



FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

TTE Technology Inc.

2.4GHz Remote Receiver Dongle

| Brand Name | Model No. |
|------------|-----------|
| TCL | RC650D |

FCC ID: W8URC650D

Prepared for : TTE Technology Inc.
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U.S.A.

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Report Number : ACS-F13283
Date of Test : Aug.31~Sep.10, 2013
Date of Report : Oct.15, 2013

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TEST REPORT CERTIFICATION

Applicant : TTE Technology Inc.
 Manufacturer : TCL King Electrical Appliances (Huizhou) Co., Ltd.
 EUT Description : 2.4GHz Remote Receiver Dongle
 FCC ID : W8URC650D

| | | | |
|---------------------------|---|------------|-----------|
| (A) MODEL NO.& BRAND NAME | : | Brand Name | Model No. |
| | | TCL | RC650D |

(B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 5V
 (D) TEST VOLTAGE : DC 5V

Tested for comply with:
 FCC Rules and Regulations Part 15 Subpart C: 2012

Test procedure used:
 ANSI C63.10:2009

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Jun.24~ 26, 2013 Report of date: Oct.15, 2013

Prepared by : Julia Zhu Reviewed by : Sunny Lu
 Julia Zhu / Assistant Sunny Lu / Assistant Manager

信華科技(深圳)有限公司
 Audix Technology (Shenzhen) Co., Ltd.
 EMC 部門報告專用章
 Stamp only for EMC Dept. Report
 Signature: David Jin

Approved & Authorized Signer David Jin
 David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION | | |
|------------------------------------|--|---------|
| Description of Test Item | Standard | Results |
| Power Line Conducted Emission Test | FCC Part 15C: 15.207 ANSI C63.10-2009 | PASS |
| Radiated Emission Test | FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2009 | PASS |
| Band Edge Compliance Test | FCC Part 15: 15.249 ANSI C63.10-2009 | PASS |
| 20dB Bandwidth Test | FCC Part 15: 15.215 ANSI C63.10-2009 | PASS |

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name : 2.4GHz Remote Receiver Dongle

Model Number&
Brand Name :

| Brand Name | Model No. |
|------------|-----------|
| TCL | RC650D |

FCC ID : W8URC650D

Operation frequency : 2403MHz-2480MHz

Antenna : Integrated PCB antenna, 2dBi gain

Modulation : GFSK

Power Supply : DC 5V

Applicant : TTE Technology Inc.
555 S. Promenada Ave., Suite 103, Corona, CA 92879,
U.S.A.

Manufacturer : TCL King Electrical Appliances (Huizhou) Co., Ltd.
Section 19, Zhongkai Development Zone for New and
High Level TECH Industries, Huizhou, Guangdong
516006, China

Date of Test : Aug.31~Sep.10, 2013

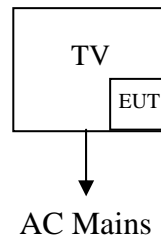
Date of Receipt : Aug.30, 2013

Sample Type : Prototype production

2.2. Tested Supporting System Details

| No. | Description | ACS No. | Manufacturer | Model | Serial Number | Approved type |
|-----|-------------|---------|--------------|---------------|---------------|---------------|
| 1. | LCD TV | -- | TCL | LE50UHDE5692G | -- | -- |

2.3. EUT Configuration and operation conditions for test.



(EUT: 2.4GHz Remote Receiver Dongle)

2.4. Test Facility

- Site Description
Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China
- 3m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 90454
Valid Date: Feb.22, 2015
- 3m & 10m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 794232
Valid Date: Dec.31, 2015
- EMC Lab. : Certificated by Industry Canada
Registration Number: IC 5183A-1
Valid Date: Jun.13, 2014
- Certificated by DAkKS, Germany
Registration No: D-PL-12151-01-01
Valid Date: Feb.01, 2014
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2014

2.5. Measurement Uncertainty (95% confidence levels, k=2)

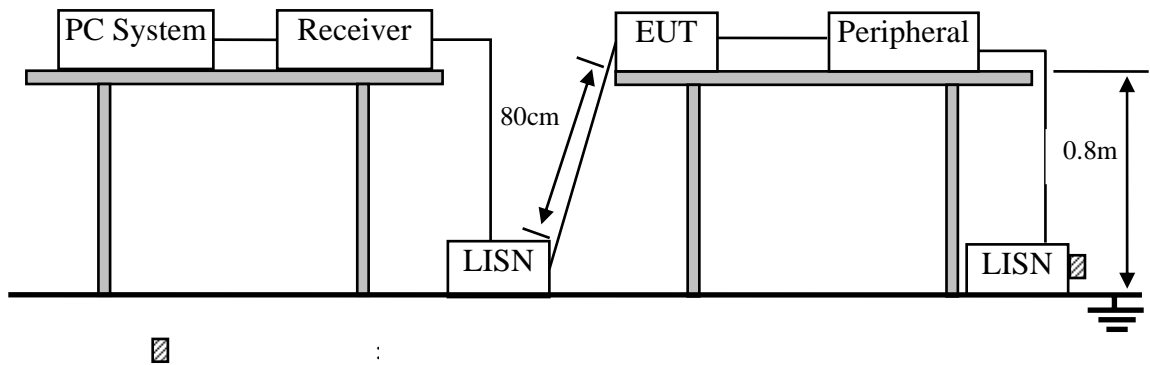
| Test Item | Uncertainty |
|---|---------------------------------|
| Uncertainty for Conducted emission test in No. 1 Conduction | 3.08 dB(9KHz to 150KHz) |
| | 3.1 dB(150KHz to 30MHz) |
| Uncertainty for Radiation Emission test in 3m chamber | 3.22 dB(30~200MHz, Polarize: H) |
| | 3.23 dB(30~200MHz, Polarize: V) |
| | 3.49 dB(200M~1GHz, Polarize: H) |
| | 3.39 dB(200M~1GHz, Polarize: V) |
| Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz) | 5.04 dB(1~6GHz, Distance: 3m) |
| | 5.06 dB(6~18GHz, Distance: 3m) |
| Uncertainty for Radiated Spurious Emission test in RF chamber | 3.57dB |
| Uncertainty for Conduction Spurious emission test | 2.00 dB |
| Uncertainty for Output power test | 0.73 dB |
| Uncertainty for Power density test | 2.00 dB |
| Uncertainty for Frequency range test | 7×10^{-8} |
| Uncertainty for Bandwidth test | 83 kHz |
| Uncertainty for DC power test | 0.038 % |
| Uncertainty for test site temperature and humidity | 0.6°C |
| | 3% |

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipment

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------|-----------------|-----------|------------|------------|---------------|
| 1. | Test Receiver | Rohde & Schwarz | ESHS10 | 838693/001 | Oct.31, 12 | 1 Year |
| 2. | L.I.S.N.#1 | Rohde & Schwarz | ESH2-Z5 | 834066/011 | Oct.31, 12 | 1 Year |
| 3. | L.I.S.N.#3 | Kyoritsu | KNW-242C | 8-1920-1 | May.08, 13 | 1 Year |
| 4. | Terminator | Hubersuhner | 50Ω | No. 1 | May.08, 13 | 1 Year |
| 5. | Terminator | Hubersuhner | 50Ω | No. 2 | May.08, 13 | 1 Year |
| 6. | RF Cable | Fujikura | 3D-2W | No.1 | May.08, 13 | 1Year |
| 7. | Coaxial Switch | Anritsu | MP59B | M50564 | May.08, 13 | 1 Year |
| 8. | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100341 | May.08, 13 | 1 Year |

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

| Frequency | Maximum RF Line Voltage | |
|-----------------|----------------------------|-------------------------|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. 2.4GHz Remote Receiver Dongle (EUT)

Model Number : RC650D

Serial Number : N/A

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3. Let the EUT work in test mode (TX Mode) and measure it.

3.6. Test Procedure

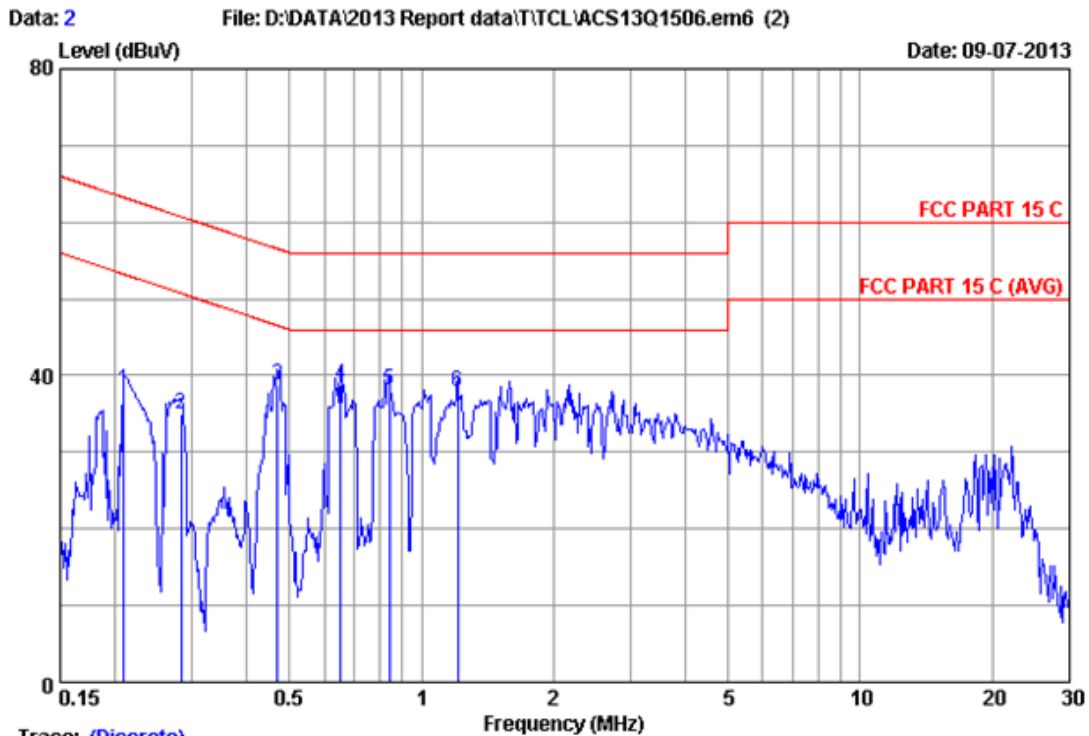
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#3). this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2009 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

3.7. Conducted Emission at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

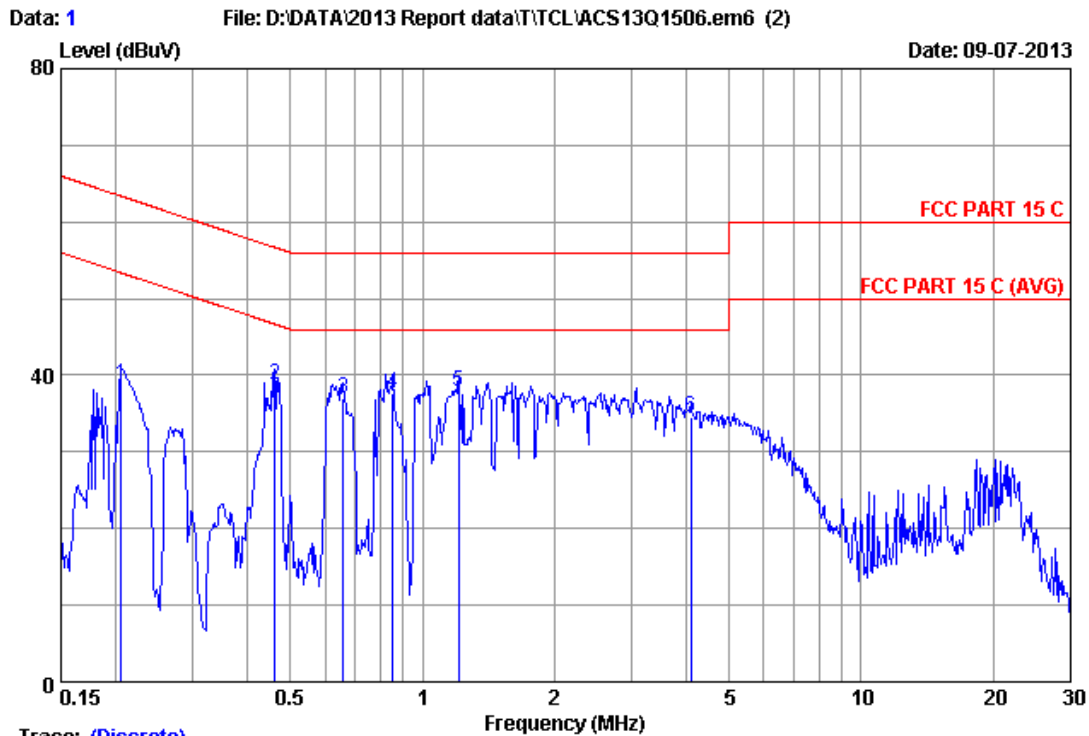


Trace: (Discrete)

