

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Soundmax Electronics Limited

Car radio

Model Number: CMS3

FCC ID: 2AB7S-CMS3

Prepared for : Soundmax Electronics Limited
17/F EU YANG SANG TOWER, 11-15 CHATHAM
ROAD,T.S.T, KOWLOON, HONG KONG

Prepared By : EST Technology Co., Ltd.
San Tun Management Zone, Houjie District, Dongguan, China

Tel: 86-769-83081888-808

Report Number: ESTE-R1606019

Date of Test : June 01 ~ 20, 2016


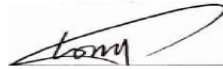

Date of Report : June 22, 2016

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Test Report Verification

| | | | |
|--|--|---|--------------------|
| Applicant: Address: | Soundmax Electronics Limited 17/F EU YANG SANG TOWER, 11-15 CHATHAM ROAD, T.S.T, KOWLOON, HONG KONG | | |
| Manufacturer Address: | Soundmax Electronics Limited 17/F EU YANG SANG TOWER, 11-15 CHATHAM ROAD, T.S.T, KOWLOON, HONG KONG | | |
| E.U.T: | Car radio | | |
| Model Number: | CMS3 | | |
| Power Supply: | DC 12V | | |
| Test Voltage: | DC 12V | | |
| Trade Name: | SOUNDMAX ; Clarion | Serial No.: | ----- |
| Date of Receipt: | June 01, 2016 | Date of Test: | June 01 – 20, 2016 |
| Test Specification: | FCC Rules and Regulations Part 15 Subpart C:2016 ANSI C63.10:2013 | | |
| Test Result: | <p>The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements.</p> <p style="text-align: right;">This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: June 22, 2016</p> | | |
| Prepared by: | Tested by: | Approved by: | |
|  |  |  | |
| Ada / Assistant | Tony.Tang/ Engineer | IcemanHu / Manager | |
| Other Aspects: | None. | | |
| <i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i> | | | |
| <i>This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.</i> | | | |



1. GENERAL INFORMATION

1.1. Description of Device (EUT)

| | | |
|---------------------|---|---|
| Product Name | : | Car radio |
| FCC ID | : | 2AB7S-CMS3 |
| Model Number | : | CMS3 |
| Operation frequency | : | 2402MHz~2480MHz |
| Number of channel | : | 79 |
| Antenna | : | Internal antenna, 4dBi gain |
| Modulation | : | BT V3.0 BDR: GFSK BT V3.0 EDR: $\pi/4$ -DQPSK BT V3.0 EDR: 8-DPSK |
| Sample Type | : | Prototype production |

2. SUMMARY OF TEST

2.1. Summary of test result

| Description of Test Item | Standard | Results |
|---|---|---------|
| Maximum Peak Output Power | FCC Part 15: 15.247(b)(1) | PASS |
| 20dB Bandwidth | FCC Part 15: 15.247(a)(1) | PASS |
| Carrier Frequency Separation | FCC Part 15: 15.247(a)(1) | PASS |
| Number Of Hopping Channel | FCC Part 15: 15.247(a)(1)(iii) | PASS |
| Dwell Time | FCC Part 15: 15.247(a)(1)(iii) | PASS |
| Radiated Emissions | FCC Part 15: 15.209 FCC Part 15: 15.247(d) | PASS |
| Band Edge Compliance | FCC Part 15: 15.247(d) | PASS |
| Power Line Conducted Emissions | FCC Part 15: 15.207 | N/A |
| Antenna requirement | FCC Part 15: 15.203 | PASS |
| Note: Because the product power supply for DC battery, so don't need to AC power line conducted test. | | |

2.2. Test Facilities

| | | |
|---------------|---|---|
| EMC Lab | : | Certificated by CNAL, CHINA Registration No.: L5288 Date of registration: December 07, 2015 Certificated by FCC, USA Registration No.: 989591 Date of registration: November 20, 2013 Certificated by Industry Canada Registration No.: 9405A-1 Date of registration: December 30, 2015 Certificated by VCCI, Japan Registration No.: R-3663 & C-4103 Date of registration: July 25, 2011 Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001 Date of registration: January 07, 2011 Certificated by TUV/PS, Shenzhen Registration No.: SCN1017 Date of registration: January 27, 2011 Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L1-18 Date of registration: April 28, 2011 Certificated by Siemic, Inc. Registration No.: SLCN021 Date of registration: November 8, 2011 Certificated by Nemko, Hong Kong Registration No.: 175193 Date of registration: May 4, 2011 |
| Name of Firm | : | EST Technology Co., Ltd. |
| Site Location | : | San Tun Management Zone, Houjie Town, Dongguan, Guangdong, China |

2.3. Measurement uncertainty

| Test Item | Uncertainty |
|---|-------------|
| Uncertainty for Conduction emission test | 2.54dB |
| Uncertainty for Radiation Emission test (30MHz-1GHz) | 3.62dB |
| Uncertainty for Radiation Emission test (1GHz to 18GHz) | 4.86dB |
| Uncertainty for radio frequency | 7×10-8 |
| Uncertainty for conducted RF Power | 0.20dB |
| Uncertainty for Power density test | 0.26dB |

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

2.4. Assistant equipment used for test

2.4.1. Battery

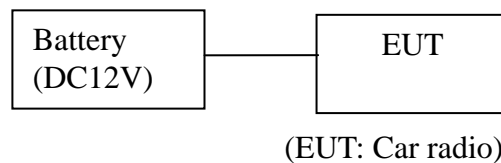
Manufacturer : YUASA
 M/N : NP7-12
 Output : DC 12V

2.4.2. Notebook

Manufacturer : DELL
 M/N : Latitude E6420
 Adapter : M/N: DA90PM111

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 or 1.5 meter high above ground. EUT was be set into BT test mode by software before test.



2.6. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

| Mode | Channel | Frequency |
|--|---------|-----------|
| GFSK | Low | 2402MHz |
| | Middle | 2441MHz |
| | High | 2480MHz |
| 8-DPSK | Low | 2402MHz |
| | Middle | 2441MHz |
| | High | 2480MHz |
| Remark: The “GFSK” and “8-DPSK” is worst case, Will be recorded in the report. | | |

2.7. Channel List for Bluetooth

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 1 | 2402 | 2 | 2403 | 3 | 2404 | 4 | 2405 |
| 5 | 2406 | 6 | 2407 | 7 | 2408 | 8 | 2409 |
| 9 | 2410 | 10 | 2411 | 11 | 2412 | 12 | 2413 |
| 13 | 2414 | 14 | 2415 | 15 | 2416 | 16 | 2417 |
| 17 | 2418 | 18 | 2419 | 19 | 2420 | 20 | 2421 |
| 21 | 2422 | 22 | 2423 | 23 | 2424 | 24 | 2425 |
| 25 | 2426 | 26 | 2427 | 27 | 2428 | 28 | 2429 |
| 29 | 2430 | 30 | 2431 | 31 | 2432 | 32 | 2433 |
| 33 | 2434 | 34 | 2435 | 35 | 2436 | 36 | 2437 |
| 37 | 2438 | 38 | 2439 | 39 | 2440 | 40 | 2441 |
| 41 | 2442 | 42 | 2443 | 43 | 2444 | 44 | 2445 |
| 45 | 2446 | 46 | 2447 | 47 | 2448 | 48 | 2449 |
| 49 | 2450 | 50 | 2451 | 51 | 2452 | 52 | 2453 |
| 53 | 2454 | 54 | 2455 | 55 | 2456 | 56 | 2457 |
| 57 | 2458 | 58 | 2459 | 59 | 2460 | 60 | 2461 |
| 61 | 2462 | 62 | 2463 | 63 | 2464 | 64 | 2465 |
| 65 | 2466 | 66 | 2467 | 67 | 2468 | 68 | 2469 |
| 69 | 2470 | 70 | 2471 | 71 | 2472 | 72 | 2473 |
| 73 | 2474 | 74 | 2475 | 75 | 2476 | 76 | 2477 |
| 77 | 2478 | 78 | 2479 | 79 | 2480 | - | - |

2.8. Test Equipment

2.8.1. For radiated emission test(9 kHz-30MHz)

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|-------------------|-----------------|-----------|------------------|------------|-----------|
| EMI Test Receiver | Rohde & Schwarz | ESCI | 100435 | June,29,15 | 1 Year |
| Loop Antenna | ETS-LINDGREN | 6502 | 00071730 | June,29,15 | 1 Year |
| RF Cable | MIYAZAKI | 5D-2W | 966 Chamber No.1 | June,28,15 | 1 Year |

2.8.2. For radiated emissions test (30-1000MHz)

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|-------------------|-----------------|-----------|------------------|------------|-----------|
| EMI Test Receiver | Rohde & Schwarz | ESVS10 | 100004 | June,28,15 | 1 Year |
| Spectrum Analyzer | Agilent | E4411B | MY50140697 | June,28,15 | 1 Year |
| Bilog Antenna | Teseq | CBL 6111D | 27090 | June,28,15 | 1 Year |
| Signal Amplifier | Agilent | 310N | 187037 | June,28,15 | 1 Year |
| RF Cable | MIYAZAKI | 5D-2W | 966 Chamber No.1 | June,28,15 | 1 Year |

2.8.3. For radio & radiated emissions test (above 1GHz)

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|-------------------------|-------------------|-------------|-------------------|------------|-----------|
| Horn Antenna | SCHWARZB ECK | BBHA 9120 D | BBHA9120D1 002 | June,28,15 | 1 Year |
| Board-Band Horn Antenna | SCHWARZB ECK | BBHA 9170 | 9170-497 | June,28,15 | 1 Year |
| Signal Amplifier | SCHWARZB ECK | BBV9718 | 9718-212 | June,28,15 | 1 Year |
| Spectrum Analyzer | Agilent | E4408B | MY44211139 | June,28,15 | 1 Year |
| Spectrum Analyzer | Rohde &Schwarz | FSV | 103173 | June,28,15 | 1 Year |
| RF Cable | Hubersuhner | RG 214/U | 513423 | June,28,15 | 1 Year |

3. MAXIMUM PEAK OUTPUT POWER

3.1. Limit

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, the e.i.r.p shall not exceed 4W

3.2. Test Procedure

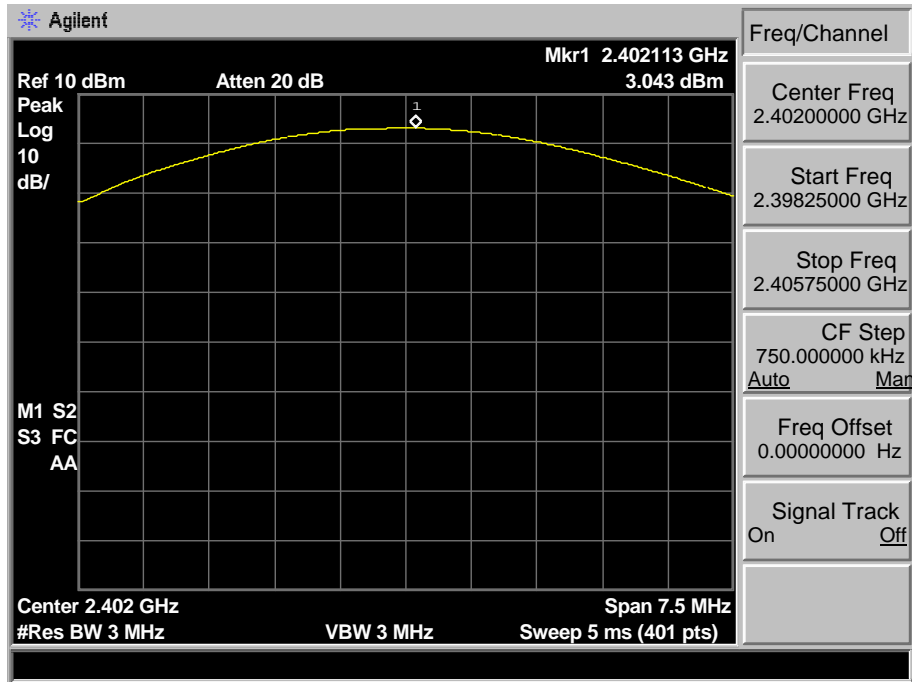
The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

3.3. Test Result

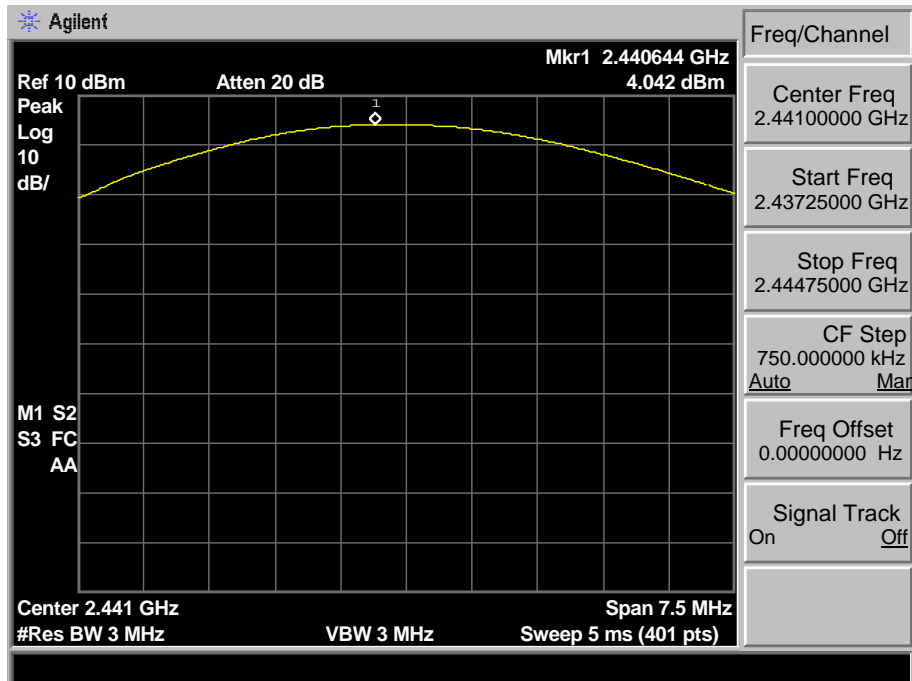
| EUT: Car radio | | | | | |
|-----------------------|------------|-------------------------|-------|----------------------|-------------|
| M/N: CMS3 | | | | | |
| Test date: 2016-06-15 | | Test site: RF site | | Tested by: Tony Tang | |
| Mode | Freq (MHz) | Result Peak power (dBm) | Limit | | Margin (dB) |
| | | | dBm | W | |
| GFSK | 2402 | 3.043 | 30.00 | 1.000 | 26.957 |
| | 2441 | 4.042 | 30.00 | 1.000 | 25.958 |
| | 2480 | 3.580 | 30.00 | 1.000 | 26.420 |
| 8-DPSK | 2402 | 2.164 | 21.00 | 0.125 | 18.836 |
| | 2441 | 3.217 | 21.00 | 0.125 | 17.783 |
| | 2480 | 2.557 | 21.00 | 0.125 | 18.443 |
| Conclusion: PASS | | | | | |

3.4. Test Data

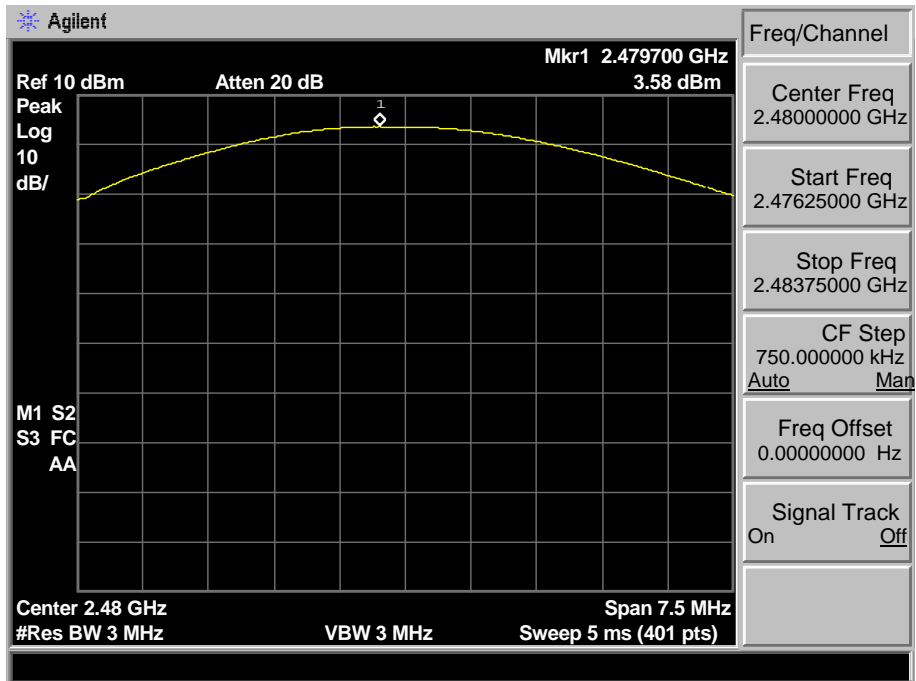
GFSK 2402 MHz



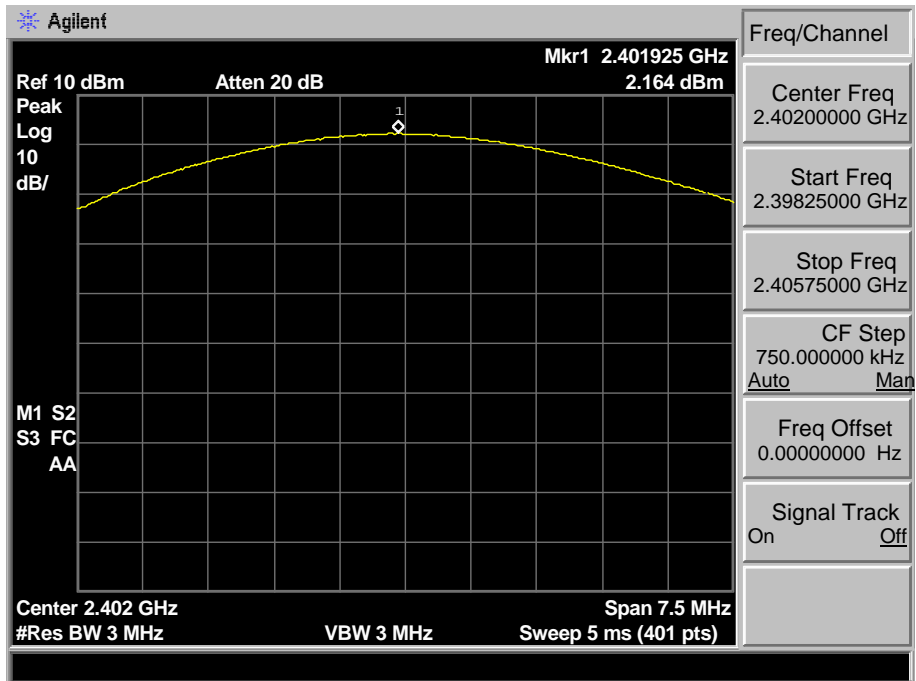
GFSK 2441 MHz



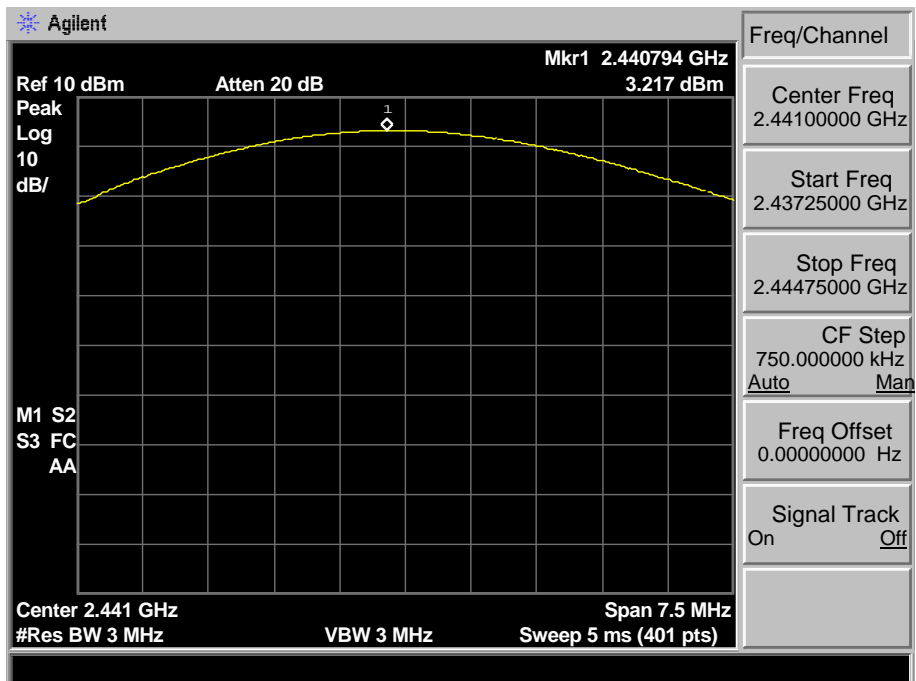
GFSK 2480 MHz



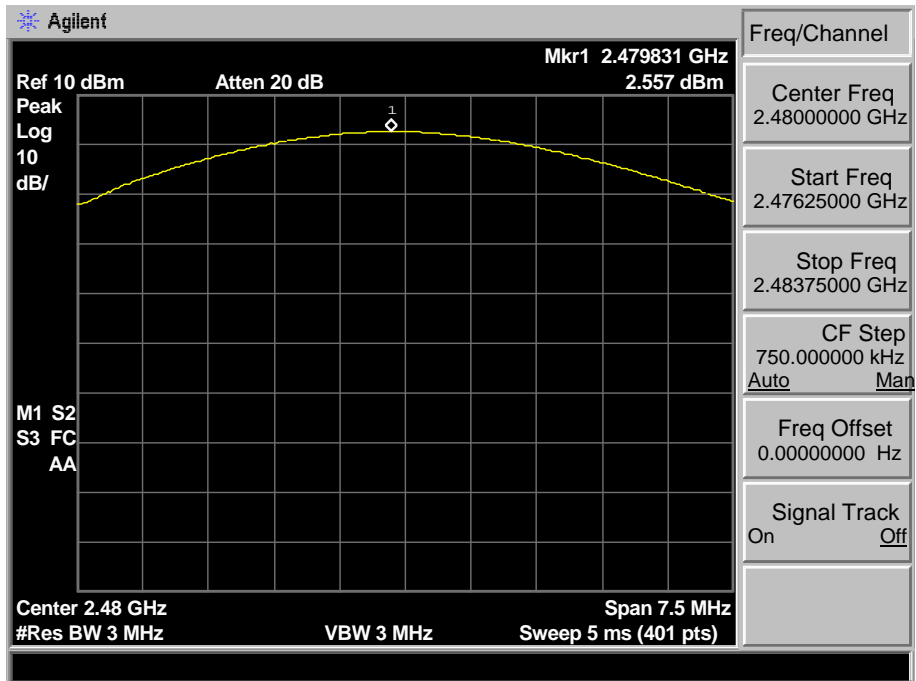
8-DPSK 2402 MHz



8-DPSK 2441 MHz



8-DPSK 2480 MHz



4. 20 DB BANDWIDTH

4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.2. Test Procedure

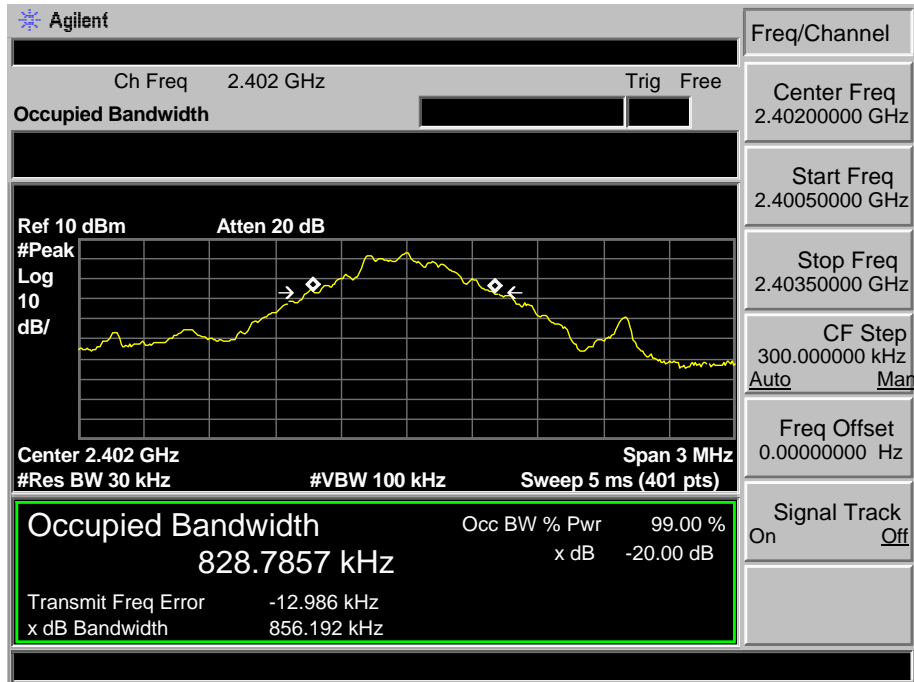
The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

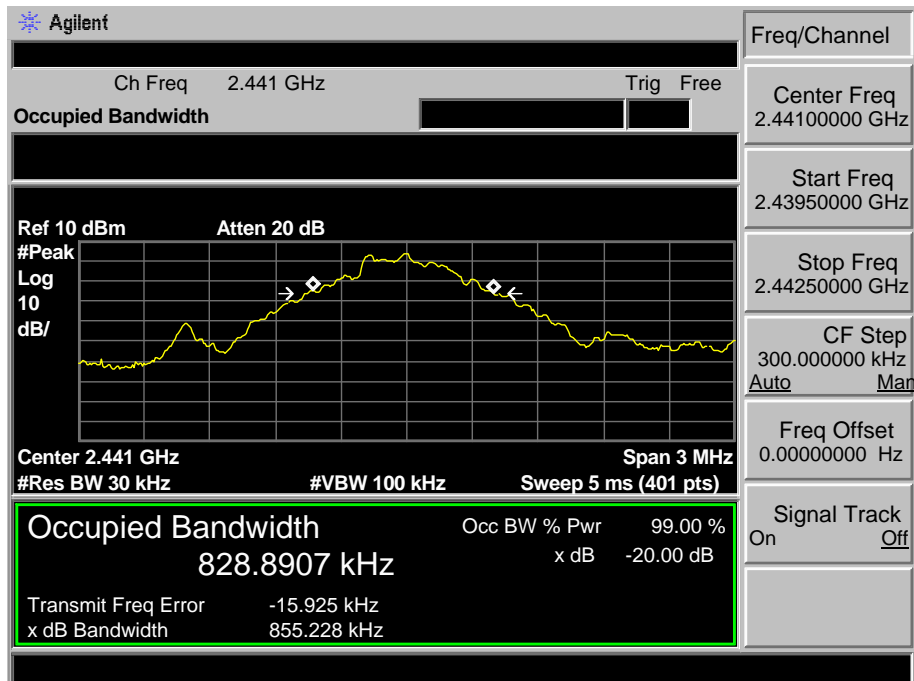
| EUT: Car radio | | | | |
|-----------------------|------------|----------------------|-------------|----------------------|
| M/N: CMS3 | | | | |
| Test date: 2016-06-15 | | Test site: RF site | | Tested by: Tony Tang |
| Mode | Freq (MHz) | 20dB Bandwidth (MHz) | Limit (kHz) | Conclusion |
| GFSK | 2402 | 0.856 | / | PASS |
| | 2441 | 0.855 | / | PASS |
| | 2480 | 0.860 | / | PASS |
| 8-DPSK | 2402 | 1.215 | / | PASS |
| | 2441 | 1.219 | / | PASS |
| | 2480 | 1.218 | / | PASS |

