FCC REPORT
(UNII)

Applicant:	LigoWave LLC
Address of Applicant:	138 Mountain Brook Dr Canton, GA 30115 United States
Equipment Under Test (EUT)	
Product Name:	Broadband Digital Transmission System
Model No.:	LigoDLB 5ac, LigoDLB 5-90ac
FCC ID:	V2V-FWBD3200
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	01 Nov., 2017
Date of Test:	02 Nov., to 24 Nov., 2017
Date of report issued:	25 Nov., 2017
Test Result:	PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*25 Nov., 2017*	*This report was amended on FCC ID: V2V-FWBD3200 follow FCC Class II Permissive Change.*

Tested by: YT Yang ***Date:*** *25 Nov., 2017*

Test Engineer

Reviewed by: Wimer Zhang ***Date:*** *25 Nov., 2017*

Project Engineer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.407 (g)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407 (a)	Pass*
26dB Occupied Bandwidth	15.407 (a)	Pass*
6dB Emission Bandwidth	15.407(e)	Pass*
Power Spectral Density	15.407 (a)	Pass*
Band Edge	15.407(b)	Pass
Spurious Emission	15.205/15.209	Pass
Frequency Stability	15.407(g)	Pass*

Pass: The EUT complies with the essential requirements in the standard.

Pass: Please refer to FCC ID: V2V-FWBD3200.*

5 General Information

5.1 Client Information

Applicant:	LigoWave LLC
Address:	138 Mountain Brook Dr Canton, GA 30115 United States
Manufacturer/ Factory:	LigoWave LLC
Address:	138 Mountain Brook Dr Canton, GA 30115 United States

5.2 General Description of E.U.T.

Product Name:	Broadband Digital Transmission System
Model No.:	LigoDLB 5ac, LigoDLB 5-90ac
Operation Frequency:	Band 1: 5150MHz-5250MHz Band 4: 5725MHz-5850MHz
Operation mode:	Fixed point-to-point operation
Channel numbers:	Band 1: 802.11a/802.11n20: 4,802.11n40: 2, 802.11ac80: 1 Band 4: 802.11a/802.11n20: 5,802.11n40: 2, 802.11ac80: 1
Channel separation:	802.11a/802.11n20:20MHz, 802.11n40:40MHz, 802.11ac80 : 80MHz
Modulation technology: (IEEE 802.11a)	BPSK,QPSK,16-QAM,64-QAM
Modulation technology: (IEEE 802.11n)	BPSK,QPSK,16-QAM,64-QAM
Modulation technology: (IEEE 802.11ac)	BPSK,QPSK,16-QAM, 64-QAM, 256-QAM
Data speed(IEEE 802.11a)	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n20):	MCS0: 13Mbps, MCS1:26Mbps, MCS2:39Mbps, MCS3:52Mbps, MCS4:78Mbps, MCS5:104Mbps, MCS6:117Mbps, MCS7:130Mbps
Data speed (IEEE 802.11n40):	MCS0:30Mbps, MCS1:60Mbps, MCS2:90Mbps, MCS3:120Mbps, MCS4:180Mbps, MCS5:240Mbps, MCS6:270Mbps, MCS7:300Mbps
Data speed (IEEE 802.11ac80):	Up to 866.7Mbps
Antenna gain:	LigoDLB 5ac: 18dBi, LigoDLB 5-90ac: 18dBi
Power supply:	DC 24V
AC adapter :	(1) Model: G0720-240-050 Input:100-240V AC,50/60Hz 0.75A Output:24V DC MAX 0.5A (2) Model: GRT-POE20-240050A Input:100-240V AC,50/60Hz 0.5A Output:24V DC MAX 500mA
Remark:	Item No.: LigoDLB 5ac, LigoDLB 5-90ac were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference name.

Operation Frequency each of channel

Band 1					
802.11a/802.11n20		802.11n40		802ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	38	5190MHz	42	5210MHz
40	5200MHz	46	5230MHz		
44	5220MHz				
48	5240MHz				
Band 4					
802.11a/802.11n20		802.11n40		802ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	155	5775MHz
153	5765MHz	159	5795MHz		
157	5785MHz				
161	5805MHz				
165	5825MHz				

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Band 1					
802.11a/802.11n20		802.11n40		802ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
The lowest channel	5180MHz	The lowest channel	5190MHz	Middle channel	5210MHz
The middle channel	5200MHz	The highest channel	5230MHz		
The highest channel	5240MHz				
Band 4					
802.11a/802.11n20		802.11n40		802ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
The lowest channel	5745MHz	The lowest channel	5755MHz	Middle channel	5775MHz
The middle channel	5785MHz	The highest channel	5795MHz		
The highest channel	5825MHz				

5.3 Test environment andmode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Continuously transmitting mode	Keep the EUT in 100% duty cycle transmitting with modulation.
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11a	6Mbps
802.11n20	13Mbps
802.11n40	30Mbps
802.11ac80	65Mbps
Final Test Mode:	
According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 6Mbps for 802.11a, 13 Mbps for 802.11n20, 30 Mbps for 802.11n40 and 65 Mbps for 802.11ac80. All test items for 802.11a, 802.11n and 802.11ac were performedwith duty cycle above 98%, meet the requirements of KDB789033.	

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.7 Measurement Uncertainty

Items	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 30MHz)	2.14 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	4.24 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	4.35 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	4.44 dB (k=2)
Radiated Emission (18GHz ~ 26.5GHz)	4.56 dB (k=2)

5.8 Test Instruments list

Radiated Emission:

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	02-25-2017	02-24-2018
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	02-25-2017	02-24-2018
Horn Antenna	SCHWARZBECK	BBHA9120D	916	02-25-2017	02-24-2018
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A
Pre-amplifier	HP	8447D	2944A09358	02-25-2017	02-24-2018
Pre-amplifier	CD	PAP-1G18	11804	02-25-2017	02-24-2018
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	02-25-2017	02-24-2018
Cable	ZDECL	Z108-NJ-NJ-81	1608458	02-25-2017	02-24-2018
Cable	MICRO-COAX	MFR64639	K10742-5	02-25-2017	02-24-2018
Cable	SUHNER	SUCOFLEX100	58193/4PE	02-25-2017	02-24-2018

Conducted Emission:

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	02-25-2017	02-24-2018
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	02-25-2017	02-24-2018
LISN	CHASE	MN2050D	1447	02-25-2017	02-24-2018
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2018
Cable	HP	10503A	N/A	02-25-2017	02-24-2018
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)

