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LAB LOCATION: DONG GUAN, CHINA REPORT NUMBER: 63315-110124
DATE IN: DATE OUT: Nov. 18, 2015

Product Description: R/C, Boat

Style No. : #15994

Model No. : 15994(777-333) P.O/Order No. : HSC50394

FCC ID : 2ACO3-15994

Applicant's name : Lucky Group(H.K.) Limited

Address : Building B, Lucky Industrial Park, Hongjin Road, Hongmei

Town, Dongguan City, Guangdong province, China

Manufacturer : Lucky Group(H.K.) Limited

Address : Building B, Lucky Industrial Park, Hongjin Road, Hongmei

Town, Dongguan City, Guangdong province, China

Laboratory Name

Address

: Modern Testing Services (Dongguan) Limited

No.76, Liang Ping Road, Xin Jiu Wei Village, Liaobu, Town Dongguan City, Guangdong Province, China

Tel: (86)769-81120818 Fax: (86)769-81120815

Report No. : 63315-110124



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TEST RESULT CERTIFICATION

| Applicant's name: | Lucky Group(H.K.) Limited | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| Address: | ress: Building B, Lucky Industrial Park, Hongjin Road, Hongmei | | | | | | | |
| | Town, Dongguan City, Guangdong province, China | | | | | | | |
| Manufacture's Name: | Lucky Group(H.K.) Limited | | | | | | | |
| Address: | Building B, Lucky Industrial Park, Hongjin Road, Hongmei | | | | | | | |
| | Town, Dongguan City, Guangdong province, China | | | | | | | |
| Product description | | | | | | | | |
| Trade Mark: | / | | | | | | | |
| Product name: | R/C, Boat | | | | | | | |
| Style No: | #15994 | | | | | | | |
| Standards: | FCC Rules and Regulations Part 15 Subpart C Section 15.249 ANSI C63.4: 2014 | | | | | | | |
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| Date of Test | : | | | | | | | |
| Date (s) of performance of tests. | : Nov. 11, 2015 ~ Nov. 18, 2015 | | | | | | | |
| Date of Issue | : Nov. 18, 2015 | | | | | | | |
| Test Result | : Pass | | | | | | | |
| | | | | | | | | |
| Prepared by: | lokon | | | | | | | |
| | JANG Ping, Loken Project Engineer | | | | | | | |
| | Project Engineer | | | | | | | |
| Reviewed by: | Score | | | | | | | |
| | WANG Yang, Oscar | | | | | | | |
| | Project Supervisor | | | | | | | |
| Approved by: | en: Chen | | | | | | | |
| | CHEN Chu Peng, Ken | | | | | | | |
| | EMC Manager | | | | | | | |



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1. TEST SUMMARY

1.1 Description of Test

| Description of Test | Result |
|--------------------------------|-----------|
| CONDUCTED EMISSIONS TEST | Compliant |
| RADIATED EMISSION TEST | Compliant |
| BAND EDGE | Compliant |
| OCCUPIED BANDWIDTH MEASUREMENT | Compliant |
| ANTENNA REQUIREMENT | Compliant |

1.2 Test Location

Test Firm : Dongguan Dongdian Testing Service Co., Ltd

Address : No.17 Zongbu road 2, Songshan Lake Sci&Tech, DongGuan

City, Guangdong province,523808 China

FCC Registration Number: 270092

1.3 Measurement Uncertainty

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2
Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2



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2. GENERAL INFORMATION

2.1 General Description of EUT

Equipment : R/C, Boat Style No. : #15994 : HSC50394

FCC ID : 2ACO3-15994

Model Difference : N/A

Modulation Type : GFSK

Antenna Type : Internal

Antenna Gain : 0 dBi

Operation frequency : 2402-2482MHz

Number of Channels : 81

Data Rate : /

Modulation Type : /

Power Source : 6 x AA (1.5V) batteries

Power Rating : 9V DC

Adapter Model : /

EUT Noted : R/C, Boat is non-hopping system



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Carrier Frequency of Channels

