



# **RADIO TEST REPORT**

## **FCC ID: RS5-MUSTANGRX**

**Product:** Baby monitor  
**Trade Mark:** Timeflys  
**Model No.:** Mustang RX  
**Serial Model:** N/A  
**Report No.:** NTEK-2017NT06073817F  
**Issue Date:** 19 Jun. 2017

### **Prepared for**

MC Devices Co., Ltd.  
The 23rd floor, Overseas Chinese mansion phase II, Keyuan south  
road, Nanshan district, Shenzhen, China

### **Prepared by**

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## 1 TEST RESULT CERTIFICATION

Applicant's name .....	MC Devices Co., Ltd.
Address .....	The 23rd floor, Overseas Chinese mansion phase II, Keyuan south road, Nanshan district, Shenzhen, China
Manufacturer's Name .....	MC Devices Co., Ltd.
Address .....	The 23rd floor, Overseas Chinese mansion phase II, Keyuan south road, Nanshan district, Shenzhen, China
Product description	
Product name .....	Baby monitor
Model and/or type reference .....	Mustang RX
Serial Model .....	N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD/ TEST PROCEDURE	TEST RESULT
FCC 47 CFR Part 2, Subpart J:2016 FCC 47 CFR Part 15, Subpart C:2016 KDB 174176 D01 Line Conducted FAQ v01r01 ANSI C63.10-2013	Complied

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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The test results of this report relate only to the tested sample identified in this report.

Date of Test : 07 Jun. 2017 ~ 19 Jun. 2017

Testing Engineer : Lake Xie  
(Lake Xie)

Technical Manager : Jason Chen  
(Jason Chen)

Authorized Signatory : Sam Chen  
(Sam Chen)

## 2 SUMMARY OF TEST RESULTS

FCC Part15 (15.247), Subpart C			
Standard Section	Test Item	Verdict	Remark
15.207	Conducted Emission	PASS	
15.247(c)	Radiated Spurious Emission	PASS	
15.247(a)(1)	Hopping Channel Separation	PASS	
15.247(b)(1)	Peak Output Power	PASS	
15.247(a)(iii)	Number of Hopping Frequency	PASS	
15.247(a)(iii)	Dwell Time	PASS	
15.247(a)(1)	Bandwidth	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

**Remark:**

1. "N/A" denotes test is not applicable in this Test Report.
2. All test items were verified and recorded according to the standards and without any deviation during the test.

### 3 FACILITIES AND ACCREDITATIONS

#### 3.1 FACILITIES

All measurement facilities used to collect the measurement data are located at 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

#### 3.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: Accredited by CNAS, 2014.09.04

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)

The Certificate Registration Number is L5516.

Accredited by FCC, September 6, 2013

The Certificate Registration Number is 238937.

Accredited by Industry Canada, August 29, 2012

The Certificate Registration Number is 9270A-1.

Name of Firm

: Shenzhen NTEK Testing Technology Co., Ltd

Site Location

: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

#### 3.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.80\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(30MHz~1GHz)	$\pm 2.64\text{dB}$
5	All emissions, radiated(1GHz~6GHz)	$\pm 2.40\text{dB}$
6	All emissions, radiated(>6GHz)	$\pm 2.52\text{dB}$
7	Temperature	$\pm 0.5^{\circ}\text{C}$
8	Humidity	$\pm 2\%$

#### 4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification	
Equipment	Baby monitor
Trade Mark	Timeflys
FCC ID	RS5-MUSTANGRX
Model No.	Mustang RX
Serial Model	N/A
Model Difference	N/A
Operating Frequency	2405.377 MHz ~2477.569 MHz
Modulation	FHSS
Number of Channels	36 Channels
Antenna Type	Internal Antenna
Antenna Gain	0 dBi
Power supply	<input checked="" type="checkbox"/> DC supply: DC 1.2V*3 AAA Battery
	<input checked="" type="checkbox"/> Adapter supply: Model: HJ-0501000E1-US Input: AC 100-240V,50/60Hz 0.2A Output: DC 5V,1000mA
HW Version	V01
SW Version	V01

Note: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.



## 5 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (1Mbps for FHSS modulation) were used for all test.

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

Carrier Frequency and Channel list:

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2405.377	10	2423.809	19	2442.753	28	2461.185
02	2407.425	11	2425.857	20	2444.801	29	2463.233
03	2409.473	12	2427.905	21	2446.849	30	2465.281
04	2411.521	13	2430.465	22	2448.897	31	2467.329
05	2413.569	14	2432.513	23	2450.945	32	2469.377
06	2415.617	15	2434.561	24	2452.993	33	2471.425
07	2417.665	16	2436.609	25	2455.041	34	2473.473
08	2419.713	17	2438.657	26	2457.089	35	2475.521
09	2421.761	18	2440.705	27	2459.137	36	2477.569

Note:  $f_c = 2405.377\text{MHz} + k \times 1\text{MHz}$   $k=0$  to 36

The following summary table is showing all test modes to demonstrate in compliance with the standard.

For AC Conducted Emission	
Final Test Mode	Description
Mode 1	normal link mode

Note: AC power line Conducted Emission was tested under maximum output power.

For Radiated Test Cases	
Final Test Mode	Description
Mode 1	normal link mode
Mode 2	CH01(2405.377MHz)
Mode 3	CH18(2440.705MHz)
Mode 4	CH36(2477.569MHz)

Note: For radiated test cases, the worst Mode 2 was reported only, because this data rate has the highest RF output power at preliminary tests, and no other significantly frequencies found in conducted spurious emission.



**For Conducted Test Cases**

Final Test Mode	Description
Mode 2	CH01(2405.377MHz)
Mode 3	CH18(2440.705MHz)
Mode 4	CH36(2477.569MHz)
Mode 5	Hopping mode

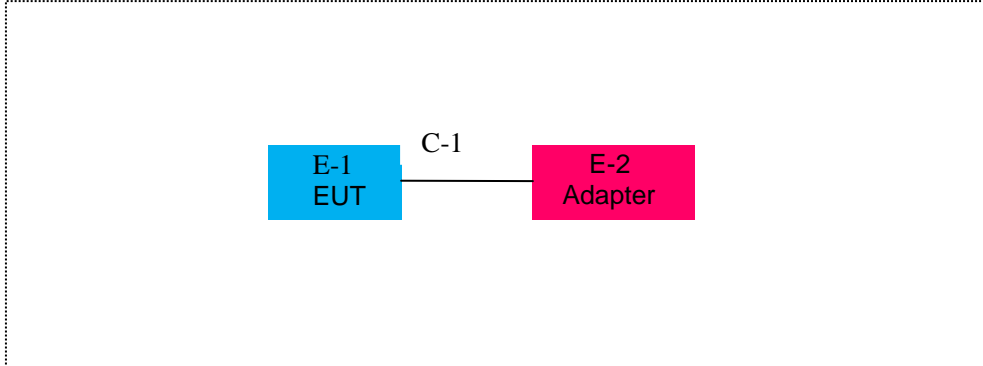
Note: The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.

1. AC power line Conducted Emission was tested under maximum output power.
2. EUT built-in battery-powered, fully-charged battery use of the test battery

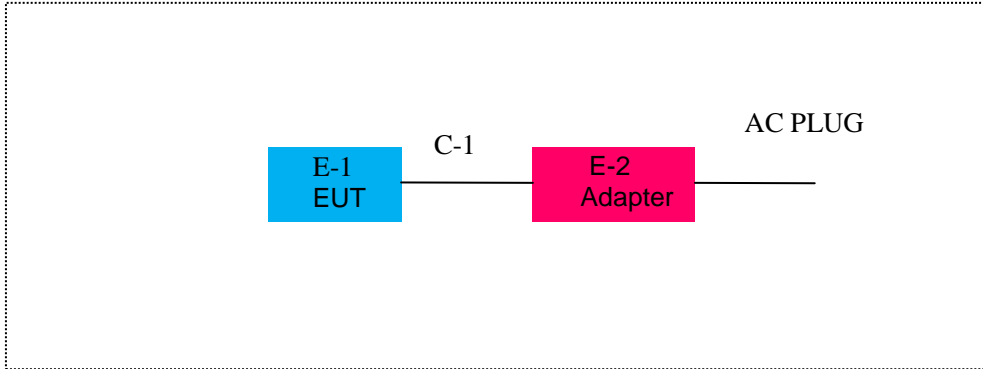
## 6 SETUP OF EQUIPMENT UNDER TEST

### 6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM

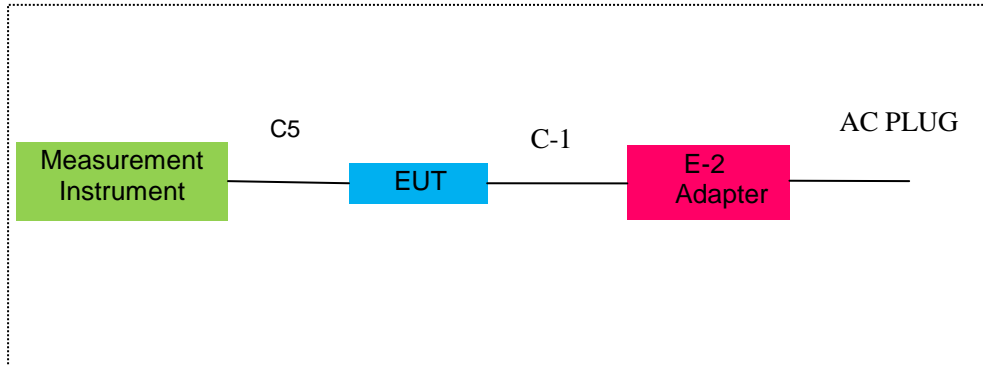
For AC Conducted Emission Mode



For Radiated Test Cases



For Conducted Test Cases



Note:The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

## 6.2 SUPPORT EQUIPMENT

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Note
E-1	Baby monitor	Timeflys	Mustang RX	RS5-MUSTANGRX	EUT
E-2	Adapter	N/A	HJ-0501000E1-US	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	NO	NO	1.2m