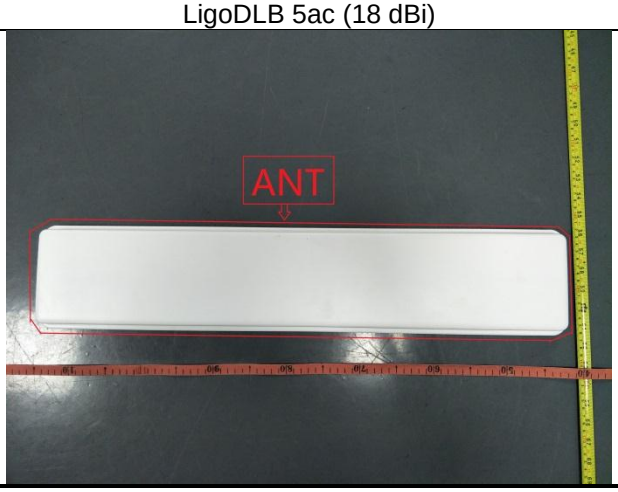
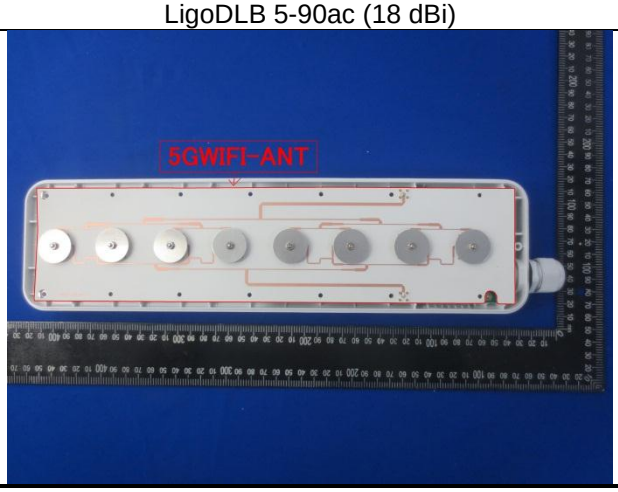
15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

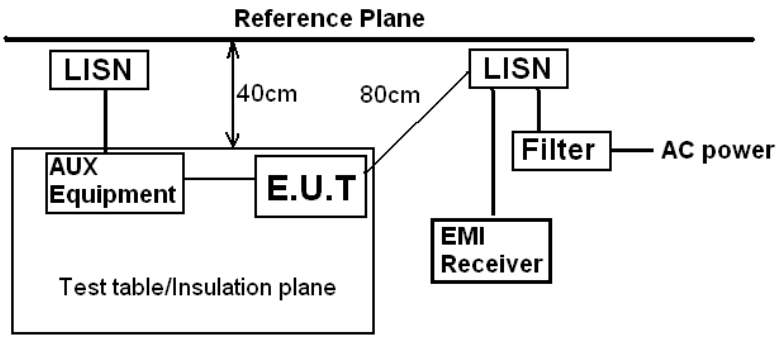
This requirementdoes not apply to carrier currentdevices or to devices operated underthe provisions of §15.211, § 15.213,§ 15.217, § 15.219, or § 15.221. Further, thisrequirement does not apply to intentionalradiators that must be professionallyinstalled, such as perimeterprotection systems and some field disturbance sensors, or to other intentionalradiators which, in accordancewith § 15.31(d), must be measured at theinstallation site. However, the installershall be responsible for ensuring thatthe proper antenna is employed so thatthe limits in this part are not exceeded.

E.U.T Antenna:	

The antenna of EUT is an integral antenna, which cannot be replaced by end-user. Details as below:

LigoDLB 5ac (18 dBi)	LigoDLB 5-90ac (18 dBi)
	

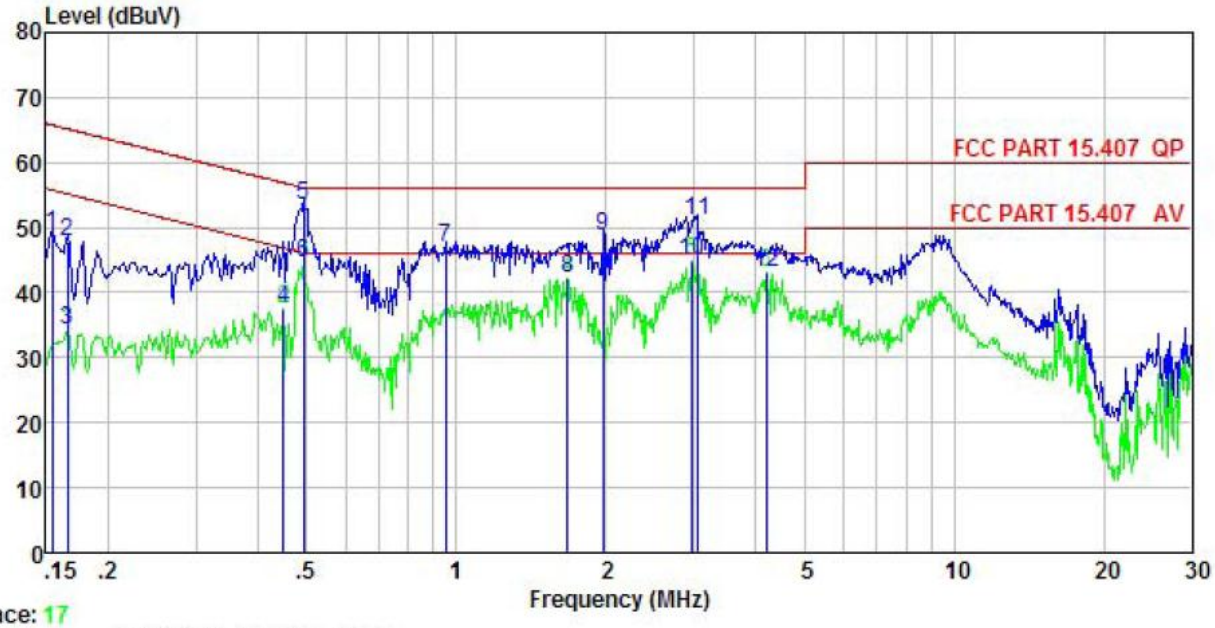
6.2 Conducted Emission

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.4: 2014		
TestFrequencyRange:	150kHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:©	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). Itprovides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Refer to section 5.3 for details.		
Test results:	Passed		

Measurement Data:

Adapter (1)
LigoDLB 5ac:

Line:

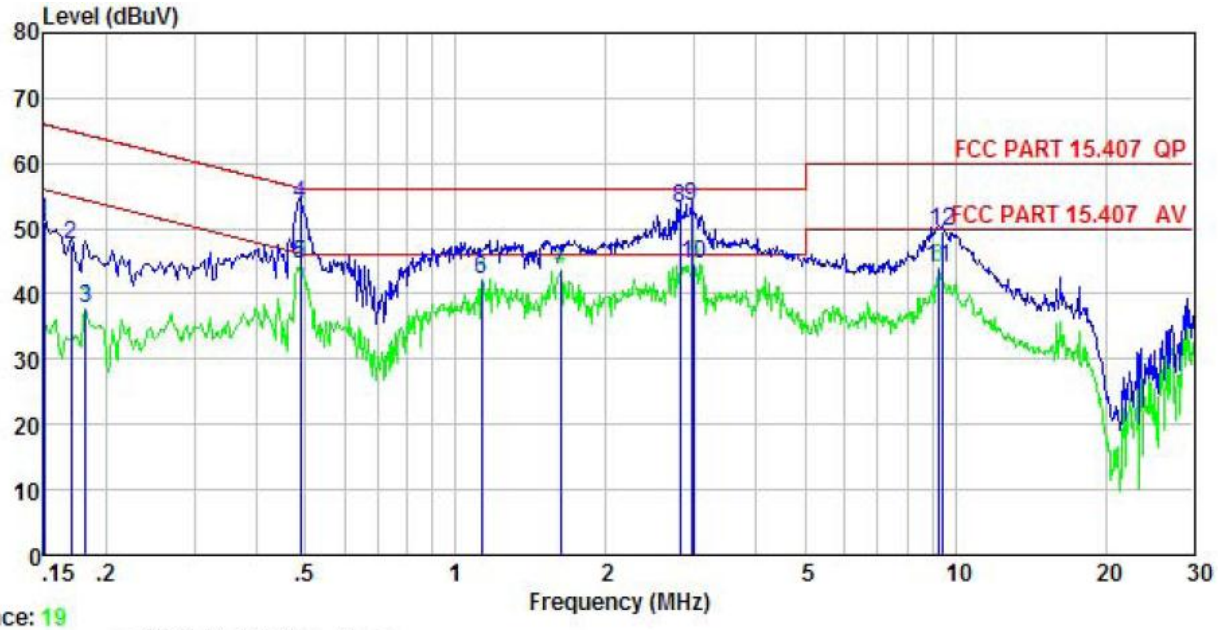


Trace: 17

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN LINE
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : G0720-240-050

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	38.71	-0.56	10.78	48.93	65.78	-16.85	QP
2	0.166	37.71	-0.55	10.77	47.93	65.16	-17.23	QP
3	0.166	23.89	-0.55	10.77	34.11	55.16	-21.05	Average
4	0.449	27.25	-0.49	10.74	37.50	46.89	-9.39	Average
5	0.494	43.16	-0.49	10.76	53.43	56.10	-2.67	QP
6	0.494	34.21	-0.49	10.76	44.48	46.10	-1.62	Average
7	0.953	36.50	-0.49	10.86	46.87	56.00	-9.13	QP
8	1.671	31.63	-0.45	10.94	42.12	46.00	-3.88	Average
9	1.970	38.06	-0.43	10.96	48.59	56.00	-7.41	QP
10	2.978	34.48	-0.44	10.92	44.96	46.00	-1.04	Average
11	3.041	40.44	-0.43	10.92	50.93	56.00	-5.07	QP
12	4.202	32.50	-0.27	10.88	43.11	46.00	-2.89	Average

Neutral:



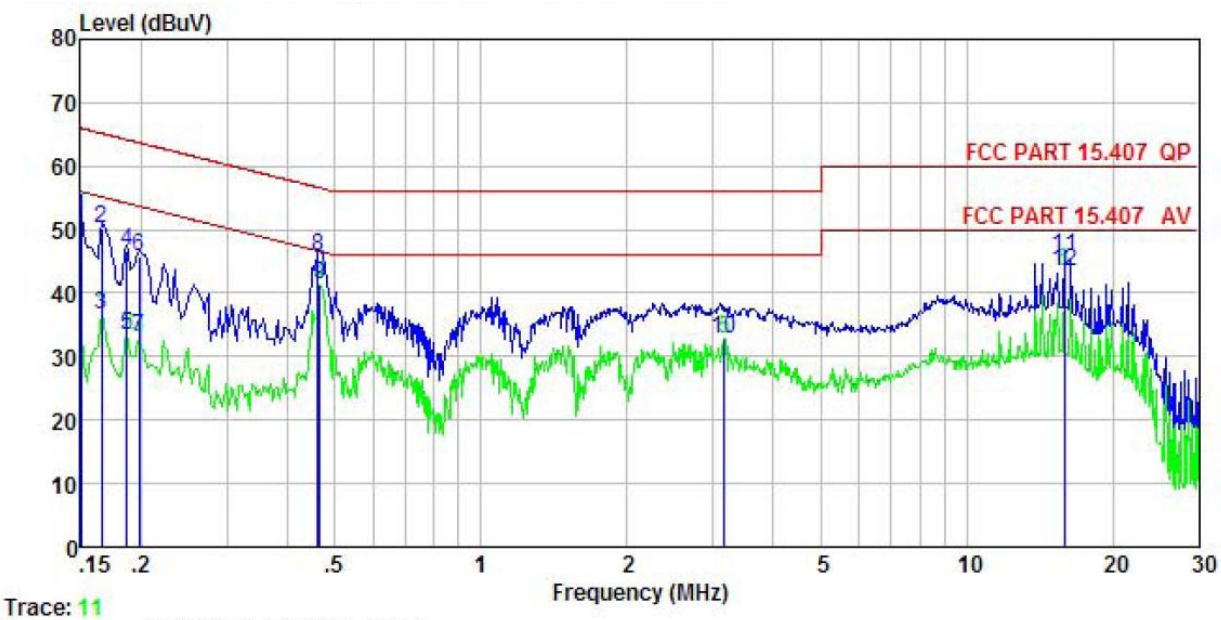
Trace: 19

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN NEUTRAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : G0720-240-050

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	40.77	-0.38	10.78	51.17	66.00	-14.83	QP
2	0.170	37.13	-0.36	10.77	47.54	64.94	-17.40	QP
3	0.182	27.35	-0.35	10.77	37.77	54.42	-16.65	Average
4	0.489	43.33	-0.30	10.76	53.79	56.19	-2.40	QP
5	0.489	34.11	-0.30	10.76	44.57	46.19	-1.62	Average
6	1.129	31.52	-0.28	10.89	42.13	46.00	-3.87	Average
7	1.619	33.16	-0.27	10.93	43.82	46.00	-2.18	Average
8	2.809	42.42	-0.21	10.93	53.14	56.00	-2.86	QP
9	2.962	42.70	-0.20	10.92	53.42	56.00	-2.58	QP
10	3.009	33.87	-0.20	10.92	44.59	46.00	-1.41	Average
11	9.253	32.69	0.29	10.91	43.89	50.00	-6.11	Average
12	9.451	38.38	0.30	10.92	49.60	60.00	-10.40	QP

LigoDLB 5-90ac:

Line:

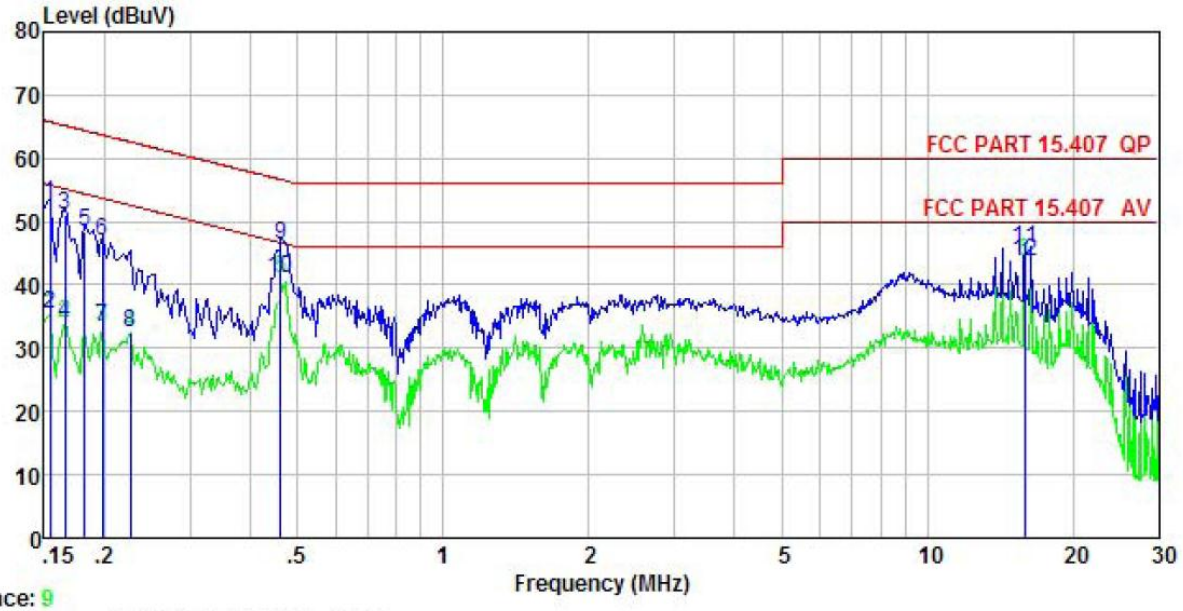


Trace: 11

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN LINE
EUT : Broadband Digital Transmission System
Model : LigoDLB 90ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : G0720-240-050

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	41.78	-0.56	10.78	52.00	66.00	-14.00	QP
2	0.166	39.85	-0.55	10.77	50.07	65.16	-15.09	QP
3	0.166	26.29	-0.55	10.77	36.51	55.16	-18.65	Average
4	0.186	36.41	-0.53	10.76	46.64	64.20	-17.56	QP
5	0.186	23.16	-0.53	10.76	33.39	54.20	-20.81	Average
6	0.198	35.40	-0.52	10.76	45.64	63.71	-18.07	QP
7	0.198	22.79	-0.52	10.76	33.03	53.71	-20.68	Average
8	0.461	35.55	-0.49	10.74	45.80	56.67	-10.87	QP
9	0.466	31.15	-0.49	10.75	41.41	46.58	-5.17	Average
10	3.173	22.28	-0.41	10.91	32.78	46.00	-13.22	Average
11	15.885	35.38	-0.65	10.91	45.64	60.00	-14.36	QP
12	15.885	33.06	-0.65	10.91	43.32	50.00	-6.68	Average

Neutral:



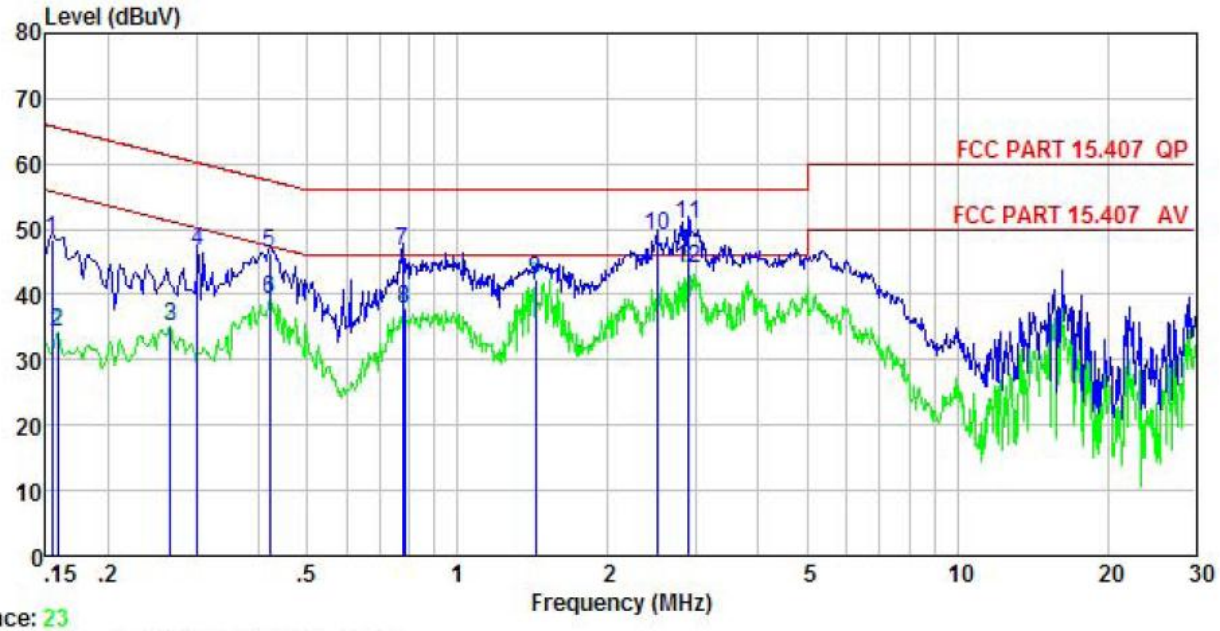
Trace: 9

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN NEUTRAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 90ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : G0720-240-050

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	42.42	-0.38	10.78	52.82	65.78	-12.96	QP
2	0.154	25.08	-0.38	10.78	35.48	55.78	-20.30	Average
3	0.166	40.65	-0.37	10.77	51.05	65.16	-14.11	QP
4	0.166	23.43	-0.37	10.77	33.83	55.16	-21.33	Average
5	0.182	38.06	-0.35	10.77	48.48	64.42	-15.94	QP
6	0.198	36.48	-0.34	10.76	46.90	63.71	-16.81	QP
7	0.198	23.01	-0.34	10.76	33.43	53.71	-20.28	Average
8	0.226	22.19	-0.33	10.75	32.61	52.61	-20.00	Average
9	0.461	35.96	-0.31	10.74	46.39	56.67	-10.28	QP
10	0.461	30.56	-0.31	10.74	40.99	46.67	-5.68	Average
11	15.885	35.17	-0.35	10.91	45.73	60.00	-14.27	QP
12	15.885	33.14	-0.35	10.91	43.70	50.00	-6.30	Average