4.4. Test Data

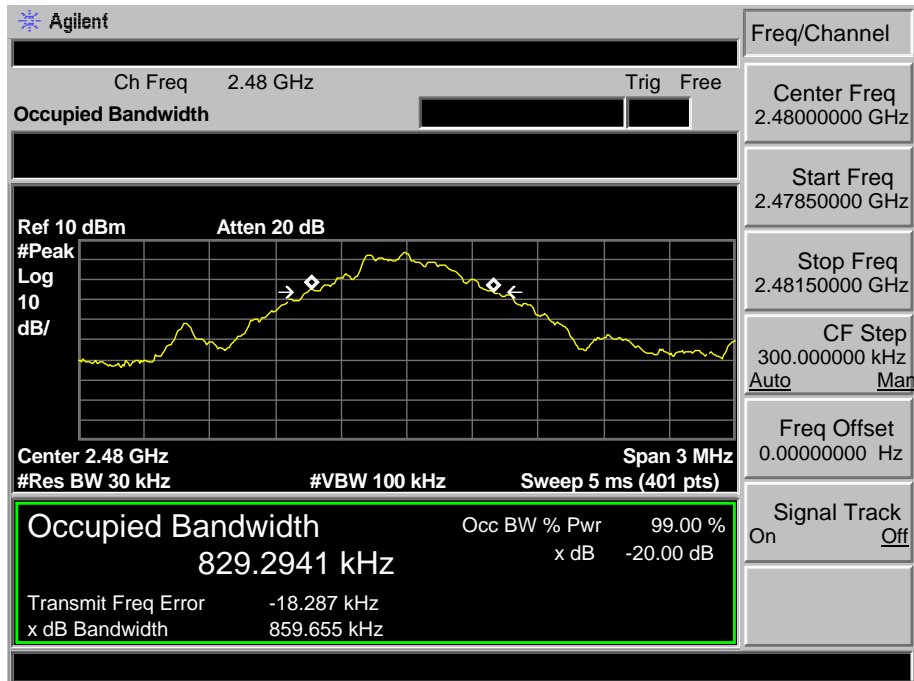
GFSK 2402MHz



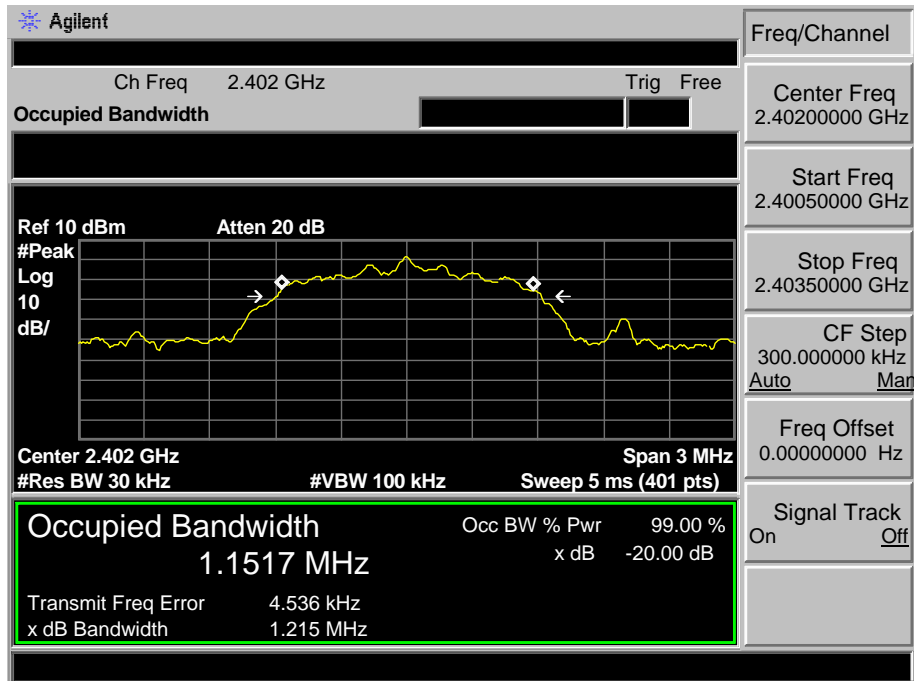
GFSK 2441MHz



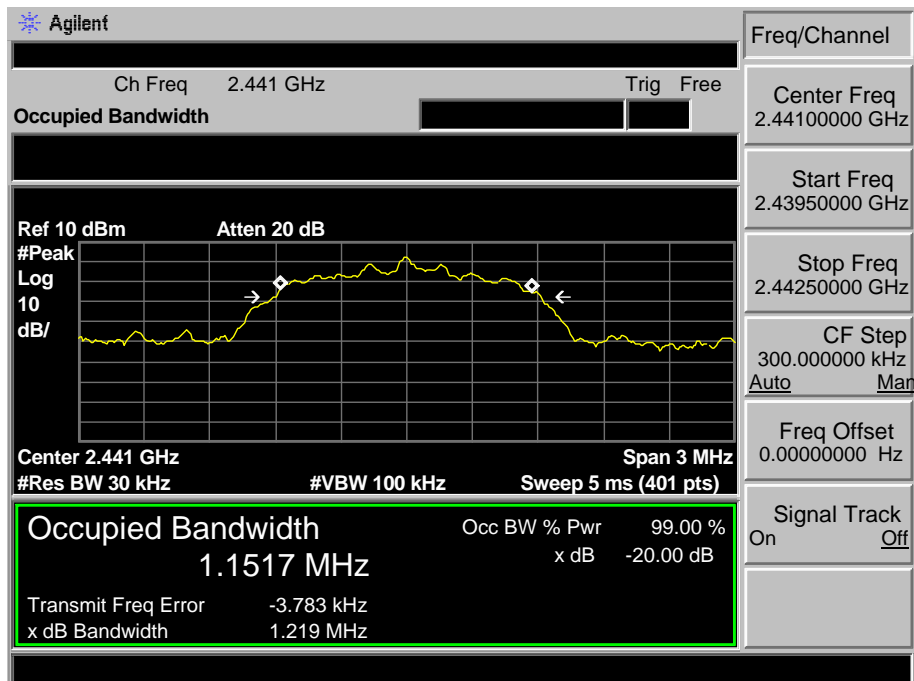
GFSK 2480MHz



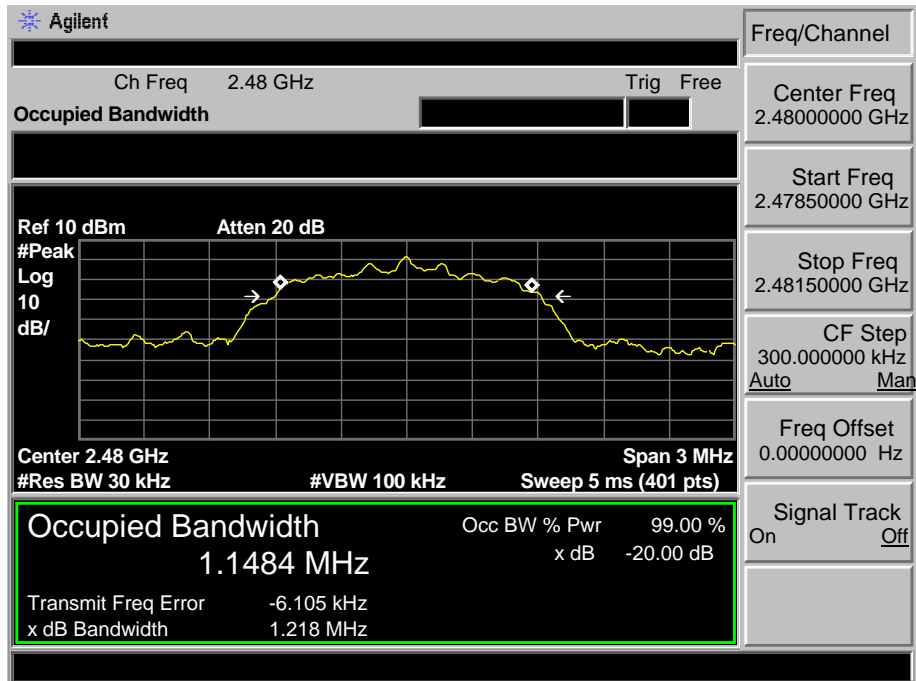
8-DPSK 2402MHz



8-DPSK 2441MHz



8-DPSK 2480MHz



5. CARRIER FREQUENCY SEPARATION

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

5.2. Test Procedure

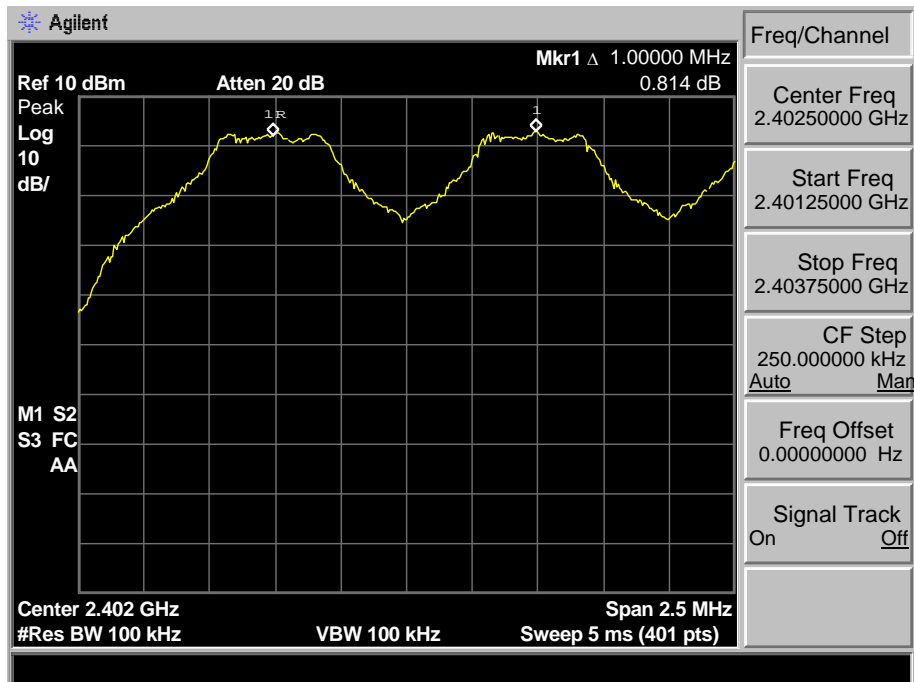
The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable, Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

5.3. Test Result

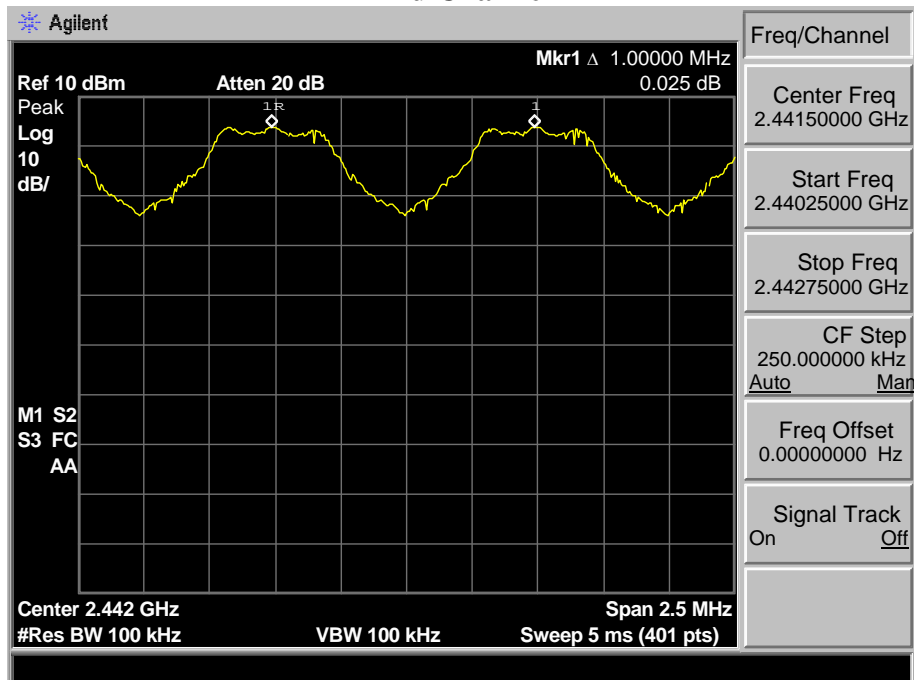
| EUT: Car radio | | | | |
|-----------------------|---------|--------------------------|---|----------------------|
| M/N: CMS3 | | | | |
| Test date: 2016-06-15 | | Test site: RF site | | Tested by: Tony Tang |
| Mode | Channel | Channel separation (MHz) | Limit | Conclusion |
| GFSK | Low CH | 1.000 | 0.856 MHz | PASS |
| | Mid CH | 1.000 | 0.855 MHz | PASS |
| | High CH | 1.000 | 0.860 MHz | PASS |
| 8-DPSK | Low CH | 1.000 | > 2/3 of the 20dB Bandwidth or 25[kHz](whichever is greater) | PASS |
| | Mid CH | 1.000 | | PASS |
| | High CH | 1.000 | | PASS |

5.4. Test Data

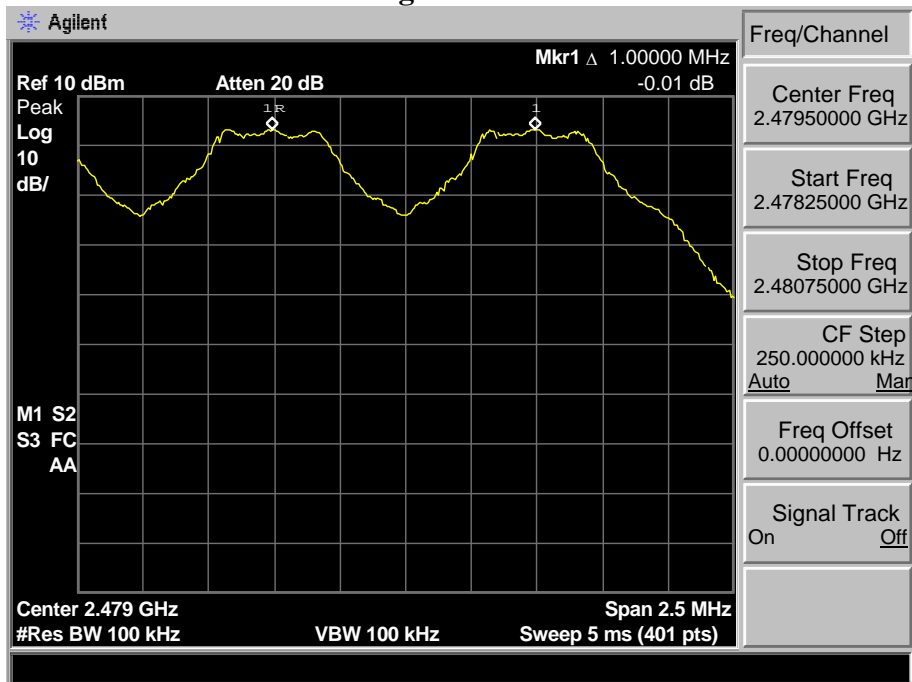
GFSK Low Channel



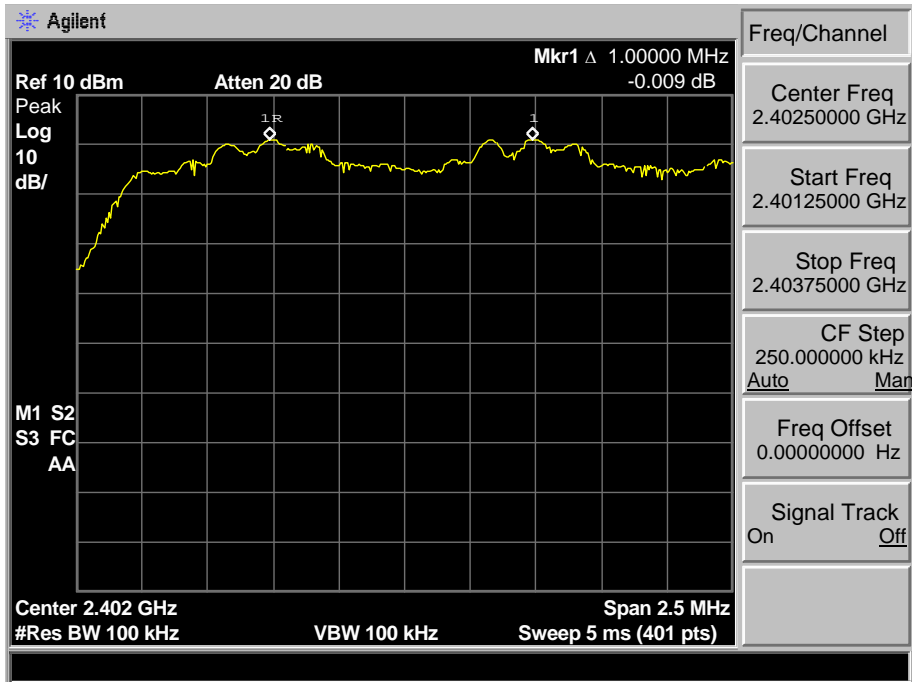
Mid Channel



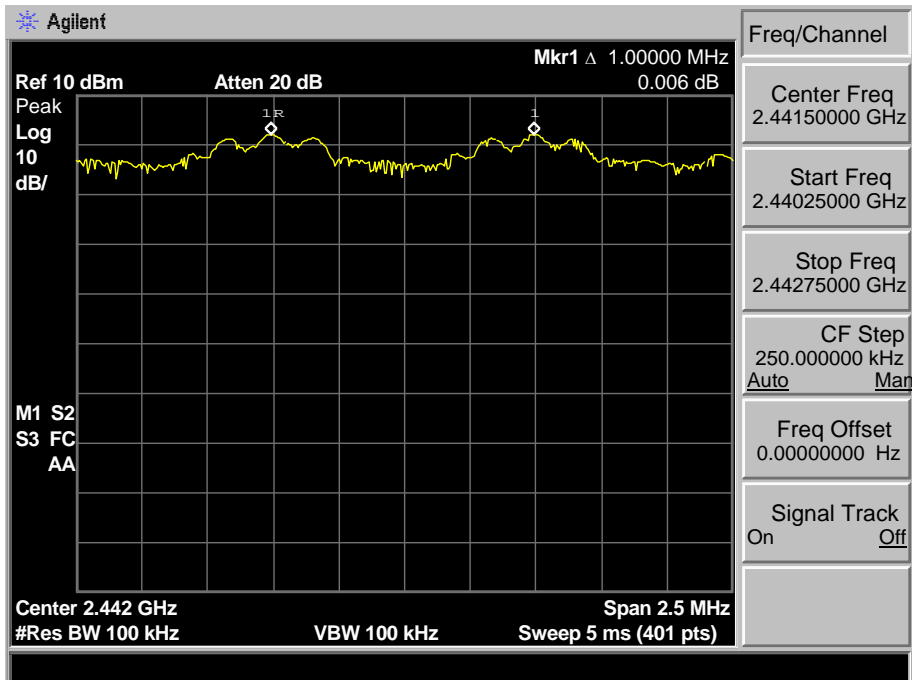
High Channel



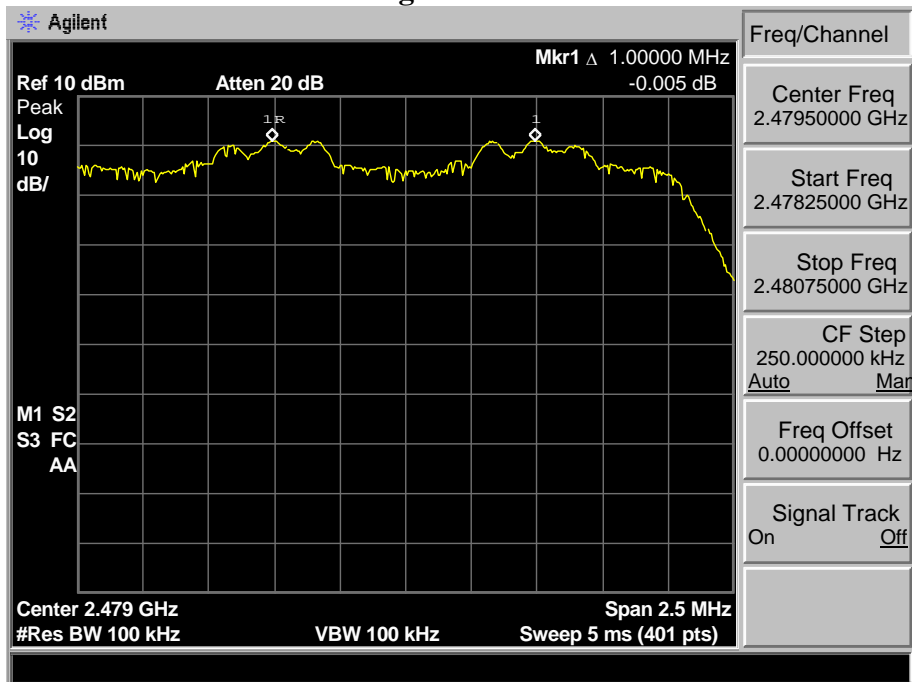
8-DPSK Low Channel



Mid Channel



High Channel



6. NUMBER OF HOPPING CHANNEL

6.1. Limit

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

6.2. Test Procedure

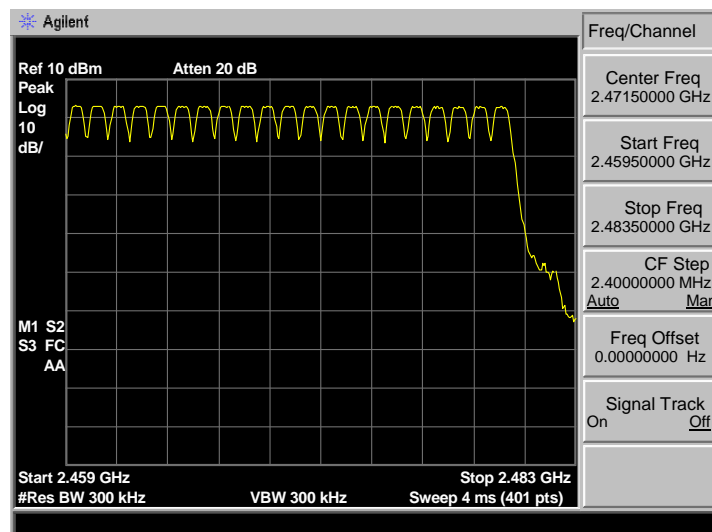
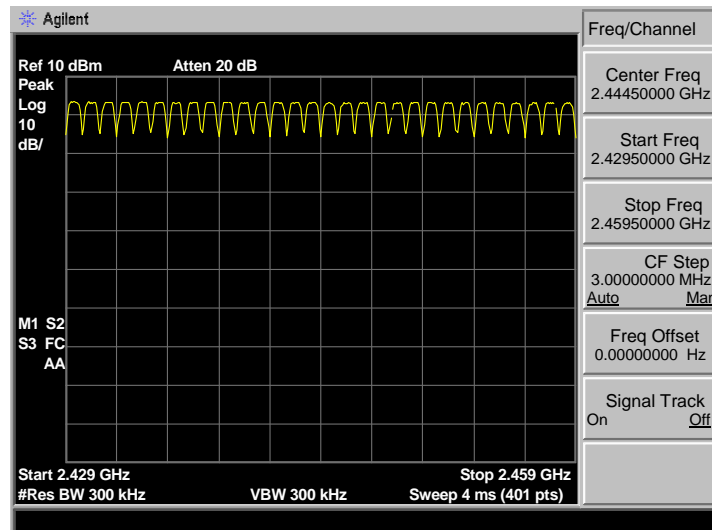
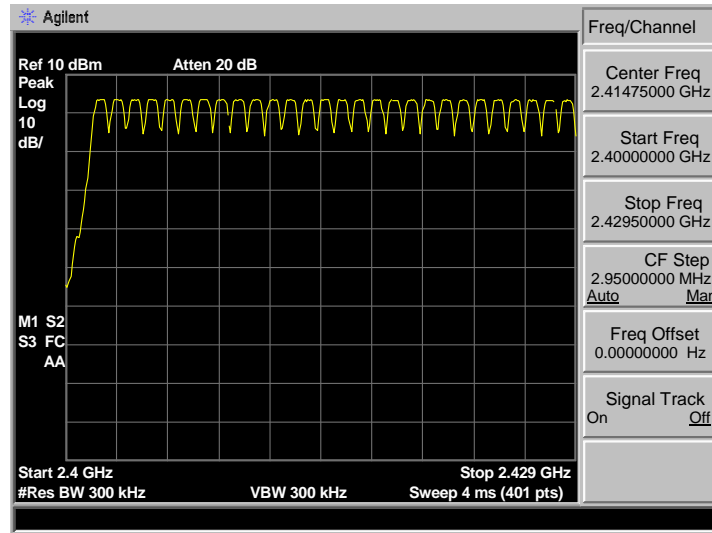
The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

6.3. Test Result

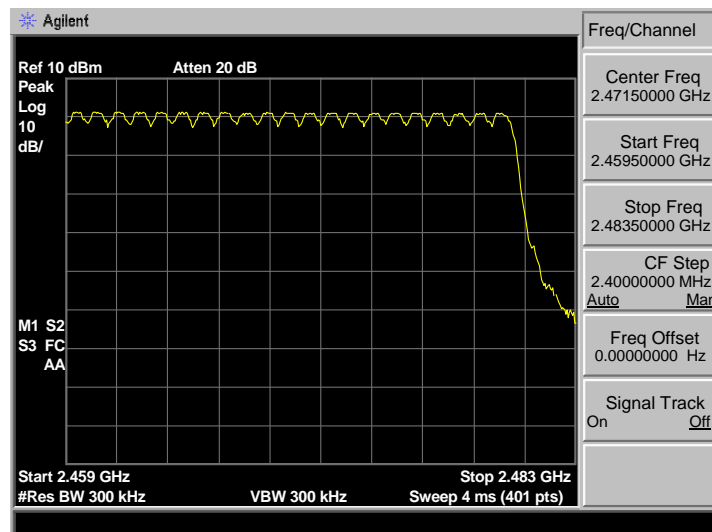
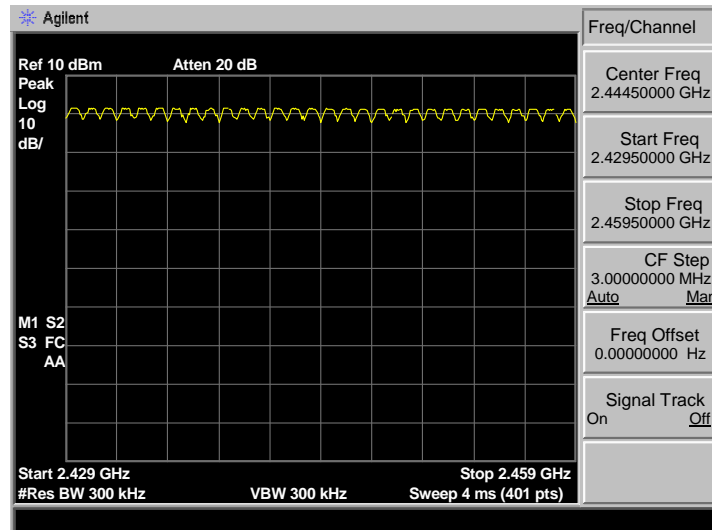
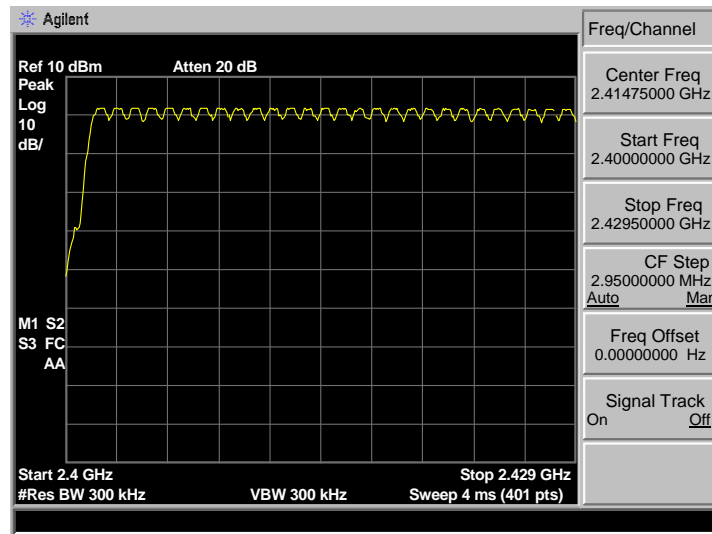
| EUT: Car radio | | | |
|-----------------------|---------------------------|--------------------|----------------------|
| M/N: CMS3 | | | |
| Test date: 2016-06-15 | | Test site: RF site | Tested by: Tony.Tang |
| Mode | Number of hopping channel | Limit | Conclusion |
| GFSK | 79 | >15 | PASS |
| 8-DPSK | 79 | >15 | PASS |

6.4. Test Data

GFSK



8-DPSK



7. DWELL TIME

7.1. Limit

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

7.2. Test Procedure

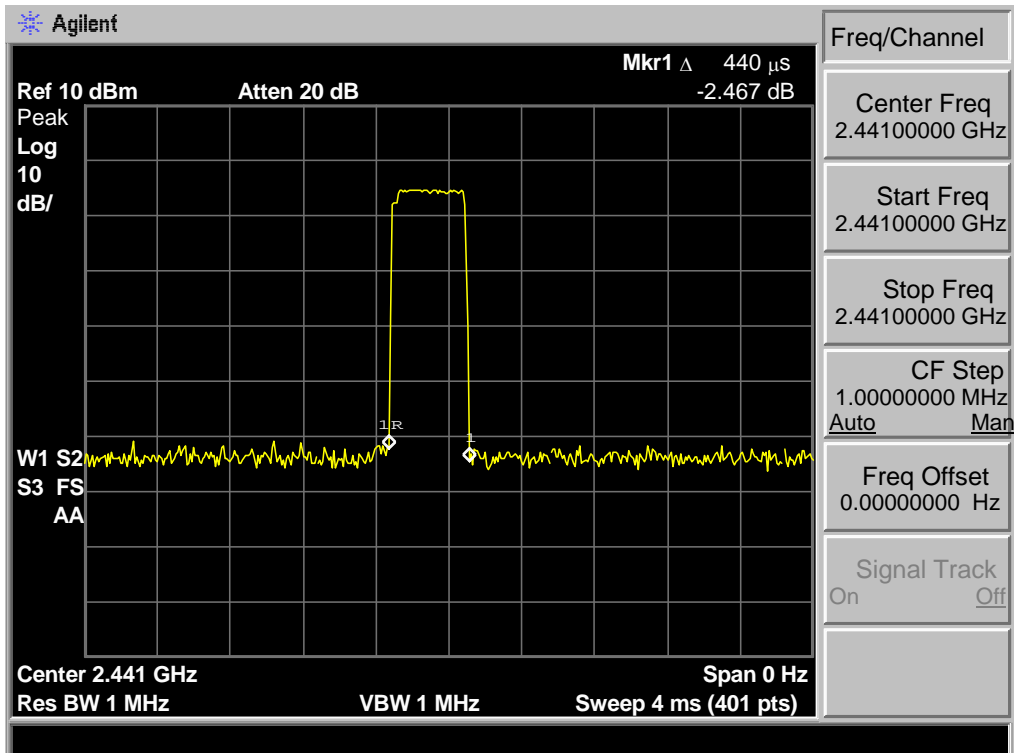
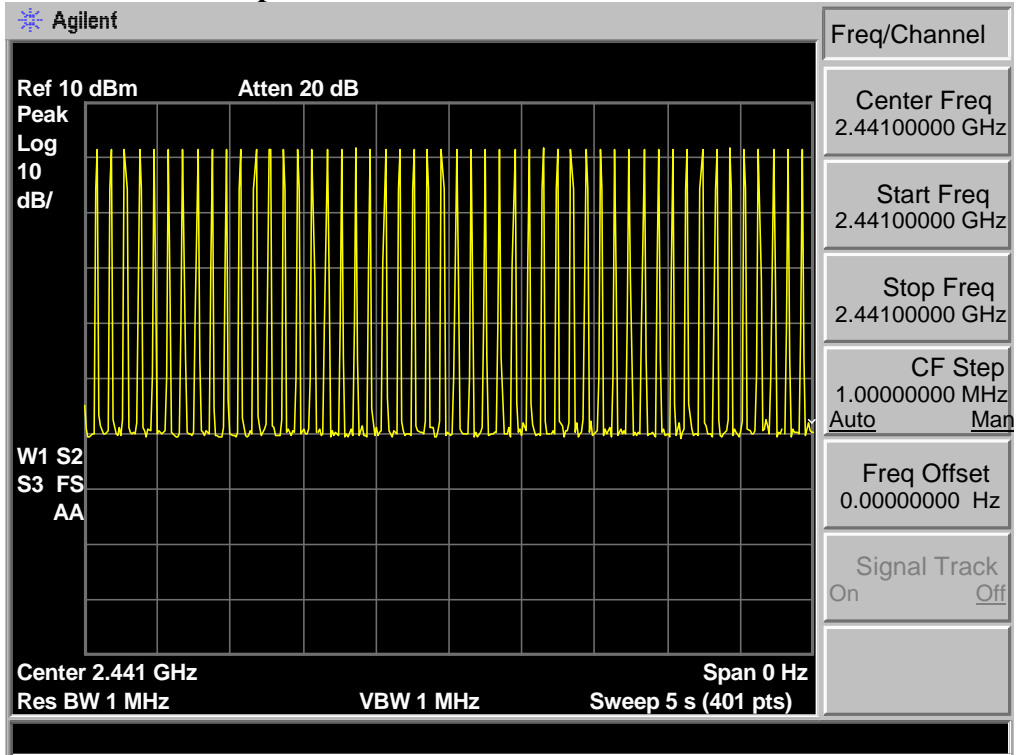
1. The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable..
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: Centered Frequency = measured channel, RBW = 1MHz, VBW= 1MHz, Frequency Span = 0 Hz.
4. Set sweep time properly to capture the entire dwell time per hopping channel.
5. Set detector type to Peak and trace mode to Max Hold and make the measurement.
6. Repeat step 3-5 until all channels measured were complete.