Site no :1#conduction Data No :2
 Dis./Ant. :** 2012 ESH2-Z5 LINE
 Limit :FCC PART 15 C
 Env./Ins. :26.5°C/63% Engineer :Nick_Huang
 EUT :2.4GHz Remote Receiver Dongle
 Power Rating :DC 5V
 Test Mode :Tx Mode
 M/N:RC650D

| No | Freq (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|----|------------|------------------|-----------------|----------------|-----------------------|---------------|-------------|--------|
| 1 | 0.20944 | 0.19 | 0.01 | 37.81 | 38.01 | 63.23 | 25.22 | QP |
| 2 | 0.28328 | 0.19 | 0.01 | 34.77 | 34.97 | 60.72 | 25.75 | QP |
| 3 | 0.46861 | 0.19 | 0.02 | 38.61 | 38.82 | 56.54 | 17.72 | QP |
| 4 | 0.65430 | 0.20 | 0.03 | 38.50 | 38.73 | 56.00 | 17.27 | QP |
| 5 | 0.84378 | 0.20 | 0.03 | 37.79 | 38.02 | 56.00 | 17.98 | QP |
| 6 | 1.210 | 0.22 | 0.03 | 37.55 | 37.80 | 56.00 | 18.20 | QP |

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Trace: (Discrete)

Site no :1#conduction Data No :1
 Dis./Ant. :** 2012 ESH2-Z5 NEUTRAL
 Limit :FCC PART 15 C
 Env./Ins. :26.5°C/63% Engineer :Nick_Huang
 EUT :2.4GHz Remote Receiver Dongle
 Power Rating :DC 5V
 Test Mode :Tx Mode
 M/N:RC650D

| No | Freq (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|----|------------|------------------|-----------------|----------------|-----------------------|---------------|-------------|--------|
| 1 | 0.20614 | 0.21 | 0.01 | 38.53 | 38.75 | 63.36 | 24.61 | QP |
| 2 | 0.46122 | 0.23 | 0.02 | 38.47 | 38.72 | 56.67 | 17.95 | QP |
| 3 | 0.66127 | 0.24 | 0.03 | 36.70 | 36.97 | 56.00 | 19.03 | QP |
| 4 | 0.85729 | 0.24 | 0.03 | 37.41 | 37.68 | 56.00 | 18.32 | QP |
| 5 | 1.210 | 0.25 | 0.03 | 37.63 | 37.91 | 56.00 | 18.09 | QP |
| 6 | 4.092 | 0.33 | 0.06 | 34.11 | 34.50 | 56.00 | 21.50 | QP |

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION TEST

4.1. Test Equipment

Frequency rang: 30~1000MHz

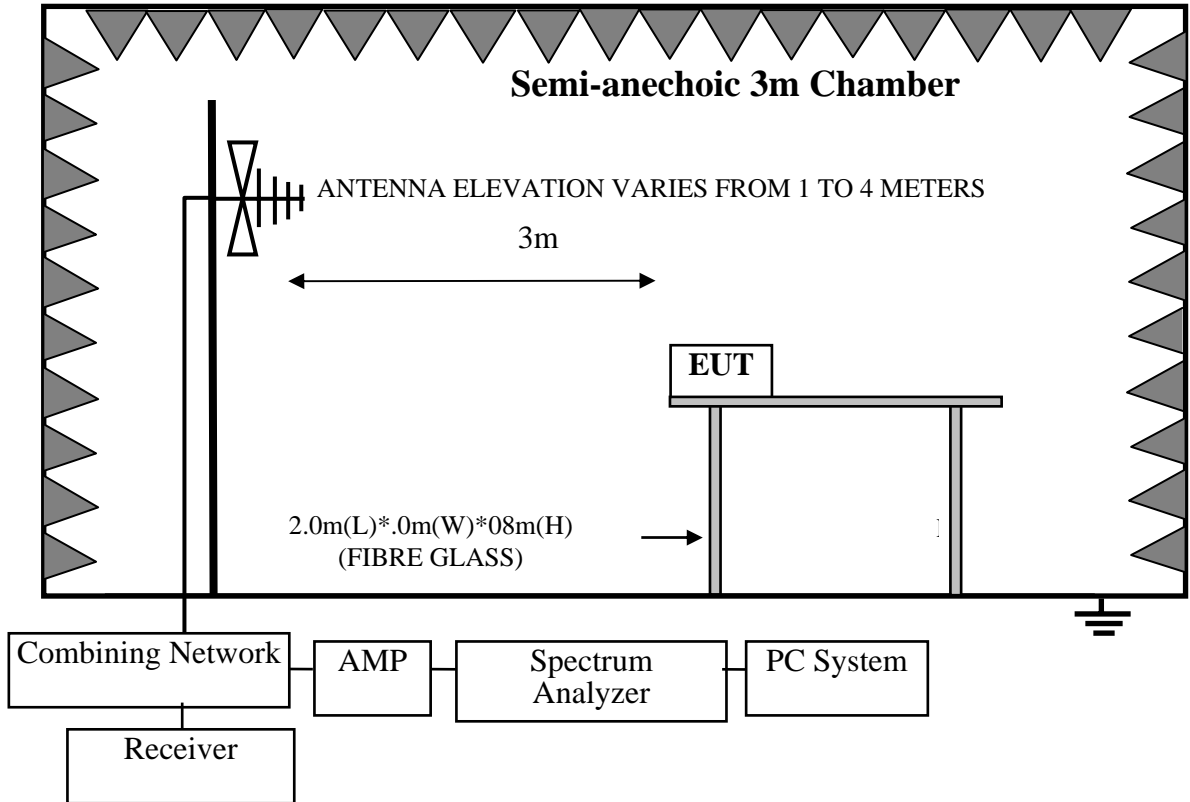
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------|-----------------|-----------|-----------------|------------|---------------|
| 1 | 3#Chamber | AUDIX | N/A | N/A | Nov.24,12 | 1 Year |
| 2 | EMI Spectrum | Agilent | E4407B | MY41440292 | May.08, 13 | 1 Year |
| 3 | Test Receiver | Rohde & Schwarz | ESVS10 | 834468/011 | May.08, 13 | 1 Year |
| 4 | Amplifier | HP | 8447D | 2648A04738 | May.08, 13 | 1 Year |
| 5 | Bilog Antenna | Schaffner | CBL6111C | 2598 | Mar.14,13 | 1 Year |
| 6 | RF Cable | MIYAZAKI | CFD400-NL | 3# Chamber No.1 | May.08, 13 | 1 Year |
| 7 | Coaxial Switch | Anritsu | MP59B | M74389 | May.08, 13 | 1 Year |

Frequency rang: above 1000MHz

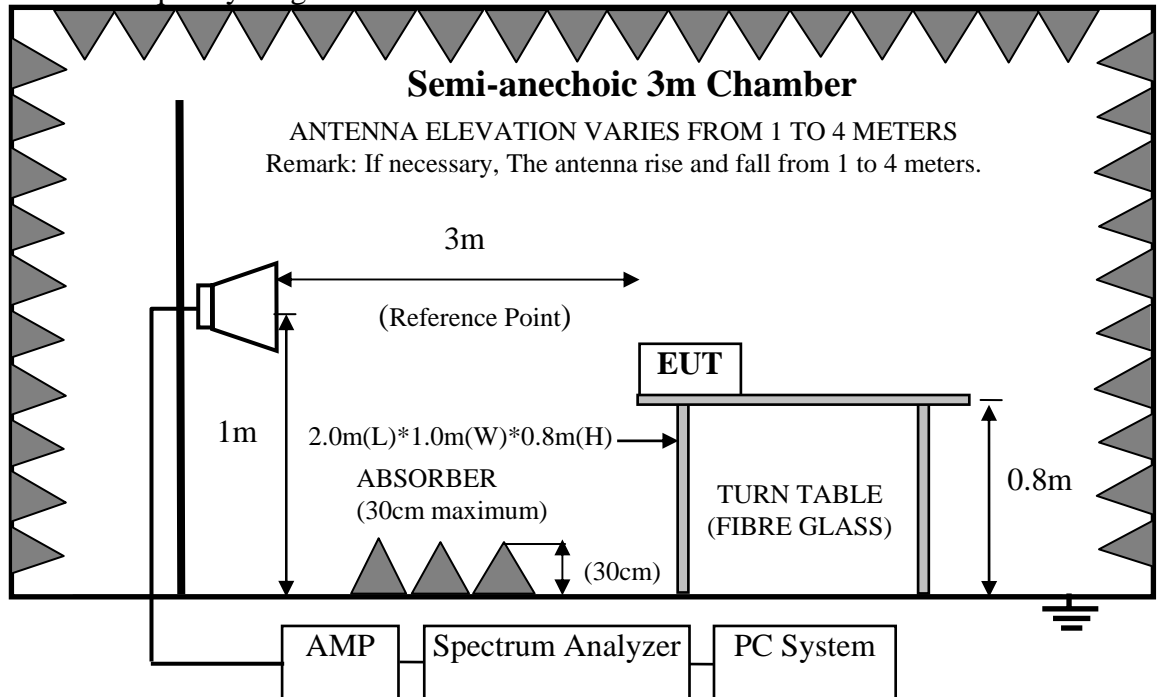
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|--------------|-------------|------------|------------|---------------|
| 1 | Spectrum Analyzer | Agilent | E4407B | MY41440292 | May.08, 13 | 1 Year |
| 2 | Horn Antenna | EMCO | 3115 | 9510-4580 | May.28, 13 | 1 Year |
| 3 | Amplifier | Agilent | 8449B | 3008A00863 | May.08, 13 | 1 Year |
| 4 | RF Cable | Hubersuhner | SUCOFLEX106 | 77980/6 | May.08, 13 | 1 Year |
| 5 | RF Cable | Hubersuhner | SUCOFLEX106 | 77977/6 | May.08, 13 | 1 Year |
| 6 | Horn Antenna | EMCO | 3116 | 00060089 | Aug.28, 13 | 1 Year |

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range above 1GHz



4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|--|--------------------|--|----------|
| | | μV/m | dB(μV)/m |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000MHz | 3 | 74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average) | |
| Field Strength of fundamental emissions for 2.4GHz-2.4835GHz | 3 | 114.0 dB(μV)/m (Peak) 94.0 dB(μV)/m (Average) | |

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
 - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.5.Operating Condition of EUT

- 4.5.1.Setup the EUT and simulator as shown as Section 4.2.
- 4.5.2.Turned on the power of all equipment.
- 4.5.3.Let EUT work in Tx mode.

4.6.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The 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. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2009 on radiated emission Test.

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions.

After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation show in the test setup photos.