Adapter (2)
LigoDLB 5ac:

Line:

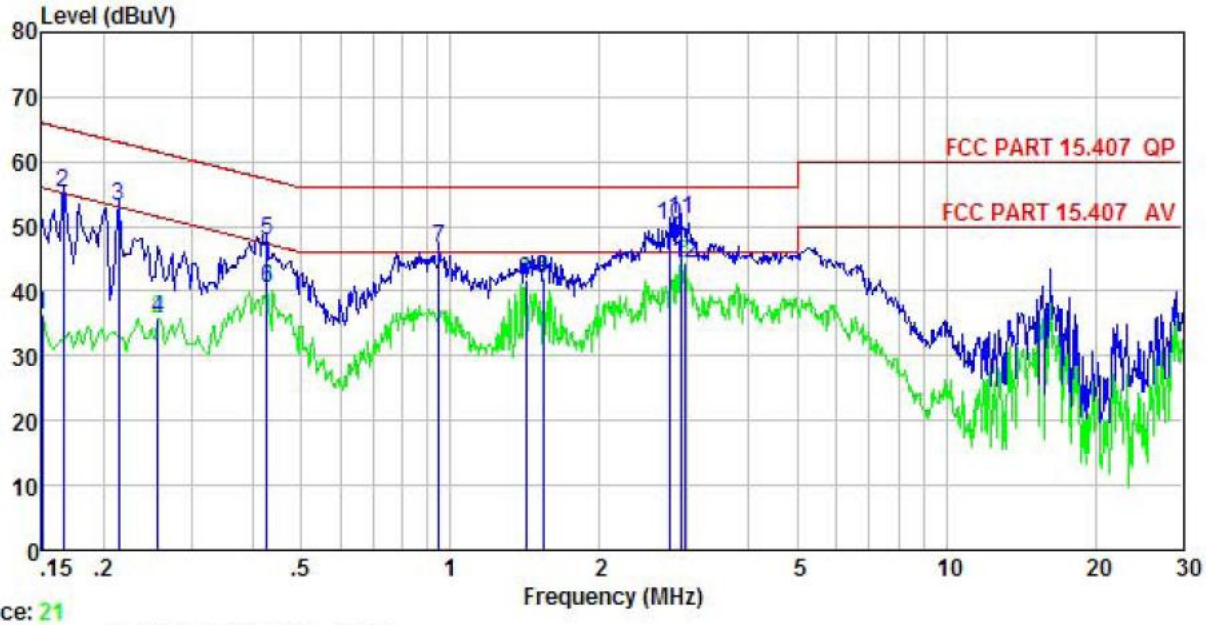


Trace: 23

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN LINE
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	38.26	-0.56	10.78	48.48	65.78	-17.30	QP
2	0.158	24.11	-0.55	10.77	34.33	55.56	-21.23	Average
3	0.266	24.77	-0.51	10.75	35.01	51.25	-16.24	Average
4	0.302	36.30	-0.51	10.74	46.53	60.19	-13.66	QP
5	0.421	36.00	-0.50	10.73	46.23	57.42	-11.19	QP
6	0.421	28.95	-0.50	10.73	39.18	47.42	-8.24	Average
7	0.775	36.38	-0.48	10.80	46.70	56.00	-9.30	QP
8	0.783	27.58	-0.48	10.81	37.91	46.00	-8.09	Average
9	1.433	31.87	-0.46	10.92	42.33	46.00	-3.67	Average
10	2.500	38.47	-0.44	10.94	48.97	56.00	-7.03	QP
11	2.884	40.42	-0.44	10.92	50.90	56.00	-5.10	QP
12	2.884	33.41	-0.44	10.92	43.89	46.00	-2.11	Average

Neutral:



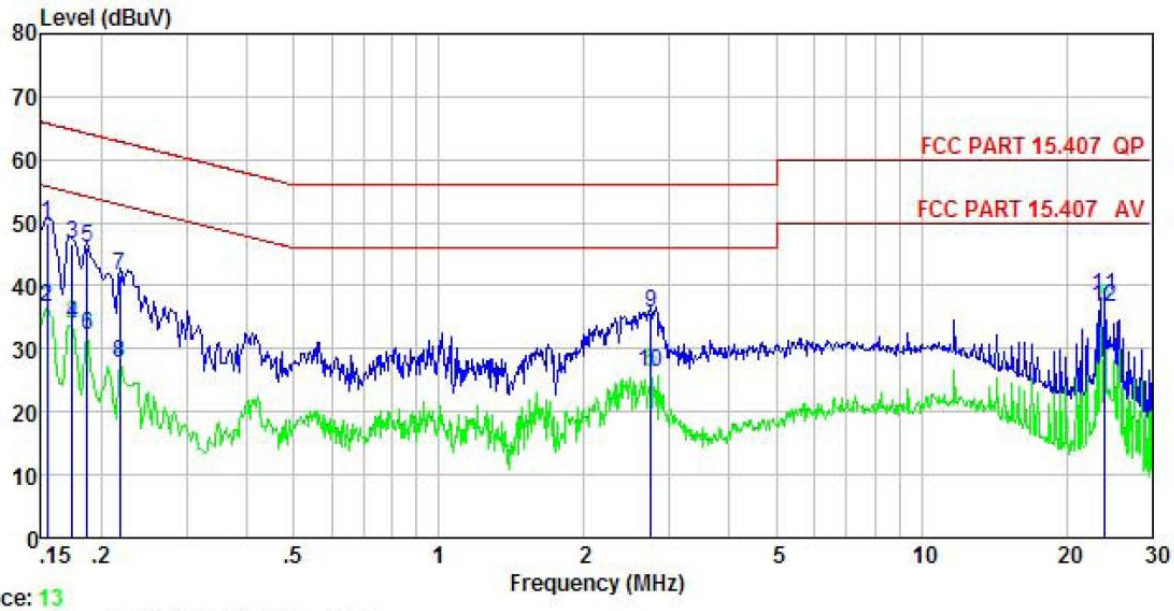
Trace: 21

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN NEUTRAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	25.97	-0.38	10.78	36.37	56.00	-19.63	Average
2	0.166	44.86	-0.37	10.77	55.26	65.16	-9.90	QP
3	0.214	42.74	-0.34	10.76	53.16	63.05	-9.89	QP
4	0.258	25.42	-0.33	10.75	35.84	51.51	-15.67	Average
5	0.426	37.38	-0.31	10.73	47.80	57.33	-9.53	QP
6	0.426	29.94	-0.31	10.73	40.36	47.33	-6.97	Average
7	0.948	36.03	-0.29	10.85	46.59	56.00	-9.41	QP
8	1.418	31.03	-0.27	10.92	41.68	46.00	-4.32	Average
9	1.535	31.38	-0.27	10.93	42.04	46.00	-3.96	Average
10	2.765	39.57	-0.21	10.93	50.29	56.00	-5.71	QP
11	2.915	40.38	-0.20	10.92	51.10	56.00	-4.90	QP
12	2.962	33.52	-0.20	10.92	44.24	46.00	-1.76	Average

