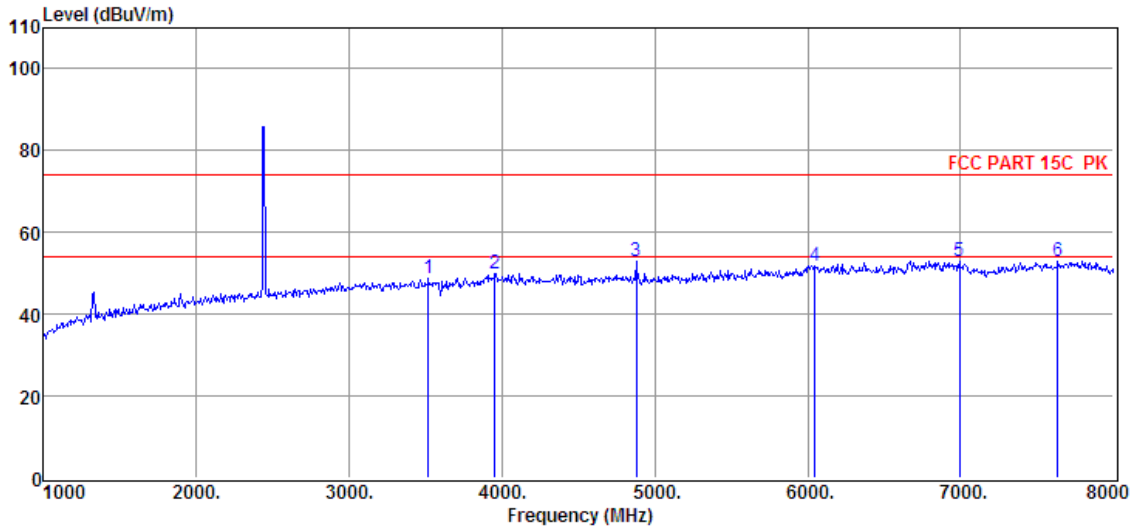
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	14035.00	31.20	39.87	34.76	15.07	51.38	74.00	-22.62	Peak	VERTICAL
2	16449.00	26.76	44.62	35.99	17.46	52.85	74.00	-21.15	Peak	VERTICAL
3	18285.00	25.06	44.70	37.71	19.72	51.77	74.00	-22.23	Peak	VERTICAL
4	20886.00	26.78	44.70	37.71	19.72	53.49	74.00	-20.51	Peak	VERTICAL
5	23504.00	26.89	44.70	37.71	19.72	53.60	74.00	-20.40	Peak	VERTICAL
6	24354.00	26.68	44.70	37.71	19.72	53.39	74.00	-20.61	Peak	VERTICAL

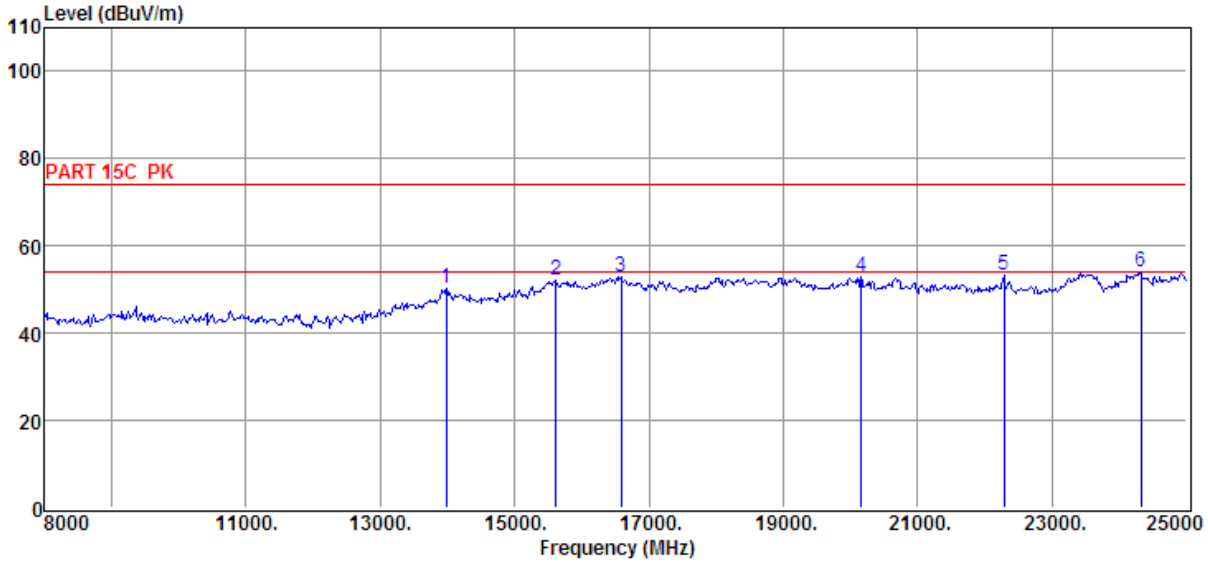
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Horizontal
Test Mode:	GFSK Mode Middle Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	3520.00	38.80	31.96	29.49	7.31	48.58	74.00	-25.42	Peak	HORIZONTAL
2	3954.00	38.12	33.27	29.06	7.58	49.91	74.00	-24.09	Peak	HORIZONTAL
3	4878.00	39.84	33.72	29.33	8.56	52.79	74.00	-21.21	Peak	HORIZONTAL
4	6047.00	36.41	35.08	29.23	9.71	51.97	74.00	-22.03	Peak	HORIZONTAL
5	6992.00	36.76	36.19	30.38	10.42	52.99	74.00	-21.01	Peak	HORIZONTAL
6	7636.00	36.45	36.63	30.92	10.93	53.09	74.00	-20.91	Peak	HORIZONTAL