| | equency each of ch | | | | | | |
|---------|--------------------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1 | 2402 | 21 | 2422 | 41 | 2442 | 61 | 2462 |
| 2 | 2403 | 22 | 2423 | 42 | 2443 | 62 | 2463 |
| 3 | 2404 | 23 | 2424 | 43 | 2444 | 63 | 2464 |
| 4 | 2405 | 24 | 2425 | 44 | 2445 | 64 | 2465 |
| 5 | 2406 | 25 | 2426 | 45 | 2446 | 65 | 2466 |
| 6 | 2407 | 26 | 2427 | 46 | 2447 | 66 | 2467 |
| 7 | 2408 | 27 | 2428 | 47 | 2448 | 67 | 2468 |
| 8 | 2409 | 28 | 2429 | 48 | 2449 | 68 | 2469 |
| 9 | 2410 | 29 | 2430 | 49 | 2450 | 69 | 2470 |
| 10 | 2411 | 30 | 2431 | 50 | 2451 | 70 | 2471 |
| 11 | 2412 | 31 | 2432 | 51 | 2452 | 71 | 2472 |
| 12 | 2413 | 32 | 2433 | 52 | 2453 | 72 | 2473 |
| 13 | 2414 | 33 | 2434 | 53 | 2454 | 73 | 2474 |
| 14 | 2415 | 34 | 2435 | 54 | 2455 | 74 | 2475 |
| 15 | 2416 | 35 | 2436 | 55 | 2456 | 75 | 2476 |
| 16 | 2417 | 36 | 2437 | 56 | 2457 | 76 | 2477 |
| 17 | 2418 | 37 | 2438 | 57 | 2458 | 77 | 2478 |
| 18 | 2419 | 38 | 2439 | 58 | 2459 | 78 | 2479 |
| 19 | 2420 | 39 | 2440 | 59 | 2460 | 79 | 2480 |
| 20 | 2421 | 40 | 2441 | 60 | 2461 | 80 | 2481 |
| | | | | | | 81 | 2482 |

2.2 Operation of EUT during testing Operating Mode

The mode is used: Transmitting mode

Low Channel: 2402MHz Middle Channel: 2442MHz High Channel: 2482MHz

2.3 Description of Test Setup

Operation of EUT during testing



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2.4 Measurement Instruments List

| | Vicasarcinent mistra | | | | | |
|------|---|----------------------|------------|------------------|--------------|---------------|
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
| 1. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | May 19, 2015 | 1 Year |
| 2. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | May 19, 2015 | 1 Year |
| 3. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | May 19, 2015 | 1 Year |
| 4. | EMI Test Software ES-K1 | Rohde & Schwarz | N/A | N/A | N/A | N/A |
| 5. | EMI Test Receiver | Rohde & Schwarz | ESCI | 100627 | May 19, 2015 | 1 Year |
| 6. | Trilog Broadband Antenna | Schwarzbeck | VULB9163 | VULB 9163-289 | May 17, 2015 | 1 Year |
| 7. | Pre-amplifier | Compliance Direction | PAP-0203 | 22008 | May 19, 2015 | 1 Year |
| 8. | EMI Test Software EZ-EMC | SHURPLE | N/A | N/A | N/A | N/A |
| 9. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | May 19, 2015 | 1 Year |
| 10. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | May 19, 2015 | 1 Year |
| 11. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | May 19, 2015 | 1 Year |
| 12. | EMI Test Software ES-K1 | Rohde & Schwarz | N/A | N/A | N/A | N/A |
| 13. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | May 19, 2015 | 1 Year |
| 14. | EMI Receiver | Rohde & Schwarz | ESCI | 100627 | May 19, 2015 | 1 Year |
| 15. | LISN | SchwarzBeck | NSLK 8126 | 8126377 | May 19, 2015 | 1 Year |
| 16. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | May 19, 2015 | 1 Year |
| 17. | EMI Test Software ES-K1 | Rohde & Schwarz | N/A | N/A | N/A | N/A |
| 18. | Programmable AC Power source | SOPH POWER | PAG-1050 | 630250 | May 26, 2015 | 1 Year |
| 19. | Harmonic and Flicker Analyzer | LAPLACE | AC2000A | 272629 | May 26, 2015 | 1 Year |
| 20. | Harmonic and Flicker Test Software AC 2000A | LAPLACE | N/A | N/A | N/A | N/A |
| 21. | ESD Simulators | KIKUSUI | KES4021 | LJ003477 | May 25, 2015 | 1 Year |
| 22. | EFT Generator | EMPEK | EFT-4040B | 0430928N | May 19, 2015 | 1 Year |
| 23. | Shielding Room | ChangZhou ZhongYu | JB88 | SEL0166 | May 19, 2015 | 1 Year |
| 24. | Signal Generator 9KHz~2.2GHz | R&S | SML02 | SEL0143 | May 19, 2015 | 1 Year |
| 25. | Signal Generator 9KHz~1.1GHz | R&S | SML01 | SEL0135 | May 19, 2015 | 1 Year |
| 26. | Power Meter | R&S | NRVS | SEL0144 | May 19, 2015 | 1 Year |
| 27. | RF Level Meter | | URV35 | SEL0137 | May 19, 2015 | 1 Year |
| 28. | Audio Analyzer | R&S | UPL | SEL0136 | May 19, 2015 | 1 Year |
| 29. | RF-Amplifier 150KHz~150MHz | BONN Elektronik | BSA1515-25 | SEL0157 | May 19, 2015 | 1 Year |
| 30. | Stripline Test Cell | Erika Fiedler | VDE0872 | SEL0167 | N/A | N/A |
| 31. | TV Test Transmitter | R&S | SFM | SEL0159 | May 17, 2015 | 1 Year |
| 32. | TV Generator PAL | R&S | SGPF | SEL0138 | May 19, 2015 | 1 Year |
| 33. | TV Generator Ntsc | R&S | SGMF | SEL0140 | May 19, 2015 | 1 Year |
| 34. | TV Generator Secam | R&S | SGSF | SEL0139 | May 19, 2015 | 1 Year |
| | | | | | | |



