FCC TEST REPORT

FOR

NUM AXES

CLASSIC DOG FENCE TRANSMITTER/CAT & SMALL DOG FENCE TRANSMITTER

Test Model: PFFUGFIL085

Additional Model No.: PFFUGFIL061, PFFUGFIL079, PFFUGFIL060

Prepared for : NUM AXES

Address : 745, rue de la Bergeresse ZAC des Aulnaies, OLIVET 45161, France

Prepared by Shenzhen LCS Compliance Testing Laboratory Ltd

1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an

District, Shenzhen, Guangdong, China

Tel (+86)755-82591330 Fax (+86)755-82591332 Web www.LCS-cert.com

Mail webmaster@LCS-cert.com

Date of receipt of test sample : April 02, 2018

Number of tested samples

Address

Sample number : 180402140A

Date of Test : April 02, 2018~May 03, 2018

Date of Report December 25, 2018

FCC TEST REPORT

FCC CFR 47 PART 15 C

Report Reference No.: LCS180402140AEA

Date of Issue.....: Dec 25, 2018

Testing Laboratory Name......: : Shenzhen LCS Compliance Testing Laboratory Ltd.

Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure Partial application of Harmonised standards

Other standard testing method

Applicant's Name: : NUM AXES

745, rue de la Bergeresse ZAC des Aulnaies, OLIVET 45161, Address.....::

France

Test Specification

Standard : FCC CFR 47 PART 15 C / ANSI C63.10: 2013

Test Report Form No.....: LCSEMC-1.0

TRF Originator.....: Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF.....: Dated 2011-03

Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

CLASSIC DOG FENCE TRANSMITTER/CAT & SMALL DOG Test Item Description.....:

FENCE TRANSMITTER

Test Model: PFFUGFIL085

DC 15V/150mA by power adapter Ratings....::

Adapter input: AC120V,60Hz

Result: Positive

Compiled by:

Trade Mark:

Supervised by:

Approved by:

Calvin Weng

Calvin Weng/ Administrators

Dick Su / Technique principal

Gavin Liang/ Manager

FCC -- TEST REPORT

December 25, 2018 Test Report No.: LCS180402140AEA Date of issue

Test Model.....: : PFFUGFIL061

CLASSIC DOG FENCE TRANSMITTER/CAT & SMALL DOG FENCE TRANSMITTER EUT.....

Applicant..... : NUM AXES

. 745, rue de la Bergeresse ZAC des Aulnaies, OLIVET 45161, France Address.....

Telephone.....:: : /

Fax.....:: : /

Manufacturer..... : NUM AXES

. 745, rue de la Bergeresse ZAC des Aulnaies, OLIVET 45161, France Address.....

Telephone.....:: : /

Fax.....

Test Result	Positive
Test Result	Positive

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
000	December 25, 2018	Initial Issue	Gavin Liang

TABLE OF CONTENTS

1. GENERAL INFORMATION	. 6
1.1. Description of Device (EUT)	. 6
1.2. Support Equipment List	
1.3. External I/O	
1.4. Description of Test Facility	. 6
1.5. Statement of the measurement uncertainty	. 7
1.6. Measurement Uncertainty	. 7
1.7. Description of Test Modes	. 7
2. TEST METHODOLOGY	. 8
2.1. EUT Configuration	. 8
2.2. EUT Exercise	8
2.3. General Test Procedures	. 8
2.3.1 Conducted Emissions	. 8
2.3.2 Radiated Emissions	. 8
3. CONNECTION DIAGRAM OF TEST SYSTEM	. 9
3.1. Justification	9
3.2. EUT Exercise Software	. 9
3.3. Special Accessories	9
3.4. Block Diagram/Schematics	9
3.5. Equipment Modifications	9
3.6. Test Setup	
4. SUMMARY OF TEST RESULTS	10
5. POWER LINE CONDUCTED EMISSIONS	11
6. RADIATED EMISSION MEASUREMENT	13
7. 99% AND 20 DB BANDWIDTH MEASUREMENT	19
8. ANTENNA REQUIREMENTS	21
9. LIST OF MEASURING EQUIPMENT	22
10. TEST SETUP PHOTOGRAPHS2	23
11. EXTERIOR HOTOGRAPHS2	23
12. INTERIOR PHOTOGRAPHS	23

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

CLASSIC DOG FENCE TRANSMITTER/CAT & SMALL **EUT**

DOG FENCE TRANSMITTER

Test Model PFFUGFIL085

Additional Model(s) PFFUGFIL061, PFFUGFIL079, PFFUGFIL060

All the structure, PCB is the same except the model name Model Declaration

is different, so no additional model is tested.

