# FCC PART 15.231

# TEST REPORT

For

# GTO Access Systems, LLC

3121 Hartsfield Road, Tallahassee, Florida 32303, USA

## FCC ID: I6H-LP6110KP

| Report Type: | Product Type: |
|---|---|
| Original Report | GTO/PRO PROFESSIONAL KEYPAD |

| | |
|---|---|
| **Report Number:** | RDG170905008-00B |
| **Report Date:** | 2017-12-21 |
| **Reviewed By:** | Jerry Zhang<br>EMC Manager |
| **Test Laboratory:** | Bay Area Compliance Laboratories Corp. (Dongguan)<br>No.69 Pulongcun, Puxinhu Industry Area,<br>Tangxia, Dongguan, Guangdong, China<br>Tel: +86-769-86858888<br>Fax: +86-769-86858891<br>www.baclcorp.com.cn |

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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

| | |
|---|---|
| **EUT Name:** | GTO/PRO PROFESSIONAL KEYPAD |
| **EUT Model:** | F6110MBC |
| **FCC ID:** | I6H-LP6110KP |
| **Rated Input Voltage:** | DC6.0V from battery or AC/DC 8~24V from AC/DC port |
| **External Dimension:** | 17.7cm(L)*15.3cm(W)*11.7cm(H) |
| **Serial Number:** | 170905008 |
| **EUT Received Date:** | 2017-09-05 |

## Objective

This report is prepared on behalf of ***GTO Access Systems, LLC*** in accordance with Part 2, Subpart J, Part 15, Subparts A, and C of the Federal Communications Commission's rules

The tests were performed in order to determine compliance with FCC Rules Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, 15.35(c) and 15.231 rules.

## Related Submittal(s)/Grant(s)

FCC Part 15C DSS submissions with FCC ID: I6H-LP6110KP.
Part of system submission with FCC ID: I6H-MM136G3BASE.

## Test Methodology

All measurements detailed in this Test Report were performed in accordance with ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices".

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

## Measurement Uncertainty

| Parameter | Measurement Uncertainty |
|---|---|
| Occupied Channel Bandwidth | ±5 % |
| Unwanted Emissions, radiated | 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical<br>200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical<br>1G~6GHz: 4.45 dB, 6G~26.5GHz: 5.23 dB |
| Temperature | ±1℃ |
| Humidity | ±5% |
| DC and low frequency voltages | ±0.4% |
| Duty Cycle | 1% |
| AC Power Lines Conducted Emission | 3.12 dB (150 kHz to 30 MHz) |

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

Bay Area Compliance Laboratories Corp. (Dongguan) has been accredited to ISO/IEC 17025 by CNAS(Lab code: L5662). And accredited to ISO/IEC 17025 by NVLAP(Test Laboratory Accreditation Certificate Number 500069-0), the FCC Designation No. CN5002 under the KDB 974614 D01.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Bay Area Compliance Laboratories Corp. (Dongguan) was registered with ISED Canada under ISED Canada Registration Number 3062D.

# SYSTEM TEST CONFIGURATION

## Justification

The system was configured in testing mode which was provided by manufacturer.

When the GRANT ACCESS Button of the base unit was pressed, the 915MHz module will receive it, and if the person at the keypad side press the keypad any key, the 318 MHz module will send out the same ASK signal to the gate opener and open the gate.

## Equipment Modifications

No modifications were made to the unit tested.

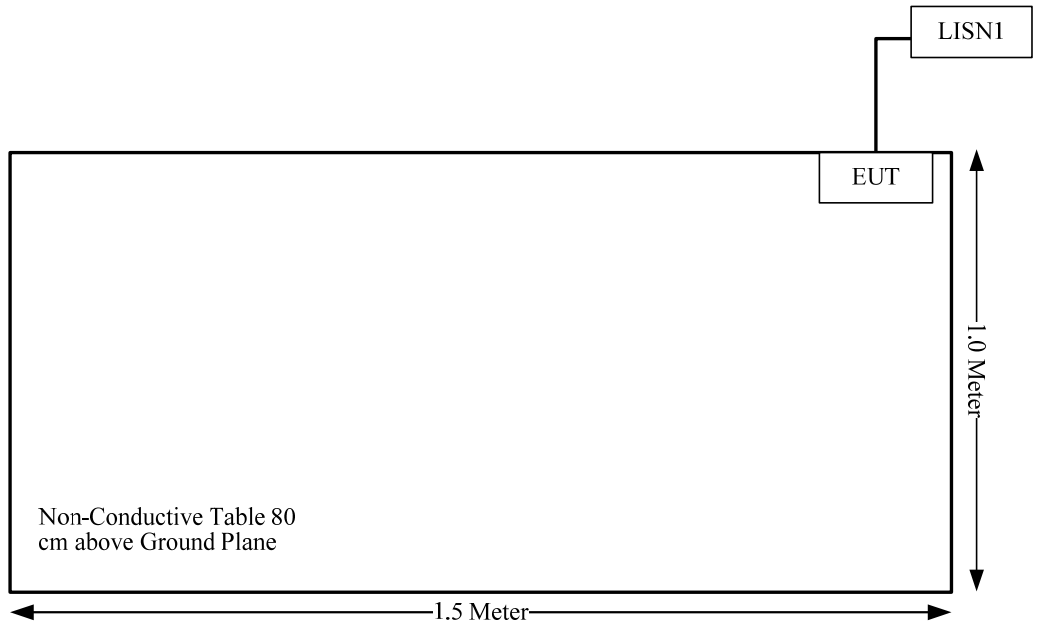
## EUT Exercise Software

No software was used in test.

## Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| GTO Access Systems, LLC | INTERCOM BASE UNIT | MM136B | / |

## Block Diagram of Test Setup



# SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| §15.203 | Antenna Requirement | Compliance |
| §15.207 (a) | Conducted Emissions | Compliance |
| §15.205, §15.209, §15.231 (b) | Radiated Emissions | Compliance |
| §15.231 (c) | 20dB Bandwidth | Compliance |
| §15.231 (a) | Deactivation Testing | Compliance |

# FCC §15.203 - ANTENNA REQUIREMENT

## Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

**Result:** Compliant.

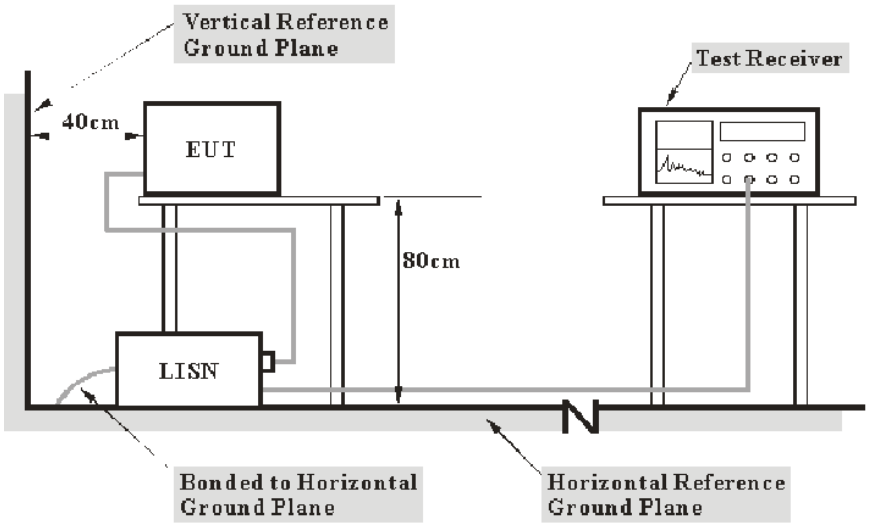
The EUT has one internal antenna arrangement, which was permanently attached and the antenna gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

# FCC §15.207 (a)– AC LINE CONDUCTED EMISSIONS

## Applicable Standard

FCC§15.207(a)

## EUT Setup




Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207.

The spacing between the peripherals was 10 cm.

The EUT was connected to the main lisn with a 8 or 24 V/60 Hz AC power source.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

| Frequency Range | IF B/W |
|---|---|
| 150 kHz – 30 MHz | 9 kHz |

## Test Procedure

During the conducted emission test, the EUT was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

## Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
$V_C$ (cord. Reading): corrected voltage amplitude
$V_R$: reading voltage amplitude
$A_c$: attenuation caused by cable loss
VDF: voltage division factor of AMN
$C_f$: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | EMI Test Receiver | ESCS 30 | 830245/006 | 2016-12-08 | 2017-12-08 |
| R&S | L.I.S.N | ESH2-Z5 | 892107/021 | 2017-09-25 | 2018-09-25 |
| R&S | Two-line V-network | ENV 216 | 3560.6550.12 | 2016-12-08 | 2017-12-08 |
| R&S | Test Software | EMC32 | Version8.53.0 | N/A | N/A |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0200-01 | 2017-09-05 | 2018-09-05 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

# Test Data

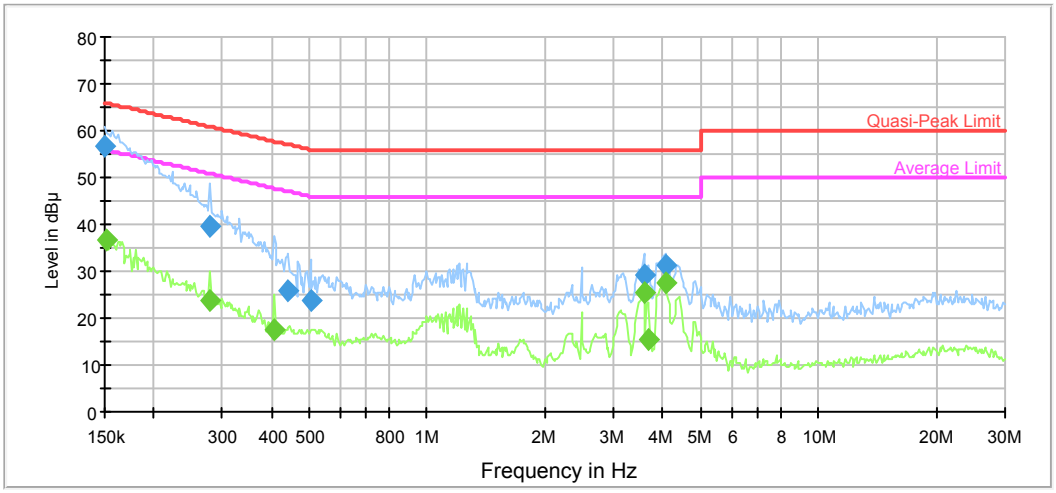
## Environmental Conditions

| | |
|---|---|
| **Temperature:** | 24.0 °C |
| **Relative Humidity:** | 34 % |
| **ATM Pressure:** | 100.8 kPa |

*The testing was performed by Alex You on 2017-11-24.*

***Test Mode:*** *Transmitting (AC 24V was the worst)*

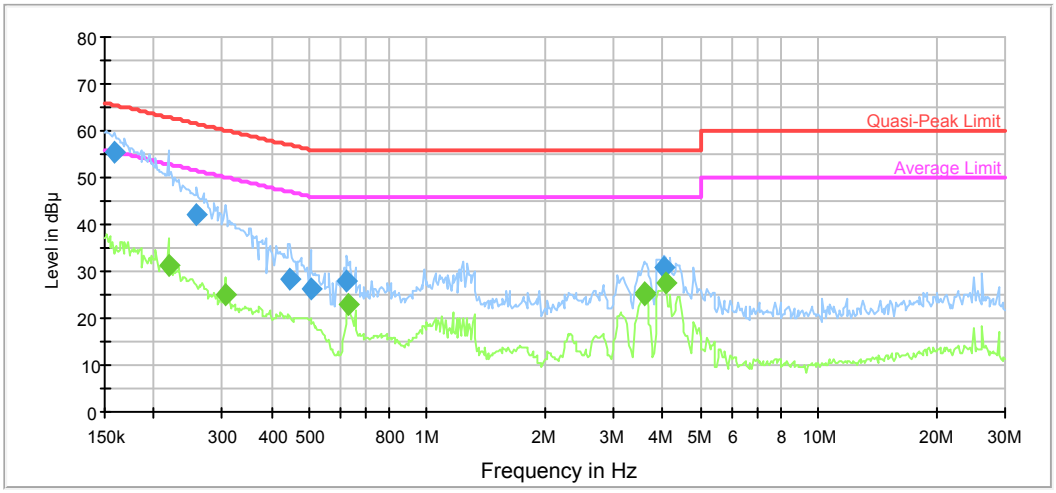
### AC24V, 60 Hz, Line:




| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|
| 0.150000 | 56.6 | 9.000 | L1 | 11.2 | 9.4 | 66.0 | Compliance |
| 0.279263 | 39.6 | 9.000 | L1 | 10.2 | 21.2 | 60.8 | Compliance |
| 0.443327 | 25.9 | 9.000 | L1 | 9.9 | 31.1 | 57.0 | Compliance |
| 0.503608 | 23.6 | 9.000 | L1 | 9.9 | 32.4 | 56.0 | Compliance |
| 3.575883 | 29.3 | 9.000 | L1 | 9.8 | 26.7 | 56.0 | Compliance |
| 4.062112 | 31.2 | 9.000 | L1 | 9.8 | 24.8 | 56.0 | Compliance |

| Frequency (MHz) | Average (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|
| 0.152410 | 36.5 | 9.000 | L1 | 11.2 | 19.4 | 55.9 | Compliance |
| 0.279263 | 23.5 | 9.000 | L1 | 10.2 | 27.3 | 50.8 | Compliance |
| 0.406123 | 17.6 | 9.000 | L1 | 10.0 | 30.1 | 47.7 | Compliance |
| 3.575883 | 25.6 | 9.000 | L1 | 9.8 | 20.4 | 46.0 | Compliance |
| 3.662393 | 15.6 | 9.000 | L1 | 9.8 | 30.4 | 46.0 | Compliance |
| 4.062112 | 27.7 | 9.000 | L1 | 9.8 | 18.3 | 46.0 | Compliance |

**AC24V, 60 Hz, Neutral:**




| Frequency (MHz) | QuasiPeak (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|
| 0.158604 | 55.2 | 9.000 | N | 11.1 | 10.3 | 65.5 | Compliance |
| 0.257874 | 42.1 | 9.000 | N | 10.3 | 19.4 | 61.5 | Compliance |
| 0.446873 | 28.4 | 9.000 | N | 9.9 | 28.5 | 56.9 | Compliance |
| 0.503608 | 26.3 | 9.000 | N | 9.9 | 29.7 | 56.0 | Compliance |
| 0.624492 | 28.0 | 9.000 | N | 9.8 | 28.0 | 56.0 | Compliance |
| 4.029873 | 31.0 | 9.000 | N | 9.8 | 25.0 | 56.0 | Compliance |

| Frequency (MHz) | Average (dBµV) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|---|---|---|---|---|---|---|---|
| 0.218141 | 31.3 | 9.000 | N | 10.5 | 21.6 | 52.9 | Compliance |
| 0.304845 | 25.1 | 9.000 | N | 10.1 | 25.0 | 50.1 | Compliance |
| 0.629488 | 22.8 | 9.000 | N | 9.8 | 23.2 | 46.0 | Compliance |
| 3.575883 | 25.0 | 9.000 | N | 9.8 | 21.0 | 46.0 | Compliance |
| 3.604490 | 25.5 | 9.000 | N | 9.8 | 20.5 | 46.0 | Compliance |
| 4.062112 | 27.6 | 9.000 | N | 9.8 | 18.4 | 46.0 | Compliance |

# FCC §15.205, §15.209, §15.231 (b) - RADIATED EMISSIONS

## Applicable Standard

FCC §15.205, §15.209, §15.231 (b)

(b) In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

| Fundamental frequency (MHz) | Field strength of fundamental (microvolts/meter) | Field strength of spurious emissions (microvolts/meter) |
|---|---|---|
| 40.66-40.70 | 2,250 | 225 |
| 70-130 | 1,250 | 125 |
| 130-174 | [1]1,250 to 3,750 | [1]125 to 375 |
| 174-260 | 3,750 | 375 |
| 260-470 | [1]3,750 to 12,500 | [1]375 to 1,250 |
| Above 470 | 12,500 | 1,250 |

[1]Linear interpolations.

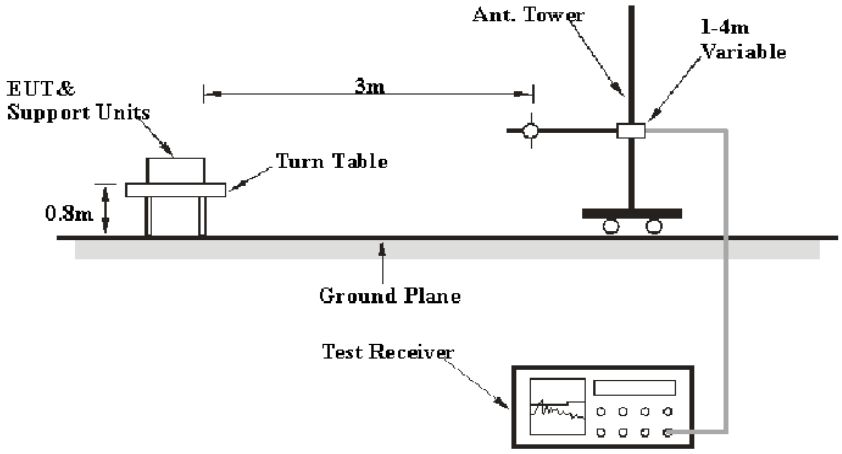
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