### Notes:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

### 6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

#### Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2017.06.06	2018.06.05	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2016.11.10	2017.11.09	1 year
3	EMI Test Receiver	Agilent	N9038A	MY53227146	2017.06.06	2018.06.05	1 year
4	Test Receiver	R&S	ESPI	101318	2017.06.06	2018.06.05	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2017.04.09	2018.04.08	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2017.06.06	2018.06.05	1 year
7	Horn Antenna	EM	EM-AH-10180	2011071402	2017.04.09	2018.04.08	1 year
8	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05	1 year
9	Amplifier	EMC	EMC051835SE	980246	2016.08.09	2017.08.08	1 year
10	Amplifier	MITEQ	TTA1840-35-HG	177156	2017.06.06	2018.06.05	1 year
11	Loop Antenna	ARA	PLA-1030/B	1029	2017.06.06	2018.06.05	1 year
12	Power Meter	DARE	RPR3006W	15I00041SN084	2016.08.09	2017.08.08	1 year
13	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
14	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
16	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

#### Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test  
And this temporary antenna connector is listed within the instrument list

## Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2017.06.06	2018.06.05	1 year
2	LISN	R&S	ENV216	101313	2017.04.19	2018.04.18	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2017.06.06	2018.06.05	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2017.06.06	2018.06.05	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

1	Filter	TRILTHIC	2400MHz	29	2017.04.19	2018.04.18	1 year
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Note: Each piece of equipment is scheduled for calibration once a year.



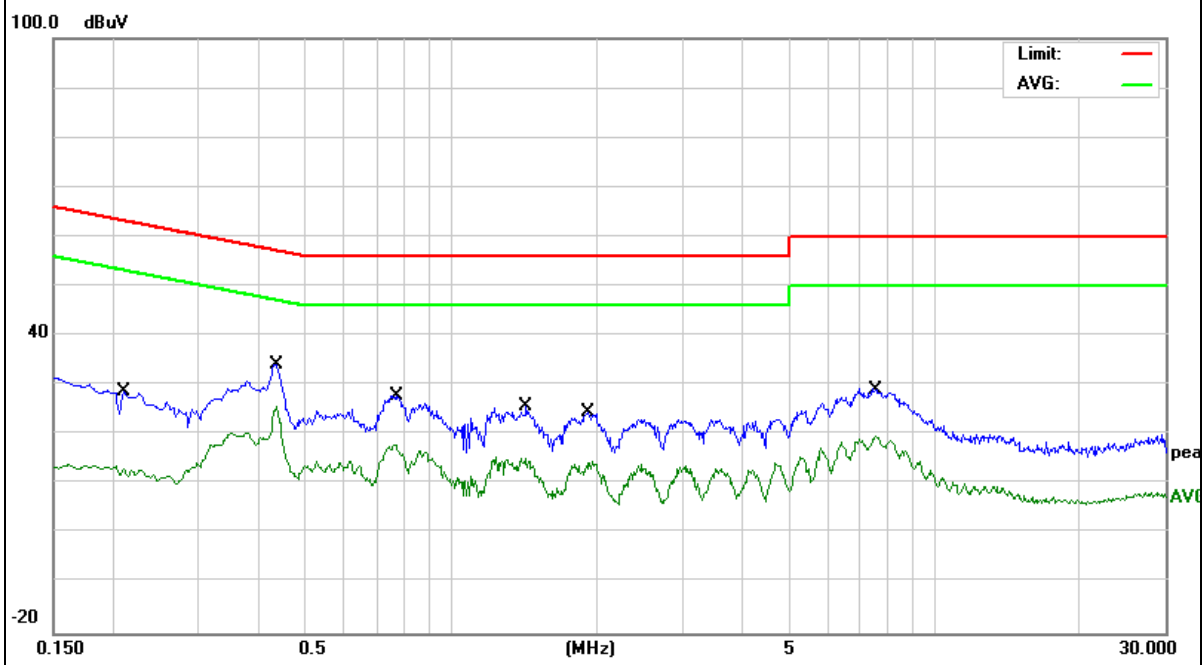
### 7.1.6 Test Results

EUT:	Baby monitor	Model Name :	Mustang RX
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.2083	19.11	9.70	28.81	63.27	-34.46	QP
0.2083	2.98	9.70	12.68	53.27	-40.59	AVG
0.4340	24.57	9.71	34.28	57.18	-22.90	QP
0.4340	15.95	9.71	25.66	47.18	-21.52	AVG
0.7700	18.17	9.73	27.90	56.00	-28.10	QP
0.7700	8.35	9.73	18.08	46.00	-27.92	AVG
1.4339	15.90	9.78	25.68	56.00	-30.32	QP
1.4339	3.66	9.78	13.44	46.00	-32.56	AVG
1.9139	14.78	9.74	24.52	56.00	-31.48	QP
1.9139	4.10	9.74	13.84	46.00	-32.16	AVG
7.5420	19.43	9.88	29.31	60.00	-30.69	QP
7.5420	9.79	9.88	19.67	50.00	-30.33	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

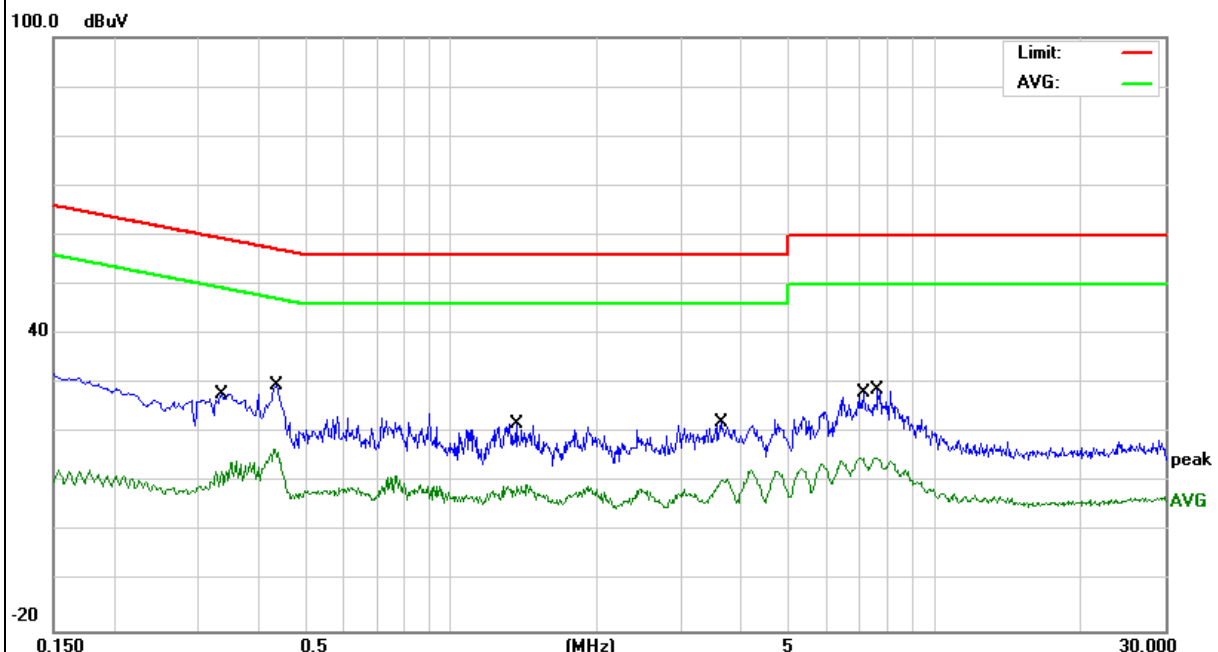


EUT:	Baby monitor	Model Name :	Mustang RX
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.3340	17.91	9.80	27.71	59.35	-31.64	QP
0.3340	2.59	9.80	12.39	49.35	-36.96	AVG
0.4340	19.80	9.81	29.61	57.18	-27.57	QP
0.4340	7.06	9.81	16.87	47.18	-30.31	AVG
1.3620	12.11	9.82	21.93	56.00	-34.07	QP
1.3620	-2.31	9.82	7.51	46.00	-38.49	AVG
3.6259	12.32	9.86	22.18	56.00	-33.82	QP
3.6259	0.44	9.86	10.30	46.00	-35.70	AVG
7.0300	5.11	9.98	15.09	50.00	-34.91	QP
7.0300	5.11	9.98	15.09	50.00	-34.91	AVG
7.6300	18.78	9.98	28.76	60.00	-31.24	QP
7.6300	4.96	9.98	14.94	50.00	-35.06	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