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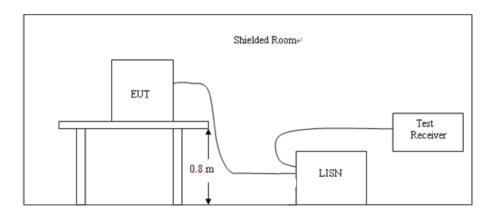
| 35. | TV Test Transmitter 0.3MHz~3300MHz | R&S | SFQ | SEL0142 | May 19, 2015 | 1 Year |
|-----|-------------------------------------|---------------------|-------------------------|---------|---------------|--------|
| 36. | MPEG2 Measurement Generator | R&S | DVG | SEL0141 | May 19, 2015 | 1 Year |
| 37. | Spectrum Analyzer | R&S | FSP | SEL0177 | May 19, 2015 | 1 Year |
| 38. | Matching | R&S | RAM | SEL0146 | N/A | N/A |
| 39. | Matching | R&S | RAM | SEL0148 | N/A | N/A |
| 40. | Absorbing Clamp | R&S | MDS21 | SEL0158 | May 17, 2015 | 1 Year |
| 41. | Coupling Set | Erika Fiedler | Rco, Rci, MC, AC, LC | SEL0149 | N/A | N/A |
| 42. | Filters | Erika Fiedler | Sr, LBS | SEL0150 | N/A | N/A |
| 43. | Matching Network | Erika Fiedler | MN, T1 | SEL0151 | N/A | N/A |
| 44. | Fully Anechoic Room | ChangZhou ZhongYu | 854 | SEL0169 | Jun. 10, 2015 | 1 Year |
| 45. | Signal Generator | R&S | SML03 | SEL0068 | May 17, 2015 | 1 Year |
| 46. | RF-Amplifier 30M~1GHz | Amplifier Reasearch | 250W1000A | SEL0066 | Oct. 24, 2015 | 1 Year |
| 47. | RF-Amplifier 0.8~3.0GHz | Amplifier Reasearch | 60S1G3 | SEL0065 | Oct. 24, 2015 | 1 Year |
| 48. | Power Meter | R&S | NRVD | SEL0069 | May 17, 2015 | 1 Year |
| 49. | Power Sensor | R&S | URV5-Z2 | SEL0071 | May 17, 2015 | 1 Year |
| 50. | Power Sensor | R&S | URV5-Z2 | SEL0072 | May 17, 2015 | 1 Year |
| 51. | Software EMC32 | R&S | EMC32-S | SEL0082 | N/A | N/A |
| 52. | Log-periodic Antenna | Amplifier Reasearch | AT1080 | SEL0073 | N/A | N/A |
| 53. | Antenna Tripod | Amplifier Reasearch | TP1000A | SEL0074 | N/A | N/A |
| 54. | High Gain Horn Antenna(0.8-5GHz) | Amplifier Reasearch | AT4002A | SEL0075 | N/A | N/A |
| 55. | Double-Ridged | | | | | |
| | Waveguide Horn Antenna | ROHDE& | HF907 | 100013 | May 17, 2015 | 1 Year |
| | (0.8-18GHz) | SCHWARZ | | | | |
| 56. | Log-periodic Antenna | ROHDE& | LII OFOO7 | 100406 | Mov 17, 2015 | 1 V22" |
| | (850MHz-26.5GHz) | SCHWARZ | HL050S7 | 100496 | May 17, 2015 | 1 Year |



