

FCC PART 15.231

TEST REPORT

For

ANPOSI PRODUCTS LTD.

2/F, E. ZONG HE LOU, No.28 YI TIAN GARDEN, FUQIANG Shenzhen China

FCC ID: WHTP2019TC3

Report Type: Original Report	Product Type: WIFI VIDEO DOORBELL
Report Number: RDG171110019-00B	
Report Date: 2017-12-20	
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
MEASUREMENT UNCERTAINTY.....	3
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EQUIPMENT MODIFICATIONS	5
EUT EXERCISE SOFTWARE	5
LOCAL SUPPORT EQUIPMENT LIST AND DETAILS	5
SUPPORT CABLE LIST AND DETAILS	5
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
FCC §15.203 - ANTENNA REQUIREMENT.....	8
APPLICABLE STANDARD	8
FCC §15.207 (A)– AC LINE CONDUCTED EMISSIONS	9
APPLICABLE STANDARD	9
EUT SETUP.....	9
EMI TEST RECEIVER SETUP.....	9
TEST PROCEDURE	9
CORRECTED AMPLITUDE & MARGIN CALCULATION	10
TEST EQUIPMENT LIST AND DETAILS.....	10
TEST DATA	10
FCC §15.205, §15.209, §15.231 (B) - RADIATED EMISSIONS	15
APPLICABLE STANDARD	15
EUT SETUP.....	16
EMI TEST RECEIVER SETUP.....	16
TEST EQUIPMENT LIST AND DETAILS.....	17
TEST PROCEDURE	17
CORRECTED AMPLITUDE & MARGIN CALCULATION	17
TEST RESULTS SUMMARY	18
TEST DATA	18
FCC §15.231(C) – 20 DB BANDWIDTH TESTING.....	24
REQUIREMENT	24
TEST EQUIPMENT LIST AND DETAILS.....	24
TEST PROCEDURE	24
TEST DATA	24
FCC §15.231(A) - DEACTIVATION TESTING	26
APPLICABLE STANDARD	26
TEST EQUIPMENT LIST AND DETAILS.....	26
TEST DATA	26

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The **ANPOSI PRODUCTS LTD.**'s product, model number: **P2019TC3(FCC ID: WHTP2019TC3)** (the "EUT") in this report was a **WIFI VIDEO DOORBELL**, which was measured approximately: 14.2 cm (L) x 5.8 cm (W) x 2.9 cm (H), rated input voltage: DC3.7V from battery or DC 5V from USB port, AC 8~24V from AC pin.

Note: The series product, model P2019TC3 and ER107001 are electrically identical, the difference between them just is the model name, we selected P2019TC3 for fully testing, the details was explained in the declaration letter.

**All measurement and test data in this report was gathered from production sample serial number: 171110019 (Assigned by BACL,Dongguan). The EUT was received on 2017-11-23.*

Objective

This report is prepared on behalf of **ANPOSI PRODUCTS LTD.** 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 DTS submissions with FCC ID: WHTP2019TC3.

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 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~26.5GHz: 5.23 dB
Temperature	±1 °C
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.

Equipment Modifications

No modifications were made to the unit tested.

EUT Exercise Software

No software was used in test

Local Support Equipment List and Details

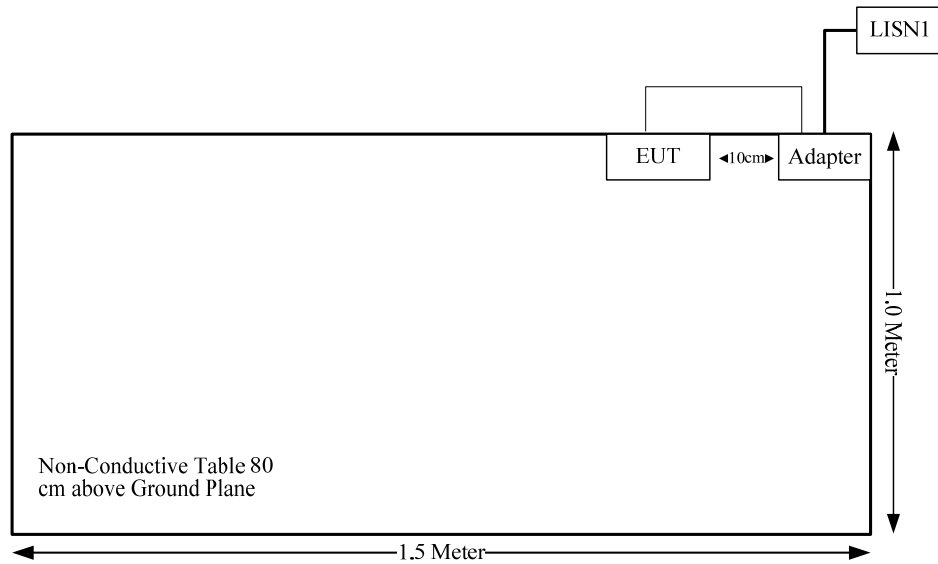
Manufacturer	Description	Model	Serial Number
HuaJin	adapter	HJ-0502000W2-US	/

