

FCC TEST REPORT

Product : 1:24 RC CAR(storm crusher)
Trade mark : N/A
Model/Type reference : KD0785(5F62DB2)
FCC ID : XRZKD0785
Report Number : EED32H000389-1
Date : May 04, 2015
Regulations : See below

| Test Standards | Results |
|---|---------|
| <input checked="" type="checkbox"/> 47 CFR FCC Part 15 Subpart C 15.249: 2014 | PASS |

Prepared for
KidsRock Limited
Unit 08A, 25/F Gammon House, 12 Harcourt Road, Admiralty, Hong Kong

Prepared by
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Date: May 04, 2015



Jimmy Li
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Check No.: 1727811548

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: KidsRock Limited
 Unit 08A, 25/F Gammon House, 12 Harcourt Road, Admiralty,
 Hong Kong
Manufacturer: KidsRock Limited
 Unit 08A, 25/F Gammon House, 12 Harcourt Road, Admiralty,
 Hong Kong
FCC ID: XRZKD0785
Product: 1:24 RC CAR(strom crusher)
Trade mark: N/A
Model/Type reference: KD0785(5F62DB2)
Serial Number: N/A
Report Number: EED32H000389-1
Sample Received Date: Apr. 11, 2015
Sample tested Date: Apr. 11, 2015 to May 04, 2015

The above equipment was tested by Centre Testing International (Shenzhen) Corporation for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, Subpart C and the measurement procedure according to ANSI C63.4:2014 and ANSI C63.10:2013.

2. TEST SUMMARY

The complete list of measurements is given below:

| No. | Test Item | Rule | Result |
|-----|------------------------|--------------------------------|--------|
| 1 | 20dB/ 99% Bandwidth | FCC 15.215(c) 7& RSS-Gen 4.6.1 | PASS |
| 2 | Radiated Emission | FCC 15.249 & A2.9 | PASS |
| 3 | AC Conducted Emission | FCC PART15.207 & RSS-Gen 7.2.4 | N/A |
| 4 | Antenna Requirements * | FCC 15.203 & RSS-Gen 7.1.2 | PASS |

- According to Section 15.203 and RSS-Gen 7.1.2, 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 EUT has a built in antenna which is a short wire solder on the PCB, this is permanently attached antenna and meets the requirements of this section.
- New battery is used during all the test.

3. MEASUREMENT UNCERTAINTY

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

| Measurement items | Uncertainty |
|--------------------|-------------|
| Radiated Emissions | 4.5 dB |

4. TEST EQUIPMENT LIST

| Equipment | Manufacturer | Model | Serial No. | Due Date |
|----------------------------------|--------------|-----------|------------|------------|
| 3M Chamber & Accessory Equipment | ETS-LINDGREN | FACT-3 | 3510 | 07/12/2016 |
| Spectrum Analyzer | Agilent | E4443A | MY45300910 | 01/12/2016 |
| Receiver | R&S | ESCI | 100435 | 07/08/2015 |
| TRILOG Broadband Antenna | schwarzbeck | VULB 9163 | 617 | 07/13/2015 |
| Multi device Controller | ETS-LINGREN | 2090 | 00057230 | N/A |
| Horn Antenna | ETS-LINGREN | 3117 | 00057407 | 07/07/2015 |
| Microwave Preamplifier | Agilent | 8449B | 3008A02425 | 01/28/2016 |
| Spectrum Analyzer | R&S | FSP40 | 100416 | 07/06/2015 |

5. SUPPORT EQUIPMENT LIST

| No. | Device Type | Brand | Model | Series No. | Data Cable | Power Cord |
|------|-------------|-------|-------|------------|------------|------------|
| ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| ---- | ---- | ---- | ---- | ---- | ---- | ---- |

6. PRODUCT INFORMATION

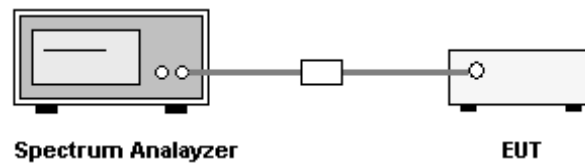
| Items | Description |
|-------------------------|-------------------------|
| Rating | DC 6V |
| Intentional Transceiver | Intentional Transmitter |
| Modulation | GFSK |
| Frequency Range | 2.406~2.480GHz |
| Channel Number | 16 |
| Type | Integrate Antenna |
| Antenna Gain | 2.54dBi |
| Connector | fixed on board |