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3. CONDUCTED EMISSION TEST

3.1 Block Diagram of Test Setup



3.2 Conducted Power Line Emission Limit

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

| Fraguanay | M | Maximum RF Line Voltage (dBμV) | | | | | | |
|--------------------|------|--------------------------------|---------|--------|--|--|--|--|
| Frequency (MHz) | CLAS | SS A | CLASS B | | | | | |
| (11112) | Q.P. | Ave. | Q.P. | Ave. | | | | |
| 0.15 - 0.50 | 79 | 66 | 66-56* | 56-46* | | | | |
| 0.50 - 5.00 | 73 | 60 | 56 | 46 | | | | |
| 5.00 - 30.0 | 73 | 60 | 60 | 50 | | | | |

^{*} Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.3 Test Procedure

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.
- 2, Support equipment, if needed, was placed as per ANSI C63.4.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes

3.4 Test Result

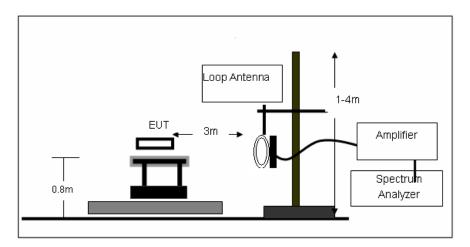
N/A (Because the sample have not AC power source, so the test item result is NA)



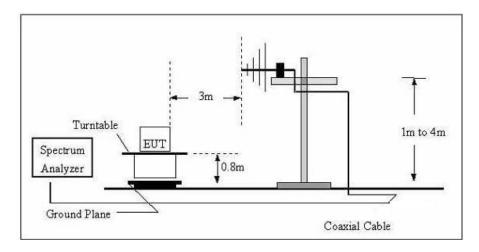
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4. RADIATED EMISSION TEST

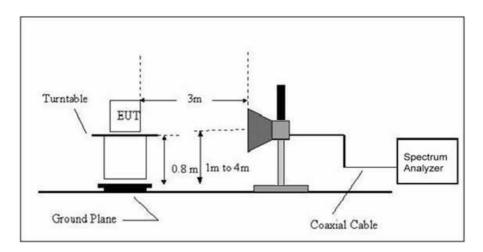
- 4.1 Block Diagram of Test Setup
 - (1) Radiated Emission Test-Up Frequency Below 30MHz



(2) Radiated Emission Test-Up Frequency 30MHz~1GHz



(3) Radiated Emission Test-Up Frequency Above 1GHz





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4.2 Limits

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency range | Distance Meters | Field Strengths Limit (15.209) | | | |
|-----------------|-----------------|--------------------------------|--------------------|--|--|
| MHz | | μV/m | | | |
| 0.009 ~ 0.490 | 300 | 2400/F | (kHz) | | |
| 0.490 ~ 1.705 | 30 | 24000/ | F(kHz) | | |
| 1.705 ~ 30 | 30 | 30 |) | | |
| 30 ~ 88 | 3 | 10 | 0 | | |
| 88 ~ 216 | 3 | 150 | | | |
| 216 ~ 960 | 3 | 200 | | | |
| Above 960 | 3 | 50 | 0 | | |
| Frequency range | Distance Meters | Field Strengths Limit (15.249) | | | |
| MHz | | μV/m | μV/m | | |
| | | (Field strength of | (Field strength of | | |
| | | fundamental) | Harmonics) | | |
| 902 ~ 928 | 3 | 50 | 500 | | |
| 2400 ~ 2483.5 | 3 | 50 | 500 | | |
| 5725 ~ 5875 | 3 | 50 500 | | | |
| 24000 ~ 2425000 | 3 | 250 | 2500 | | |

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

4.3 Test Procedure

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7. Based on the Frequency Generator in the device include 26MHz. The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a).