Support Cable List and Details

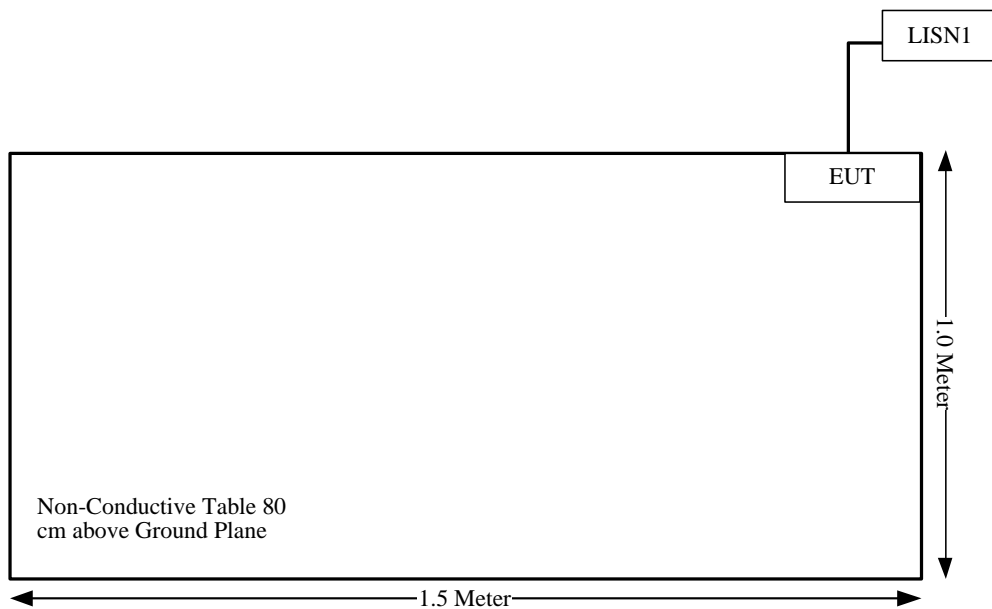
Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
USB Cable	yes	no	1.0	Adapter	EUT

Block Diagram of Test Setup

USB Power:



AC Power:



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.

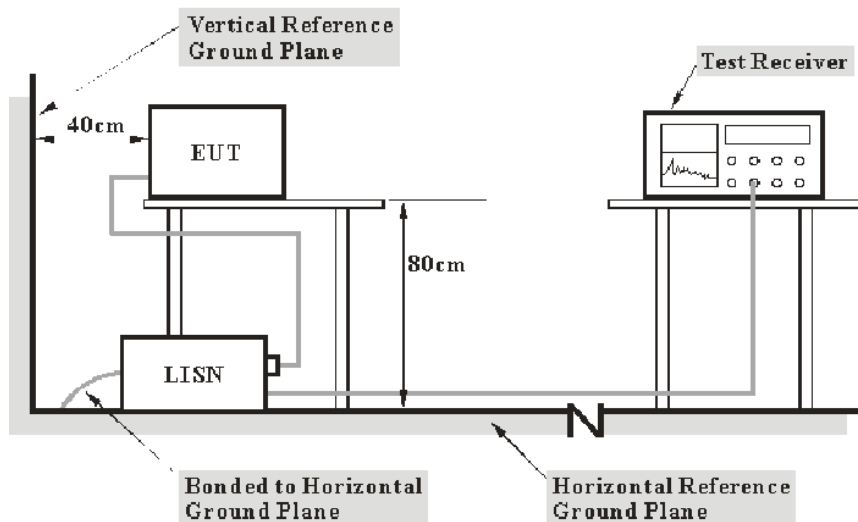
The EUT has one internal antenna arrangement, which was permanently attached and the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

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.

For USB power mode, the adapter was connected to the main LISN with a 120 V/60 Hz AC power source. For AC power mode, 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 adapter or 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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

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

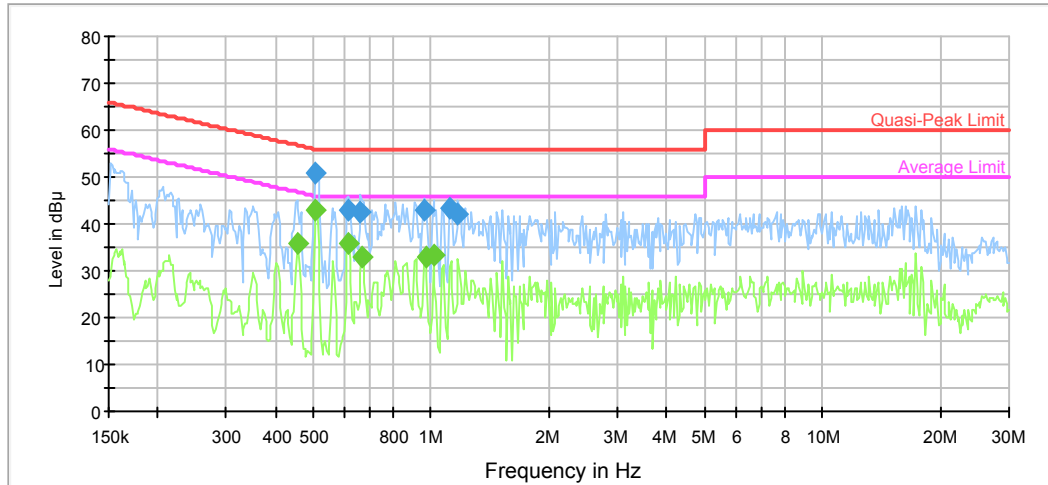
Temperature:	26.0 °C
Relative Humidity:	52 %
ATM Pressure:	101.4 kPa

The testing was performed by Alex You on 2017-11-29.