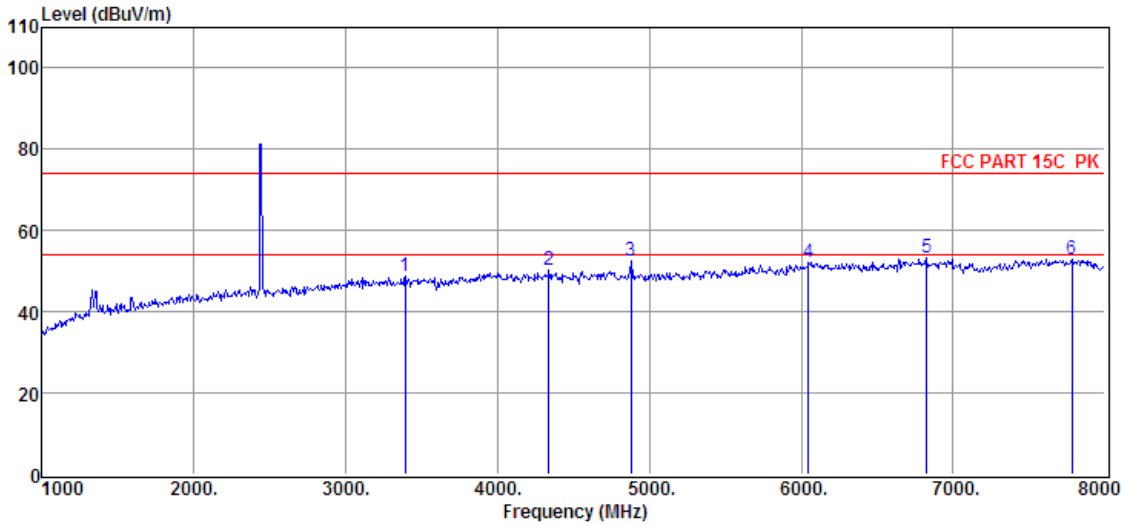
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	13984.00	30.41	39.78	34.73	14.98	50.44	74.00	-23.56	Peak	HORIZONTAL
2	15616.00	27.83	43.21	35.62	16.63	52.05	74.00	-21.95	Peak	HORIZONTAL
3	16585.00	26.88	44.56	36.21	17.64	52.87	74.00	-21.13	Peak	HORIZONTAL
4	20155.00	26.17	44.70	37.71	19.72	52.88	74.00	-21.12	Peak	HORIZONTAL
5	22280.00	26.53	44.70	37.71	19.72	53.24	74.00	-20.76	Peak	HORIZONTAL
6	24320.00	27.19	44.70	37.71	19.72	53.90	74.00	-20.10	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Vertical
Test Mode:	GFSK Mode Middle Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	3394.00	39.37	31.86	29.79	7.19	48.63	74.00	-25.37	Peak	VERTICAL
2	4339.00	37.64	33.68	29.13	7.98	50.17	74.00	-23.83	Peak	VERTICAL
3	4878.00	39.68	33.72	29.33	8.56	52.63	74.00	-21.37	Peak	VERTICAL
4	6047.00	36.46	35.08	29.23	9.71	52.02	74.00	-21.98	Peak	VERTICAL
5	6824.00	37.22	36.06	30.25	10.26	53.29	74.00	-20.71	Peak	VERTICAL
6	7783.00	36.15	36.66	31.03	11.01	52.79	74.00	-21.21	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