7.3. Test Result

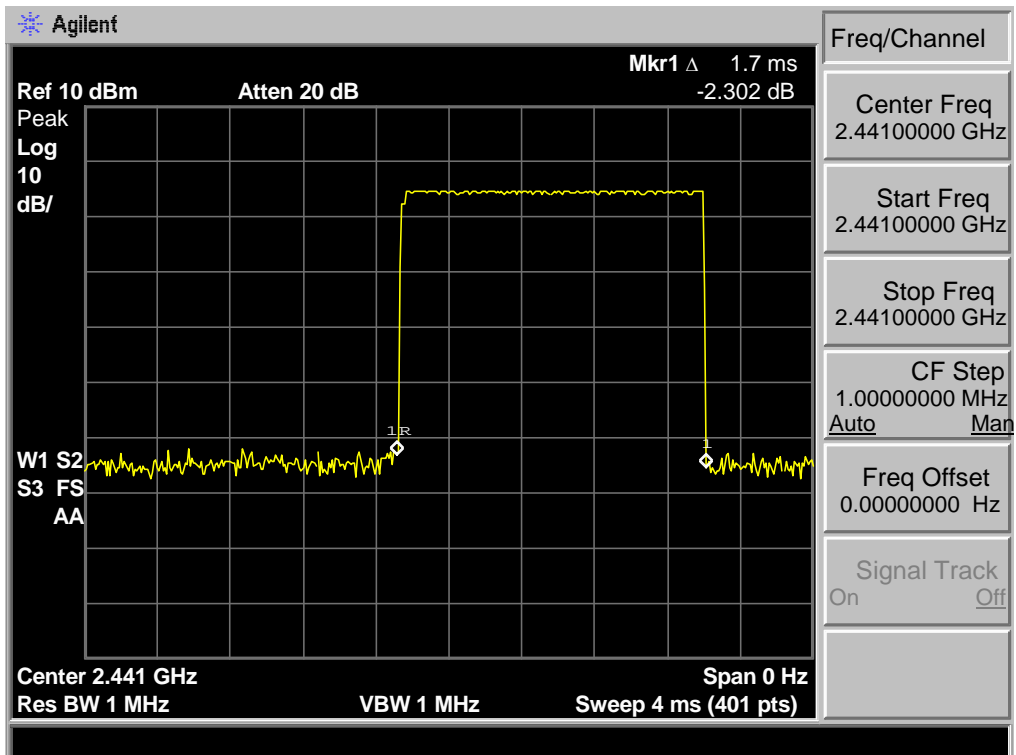
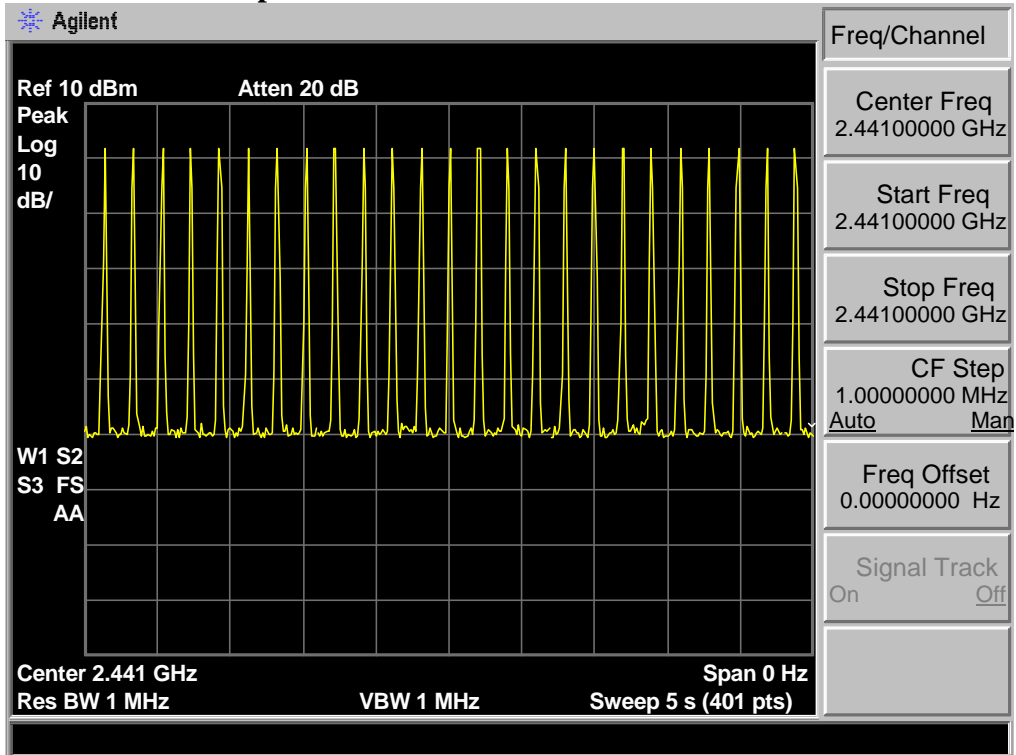
| EUT: Car radio | | | |
|-----------------------|-----------------|--------------------|----------------------|
| M/N: CMS3 | | | |
| Test date: 2016-06-15 | | Test site: RF site | Tested by: Tony Tang |
| Mode | Dwell time (ms) | Limit | Conclusion |
| GFSK DH1 | 139.04 | <400ms | PASS |
| GFSK DH3 | 268.60 | <400ms | PASS |
| GFSK DH5 | 319.10 | <400ms | PASS |
| 8-DPSK 3DH1 | 145.36 | <400ms | PASS |
| 8-DPSK 3DH3 | 270.18 | <400ms | PASS |
| 8-DPSK 3DH5 | 316.95 | <400ms | PASS |

7.4. Test Data

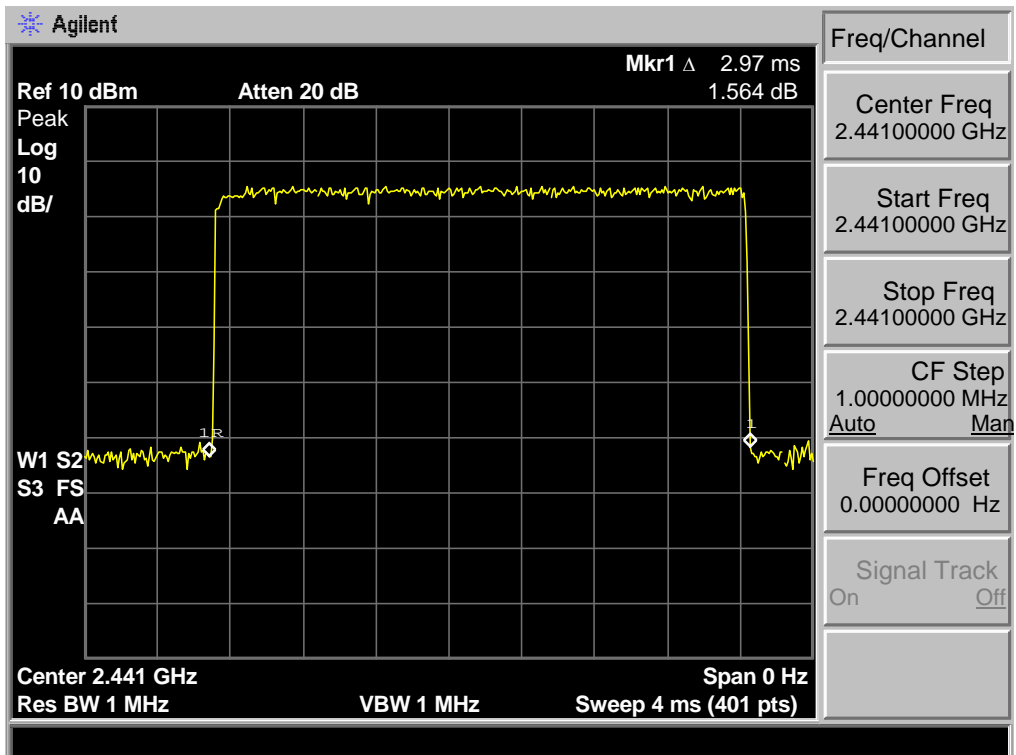
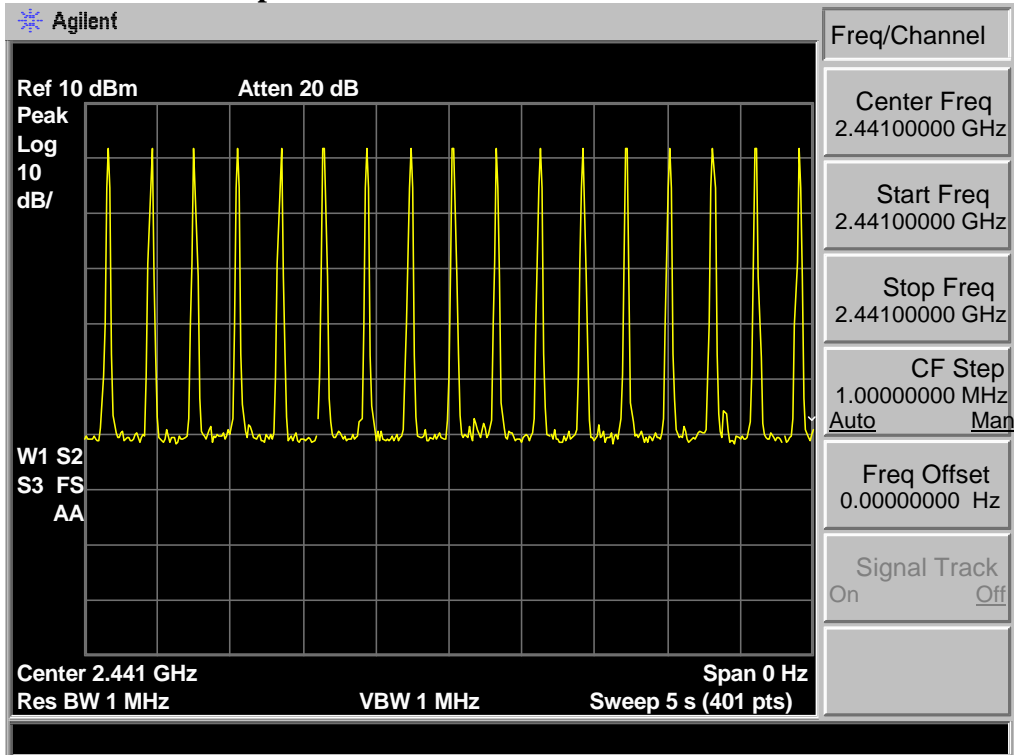
GFSK DH1 : $50\text{hop}/5\text{s} * 0.4 * 79 * 0.44\text{ms} = 139.04$



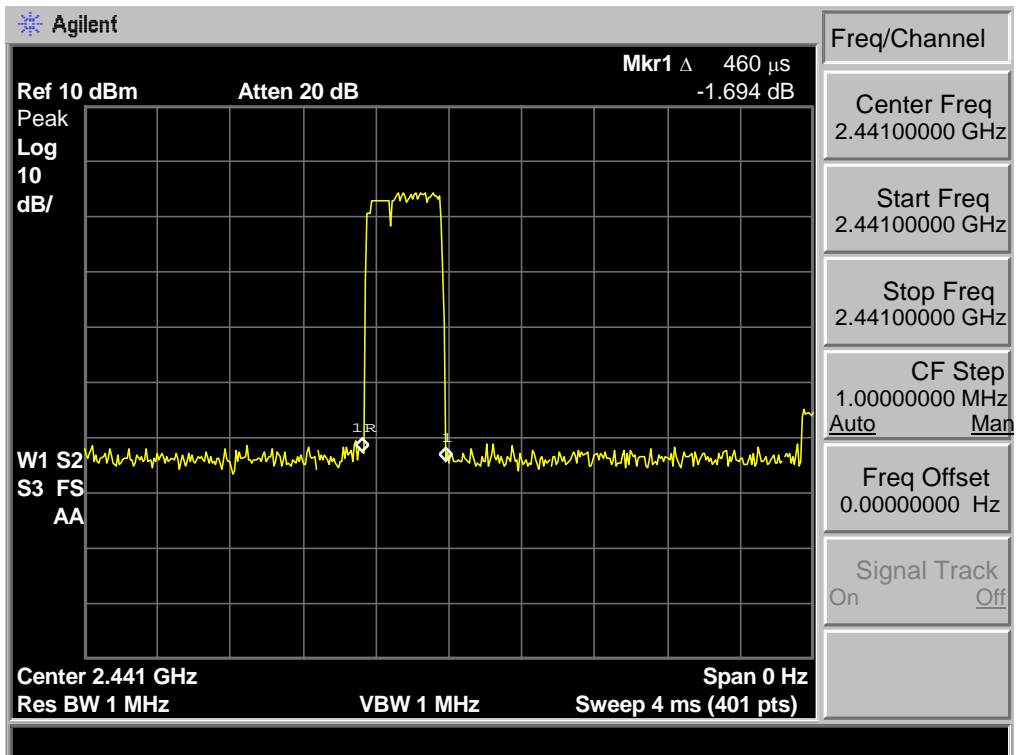
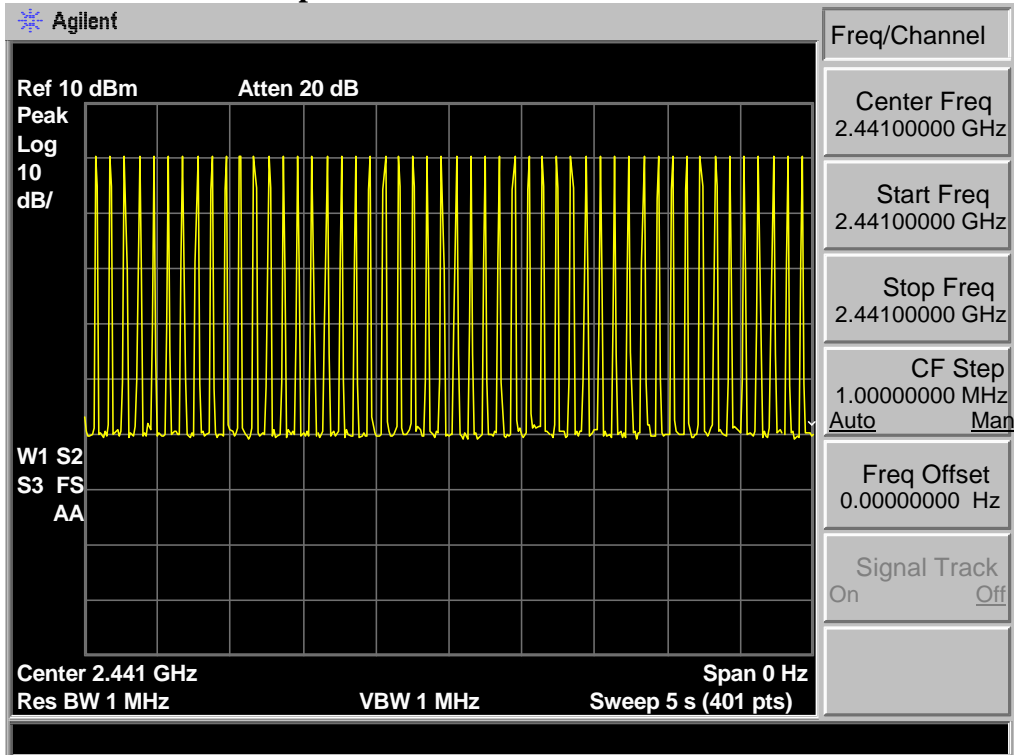
GFSK DH3 : 25hop/5s * 0.4 * 79 * 1.70ms= 268.60



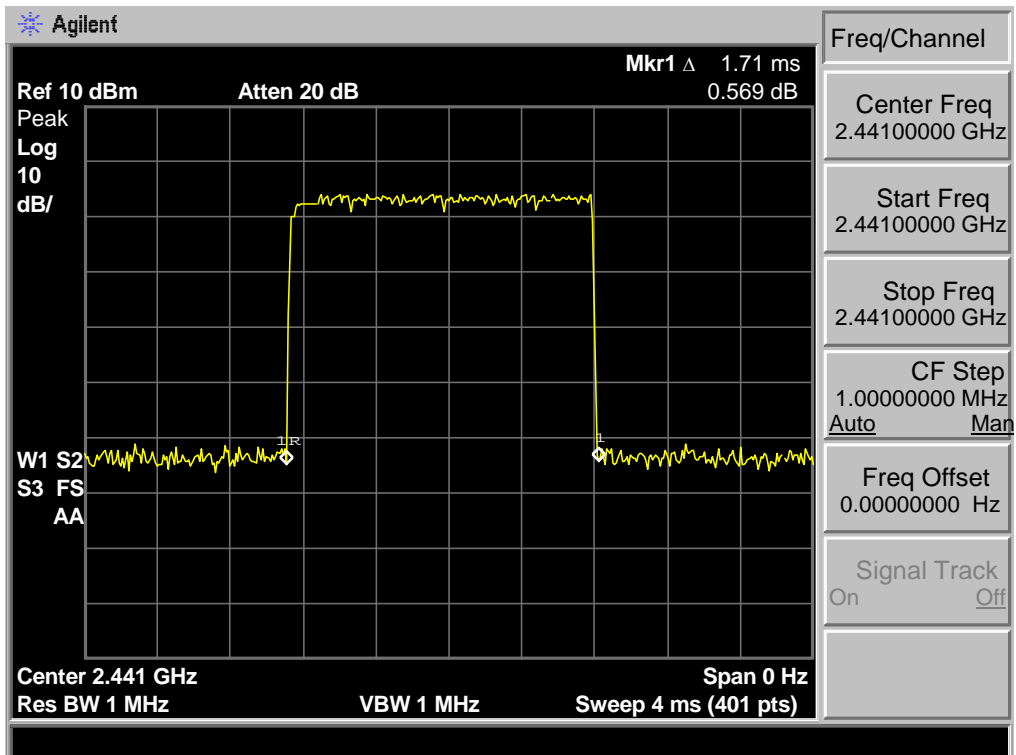
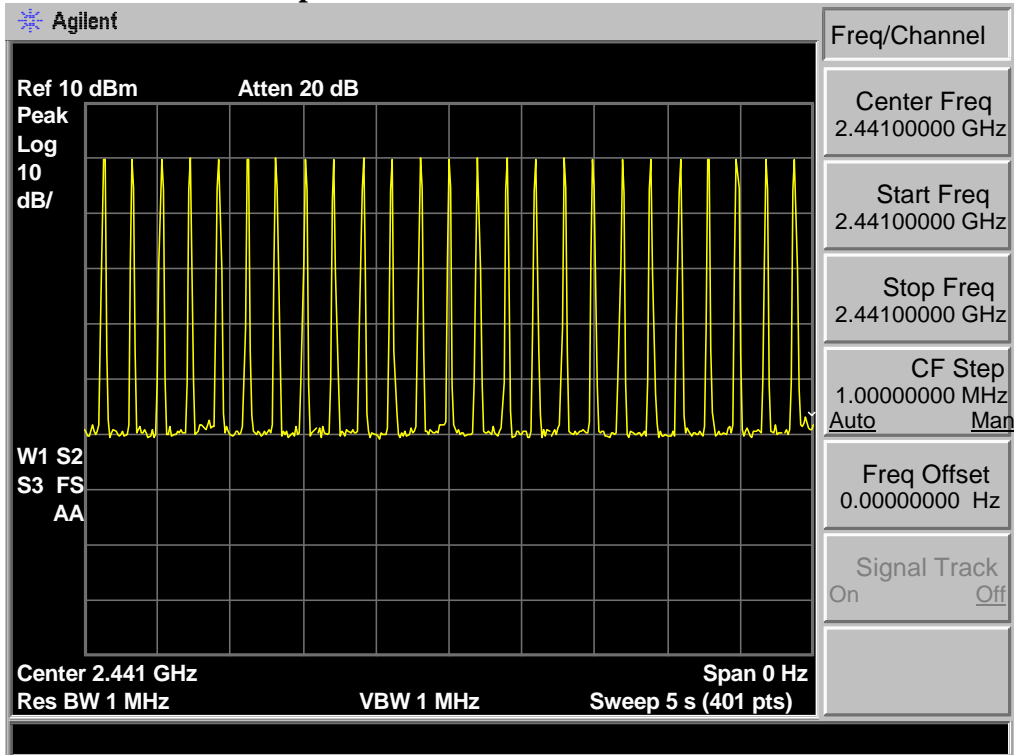
GSFK DH5 : 17hop/5s * 0.4 * 79 * 2.97ms = 319.10



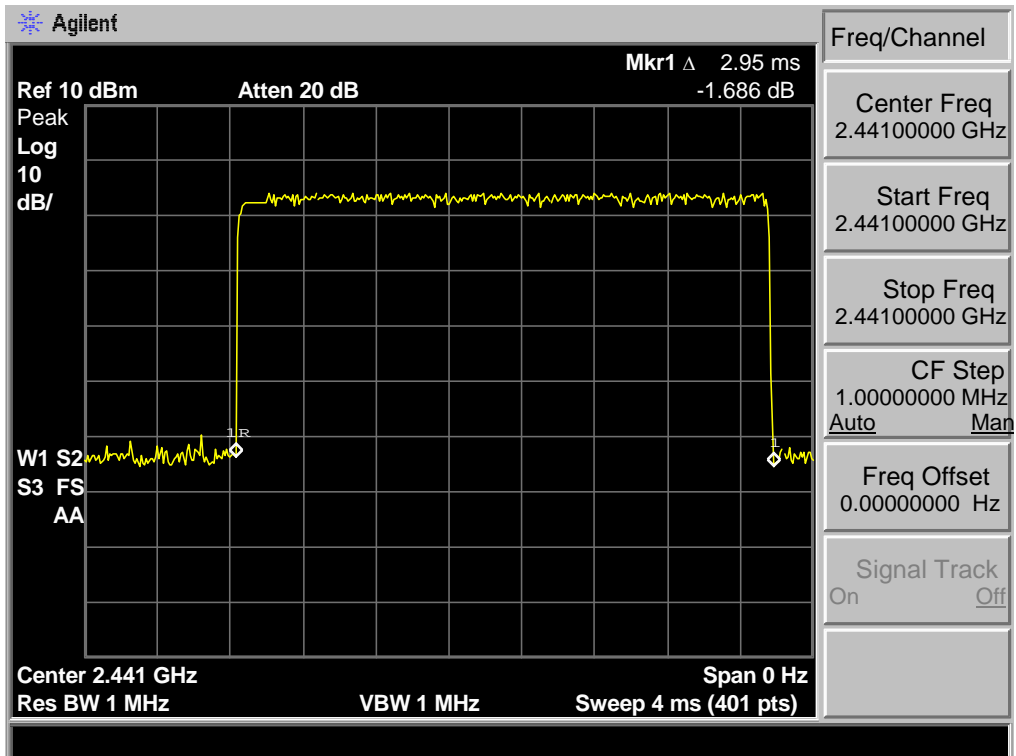
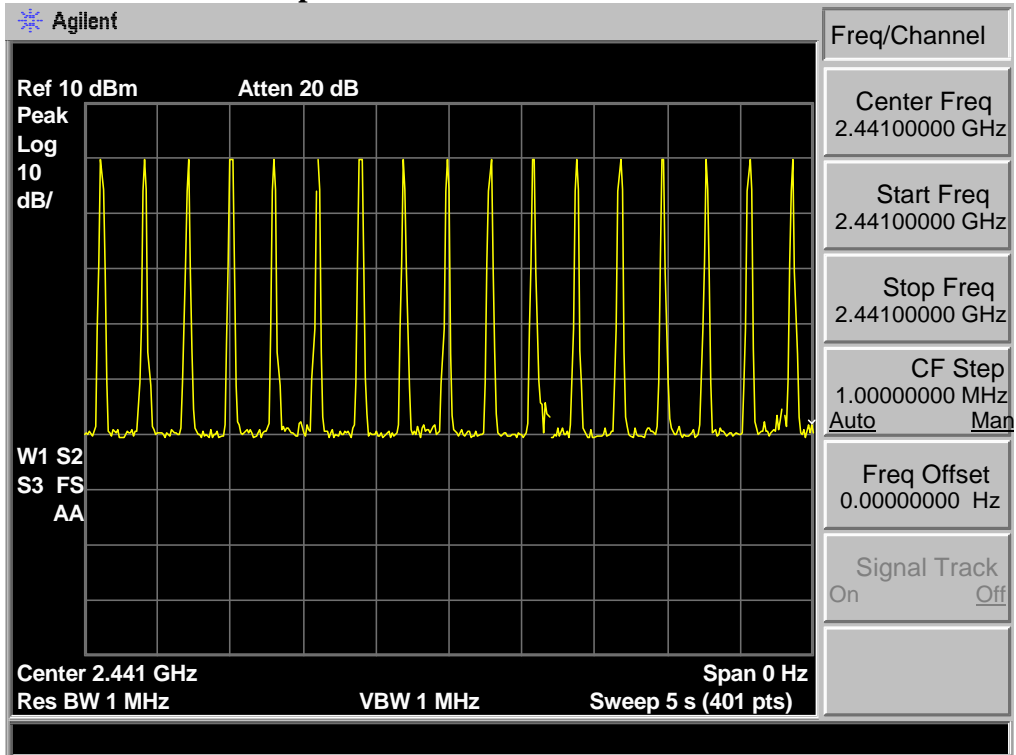
8-DPSK 3DH1 : 50hop/5s * 0.4 * 79 * 0.46ms = 145.36



8-DPSK 3DH3 : 25hop/5s * 0.4 * 79 * 1.71ms= 270.18



8-DPSK 3DH5 : 17hop/5s * 0.4 * 79 * 2.95ms = 316.95



8. RADIATED EMISSIONS

8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

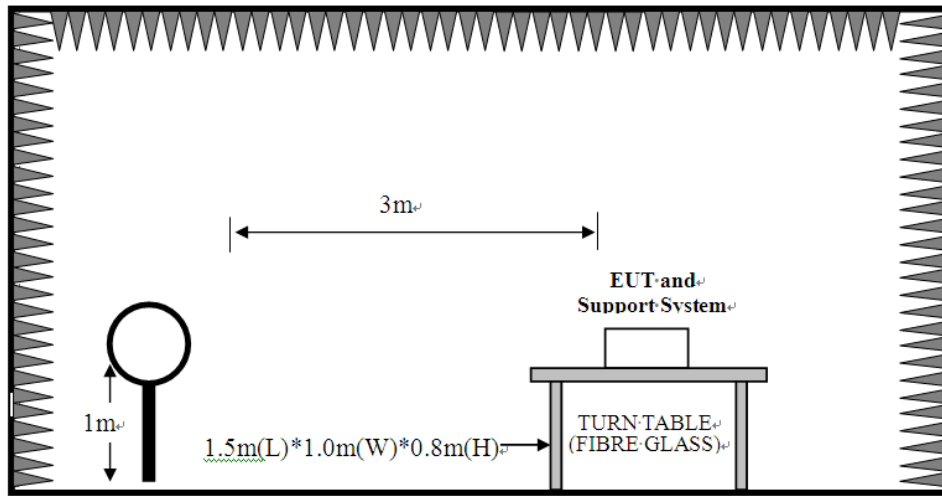
| MHz | MHz | MHz | GHz |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| ¹ 0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 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 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 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) |

15.209 Limit

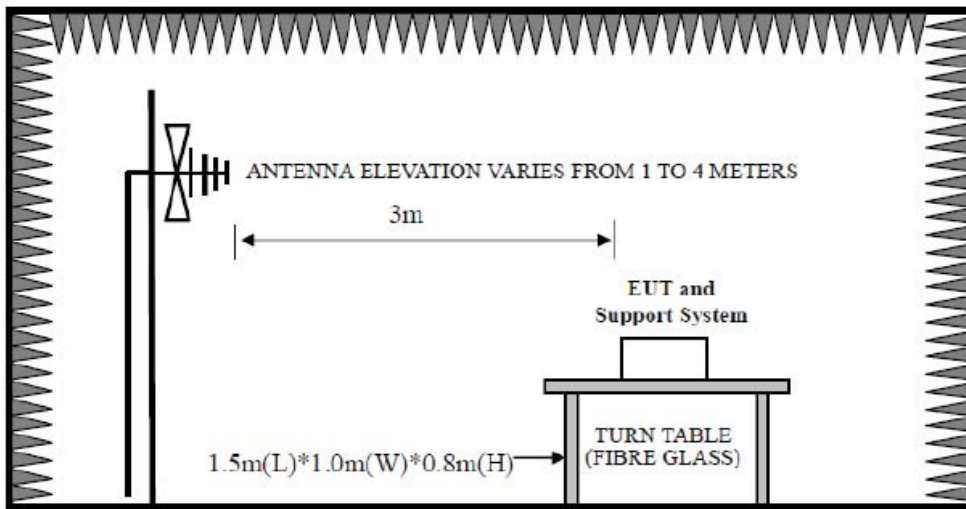
| Frequency (MHz) | Field strength (μV/m) | Distance (m) |
|-----------------|-----------------------|--------------|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

8.2. Block Diagram of Test setup

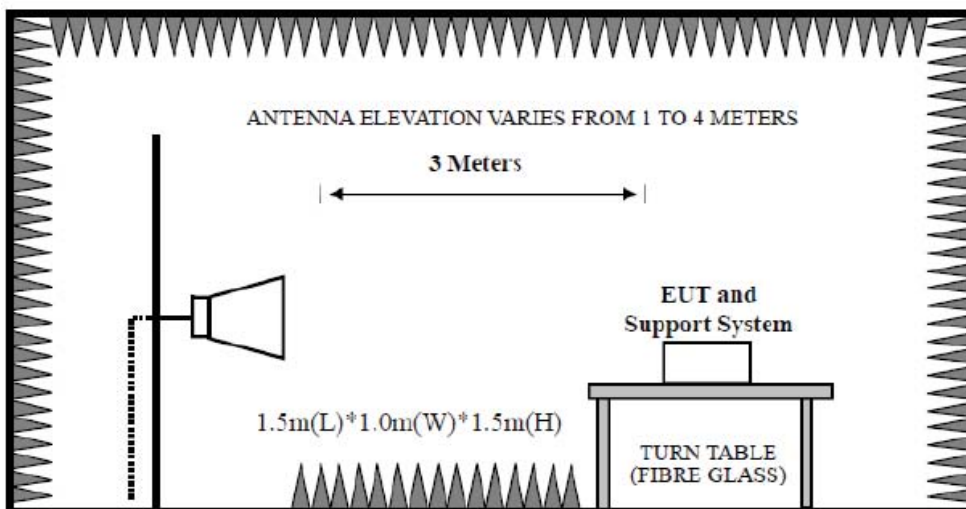
9kHz~30MHz



30~1000MHz



Above 1GHz



8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

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 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.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement,

PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

8.4. Test Result

| 30MHz—25GHz Radiated emissison Test result | | |
|--|-----------------------|----------------------|
| EUT: Car radio | | |
| M/N: CMS3 | | |
| Power: DC 12V | | |
| Test date: 2016-06-13 | Test site: 3m Chamber | Tested by: Tony Tang |
| Test mode: Tx Mode | | |
| Pass | | |

- Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
- 2、 The frequency 2402MHz 、2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

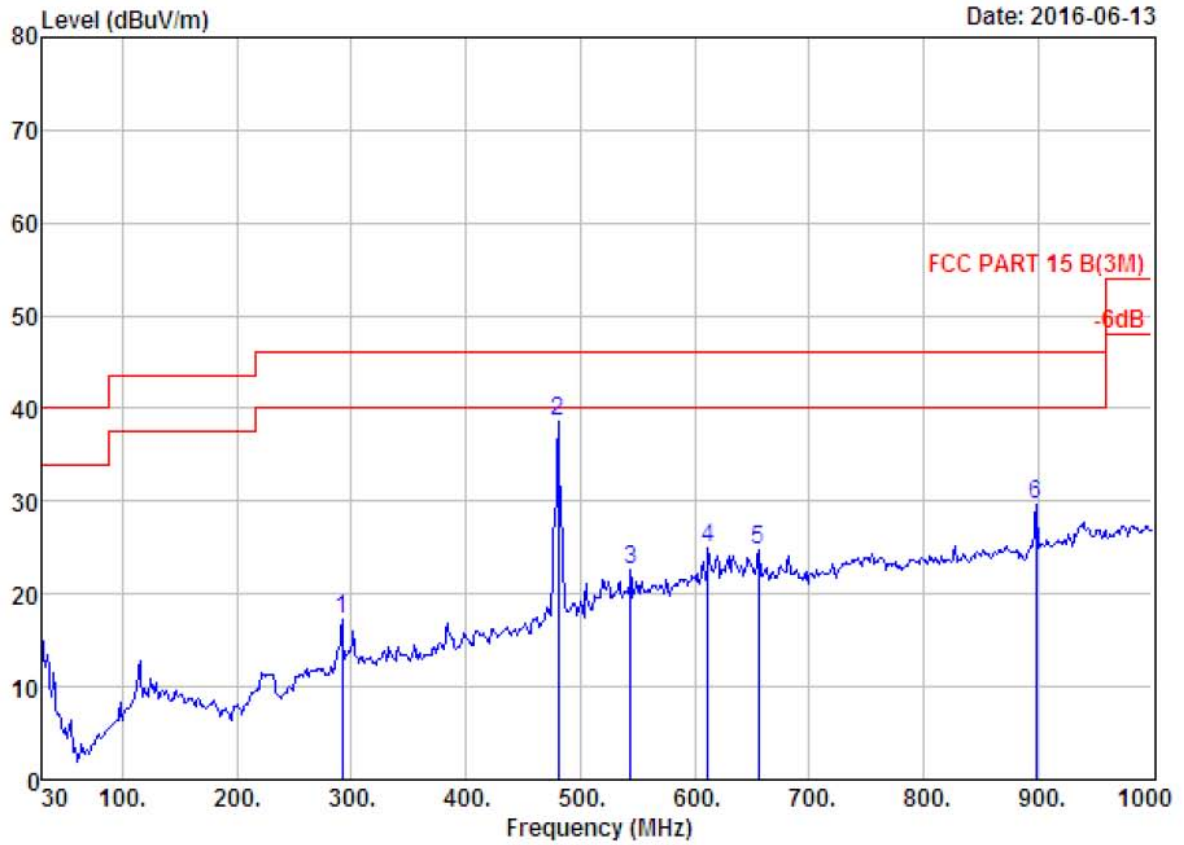
8.5. Test Data

9 kHz – 30 MHz

Pass

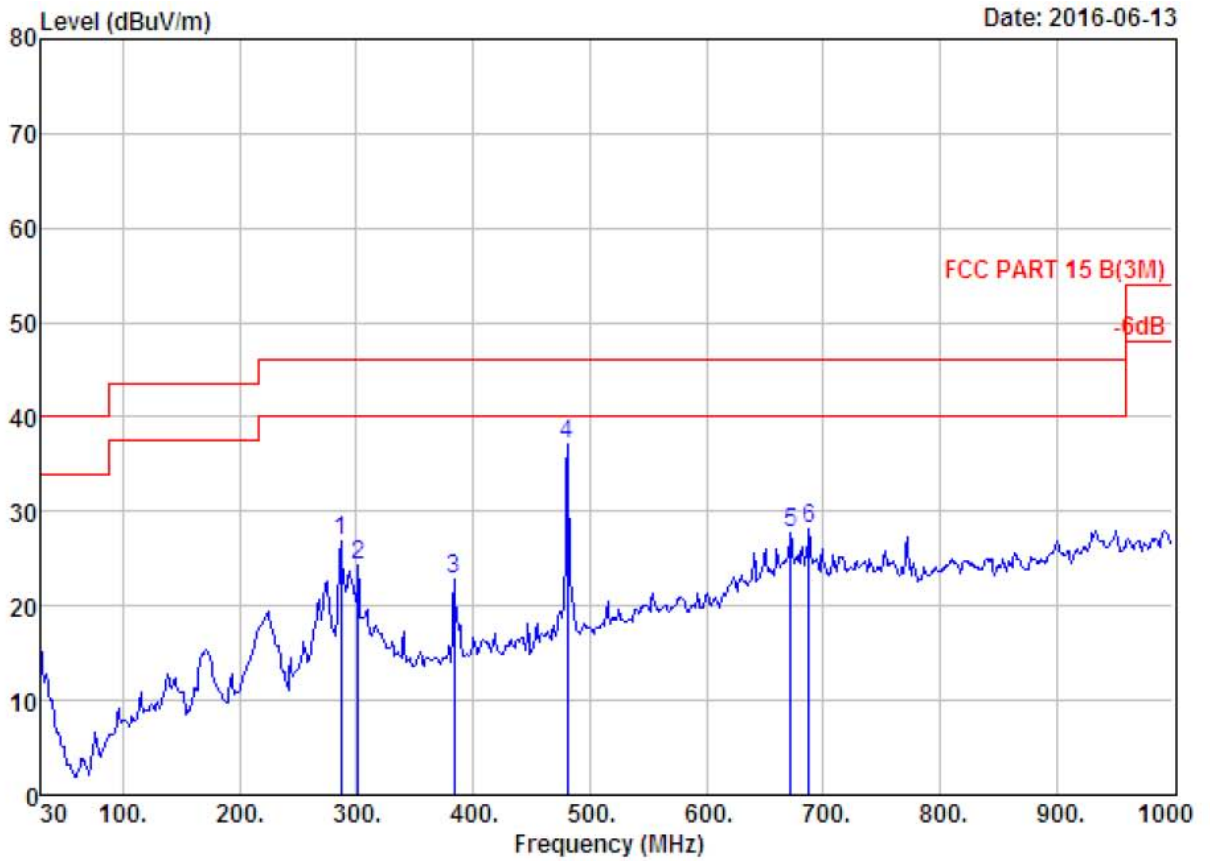
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

30 MHz – 1000 MHz



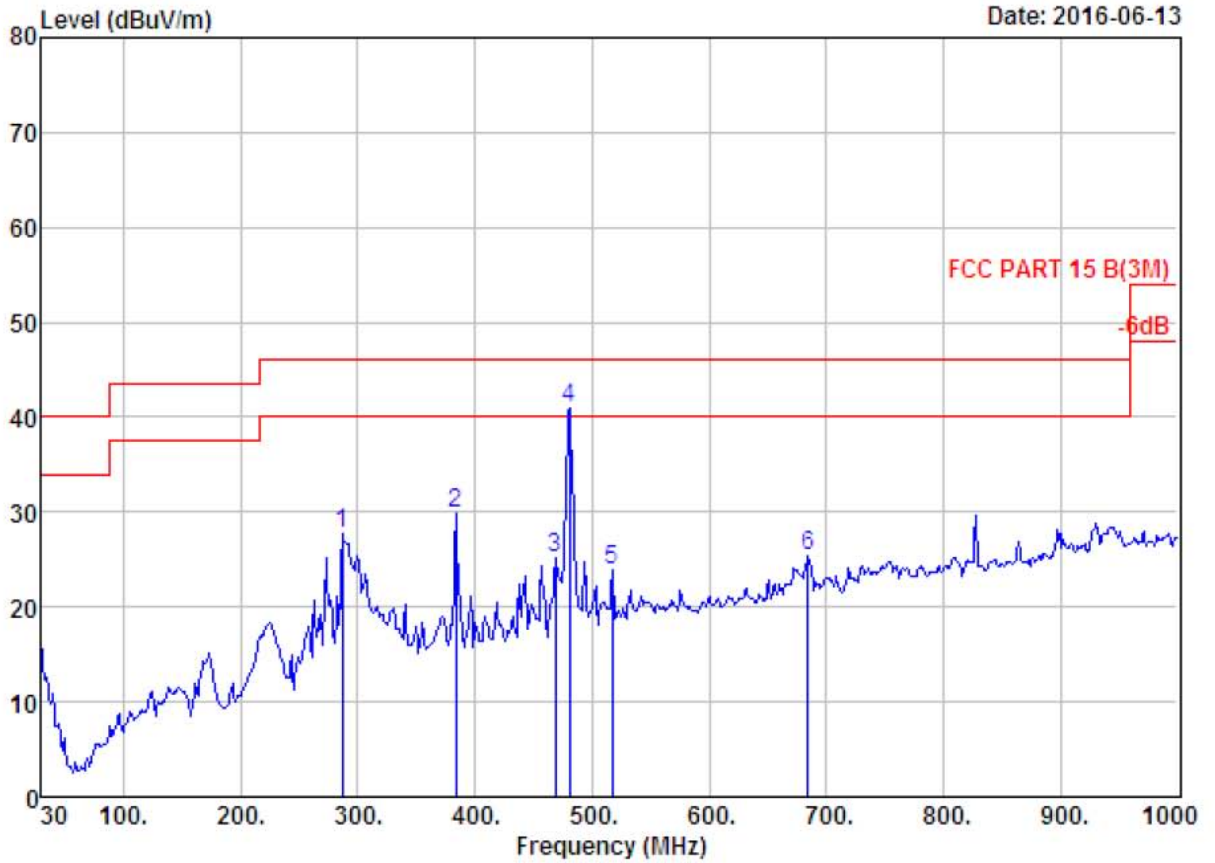
Site no. : 966 1# chamber Data no. : 41
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 291.90 | 12.83 | 2.33 | 2.13 | 17.29 | 46.00 | 28.71 | QP |
| 2 | 481.05 | 17.49 | 3.09 | 17.93 | 38.51 | 46.00 | 7.49 | QP |
| 3 | 544.10 | 19.46 | 3.20 | 0.01 | 22.67 | 46.00 | 23.33 | QP |
| 4 | 612.00 | 19.91 | 3.33 | 1.74 | 24.98 | 46.00 | 21.02 | QP |
| 5 | 655.65 | 20.08 | 3.61 | 1.05 | 24.74 | 46.00 | 21.26 | QP |
| 6 | 898.15 | 23.17 | 4.12 | 2.33 | 29.62 | 46.00 | 16.38 | QP |



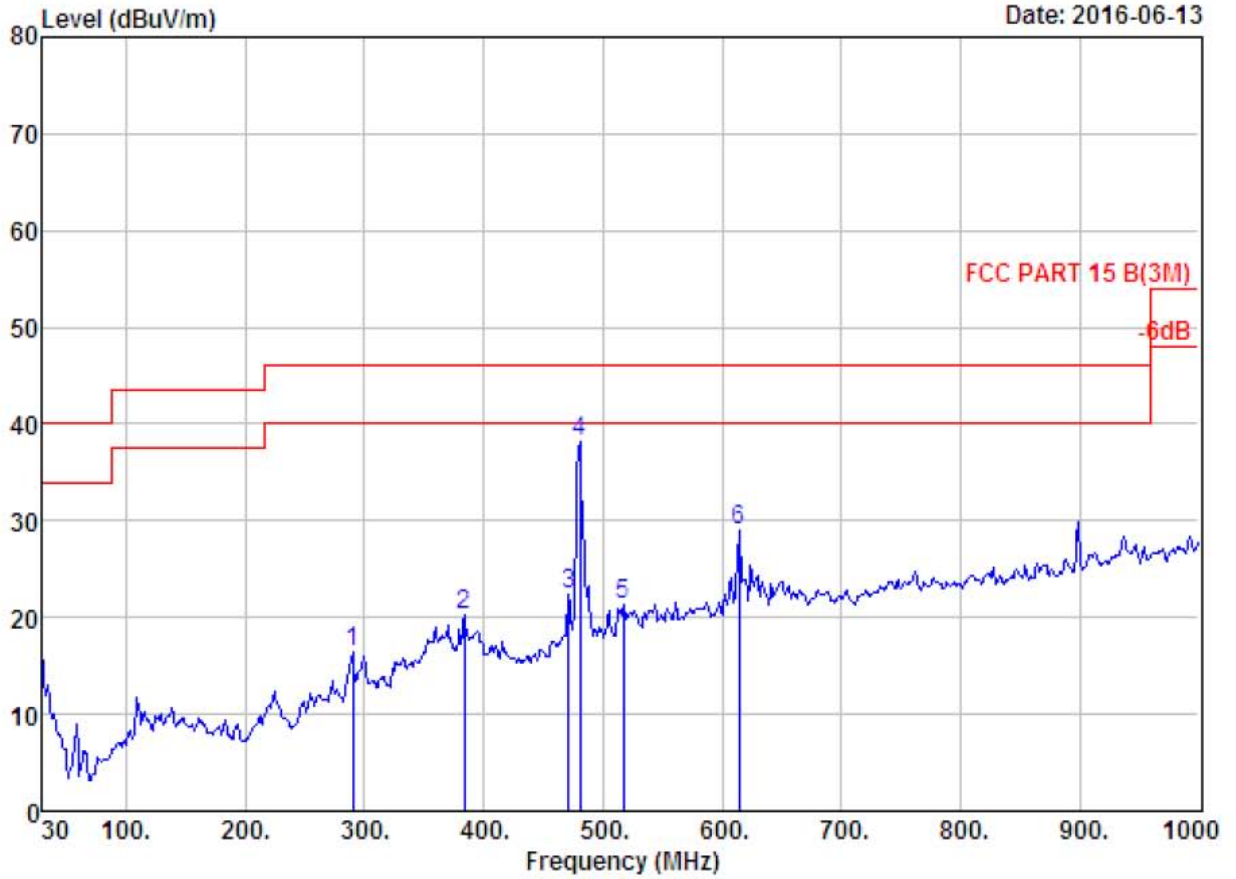
Site no. : 966 1# chamber Data no. : 42
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 287.05 | 12.59 | 2.32 | 11.98 | 26.89 | 46.00 | 19.11 | QP |
| 2 | 301.60 | 13.04 | 2.39 | 8.80 | 24.23 | 46.00 | 21.77 | QP |
| 3 | 384.05 | 15.24 | 2.64 | 4.90 | 22.78 | 46.00 | 23.22 | QP |
| 4 | 481.05 | 17.49 | 3.09 | 16.63 | 37.21 | 46.00 | 8.79 | QP |
| 5 | 672.14 | 20.23 | 3.62 | 3.81 | 27.66 | 46.00 | 18.34 | QP |
| 6 | 687.66 | 20.35 | 3.63 | 4.20 | 28.18 | 46.00 | 17.82 | QP |



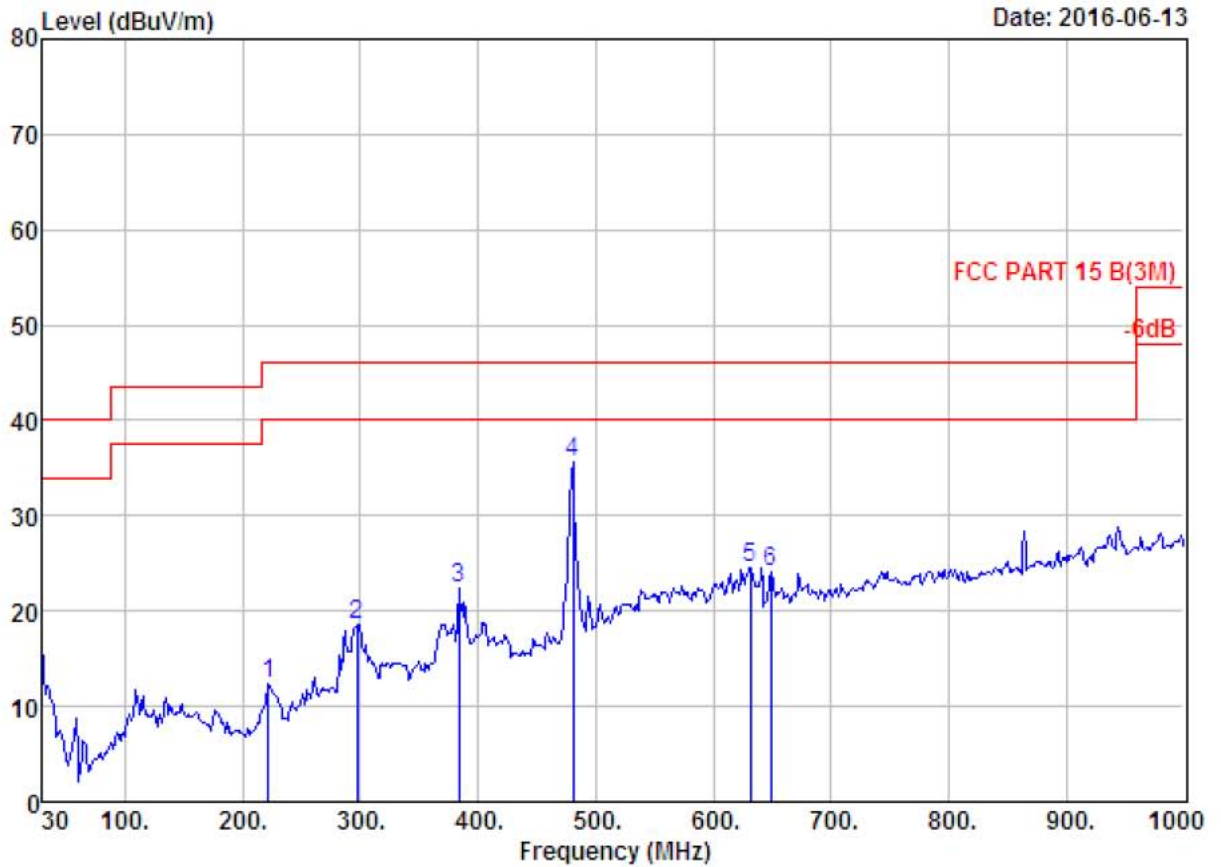
Site no. : 966 1# chamber Data no. : 43
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 287.05 | 12.59 | 2.32 | 12.77 | 27.68 | 46.00 | 18.32 | QP |
| 2 | 384.05 | 15.24 | 2.64 | 12.09 | 29.97 | 46.00 | 16.03 | QP |
| 3 | 468.44 | 17.14 | 3.09 | 4.99 | 25.22 | 46.00 | 20.78 | QP |
| 4 | 481.05 | 17.49 | 3.09 | 20.29 | 40.87 | 46.00 | 5.13 | QP |
| 5 | 516.94 | 17.95 | 3.15 | 2.75 | 23.85 | 46.00 | 22.15 | QP |
| 6 | 684.75 | 20.33 | 3.61 | 1.36 | 25.30 | 46.00 | 20.70 | QP |



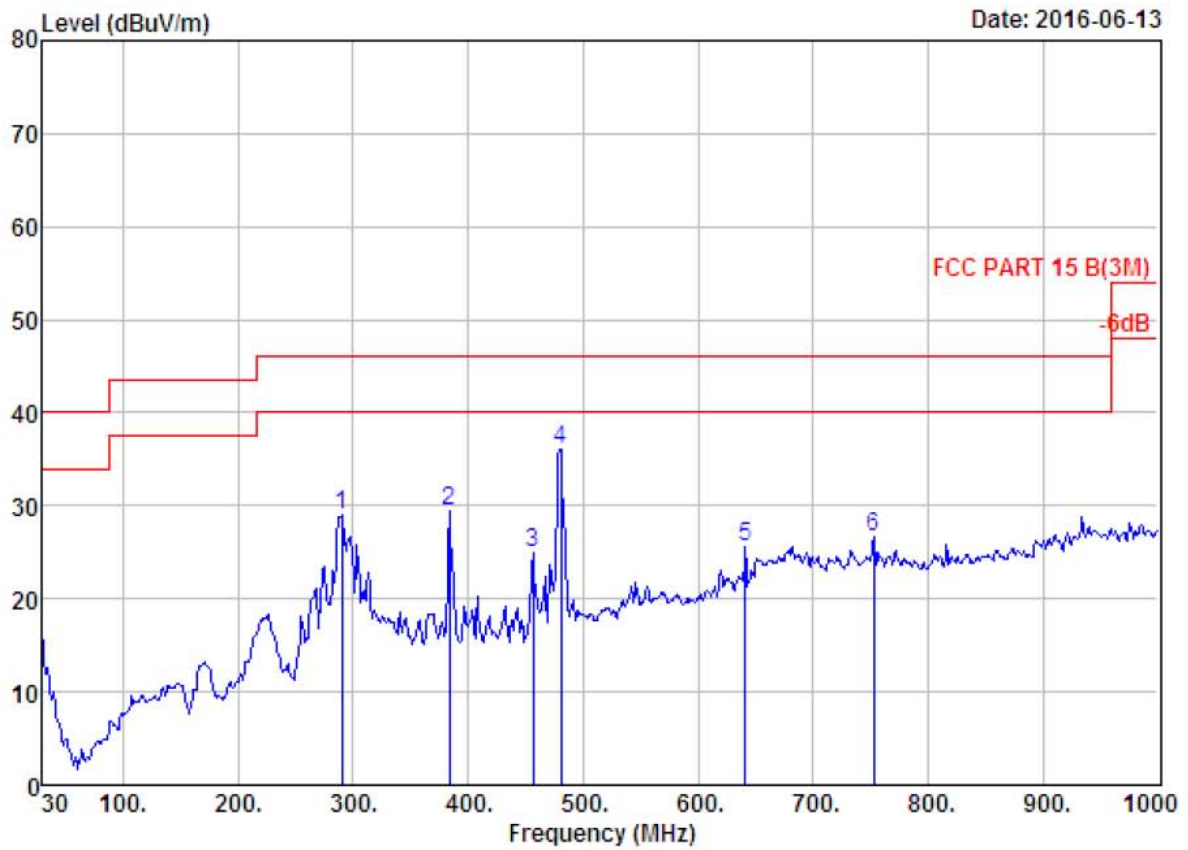
Site no. : 966 1# chamber Data no. : 44
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 289.96 | 12.73 | 2.32 | 1.34 | 16.39 | 46.00 | 29.61 | Peak |
| 2 | 384.05 | 15.24 | 2.64 | 2.41 | 20.29 | 46.00 | 25.71 | Peak |
| 3 | 471.35 | 17.23 | 3.11 | 2.14 | 22.48 | 46.00 | 23.52 | Peak |
| 4 | 481.05 | 17.49 | 3.09 | 17.56 | 38.14 | 46.00 | 7.86 | Peak |
| 5 | 516.94 | 17.95 | 3.15 | 0.26 | 21.36 | 46.00 | 24.64 | Peak |
| 6 | 613.94 | 19.94 | 3.39 | 5.61 | 28.94 | 46.00 | 17.06 | Peak |



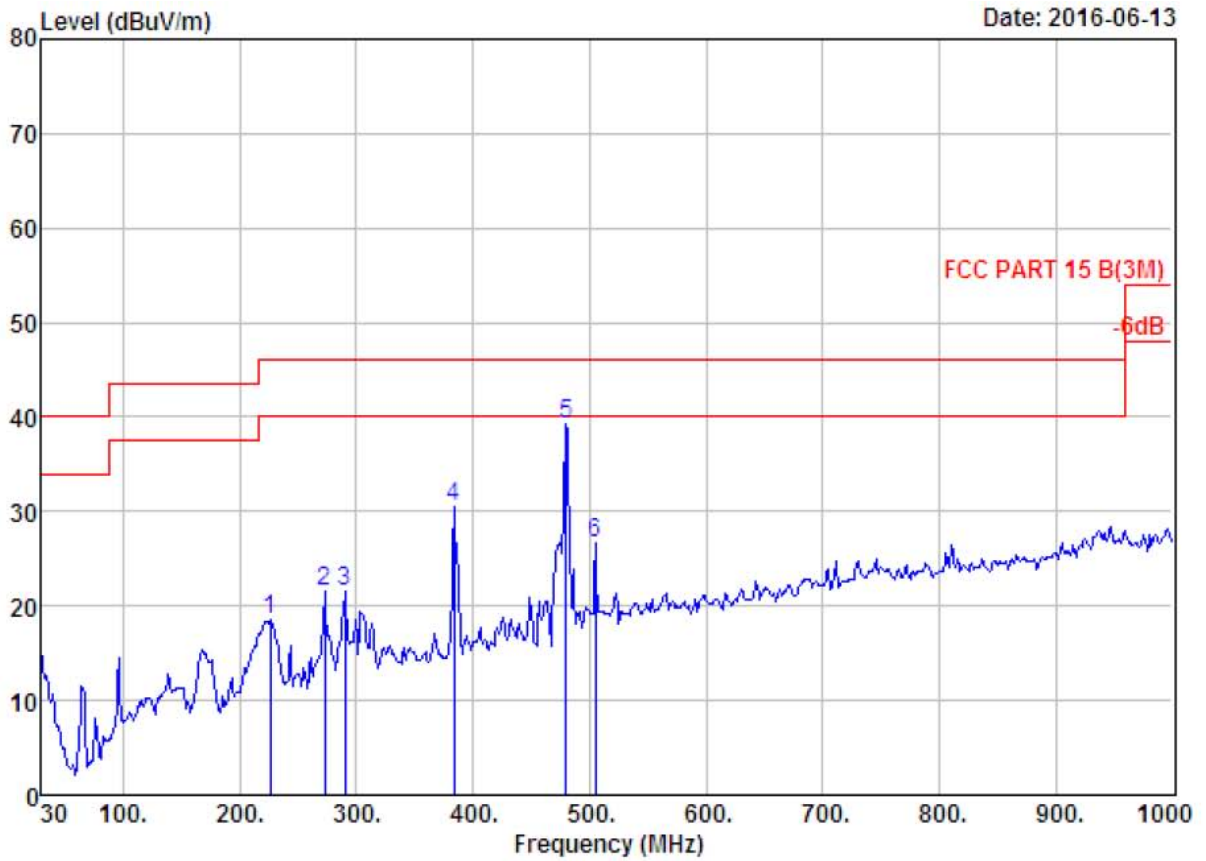
Site no. : 966 1# chamber Data no. : 45
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 222.06 | 9.31 | 2.01 | 0.96 | 12.28 | 46.00 | 33.72 | QP |
| 2 | 296.75 | 12.99 | 2.32 | 3.32 | 18.63 | 46.00 | 27.37 | QP |
| 3 | 384.05 | 15.24 | 2.64 | 4.53 | 22.41 | 46.00 | 23.59 | QP |
| 4 | 481.05 | 17.49 | 3.09 | 14.99 | 35.57 | 46.00 | 10.43 | QP |
| 5 | 631.40 | 20.15 | 3.49 | 0.95 | 24.59 | 46.00 | 21.41 | QP |
| 6 | 648.86 | 20.09 | 3.59 | 0.48 | 24.16 | 46.00 | 21.84 | QP |



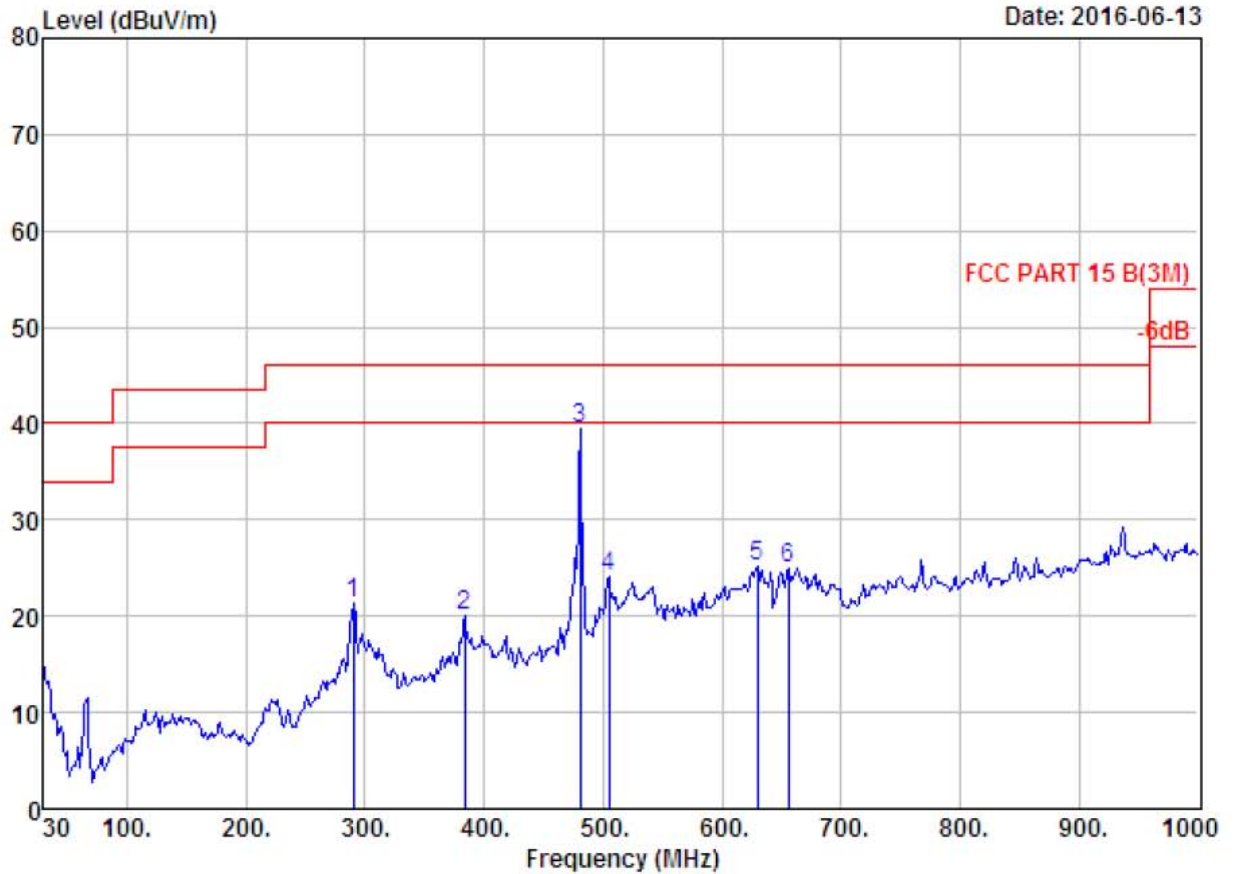
Site no. : 966 1# chamber Data no. : 46
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 289.96 | 12.73 | 2.32 | 13.92 | 28.97 | 46.00 | 17.03 | QP |
| 2 | 384.05 | 15.24 | 2.64 | 11.66 | 29.54 | 46.00 | 16.46 | QP |
| 3 | 456.80 | 16.73 | 2.93 | 5.38 | 25.04 | 46.00 | 20.96 | QP |
| 4 | 481.05 | 17.49 | 3.09 | 15.47 | 36.05 | 46.00 | 9.95 | QP |
| 5 | 641.10 | 20.02 | 3.56 | 2.04 | 25.62 | 46.00 | 20.38 | QP |
| 6 | 752.65 | 22.15 | 3.88 | 0.60 | 26.63 | 46.00 | 19.37 | QP |