Test Mode: Transmitting

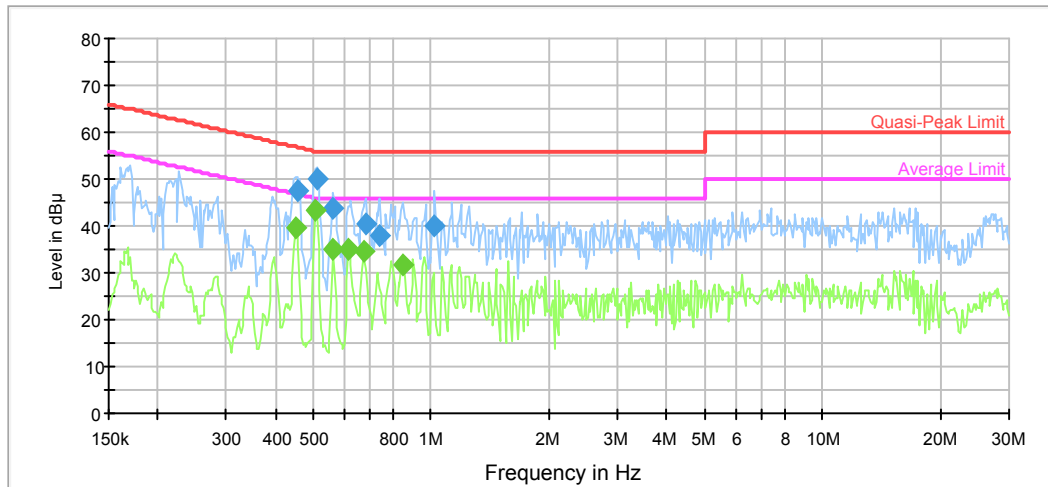
1) USB power mode:

AC120V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.507637	50.9	9.000	L1	9.9	5.1	56.0	Compliance
0.614619	43.0	9.000	L1	9.8	13.0	56.0	Compliance
0.660314	42.6	9.000	L1	9.8	13.4	56.0	Compliance
0.960275	43.1	9.000	L1	9.8	12.9	56.0	Compliance
1.117238	43.4	9.000	L1	9.8	12.6	56.0	Compliance
1.171949	42.2	9.000	L1	9.8	13.8	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.457684	35.8	9.000	L1	9.9	10.9	46.7	Compliance
0.507637	42.8	9.000	L1	9.9	3.2	46.0	Compliance
0.614619	36.0	9.000	L1	9.8	10.0	46.0	Compliance
0.665597	32.8	9.000	L1	9.8	13.2	46.0	Compliance
0.967957	33.1	9.000	L1	9.8	12.9	46.0	Compliance
1.015358	33.3	9.000	L1	9.8	12.7	46.0	Compliance

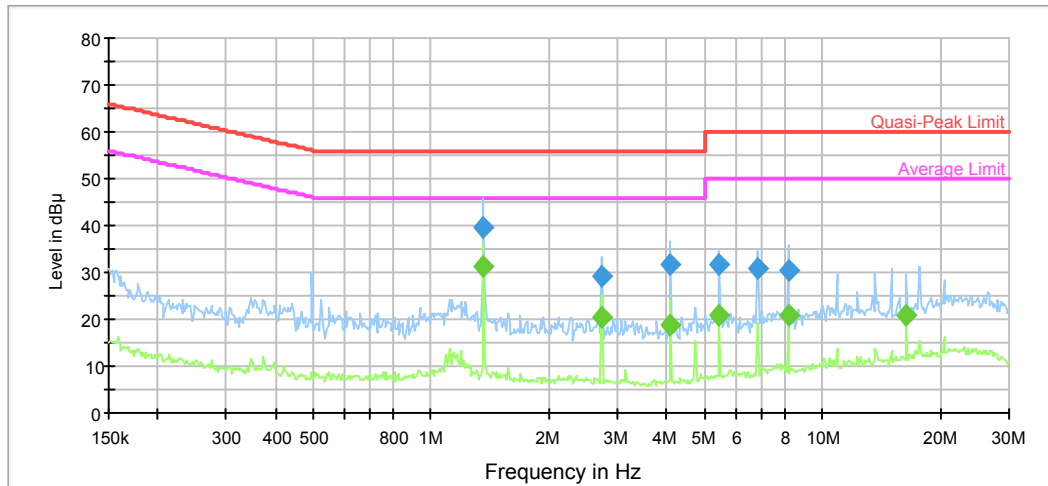
AC120V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.454052	47.5	9.000	N	9.9	9.3	56.8	Compliance
0.511698	50.0	9.000	N	9.9	6.0	56.0	Compliance
0.563041	43.7	9.000	N	9.8	12.3	56.0	Compliance
0.681699	40.2	9.000	N	9.8	15.8	56.0	Compliance
0.738241	37.8	9.000	N	9.8	18.2	56.0	Compliance
1.023481	40.1	9.000	N	9.8	15.9	56.0	Compliance

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.450448	39.4	9.000	N	9.9	7.5	46.9	Compliance
0.507637	43.4	9.000	N	9.9	2.6	46.0	Compliance
0.563041	35.0	9.000	N	9.8	11.0	46.0	Compliance
0.614619	34.9	9.000	N	9.8	11.1	46.0	Compliance
0.670921	34.4	9.000	N	9.8	11.6	46.0	Compliance
0.845331	31.7	9.000	N	9.8	14.3	46.0	Compliance