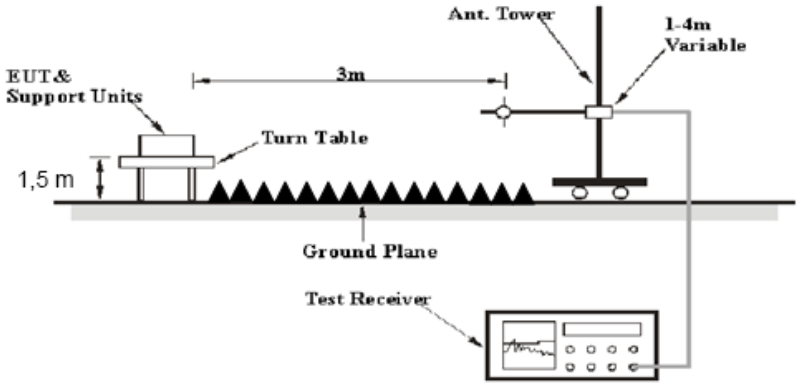
(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

## EUT Setup

**Below 1 GHz:**




**Above 1 GHz:**




The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15 § 15.209, 15.205 and 15.231.

## EMI Test Receiver Setup

The system was investigated from 30 MHz to 4 GHz.

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

| Frequency Range | RBW | Video B/W | IF B/W | Measurement |
|---|---|---|---|---|
| 30 MHz – 1000 MHz | 100 kHz | 300 kHz | 100 kHz | PK |
| 1 GHz – 4 GHz | 1 MHz | 3 MHz | / | PK |

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | EMI Test Receiver | ESCI | 100224 | 2017-09-01 | 2018-09-01 |
| Sunol Sciences | Antenna | JB3 | A060611-2 | 2017-08-25 | 2020-08-25 |
| HP | Amplifier | 8447D | 2727A05902 | 2017-09-05 | 2018-09-05 |
| Agilent | Spectrum Analyzer | E4440A | SG43360054 | 2017-12-08 | 2018-12-08 |
| ETS-Lindgren | Horn Antenna | 3115 | 000 527 35 | 2016-01-05 | 2019-01-05 |
| MITEQ | Amplifier | AFS42-00101800-25-S-42 | 2001271 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0400-01 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0075-01 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-1000-01 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-SJSJ-50 | C-0800-01 | 2017-09-05 | 2018-09-05 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

According to §15.231, Intentional radiators operating under the provisions of this Section shall demonstrate compliance with the limits on the field strength of emissions, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

## Test Results Summary

According to the data in the following table, the EUT complied with the CFR47 §15.205, §15.209, §15.231 (b).

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25.2~28.5 °C |
| **Relative Humidity:** | 49~50 % |
| **ATM Pressure:** | 100.4~100.6 kPa |

*The testing was performed by Steven Zuo on 2017-12-20 and 2017-12-21.*

*Test mode: Transmitting*

**Field Strength (Peak)**

| Frequency | Receiver | Rx Antenna | | Cable loss (dB) | Amplifier Gain (dB) | Corrected Amplitude (dBμV/m) | 15.231(b) | |
|---|---|---|---|---|---|---|---|---|
| (MHz) | Reading (dBμV) | Polar (H/V) | Factor (dB) | | | | Limit (dBμV/m) | Margin (dB) |
| Operating Frequency: 318.022 MHz | | | | | | | | |
| 318.022 | 75.38 | H | 14.50 | 2.18 | 21.57 | 70.49 | 95.8 | 25.31 |
| 318.022 | 80.49 | V | 14.50 | 2.18 | 21.57 | 75.6 | 95.8 | 20.2 |
| 636.044 | 39.8 | H | 20.10 | 3.08 | 22.28 | 40.7 | 75.8 | 35.1 |
| 636.044 | 42.6 | V | 20.10 | 3.08 | 22.28 | 43.5 | 75.8 | 32.3 |
| 954.066 | 36.9 | H | 23.33 | 3.76 | 22.08 | 41.91 | 75.8 | 33.89 |
| 954.066 | 38.6 | V | 23.33 | 3.76 | 22.08 | 43.61 | 75.8 | 32.19 |
| 1272.088 | 59.43 | H | 25.27 | 2.15 | 35.28 | 51.58 | 74 | 22.42 |
| 1272.088 | 58.38 | V | 25.27 | 2.15 | 35.28 | 50.53 | 74 | 23.47 |
| 1590.11 | 59.17 | H | 26.09 | 2.46 | 35.32 | 52.41 | 74 | 21.59 |
| 1590.11 | 59.09 | V | 26.09 | 2.46 | 35.32 | 52.33 | 74 | 21.67 |
| 1908.132 | 54.12 | H | 28.19 | 2.67 | 35.58 | 49.41 | 74 | 24.59 |
| 1908.132 | 52.86 | V | 28.19 | 2.67 | 35.58 | 48.15 | 74 | 25.85 |
| 2226.154 | 58.52 | H | 30.07 | 2.97 | 35.57 | 55.99 | 74 | 18.01 |
| 2226.154 | 55.48 | V | 30.07 | 2.97 | 35.57 | 52.95 | 74 | 21.05 |
| 2544.176 | 53.42 | H | 31.54 | 3.10 | 35.45 | 52.61 | 74 | 21.39 |
| 2544.176 | 52.79 | V | 31.54 | 3.10 | 35.45 | 51.98 | 74 | 22.02 |