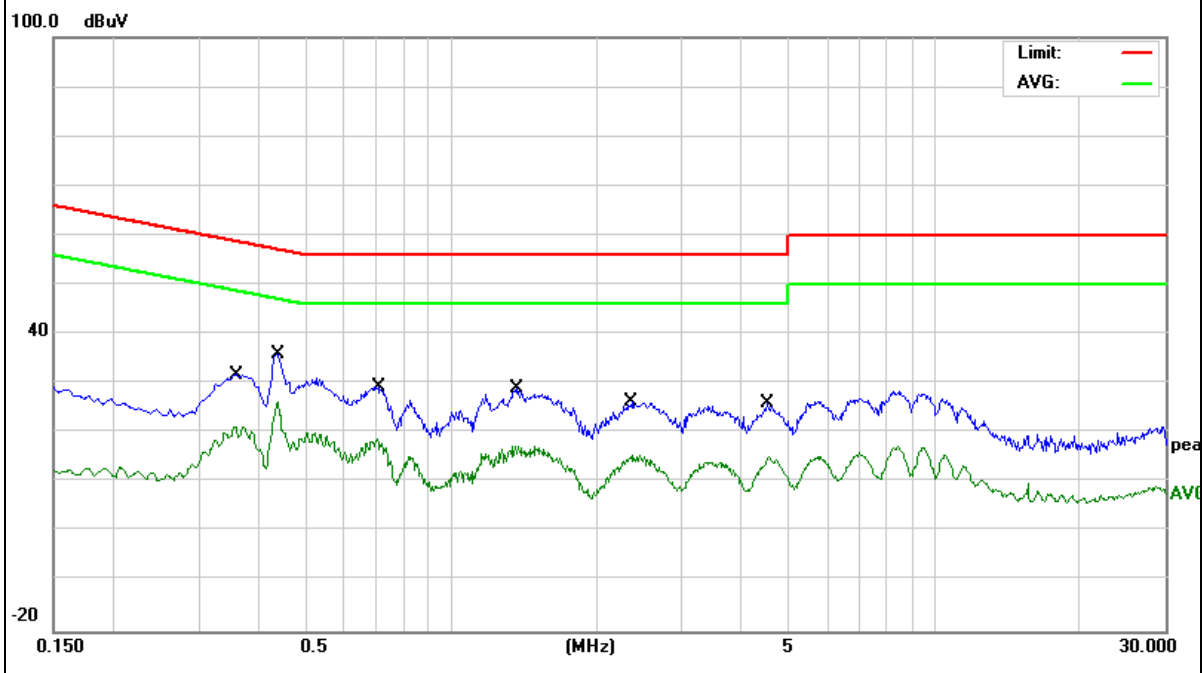


EUT:	Baby monitor	Model Name :	Mustang RX
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter AC 240V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.3633	22.24	9.70	31.94	58.65	-26.71	QP
0.3633	9.70	9.70	19.40	48.65	-29.25	AVG
0.4380	26.35	9.71	36.06	57.10	-21.04	QP
0.4380	16.66	9.71	26.37	47.10	-20.73	AVG
0.7059	19.59	9.71	29.30	56.00	-26.70	QP
0.7059	9.25	9.71	18.96	46.00	-27.04	AVG
1.3580	19.31	9.78	29.09	56.00	-26.91	QP
1.3580	7.70	9.78	17.48	46.00	-28.52	AVG
2.3740	16.42	9.81	26.23	56.00	-29.77	QP
2.3740	4.64	9.81	14.45	46.00	-31.55	AVG
4.5218	16.02	9.97	25.99	56.00	-30.01	QP
4.5218	4.11	9.97	14.08	46.00	-31.92	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

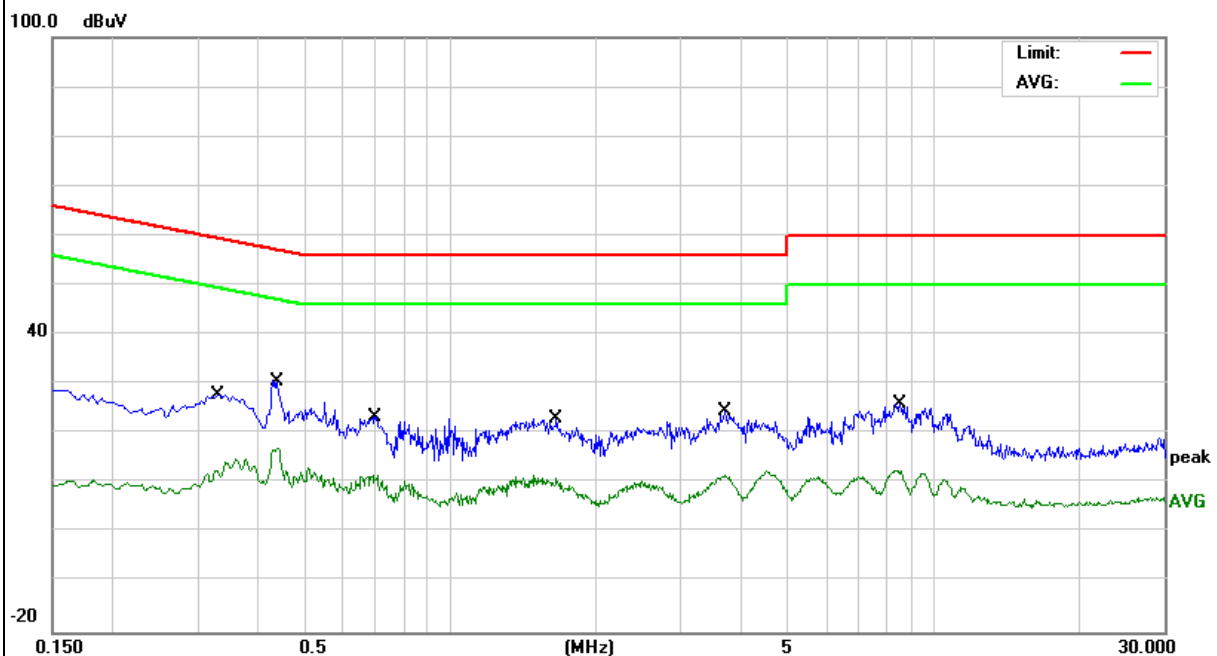


EUT:	Baby monitor	Model Name :	Mustang RX
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter AC 240V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.3303	18.16	9.80	27.96	59.44	-31.48	QP
0.3303	2.64	9.80	12.44	49.44	-37.00	AVG
0.4420	20.89	9.81	30.70	57.02	-26.32	QP
0.4420	7.14	9.81	16.95	47.02	-30.07	AVG
0.6980	13.54	9.81	23.35	56.00	-32.65	QP
0.6980	0.24	9.81	10.05	46.00	-35.95	AVG
1.6620	13.36	9.83	23.19	56.00	-32.81	QP
1.6620	1.68	9.83	11.51	46.00	-34.49	AVG
3.7180	14.61	9.86	24.47	56.00	-31.53	QP
3.7180	1.75	9.86	11.61	46.00	-34.39	AVG
8.4340	16.08	9.99	26.07	60.00	-33.93	QP
8.4340	2.63	9.99	12.62	50.00	-37.38	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



## 7.2 RADIATED SPURIOUS EMISSION

### 7.2.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and ANSI C63.10-2013

### 7.2.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).  
According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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	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			

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	2400/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency(MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

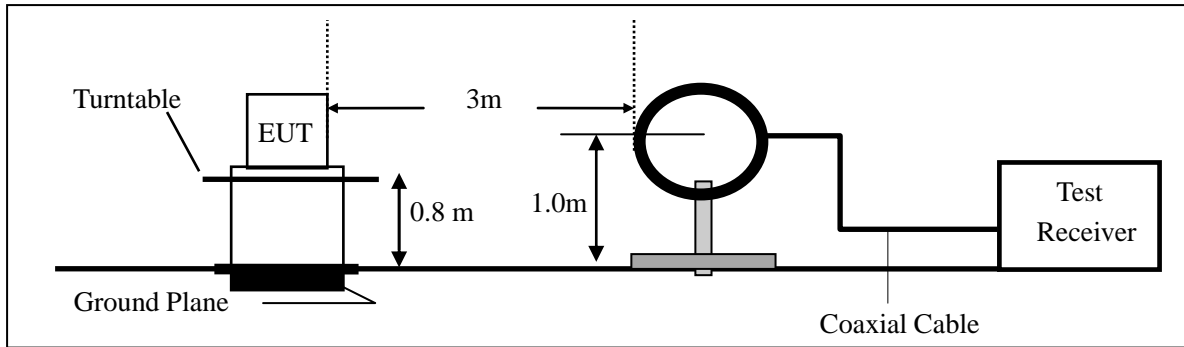
Remark :1. Emission level in dBuV/m=20 log (uV/m)  
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.  
3. Distance extrapolation factor =40log(Specific distance/ test distance)( dB);  
Limit line=Specific limits(dBuV) + distance extrapolation factor.

### 7.2.3 Measuring Instruments

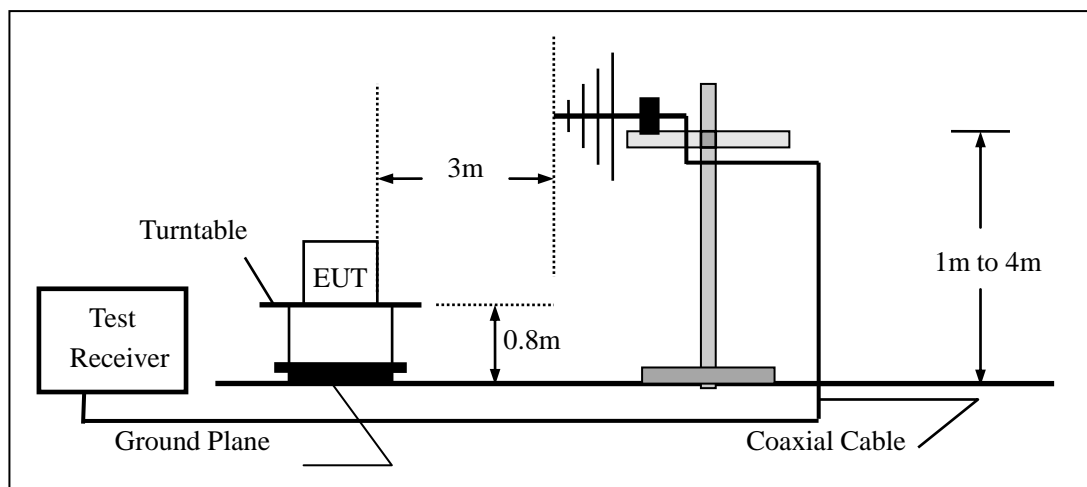
The Measuring equipment is listed in the section 6.3 of this test report.