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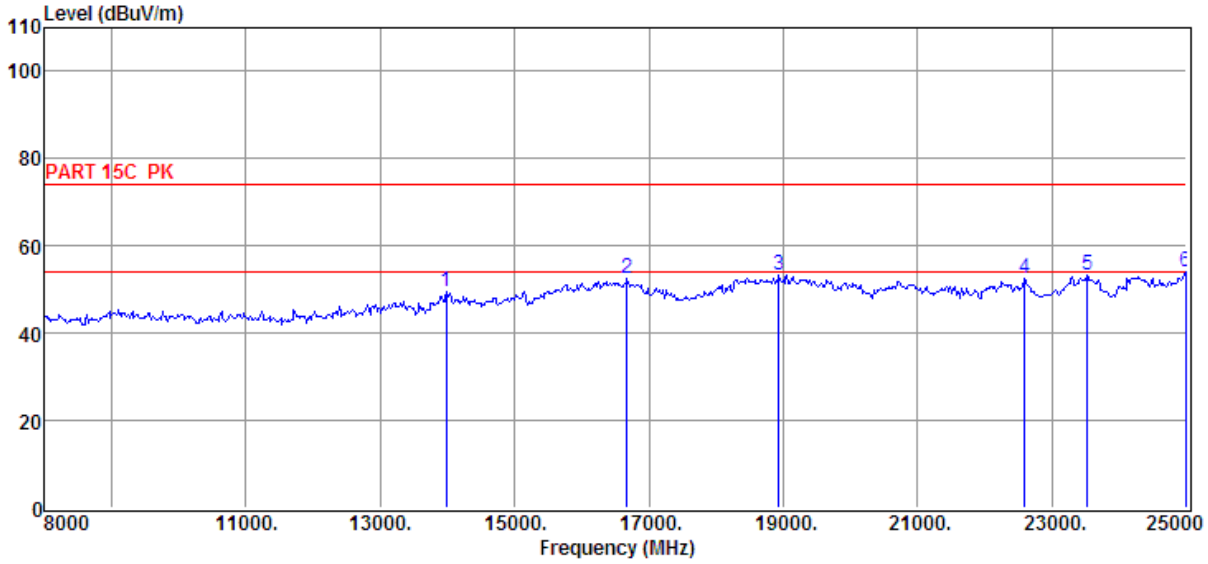
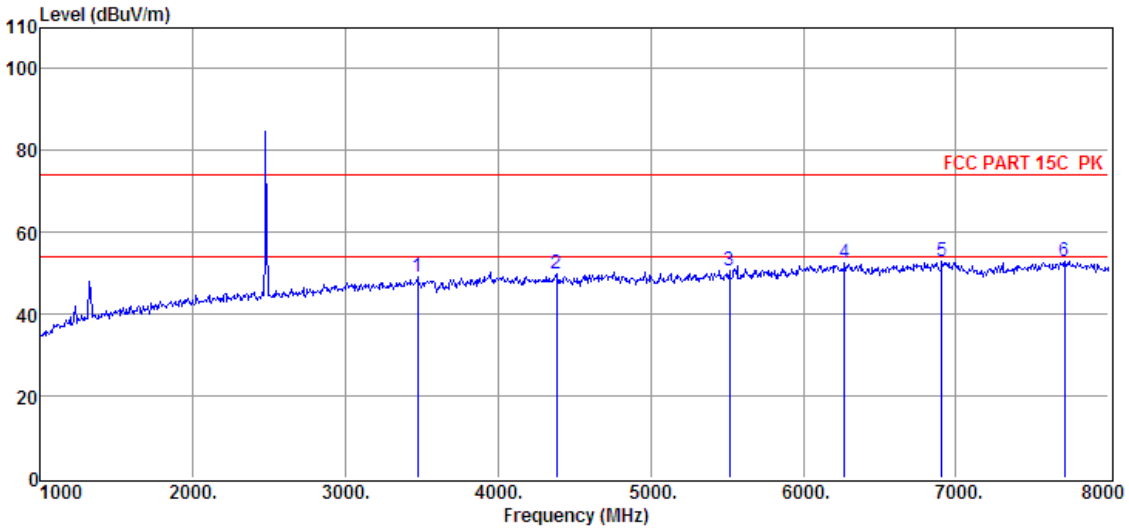


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	13984.00	29.63	39.78	34.73	14.98	49.66	74.00	-24.34	Peak	VERTICAL
2	16670.00	26.51	44.43	36.28	17.77	52.43	74.00	-21.57	Peak	VERTICAL
3	18931.00	26.51	44.70	37.71	19.72	53.22	74.00	-20.78	Peak	VERTICAL
4	22586.00	26.02	44.70	37.71	19.72	52.73	74.00	-21.27	Peak	VERTICAL
5	23521.00	26.63	44.70	37.71	19.72	53.34	74.00	-20.66	Peak	VERTICAL
6	24983.00	27.23	44.70	37.71	19.72	53.94	74.00	-20.06	Peak	VERTICAL