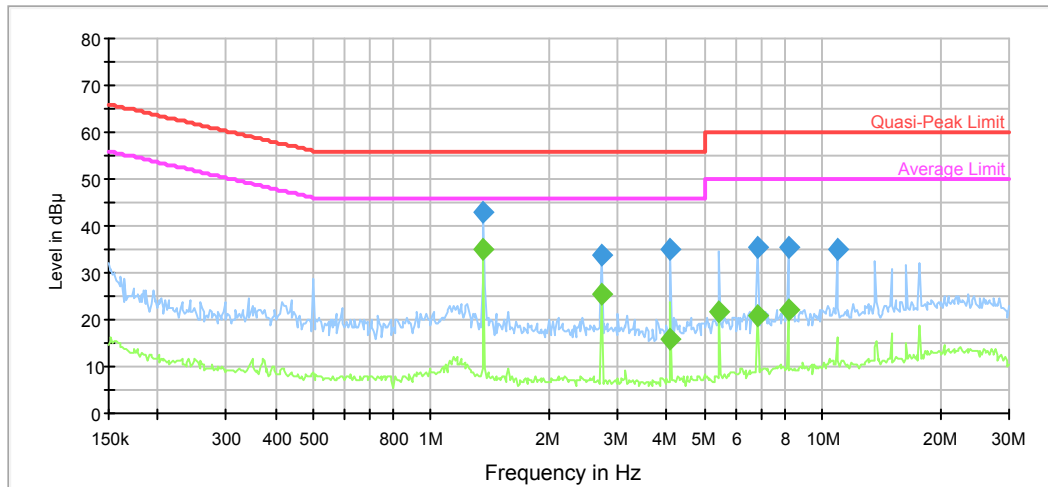
2) AC Power mode(24V was the worst):

AC24V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
1.363512	39.6	9.000	L1	9.7	16.4	56.0	Compliance
2.727252	29.1	9.000	L1	9.8	26.9	56.0	Compliance
4.094608	31.6	9.000	L1	9.8	24.4	56.0	Compliance
5.454959	31.7	9.000	L1	9.8	28.3	60.0	Compliance
6.818462	31.0	9.000	L1	9.8	29.0	60.0	Compliance
8.189901	30.4	9.000	L1	9.9	29.6	60.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
1.363512	31.4	9.000	L1	9.7	14.6	46.0	Compliance
2.727252	20.4	9.000	L1	9.8	25.6	46.0	Compliance
4.094608	18.9	9.000	L1	9.8	27.1	46.0	Compliance
5.454959	20.8	9.000	L1	9.8	29.2	50.0	Compliance
8.189901	21.0	9.000	L1	9.9	29.0	50.0	Compliance
16.381172	20.7	9.000	L1	10.0	29.3	50.0	Compliance

AC24V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
1.363512	42.9	9.000	N	9.7	13.1	56.0	Compliance
2.727252	34.0	9.000	N	9.8	22.0	56.0	Compliance
4.094608	35.1	9.000	N	9.8	10.9	56.0	Compliance
6.818462	35.5	9.000	N	9.8	14.5	60.0	Compliance
8.189901	35.4	9.000	N	9.8	24.6	60.0	Compliance
10.910831	34.8	9.000	N	9.9	25.2	60.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
1.363512	35.0	9.000	N	9.7	11.0	46.0	Compliance
2.727252	25.4	9.000	N	9.8	20.6	46.0	Compliance
4.094608	15.9	9.000	N	9.8	30.1	46.0	Compliance
5.454959	21.5	9.000	N	9.8	28.5	50.0	Compliance
6.818462	20.6	9.000	N	9.8	29.4	50.0	Compliance
8.189901	22.0	9.000	N	9.8	28.0	50.0	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

¹Linear interpolations.

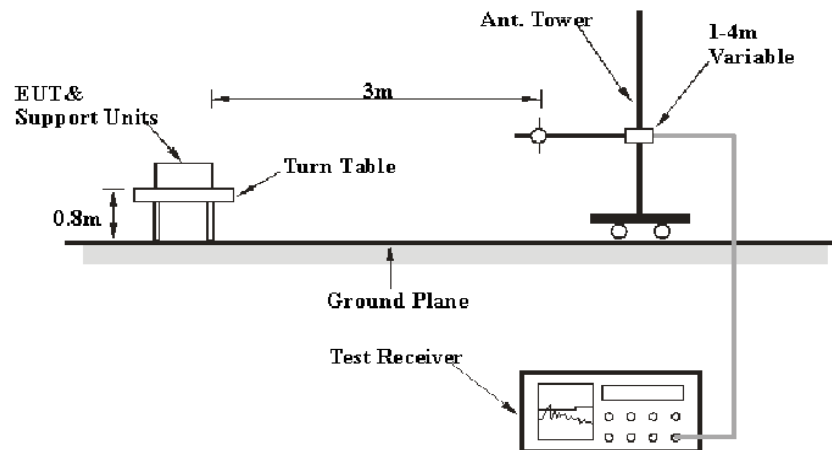
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(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.

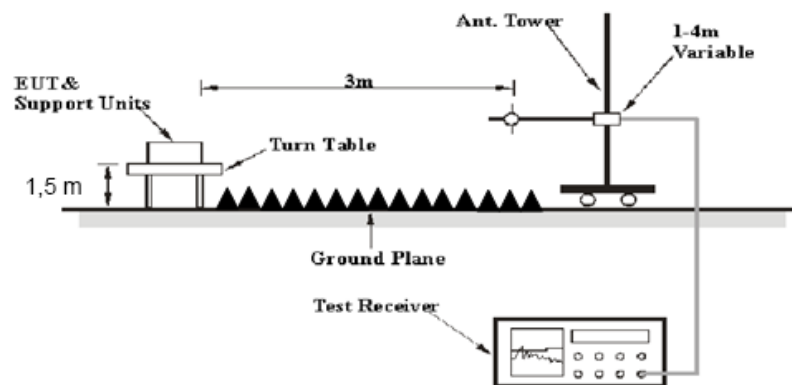
(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §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 5 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 – 5 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	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2016-12-08	2017-12-08
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
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
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* **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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

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:	21.9~25.8 °C
Relative Humidity:	28.6~32 %
ATM Pressure:	100.8~101.8 kPa