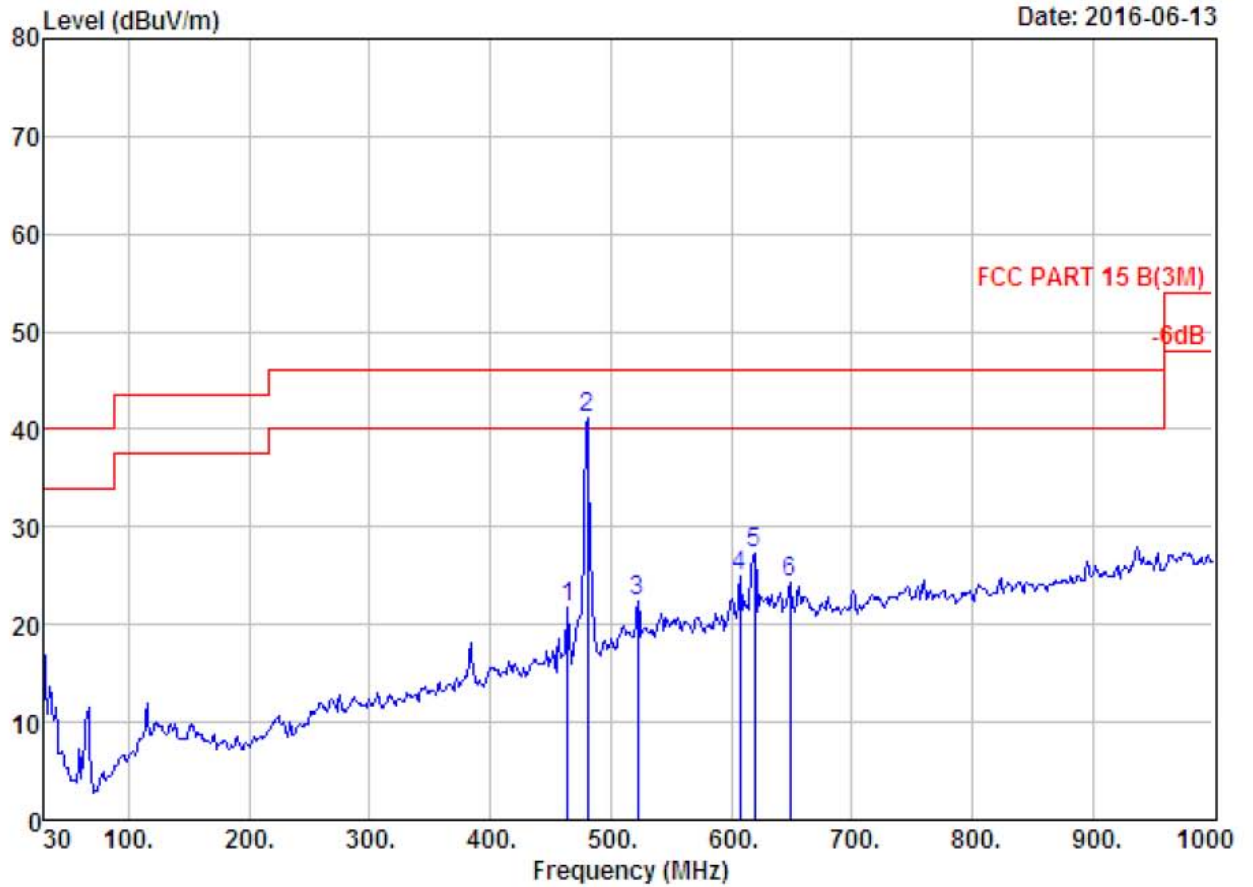
Site no. : 966 1# chamber Data no. : 47
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUI : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 225.94 | 9.47 | 1.99 | 7.09 | 18.55 | 46.00 | 27.45 | QP |
| 2 | 272.50 | 12.46 | 2.26 | 6.79 | 21.51 | 46.00 | 24.49 | QP |
| 3 | 289.96 | 12.73 | 2.32 | 6.43 | 21.48 | 46.00 | 24.52 | QP |
| 4 | 384.05 | 15.24 | 2.64 | 12.59 | 30.47 | 46.00 | 15.53 | QP |
| 5 | 480.08 | 17.45 | 3.10 | 18.63 | 39.18 | 46.00 | 6.82 | QP |
| 6 | 505.30 | 17.91 | 3.16 | 5.52 | 26.59 | 46.00 | 19.41 | QP |



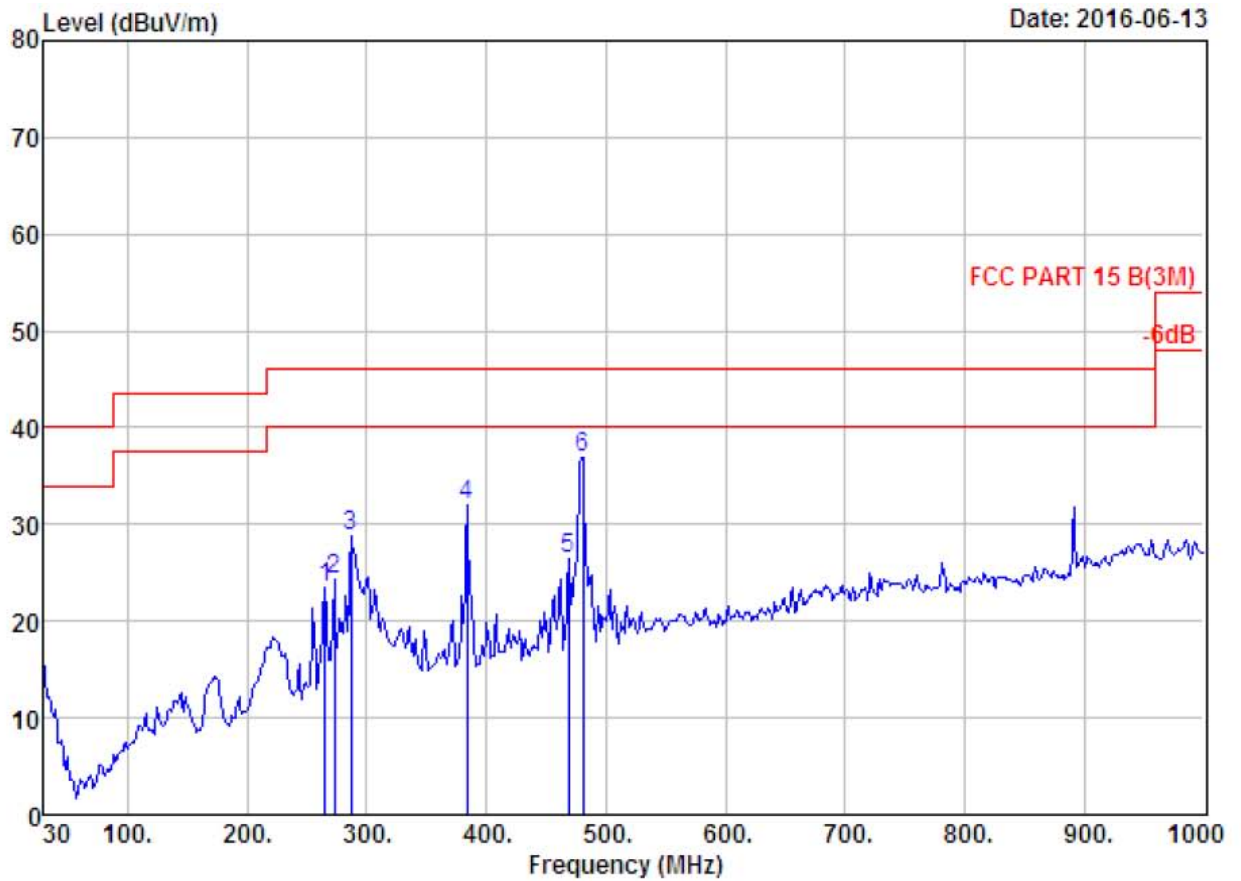
Site no. : 966 1# chamber Data no. : 48
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 289.96 | 12.73 | 2.32 | 6.27 | 21.32 | 46.00 | 24.68 | QP |
| 2 | 384.05 | 15.24 | 2.64 | 2.08 | 19.96 | 46.00 | 26.04 | QP |
| 3 | 481.05 | 17.49 | 3.09 | 18.96 | 39.54 | 46.00 | 6.46 | QP |
| 4 | 505.30 | 17.91 | 3.16 | 3.05 | 24.12 | 46.00 | 21.88 | QP |
| 5 | 629.46 | 20.16 | 3.43 | 1.69 | 25.28 | 46.00 | 20.72 | QP |
| 6 | 655.65 | 20.08 | 3.61 | 1.26 | 24.95 | 46.00 | 21.05 | QP |



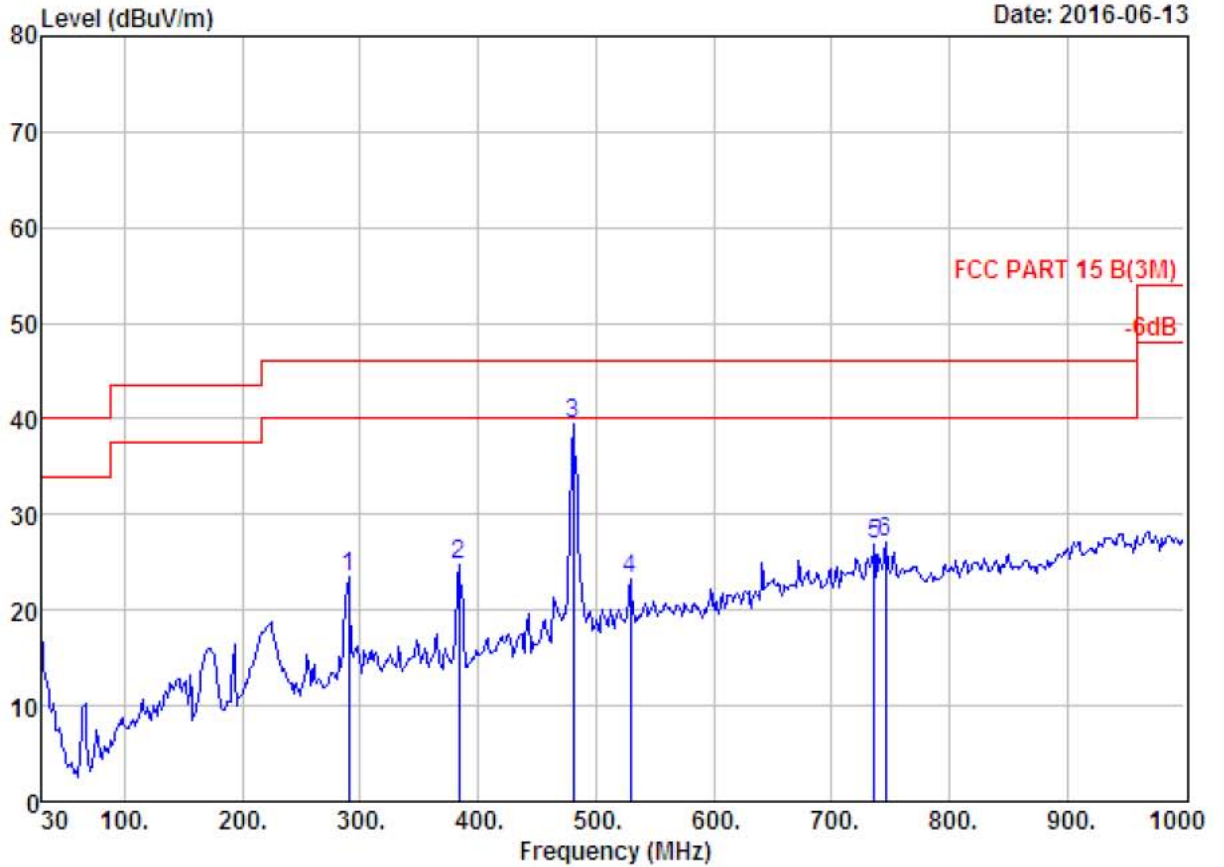
Site no. : 966 1# chamber Data no. : 49
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 464.56 | 17.01 | 3.02 | 1.80 | 21.83 | 46.00 | 24.17 | QP |
| 2 | 481.05 | 17.49 | 3.09 | 20.65 | 41.23 | 46.00 | 4.77 | QP |
| 3 | 522.76 | 18.04 | 3.21 | 1.15 | 22.40 | 46.00 | 23.60 | QP |
| 4 | 607.15 | 19.80 | 3.41 | 1.70 | 24.91 | 46.00 | 21.09 | QP |
| 5 | 619.76 | 20.03 | 3.43 | 3.80 | 27.26 | 46.00 | 18.74 | QP |
| 6 | 648.86 | 20.09 | 3.59 | 0.69 | 24.37 | 46.00 | 21.63 | QP |



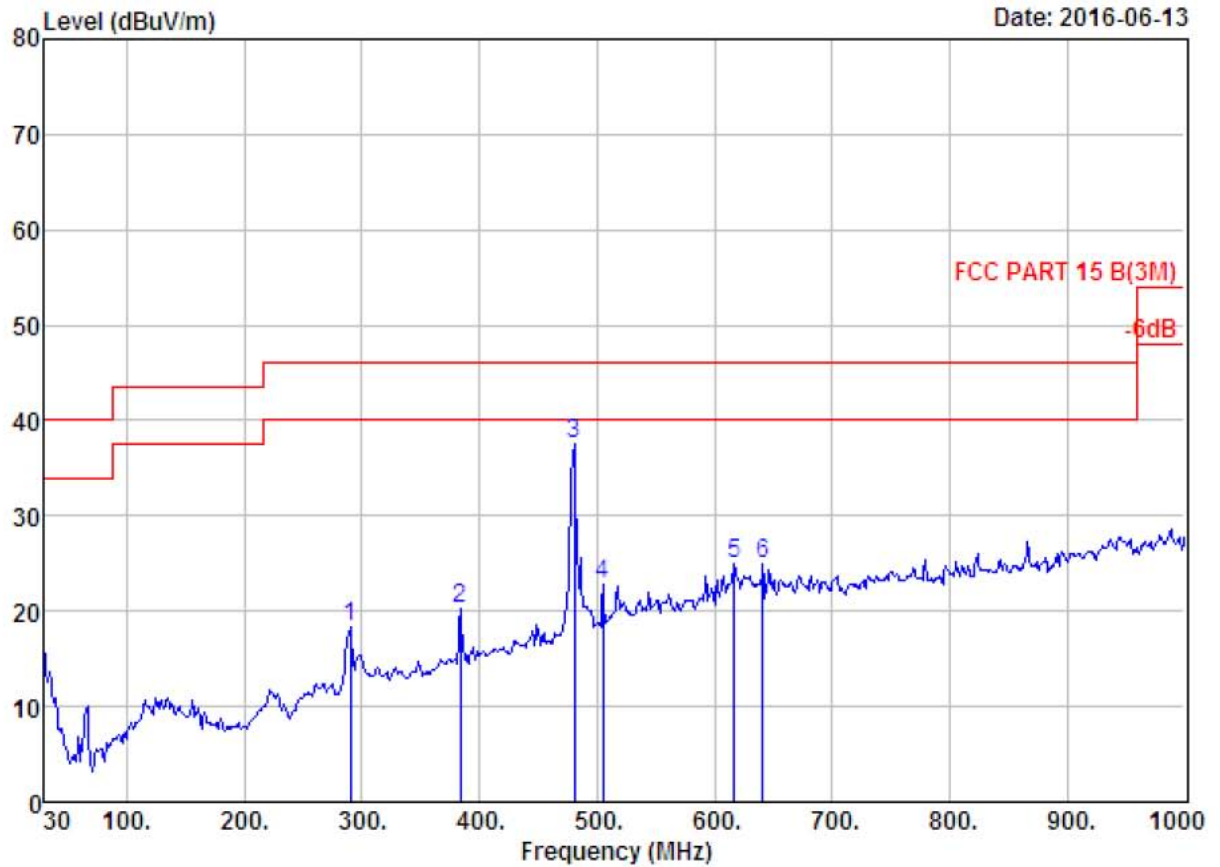
Site no. : 966 1# chamber Data no. : 50
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 264.74 | 12.94 | 2.28 | 8.22 | 23.44 | 46.00 | 22.56 | QP |
| 2 | 272.50 | 12.46 | 2.26 | 9.49 | 24.21 | 46.00 | 21.79 | QP |
| 3 | 287.05 | 12.59 | 2.32 | 13.99 | 28.90 | 46.00 | 17.10 | QP |
| 4 | 384.05 | 15.24 | 2.64 | 14.07 | 31.95 | 46.00 | 14.05 | QP |
| 5 | 468.44 | 17.14 | 3.09 | 6.31 | 26.54 | 46.00 | 19.46 | QP |
| 6 | 481.05 | 17.49 | 3.09 | 16.42 | 37.00 | 46.00 | 9.00 | QP |



Site no. : 966 1# chamber Data no. : 51
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUI : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 289.96 | 12.73 | 2.32 | 8.49 | 23.54 | 46.00 | 22.46 | QP |
| 2 | 384.05 | 15.24 | 2.64 | 6.94 | 24.82 | 46.00 | 21.18 | QP |
| 3 | 481.05 | 17.49 | 3.09 | 18.84 | 39.42 | 46.00 | 6.58 | QP |
| 4 | 529.55 | 18.23 | 3.21 | 1.71 | 23.15 | 46.00 | 22.85 | QP |
| 5 | 736.16 | 22.28 | 3.78 | 0.83 | 26.89 | 46.00 | 19.11 | QP |
| 6 | 745.86 | 22.26 | 3.90 | 0.86 | 27.02 | 46.00 | 18.98 | QP |



Site no. : 966 1# chamber Data no. : 52
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 289.96 | 12.73 | 2.32 | 3.40 | 18.45 | 46.00 | 27.55 | QP |
| 2 | 384.05 | 15.24 | 2.64 | 2.45 | 20.33 | 46.00 | 25.67 | QP |
| 3 | 481.05 | 17.49 | 3.09 | 16.94 | 37.52 | 46.00 | 8.48 | QP |
| 4 | 505.30 | 17.91 | 3.16 | 1.72 | 22.79 | 46.00 | 23.21 | QP |
| 5 | 616.85 | 19.99 | 3.46 | 1.51 | 24.96 | 46.00 | 21.04 | QP |
| 6 | 641.10 | 20.02 | 3.56 | 1.33 | 24.91 | 46.00 | 21.09 | QP |

Above 1000 MHz

```

Site no.      : 966 1# chamber          Data no.   : 1
Dis. / Ant.   : 3m ANT 1-18G          Ant. pol.  : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Car radio
Power        : DC 12V
M/N          : CMS3
Test Mode    : GFSK TX 2402MHz

```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.64 | 86.77 | 86.36 | 74.00 | -12.36 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 35.64 | 34.25 | 41.63 | 74.00 | 32.37 | Peak |
| 3 | 7206.00 | 36.52 | 11.54 | 33.95 | 32.18 | 46.29 | 74.00 | 27.71 | Peak |
| 4 | 11030.00 | 39.50 | 11.27 | 33.98 | 31.81 | 48.60 | 74.00 | 25.40 | Peak |
| 5 | 14566.00 | 41.71 | 10.92 | 33.66 | 31.45 | 50.42 | 74.00 | 23.58 | Peak |
| 6 | 17966.00 | 46.12 | 11.34 | 31.76 | 26.67 | 52.37 | 74.00 | 21.63 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 2
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.64 | 90.90 | 90.49 | 74.00 | -16.49 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 35.64 | 34.46 | 41.84 | 74.00 | 32.16 | Peak |
| 3 | 7206.00 | 36.52 | 11.54 | 33.95 | 32.18 | 46.29 | 74.00 | 27.71 | Peak |
| 4 | 8684.00 | 37.32 | 11.45 | 33.66 | 31.97 | 47.08 | 74.00 | 26.92 | Peak |
| 5 | 14209.00 | 41.64 | 10.91 | 33.40 | 29.78 | 48.93 | 74.00 | 25.07 | Peak |
| 6 | 17915.00 | 45.62 | 11.28 | 31.26 | 25.90 | 51.54 | 74.00 | 22.46 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 3
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2441.00 | 27.60 | 6.67 | 34.85 | 89.16 | 88.58 | 74.00 | -14.58 | Peak |
| 2 | 4882.00 | 31.37 | 12.07 | 35.76 | 32.46 | 40.14 | 74.00 | 33.86 | Peak |
| 3 | 7323.00 | 36.55 | 11.57 | 34.14 | 32.17 | 46.15 | 74.00 | 27.85 | Peak |
| 4 | 8684.00 | 37.32 | 11.45 | 33.66 | 31.87 | 46.98 | 74.00 | 27.02 | Peak |
| 5 | 11676.00 | 39.00 | 11.09 | 33.24 | 29.33 | 46.18 | 74.00 | 27.82 | Peak |
| 6 | 17966.00 | 46.12 | 11.34 | 31.76 | 25.92 | 51.62 | 74.00 | 22.38 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 4
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2441MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2441.00 | 27.60 | 6.67 | 34.85 | 91.63 | 91.05 | 74.00 | -17.05 | Peak |
| 2 | 4882.00 | 31.37 | 12.07 | 35.76 | 31.76 | 39.44 | 74.00 | 34.56 | Peak |
| 3 | 7323.00 | 36.55 | 11.57 | 34.14 | 32.10 | 46.08 | 74.00 | 27.92 | Peak |
| 4 | 7834.00 | 36.68 | 11.47 | 34.96 | 32.07 | 45.26 | 74.00 | 28.74 | Peak |
| 5 | 14311.00 | 41.73 | 10.92 | 33.42 | 28.84 | 48.07 | 74.00 | 25.93 | Peak |
| 6 | 17864.00 | 45.12 | 11.22 | 30.66 | 26.08 | 51.76 | 74.00 | 22.24 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 5
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 92.01 | 91.19 | 74.00 | -17.19 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 36.01 | 32.07 | 39.99 | 74.00 | 34.01 | Peak |
| 3 | 7440.00 | 36.54 | 11.61 | 34.22 | 32.92 | 46.85 | 74.00 | 27.15 | Peak |
| 4 | 8055.00 | 36.91 | 11.41 | 34.91 | 32.98 | 46.39 | 74.00 | 27.61 | Peak |
| 5 | 14345.00 | 41.76 | 10.92 | 33.39 | 28.07 | 47.36 | 74.00 | 26.64 | Peak |
| 6 | 17966.00 | 46.12 | 11.34 | 31.76 | 25.78 | 51.48 | 74.00 | 22.52 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 6
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 87.53 | 86.71 | 74.00 | -12.71 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 36.01 | 32.43 | 40.35 | 74.00 | 33.65 | Peak |
| 3 | 7440.00 | 36.54 | 11.61 | 34.22 | 32.79 | 46.72 | 74.00 | 27.28 | Peak |
| 4 | 7885.00 | 36.78 | 11.45 | 35.09 | 33.49 | 46.63 | 74.00 | 27.37 | Peak |
| 5 | 15484.00 | 37.94 | 11.09 | 32.90 | 31.32 | 47.45 | 74.00 | 26.55 | Peak |
| 6 | 17983.00 | 46.28 | 11.36 | 31.94 | 24.86 | 50.56 | 74.00 | 23.44 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 7
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.64 | 88.66 | 88.25 | 74.00 | -14.25 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 35.64 | 32.33 | 39.71 | 74.00 | 34.29 | Peak |
| 3 | 7206.00 | 36.52 | 11.54 | 33.95 | 31.40 | 45.51 | 74.00 | 28.49 | Peak |
| 4 | 10860.00 | 39.37 | 11.30 | 34.03 | 29.02 | 45.66 | 74.00 | 28.34 | Peak |
| 5 | 15824.00 | 37.36 | 10.82 | 33.10 | 32.39 | 47.47 | 74.00 | 26.53 | Peak |
| 6 | 17966.00 | 46.12 | 11.34 | 31.76 | 24.19 | 49.89 | 74.00 | 24.11 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

```

Site no.      : 966 1# chamber           Data no.   : 8
Dis. / Ant.  : 3m  ANT 1-18G           Ant. pol.  : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Car radio
Power        : DC 12V
M/N         : CMS3
Test Mode    : 8-DPSK TX 2402MHz
    
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2402.00 | 27.61 | 6.62 | 34.64 | 84.85 | 84.44 | 74.00 | -10.44 | Peak |
| 2 | 4804.00 | 31.25 | 11.77 | 35.64 | 32.21 | 39.59 | 74.00 | 34.41 | Peak |
| 3 | 7206.00 | 36.52 | 11.54 | 33.95 | 32.18 | 46.29 | 74.00 | 27.71 | Peak |
| 4 | 7800.00 | 36.61 | 11.49 | 34.87 | 33.92 | 47.15 | 74.00 | 26.85 | Peak |
| 5 | 15875.00 | 37.27 | 10.77 | 32.98 | 33.36 | 48.42 | 74.00 | 25.58 | Peak |
| 6 | 18000.00 | 46.45 | 11.38 | 32.12 | 23.23 | 48.94 | 74.00 | 25.06 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

```

Site no.       : 966 1# chamber           Data no.  : 9
Dis. / Ant.   : 3m   ANT 1-18G          Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Car radio
Power         : DC 12V
M/N           : CMS3
Test Mode     : 8-DPSK TX 2441MHz
    