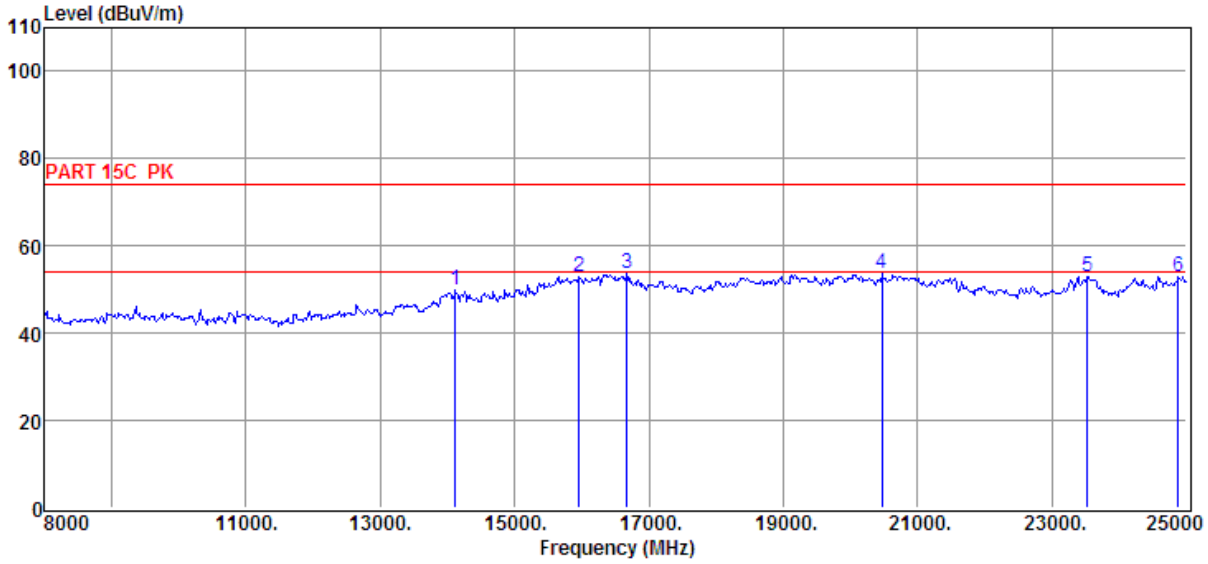
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Horizontal
Test Mode:	GFSK Mode High Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	3471.00	39.46	31.89	29.59	7.26	49.02	74.00	-24.98	Peak	HORIZONTAL
2	4381.00	37.32	33.71	29.14	8.02	49.91	74.00	-24.09	Peak	HORIZONTAL
3	5515.00	36.18	34.71	29.26	9.20	50.83	74.00	-23.17	Peak	HORIZONTAL
4	6271.00	36.68	35.44	29.44	9.82	52.50	74.00	-21.50	Peak	HORIZONTAL
5	6908.00	36.81	36.13	30.33	10.35	52.96	74.00	-21.04	Peak	HORIZONTAL
6	7713.00	36.38	36.64	30.99	10.98	53.01	74.00	-20.99	Peak	HORIZONTAL

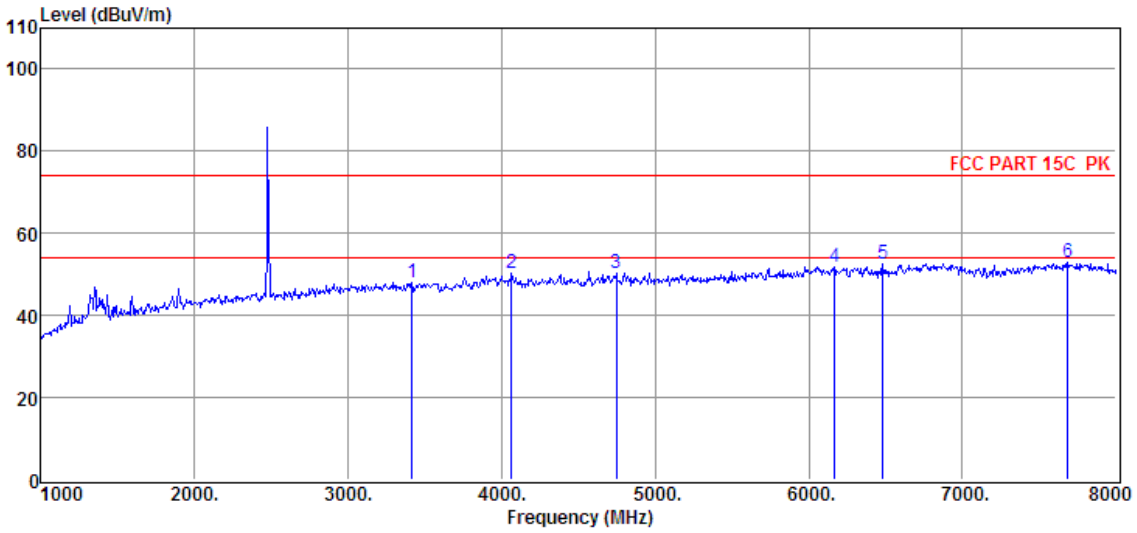
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	14120.00	29.42	40.04	34.88	15.18	49.76	74.00	-24.24	Peak	HORIZONTAL
2	15956.00	27.76	43.82	35.50	17.02	53.10	74.00	-20.90	Peak	HORIZONTAL
3	16670.00	27.72	44.43	36.28	17.77	53.64	74.00	-20.36	Peak	HORIZONTAL
4	20461.00	27.13	44.70	37.71	19.72	53.84	74.00	-20.16	Peak	HORIZONTAL
5	23521.00	26.36	44.70	37.71	19.72	53.07	74.00	-20.93	Peak	HORIZONTAL
6	24881.00	26.31	44.70	37.71	19.72	53.02	74.00	-20.98	Peak	HORIZONTAL