7. 20DB/ 99% BANDWIDTH MEASUREMENT

7.1 LIMITS

None

7.2 BLOCK DIAGRAM OF TEST SETUP



7.3 TEST PROCEDURE

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set spectrum analyzer's RBW and VBW to applicable value with Peak in Max Hold.
3. A PEAK output reading and 20dB/99% BW function in spectrum analyzer were taken.

7.4 TEST RESULT

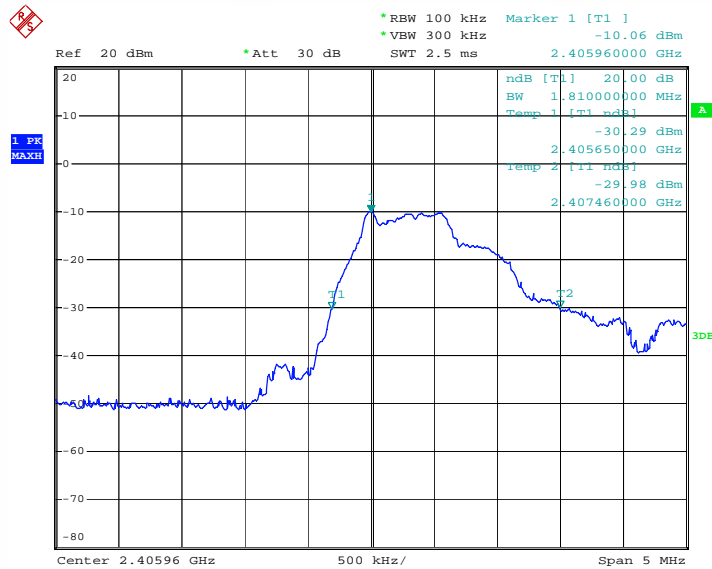
20dB Bandwidth:

| Channel | Frequency (GHz) | 20 dB BW (MHz) | 99% BW (MHz) |
|---------|-----------------|----------------|--------------|
| Low | 2.406 | 1.81 | 1.95 |
| Middle | 2.443 | 1.79 | 1.91 |
| High | 2.480 | 1.97 | 2.39 |

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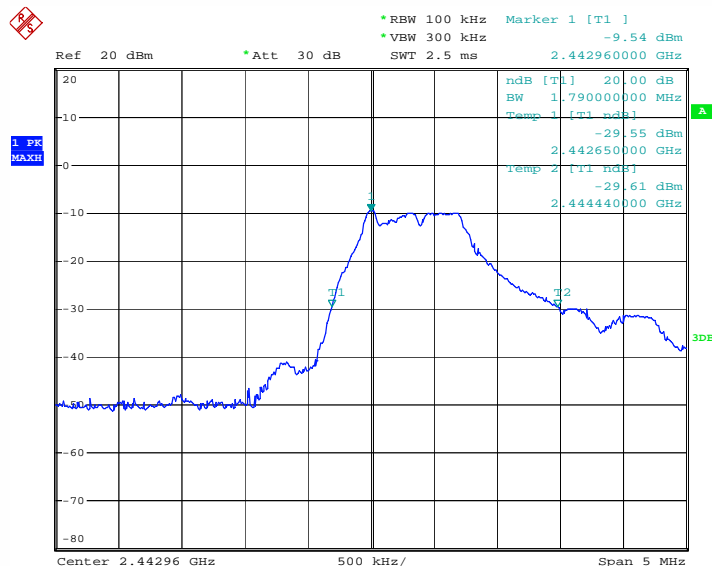
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Please see the following plots:
20dB BW:



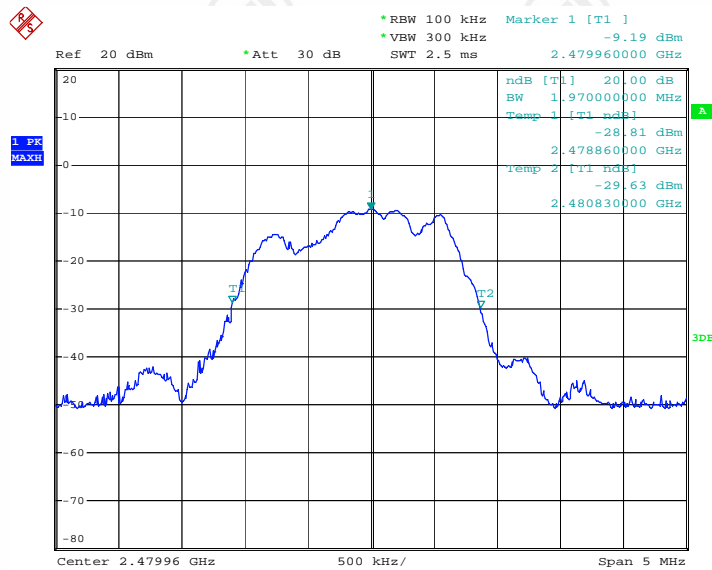
Date: 16.APR.2015 11:33:19

Channel low



Date: 16.APR.2015 11:38:46

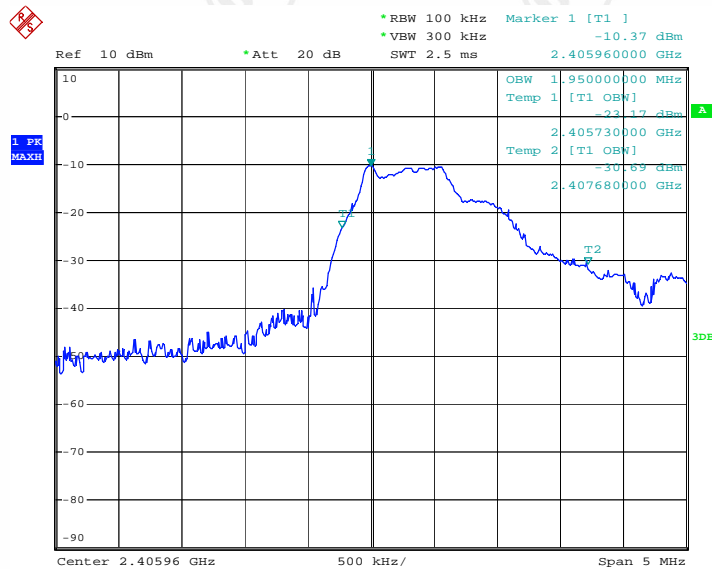
Channel middle



Date: 16.APR.2015 11:45:17

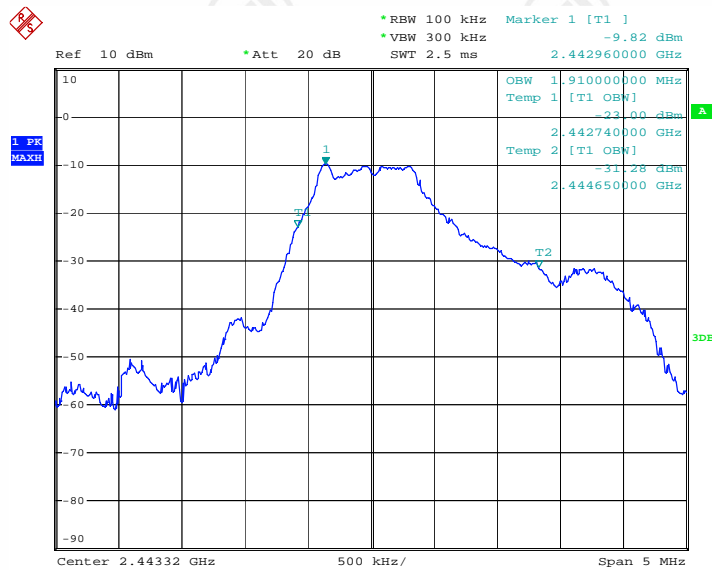
Channel high

99% BW:



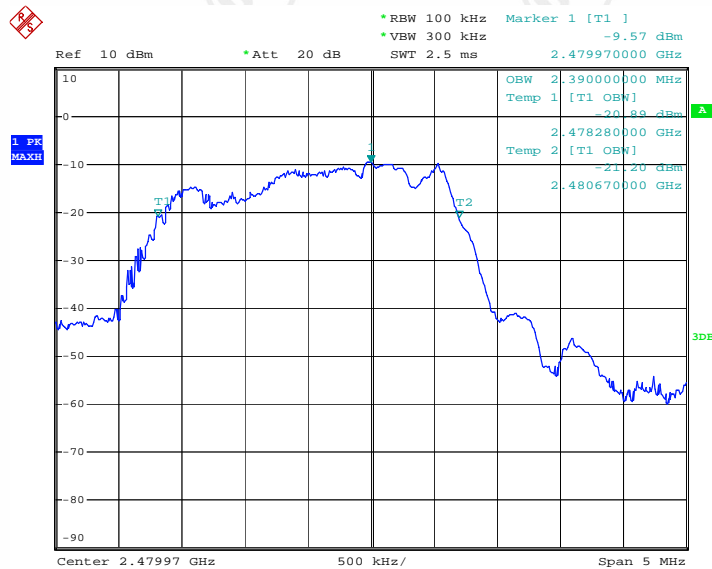
Date: 15.APR.2015 18:30:29

Channel low



Date: 15.APR.2015 18:26:04

Channel middle



Date: 15.APR.2015 18:35:41

Channel high

8. RADIATED EMISSIONS MEASUREMENT

8.1 LIMITS

(1) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental frequency | Field strength of fundamental (millivolts/ meter) | Field strength of harmonics (microvolts/ meter) |
|-----------------------|---|---|
| 2400–2483.5 MHz | 50 | 500 |

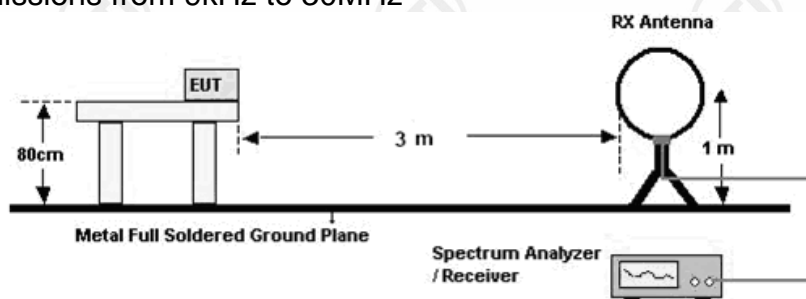
(2) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209 as the following , whichever is the lesser attenuation.

| Frequency (MHz) | Field strength (mV/m) | Distance (m) |
|-----------------|-----------------------|--------------|
| 0.009-0.490 | $2400/F(\text{kHz})$ | 300 |
| 0.490-1.705 | $24000/F(\text{kHz})$ | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

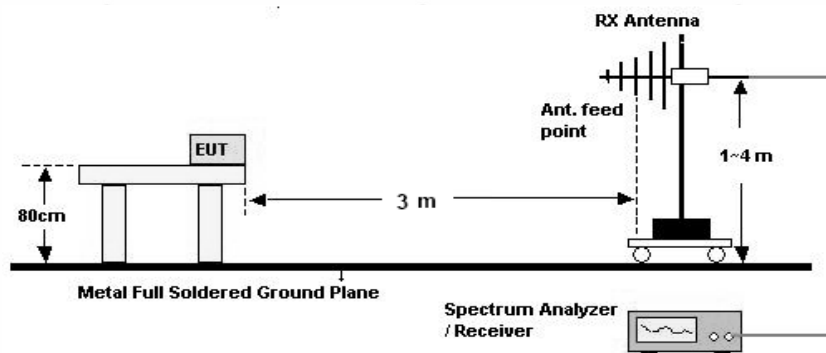
Note: the tighter limit applies at the band edges.