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2441.00 | 27.60 | 6.67 | 34.85 | 85.52 | 84.94 | 74.00 | -10.94 | Peak |
| 2 | 4882.00 | 31.37 | 12.07 | 35.76 | 33.33 | 41.01 | 74.00 | 32.99 | Peak |
| 3 | 7323.00 | 36.55 | 11.57 | 34.14 | 32.66 | 46.64 | 74.00 | 27.36 | Peak |
| 4 | 8667.00 | 37.30 | 11.45 | 33.67 | 32.01 | 47.09 | 74.00 | 26.91 | Peak |
| 5 | 14855.00 | 40.71 | 10.88 | 33.68 | 31.59 | 49.50 | 74.00 | 24.50 | Peak |
| 6 | 17864.00 | 45.12 | 11.22 | 30.66 | 23.38 | 49.06 | 74.00 | 24.94 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

```

Site no.       : 966 1# chamber          Data no.  : 10
Dis. / Ant.   : 3m  ANT 1-18G          Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Car radio
Power         : DC 12V
M/N           : CMS3
Test Mode     : 8-DPSK TX 2441MHz
    
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2441.00 | 27.60 | 6.67 | 34.85 | 84.13 | 83.55 | 74.00 | -9.55 | Peak |
| 2 | 4882.00 | 31.37 | 12.07 | 35.76 | 32.11 | 39.79 | 74.00 | 34.21 | Peak |
| 3 | 7323.00 | 36.55 | 11.57 | 34.14 | 32.45 | 46.43 | 74.00 | 27.57 | Peak |
| 4 | 8480.00 | 36.91 | 11.45 | 34.18 | 32.76 | 46.94 | 74.00 | 27.06 | Peak |
| 5 | 14260.00 | 41.68 | 10.92 | 33.42 | 26.73 | 45.91 | 74.00 | 28.09 | Peak |
| 6 | 18000.00 | 46.45 | 11.38 | 32.12 | 23.41 | 49.12 | 74.00 | 24.88 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 11
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 86.72 | 85.90 | 74.00 | -11.90 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 36.01 | 32.38 | 40.30 | 74.00 | 33.70 | Peak |
| 3 | 7440.00 | 36.54 | 11.61 | 34.22 | 32.57 | 46.50 | 74.00 | 27.50 | Peak |
| 4 | 8735.00 | 37.40 | 11.45 | 33.76 | 33.14 | 48.23 | 74.00 | 25.77 | Peak |
| 5 | 14260.00 | 41.68 | 10.92 | 33.42 | 29.10 | 48.28 | 74.00 | 25.72 | Peak |
| 6 | 17830.00 | 44.78 | 11.18 | 30.50 | 25.25 | 50.71 | 74.00 | 23.29 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Site no. : 966 1# chamber Data no. : 12
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 87.29 | 86.47 | 74.00 | -12.47 | Peak |
| 2 | 4960.00 | 31.49 | 12.44 | 36.01 | 32.42 | 40.34 | 74.00 | 33.66 | Peak |
| 3 | 7440.00 | 36.54 | 11.61 | 34.22 | 32.31 | 46.24 | 74.00 | 27.76 | Peak |
| 4 | 8038.00 | 36.95 | 11.40 | 34.90 | 33.01 | 46.46 | 74.00 | 27.54 | Peak |
| 5 | 16385.00 | 37.98 | 10.56 | 33.24 | 31.56 | 46.86 | 74.00 | 27.14 | Peak |
| 6 | 17864.00 | 45.12 | 11.22 | 30.66 | 24.46 | 50.14 | 74.00 | 23.86 | Peak |

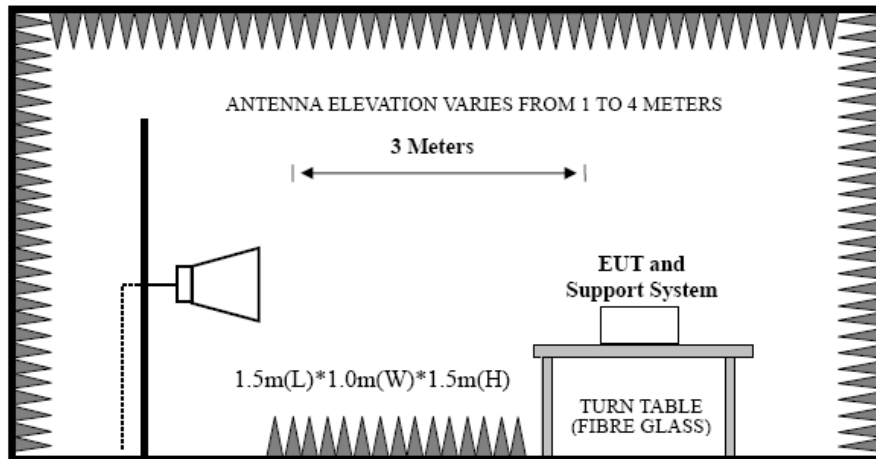
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

9. BAND EDGE COMPLIANCE

9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

9.2. Block Diagram of Test setup



9.3. Test Procedure

EUT was placed on a turn table, which is 1.5 m high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

Peak : RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto.

AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

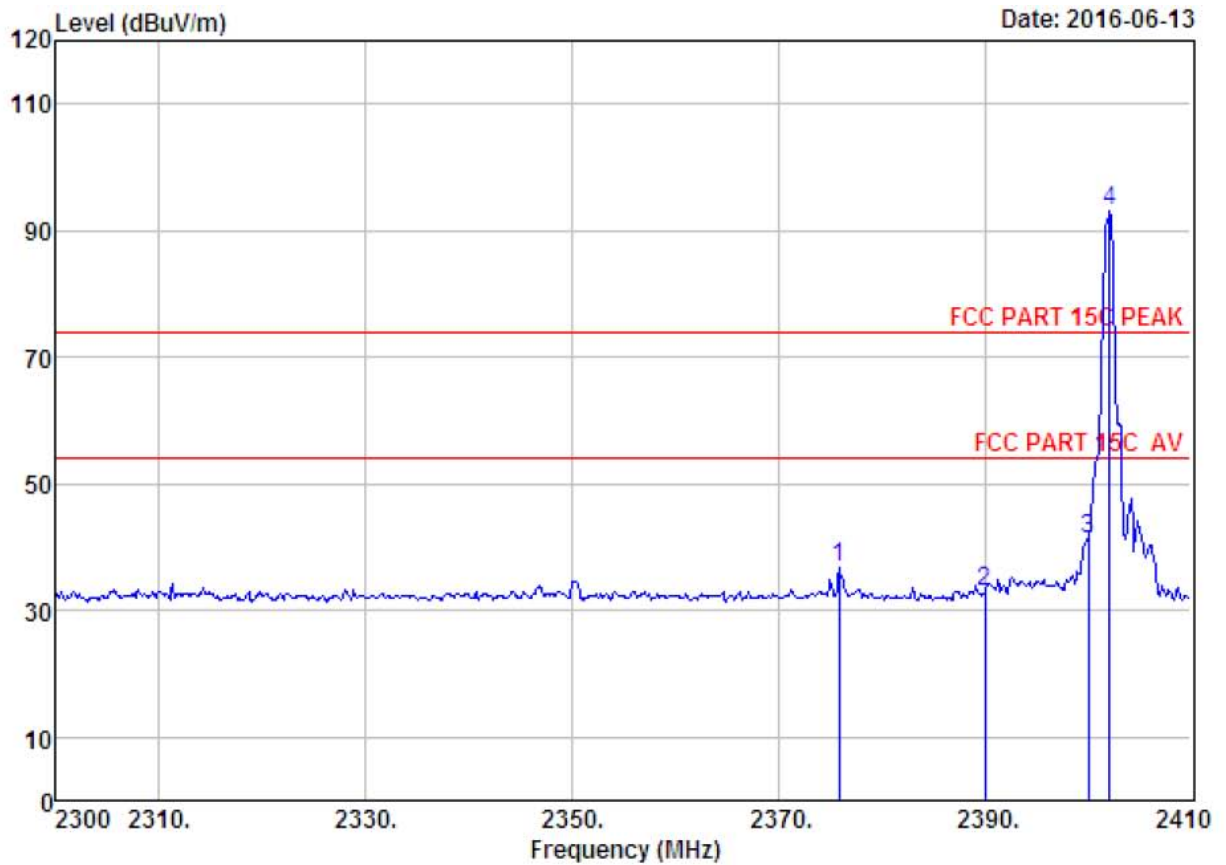
9.4. Test Result

| |
|--|
| EUT: Car radio |
| M/N: CMS3 |
| Power: DC 12V |
| Test date: 2016-06-13 Test site: 3m Chamber Tested by: Tony Tang |
| Test mode: Tx Mode (Hopping On & No Hopping) |
| Pass |

Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2、 The frequency 2402MHz 、2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

9.5. Test Data

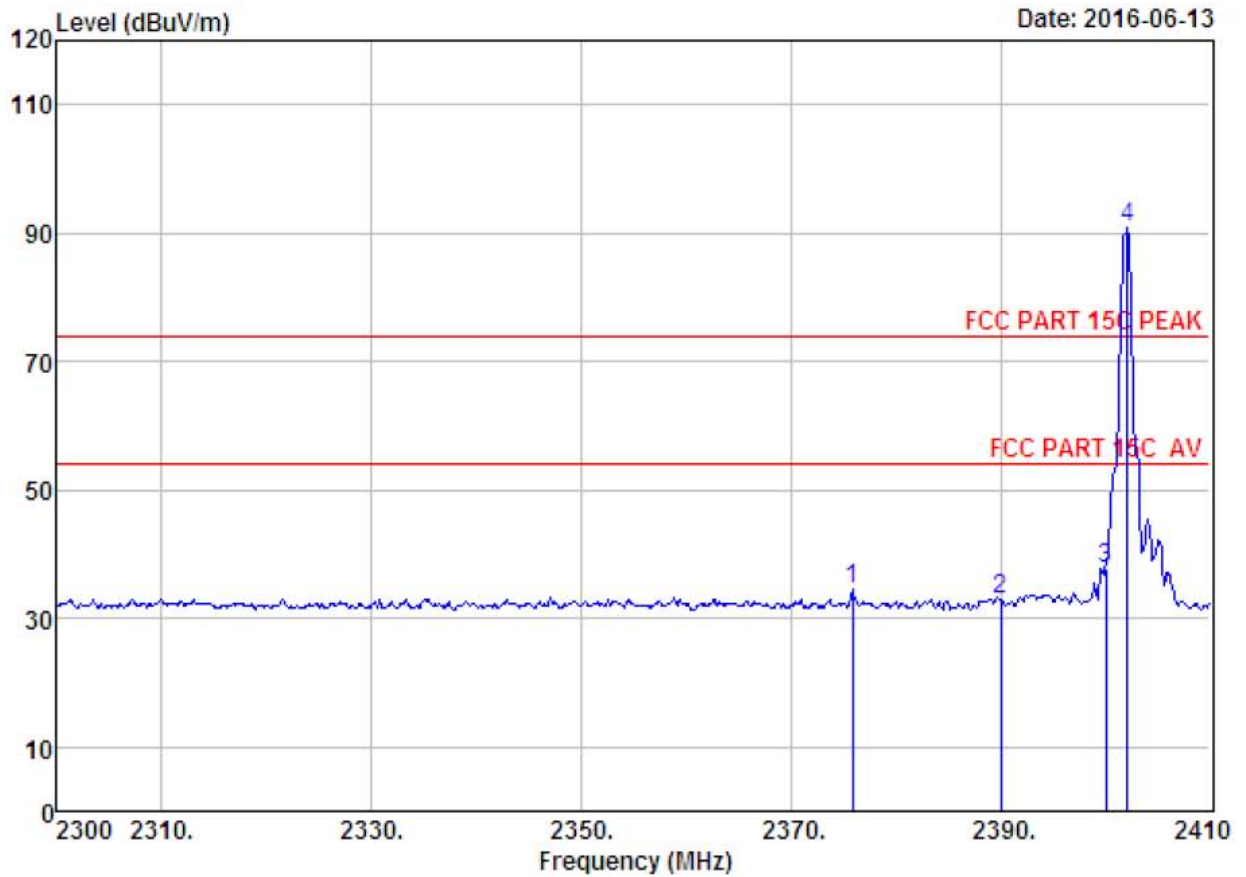


```

Site no.      : 966 1# chamber           Data no.   : 13
Dis. / Ant.   : 3m ANT 1-18G           Ant. pol.  : VERTICAL
Limit        : FCC PART 15C PEAK
Env. / Ins.   : Temp:23.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUI          : Car radio
Power        : DC 12V
M/N          : CMS3
Test Mode    : GFSK TX 2402MHz (No Hopping)
    