**Field Strength (Average)**

| Frequency (MHz) | Peak Measurement @ 3m (dBμV/m) | Polar (H/V) | Duty Cycle Correction Factor (dB) | Average Amp. (dBμV/m) | 15.231(b) | |
|---|---|---|---|---|---|---|
| | | | | | Limit (dBμV/m) | Margin (dB) |
| Operating Frequency: 318.022 MHz | | | | | | |
| 318.022 | 70.49 | H | -8.19 | 62.30 | 75.8 | 13.50 |
| 318.022 | 75.6 | V | -8.19 | 67.41 | 75.8 | 8.39 |
| 636.044 | 40.7 | H | -8.19 | 32.51 | 55.8 | 23.29 |
| 636.044 | 43.5 | V | -8.19 | 35.31 | 55.8 | 20.49 |
| 954.066 | 41.91 | H | -8.19 | 33.72 | 55.8 | 22.08 |
| 954.066 | 43.61 | V | -8.19 | 35.42 | 55.8 | 20.38 |
| 1272.088 | 51.58 | H | -8.19 | 43.39 | 54 | 10.61 |
| 1272.088 | 50.53 | V | -8.19 | 42.34 | 54 | 11.66 |
| 1590.11 | 52.41 | H | -8.19 | 44.22 | 54 | 9.78 |
| 1590.11 | 52.33 | V | -8.19 | 44.14 | 54 | 9.86 |
| 1908.132 | 49.41 | H | -8.19 | 41.22 | 54 | 12.78 |
| 1908.132 | 48.15 | V | -8.19 | 39.96 | 54 | 14.04 |
| 2226.154 | 55.99 | H | -8.19 | 47.80 | 54 | 6.2 |
| 2226.154 | 52.95 | V | -8.19 | 44.76 | 54 | 9.24 |
| 2544.176 | 52.61 | H | -8.19 | 44.42 | 54 | 9.58 |
| 2544.176 | 51.98 | V | -8.19 | 43.79 | 54 | 10.21 |

Duty Cycle Correction Factor Calculation as below:

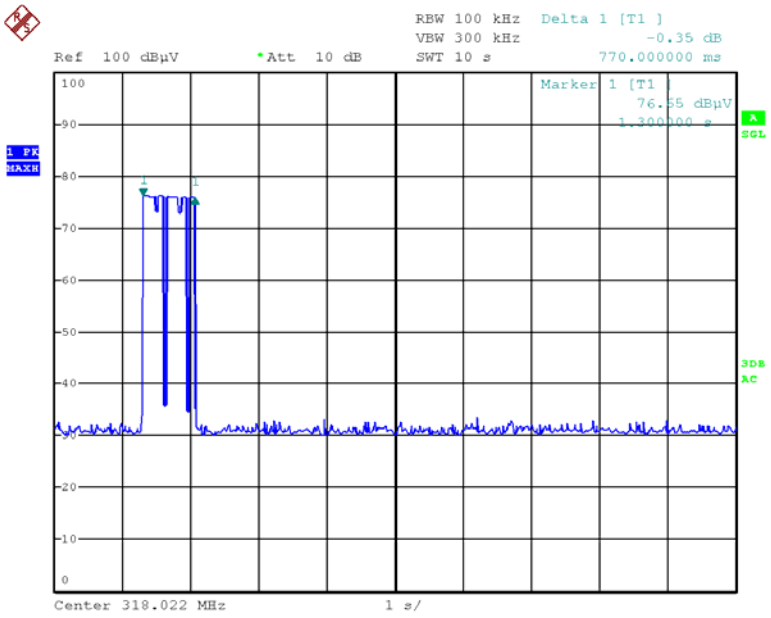
$T_{on}$=8*4.12+10*0.6 =38.96 ms

$T_{on+off}$ =100 ms

Duty cycle = 38.96/100*100%=38.96%

Duty Cycle Correction Factor= 20*log(Duty cycle)= -8.19 dB

*Transmission duration(780ms)*

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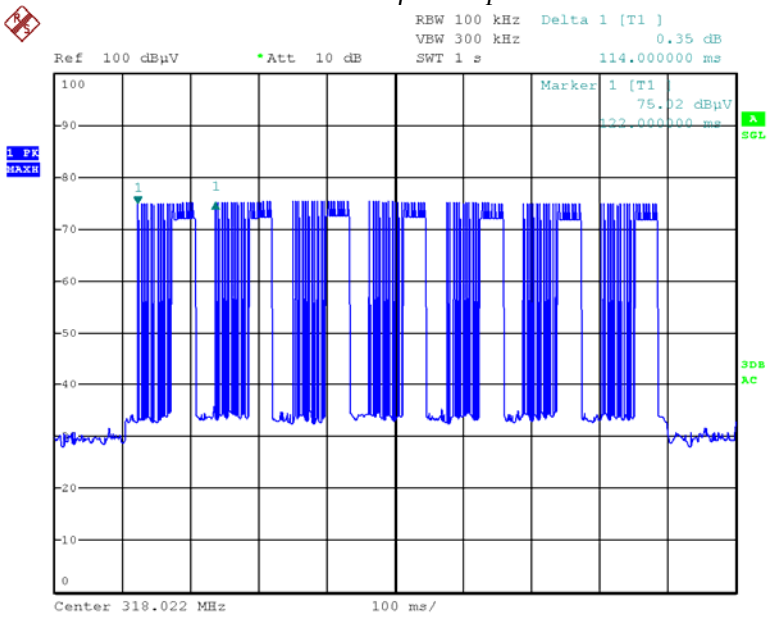
*7 period in Transmission duration*
*114ms for one period*

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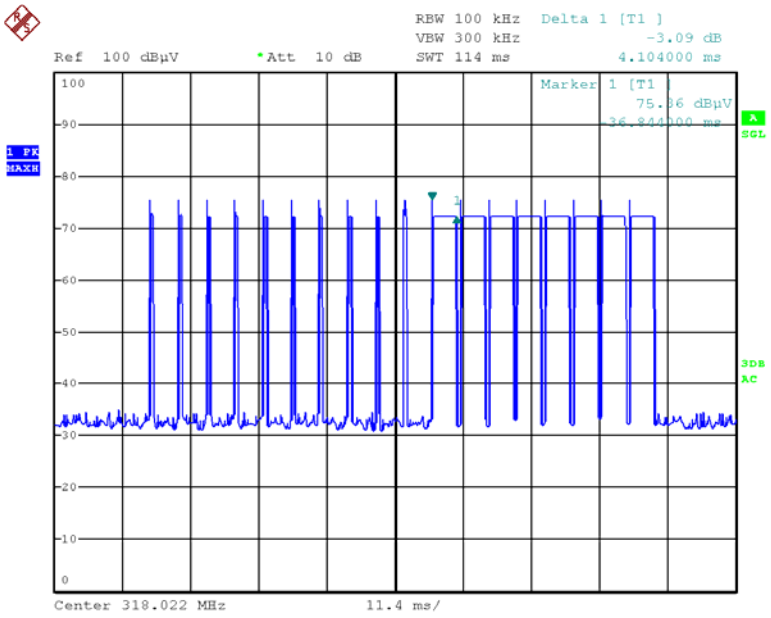
*All Pulse*