** The testing was performed by Blake Yang & Steven Zuo on 2017-11-23 and 2017-12-07.*

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)	Measurement	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Operating Frequency:433.92 MHz									
433.92	58.87	PK	H	16.48	2.65	0.00	78.00	100.83	22.83
433.92	65.34	PK	V	16.48	2.65	0.00	84.47	100.83	16.36
867.84	35.34	PK	H	21.76	4.09	0.00	61.19	80.83	19.64
867.84	36.48	PK	V	21.76	4.09	0.00	62.33	80.83	18.50
1301.76	54.36	PK	H	24.53	1.57	35.95	44.51	74.00	29.49
1735.68	52.48	PK	H	26.19	1.65	36.06	44.26	74.00	29.74
2169.60	48.43	PK	H	27.64	1.74	36.18	41.63	74.00	32.37
2603.52	46.62	PK	H	28.67	1.88	36.38	40.79	74.00	33.21
2015.00	45.87	PK	H	27.33	1.73	36.21	38.72	74.00	35.28

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:433.92 MHz						
433.92	78	H	-8.14	69.86	80.83	10.97
433.92	84.47	V	-8.14	76.33	80.83	4.5
867.84	61.19	H	-8.14	53.05	60.83	7.78
867.84	62.33	V	-8.14	54.19	60.83	6.64
1301.76	44.51	H	-8.14	36.37	54.00	17.63
1735.68	44.26	H	-8.14	36.12	54.00	17.88
2169.6	41.63	H	-8.14	33.49	54.00	20.51
2603.52	40.79	H	-8.14	32.65	54.00	21.35
2015	38.72	H	-8.14	30.58	54.00	23.42

Duty Cycle Correction Factor Calculation as below:

$$T_{on}=0.25ms*34 = 8.5ms$$

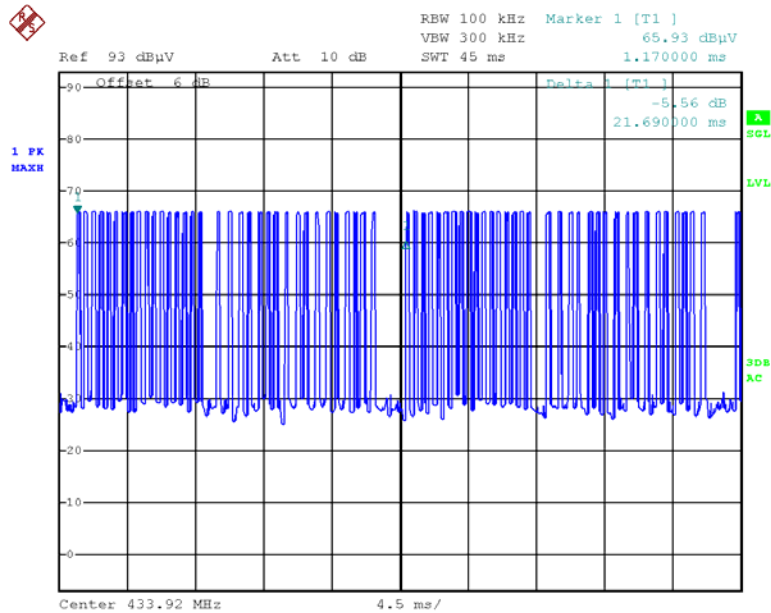
$$T_{on+off}=21.69ms$$

$$\text{Duty cycle} = 8.5/21.69*100\%=39.19\%$$

$$\text{Duty Cycle Correction Factor}= 20*\log(\text{Duty cycle})=-8.14 \text{ dB}$$

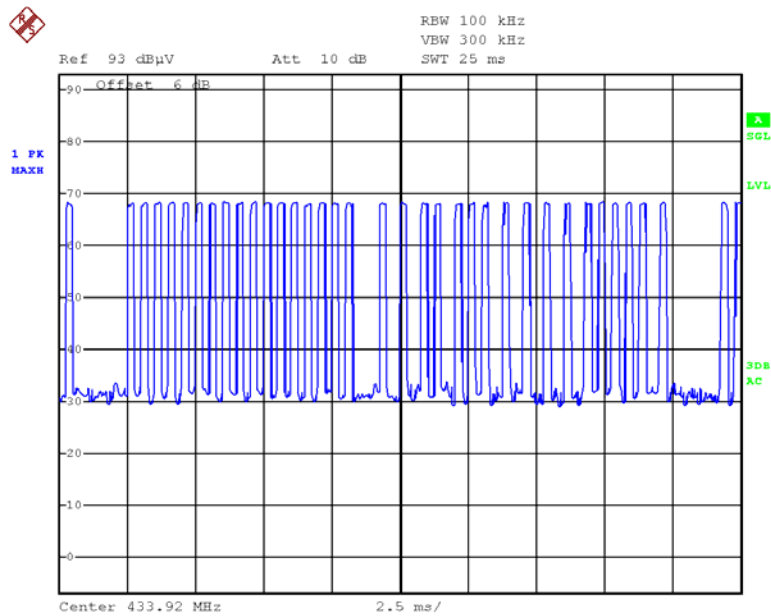
Duty Cycle:

Period: 21.69ms



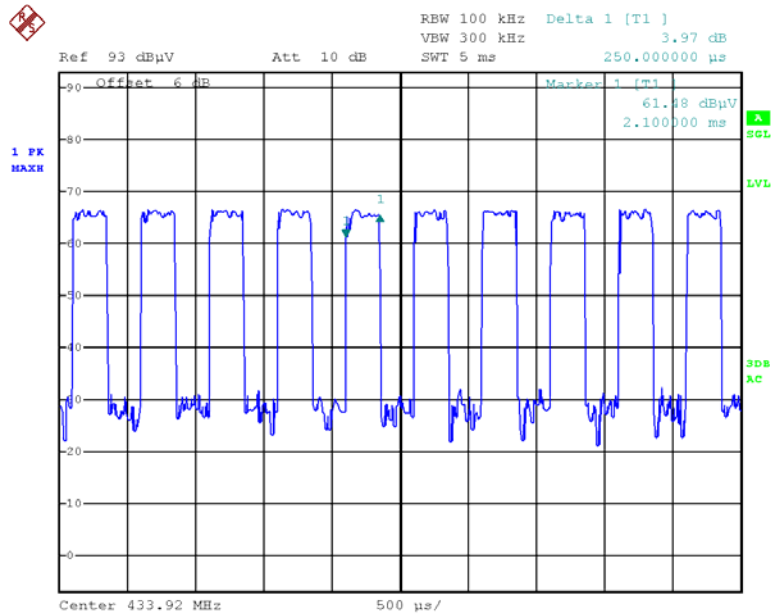
Date: 7.DEC.2017 21:15:34

Total 34 pulse in one Period



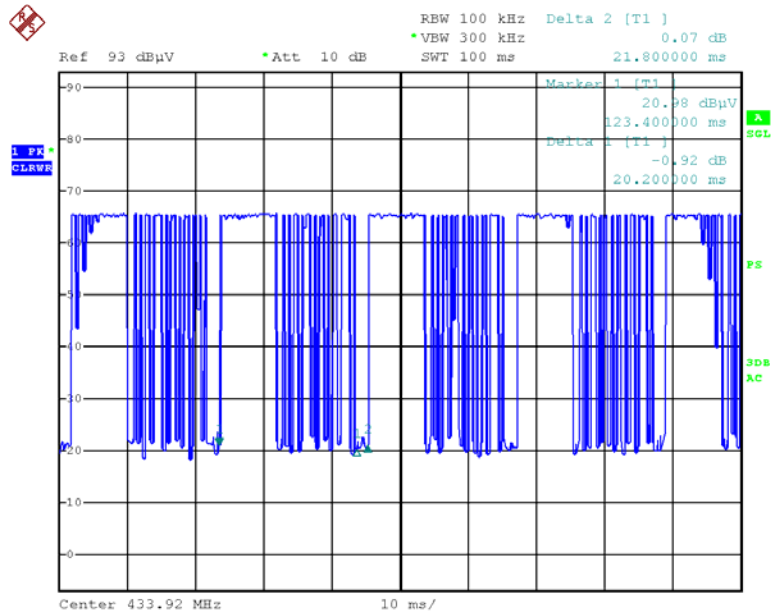
Date: 7.DEC.2017 21:12:08

One Pulse 250us



Date: 7.DEC.2017 21:10:08

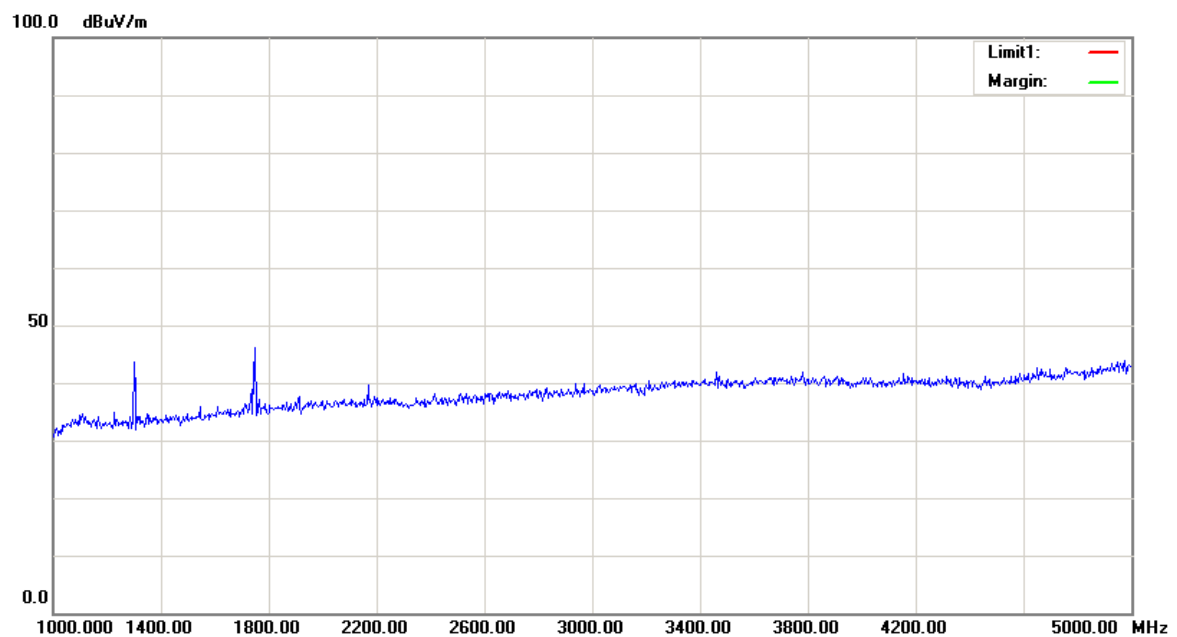
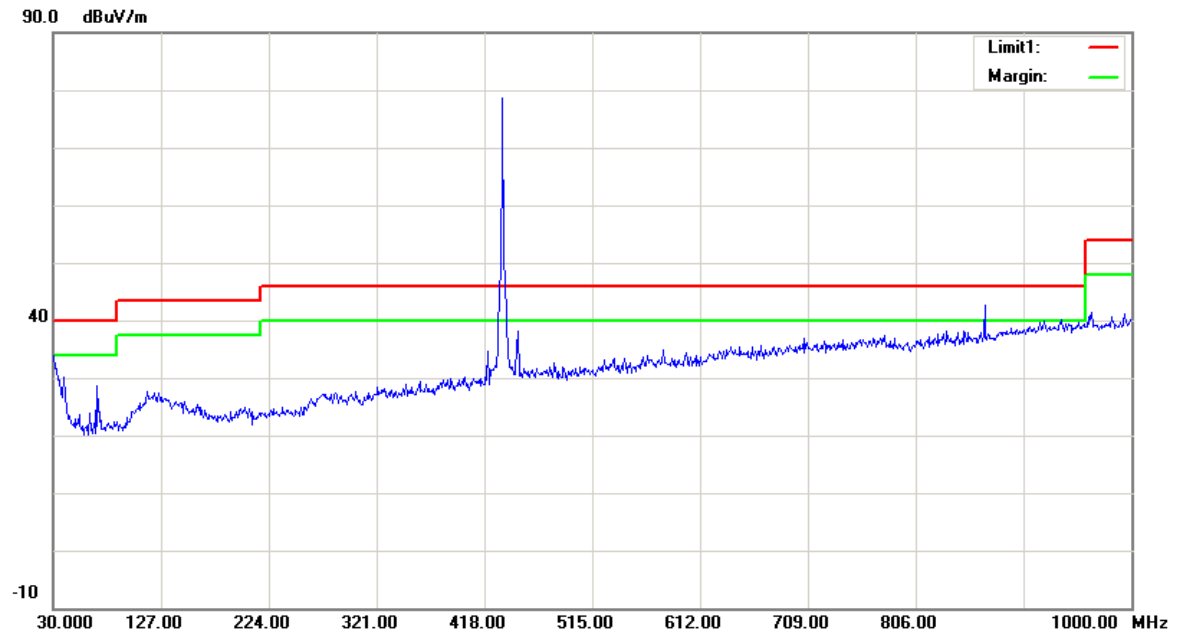
100ms