8.2 BLOCK DIAGRAM OF TEST SETUP

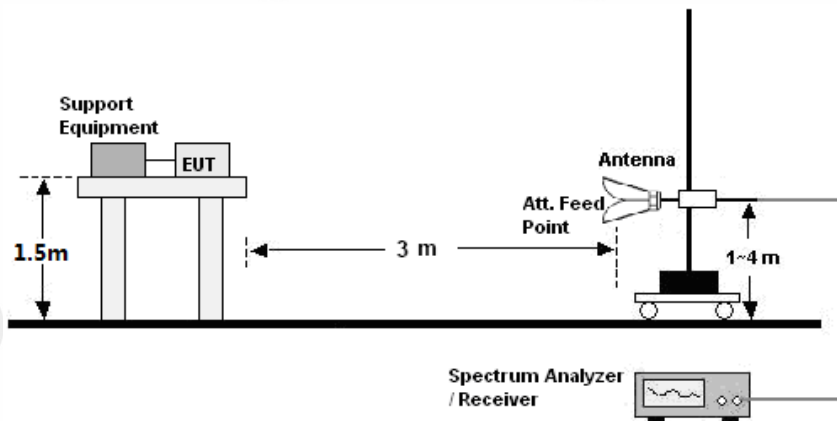
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30 - 1000MHz



For radiated emissions from 1GHz to 25GHz



8.3 TEST PROCEDURE

Below 30MHz

- The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.
- For each suspected emission, the Product was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

30MHz ~ 1GHz:

- The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 100 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value (120 kHz RBW): vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

Above 1GHz:

- The EUT was placed on the non-conductive turntable 1.5m above the ground at a chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the

antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

8.4 TEST RESULT

All the modes of operation (X, Y, Z) were investigated and the worst-case emissions are reported.

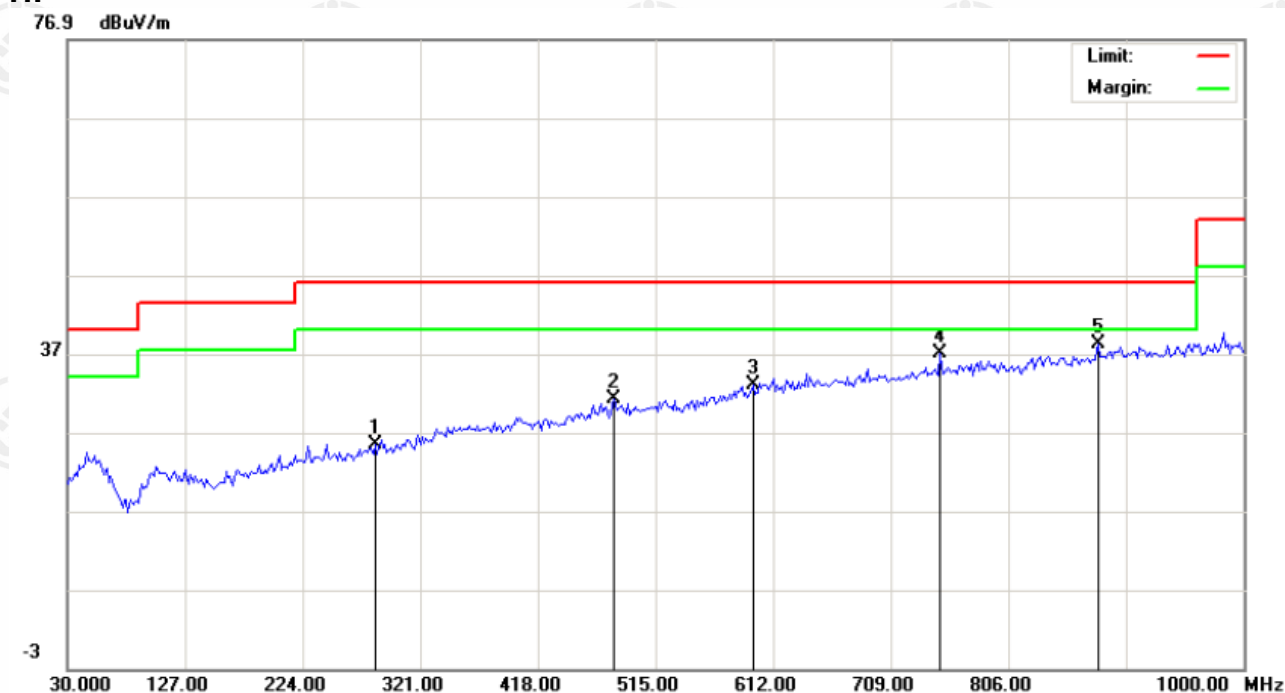
Below 30MHz:

No emissions were found higher than the background below 30MHz and background is lower than the limit, so it deems to compliance with the limit without recorded.

30MHz ~ 1GHz:

The test data of low channel, middle channel and high channel are almost same in frequency bands 30MHz to 1GHz, and the data of middle channel are chosen as representative in below:

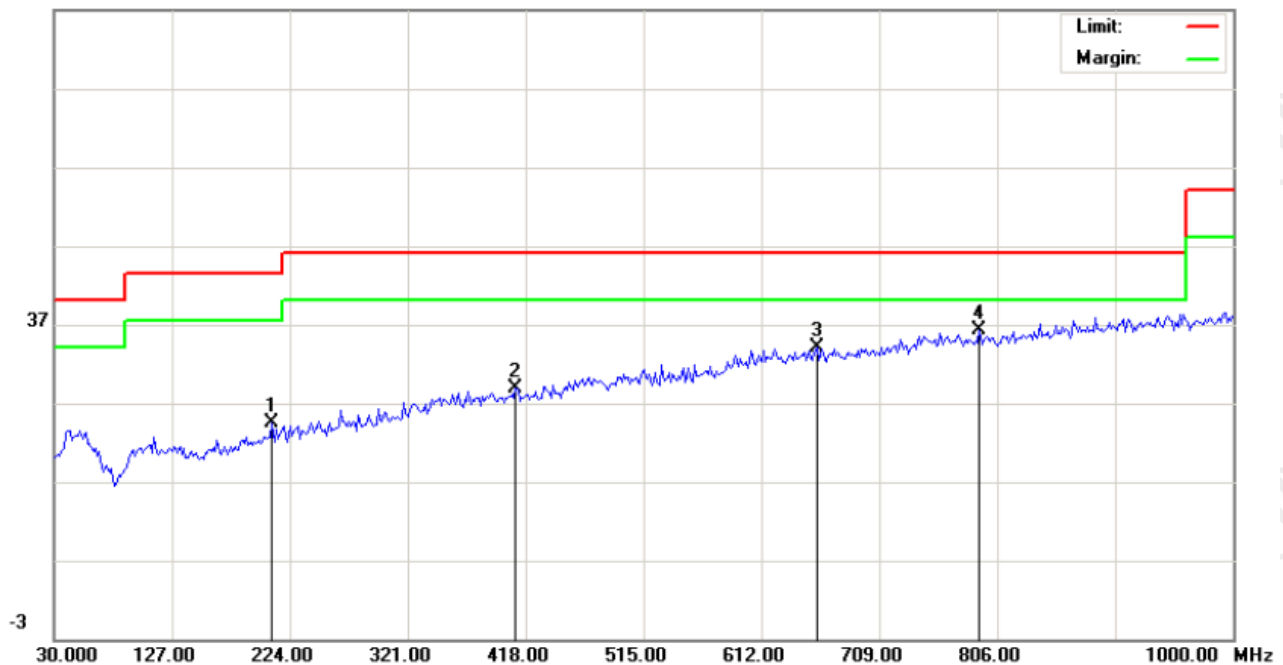
H:



| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-----|-------------------------|-------------------------|----|-----|-------------------|-----|----------------|-----|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 283.8167 | 9.09 | | | 16.31 | 25.40 | | | 46.00 | | -20.60 | | P | |
| 2 | 481.0500 | 9.93 | | | 21.25 | 31.18 | | | 46.00 | | -14.82 | | P | |
| 3 | 595.8333 | 9.27 | | | 23.73 | 33.00 | | | 46.00 | | -13.00 | | P | |
| 4 | 749.4167 | 10.92 | | | 26.18 | 37.10 | | | 46.00 | | -8.90 | | P | |
| 5 | 880.3667 | 10.45 | | | 27.69 | 38.14 | | | 46.00 | | -7.86 | | P | |