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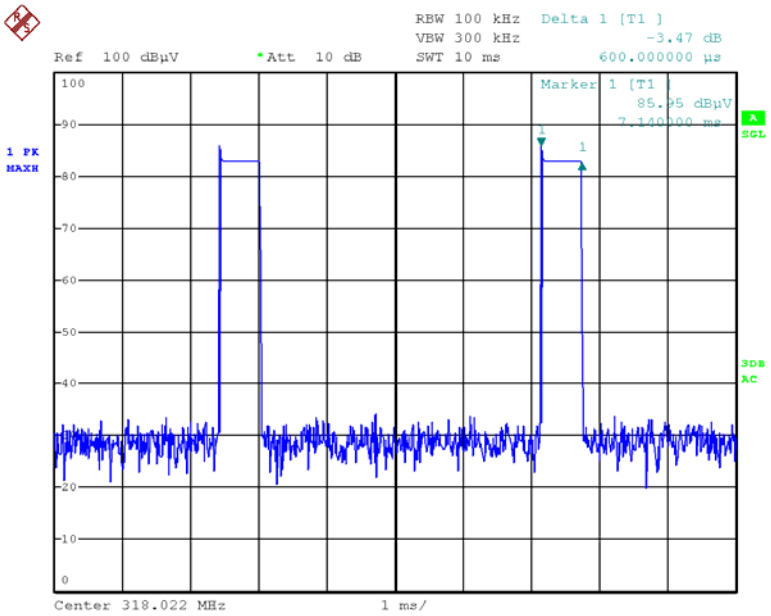
*Pulse 1*

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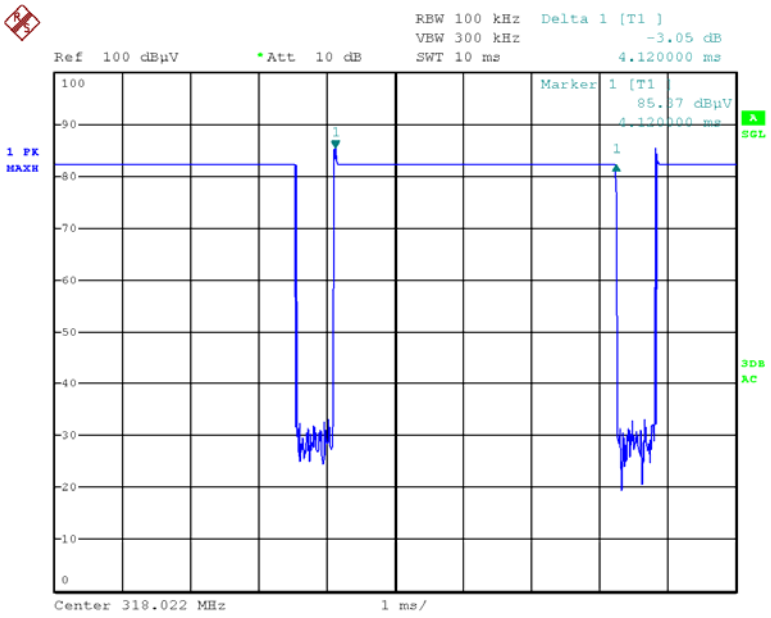
*Pulse 2*