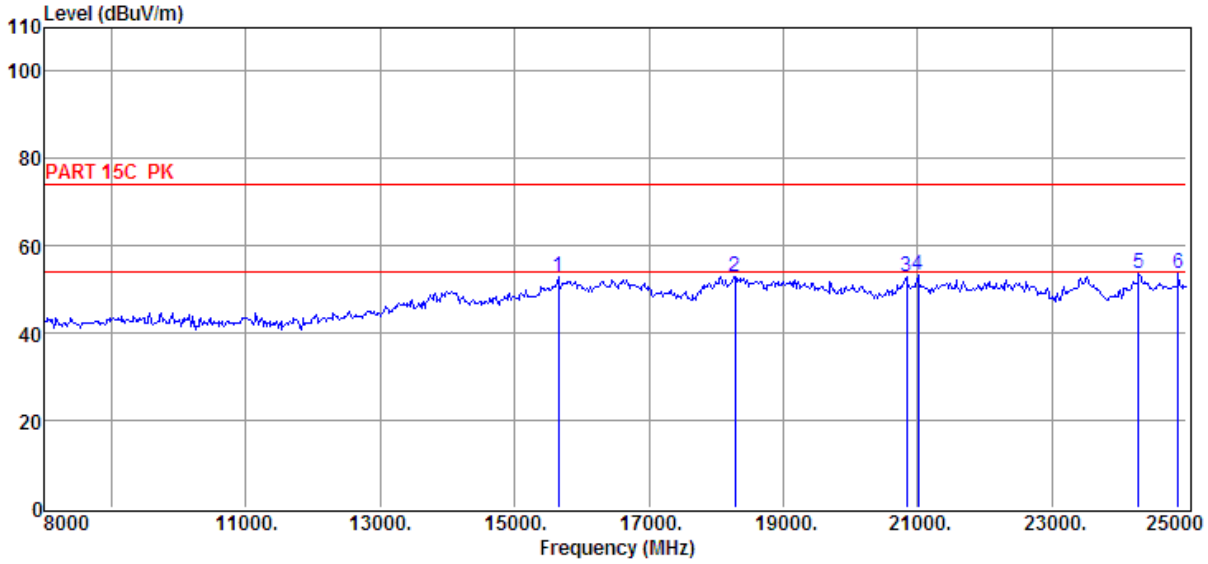
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Vertical
Test Mode:	GFSK Mode High Chanel		



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	3415.00	38.64	31.87	29.75	7.21	47.97	74.00	-26.03	Peak	VERTICAL
2	4066.00	38.14	33.46	29.05	7.69	50.24	74.00	-23.76	Peak	VERTICAL
3	4745.00	37.44	33.75	29.31	8.41	50.29	74.00	-23.71	Peak	VERTICAL
4	6166.00	36.23	35.27	29.32	9.76	51.94	74.00	-22.06	Peak	VERTICAL
5	6481.00	36.85	35.77	29.83	9.93	52.72	74.00	-21.28	Peak	VERTICAL
6	7685.00	36.19	36.64	30.97	10.96	52.82	74.00	-21.18	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	15650.00	28.45	43.27	35.62	16.69	52.79	74.00	-21.21	Peak	VERTICAL
2	18285.00	26.38	44.70	37.71	19.72	53.09	74.00	-20.91	Peak	VERTICAL
3	20835.00	26.20	44.70	37.71	19.72	52.91	74.00	-21.09	Peak	VERTICAL
4	21005.00	26.63	44.70	37.71	19.72	53.34	74.00	-20.66	Peak	VERTICAL
5	24286.00	26.80	44.70	37.71	19.72	53.51	74.00	-20.49	Peak	VERTICAL
6	24881.00	26.80	44.70	37.71	19.72	53.51	74.00	-20.49	Peak	VERTICAL