Hardware Version CPSSECAR143

Software Version CPELEPRG086 Version Géné-2-H DC 15V/150mA by power adapter **Power Supply**

Adapter input: AC120V,60Hz

Wireless technology

20KHz Frequency Range Channel Spacing N/A **Channel Number** 1 channel

Modulation Type OOK

Antenna Description External Antenna, 0dBi (Max.)

1.2. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
HON KWANG ELECTRIC CO LTD	Power adapter	D7300-01		FCC VOC

1.3. External I/O

I/O Port Description	Quantity	Cable
DC in port	1	N/A

1.4. Description of Test Facility

FCC Registration Number. is 254912.

Industry Canada Registration Number. is 9642A-1.

ESMD Registration Number. is ARCB0108.

UL Registration Number. is 100571-492.

TUV SUD Registration Number. is SCN1081.

TUV RH Registration Number. is UA 50296516-001

NVLAP Registration Code is 600167-0

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
		9KHz~30MHz	3.10dB	(1)
Radiation Uncertainty	l.l	30MHz~200MHz	2.96dB	(1)
Radiation Uncertainty	ŀ	200MHz~1000MHz	3.10dB	(1)
		1GHz~26.5GHz	4.00dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	1.63dB	(1)
Power disturbance	:	30MHz~300MHz	1.60dB	(1)

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

1.7. Description of Test Modes

The EUT operates at 20 KHz. The following operating modes were applied for the related test items. All test modes were tested, only the result of the worst case was recorded in the report. It was pre-tested on the positioned of each 3 axis. The worst case was found positioned on X-plane.

Mode of Operations	Transmitting Frequency (KHz)		
OOK	20		
For Conduct	red Emission		
Test Mode	TX Mode		
For Radiated Emission			
Test Mode	TX Mode		

^{***}Note: Using a temporary antenna connector for the EUT when the conducted measurements are performed.

2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10: 2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd.

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.201, 15.203, 15.205, 15.207, 15.209 under the FCC Rules Part 15 Subpart C.

2.3. General Test Procedures

2.3.1 Conducted Emissions

According to the requirements in Section 6.2 of ANSI C63.10: 2013, AC power-line conducted emissions shall be measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table and the turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10: 2013.

3. CONNECTION DIAGRAM OF TEST SYSTEM

3.1. Justification

The system was configured for testing in a continuous transmitting condition.

3.2. EUT Exercise Software

Powered on the EUT then the EUT will transmit at 20 KHz.

3.3. Special Accessories

N/A

3.4. Block Diagram/Schematics

Please refer to the related document

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6. Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

Applied Standard: FCC Part 15 Subpart C					
FCC Rules Description Of Test Result					
§15.203	Antenna Requirement	Compliant			
§15.207(a)	Power Line Conducted Emissions Compliant				
§15.201(a), §15.205(a), §15.209(a), §15.215(a)	Radiated Emissions Measurement Complia				
§2.1049 §15.215	99% and 20dB Bandwidth Complia				

Remark:

Note 1 --- Test results inside test report.

5. POWER LINE CONDUCTED EMISSIONS

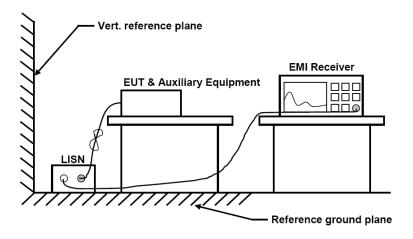
5.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range	Limits (dBµV)		
(MHz)	Quasi-peak	Average	
0.15 to 0.50	66 to 56	56 to 46	
0.50 to 5	56	46	
5 to 30	60	50	