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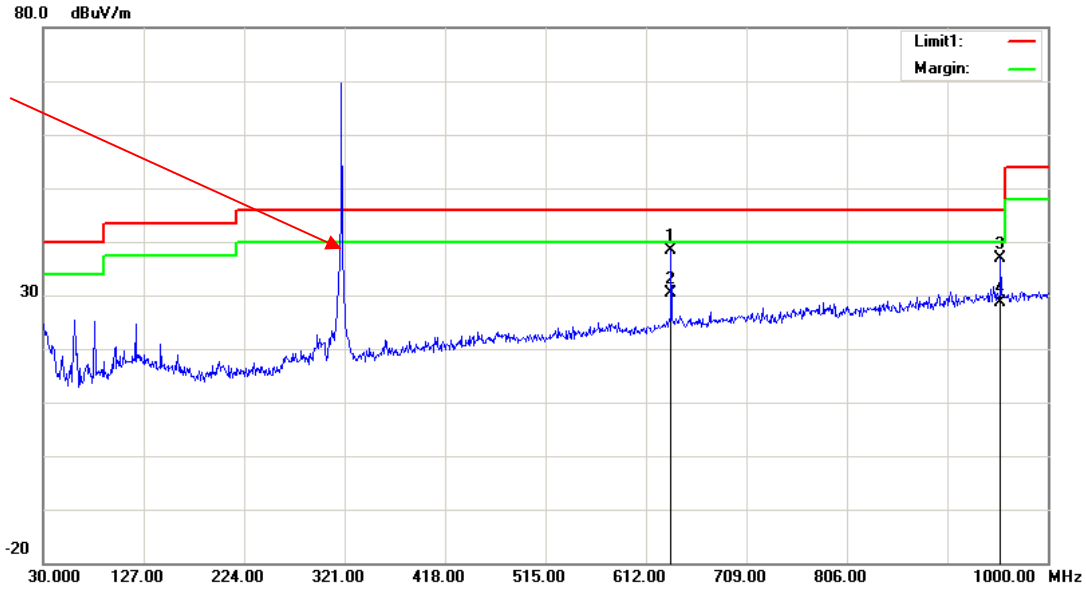
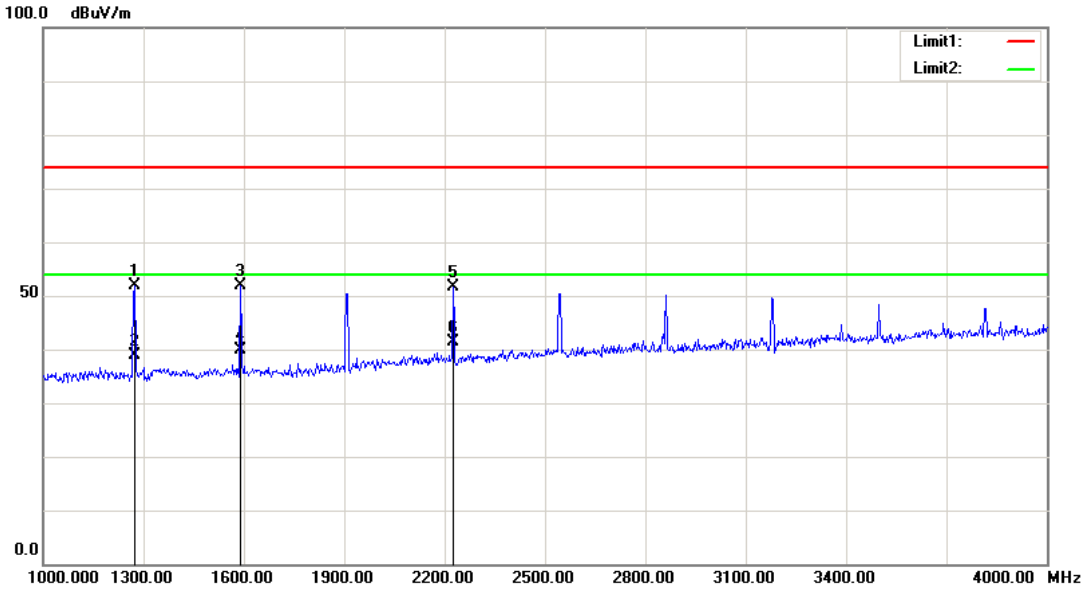
*Peak Test plots*

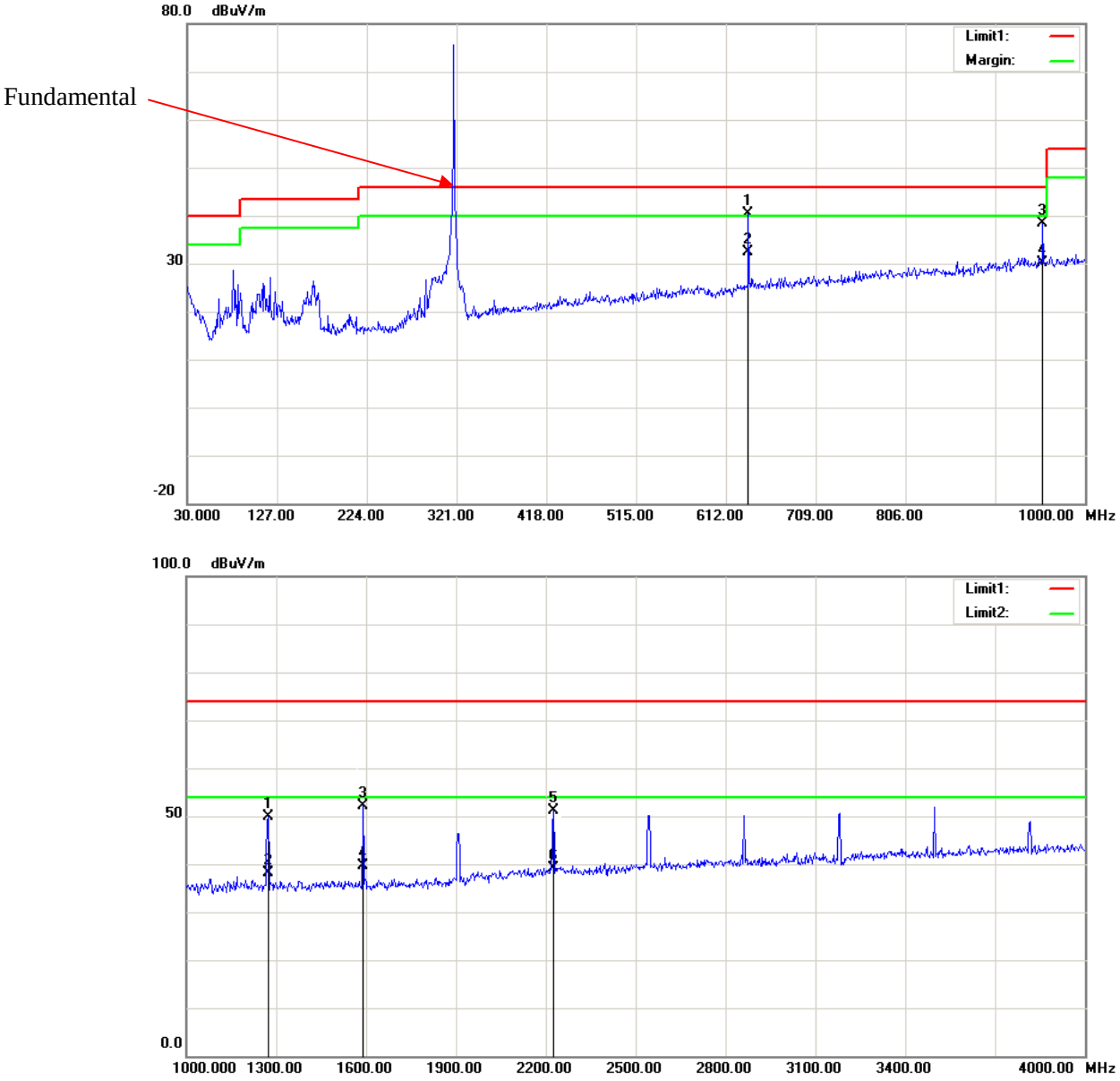
**Horizontal:**

Fundamental



**Vertical:**


Fundamental
80.0 dBuV/m
Limit1:
Margin:
30
-20
30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz
100.0 dBuV/m
Limit1:
Limit2:
50
0.0
1000.000 1300.00 1600.00 1900.00 2200.00 2500.00 2800.00 3100.00 3400.00 4000.00 MHz