### 7.2.4 Test Configuration

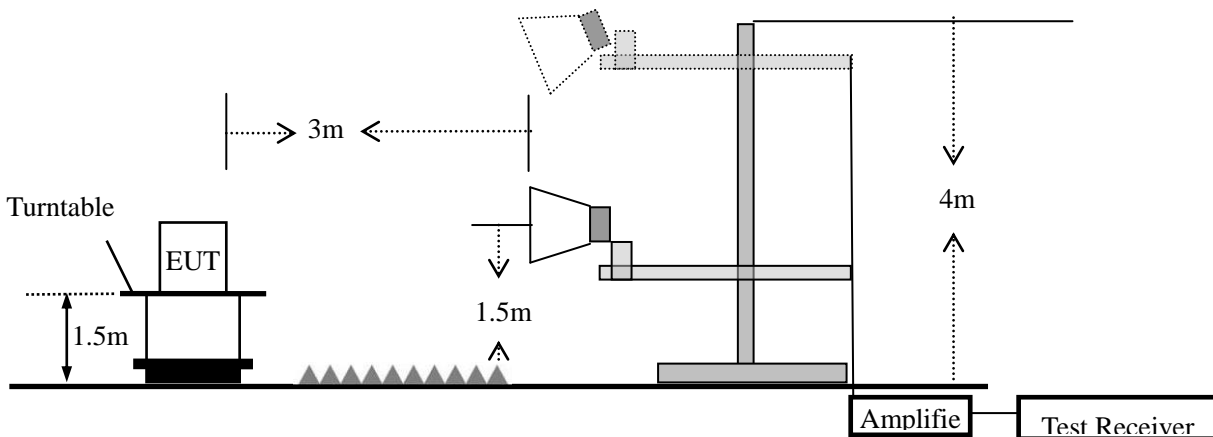
(a) For radiated emissions below 30MHz



(b) For radiated emissions from 30MHz to 1000MHz



(c) For radiated emissions above 1000MHz



## 7.2.5 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT.

Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For the radiated emission test above 1GHz:  
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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 Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where  $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW} [kHz])$ . , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

## 7.2.6 Test Results

### ■ Spurious Emission below 30MHz (9KHz to 30MHz)

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor =  $20 \log(\text{Specific distance} / \text{test distance})$  ( dB);

Limit line = Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission below 1GHz (30MHz to 1GHz)

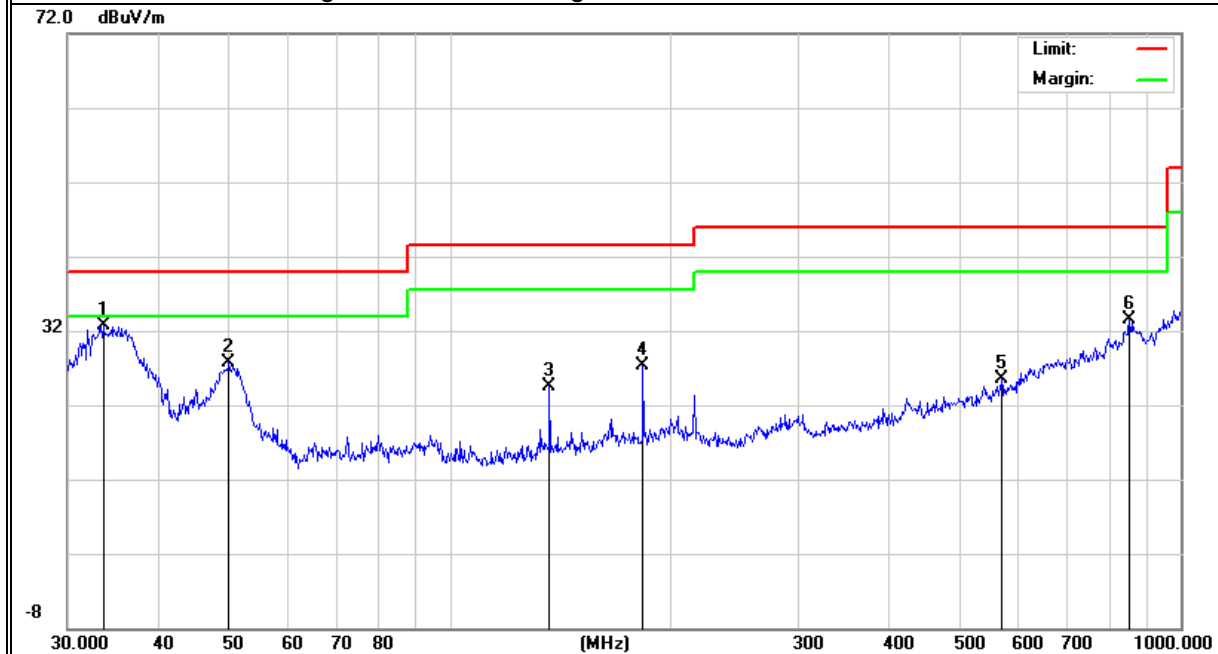
All the modulation modes have been tested, and the worst result was report as below:

EUT:	Baby monitor	Model Name :	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010hPa	Test Mode:	Mode 1
Test Voltage :	DC 5V from Adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	33.5624	13.18	19.59	32.77	40.00	-7.23	QP
V	49.8814	14.33	13.34	27.67	40.00	-12.33	QP
V	136.9391	12.98	11.57	24.55	43.50	-18.95	QP
V	183.8439	14.66	12.71	27.37	43.50	-16.13	QP
V	568.6127	6.80	18.67	25.47	46.00	-20.53	QP
V	851.0353	7.73	25.71	33.44	46.00	-12.56	QP

**Remark:**

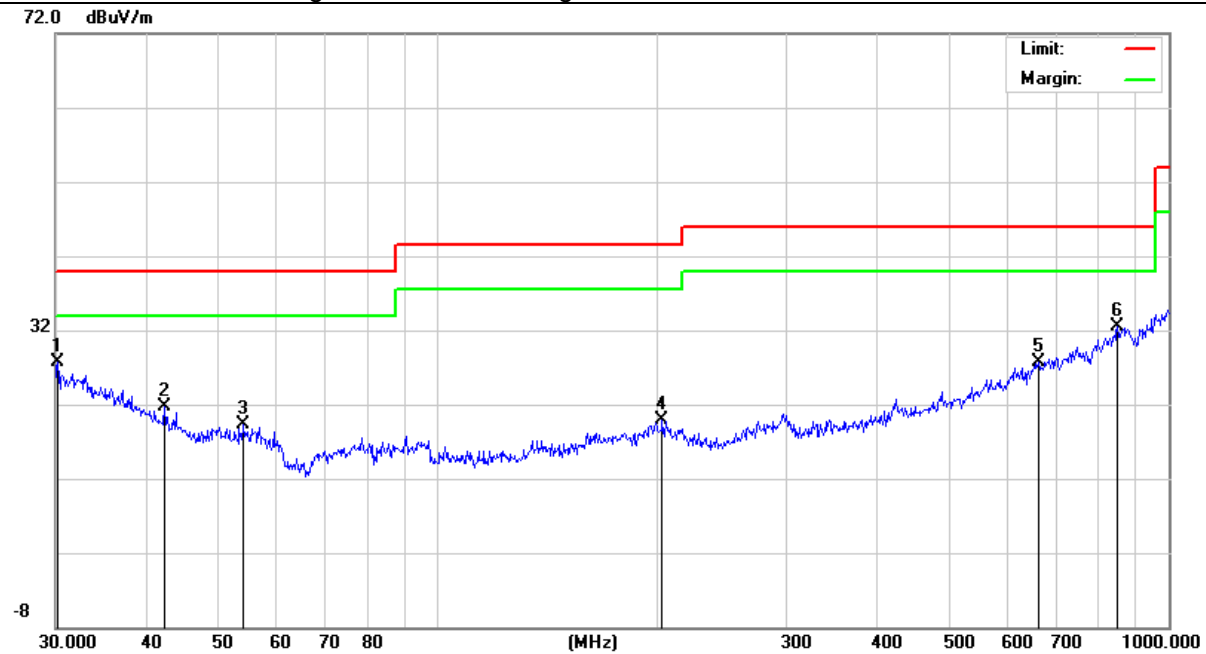
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	30.2111	6.50	21.11	27.61	40.00	-12.39	QP
H	42.3021	6.33	15.33	21.66	40.00	-18.34	QP
H	54.2610	7.11	12.28	19.39	40.00	-20.61	QP
H	202.8104	6.15	13.84	19.99	43.50	-23.51	QP
H	663.4728	6.81	20.94	27.75	46.00	-18.25	QP
H	851.0353	6.74	25.71	32.45	46.00	-13.55	QP

**Remark:**

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit





# ■ Spurious Emission Above 1GHz (1GHz to 25GHz)

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

All the modulation modes have been tested, and the worst result was report as below:

Frequency	Read Level	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Remark	Comment
(MHz)	(dBμV)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
Low Channel (2405.377 MHz)(GFSK)--Above 1G									
4810.17	57.86	5.21	35.59	44.30	54.36	74.00	-19.64	Pk	Vertical
4810.17	43.18	5.21	35.59	44.30	39.68	54.00	-14.32	AV	Vertical
7215.45	54.76	6.48	36.27	44.60	52.91	74.00	-21.09	Pk	Vertical
7215.45	42.88	6.48	36.27	44.60	41.03	54.00	-12.97	AV	Vertical
4810.11	52.42	5.21	35.55	44.30	48.88	74.00	-25.12	Pk	Horizontal
4810.11	43.33	5.21	35.55	44.30	39.79	54.00	-14.21	AV	Horizontal
7215.22	50.25	6.48	36.27	44.52	48.48	74.00	-25.52	Pk	Horizontal
7215.22	43.49	6.48	36.27	44.52	41.72	54.00	-12.28	AV	Horizontal
Mid Channel (2440.705 MHz)(GFSK)--Above 1G									
4880.14	55.43	5.21	35.66	44.20	52.10	74.00	-21.90	Pk	Vertical
4880.14	43.91	5.21	35.66	44.20	40.58	54.00	-13.42	AV	Vertical
7320.08	52.88	7.10	36.50	44.43	52.05	74.00	-21.95	Pk	Vertical
7320.08	42.28	7.10	36.50	44.43	41.45	54.00	-12.55	AV	Vertical
4880.36	52.27	5.21	35.66	44.20	48.94	74.00	-25.06	Pk	Horizontal
4880.36	40.74	5.21	35.66	44.20	37.41	54.00	-16.59	AV	Horizontal
7320.42	50.09	7.10	36.50	44.43	49.26	74.00	-24.74	Pk	Horizontal
7320.42	42.76	7.10	36.50	44.43	41.93	54.00	-12.07	AV	Horizontal
High Channel (2477.569 MHz)(GFSK)-- Above 1G									
4954.53	55.85	5.21	35.52	44.21	52.37	74.00	-21.63	Pk	Vertical
4954.53	43.64	5.21	35.52	44.21	40.16	54.00	-13.84	AV	Vertical
7431.11	53.70	7.10	36.53	44.60	52.73	74.00	-21.27	Pk	Vertical
7431.11	42.85	7.10	36.53	44.60	41.88	54.00	-12.12	AV	Vertical
4954.24	51.92	5.21	35.52	44.21	48.44	74.00	-25.56	Pk	Horizontal
4954.24	43.81	5.21	35.52	44.21	40.33	54.00	-13.67	AV	Horizontal
7431.19	52.27	7.10	36.53	44.60	51.30	74.00	-22.70	Pk	Horizontal
7431.19	41.43	7.10	36.53	44.60	40.46	54.00	-13.54	AV	Horizontal

Note: (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).  
(2) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor  
(3)All other emissions more than 20dB below the limit.