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

5.2 Block Diagram of Test Setup

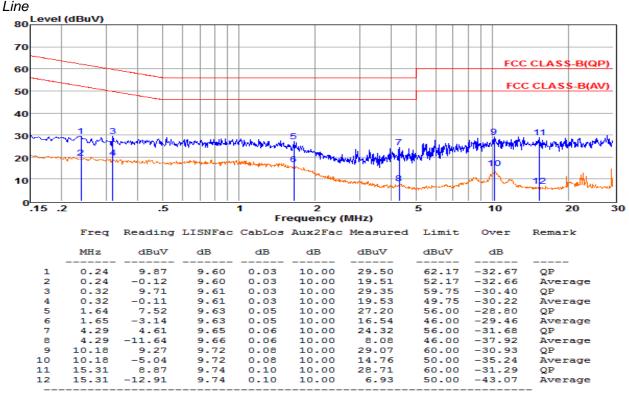


5.3 Test Results

PASS.

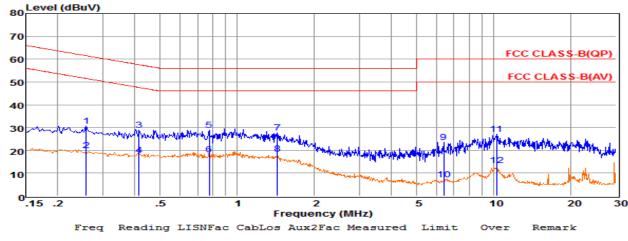
The test data please refer to following page.

AC Conducted Emission of charge from power adapter mode @ AC 120V/60Hz @ (worst case)



Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac. The emission levels that are 20dB below the official limit are not reported.

Neutral



	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.26	11.02	9.63	0.03	10.00	30.68	61.51	-30.83	QP
2	0.26	0.16	9.63	0.03	10.00	19.82	51.51	-31.69	Average
3	0.41	9.24	9.62	0.04	10.00	28.90	57.55	-28.65	QP
4	0.41	-1.94	9.62	0.04	10.00	17.72	47.55	-29.83	Average
5	0.78	9.12	9.64	0.04	10.00	28.80	56.00	-27.20	QP
6	0.78	-1.50	9.64	0.04	10.00	18.18	46.00	-27.82	Average
7	1.43	7.90	9.64	0.05	10.00	27.59	56.00	-28.41	QP
8	1.43	-1.26	9.64	0.05	10.00	18.43	46.00	-27.57	Average
9	6.39	3.83	9.67	0.07	10.00	23.57	60.00	-36.43	QP
10	6.39	-12.46	9.67	0.07	10.00	7.28	50.00	-42.72	Average
11	10.23	7.25	9.69	0.08	10.00	27.02	60.00	-32.98	QP
12	10.23	-6.38	9.69	0.08	10.00	13.39	50.00	-36.61	Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac. The emission levels that are 20dB below the official limit are not reported.

^{***}Note: Pre-scan all modes and recorded the worst case results in this report.

6. RADIATED EMISSION MEASUREMENT

6.1. Standard Applicable

According to FCC §15.201 (a) "Intentional radiators operated as carrier current systems, devices operated under the provisions of §§15.211, 15.213, and 15.221, and devices operating below 490 kHz in which all emissions are at least 40 dB below the limits in §15.209 are subject to Suppliers Declaration of Conformity pursuant to the procedures in subpart J of part 2 of this chapter prior to marketing."

Frequencies	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

6.2. Instruments Setting

Please refer to of equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10 th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB/VB 120kHz/1MHz for QP

6.3. Test Procedure

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- --- If the EUT is a floor standing device, it is placed on the ground.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 3 meter.
- --- The EUT was set into operation.

Premeasurement:

- --- The turntable rotates from 0° to 315° using 45° steps.
- --- The antenna height is 0.8 meter.
- --- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- --- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).
- --- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- --- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

- --- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- --- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground
- --- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- --- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- --- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- --- The measurement distance is 3 meter.
- --- The EUT was set into operation.