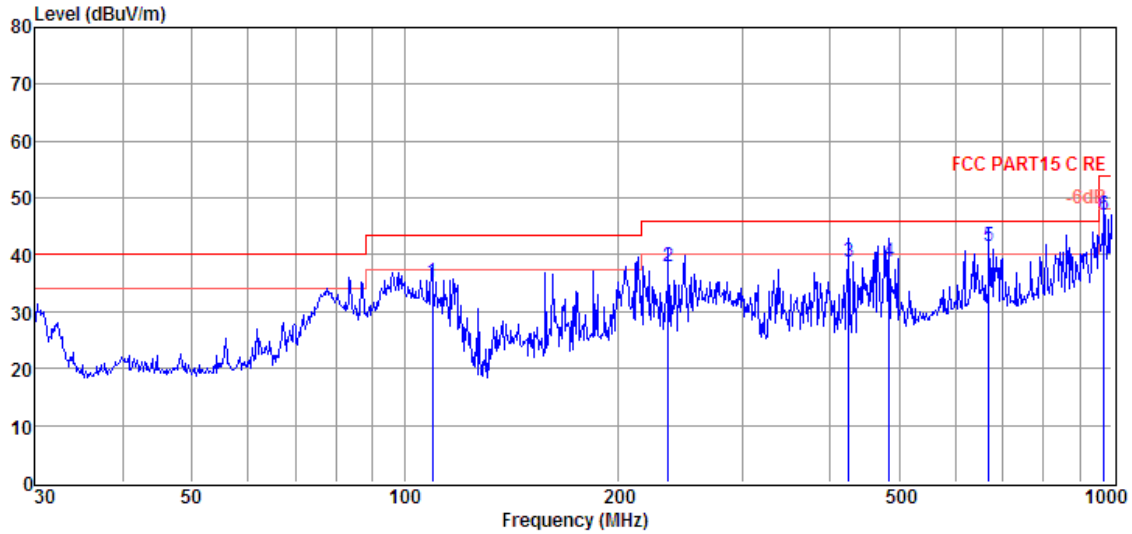
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

Note: EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

7.4. SPURIOUS EMISSIONS 30M ~ 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

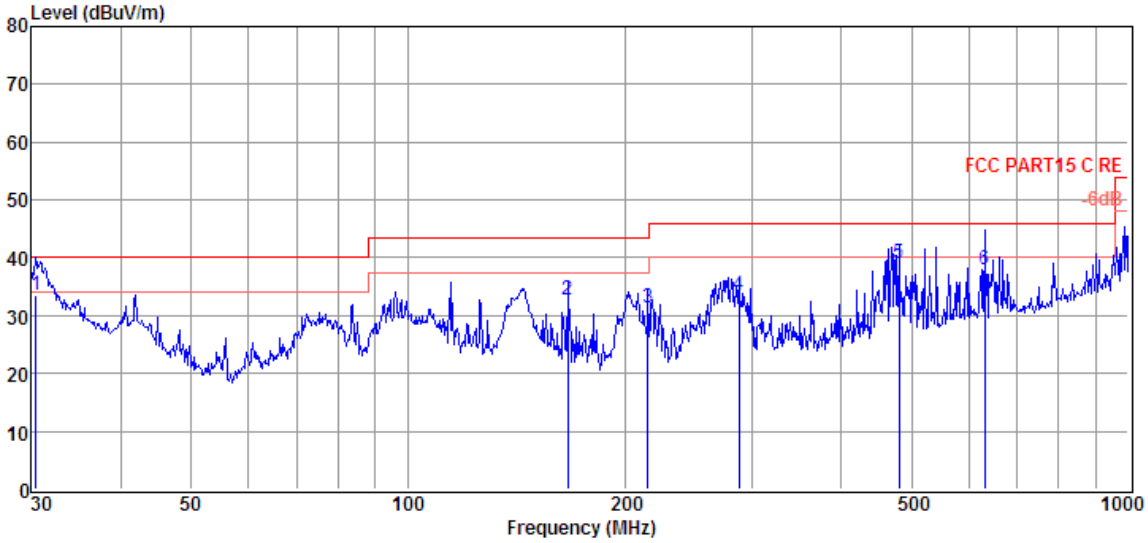
EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Horizontal
Test Mode:	GFSK Mode Middle Channel		



Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	dB	(dBµV/m)	(dBµV/m)	(dB)	
1	109.41	19.72	11.07	4.35	35.14	43.50	-8.36	QP
2	235.82	21.09	11.73	5.07	37.89	46.00	-8.11	QP
3	425.03	16.75	16.25	5.89	38.89	46.00	-7.11	QP
4	483.91	15.64	17.10	6.11	38.85	46.00	-7.15	QP
5	670.49	15.08	19.80	6.73	41.61	46.00	-4.39	QP
6	975.75	16.50	22.84	7.62	46.96	54.00	-7.04	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

EUT:	Mattel Bluetooth Low Energy Module	Polarization :	Vertical
Test Mode:	GFSK Mode Middle Channel		



Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	(dBμV/m)	(dBμV/m)	(dB)	
1	30.42	18.60	11.17	3.67	33.44	40.00	-6.56	QP
2	166.65	19.67	8.27	4.70	32.64	43.50	-10.86	QP
3	215.27	15.28	11.02	4.97	31.27	43.50	-12.23	QP
4	287.99	14.94	13.26	5.32	33.52	46.00	-12.48	QP
5	480.53	15.74	17.10	6.10	38.94	46.00	-7.06	QP
6	631.69	11.89	19.38	6.61	37.88	46.00	-8.12	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Note 1: All the modulation and channels had been tested, but only the worst data recorded in the report.