# ■ Spurious Emission in Band edge

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/ Mode4	Test By:	Lake Xie

All the modulation modes have been tested, and the worst result was report as below:

Frequency (MHz)	Meter Reading (dBμV)	Cable Loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
GFSK-hopping									
2310.00	54.46	2.97	27.80	43.80	41.43	74	-32.57	Pk	Horizontal
2310.00	44.75	2.97	27.80	43.80	31.72	54	-22.28	AV	Horizontal
2310.00	53.57	2.97	27.80	43.80	40.54	74	-33.46	Pk	Vertical
2310.00	40.46	2.97	27.80	43.80	27.43	54	-26.57	AV	Vertical
2390.00	54.51	3.14	27.21	43.80	41.06	74	-32.94	Pk	Vertical
2390.00	40.92	3.14	27.21	43.80	27.47	54	-26.53	AV	Vertical
2390.00	51.15	3.14	27.21	43.80	37.70	74	-36.30	Pk	Horizontal
2390.00	42.88	3.14	27.21	43.80	29.43	54	-24.57	AV	Horizontal
2483.50	54.45	3.58	27.70	44.00	41.73	74	-32.27	Pk	Vertical
2483.50	43.36	3.58	27.70	44.00	30.64	54	-23.36	AV	Vertical
2483.50	52.45	3.58	27.70	44.00	39.73	74	-34.27	Pk	Horizontal
2483.50	42.79	3.58	27.70	44.00	30.07	54	-23.93	AV	Horizontal
GFSK- Non-hopping									
2310.00	50.13	2.97	27.80	43.80	37.10	74	-36.90	Pk	Horizontal
2310.00	43.80	2.97	27.80	43.80	30.77	54	-23.23	AV	Horizontal
2310.00	50.74	2.97	27.80	43.80	37.71	74	-36.29	Pk	Vertical
2310.00	44.66	2.97	27.80	43.80	31.63	54	-22.37	AV	Vertical
2390.00	50.32	3.14	27.21	43.80	36.87	74	-37.13	Pk	Vertical
2390.00	40.04	3.14	27.21	43.80	26.59	54	-27.41	AV	Vertical
2390.00	53.90	3.14	27.21	43.80	40.45	74	-33.55	Pk	Horizontal
2390.00	41.85	3.14	27.21	43.80	28.40	54	-25.60	AV	Horizontal
2483.50	54.94	3.58	27.70	44.00	42.22	74	-31.78	Pk	Vertical
2483.50	40.66	3.58	27.70	44.00	27.94	54	-26.06	AV	Vertical
2483.50	53.03	3.58	27.70	44.00	40.31	74	-33.69	Pk	Horizontal
2483.50	42.15	3.58	27.70	44.00	29.43	54	-24.57	AV	Horizontal

Note: (1) All other emissions more than 20dB below the limit.

■ Spurious Emission in Restricted Band 3260MMHz-18000MHz

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/ Mode4	Test By:	Lake Xie

All the modulation modes have been tested, and the worst result was report as below:

Frequency (MHz)	Reading Level (dBμV)	Cable Loss (dB)	Antenna (dB/m)	Preamplifier Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detection or Type	Comment
3260	62.66	4.04	29.57	44.70	51.57	74	-22.43	Pk	Vertical
3260	57.49	4.04	29.57	44.70	46.40	54	-7.60	AV	Vertical
3260	62.18	4.04	29.57	44.70	51.09	74	-22.91	Pk	Horizontal
3260	56.17	4.04	29.57	44.70	45.08	54	-8.92	AV	Horizontal
3332	63.18	4.26	29.87	44.40	52.91	74	-21.09	Pk	Vertical
3332	57.54	4.26	29.87	44.40	47.27	54	-6.73	AV	Vertical
3332	63.75	4.26	29.87	44.40	53.48	74	-20.52	Pk	Horizontal
3332	55.14	4.26	29.87	44.40	44.87	54	-9.13	AV	Horizontal
17797	57.07	10.99	43.95	43.50	68.51	74	-5.49	Pk	Vertical
17797	39.12	10.99	43.95	43.50	50.56	54	-3.44	AV	Vertical
17788	57.73	11.81	43.69	44.60	68.63	74	-5.37	Pk	Horizontal
17788	38.89	11.81	43.69	44.60	49.79	54	-4.21	AV	Horizontal

Note: (1) All other emissions more than 20dB below the limit.

### 7.3 NUMBER OF HOPPING CHANNEL

#### 7.3.1 Applicable Standard

According to FCC Part 15.247(a)(1) (iii) and ANSI C63.10-2013

#### 7.3.2 Conformance Limit

Frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels.

#### 7.3.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.3.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.3.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.3

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT must have its hopping function enabled.

Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW : To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

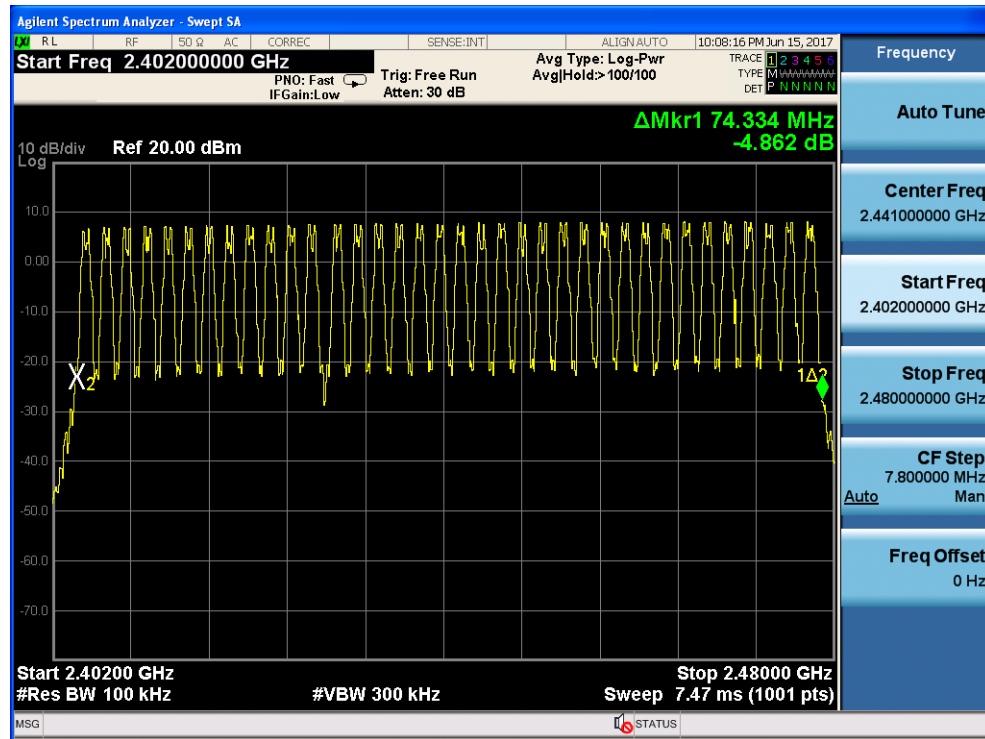
Trace = max hold

#### 7.3.6 Test Results

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode 5	Test By:	Lake Xie

Number of Hopping (Channel)	Adaptive Frequency hopping (Channel)	limit	Verdict
36	20	$\geq 15$	Pass

### Number of Hopping Channel Plot



## **7.4 HOPPING CHANNEL SEPARATION MEASUREMENT**

### **7.4.1 Applicable Standard**

According to FCC Part 15.247(a)(1) and ANSI C63.10-2013

### **7.4.2 Conformance Limit**

Frequency hopping systems operating in the 2400-2483.5MHz band shall have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

### **7.4.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.4.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.4.5 Test Procedure**

The testing follows ANSI C63.10-2013 clause 7.8.2

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = Measurement Bandwidth or Channel Separation

RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

#### 7.4.6 Test Results

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

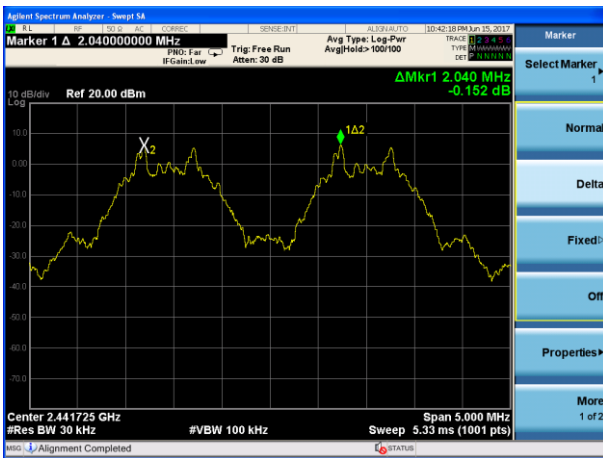
Modulation Mode	Channel Number	Channel Frequency (MHz)	Measured Channel Separation (kHz)	Limit (kHz)		Verdict
GFSK	1	2405.377	2040	>912.000	2/3 of 20dB BW	PASS
	18	2440.705	2040	>941.333	2/3 of 20dB BW	PASS
	36	2477.569	2040	>996.667	2/3 of 20dB BW	PASS

## Test Plot

Channel Separation plot on channel 01-02



Channel Separation plot on channel 17-18



Channel Separation plot on channel 35-36





## **7.5 AVERAGE TIME OF OCCUPANCY (DWELL TIME)**

### **7.5.1 Applicable Standard**

According to FCC Part 15.247(a)(1)(iii) and ANSI C63.10-2013

### **7.5.2 Conformance Limit**

The average time of occupancy on any channel shall not be greater than 0.4s within a period of 0.4s multiplied by the number of hopping channels employed.