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 RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

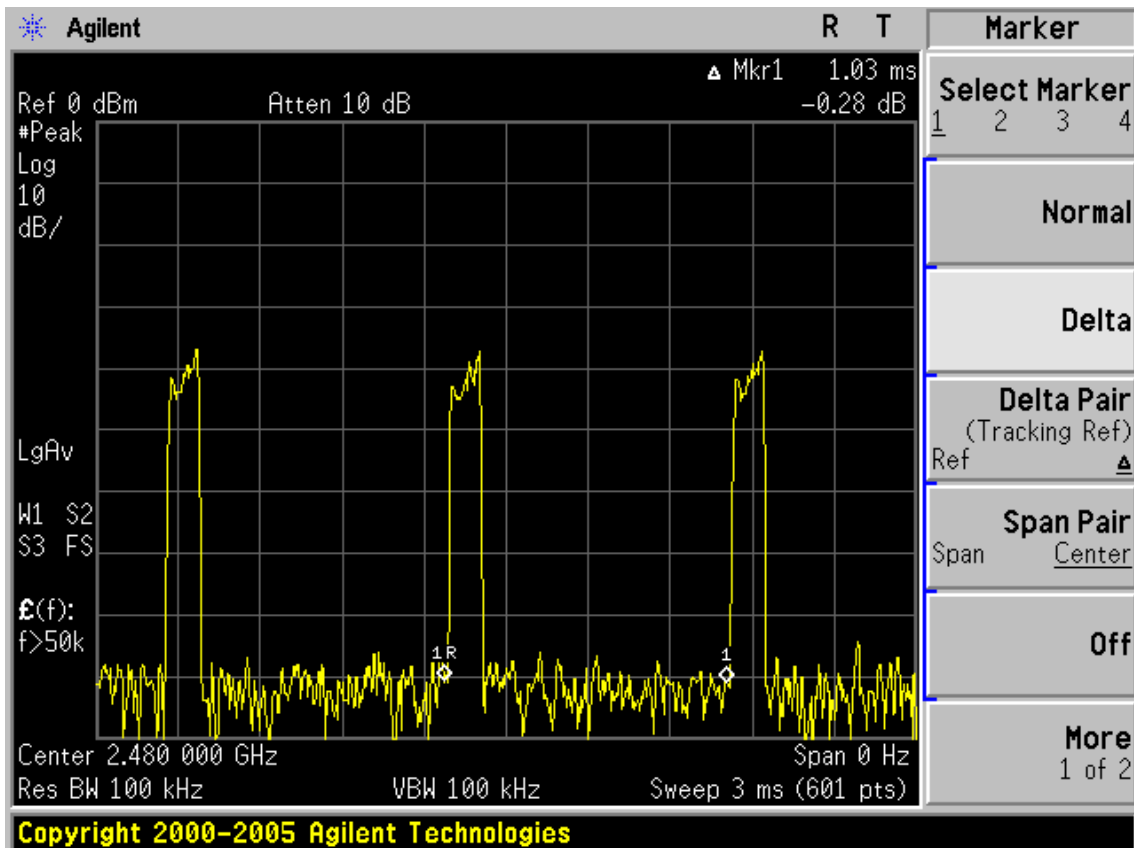
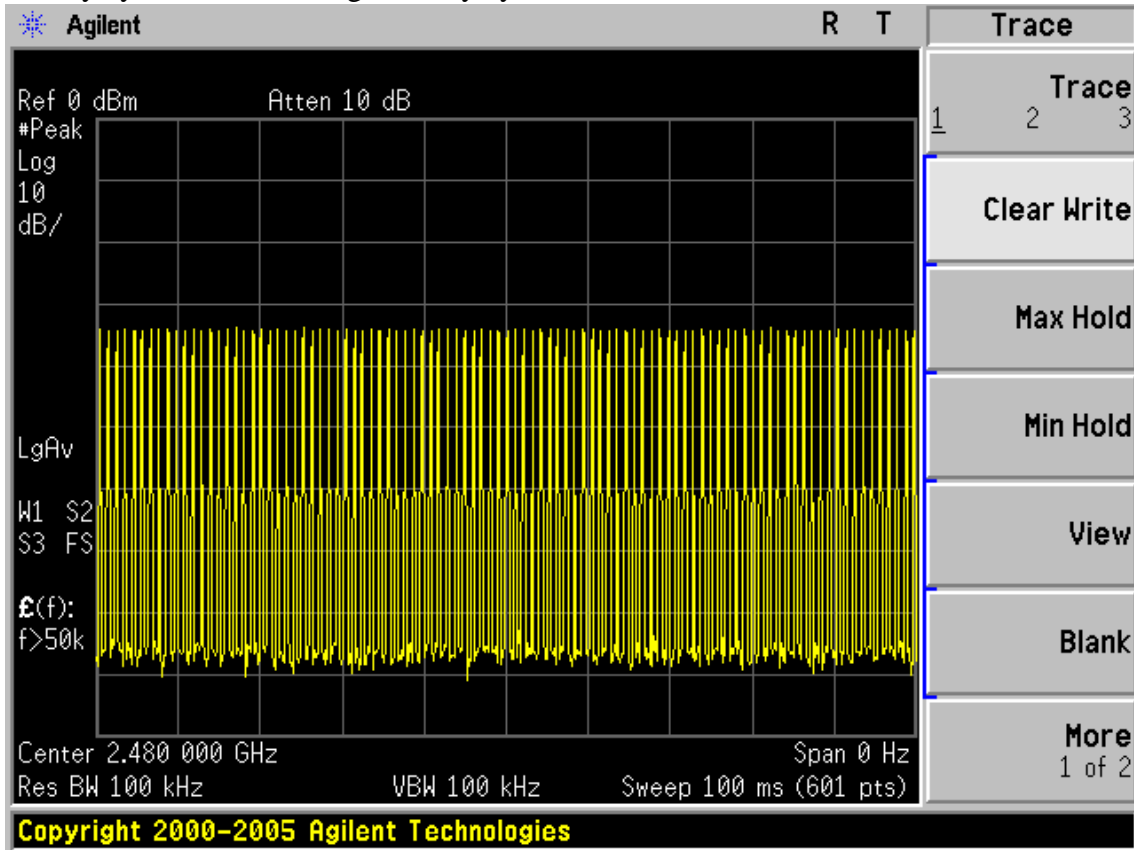
4.7.Radiated Emission Test Results

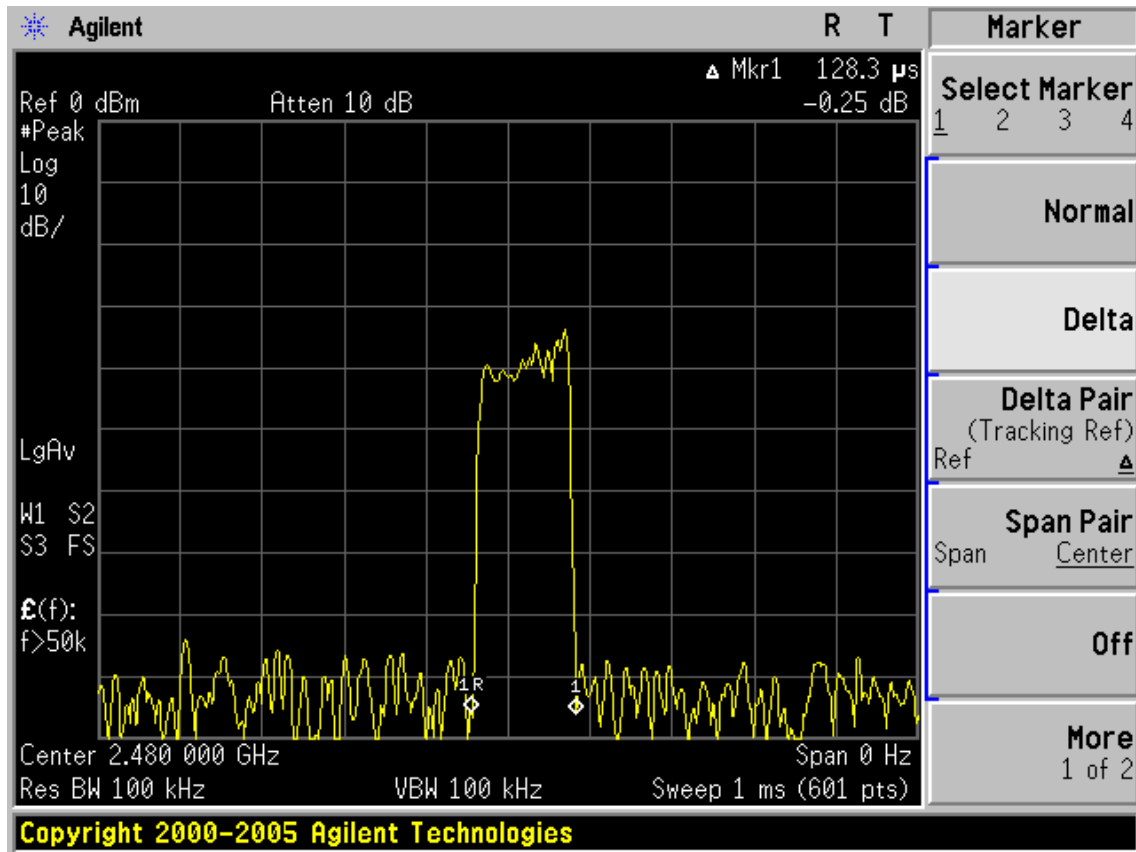
PASS.

All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

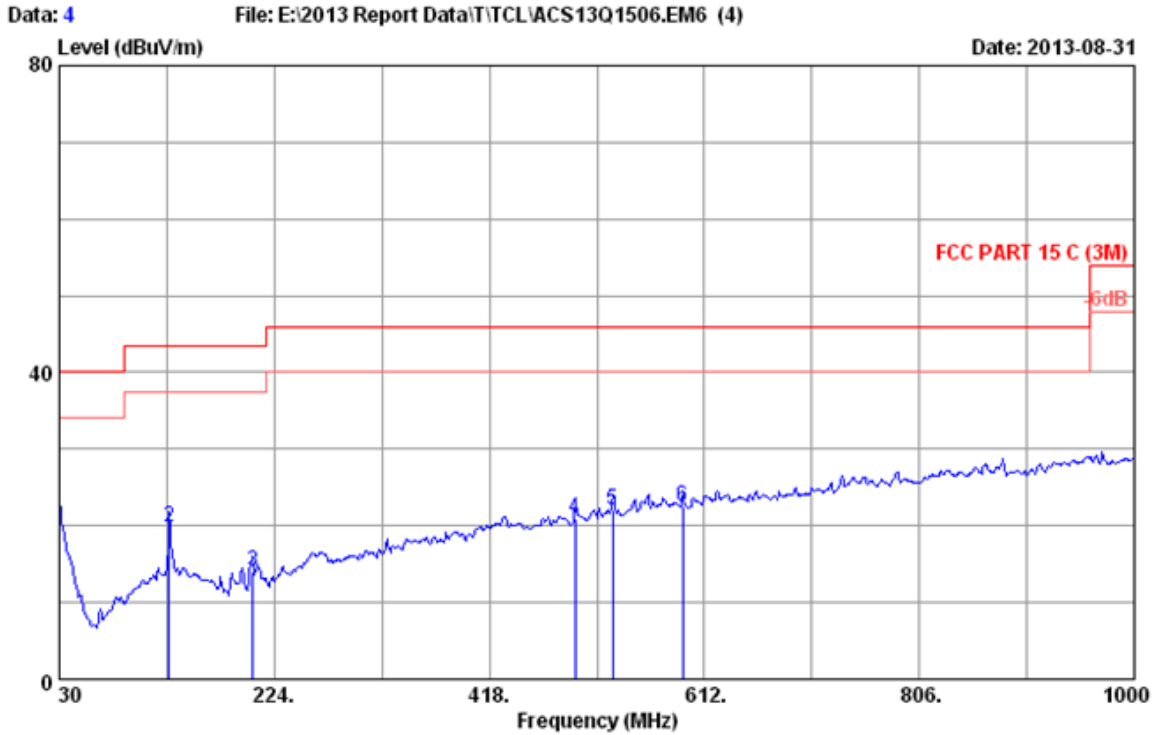
Note: The duty cycle factor for calculate average level is 18.10dB, and average limit is 20dB below peak limit, so if peak measured level comply with peak limit, the average level was deemed to comply with average limit.

Duty cycle: $0.1283\text{ms} / 1.03\text{ms} * 100\% = 12.46\%$
 Duty cycle factor = $20\log (1/\text{duty cycle}) = 18.10\text{dB}$





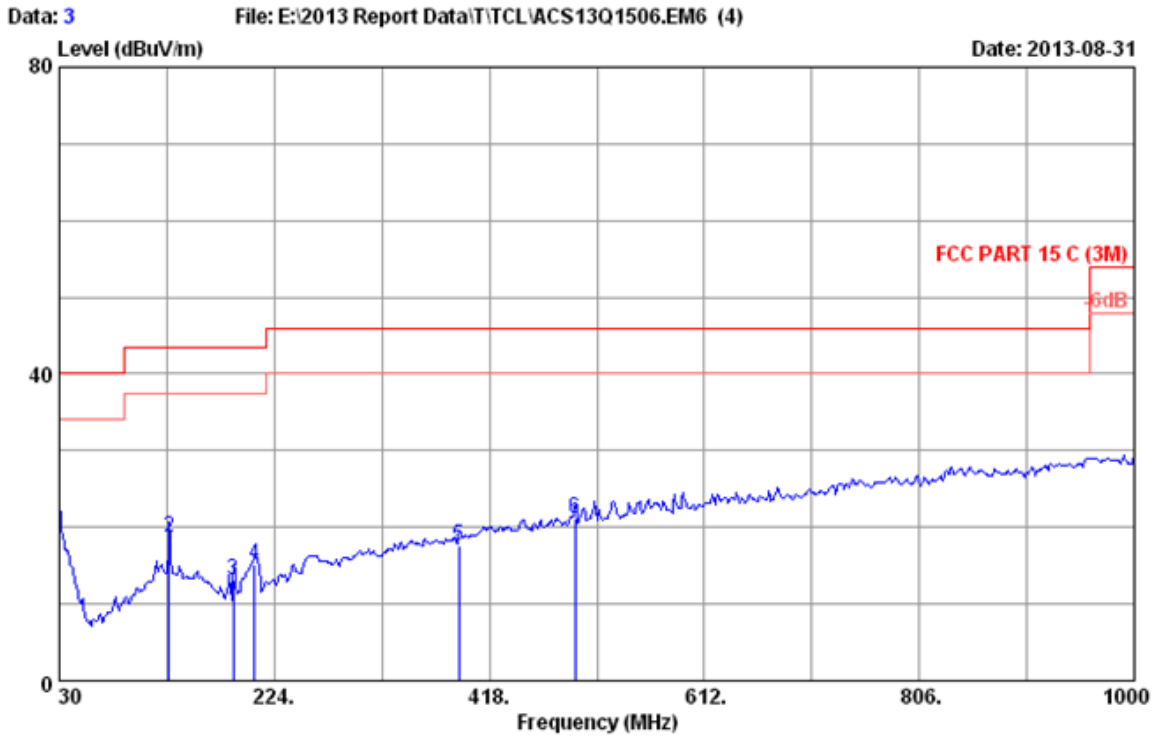
Frequency: 30MHz~1GHz



Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 2013 CBL6111C 2598 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/65% Engineer : Even_Deng
 EUT : 2.4GHz Remote Receiver Dongle
 Power rating : DC 5V
 Test Mode : Tx Mode
 M/N:RC650D

| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-------------------------|-----------------|-------------|--------|
| 1 | 30.000 | 19.90 | 0.83 | 28.92 | 21.33 | 40.00 | 18.67 | QP |
| 2 | 128.940 | 12.35 | 1.52 | 34.01 | 19.91 | 43.50 | 23.59 | QP |
| 3 | 204.600 | 10.09 | 1.81 | 29.75 | 14.07 | 43.50 | 29.43 | QP |
| 4 | 495.600 | 18.12 | 2.74 | 28.38 | 20.88 | 46.00 | 25.12 | QP |
| 5 | 529.550 | 18.60 | 2.83 | 28.96 | 21.95 | 46.00 | 24.05 | QP |
| 6 | 592.600 | 19.60 | 3.02 | 28.39 | 22.44 | 46.00 | 23.56 | QP |