```

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2375.90 | 27.64 | 6.60 | 34.59 | 37.20 | 36.85 | 74.00 | 37.15 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 33.36 | 33.00 | 74.00 | 41.00 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 41.67 | 41.26 | 74.00 | 32.74 | Peak |
| 4 | 2402.08 | 27.61 | 6.62 | 34.64 | 93.43 | 93.02 | 74.00 | -19.02 | Peak |

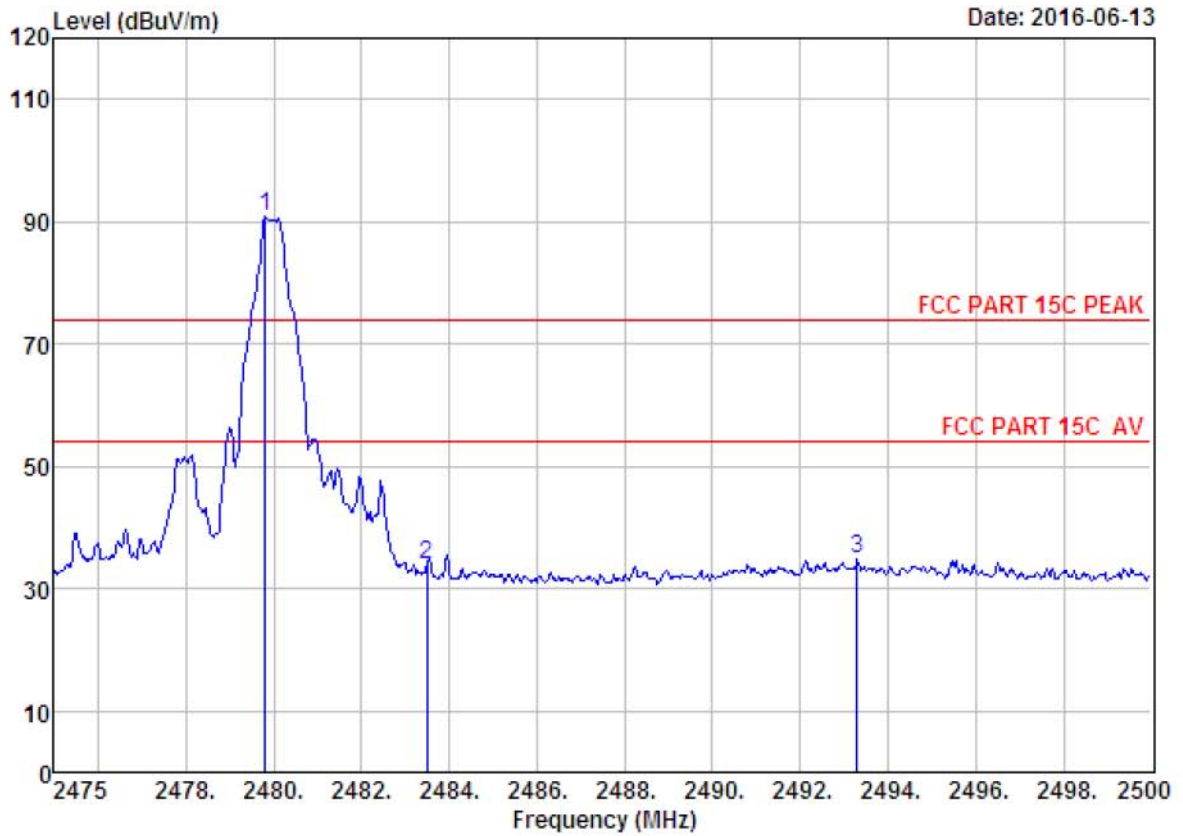
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : site Data no. : 14
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2375.90 | 27.64 | 6.60 | 34.59 | 34.93 | 34.58 | 74.00 | 39.42 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 33.29 | 32.93 | 74.00 | 41.07 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 38.01 | 37.60 | 74.00 | 36.40 | Peak |
| 4 | 2402.08 | 27.61 | 6.62 | 34.64 | 91.22 | 90.81 | 74.00 | -16.81 | Peak |

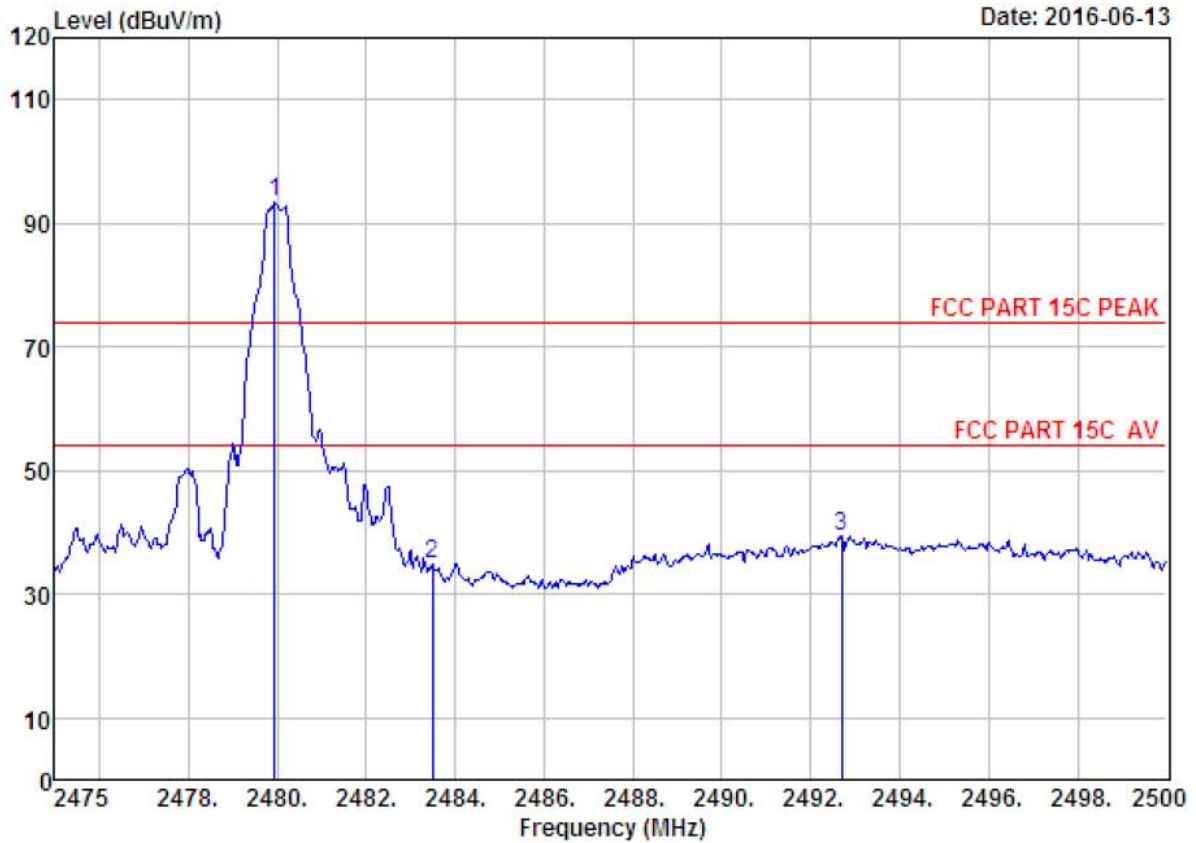
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 15
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2479.80 | 27.58 | 6.71 | 35.11 | 91.68 | 90.86 | 74.00 | -16.86 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 34.60 | 33.78 | 74.00 | 40.22 | Peak |
| 3 | 2493.30 | 27.58 | 6.73 | 35.24 | 35.69 | 34.76 | 74.00 | 39.24 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

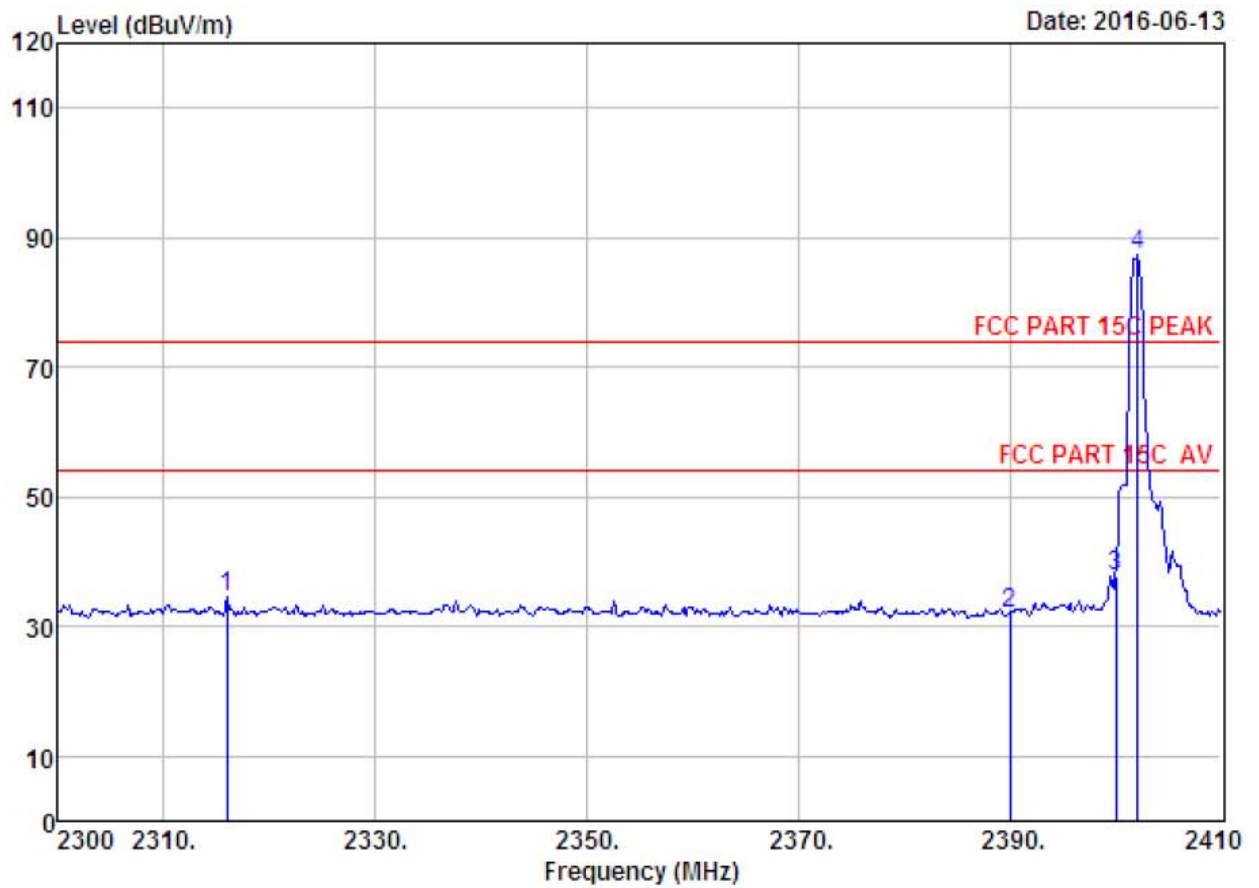


Site no. : 966 1# chamber
 Dis. / Ant. : 3m ANT 1-18G
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz (No Hopping)

Data no. : 16
 Ant. pol. : VERTICAL

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|-------------|--------------------|-----------------|-----------------|----------------|-------------------------|-----------------|-------------|--------|
| 1 | 2479.95 | 27.58 | 6.71 | 35.11 | 94.14 | 93.32 | 74.00 | -19.32 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 35.71 | 34.89 | 74.00 | 39.11 | Peak |
| 3 | 2492.70 | 27.58 | 6.73 | 35.24 | 40.24 | 39.31 | 74.00 | 34.69 | Peak |

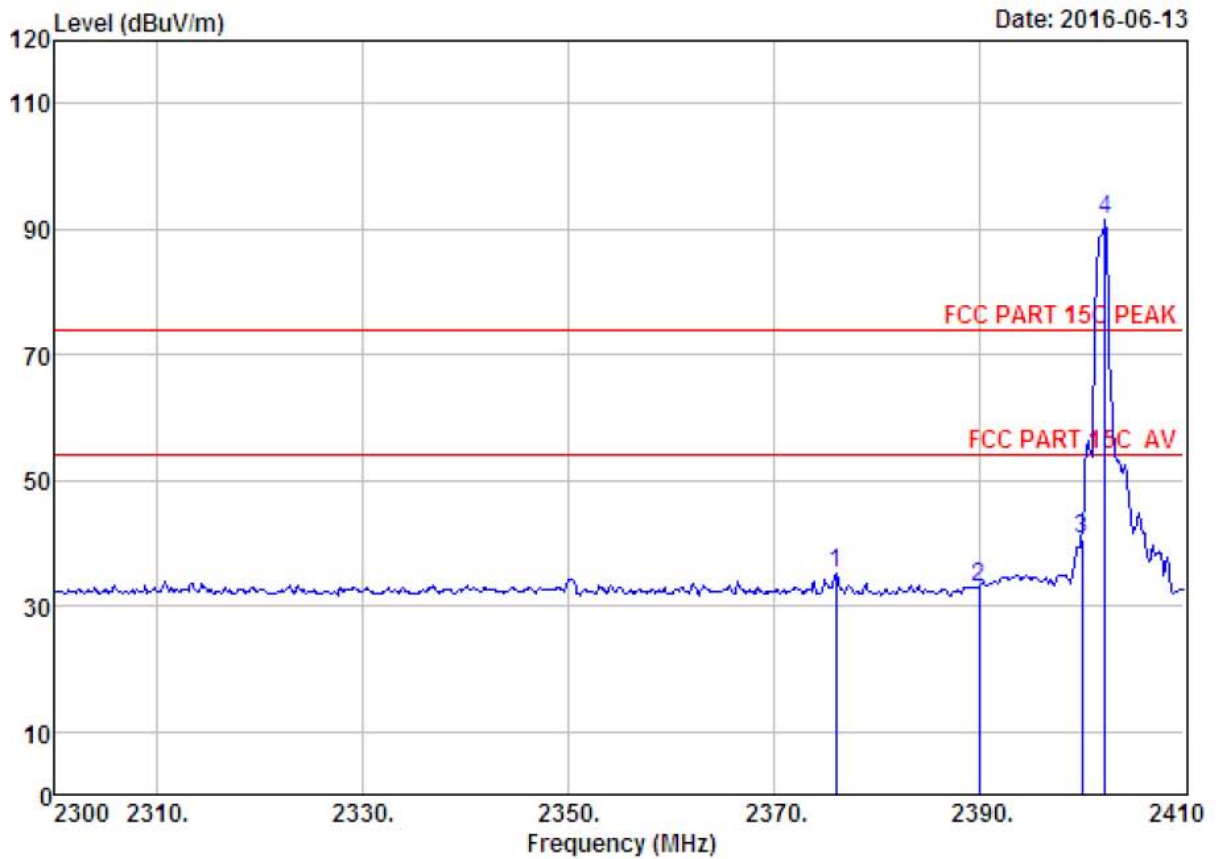
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 17
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2315.95 | 27.76 | 6.53 | 34.60 | 34.98 | 34.67 | 74.00 | 39.33 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 32.40 | 32.04 | 74.00 | 41.96 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 38.03 | 37.62 | 74.00 | 36.38 | Peak |
| 4 | 2402.08 | 27.61 | 6.62 | 34.64 | 87.78 | 87.37 | 74.00 | -13.37 | Peak |

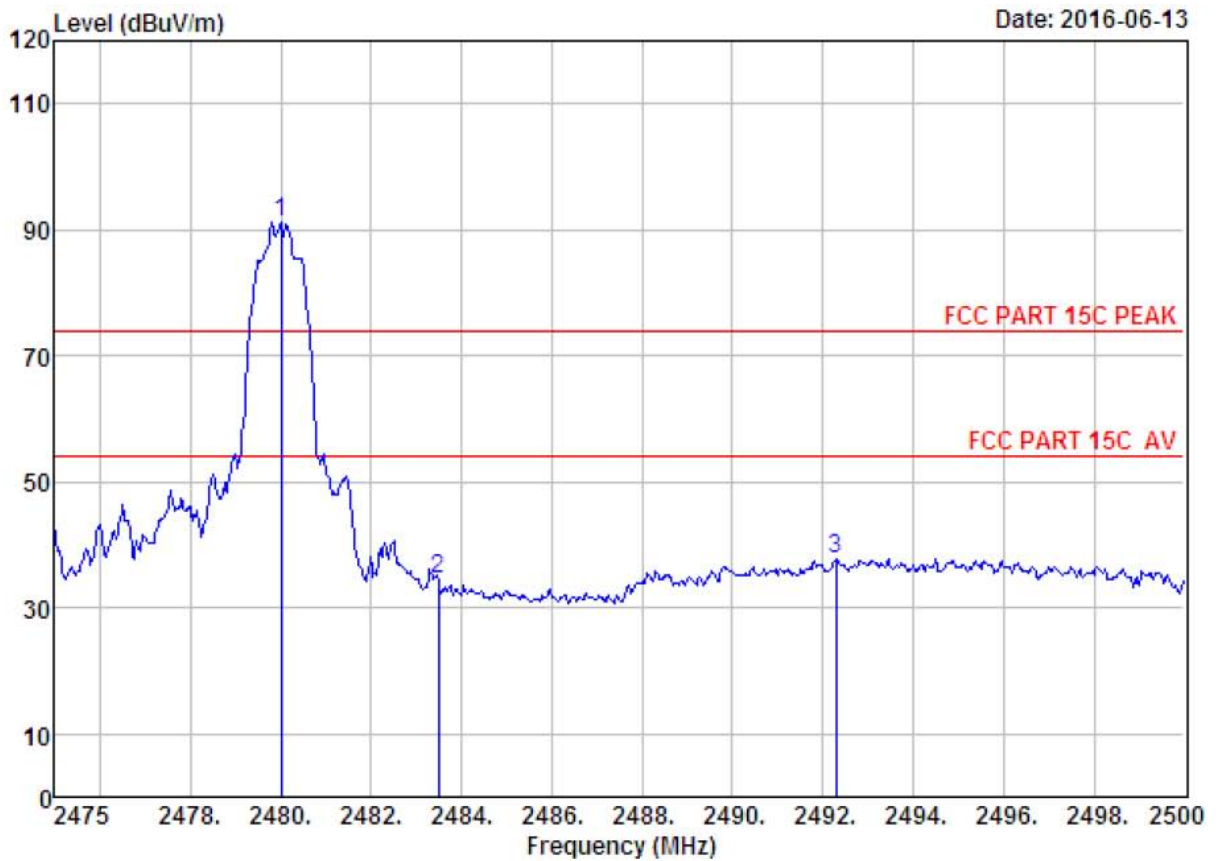
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 18
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUI : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2376.12 | 27.64 | 6.60 | 34.59 | 35.63 | 35.28 | 74.00 | 38.72 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 33.35 | 32.99 | 74.00 | 41.01 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 41.07 | 40.66 | 74.00 | 33.34 | Peak |
| 4 | 2402.30 | 27.61 | 6.62 | 34.64 | 92.07 | 91.66 | 74.00 | -17.66 | Peak |

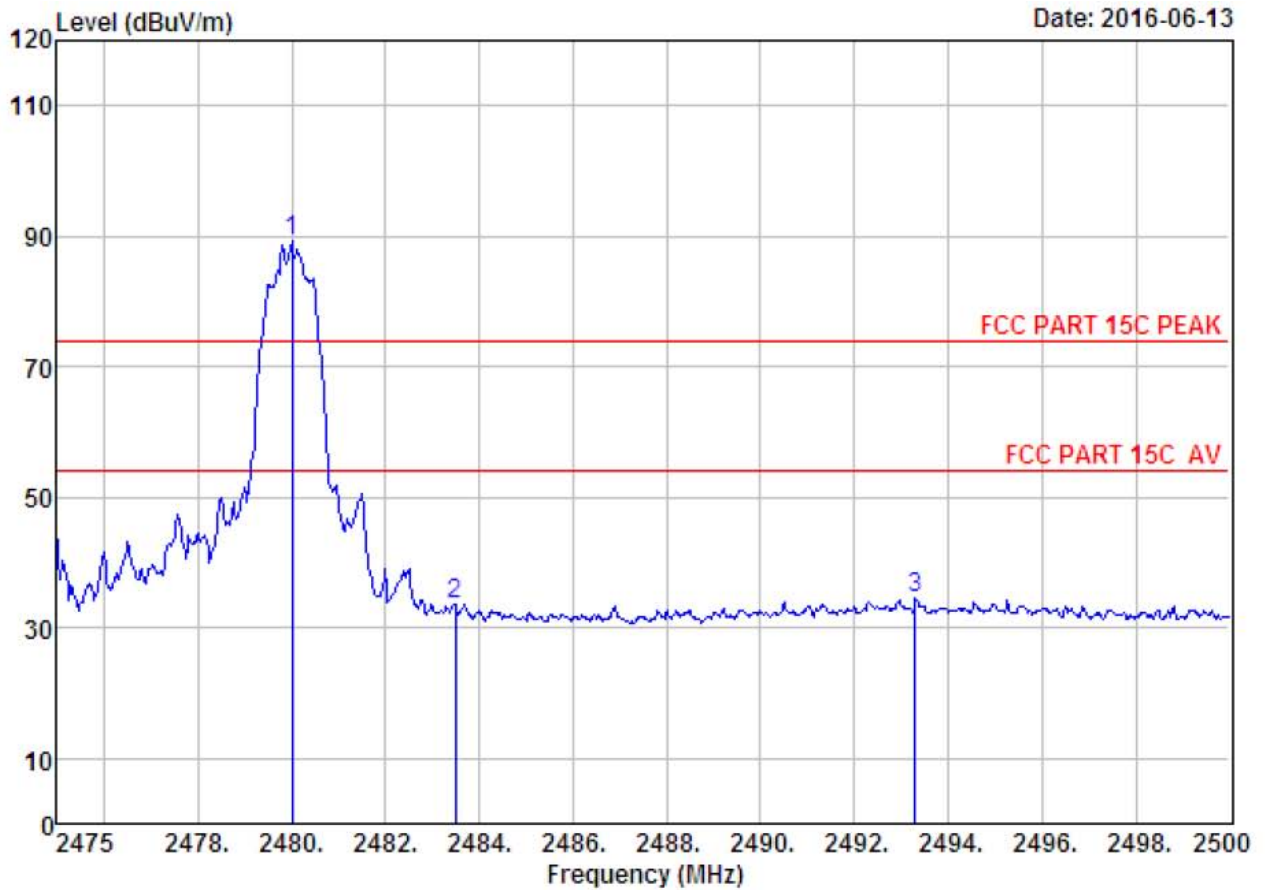
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 19
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 92.14 | 91.32 | 74.00 | -17.32 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 35.31 | 34.49 | 74.00 | 39.51 | Peak |
| 3 | 2492.30 | 27.58 | 6.73 | 35.24 | 38.72 | 37.79 | 74.00 | 36.21 | Peak |

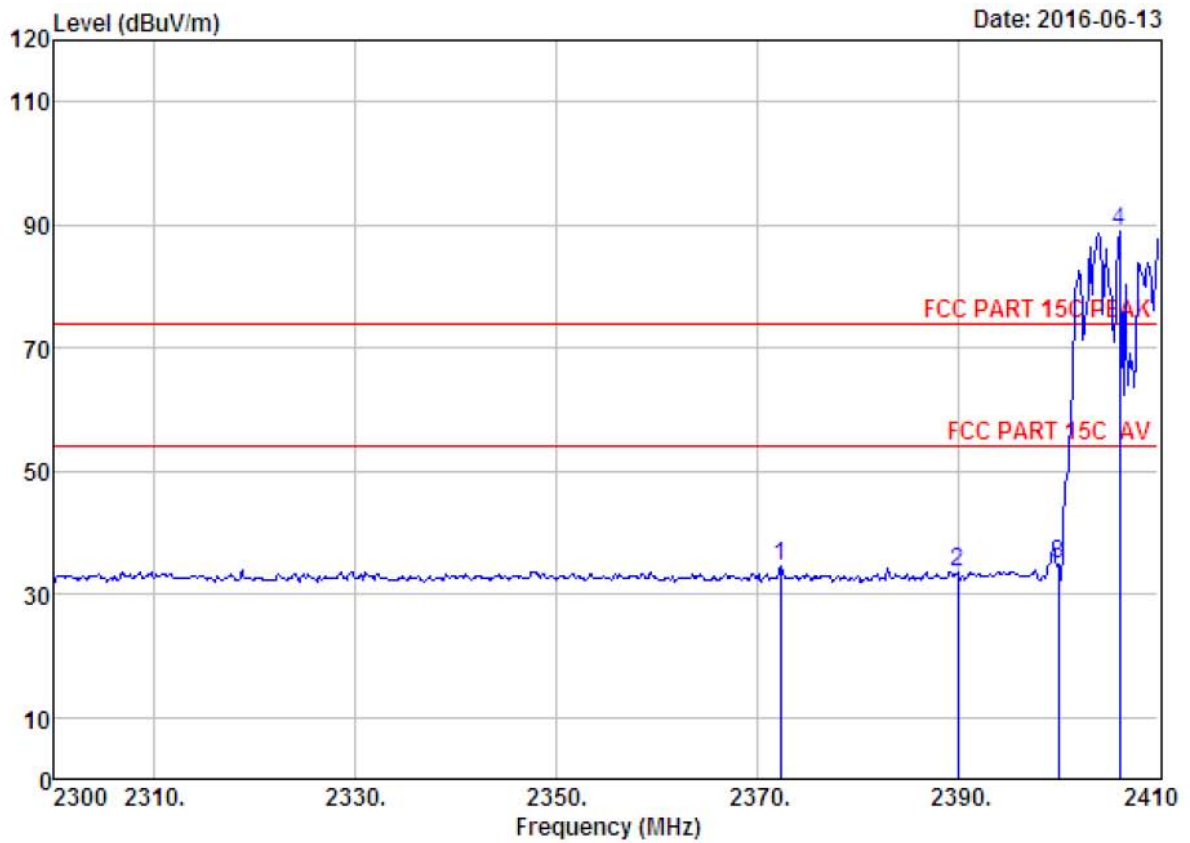
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 20
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.00 | 27.58 | 6.71 | 35.11 | 89.98 | 89.16 | 74.00 | -15.16 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 34.52 | 33.70 | 74.00 | 40.30 | Peak |
| 3 | 2493.30 | 27.58 | 6.73 | 35.24 | 35.56 | 34.63 | 74.00 | 39.37 | Peak |

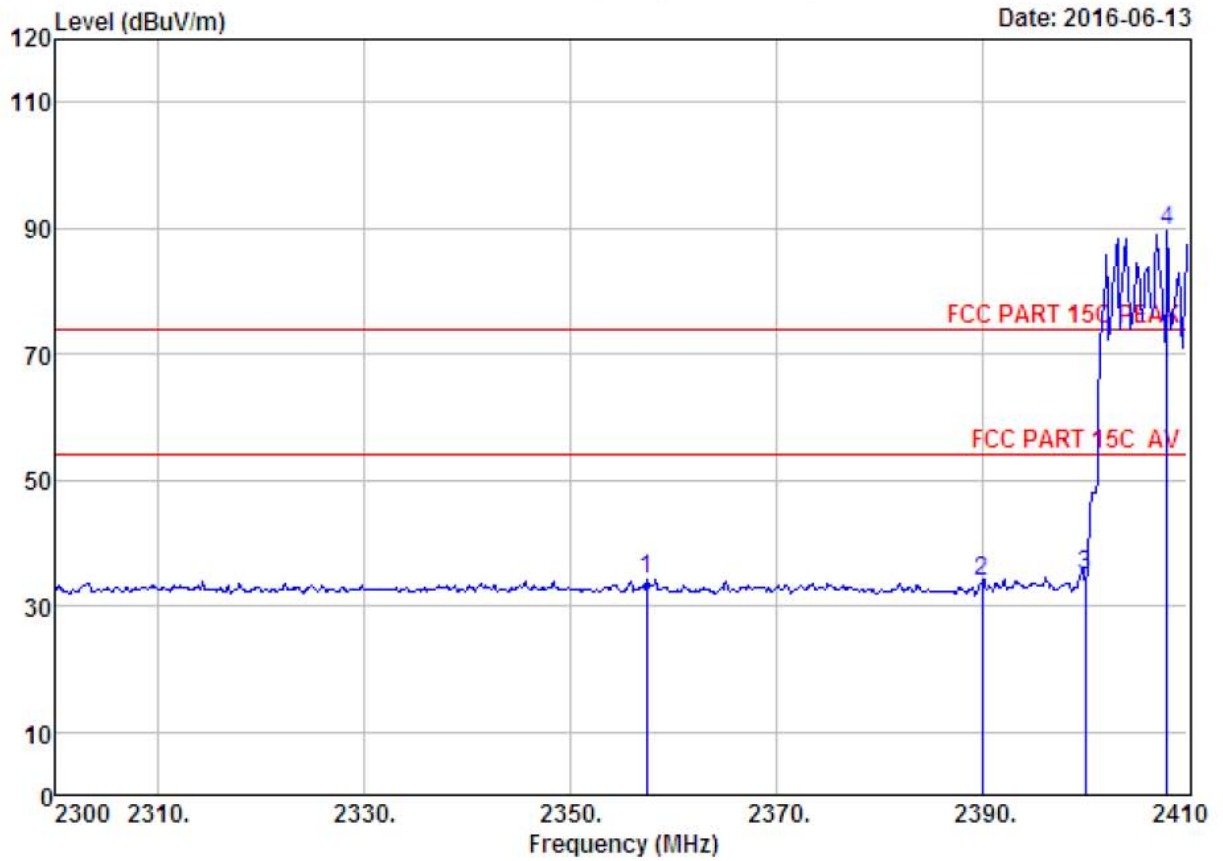
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 21
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2372.38 | 27.67 | 6.60 | 34.59 | 34.91 | 34.59 | 74.00 | 39.41 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 33.97 | 33.61 | 74.00 | 40.39 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 35.19 | 34.78 | 74.00 | 39.22 | Peak |
| 4 | 2406.15 | 27.61 | 6.64 | 34.64 | 89.39 | 89.00 | 74.00 | -15.00 | Peak |

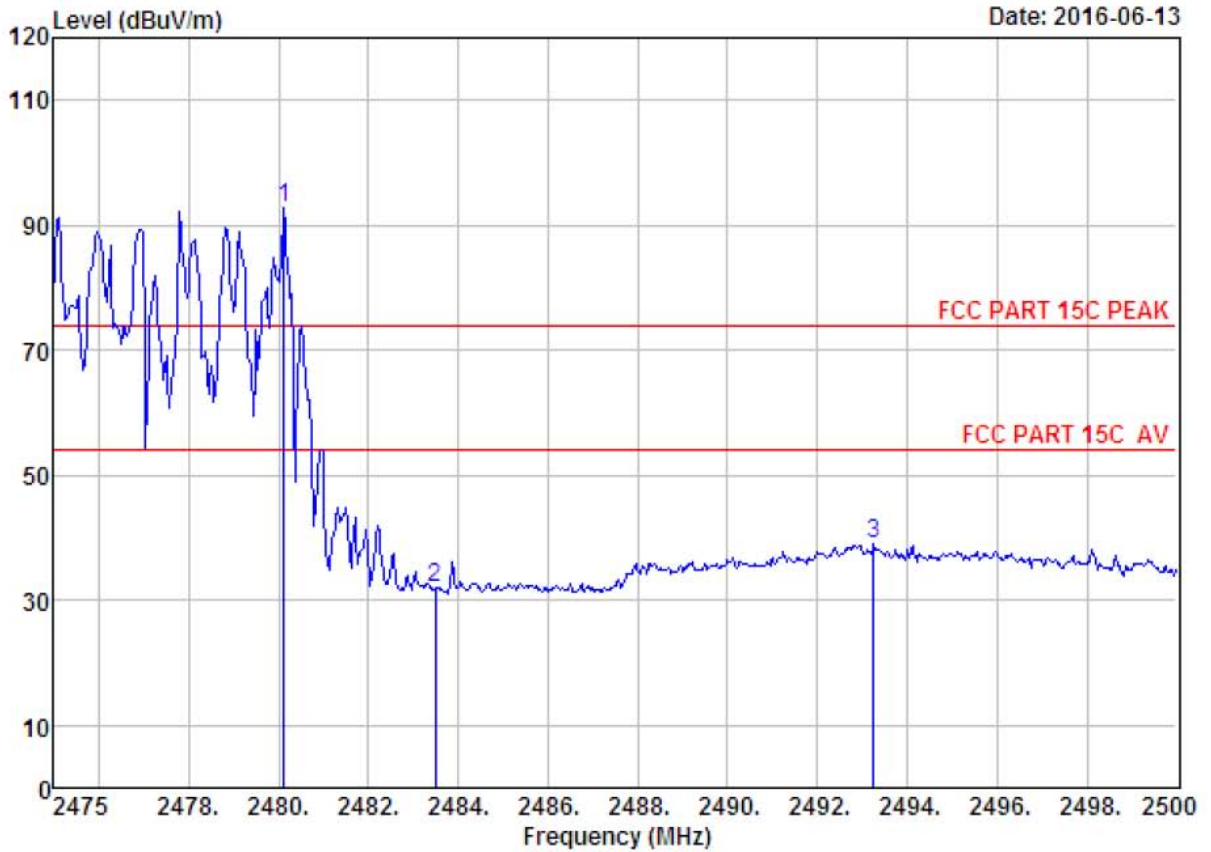
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 22