Note:

Three axes are chosen for pretest, the Y axis is the worst mode for final test. For battery operated equipment, the equipment tests shall be performed using a new battery.

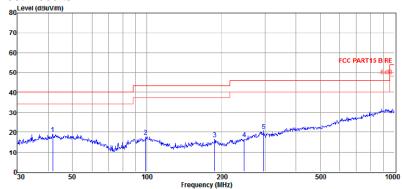
4.4 Test Result PASS



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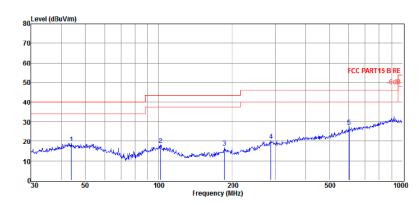
All the test modes completed for test. The worst case of Radiated Emission Is transmitter CH 2402; the test data of this mode was reported.

Below 1GHz Test Results:



| Item (Mark) | Freq (MHz) | Read Level (dBµV) | Antenna Factor (dB/m) | Cable Loss dB | Result Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Detector | Polarization |
|----------------|---------------|-------------------------|-----------------------------|---------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1 | 41.57 | 3.87 | 14.00 | 1.01 | 18.88 | 40.00 | -21.12 | Peak | VERTICAL |
| 2 | 98.83 | 3.99 | 12.25 | 1.49 | 17.73 | 43.50 | -25.77 | Peak | VERTICAL |
| 3 | 187.75 | 3.69 | 10.57 | 2.11 | 16.37 | 43.50 | -27.13 | Peak | VERTICAL |
| 4 | 246.82 | 2.60 | 11.50 | 2.38 | 16.48 | 46.00 | -29.52 | Peak | VERTICAL |
| 5 | 296.18 | 4.19 | 13.83 | 2.69 | 20.71 | 46.00 | -25.29 | Peak | VERTICAL |

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.



| Item (Mark) | Freq (MHz) | Read Level (dBµV) | Antenna Factor (dB/m) | Cable Loss dB | Result Level (dBµV/m) | Limit Line (dBµV/m) | Over Limit (dB) | Detector | Polarization |
|----------------|---------------|-------------------------|-----------------------------|---------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1 | 43.81 | 3.07 | 14.90 | 1.03 | 19.00 | 40.00 | -21.00 | Peak | HORIZONTAL |
| 2 | 101.64 | 4.16 | 12.50 | 1.50 | 18.16 | 43.50 | -25.34 | Peak | HORIZONTAL |
| 3 | 185.79 | 3.99 | 10.57 | 2.10 | 16.66 | 43.50 | -26.84 | Peak | HORIZONTAL |
| 4 | 289.00 | 3.40 | 14.25 | 2.67 | 20.32 | 46.00 | -25.68 | Peak | HORIZONTAL |
| 5 | 603.54 | 5.39 | 18.21 | 3.98 | 27.58 | 46.00 | -18.42 | Peak | HORIZONTAL |

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.

Remark:

- (1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.



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Above 1 GHz Test Results: Horizontal CH Low (2402MHz)

| | Freq | Preamp Factor | Read Level | | Antenna Factor | | Limit Line | Over Limit | Remark |
|---|----------|------------------|---------------|-------|-------------------|--------|---------------|---------------|---------|
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 2402.00 | 26.32 | 79.68 | 7.34 | 28.72 | 89.42 | 94.00 | -4.58 | Average |
| 2 | 2402.00 | 26.32 | 91.60 | 7.34 | 28.72 | 101.34 | 114.00 | -12.66 | Peak |
| 3 | 4804.00 | 27.49 | 31.78 | 11.96 | 32.94 | 49.19 | 74.00 | -24.81 | Peak |
| 4 | 6831.00 | 27.87 | 16.60 | 16.60 | 36.75 | 42.08 | 74.00 | -31.92 | Peak |
| 5 | 9483.00 | 28.59 | 15.98 | 16.92 | 37.98 | 42.29 | 74.00 | -31.71 | Peak |
| 6 | 13087.00 | 29.22 | 12.11 | 18.32 | 41.10 | 42.31 | 74.00 | -31.69 | Peak |