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

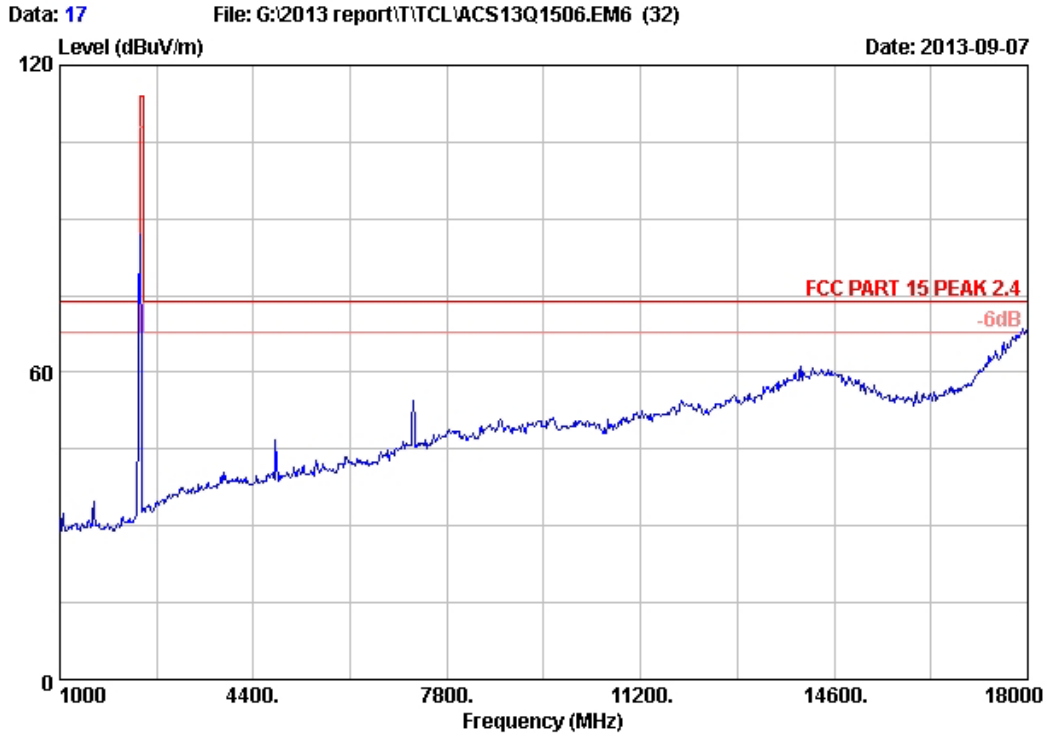


Site no. : 3m Chamber Data no. : 3
 Dis. / Ant. : 3m 2013 CBL6111C 2598 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/65% Engineer : Even_Deng
 EUT : 2.4GHz Remote Receiver Dongle
 Power rating : DC 5V
 Test Mode : Tx Mode
 M/N:RC650D

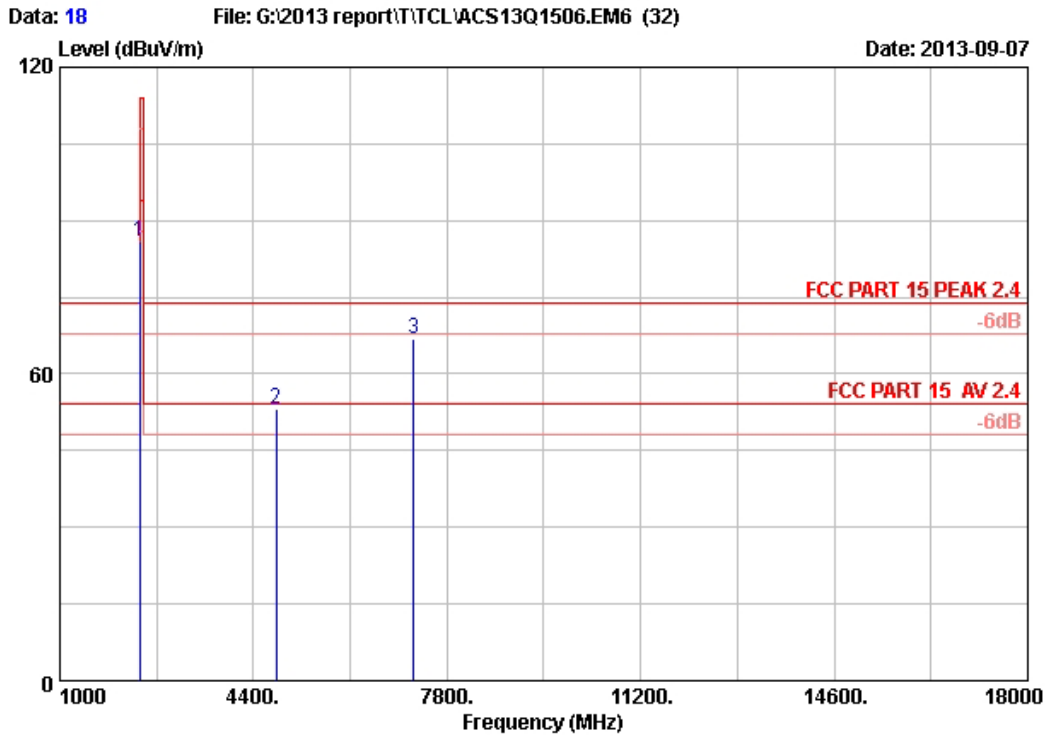
| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-------------------------|-----------------|-------------|--------|
| 1 | 30.000 | 19.90 | 0.83 | 28.70 | 21.11 | 40.00 | 18.89 | QP |
| 2 | 128.940 | 12.35 | 1.52 | 32.71 | 18.61 | 43.50 | 24.89 | QP |
| 3 | 187.140 | 9.10 | 1.74 | 30.03 | 13.20 | 43.50 | 30.30 | QP |
| 4 | 206.540 | 10.10 | 1.81 | 30.86 | 15.20 | 43.50 | 28.30 | QP |
| 5 | 390.840 | 15.92 | 2.43 | 26.99 | 17.51 | 46.00 | 28.49 | QP |
| 6 | 495.600 | 18.12 | 2.74 | 28.66 | 21.16 | 46.00 | 24.84 | QP |

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

Frequency: 1GHz~18GHz



| | | | |
|--------------|---------------------------------|-----------|--------------|
| Site no. | : 3m Chamber | Data no. | : 17 |
| Dis. / Ant. | : 3m 2012 3115 (4580) | Ant. pol. | : HORIZONTAL |
| Limit | : FCC PART 15 PEAK 2.4 | | |
| Env. / Ins. | : 23°C/54% | Engineer | : Leo-Li |
| EUT | : 2.4GHz Remote Receiver Dongle | | |
| Power supply | : DC 5V | | |
| Test mode | : 2403MHz Tx Mode | | |
| | RC650D | | |



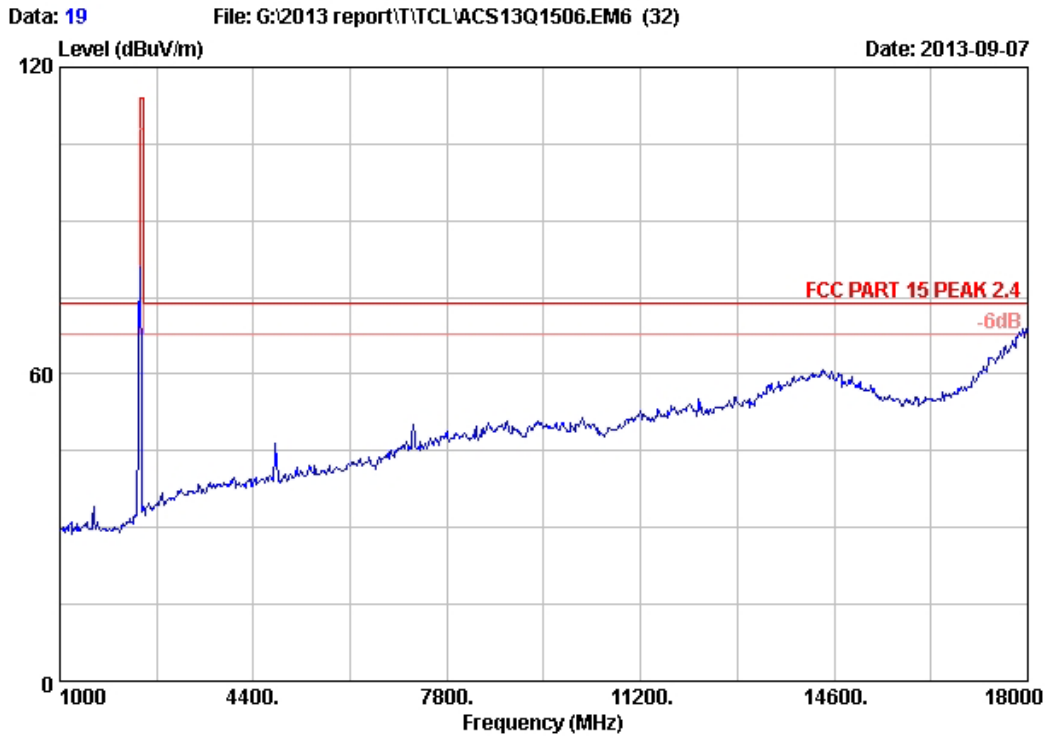
Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2403MHz Tx Mode
 RC650D

| | 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 | 2403.000 | 26.78 | 5.80 | 35.70 | 88.98 | 85.86 | 114.00 | 28.14 | Peak |
| 2 | 4806.000 | 32.47 | 8.56 | 35.70 | 47.83 | 53.16 | 74.00 | 20.84 | Peak |
| 3 | 7209.000 | 35.44 | 10.97 | 35.46 | 55.90 | 66.85 | 74.00 | 7.15 | Peak |