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2402MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2357.42 | 27.67 | 6.58 | 34.57 | 34.55 | 34.23 | 74.00 | 39.77 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 34.41 | 34.05 | 74.00 | 39.95 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 35.14 | 34.73 | 74.00 | 39.27 | Peak |
| 4 | 2408.02 | 27.61 | 6.64 | 34.64 | 90.10 | 89.71 | 74.00 | -15.71 | Peak |

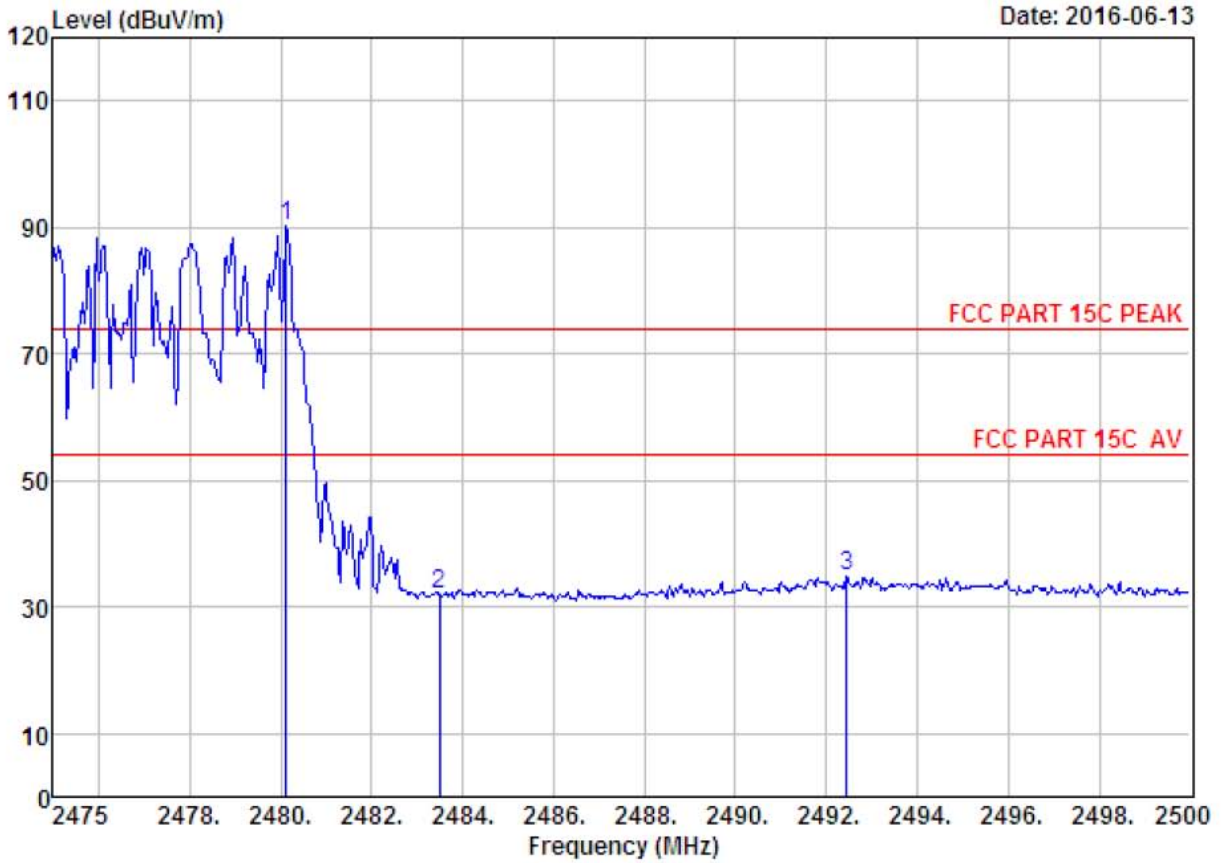
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 23
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.13 | 27.58 | 6.71 | 35.11 | 93.71 | 92.89 | 74.00 | -18.89 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 32.67 | 31.85 | 74.00 | 42.15 | Peak |
| 3 | 2493.25 | 27.58 | 6.73 | 35.24 | 39.83 | 38.90 | 74.00 | 35.10 | Peak |

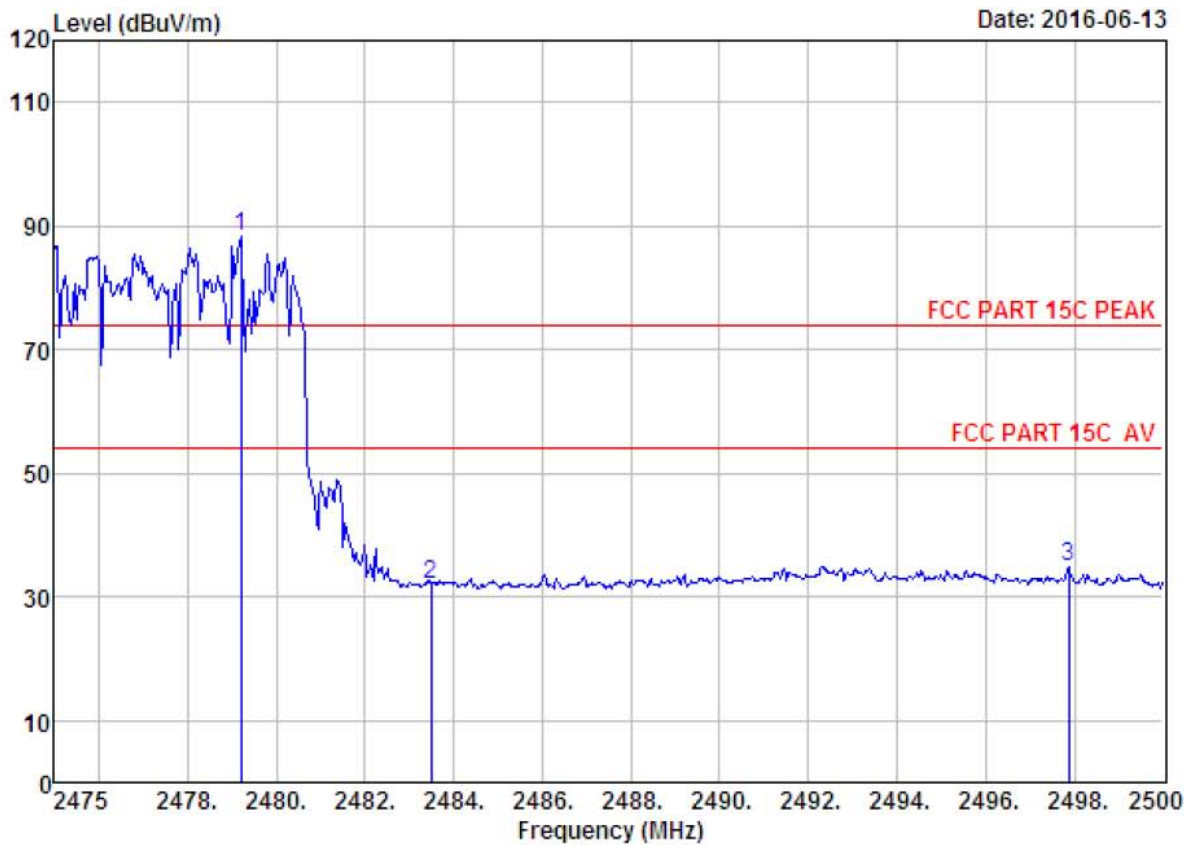
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : site Data no. : 24
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : GFSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2480.13 | 27.58 | 6.71 | 35.11 | 91.16 | 90.34 | 74.00 | -16.34 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 32.80 | 31.98 | 74.00 | 42.02 | Peak |
| 3 | 2492.45 | 27.58 | 6.73 | 35.24 | 35.70 | 34.77 | 74.00 | 39.23 | Peak |

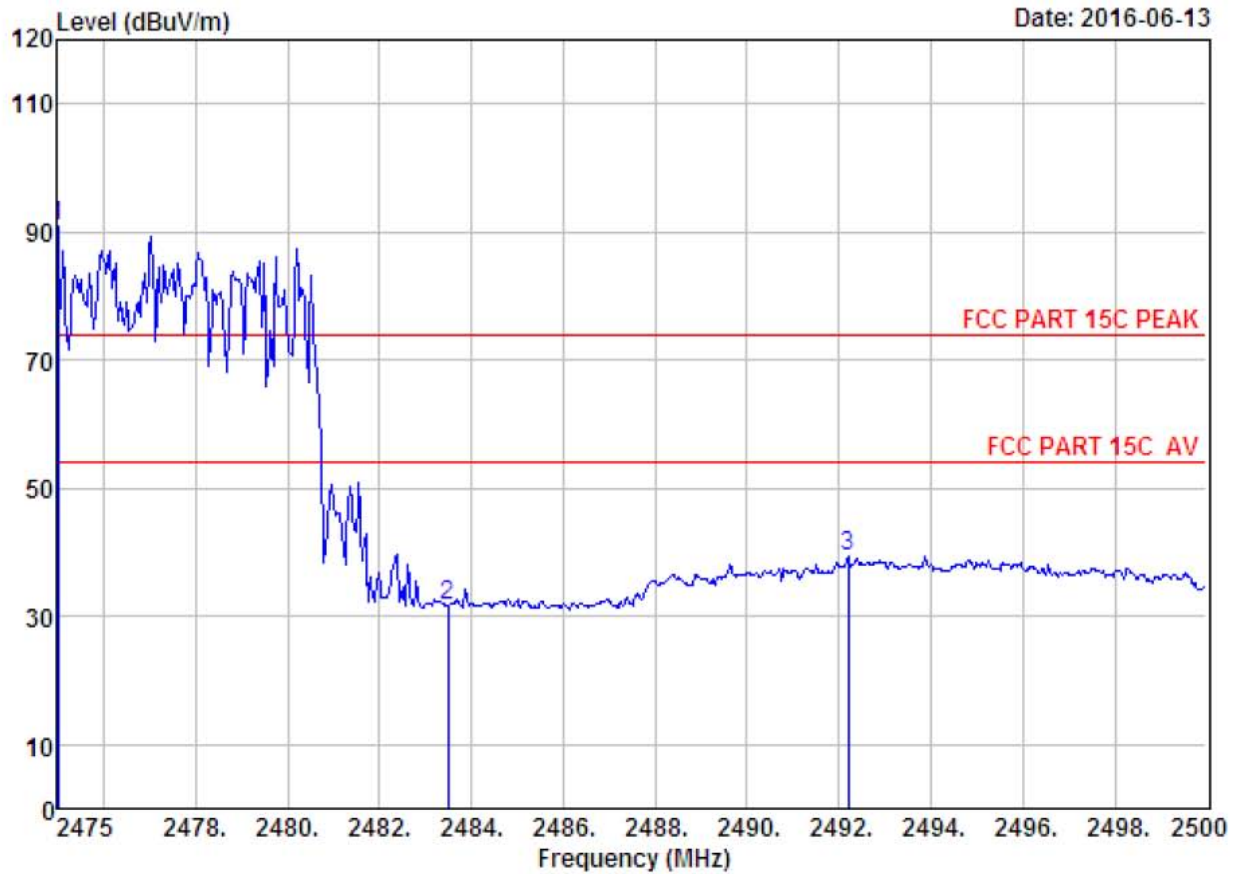
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 25
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2479.20 | 27.58 | 6.71 | 35.11 | 89.04 | 88.22 | 74.00 | -14.22 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 32.86 | 32.04 | 74.00 | 41.96 | Peak |
| 3 | 2497.88 | 27.57 | 6.73 | 35.24 | 35.93 | 34.99 | 74.00 | 39.01 | Peak |

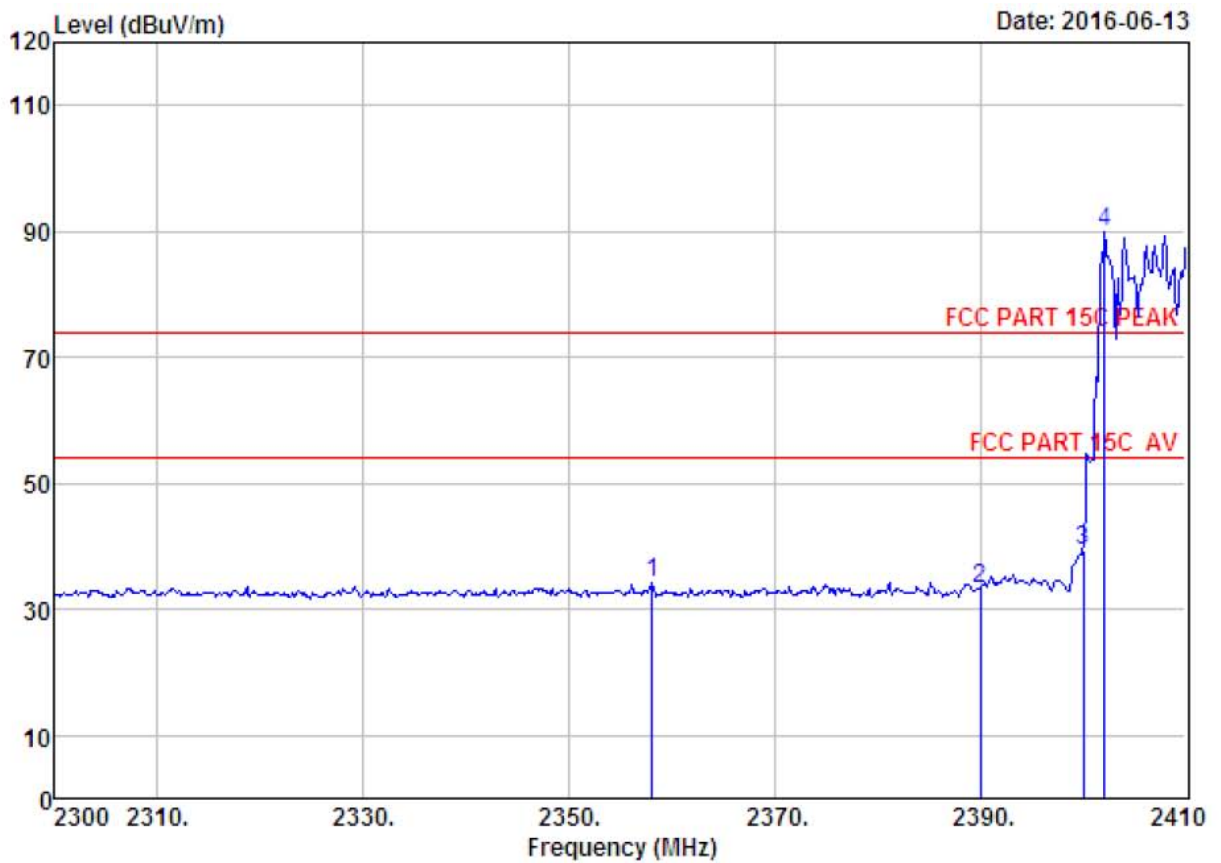
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 26
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2475.00 | 27.58 | 6.71 | 35.11 | 91.79 | 90.97 | 74.00 | -16.97 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 35.11 | 32.49 | 31.67 | 74.00 | 42.33 | Peak |
| 3 | 2492.20 | 27.58 | 6.73 | 35.24 | 40.25 | 39.32 | 74.00 | 34.68 | Peak |

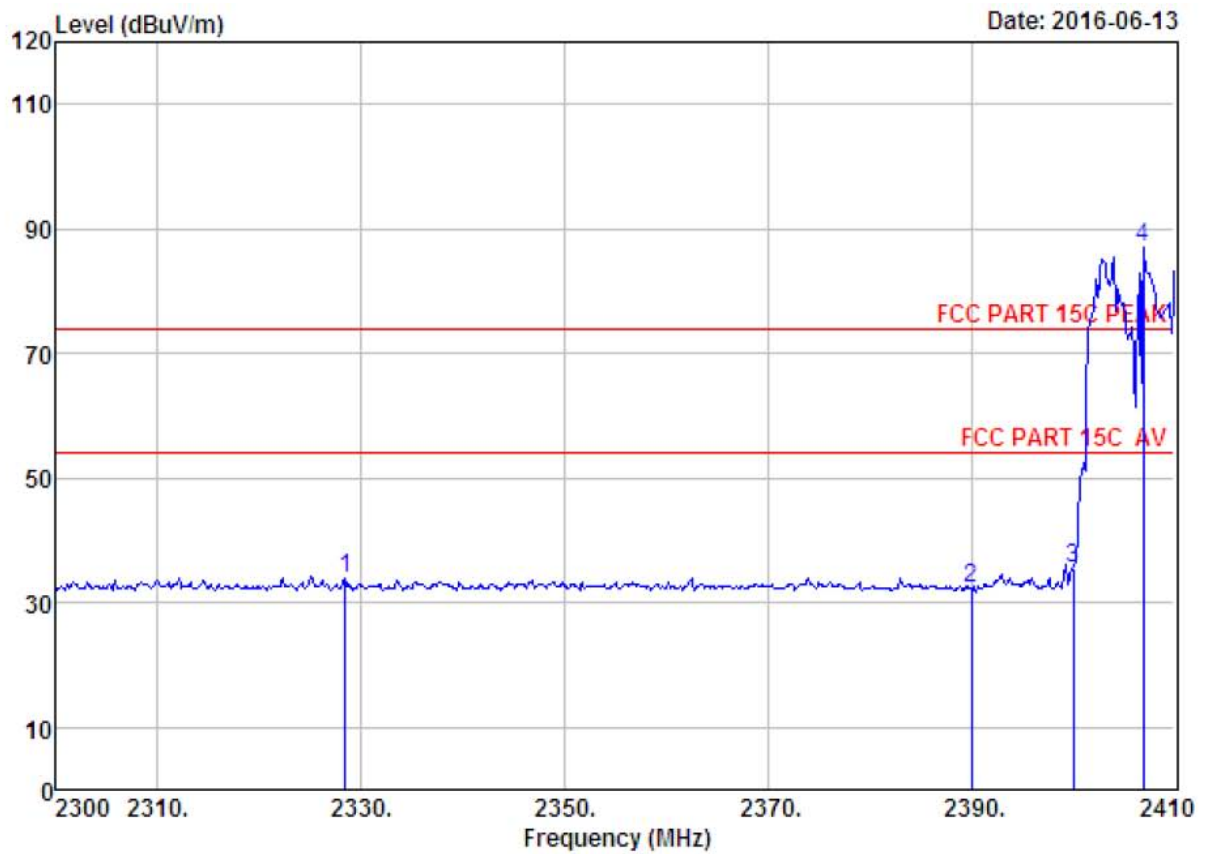
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 27
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUI : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2358.08 | 27.67 | 6.58 | 34.57 | 34.67 | 34.35 | 74.00 | 39.65 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 33.49 | 33.13 | 74.00 | 40.87 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 39.84 | 39.43 | 74.00 | 34.57 | Peak |
| 4 | 2402.08 | 27.61 | 6.62 | 34.64 | 90.19 | 89.78 | 74.00 | -15.78 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 966 1# chamber Data no. : 28
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Car radio
 Power : DC 12V
 M/N : CMS3
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBUV) | Emission Level (dBUV/m) | Limits (dBUV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2328.38 | 27.73 | 6.54 | 34.59 | 34.21 | 33.89 | 74.00 | 40.11 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.62 | 32.54 | 32.18 | 74.00 | 41.82 | Peak |
| 3 | 2400.00 | 27.61 | 6.62 | 34.64 | 35.89 | 35.48 | 74.00 | 38.52 | Peak |
| 4 | 2406.92 | 27.61 | 6.64 | 34.64 | 87.28 | 86.89 | 74.00 | -12.89 | Peak |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

10. ANTENNA REQUIREMENTS

10.1. Limit

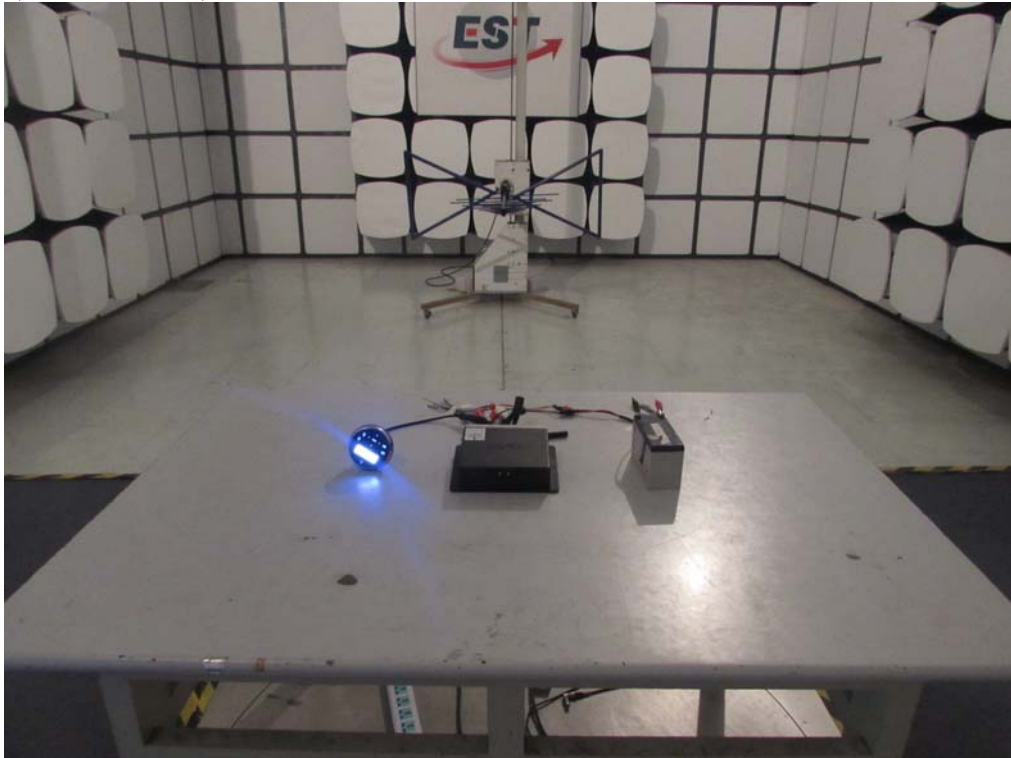
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Result

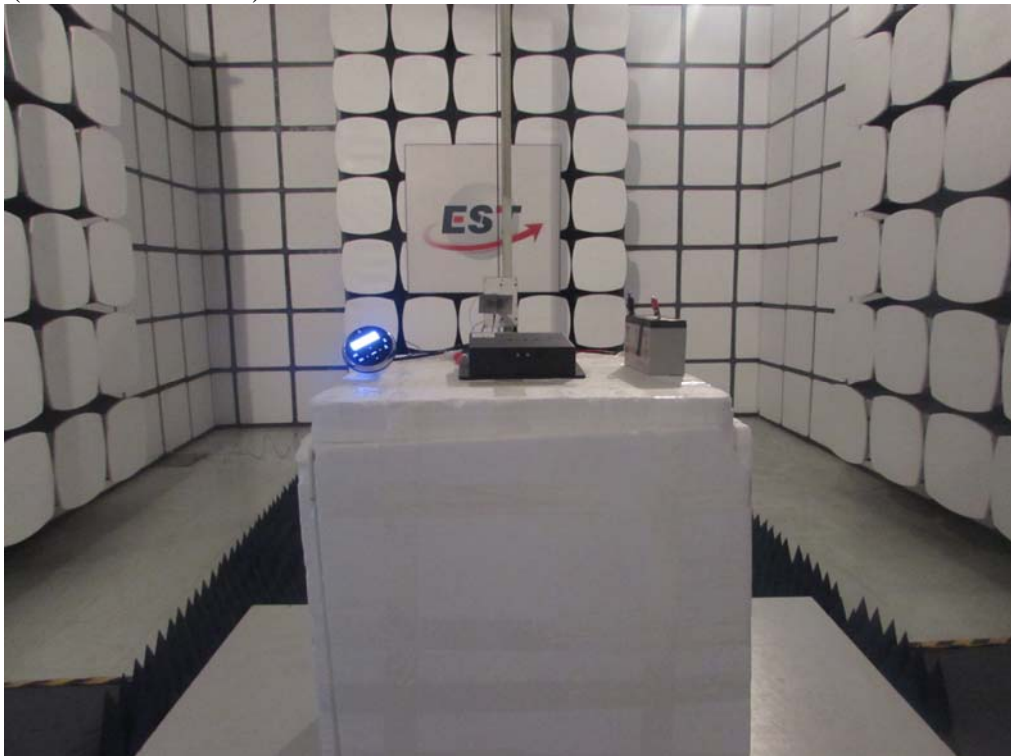
The antennas used for this product are internal Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 4dBi.

11. TEST SETUP PHOTO

Radiated Test (30-1000 MHz)

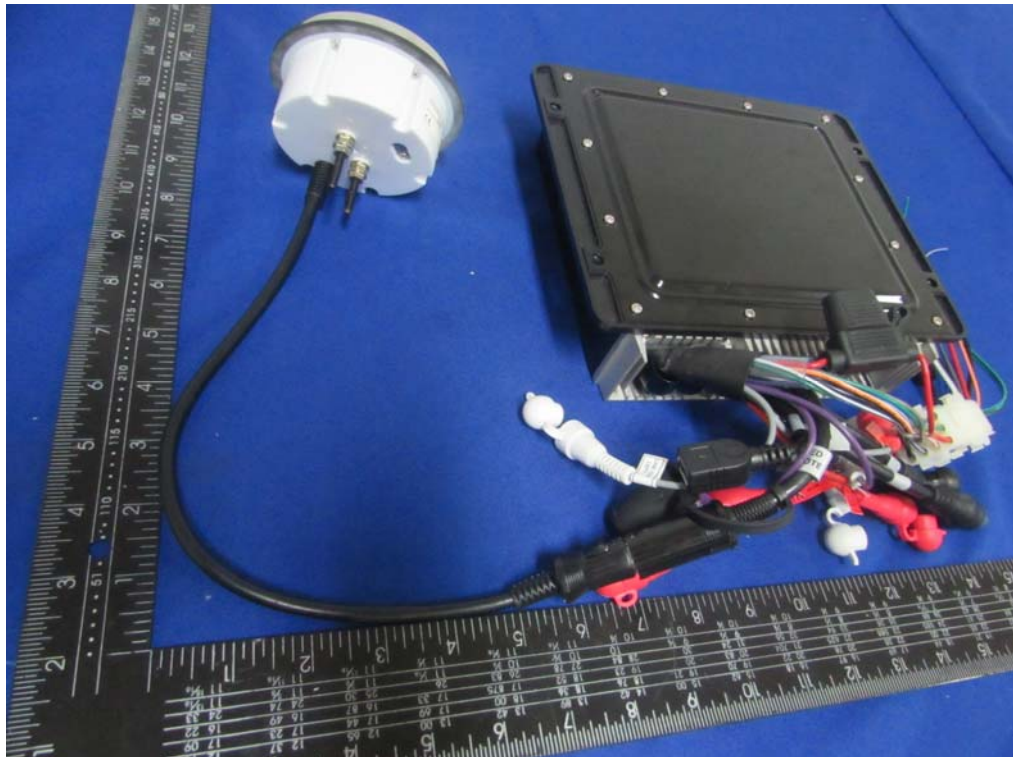
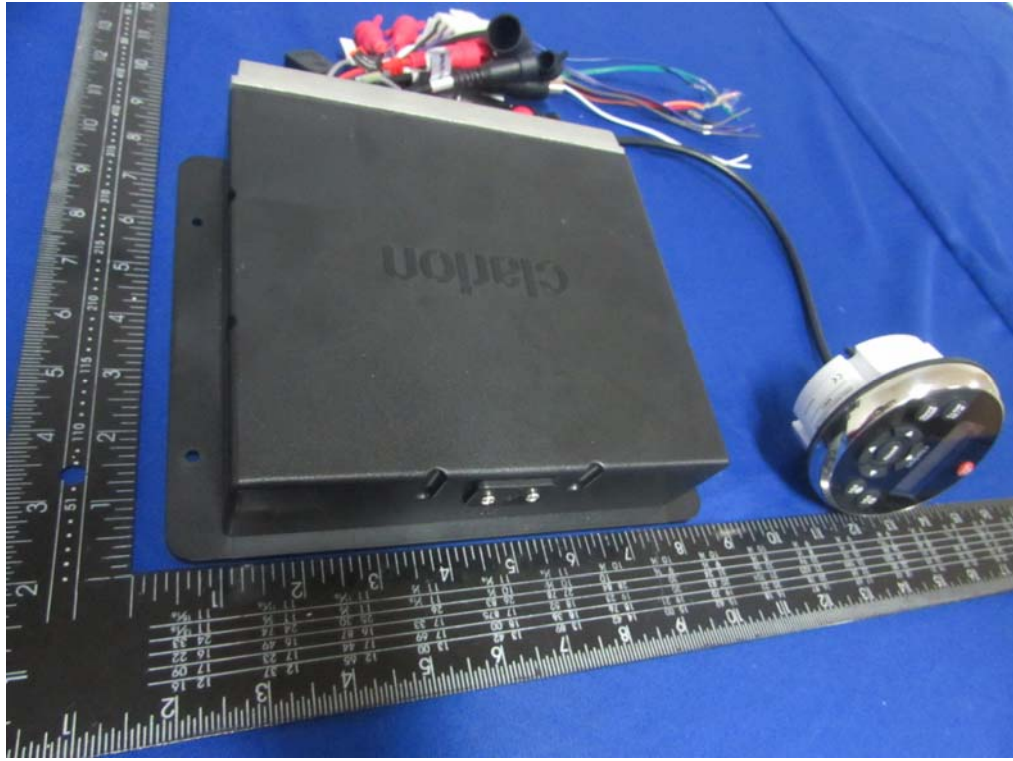


Radiated Test (Above 1000 MHz)

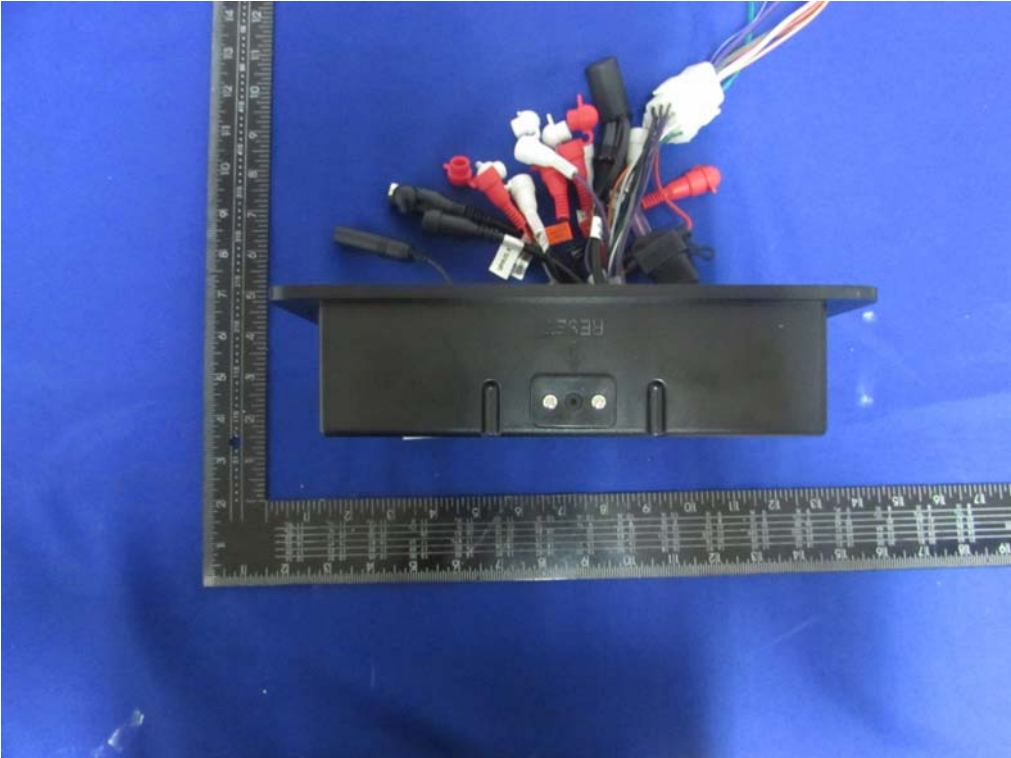
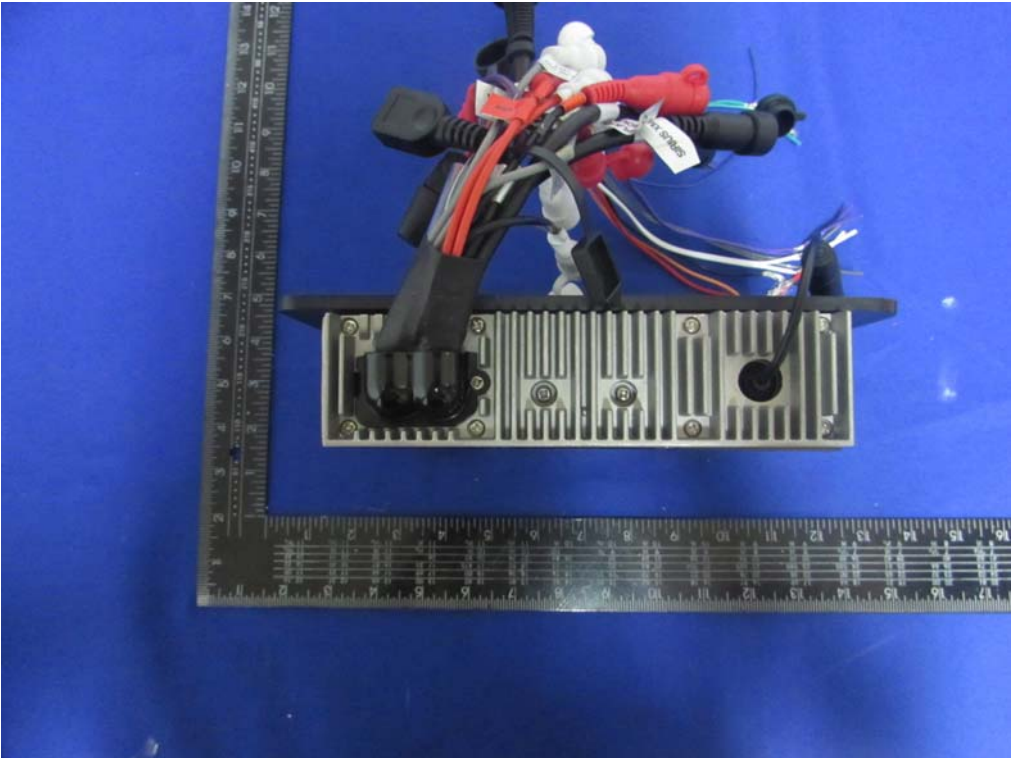


12.PHOTO EUT

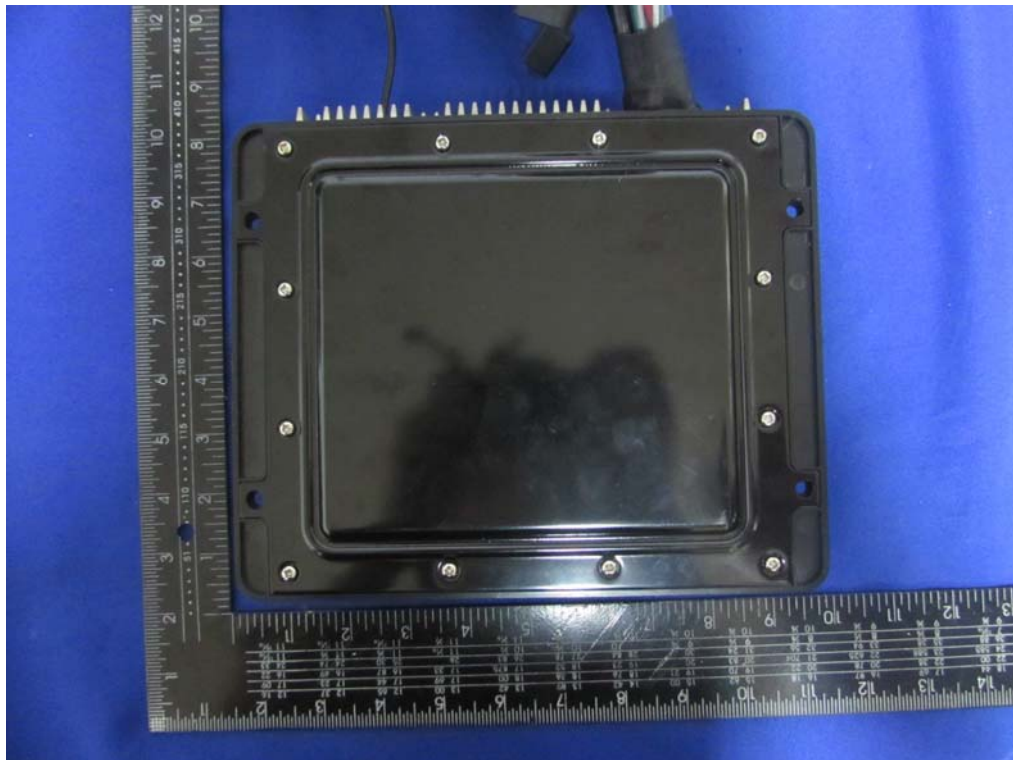
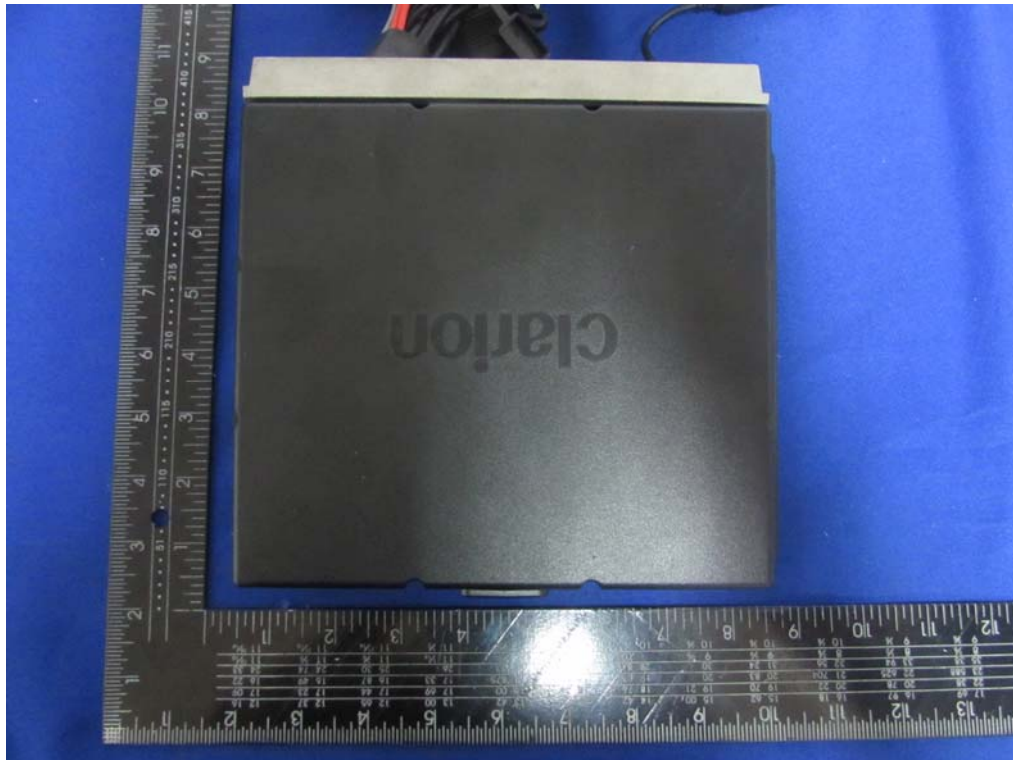
External Photos
M/N: CMS3



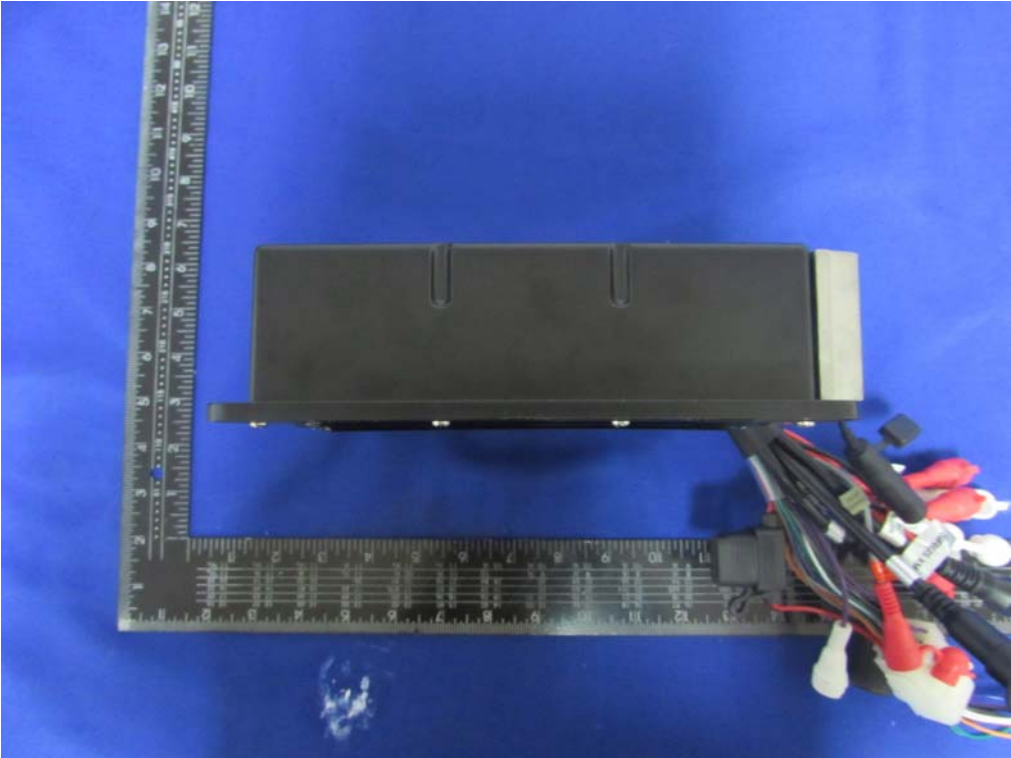
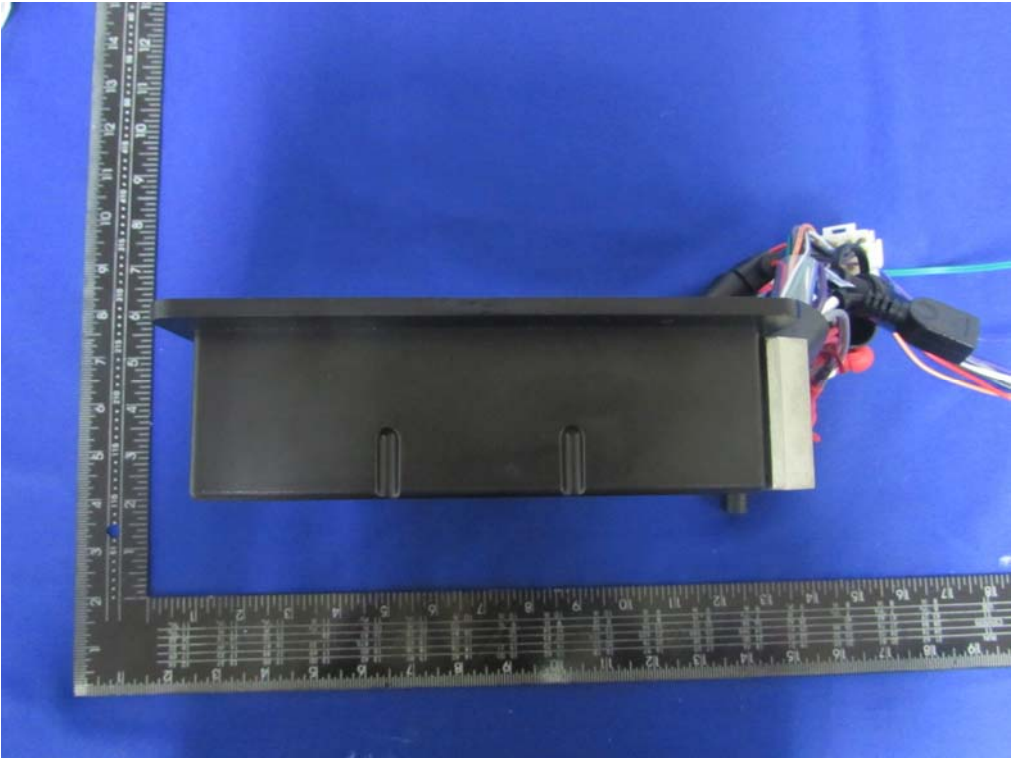
External Photos
M/N: CMS3



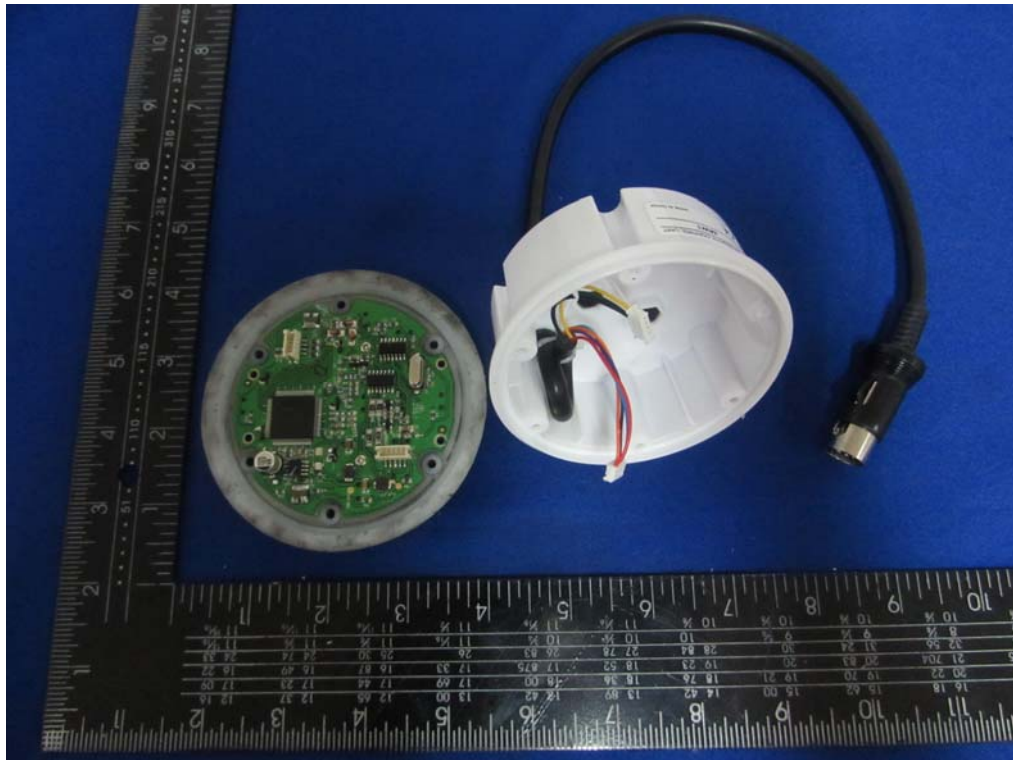
External Photos
M/N: CMS3



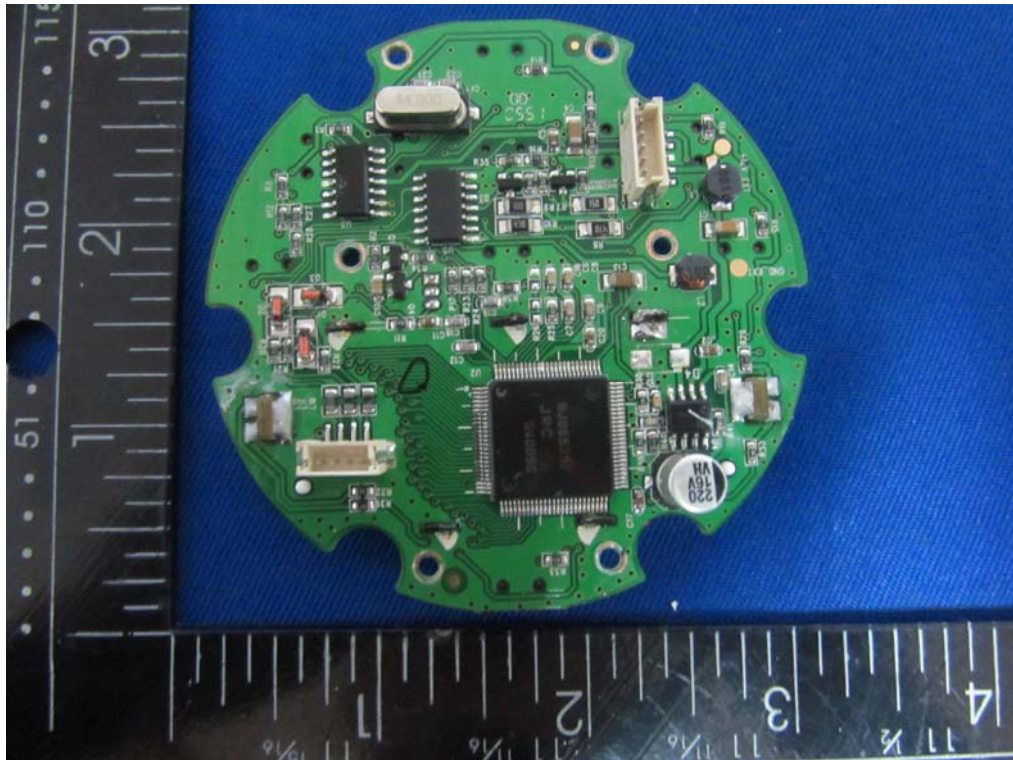
External Photos
M/N: CMS3



Internal Photos
M/N: CMS3



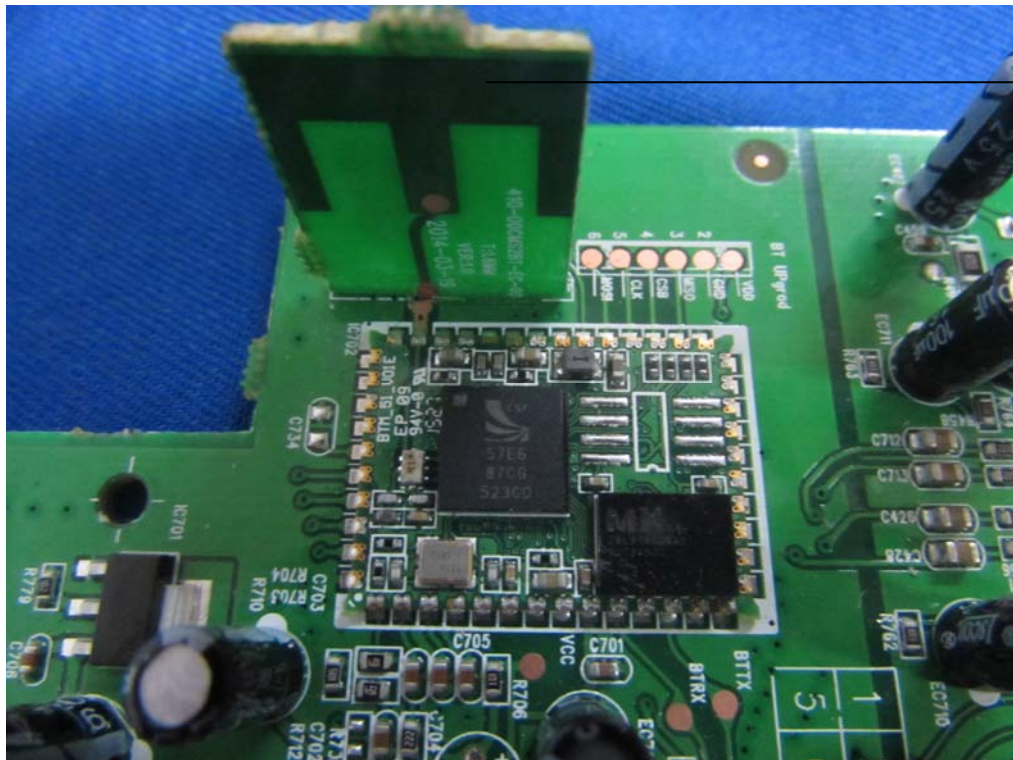
Internal Photos
M/N: CMS3



Internal Photos
M/N: CMS3



Internal Photos
M/N: CMS3



Bluetooth
Antenna