### **7.5.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.5.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.5.5 Test Procedure**

The testing follows ANSI C63.10-2013 clause 7.8.4

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT must have its hopping function enabled.

Use the following spectrum analyzer settings:

Span = zero span, centered on a hopping channel

RBW  $\geq$  1MHz

VBW  $\geq$  RBW

Sweep = as necessary to capture the entire dwell time per hopping channel

Detector function = peak

Trace = max hold

Measure the maximum time duration of one single pulse.

Set the EUT for hop transmitting.

Measure the accumulated Dwell Time.

### 7.5.6 Test Results

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

Modulation Mode	Channel Number	Mode	Single Pulse width	Accumulated Dwell Time	Limit	Verdict
			(ms)	(ms)	(ms)	
GFSK	1	Hop	1.21	248.64	<400	PASS
	18	Hop	1.21	245.76	<400	PASS
	36	Hop	1.21	252.00	<400	PASS

Note:

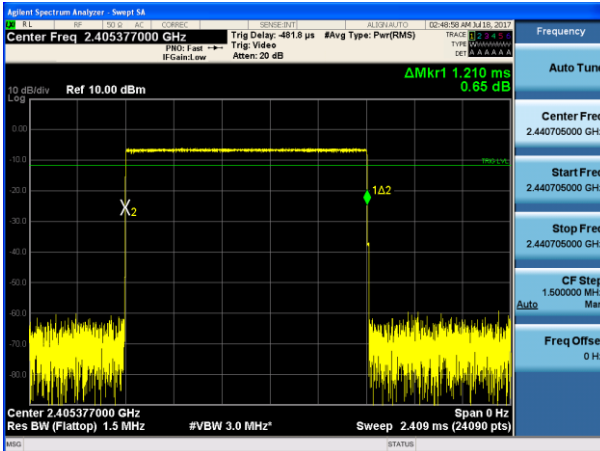
A Period Time = (channel number)\*0.4=14.4s

Accumulated Dwell Time= In a Period Time all hop time accumulated.

## Test Plot

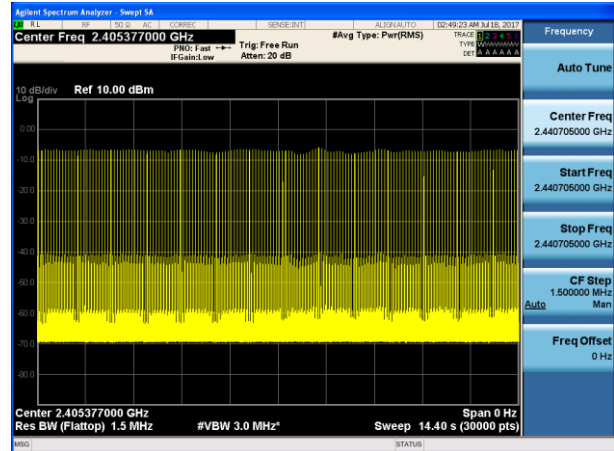
### Package Transfer Time Plot CH01

Single Burst Pulse Width: 1.210475ms



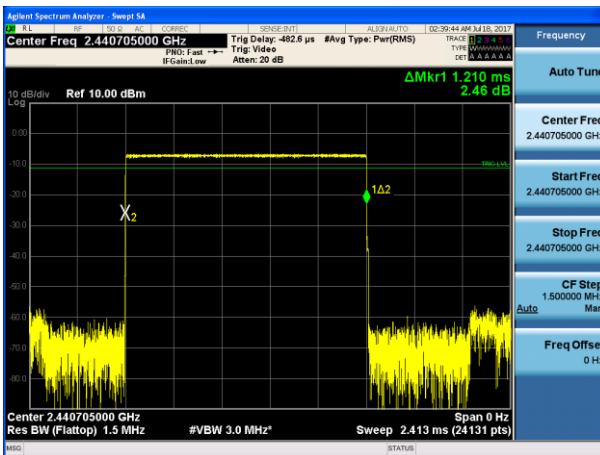
### A Period Time Plot CH01

Accumulated Dwell Time: 248.640000ms



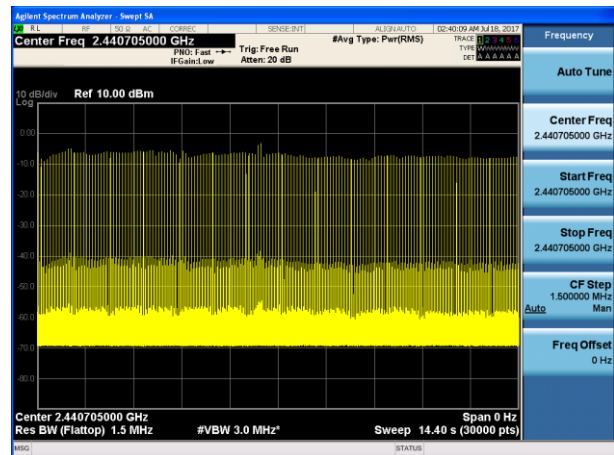
### Package Transfer Time Plot CH18

Single Burst Pulse Width: 1.210381ms



### A Period Time Plot CH18

Accumulated Dwell Time: 245.760000ms



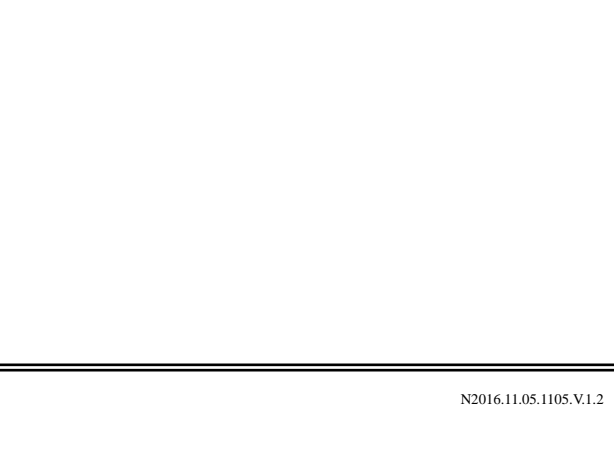
### Package Transfer Time Plot CH36

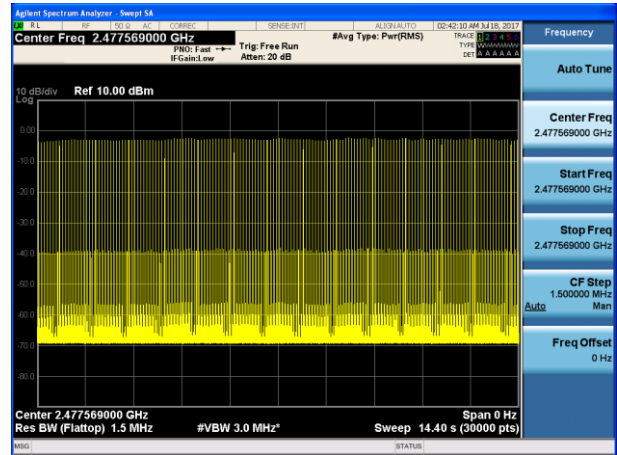
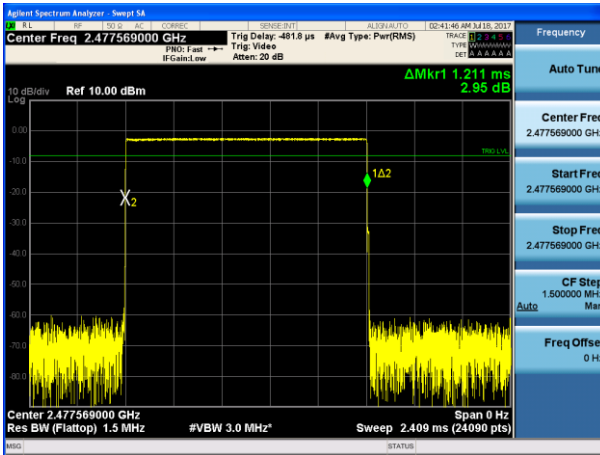
Single Burst Pulse Width: 1.210575ms



### A Period Time Plot CH36

Accumulated Dwell Time: 252.000000ms





## **7.6 20DB BANDWIDTH TEST**

### **7.6.1 Applicable Standard**

According to FCC Part 15.247(a)(1) and ANSI C63.10-2013

### **7.6.2 Conformance Limit**

No limit requirement.