Vertical CH Low (2402MHz)

| | Freq | Preamp Freq Factor | | Preamp Read Factor Level | | CableAntenna Loss Factor | | | Limit Line | Over Limit | Remark |
|---|----------|-----------------------|-------|-----------------------------|-------|-----------------------------|--------|--------|---------------|---------------|--------|
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | | | |
| 1 | 2402.00 | 26.32 | 79.45 | 7.34 | 28.72 | 89.19 | 94.00 | -4.81 | Average | | |
| 2 | 2402.00 | 26.32 | 91.59 | 7.34 | 28.72 | 101.33 | 114.00 | -12.67 | Peak | | |
| 3 | 4804.00 | 27.49 | 31.71 | 11.96 | 32.94 | 49.12 | 74.00 | -24.88 | Peak | | |
| 4 | 6712.00 | 27.84 | 15.64 | 16.60 | 36.44 | 40.84 | 74.00 | -33.16 | Peak | | |
| 5 | 9619.00 | 28.65 | 16.27 | 16.93 | 38.10 | 42.65 | 74.00 | -31.35 | Peak | | |
| 6 | 12985.00 | 29.20 | 14.84 | 18.20 | 40.66 | 44.50 | 74.00 | -29.50 | Peak | | |

Horizontal CH Middle (2442MHz)

| | | Preamp | Read | Cable | Antenna | | Limit | Over | |
|---|----------|--------|-------|-------|---------|--------|--------|--------|---------|
| | Freq | Factor | Level | Loss | Factor | Level | Line | Limit | Remark |
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 2442.00 | 26.33 | 79.47 | 7.48 | 28.76 | 89.38 | 94.00 | -4.62 | Average |
| 2 | 2442.00 | 26.33 | 91.27 | 7.48 | 28.76 | 101.18 | 114.00 | -12.82 | Peak |
| 3 | 4884.00 | 27.53 | 31.49 | 12.14 | 33.11 | 49.21 | 74.00 | -24.79 | Peak |
| 4 | 7137.00 | 27.93 | 15.91 | 16.60 | 37.26 | 41.84 | 74.00 | -32.16 | Peak |
| 5 | 10231.00 | 28.82 | 18.32 | 17.01 | 38.77 | 45.28 | 74.00 | -28.72 | Peak |
| 6 | 13376.00 | 29.27 | 13.48 | 18.65 | 42.44 | 45.30 | 74.00 | -28.70 | Peak |



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Vertical CH Middle (2442MHz)

| | | Freamp | Read | Cable | Intenna | | Limit | Över | |
|---|----------|--------|-------|-------|---------|--------|--------|--------|---------|
| | Freq | Factor | Level | Loss | Factor | Level | Line | Limit | Remark |
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 2442.00 | 26.33 | 79.52 | 7.48 | 28.76 | 89.43 | 94.00 | -4.57 | Average |
| 2 | 2442.00 | 26.33 | 91.66 | 7.48 | 28.76 | 101.57 | 114.00 | -12.43 | Peak |
| 3 | 4884.00 | 27.53 | 31.57 | 12.14 | 33.11 | 49.29 | 74.00 | -24.71 | Peak |
| 4 | 7341.00 | 27.97 | 16.69 | 16.62 | 37.34 | 42.68 | 74.00 | -31.32 | Peak |
| 5 | 11370.00 | 28.94 | 15.14 | 17.24 | 39.79 | 43.23 | 74.00 | -30.77 | Peak |
| 6 | 13546.00 | 29.31 | 10.25 | 18.83 | 43.05 | 42.82 | 74.00 | -31.18 | Peak |