LigoDLB 5-90ac:

Line:

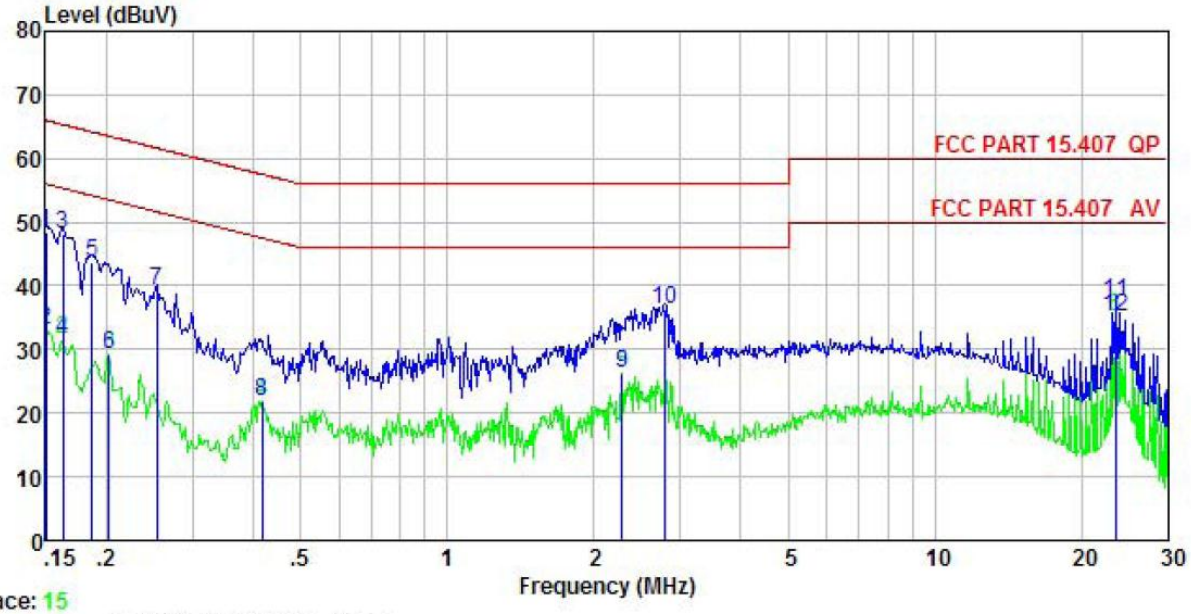


Trace: 13

Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN LINE
EUT : Broadband Digital Transmission System
Model : LigoDLB 90ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	39.80	-0.56	10.78	50.02	65.78	-15.76	QP
2	0.154	26.38	-0.56	10.78	36.60	55.78	-19.18	Average
3	0.174	36.56	-0.54	10.77	46.79	64.77	-17.98	QP
4	0.174	23.67	-0.54	10.77	33.90	54.77	-20.87	Average
5	0.186	35.74	-0.53	10.76	45.97	64.20	-18.23	QP
6	0.186	21.91	-0.53	10.76	32.14	54.20	-22.06	Average
7	0.219	31.48	-0.52	10.76	41.72	62.88	-21.16	QP
8	0.219	17.47	-0.52	10.76	27.71	52.88	-25.17	Average
9	2.750	25.20	-0.44	10.93	35.69	56.00	-20.31	QP
10	2.750	15.73	-0.44	10.93	26.22	46.00	-19.78	Average
11	24.015	28.23	-0.65	10.88	38.46	60.00	-21.54	QP
12	24.015	26.29	-0.65	10.88	36.52	50.00	-13.48	Average

Neutral:



Trace: 15

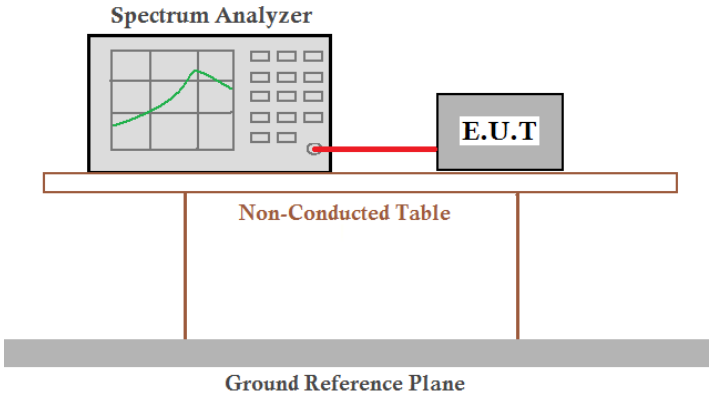
Site : CCIS Shielding Room
Condition : FCC PART 15.407 QP LISN NEUTRAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 90ac
Test Mode : 5GWIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	38.15	-0.38	10.78	48.55	66.00	-17.45	QP
2	0.150	22.58	-0.38	10.78	32.98	56.00	-23.02	Average
3	0.162	37.82	-0.37	10.77	48.22	65.34	-17.12	QP
4	0.162	21.25	-0.37	10.77	31.65	55.34	-23.69	Average
5	0.186	33.39	-0.35	10.76	43.80	64.20	-20.40	QP
6	0.202	18.88	-0.34	10.76	29.30	53.54	-24.24	Average
7	0.253	28.70	-0.33	10.75	39.12	61.64	-22.52	QP
8	0.417	11.54	-0.32	10.73	21.95	47.51	-25.56	Average
9	2.285	15.66	-0.24	10.95	26.37	46.00	-19.63	Average
10	2.794	25.53	-0.21	10.93	36.25	56.00	-19.75	QP
11	23.511	27.15	-0.68	10.89	37.36	60.00	-22.64	QP
12	23.511	24.99	-0.68	10.89	35.20	50.00	-14.80	Average