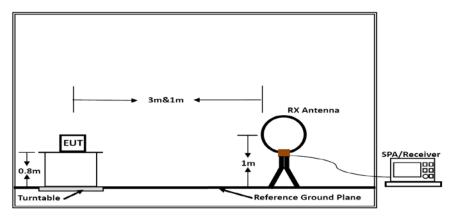
Premeasurement:

- --- The turntable rotates from 0° to 315° using 45° steps.
- --- The antenna is polarized vertical and horizontal.
- --- The antenna height changes from 1 to 3 meter.
- --- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

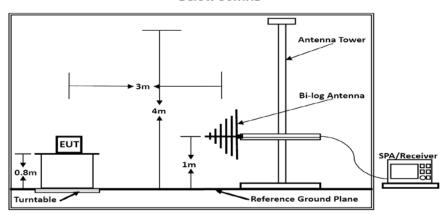
Final measurement:

- --- The final measurement will be performed with minimum the six highest peaks.
- --- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.
- --- The final measurement will be done with QP detector with an EMI receiver.
- --- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

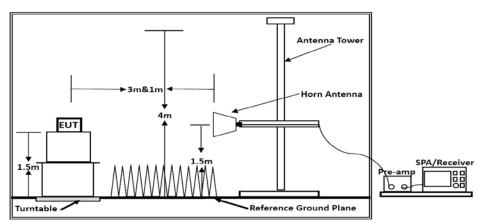
6.4. Block Diagram of Test Setup



Below 30MHz



Below 1GHz



Above 1GHz

Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1m]) (dB); Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

6.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

-48.69

-55.66

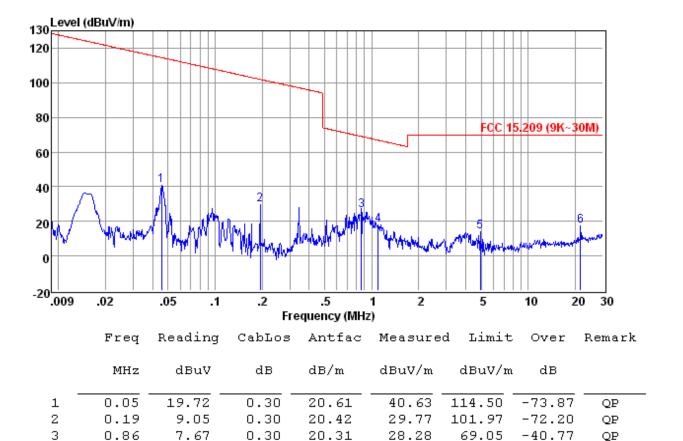
QP

QP

66.83

69.50

6.6. Results of Radiated Emissions (9 KHz~30MHz)



6 21.51 -2.71 0.30 19.94 17.53 69.50 -51.97 QP

18.14

13.84

20.30

20.30

Note: 1. All readings are Quasi-peak values.

-2.46

-6.76

2. Measured= Reading + Antenna Factor + Cable Loss

0.30

0.30

3. The emission that ate 20db blow the offficial limit are not reported

Note:

4

5

1.10

4.95

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB); Limit line = specific limits (dBuV) + distance extrapolation factor.

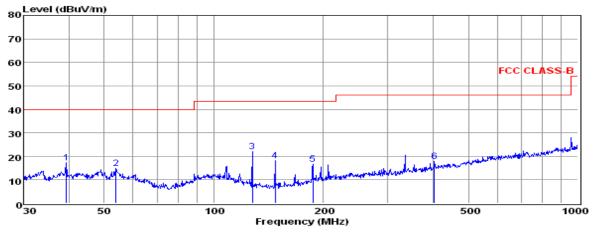
6.7. Results of Radiated Emissions (30 MHz~1000 MHz)

PASS.

Only record the worst test result in this report.

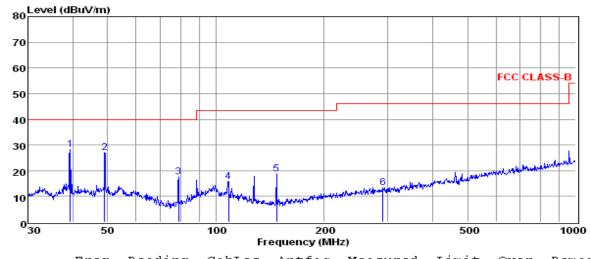
The test data please refer to following page.