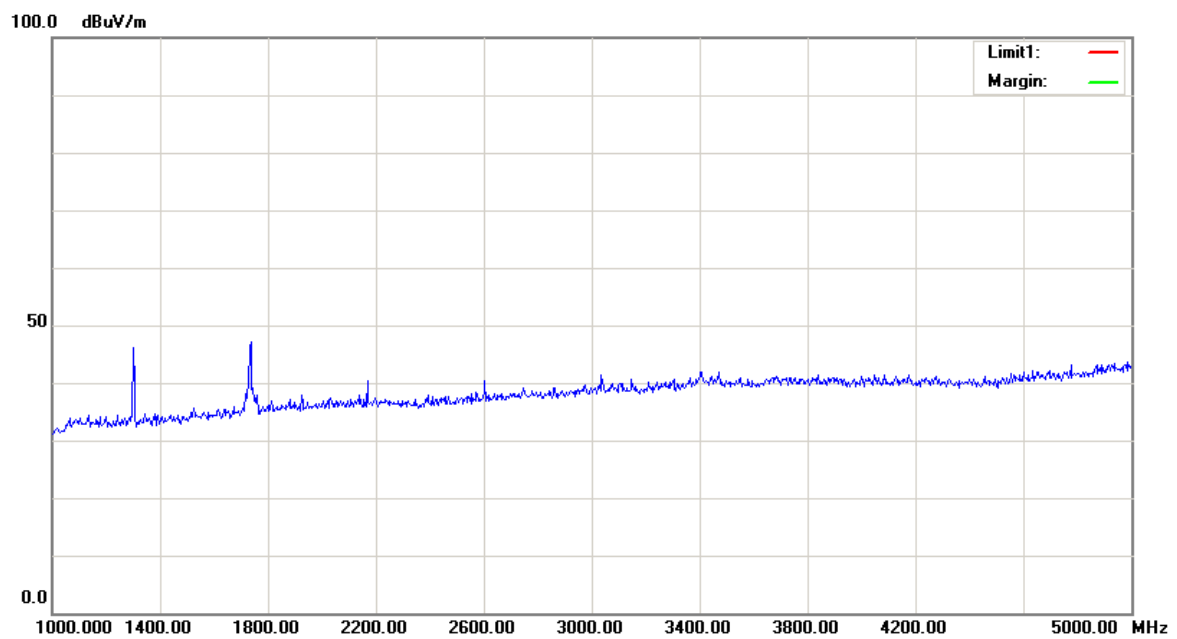
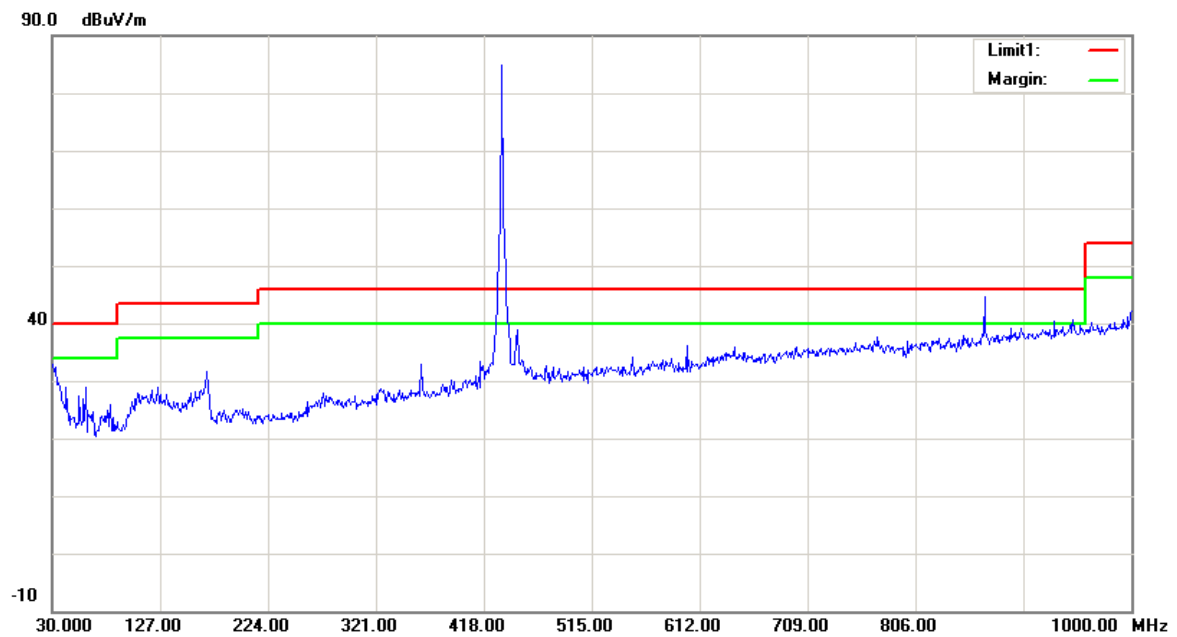
Date: 20.DEC.2017 16:05:04