V:

76.9 dBuV/m



| No. | Freq. MHz | Reading_Level (dBuV) | | | Correct Factor dB | Measurement (dBuV/m) | | | Limit (dBuV/m) | | Margin (dB) | | P/F | Comment |
|-----|--------------|-------------------------|----|-----|-------------------------|-------------------------|----|-----|-------------------|-----|----------------|-----|-----|---------|
| | | Peak | QP | AVG | | peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 209.4499 | 9.73 | | | 14.61 | 24.34 | | | 43.50 | | -19.16 | | P | |
| 2 | 409.9166 | 9.05 | | | 19.70 | 28.75 | | | 46.00 | | -17.25 | | P | |
| 3 | 657.2667 | 9.48 | | | 24.54 | 34.02 | | | 46.00 | | -11.98 | | P | |
| 4 | 791.4500 | 9.75 | | | 26.37 | 36.12 | | | 46.00 | | -9.88 | | P | |

Above 1GHz:
Test Results-(Measurement Distance: 3m) Channel low 2406MHz_GFSK mode:

| Frequency (MHz) | Measurement (dBuV/m) | Limit (dBuV/m) | Detector Type | Antenna (H/V) | Result (P/F) |
|-----------------|----------------------|----------------|---------------|---------------|--------------|
| 2390.0 | 32.15 | 74 | PK | H | P |
| 2400.0 | 33.09 | 74 | PK | H | P |
| 2406.0* | 92.38 | 114 | PK | H | P |
| 4812.0 | 43.16 | 74 | PK | H | P |
| 2390.0 | 32.09 | 74 | PK | V | P |
| 2400.0 | 33.18 | 74 | PK | V | P |
| 2406.0* | 91.09 | 114 | PK | V | P |
| 4812.0 | 40.78 | 74 | PK | V | P |

*: fundamental frequency

Test Results-(Measurement Distance: 3m) Channel middle 2443MHz_GFSK mode:

| Frequency (MHz) | Measurement (dBuV/m) | Limit (dBuV/m) | Detector Type | Antenna (H/V) | Result (P/F) |
|-----------------|----------------------|----------------|---------------|---------------|--------------|
| 2443.0* | 92.17 | 114 | PK | H | P |
| 4886.0 | 39.78 | 74 | PK | H | P |
| 2443.0* | 89.78 | 114 | PK | V | P |
| 4886.0 | 40.13 | 74 | PK | V | P |

*: fundamental frequency

Test Results-(Measurement Distance: 3m) Channel high 2480MHz_GFSK mode:

| Frequency (MHz) | Measurement (dBuV/m) | Limit (dBuV/m) | Detector Type | Antenna (H/V) | Result (P/F) |
|-----------------|----------------------|----------------|---------------|---------------|--------------|
| 2480.0* | 92.17 | 114 | PK | H | P |
| 2483.5 | 40.13 | 74 | PK | H | P |
| 4960.0 | 42.17 | 74 | PK | H | P |
| 2480.0* | 89.34 | 114 | PK | V | P |
| 2483.5 | 39.27 | 74 | PK | V | P |
| 4960.0 | 40.15 | 74 | PK | V | P |

*: fundamental frequency

Remark:

1. The above tables show that the frequencies peak data are all below the average limit, so the average data of these frequencies are deemed to fulfill the average limits and not reported.
2. No emission found from 18GHz to 25GHz.
3. All outside of operating frequency band and restricted band specified are below 15.209.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP



TEST SETUP OF RADIATED EMISSION (30MHz~1GHz)



TEST SETUP OF RADIATED EMISSION (Above 1GHz)