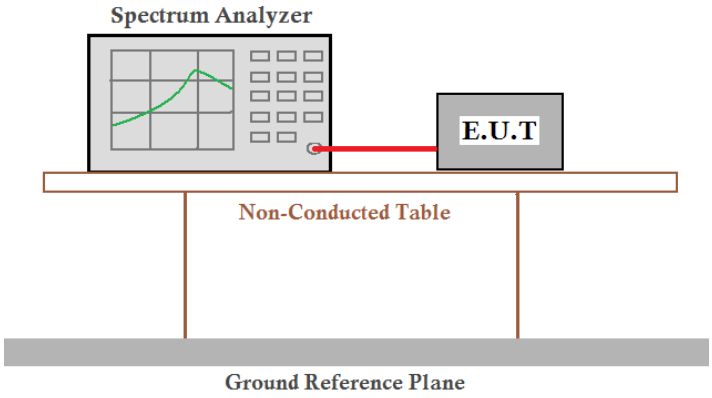
Notes:

1. An initial pre-scan was performed on the live and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

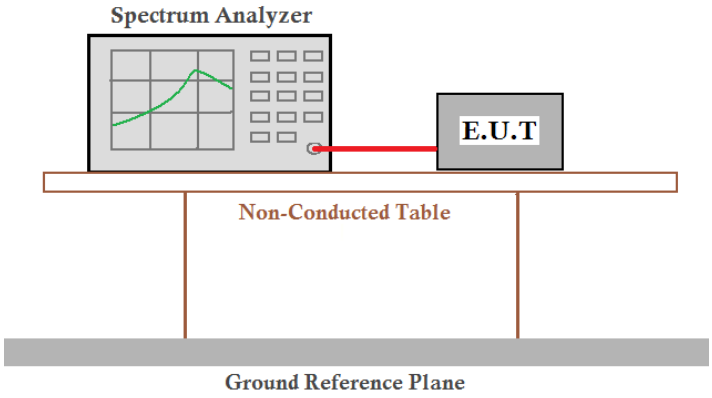
6.3 Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) & (a) (3)
Test Method:	ANSI C63.10: 2013, KDB789033
Limit:	**Band 1:** 1 W (For fixed point-to-point transmitters that employ a directional antenna gain greater than 25 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 25 dBi); **Band 4:** 1W (For fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power).
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: V2V-FWBD3200

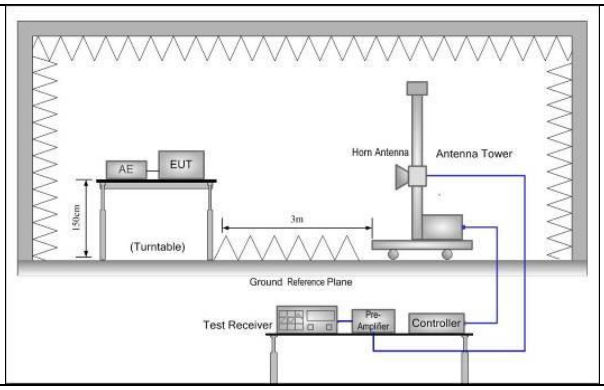
6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 E Section 15.407 (a) (5) and Section 15.407 (e)
Test Method:	ANSI C63.10:2013 and KDB 789033
Limit:	Band 1: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: >500kHz(6dB Bandwidth)
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: V2V-FWBD3200

6.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) &(a) (3)
Test Method:	ANSI C63.10:2013, KDB 789033
Limit:	**Band 1:** 17 dBm/MHz (For fixed point-to-point transmitters that employ a directional antenna gain greater than 25 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 25 dBi); **Band 4:** 30dBm/500kHz(For fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power).
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: V2V-FWBD3200

6.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 (b)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 , KDB 789033</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Band</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Band 1</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td rowspan="2">Band 4</td><td>78.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
</table>
Remark:
1. Band 1 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.
2. Band 4 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=78.2 dBuV/m,for EIPR[dBm]=-17dBm.
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

LigoDLB 5ac:
Band 1:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	49.25	31.38	7.05	41.93	45.75	68.20	-22.45	Horizontal
5150.00	48.62	31.38	7.05	41.93	45.12	68.20	-23.08	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	39.24	31.38	7.05	41.93	35.74	54.00	-18.26	Horizontal
5150.00	38.14	31.38	7.05	41.93	34.64	54.00	-19.36	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.52	30.82	7.11	41.89	44.56	68.20	-23.64	Horizontal
5350.00	48.96	30.82	7.11	41.89	45.00	68.20	-23.20	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	39.32	30.82	7.11	41.89	35.36	54.00	-18.64	Horizontal
5350.00	39.52	30.82	7.11	41.89	35.56	54.00	-18.44	Vertical

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.25	31.38	7.05	41.93	44.75	68.20	-23.45	Horizontal
5150.00	48.52	31.38	7.05	41.93	45.02	68.20	-23.18	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	38.65	31.38	7.05	41.93	35.15	54.00	-18.85	Horizontal
5150.00	38.52	31.38	7.05	41.93	35.02	54.00	-18.98	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.74	30.82	7.11	41.89	44.78	68.20	-23.42	Horizontal
5350.00	48.66	30.82	7.11	41.89	44.70	68.20	-23.50	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.21	30.82	7.11	41.89	34.25	54.00	-19.75	Horizontal
5350.00	38.65	30.82	7.11	41.89	34.69	54.00	-19.31	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.52	31.38	7.05	41.93	45.02	68.20	-23.18	Horizontal
5150.00	48.74	31.38	7.05	41.93	45.24	68.20	-22.96	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	39.25	31.38	7.05	41.93	35.75	54.00	-18.25	Horizontal
5150.00	38.53	31.38	7.05	41.93	35.03	54.00	-18.97	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.65	30.82	7.11	41.89	44.69	68.20	-23.51	Horizontal
5350.00	49.20	30.82	7.11	41.89	45.24	68.20	-22.96	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.65	30.82	7.11	41.89	34.69	54.00	-19.31	Horizontal
5350.00	39.17	30.82	7.11	41.89	35.21	54.00	-18.79	Vertical

802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.63	31.38	7.05	41.93	45.13	68.20	-23.07	Horizontal
5150.00	48.74	31.38	7.05	41.93	45.24	68.20	-22.96	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	36.35	31.38	7.05	41.93	32.85	54.00	-21.15	Horizontal
5150.00	37.52	31.38	7.05	41.93	34.02	54.00	-19.98	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.54	30.82	7.11	41.89	44.58	68.20	-23.62	Horizontal
5350.00	47.85	30.82	7.11	41.89	43.89	68.20	-24.31	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	36.32	30.82	7.11	41.89	32.36	54.00	-21.64	Horizontal
5350.00	37.85	30.82	7.11	41.89	33.89	54.00	-20.11	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	48.63	31.03	7.69	41.94	45.41	78.20	-32.79	Horizontal
5725.00	49.32	31.03	7.69	41.94	46.10	78.20	-32.10	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.24	31.03	7.69	41.94	35.02	54.00	-18.98	Horizontal
5725.00	38.65	31.03	7.69	41.94	35.43	54.00	-18.57	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	49.36	31.37	7.90	42.03	46.60	78.20	-31.60	Horizontal
5850.00	49.20	31.37	7.90	42.03	46.44	78.20	-31.76	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	38.32	31.37	7.90	42.03	35.56	54.00	-18.44	Horizontal
5850.00	38.99	31.37	7.90	42.03	36.23	54.00	-17.77	Vertical