Note 2: EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

7.5. SPURIOUS EMISSIONS BELOW 30M

Note 1: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Note 2: EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

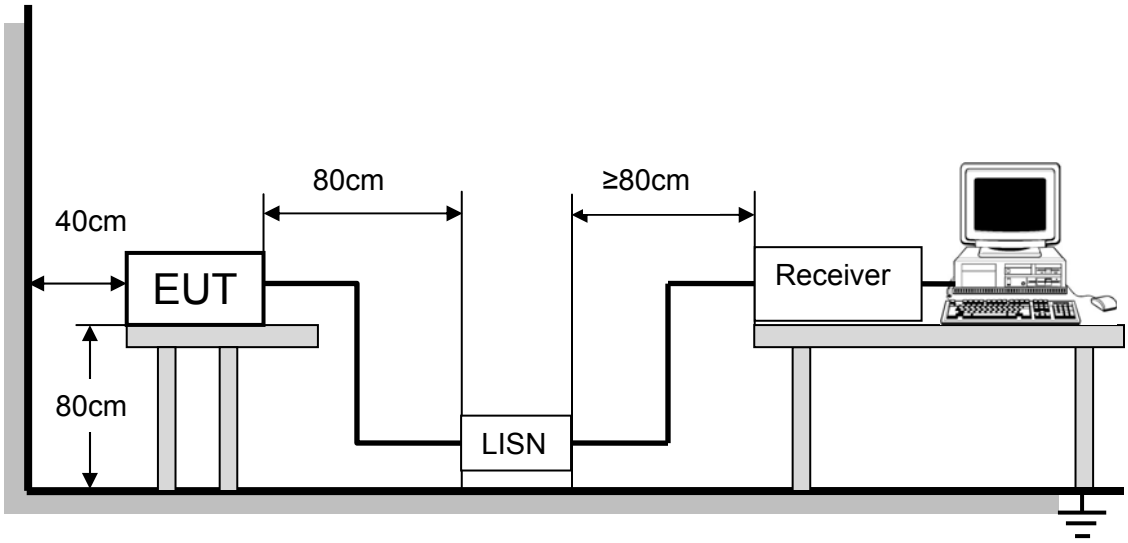
8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

TEST SETUP AND PROCEDURE

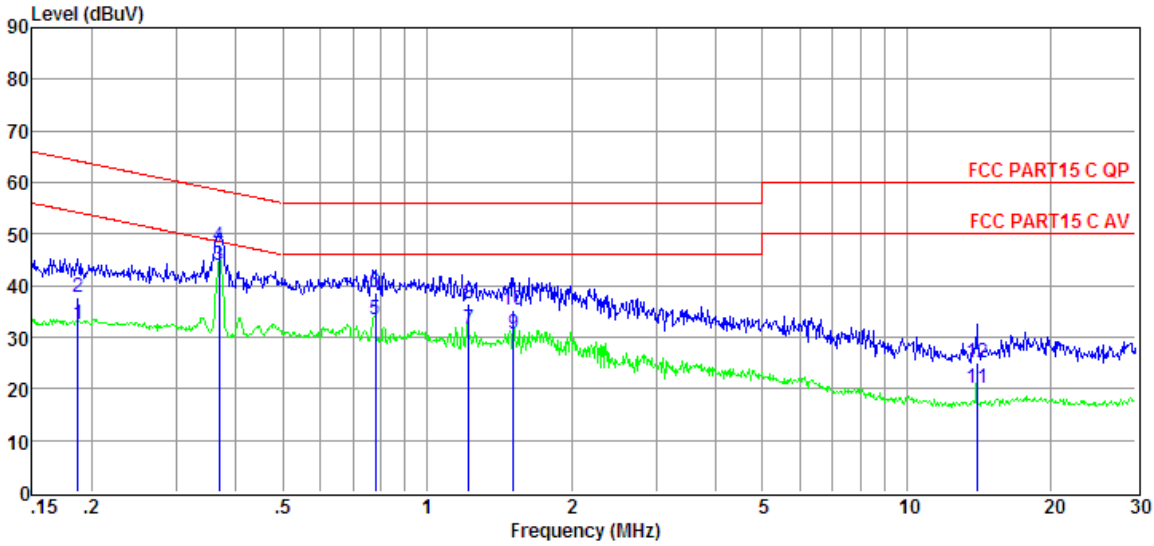


The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2014.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST RESULTS