APPENDIX 2 PHOTOGRAPHS OF EUT



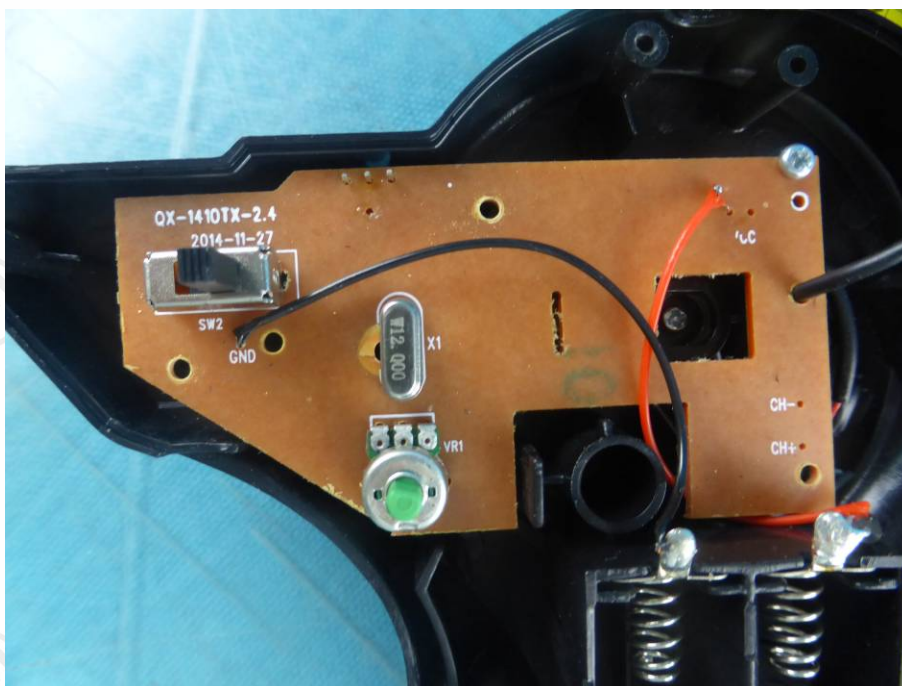
View of external EUT-1



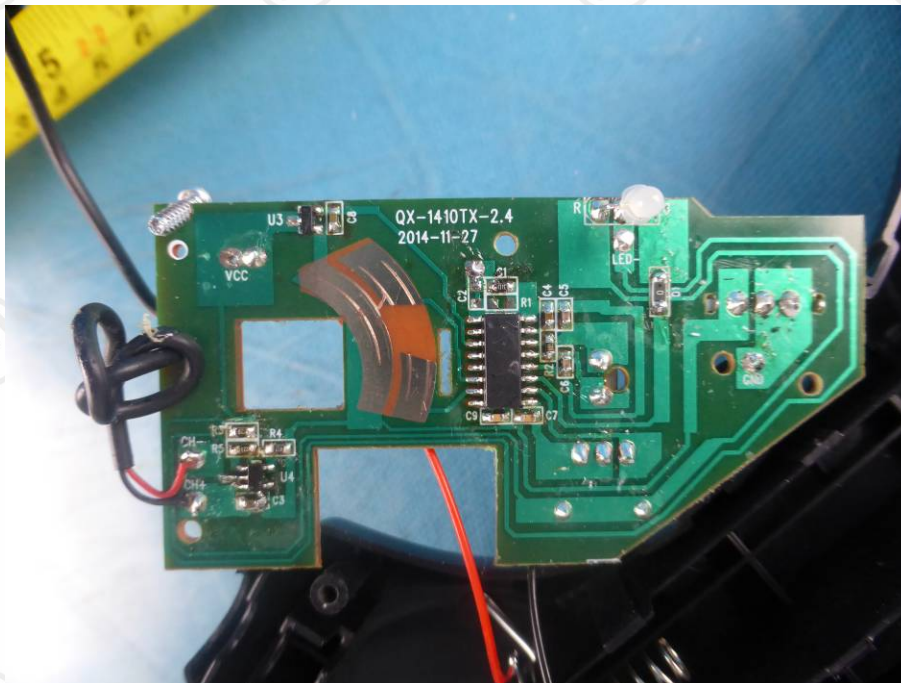
View of external EUT-2



View of internal EUT-1



View of internal EUT-2



View of internal EUT-3

*** End of Report ***

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