### **7.6.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.6.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.6.5 Test Procedure**

The testing follows ANSI C63.10-2013 clause 6.9.2

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW  $\geq$  1% of the 20 dB bandwidth

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

### 7.6.6 Test Results

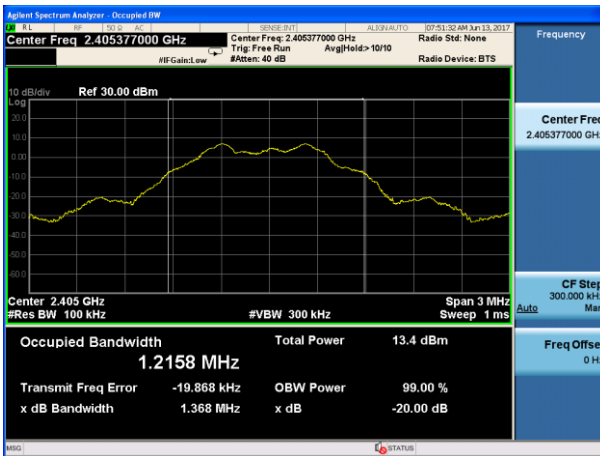
EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

Test Channel	Frequency	Measured Bandwidth (KHz)	Limit	Verdict
	(MHz)		(kHz)	
1Mbps				
1	2405.377	1368	N/A	PASS
18	2440.705	1412	N/A	PASS
36	2477.569	1495	N/A	PASS

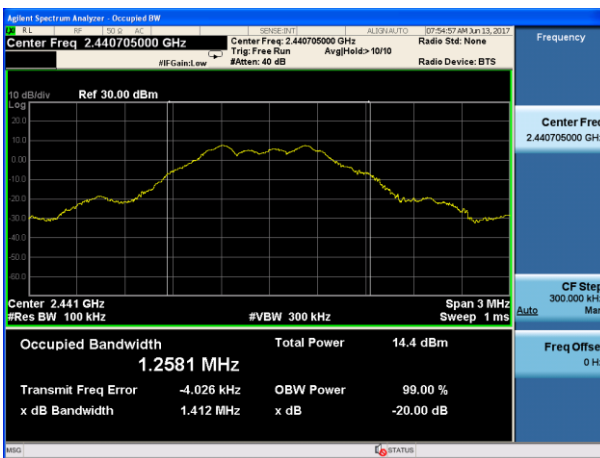
Note: N/A (Not Applicable)

## Test Plot

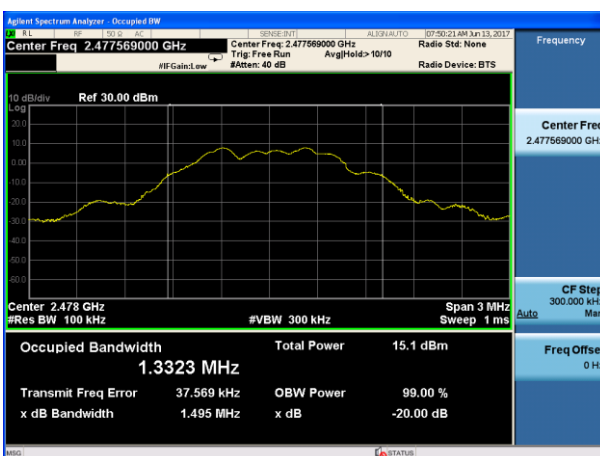
20dB Bandwidth plot on channel 01



20dB Bandwidth plot on channel 18



20dB Bandwidth plot on channel 36



## **7.7 PEAK OUTPUT POWER**

### **7.7.1 Applicable Standard**

According to FCC Part 15.247(b)(1) and ANSI C63.10-2013

### **7.7.2 Conformance Limit**

The maximum peak conducted output power of the intentional radiator shall not exceed the following: (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.

### **7.7.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.7.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.7.5 Test Procedure**

The testing follows ANSI C63.10-2013 clause 7.8.5.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

RBW  $\geq$  the 20 dB bandwidth of the emission being measured

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold



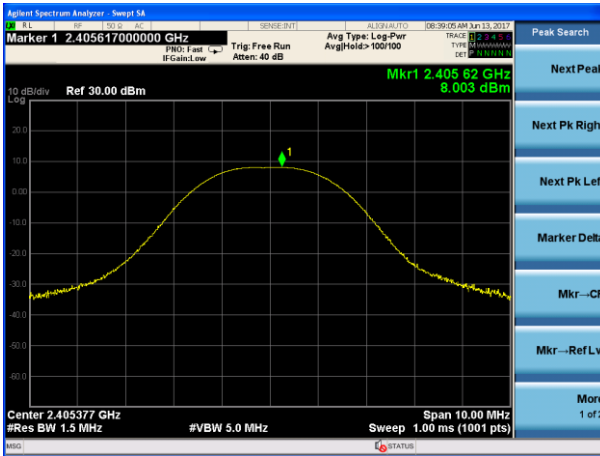
### 7.7.6 Test Results

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Lake Xie

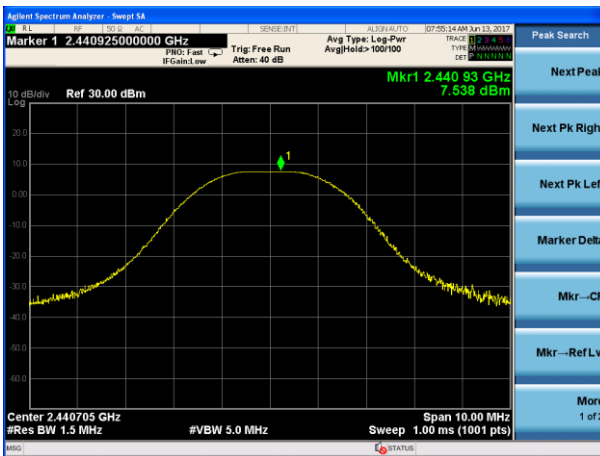
Test Channel	Frequency	Power Setting	Peak Output Power	LIMIT	Verdict
	(MHz)		(dBm)	(dBm)	
1Mbps					
1	2405.377	Default	8.003	20.97	PASS
18	2440.705	Default	7.538	20.97	PASS
36	2477.569	Default	7.873	20.97	PASS

## Test Plot

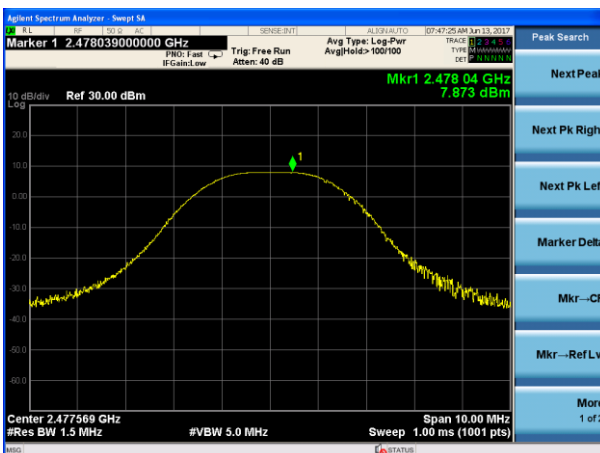
Peak output Power plot on channel 01



Peak output Power plot on channel 18



Peak output Power plot on channel 36



## **7.8 CONDUCTED BAND EDGE MEASUREMENT**

### **7.8.1 Applicable Standard**

According to FCC Part 15.247(d) and ANSI C63.10-2013

### **7.8.2 Conformance Limit**

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 §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### **7.8.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.8.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.8.5 Test Procedure**

The testing follows ANSI C63.10-2013 clause 7.8.6.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT must have its hopping function enabled.

Use the following spectrum analyzer settings:

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

RBW = 100KHz

VBW = 300KHz

Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.

Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.

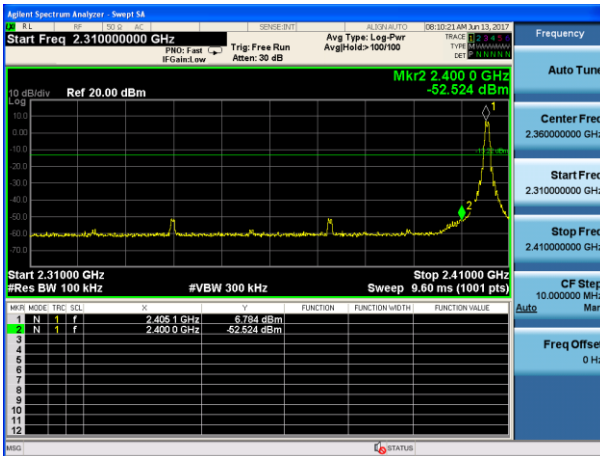
## 7.8.6 Test Results

EUT:	Baby monitor	Model No.:	Mustang RX
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2 /Mode4/ Mode 5	Test By:	Lake Xie

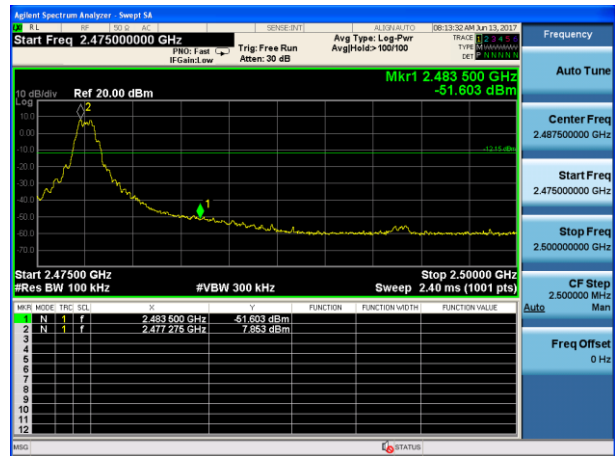
Note: Hopping enabled and disabled have evaluated, and the worst test data was reported

### Test Plot

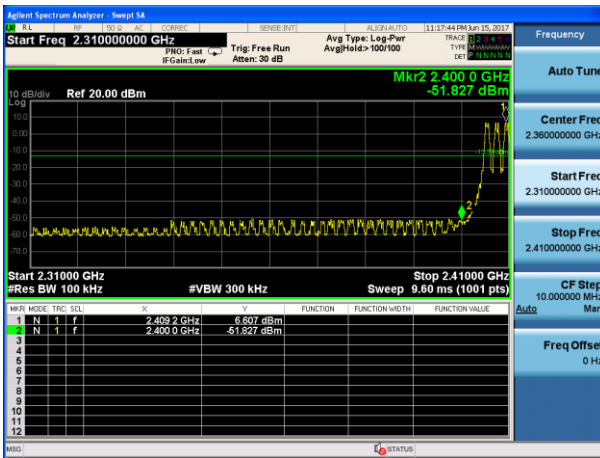
GFSK: Band Edge-Low Channel



GFSK: Band Edge-High Channel



GFSK: Band Edge-Low Channel (Hopping Mode)



GFSK: Band Edge-High Channel (Hopping Mode)



## **7.9 SPURIOUS RF CONDUCTED EMISSION**

### **7.9.1 Applicable Standard**

According to FCC Part 15.247(d) and ANSI C63.10-2013.