Horizontal



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dВ	dB/m	dBuV/m	dBuV/m	dВ	
1	39.30	3.36	0.38	13.40	17.14	40.00	-22.86	QP
2	53.88	1.30	0.46	13.07	14.83	40.00	-25.17	QP
3	127.66	12.04	0.67	9.29	22.00	43.50	-21.50	QP
4	147.40	9.08	0.86	8.24	18.18	43.50	-25.32	QP
5	187.10	5.41	0.98	10.30	16.69	43.50	-26.81	QP
6	403.25	1.39	1.32	15.13	17.84	46.00	-28.16	QP

- Note: 1. All readings are Quasi-peak values. 2. Measured= Reading + Antenna Factor + Cable Loss
- 3. The emission that ate 20db blow the offficial limit are not reported Vertical



	Freq	Reading	CabLos	Antiac	Measured	Limit	Over	Remark
	MHz	dBuV	dВ	dB/m	dBuV/m	dBuV/m	dВ	
1	39.30	14.36	0.38	13.40	28.14	40.00	-11.86	QP
2	49.01	13.41	0.35	13.31	27.07	40.00	-12.93	QP
3	78.69	8.66	0.47	8.35	17.48	40.00	-22.52	QP
4	108.27	2.63	0.68	12.41	15.72	43.50	-27.78	QP
5	147.40	9.66	0.86	8.24	18.76	43.50	-24.74	QP
6	291.04	-0.58	1.01	12.89	13.32	46.00	-32.68	QP

Note: 1. All readings are Quasi-peak values.

- 2. Measured= Reading + Antenna Factor + Cable Loss
- 3. The emission that ate 20db blow the offficial limit are not reported

***Note:

- 1). Pre-scan all modes and recorded the worst case results in this report (TX).
- 2). Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3). Corrected Reading: Antenna Factor + Cable Loss + Read Level = Level.

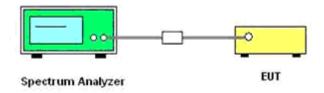
7. 99% AND 20 DB BANDWIDTH MEASUREMENT

7.1. Standard Applicable

According to §15.215, device 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.

According to §2.1049, The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable.

7.2. Block Diagram of Test Setup



7.3. Test Procedure

Use the following spectrum analyzer settings:

Span = 3 KHz

RBW = 100 Hz

VBW = 300 Hz

Sweep = auto

Detector function = peak

Trace = max hold

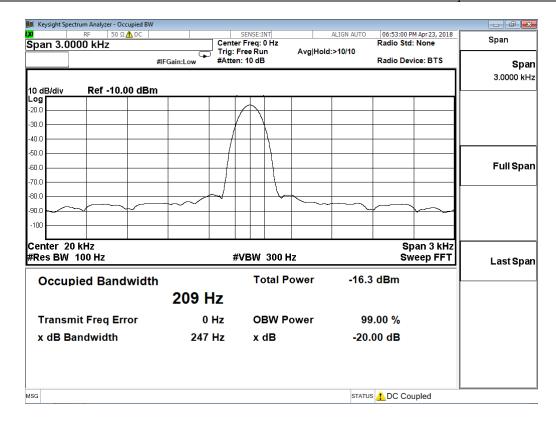
The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

7.4. Test Results

Test Result Of 99% and 20dB Bandwidth Measurement							
Test Frequency 99% Bandwidth 20dB Bandwidth Limit							
(KHz) (Hz) (Hz) (MHz)							
20.00 209.00		247.00	No Limit				

Remark:

- Test results including cable loss;
- 2. Please refer to following test plots;



8. ANTENNA REQUIREMENTS

8.1 Standard Applicable

According to antenna requirement of §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

8.2 Antenna Connected Construction

8.2.1. Standard Applicable

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2.2. Antenna Connector Construction

The antenna gain used for transmitting is 0dBi, the EUT use external antenna and a unique antenna connector. Please see EUT photo for details.