Peak Test plots

Horizontal:



Vertical:



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	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2016-09-05	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-1000-01	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

With the EUT's antenna attached, 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:	47 %
ATM Pressure:	100.2 kPa

* The testing was performed by Costa Dong on 2017-11-26.

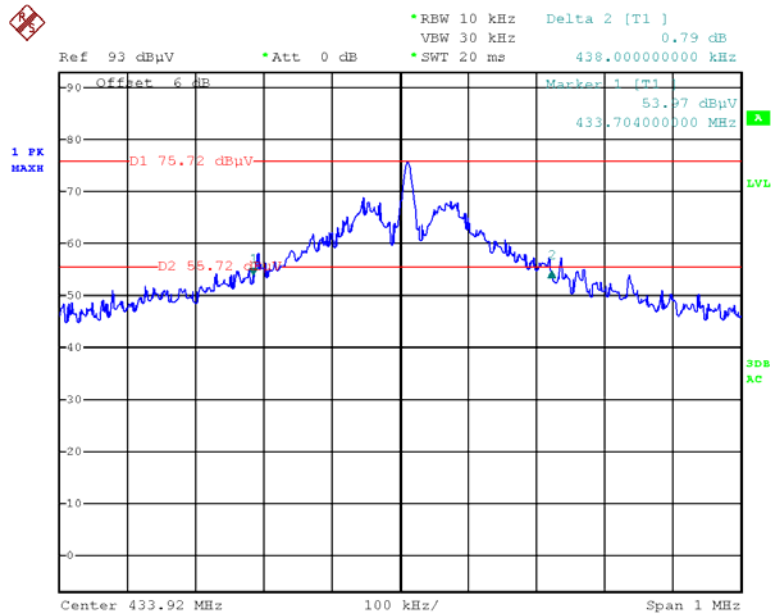
Test Mode: Transmitting

Please refer to following table and plot.

Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Limit (kHz)	Result
433.92	438	1084.8	Pass

Note: Limit = 0.25% * Center Frequency = 0.25% * 433.92 MHz = 1084.8 kHz

20 dB Bandwidth



Date: 26.NOV.2017 10:28:05

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	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2016-09-05	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-1000-01	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:	47 %
ATM Pressure:	100.2 kPa

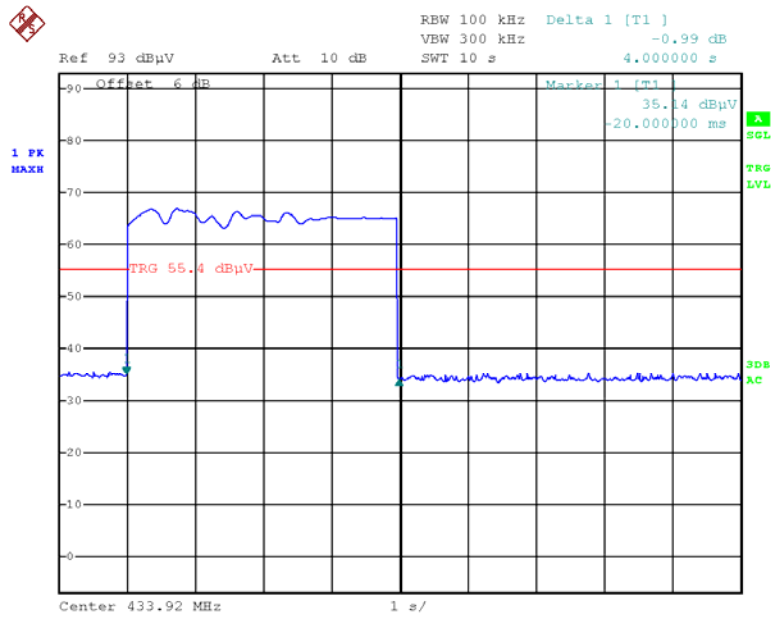
* The testing was performed by Costa Dong on 2017-12-07.

Test Mode: Transmitting

Test Result: Compliance. Please refer to following plot.

Deactivate Time (s)	Limit (s)	Result
4	<5	Pass

Transmission duration: 4s



Date: 7.DEC.2017 21:04:56

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