### **7.9.2 Conformance Limit**

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 §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### **7.9.3 Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

### **7.9.4 Test Setup**

Please refer to Section 6.1 of this test report.

### **7.9.5 Test Procedure**

Establish an emission level by using the following procedure:

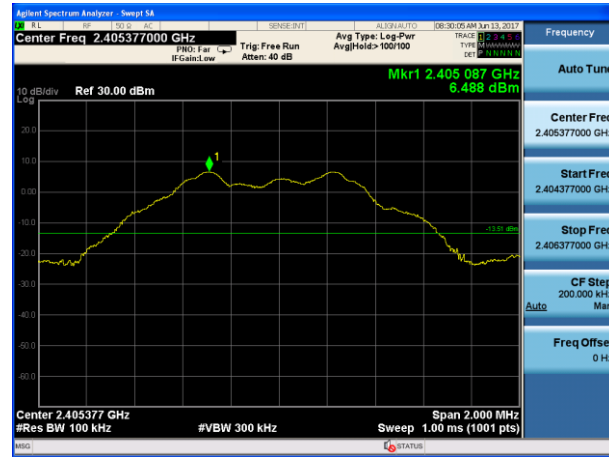
- a) Set the center frequency and span to encompass frequency range to be measured.
  - b) Set the RBW = 100 kHz.
  - c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - d) Detector = peak.
  - e) Sweep time = auto couple.
  - f) Trace mode = max hold.
  - g) Allow trace to fully stabilize.
  - h) Use the peak marker function to determine the maximum amplitude level.
- Then the limit shall be attenuated by at least 20 dB relative to the maximum amplitude level in 100 kHz.

### **7.9.6 Test Results**

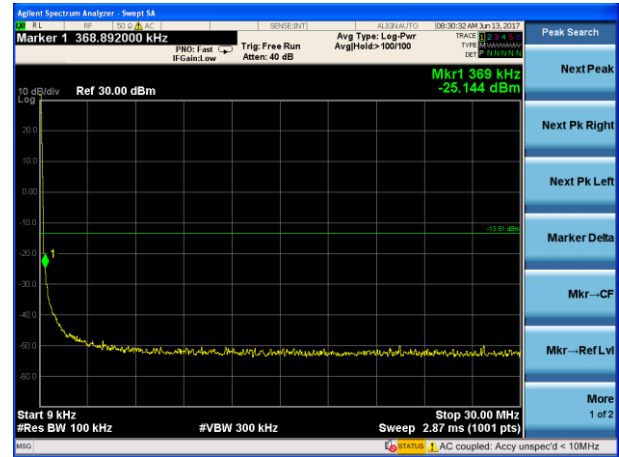
Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

# Test Plot(8-DPSK)

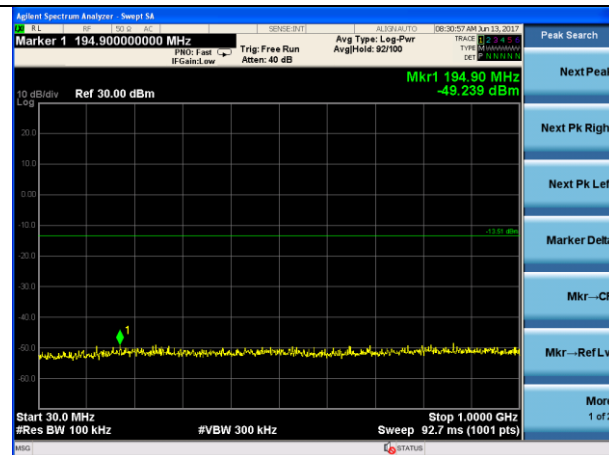
GFSK on channel 01



GFSK on channel 01



GFSK on channel 01

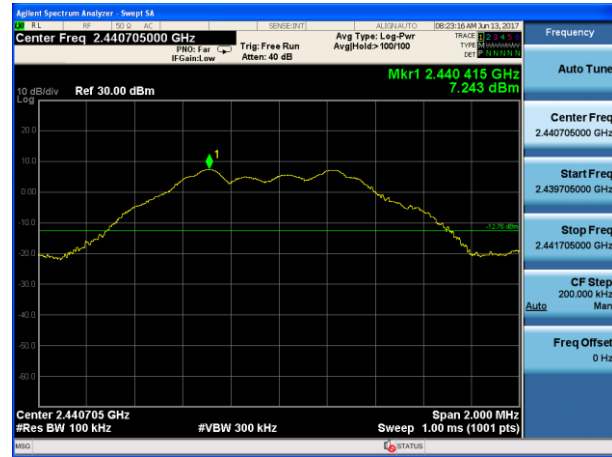


GFSK on channel 01

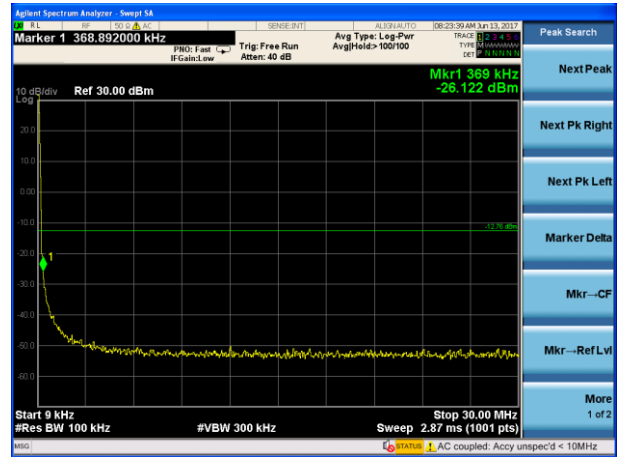


# Test Plot

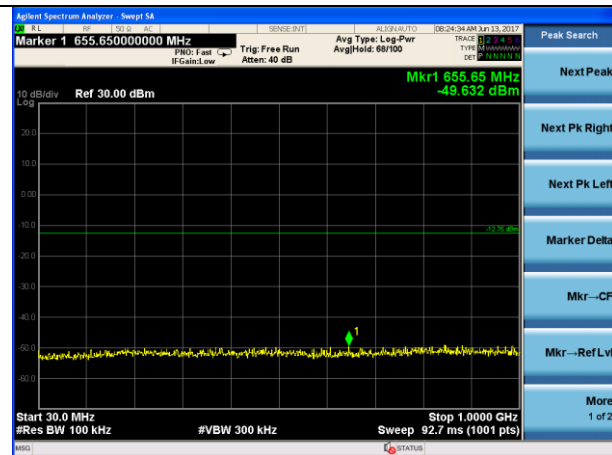
GFSK on channel 18



GFSK on channel 18



GFSK on channel 18



GFSK on channel 18

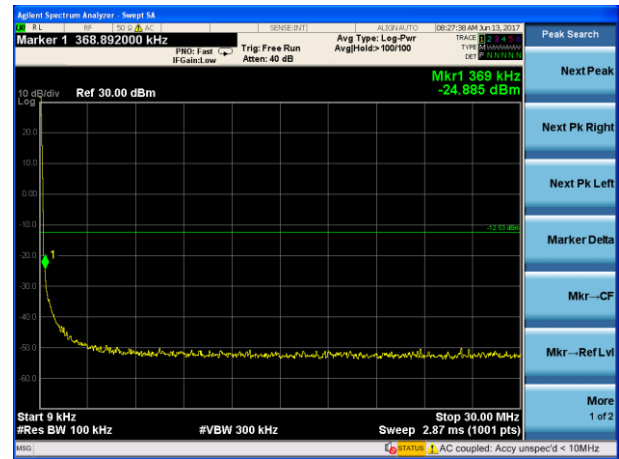


### Test Plot

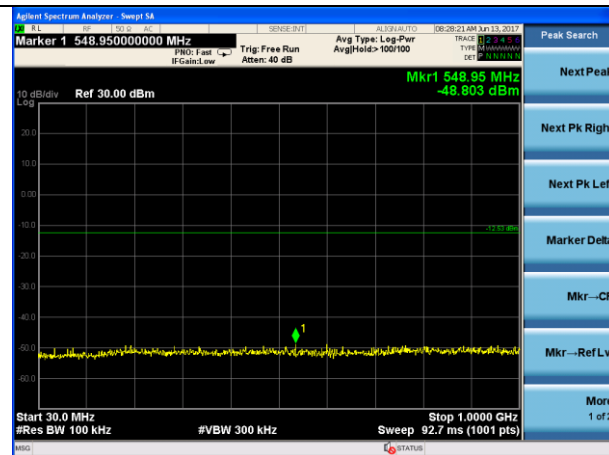
GFSK on channel 36



GFSK on channel 36



GFSK on channel 36



GFSK on channel 36





## **7.10 ANTENNA APPLICATION**

### **7.10.1 Antenna Requirement**

15.203 requirement: For intentional device, according to 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.

### **7.10.2 Result**

The EUT antenna is permanent attached Internal antenna(Gain:0dBi). It comply with the standard requirement.

END OF REPORT