8.2.3. Results: Compliance.

9. LIST OF MEASURING EQUIPMENT

1 Power Meter R&S NRVS 100444 2017-06-17 2018-06-16 3 Power Sensor R&S NRV-Z81 100458 2017-06-17 2018-06-16 3 Power Sensor R&S NRV-Z32 10057 2017-06-17 2018-06-16 4 EPM Series Power Agilent E4419B MY45104493 2017-06-17 2018-06-16 5 E-SERIES AVG Agilent E9301H MY41495234 2017-06-17 2018-06-16 ESA-E SERIES AGE Agilent E4407B MY41440754 2017-11-18 2018-11-17 2018-06-16 ESA-E SERIES SPECTRUM Agilent E4407B MY41440754 2017-11-18 2018-11-17 2018-06-16 ESA-E SERIES SPECTRUM Agilent N9020A MY49100040 2017-06-17 2018-06-16 8 SPECTRUM R&S FSP 100503 2017-06-17 2018-06-16 2018-06	Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3 Power Sensor R&S NRV-Z32 10057 2017-06-17 2018-06-16							
4 EPM Series Power Meter Agilent E4419B MY45104493 2017-06-17 2018-06-16 5 E-SERIES AVG POWER SENSOR Agilent E9301H MY41495234 2017-06-17 2018-06-16 6 SPECTRUM ANALYZER Agilent E4407B MY41440754 2017-11-18 2018-11-17 7 MXA Signal Analyzer Agilent N9020A MY49100040 2017-06-17 2018-06-16 8 SPECTRUM ANALYZER R&S FSP 100503 2017-06-17 2018-06-16 9 3m Semi Anechoic Chamber Chamber SIDT FRANKONIA SAC-3M 03CH03-HY 2017-06-17 2018-06-16 10 Positioning Controller MF MF-7082 / 2017-06-17 2018-06-16 11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-01-17							
4 Meter Aglient E4419B MY45104493 2017-06-17 2018-06-16 5 P.SERIES AVG POWER SENSOR Aglient E9301H MY41495234 2017-06-17 2018-06-16 6 SPECTRUM ANALYZER Agilent E4407B MY41440754 2017-11-18 2018-11-17 7 MXA Signal Analyzer Agilent N9020A MY49100040 2017-06-17 2018-06-16 8 SPECTRUM ANALYZER R&S FSP 100503 2017-06-17 2018-06-16 9 3m Semi Anechoic Chamber SIDT FRANKONIA SAC-3M 03CH03-HY 2017-06-17 2018-06-16 10 Positioning Controller MF MF-7082 / 2017-06-17 2018-06-16 11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16	3		R&S	NRV-Z32	10057	2017-06-17	2018-06-16
POWER SENSOR	4	Meter	Agilent	E4419B	MY45104493	2017-06-17	2018-06-16
6 SPECTRUM ANALYZER Agilent E4407B MY41440754 2017-11-18 2018-11-17 7 MXA Signal Analyzer Agilent N9020A MY49100040 2017-06-17 2018-06-16 8 SPECTRUM ANALYZER R&S FSP 100503 2017-06-17 2018-06-16 9 3m Semi Anechoic Chamber SIDT FRANKONIA SAC-3M 03CH03-HY 2017-06-17 2018-06-16 10 Positioning Controller MF MF-7082 / 2017-06-17 2018-06-16 11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-11-17 14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-06-23 2018-06-22	5		Agilent	E9301H	MY41495234	2017-06-17	2018-06-16
8 SPECTRUM ANALYZER R&S FSP 100503 2017-06-17 2018-06-16 9 3m Semi Anechoic Chamber SIDT FRANKONIA SAC-3M 03CH03-HY 2017-06-17 2018-06-16 10 Positioning Controller MF MF-7082 / 2017-06-17 2018-06-16 11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-12 15 By-log Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-06-22 2018-06-22	6	SPECTRUM	Agilent	E4407B	MY41440754	2017-11-18	2018-11-17
8 ANALYZER R&S FSP 100503 2017-06-17 2018-06-16 9 3m Semi Anechoic Chamber SIDT FRANKONIA SAC-3M 03CH03-HY 2017-06-17 2018-06-16 10 Positioning Controller MF MF-7082 / 2017-06-17 2018-06-16 11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-06-16 14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-12 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-06-23 2018-06-22 <	7	MXA Signal Analyzer	Agilent	N9020A	MY49100040	2017-06-17	2018-06-16
SIDT FRANKONIA SAC-3M O3CHO3-HY 2017-06-17 2018-06-16	8		R&S	FSP	100503	2017-06-17	2018-06-16
11 EMI Test Software AUDIX E3 N/A N/A N/A 12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-01-17 14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-06-23 2018-06-22 16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF C	9		SIDT FRANKONIA	SAC-3M	03CH03-HY	2017-06-17	2018-06-16
12 EMI Test Receiver ROHDE & SCHWARZ ESR 7 101181 2017-06-17 2018-06-16 13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-11-17 14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-05-02 2018-05-01 16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-23 2018-06-22 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16	10	Positioning Controller	MF	MF-7082	/	2017-06-17	2018-06-16