# FCC §15.231(c) – 20 dB BANDWIDTH TESTING

## Requirement

Per 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | EMI Test Receiver | ESCI | 100224 | 2017-09-01 | 2018-09-01 |
| Sunol Sciences | Antenna | JB3 | A060611-2 | 2017-08-25 | 2020-08-25 |
| HP | Amplifier | 8447D | 2727A05902 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0400-01 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0075-01 | 2017-09-05 | 2018-09-05 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Test Procedure

The waveform was received by the test antenna which was connected to the spectrum analyzer, plot the 20 dB bandwidth.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 28.5 °C |
| **Relative Humidity:** | 49 % |
| **ATM Pressure:** | 100.4 kPa |

*The testing was performed by Blake Yang on 2017-12-20.*

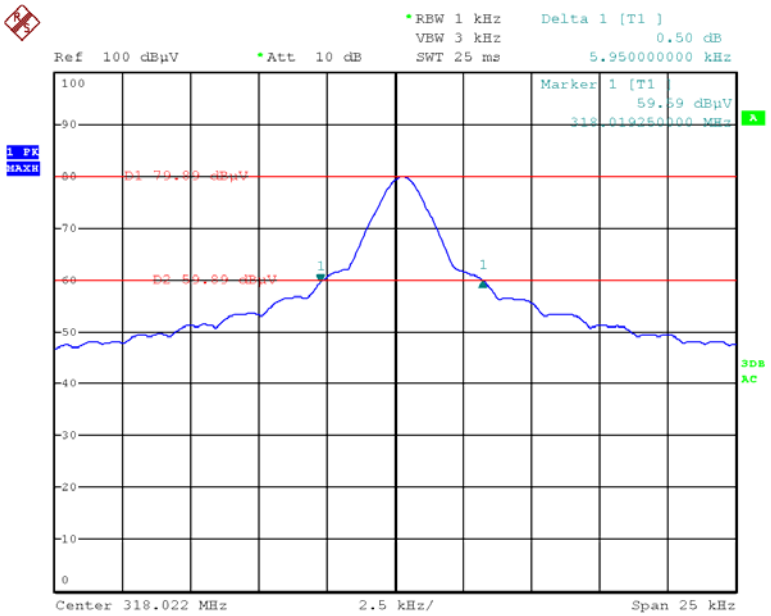
*Test Mode: Transmitting*

Please refer to following table and plot.

| Channel Frequency (MHz ) | 20 dB Bandwidth (kHz) | Limit (kHz) | Result |
|---|---|---|---|
| 318.022 | 5.95 | 795 | Pass |

**Note:** Limit = 0.25% * Center Frequency = 0.25%*318.022 MHz = 795 kHz

**20 dB Bandwidth**

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# FCC §15.231(a) - DEACTIVATION TESTING

## Applicable Standard

Per 15.231(a) (1), a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | EMI Test Receiver | ESCI | 100224 | 2017-09-01 | 2018-09-01 |
| Sunol Sciences | Antenna | JB3 | A060611-2 | 2017-08-25 | 2020-08-25 |
| HP | Amplifier | 8447D | 2727A05902 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0400-01 | 2017-09-05 | 2018-09-05 |
| N/A | Coaxial Cable | C-NJNJ-50 | C-0075-01 | 2017-09-05 | 2018-09-05 |

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 28.5 °C |
| **Relative Humidity:** | 49 % |
| **ATM Pressure:** | 100.4 kPa |

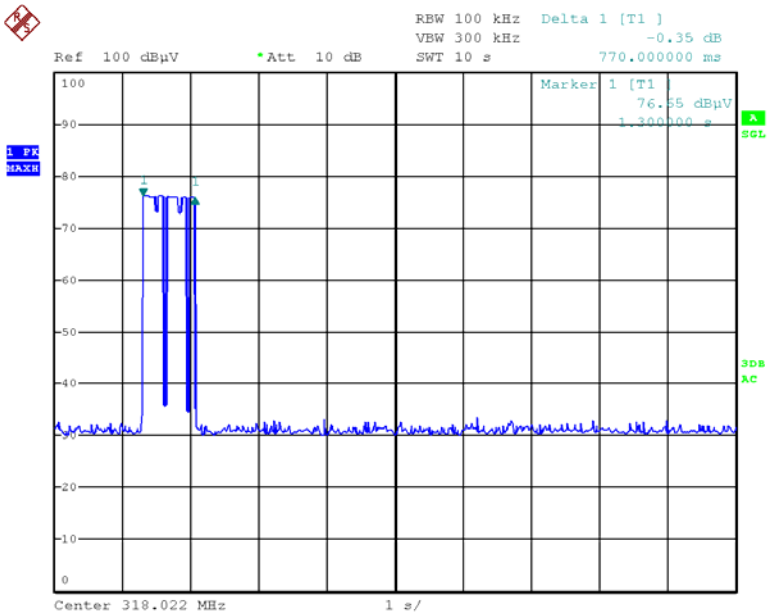
*The testing was performed by Blake Yang on 2017-12-20.*

*Test Mode: Transmitting*

**Test Result:** Compliance. Please refer to following plot.

| Deactivate Time (ms) | Limit | Result |
|---|---|---|
| 770 | <5s | Pass |

*Transmission duration*

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*******END OF REPORT*******