Horizontal CH High (2482MHz)

| | | Preamp | Read | Cable. | Antenna | | Limit | Over | |
|---|----------|--------|-------|--------|---------|--------|--------|--------|---------|
| | Freq | Factor | Level | Loss | Factor | Level | Line | Limit | Remark |
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | - |
| 1 | 2482.00 | 26.34 | 79.62 | 7.57 | 28.79 | 89.64 | 94.00 | -4.36 | Average |
| 2 | 2482.00 | 26.34 | 91.45 | 7.57 | 28.79 | 101.47 | 114.00 | -12.53 | Peak |
| 3 | 4964.00 | 27.58 | 31.11 | 12.36 | 33.32 | 49.21 | 74.00 | -24.79 | Peak |
| 4 | 7103.00 | 27.92 | 15.71 | 16.60 | 37.24 | 41.63 | 74.00 | -32.37 | Peak |
| 5 | 11455.00 | 28.95 | 12.90 | 17.26 | 39.86 | 41.07 | 74.00 | -32.93 | Peak |
| 6 | 14770.00 | 29.52 | 12.99 | 19.85 | 39.48 | 42.80 | 74.00 | -31.20 | Peak |

Vertical CH High (2482MHz)

| | | Preamp | Read | Cable. | Antenna | | Limit | Over | |
|---|----------|--------|-------|--------|---------|--------|--------|--------|---------|
| | Freq | Factor | Level | Loss | Factor | Level | Line | Limit | Remark |
| | MHz | dB | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | - |
| 1 | 2482.00 | 26.34 | 79.30 | 7.57 | 28.79 | 89.32 | 94.00 | -4.68 | Average |
| 2 | 2482.00 | 26.34 | 91.59 | 7.57 | 28.79 | 101.61 | 114.00 | -12.39 | Peak |
| 3 | 4964.00 | 27.58 | 31.22 | 12.36 | 33.32 | 49.32 | 74.00 | -24.68 | Peak |
| 4 | 7018.00 | 27.90 | 17.62 | 16.60 | 37.21 | 43.53 | 74.00 | -30.47 | Peak |
| 5 | 10129.00 | 28.81 | 16.07 | 16.99 | 38.61 | 42.86 | 74.00 | -31.14 | Peak |
| 6 | 13818.00 | 29.36 | 10.96 | 19.14 | 43.32 | 44.06 | 74.00 | -29.94 | Peak |



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Remark:

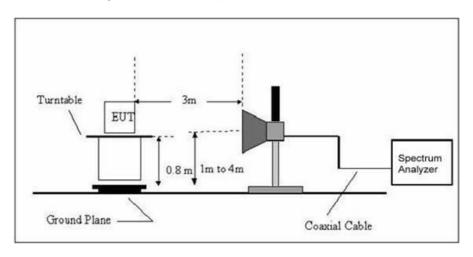
- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



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5. BAND EDGE

5.1 Block Diagram of Test Setup



5.2 Limits

FCC PART 15.249(d) 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, whichever is the lesser attenuation.

5.3 Test Procedure

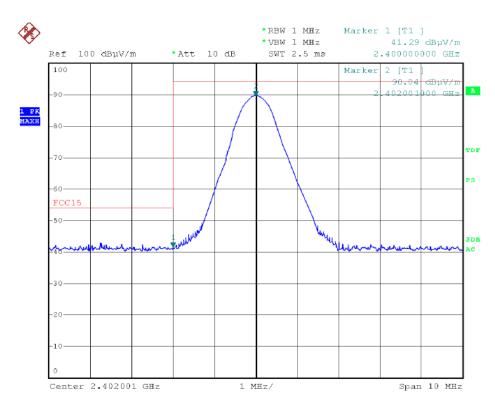
The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 1MHz and VBW to 1MHz to measure the peak field strength and set RBW to 1MHz and VBW to 1MHz to measure the average radiated field strength. The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 1MHz and VBW to 1MHz, to measure the conducted peak band edge.

5.4 Test Result PASS



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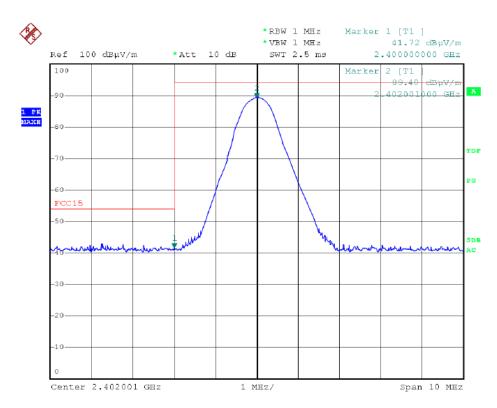
CH: Low 2402MHz Antenna polarization: V