13 AMPLIFIER QuieTek QTK-A2525G CHM10809065 2017-11-18 2018-11-17 14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-05-02 2018-06-22 16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 23 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16	11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
14 Active Loop Antenna SCHWARZBECK FMZB 1519B 00005 2017-06-23 2018-06-22 15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-05-02 2018-05-01 16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 23 Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24	12	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2017-06-17	2018-06-16
15 By-log Antenna SCHWARZBECK VULB9163 9163-470 2017-05-02 2018-05-01 16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 23 Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26	13	AMPLIFIER	QuieTek	QTK-A2525G	CHM10809065	2017-11-18	2018-11-17
16 Horn Antenna EMCO 3115 6741 2017-06-23 2018-06-22 17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 X-series USB Peak and Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	14	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2017-06-23	2018-06-22
17 RF Cable-R03m Jye Bao RG142 CB021 2017-06-17 2018-06-16 18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 23 Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	15	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2017-05-02	2018-05-01
18 RF Cable-HIGH SUHNER SUCOFLEX 106 03CH03-HY 2017-06-17 2018-06-16 19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 X-series USB Peak and Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	16	Horn Antenna	EMCO	3115	6741	2017-06-23	2018-06-22
19 TEST RECEIVER R&S ESCI 101142 2017-06-17 2018-06-16 20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 X-series USB Peak and Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	17	RF Cable-R03m	Jye Bao	RG142	CB021	2017-06-17	2018-06-16
20 RF Cable-CON UTIFLEX 3102-26886-4 CB049 2017-06-17 2018-06-16 21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 23 Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	18	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2017-06-17	2018-06-16
21 10dB Attenuator SCHWARZBECK MTS-IMP136 261115-001-0032 2017-06-17 2018-06-16 22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 X-series USB Peak and Average Power Sensor Aglient U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	19	TEST RECEIVER	R&S	ESCI	101142	2017-06-17	2018-06-16
22 Artificial Mains R&S ENV216 101288 2017-06-17 2018-06-16 X-series USB Peak and Average Power Sensor Aglient Agilent U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	20	RF Cable-CON	UTIFLEX	3102-26886-4	CB049	2017-06-17	2018-06-16
X-series USB Peak and Average Power Sensor Agilent U2021XA MY54080022 2017-10-27 2018-10-26	21	10dB Attenuator	SCHWARZBECK	MTS-IMP136	261115-001-0032	2017-06-17	2018-06-16
23 Average Power Sensor Aglient Agilent U2021XA MY54080022 2017-10-27 2018-10-26 24 4 CH. Simultaneous Sampling 14 Bits 2MS/s Agilent U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	22	Artificial Mains	R&S	ENV216	101288	2017-06-17	2018-06-16
24 Sampling 14 Bits 2MS/s Agrient U2531A MY54080016 2017-10-27 2018-10-26 25 Test Software Ascentest AT890-SW 20160630 N/A N/A	23	Average Power Sensor		U2021XA	MY54080022	2017-10-27	2018-10-26
	24		Agilent	U2531A	MY54080016	2017-10-27	2018-10-26
26 RF Control Unit Ascentest AT890-RFB N/A 2017-06-17 2018-06-16	25	Test Software	Ascentest	AT890-SW	20160630	N/A	N/A
	26	RF Control Unit	Ascentest	AT890-RFB	N/A	2017-06-17	2018-06-16

10. TEST SETUP PHOTOGRAPHS

Please refer to separated files for Test Setup Photos of the EUT.

11. EXTERIOR HOTOGRAPHS

Please refer to separated files for External Photos of the EUT.

12. INTERIOR PHOTOGRAPHS

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF TEST REPORT-----