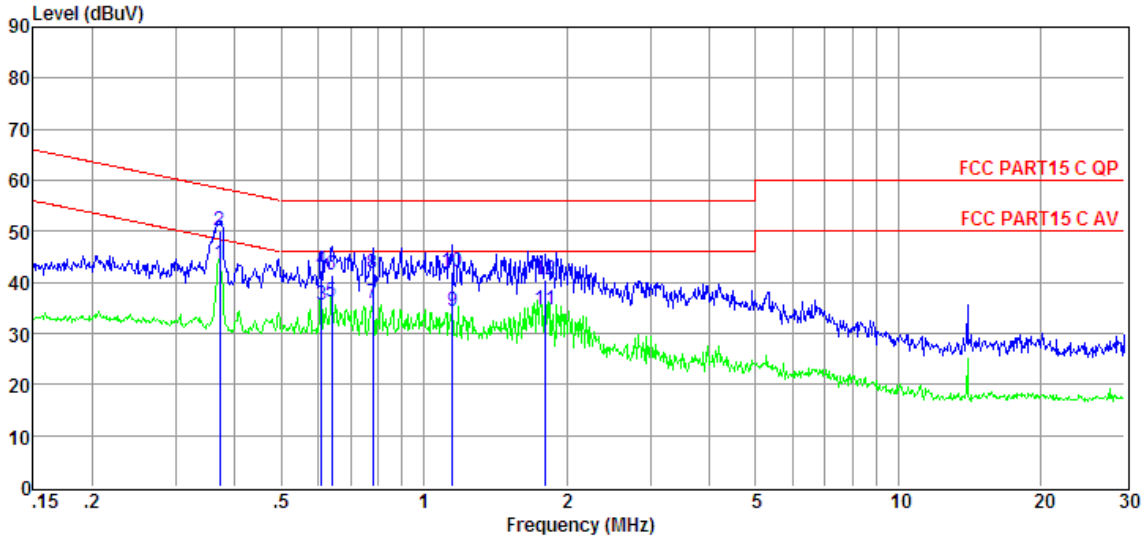
EUT:	Mattel Bluetooth Low Energy Module		
Temperature:	24.5°C	Relative Humidity:	55.0 %
Pressure:	1012 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	GFSK Mode	Phase :	L1



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.19	12.93	9.61	0.02	9.86	32.42	54.15	-21.73	Average	LINE
2	0.19	18.23	9.61	0.02	9.86	37.72	64.15	-26.43	QP	LINE
3	0.37	24.37	9.61	0.02	9.86	43.86	48.52	-4.66	Average	LINE
4	0.37	28.01	9.61	0.02	9.86	47.50	58.52	-11.02	QP	LINE
5	0.78	14.00	9.61	0.03	9.86	33.50	46.00	-12.50	Average	LINE
6	0.78	19.28	9.61	0.03	9.86	38.78	56.00	-17.22	QP	LINE
7	1.22	12.14	9.62	0.03	9.86	31.65	46.00	-14.35	Average	LINE
8	1.22	16.88	9.62	0.03	9.86	36.39	56.00	-19.61	QP	LINE
9	1.51	11.07	9.62	0.04	9.86	30.59	46.00	-15.41	Average	LINE
10	1.51	15.59	9.62	0.04	9.86	35.11	56.00	-20.89	QP	LINE
11	13.99	0.26	9.80	0.13	9.92	20.11	50.00	-29.89	Average	LINE
12	13.99	5.26	9.80	0.13	9.92	25.11	60.00	-34.89	QP	LINE

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

EUT:	Mattel Bluetooth Low Energy Module		
Temperature:	24.5°C	Relative Humidity:	55.0 %
Pressure:	1012 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	GFSK Mode	Phase :	N



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.37	24.12	9.61	0.02	9.86	43.61	48.47	-4.86	Average	NEUTRAL
2	0.37	30.46	9.61	0.02	9.86	49.95	58.47	-8.52	QP	NEUTRAL
3	0.61	16.16	9.61	0.03	9.86	35.66	46.00	-10.34	Average	NEUTRAL
4	0.61	22.80	9.61	0.03	9.86	42.30	56.00	-13.70	QP	NEUTRAL
5	0.64	16.69	9.61	0.03	9.86	36.19	46.00	-9.81	Average	NEUTRAL
6	0.64	21.89	9.61	0.03	9.86	41.39	56.00	-14.61	QP	NEUTRAL
7	0.78	16.30	9.61	0.03	9.86	35.80	46.00	-10.20	Average	NEUTRAL
8	0.78	22.37	9.61	0.03	9.86	41.87	56.00	-14.13	QP	NEUTRAL
9	1.15	14.73	9.61	0.03	9.86	34.23	46.00	-11.77	Average	NEUTRAL
10	1.15	22.66	9.61	0.03	9.86	42.16	56.00	-13.84	QP	NEUTRAL
11	1.80	15.15	9.62	0.04	9.87	34.68	46.00	-11.32	Average	NEUTRAL
12	1.80	20.89	9.62	0.04	9.87	40.42	56.00	-15.58	QP	NEUTRAL

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

END OF REPORT