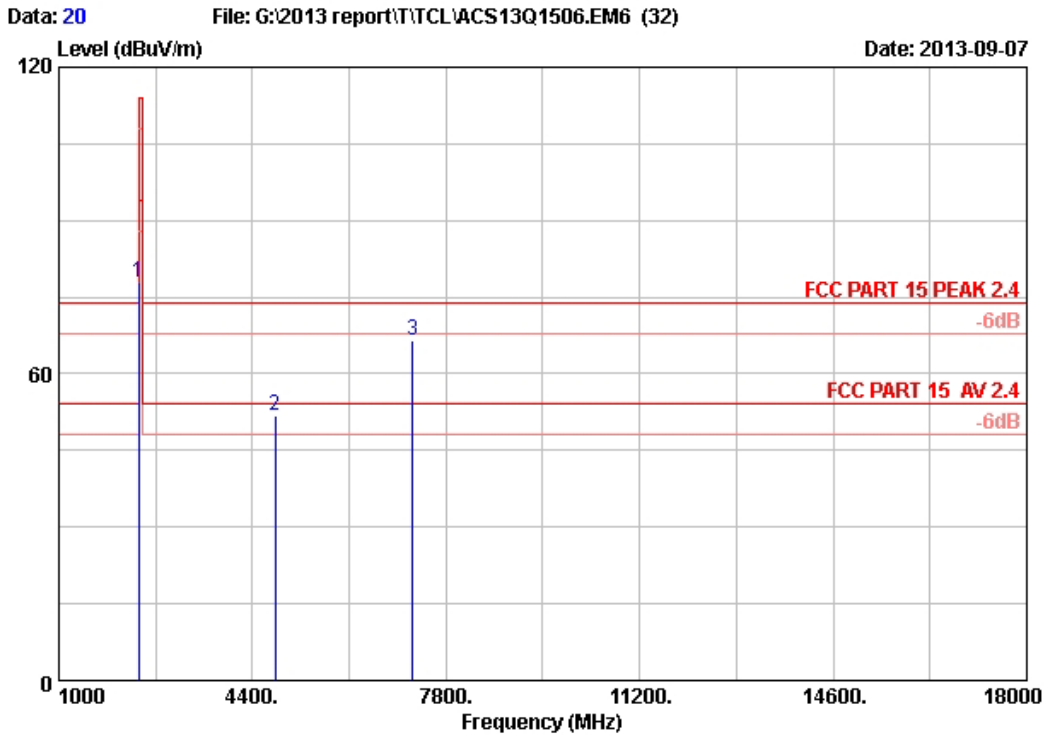
Remarks:

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

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 7209 | 66.85 | 18.10 | 48.75 | 54 | Pass |



| | | | |
|--------------|---------------------------------|-----------|------------|
| Site no. | : 3m Chamber | Data no. | : 19 |
| Dis. / Ant. | : 3m 2012 3115 (4580) | Ant. pol. | : VERTICAL |
| Limit | : FCC PART 15 PEAK 2.4 | | |
| Env. / Ins. | : 23°C/54% | Engineer | : Leo-Li |
| EUT | : 2.4GHz Remote Receiver Dongle | | |
| Power supply | : DC 5V | | |
| Test mode | : 2403MHz Tx Mode | | |
| | : RC650D | | |



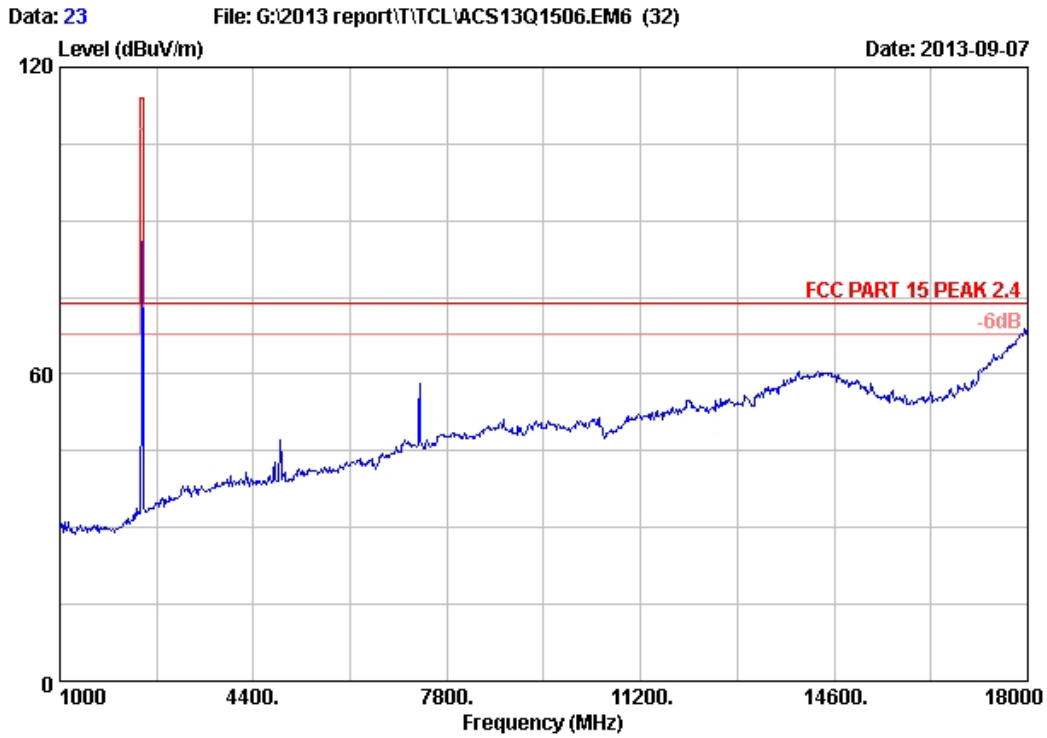
Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2403MHz Tx Mode
 RC650D

| | 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 | 2403.000 | 26.78 | 5.80 | 35.70 | 81.09 | 77.97 | 114.00 | 36.03 | Peak |
| 2 | 4806.000 | 32.47 | 8.56 | 35.70 | 46.58 | 51.91 | 74.00 | 22.09 | Peak |
| 3 | 7209.000 | 35.44 | 10.97 | 35.46 | 55.66 | 66.61 | 74.00 | 7.39 | Peak |

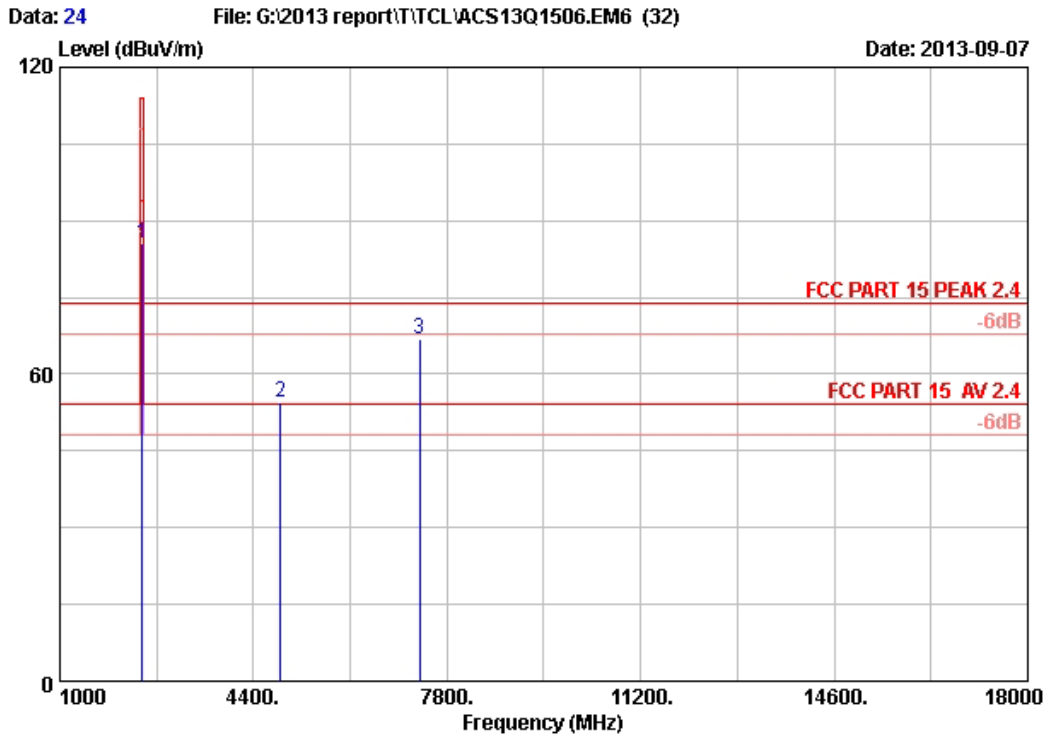
Remarks:

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

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 7209 | 66.61 | 18.10 | 48.51 | 54 | Pass |



| | | | |
|--------------|---------------------------------|-----------|--------------|
| Site no. | : 3m Chamber | Data no. | : 23 |
| Dis. / Ant. | : 3m 2012 3115 (4580) | Ant. pol. | : HORIZONTAL |
| Limit | : FCC PART 15 PEAK 2.4 | | |
| Env. / Ins. | : 23°C/54% | Engineer | : Leo-Li |
| EUT | : 2.4GHz Remote Receiver Dongle | | |
| Power supply | : DC 5V | | |
| Test mode | : 2440MHz Tx Mode | | |
| | RC650D | | |



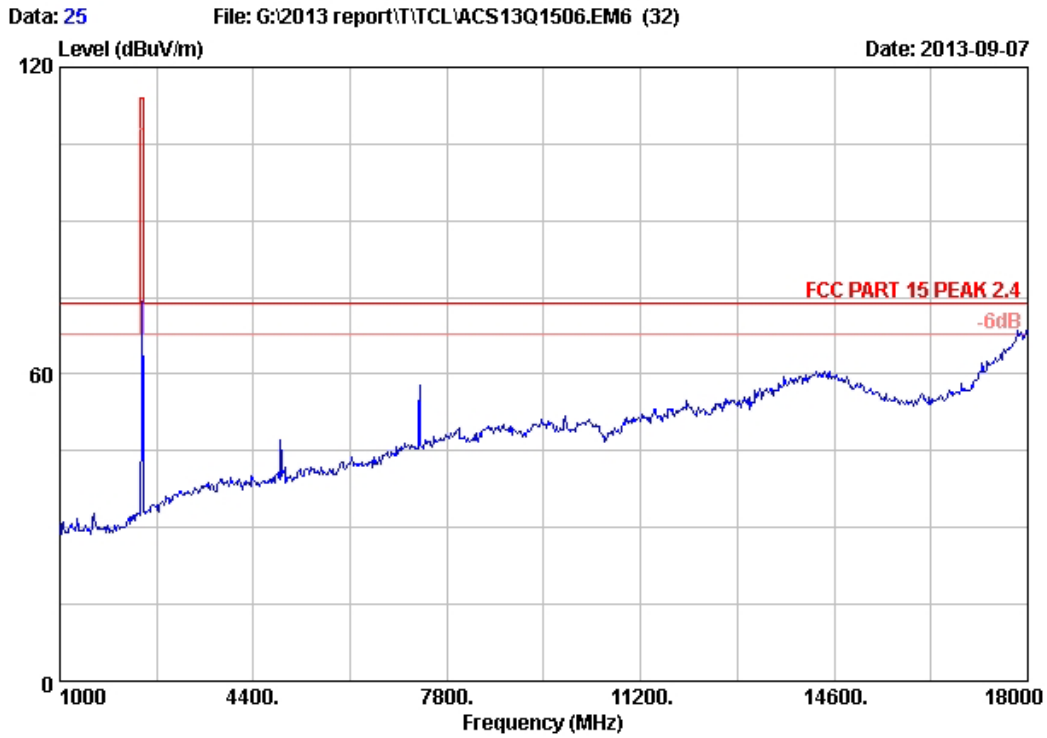
Site no. : 3m Chamber Data no. : 24
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2440MHz Tx Mode
 RC650D

| | 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 | 2440.000 | 27.02 | 5.86 | 35.70 | 88.43 | 85.61 | 114.00 | 28.39 | Peak |
| 2 | 4880.000 | 32.64 | 8.64 | 35.70 | 48.87 | 54.45 | 74.00 | 19.55 | Peak |
| 3 | 7320.000 | 35.73 | 11.03 | 35.44 | 55.62 | 66.94 | 74.00 | 7.06 | Peak |

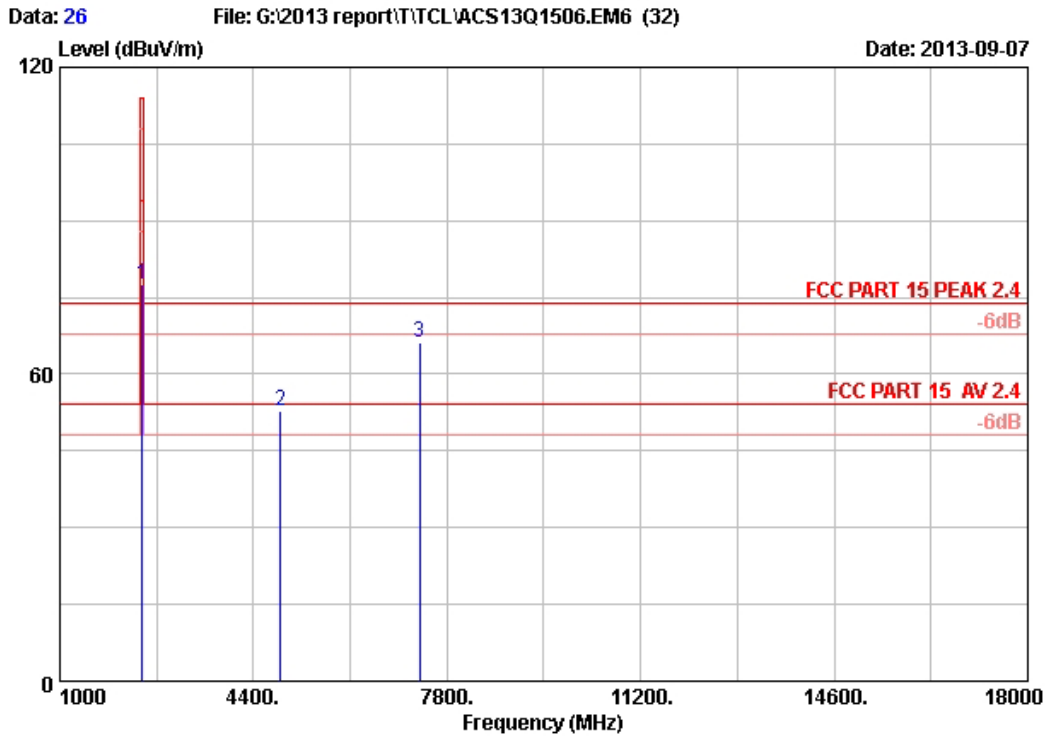
Remarks:

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

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 7320 | 66.94 | 18.10 | 48.84 | 54 | Pass |



Site no. : 3m Chamber Data no. : 25
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Leo-Li
EUT : 2.4GHz Remote Receiver Dongle
Power supply : DC 5V
Test mode : 2440MHz Tx Mode
RC650D



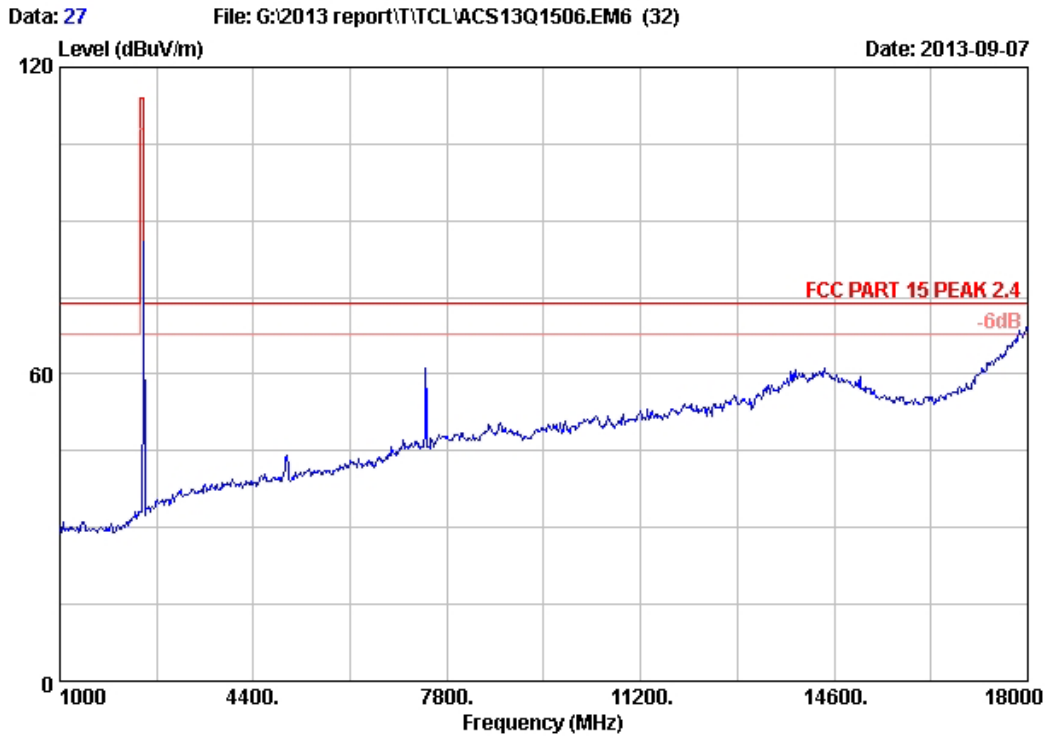
Site no. : 3m Chamber Data no. : 26
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2440MHz Tx Mode
 RC650D

| | 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 | 2440.000 | 27.02 | 5.86 | 35.70 | 80.34 | 77.52 | 114.00 | 36.48 | Peak |
| 2 | 4880.000 | 32.64 | 8.64 | 35.70 | 47.37 | 52.95 | 74.00 | 21.05 | Peak |
| 3 | 7320.000 | 35.73 | 11.03 | 35.44 | 54.76 | 66.08 | 74.00 | 7.92 | Peak |

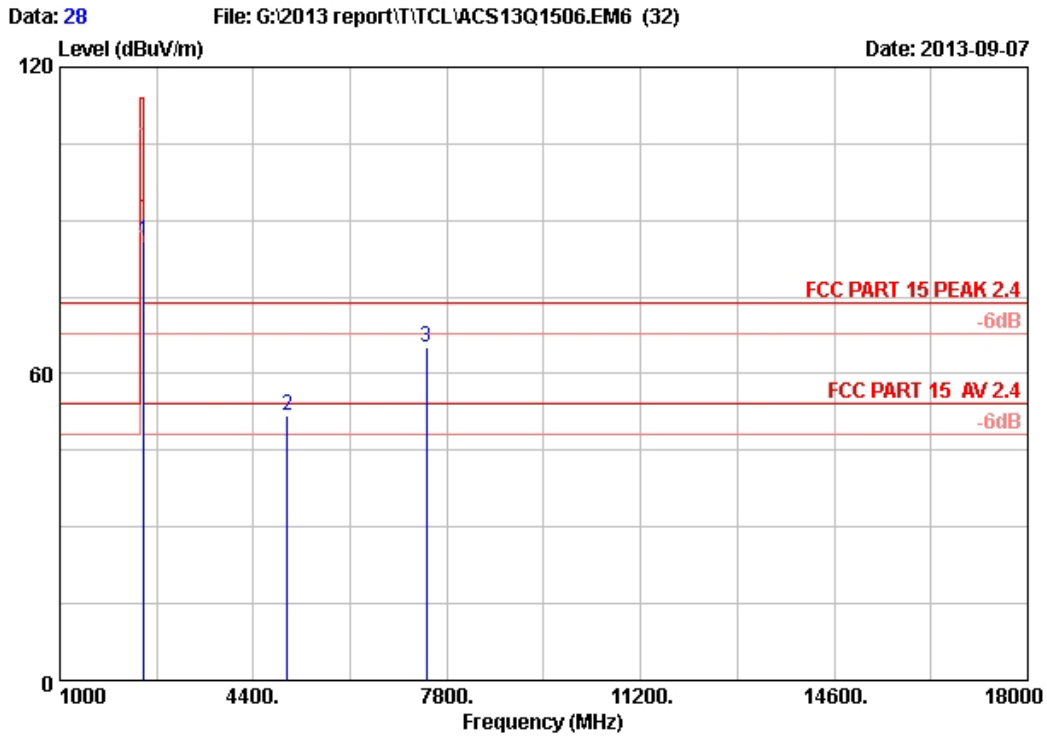
Remarks:

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

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 7320 | 66.08 | 18.10 | 47.98 | 54 | Pass |



Site no. : 3m Chamber Data no. : 27
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Leo-Li
EUT : 2.4GHz Remote Receiver Dongle
Power supply : DC 5V
Test mode : 2480MHz Tx Mode
RC650D



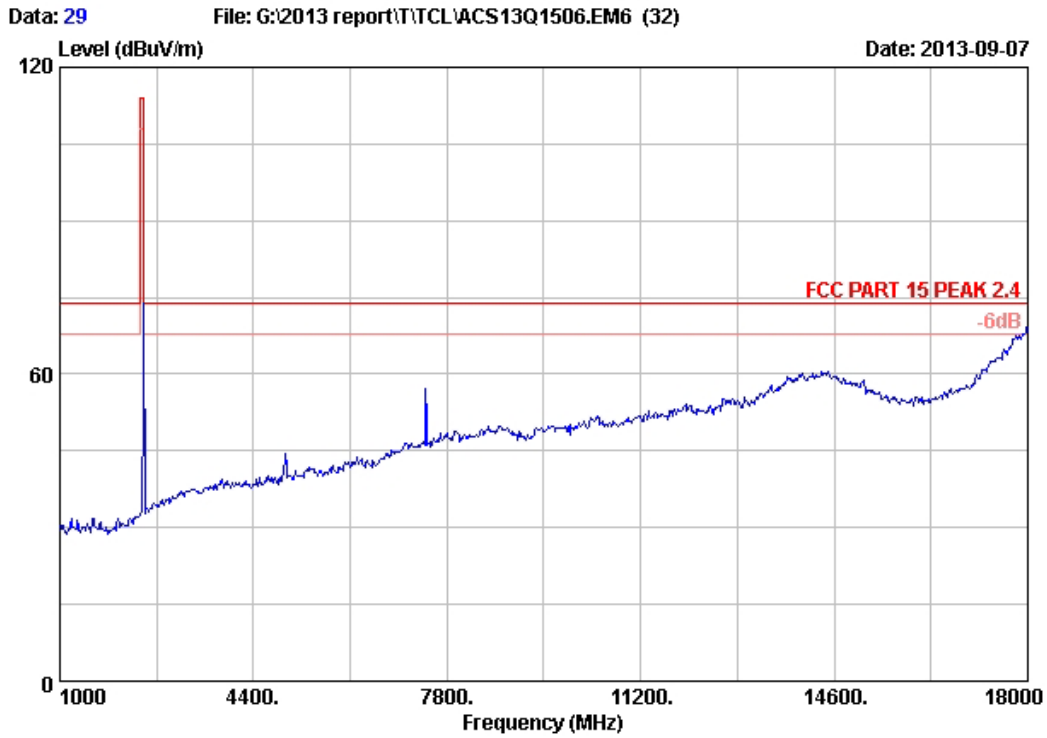
Site no. : 3m Chamber Data no. : 28
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2480MHz Tx Mode
 RC650D

| | 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 | 2480.000 | 27.27 | 5.91 | 35.70 | 88.55 | 86.03 | 114.00 | 27.97 | Peak |
| 2 | 4995.000 | 32.89 | 8.76 | 35.70 | 46.00 | 51.95 | 74.00 | 22.05 | Peak |
| 3 | 7440.000 | 36.04 | 11.09 | 35.41 | 53.37 | 65.09 | 74.00 | 8.91 | Peak |

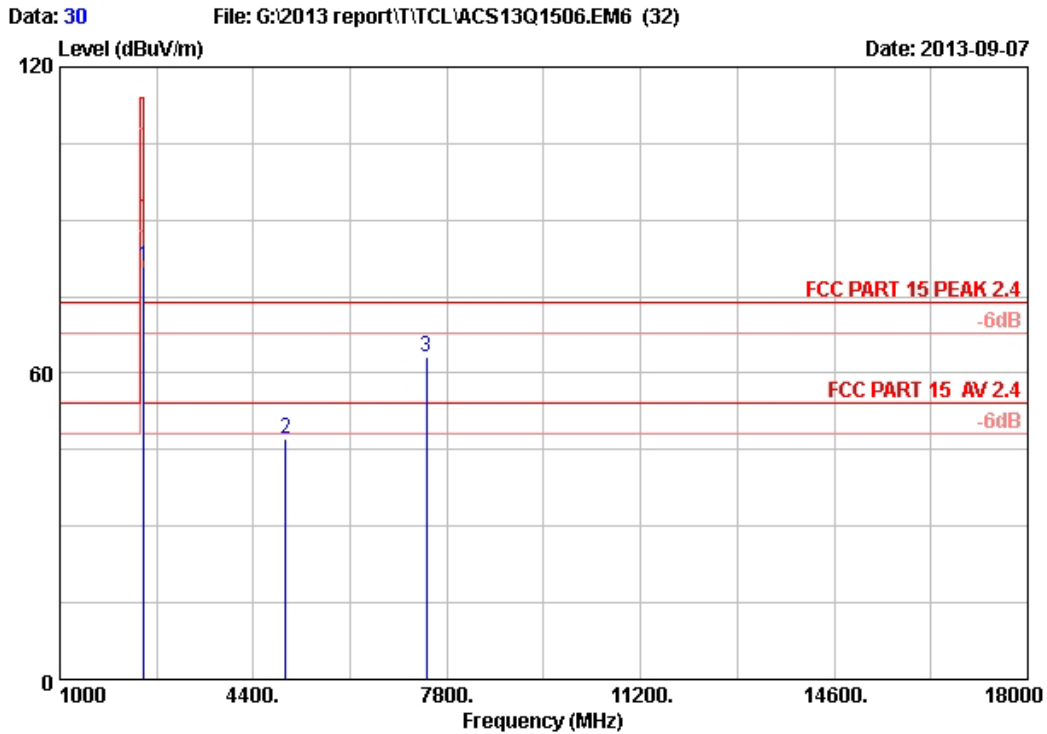
Remarks:

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

| Frequency (MHz) | Peak level (dBUV/m) | Duty cycle factor (dB) | AV level (dBUV/m) | Limit(dBUV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 7440 | 65.09 | 18.10 | 46.99 | 54 | Pass |



Site no. : 3m Chamber Data no. : 29
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Leo-Li
EUT : 2.4GHz Remote Receiver Dongle
Power supply : DC 5V
Test mode : 2480MHz Tx Mode
RC650D



Site no. : 3m Chamber Data no. : 30
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2480MHz Tx Mode
 RC650D

| | Freq. | Ant. | Cable | Amp. | Emission | | | | Remark |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | loss | Factor | Reading | Level | Limits | Margin | |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2480.000 | 27.27 | 5.91 | 35.70 | 83.30 | 80.78 | 114.00 | 33.22 | Peak |
| 2 | 4960.000 | 32.81 | 8.72 | 35.70 | 41.31 | 47.14 | 74.00 | 26.86 | Peak |
| 3 | 7440.000 | 36.04 | 11.09 | 35.41 | 51.62 | 63.34 | 74.00 | 10.66 | Peak |

Remarks:

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

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|-----------------|---------------------|------------------------|-------------------|---------------|------------|
| 7440 | 63.34 | 18.10 | 45.24 | 54 | Pass |

5. 20 DB BANDWIDTH TEST

5.1. Test Equipment

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-----------|--------------|-----------|------------|------------|---------------|
| 1. | Spectrum | Agilent | E4446A | US44300459 | May.08, 13 | 1 Year |

5.2. Limit

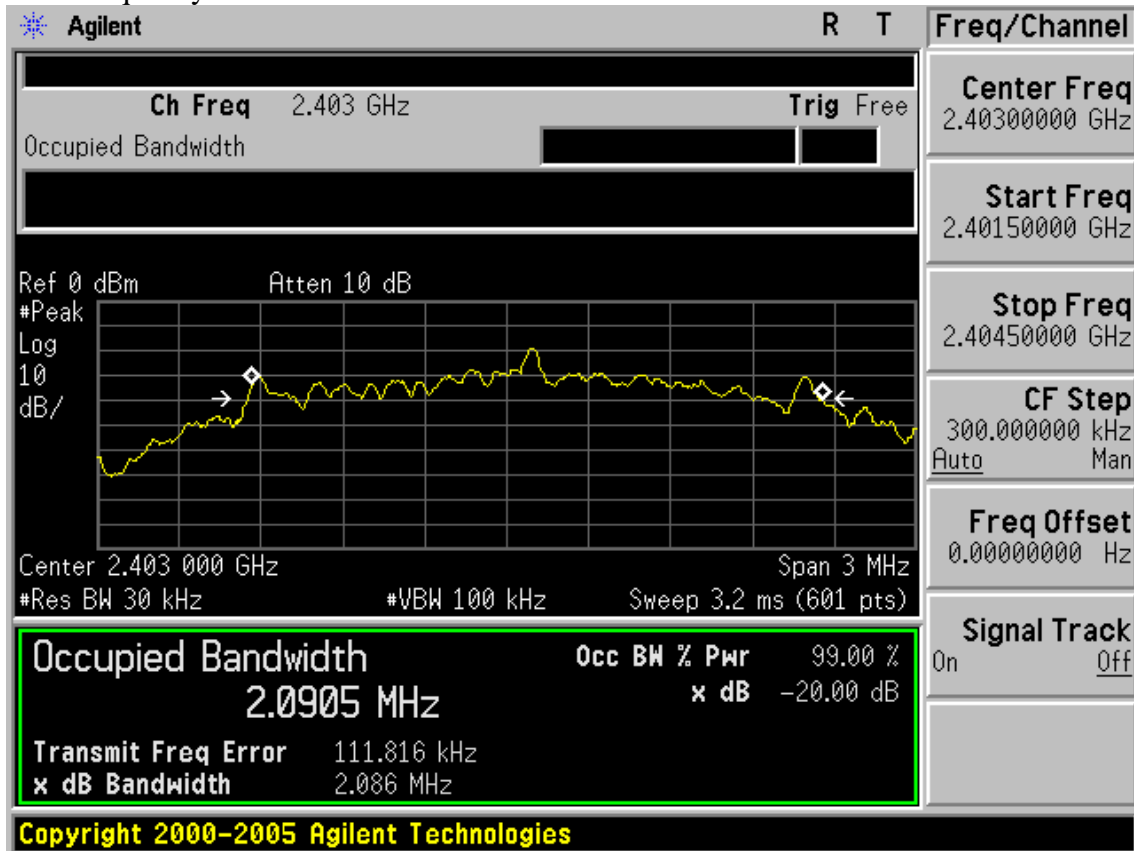
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific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

5.3. Test Results

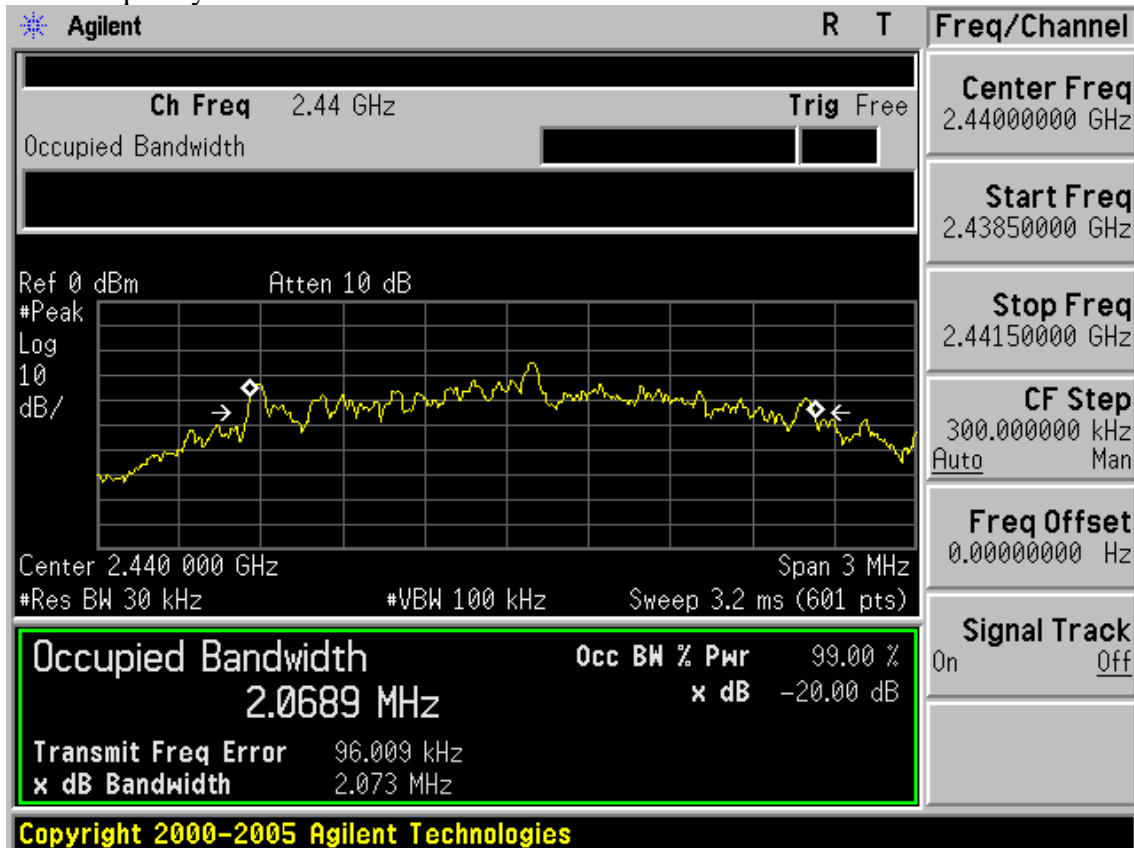
| | | |
|------------------------------------|-------------------------|-------------------------|
| EUT: 2.4GHz Remote Receiver Dongle | | |
| M/N: RC650D | | |
| Test date: 2013-09-10 | Pressure: 101.4±1.0 kpa | Humidity: 51.4±3.0% |
| Tested by: Leo-Li | Test site: RF Site | Temperature: 20.6±0.6°C |

| Frequency | 20dB bandwidth (MHz) | Limit (MHz) |
|-------------------|-------------------------|----------------|
| 2403MHz | 2.086 | N/A |
| 2440MHz | 2.073 | N/A |
| 2480MHz | 2.080 | N/A |
| Conclusion : PASS | | |

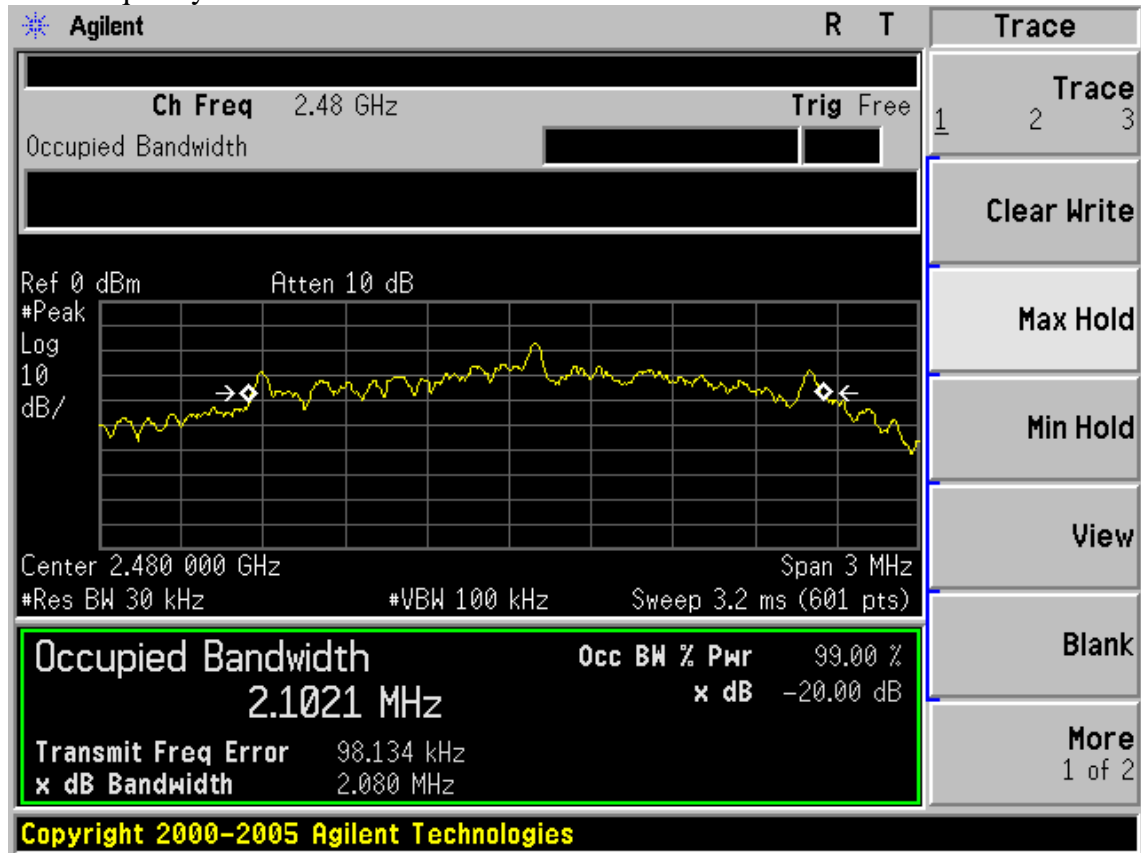
Test Frequency: 2403MHz



Test Frequency: 2440MHz



Test Frequency: 2480MHz



6. BAND EDGE COMPLIANCE TEST

6.1. Test Equipment

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-----------|--------------|-------------|------------|------------|---------------|
| 1. | Spectrum | Agilent | E4446A | US44300459 | May.08, 13 | 1 Year |
| 2. | Amp | HP | 8449B | 3008A08495 | May.08, 13 | 1 Year |
| 3. | Antenna | EMCO | 3115 | 9510-4580 | May.08, 13 | 1Year |
| 4. | HF Cable | Hubersuhne | Sucoflex104 | - | May.08, 13 | 1 Year |

6.2. 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.