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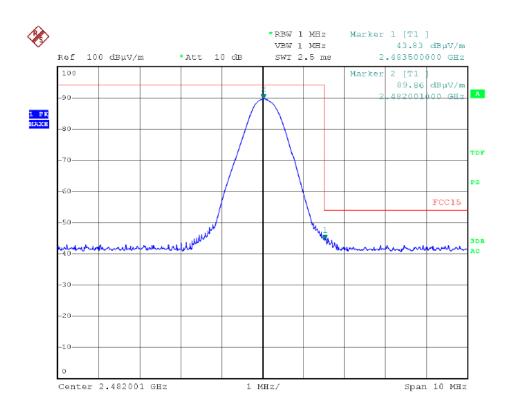
CH: Low 2402MHz Antenna polarization: H





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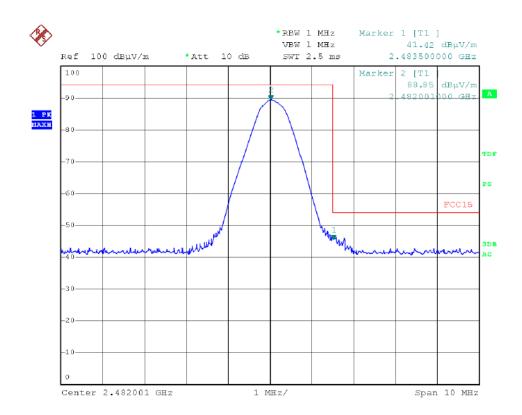
CH: High 2482MHz Antenna polarization: V





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CH: High 2482MHz Antenna polarization: H

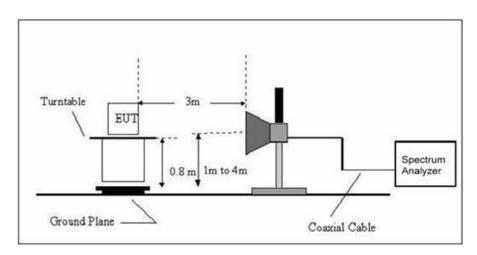




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6. OCCUPIED BANDWIDTH MEASUREMENT

6.1 Block Diagram of Test Setup



6.2 Test Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Set EUT as operation in fixed frequency emission.
- 3. Based on FCC Part15 C Section 15.239(a): RBW= 30KHz. VBW= 100 KHz, Span=3MHz.
- 4. The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.

6.3 Test Result

PASS

| Channel Frequency | 99% Bandwidth | Result |
|-------------------|---------------|--------|
| (MHz) | (MHz) | |
| 2402 | 1.401 | Pass |
| 2442 | 1.407 | Pass |
| 2482 | 1.392 | Pass |



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CH: 2402MHz



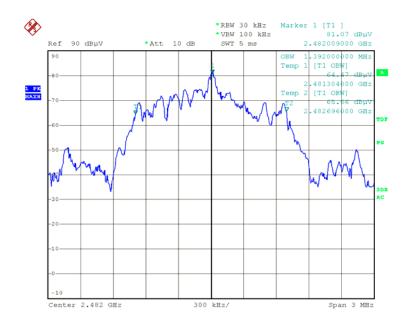
CH: 2442MHz





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CH: 2482MHz



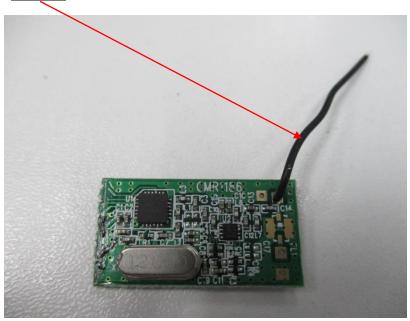


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7. ANTENNA REQUIREMENT

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. Antenna is fixed by enclosure, can not be changed except take apart the product.

<u>Antenna</u>





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8. PHOTOGRAPH OF TEST

Radiated Emission







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NOTE:

If there is question or concern regarding the above results, please contact the appropriate lab person below:

General question & concern: Olay Yip

Costumer Service Coordinator 86 769 8112 0818 Ext. 880 sales02@mts-china.com

Technical question & concern: CHEN Chu Peng, Kait

EMC Manager

(86) 769 8112 0818 Ext. 838 Kchen@mts-china.com