6.3. Test Produce

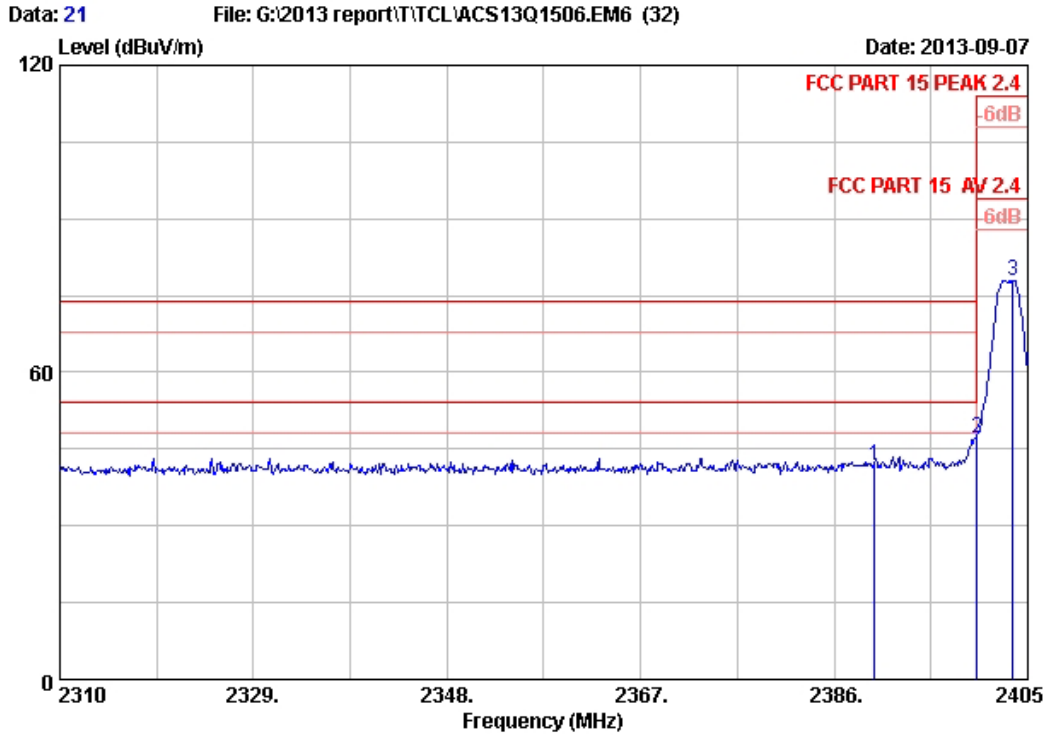
1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
 - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
 - (b)This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level

6.4. Test Results

Pass (The testing data was attached in the next pages.)

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

Note: The duty cycle factor for calculate average level is 18.1dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.

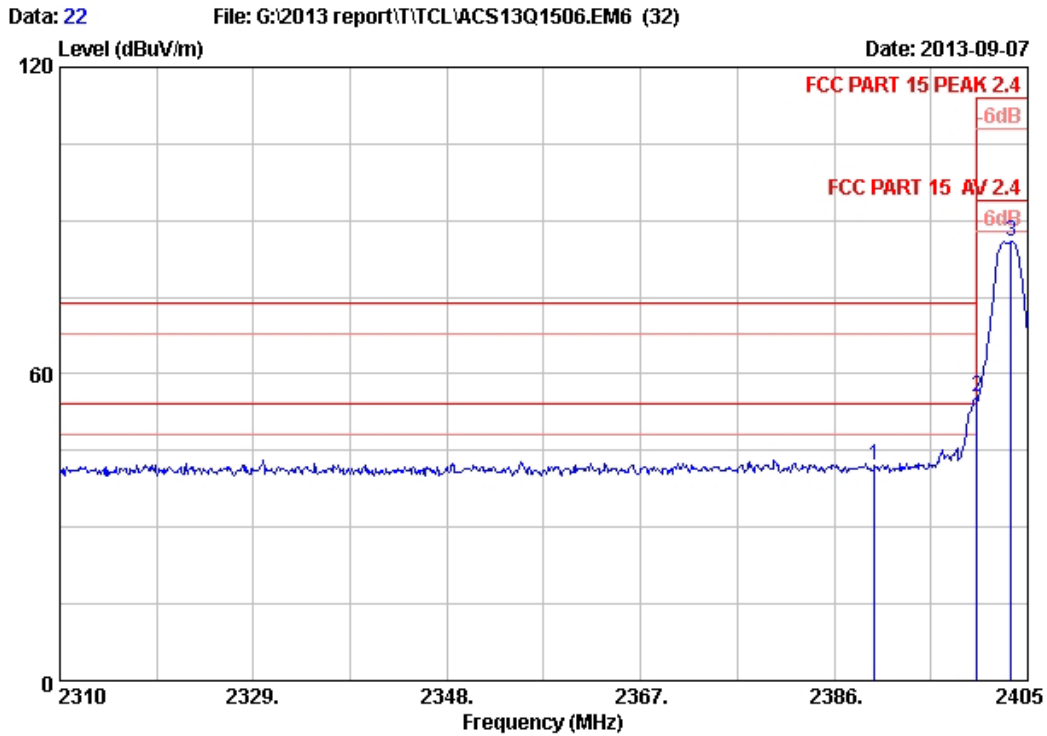


Site no. : 3m Chamber Data no. : 21
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2403MHz Tx Mode
 RC650D

| | 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 | 2390.000 | 26.70 | 5.78 | 35.70 | 45.07 | 41.85 | 74.00 | 32.15 | Peak |
| 2 | 2400.000 | 26.76 | 5.80 | 35.70 | 50.34 | 47.20 | 74.00 | 26.80 | Peak |
| 3 | 2403.575 | 26.78 | 5.80 | 35.70 | 81.09 | 77.97 | 114.00 | 36.03 | 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.



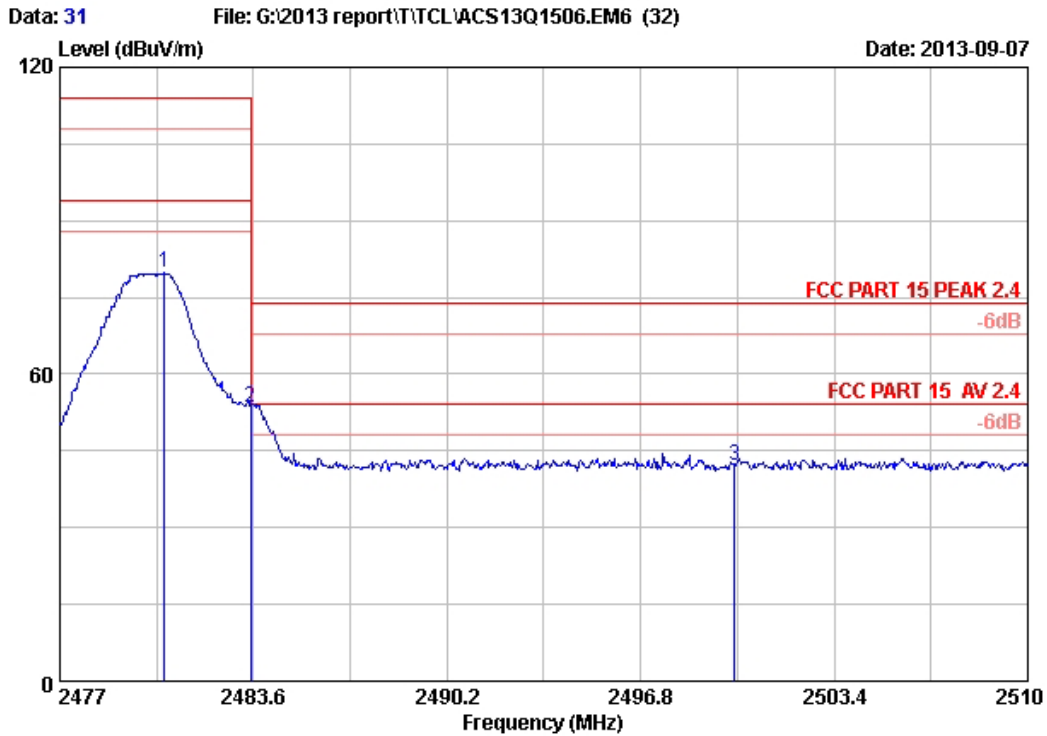
Site no. : 3m Chamber Data no. : 22
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2403MHz Tx Mode
 RC650D

| | 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 | 2390.000 | 26.70 | 5.78 | 35.70 | 45.34 | 42.12 | 74.00 | 31.88 | Peak |
| 2 | 2400.000 | 26.76 | 5.80 | 35.70 | 58.52 | 55.38 | 74.00 | 18.62 | Peak |
| 3 | 2403.385 | 26.78 | 5.80 | 35.70 | 88.98 | 85.86 | 114.00 | 28.14 | 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.

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 2400.000 | 55.38 | 18.10 | 37.28 | 54 | Pass |

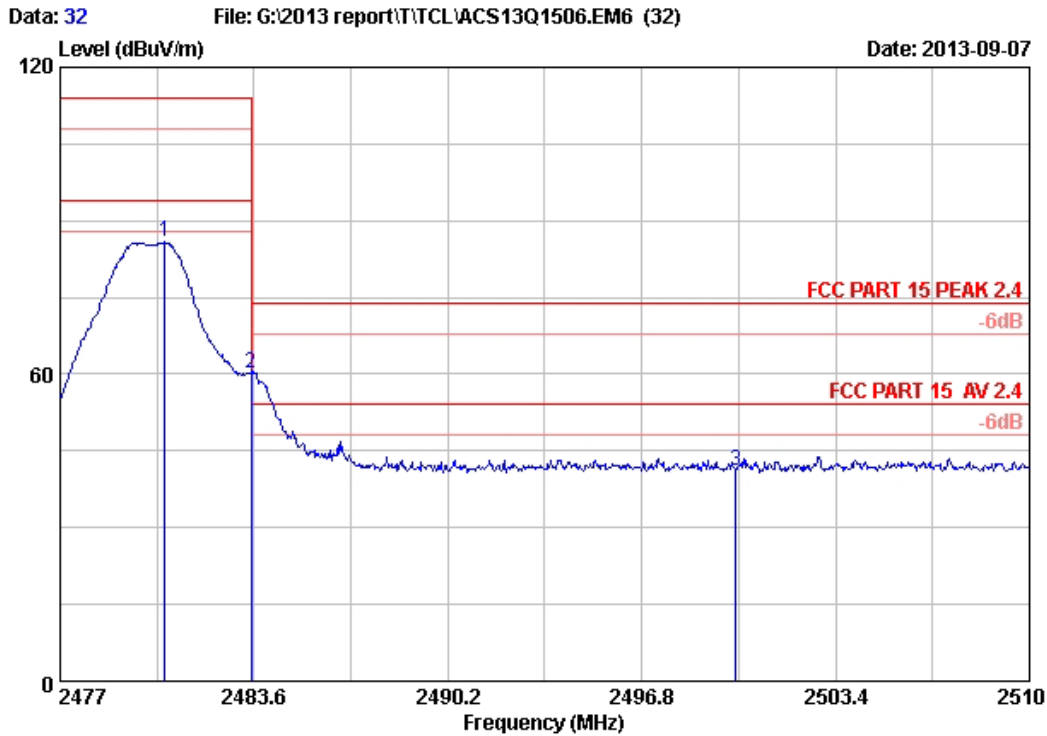


Site no. : 3m Chamber Data no. : 31
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2480MHz Tx Mode
 RC650D

| | 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 | 2480.564 | 27.28 | 5.91 | 35.70 | 82.25 | 79.74 | 114.00 | 34.26 | Peak |
| 2 | 2483.500 | 27.29 | 5.92 | 35.70 | 55.88 | 53.39 | 74.00 | 20.61 | Peak |
| 3 | 2500.000 | 27.40 | 5.94 | 35.70 | 44.55 | 42.19 | 74.00 | 31.81 | 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. : 3m Chamber Data no. : 32
 Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : 2.4GHz Remote Receiver Dongle
 Power supply : DC 5V
 Test mode : 2480MHz Tx Mode
 RC650D

| | 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 | 2480.564 | 27.28 | 5.91 | 35.70 | 88.25 | 85.74 | 114.00 | 28.26 | Peak |
| 2 | 2483.500 | 27.29 | 5.92 | 35.70 | 62.69 | 60.20 | 74.00 | 13.80 | Peak |
| 3 | 2500.000 | 27.40 | 5.94 | 35.70 | 43.56 | 41.20 | 74.00 | 32.80 | 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.

| Frequency (MHz) | Peak level (dBuV/m) | Duty cycle factor (dB) | AV level (dBuV/m) | Limit(dBuV/m) | Conclusion |
|--------------------|------------------------|---------------------------|----------------------|---------------|------------|
| 2483.500 | 60.20 | 18.10 | 42.10 | 54 | Pass |

7. DEVIATION TO TEST SPECIFICATIONS

[NONE]