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	49.52	31.03	7.69	41.94	46.30	78.20	-31.90	Horizontal
5725.00	48.55	31.03	7.69	41.94	45.33	78.20	-32.87	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.65	31.03	7.69	41.94	35.43	54.00	-18.57	Horizontal
5725.00	38.74	31.03	7.69	41.94	35.52	54.00	-18.48	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	48.25	31.37	7.90	42.03	45.49	78.20	-32.71	Horizontal
5850.00	48.47	31.37	7.90	42.03	45.71	78.20	-32.49	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	38.65	31.37	7.90	42.03	35.89	54.00	-18.11	Horizontal
5850.00	38.57	31.37	7.90	42.03	35.81	54.00	-18.19	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	49.32	31.03	7.69	41.94	46.10	78.20	-32.10	Horizontal
5725.00	48.79	31.03	7.69	41.94	45.57	78.20	-32.63	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.65	31.03	7.69	41.94	35.43	54.00	-18.57	Horizontal
5725.00	38.59	31.03	7.69	41.94	35.37	54.00	-18.63	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	48.74	31.37	7.90	42.03	45.98	78.20	-32.22	Horizontal
5850.00	48.66	31.37	7.90	42.03	45.90	78.20	-32.30	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	38.65	31.37	7.90	42.03	35.89	54.00	-18.11	Horizontal
5850.00	38.72	31.37	7.90	42.03	35.96	54.00	-18.04	Vertical

802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	48.65	31.03	7.69	41.94	45.43	78.20	-32.77	Horizontal
5725.00	48.63	31.03	7.69	41.94	45.41	78.20	-32.79	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	38.67	31.03	7.69	41.94	35.45	54.00	-18.55	Horizontal
5725.00	38.51	31.03	7.69	41.94	35.29	54.00	-18.71	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	48.23	31.37	7.90	42.03	45.47	78.20	-32.73	Horizontal
5850.00	48.95	31.37	7.90	42.03	46.19	78.20	-32.01	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	38.74	31.37	7.90	42.03	35.98	54.00	-18.02	Horizontal
5850.00	38.81	31.37	7.90	42.03	36.05	54.00	-17.95	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

LigoDLB 5-90ac:
Band 1:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	45.26	31.38	7.05	41.93	41.76	68.20	-26.44	Horizontal
5150.00	46.85	31.38	7.05	41.93	43.35	68.20	-24.85	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	39.62	31.38	7.05	41.93	36.12	54.00	-17.88	Horizontal
5150.00	38.56	31.38	7.05	41.93	35.06	54.00	-18.94	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	46.21	30.82	7.11	41.89	42.25	68.20	-25.95	Horizontal
5350.00	45.17	30.82	7.11	41.89	41.21	68.20	-26.99	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.62	30.82	7.11	41.89	34.66	54.00	-19.34	Horizontal
5350.00	37.46	30.82	7.11	41.89	33.50	54.00	-20.50	Vertical

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	46.23	31.38	7.05	41.93	42.73	68.20	-25.47	Horizontal
5150.00	45.18	31.38	7.05	41.93	41.68	68.20	-26.52	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	39.64	31.38	7.05	41.93	36.14	54.00	-17.86	Horizontal
5150.00	38.52	31.38	7.05	41.93	35.02	54.00	-18.98	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	45.17	30.82	7.11	41.89	41.21	68.20	-26.99	Horizontal
5350.00	46.19	30.82	7.11	41.89	42.23	68.20	-25.97	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.27	30.82	7.11	41.89	34.31	54.00	-19.69	Horizontal
5350.00	39.64	30.82	7.11	41.89	35.68	54.00	-18.32	Vertical

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	46.25	31.38	7.05	41.93	42.75	68.20	-25.45	Horizontal
5150.00	47.80	31.38	7.05	41.93	44.30	68.20	-23.90	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	40.21	31.38	7.05	41.93	36.71	54.00	-17.29	Horizontal
5150.00	37.46	31.38	7.05	41.93	33.96	54.00	-20.04	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	45.29	30.82	7.11	41.89	41.33	68.20	-26.87	Horizontal
5350.00	46.77	30.82	7.11	41.89	42.81	68.20	-25.39	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	37.46	30.82	7.11	41.89	33.50	54.00	-20.50	Horizontal
5350.00	38.01	30.82	7.11	41.89	34.05	54.00	-19.95	Vertical

802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	42.56	31.38	7.05	41.93	39.06	68.20	-29.14	Horizontal
5150.00	41.43	31.38	7.05	41.93	37.93	68.20	-30.27	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	32.26	31.38	7.05	41.93	28.76	54.00	-25.24	Horizontal
5150.00	32.77	31.38	7.05	41.93	29.27	54.00	-24.73	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	46.25	30.82	7.11	41.89	42.29	68.20	-25.91	Horizontal
5350.00	47.94	30.82	7.11	41.89	43.98	68.20	-24.22	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	37.46	30.82	7.11	41.89	33.50	54.00	-20.50	Horizontal
5350.00	38.45	30.82	7.11	41.89	34.49	54.00	-19.51	Vertical

Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	46.53	31.03	7.69	41.94	43.31	78.20	-34.89	Horizontal
5725.00	42.19	31.03	7.69	41.94	38.97	78.20	-39.23	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	36.27	31.03	7.69	41.94	33.05	54.00	-20.95	Horizontal
5725.00	31.46	31.03	7.69	41.94	28.24	54.00	-25.76	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	45.17	31.37	7.90	42.03	42.41	78.20	-35.79	Horizontal
5850.00	47.46	31.37	7.90	42.03	44.70	78.20	-33.50	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	32.21	31.37	7.90	42.03	29.45	54.00	-24.55	Horizontal
5850.00	33.46	31.37	7.90	42.03	30.70	54.00	-23.30	Vertical

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	46.23	31.03	7.69	41.94	43.01	78.20	-35.19	Horizontal
5725.00	44.14	31.03	7.69	41.94	40.92	78.20	-37.28	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	36.53	31.03	7.69	41.94	33.31	54.00	-20.69	Horizontal
5725.00	35.19	31.03	7.69	41.94	31.97	54.00	-22.03	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	46.28	31.37	7.90	42.03	43.52	78.20	-34.68	Horizontal
5850.00	48.15	31.37	7.90	42.03	45.39	78.20	-32.81	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	35.65	31.37	7.90	42.03	32.89	54.00	-21.11	Horizontal
5850.00	34.19	31.37	7.90	42.03	31.43	54.00	-22.57	Vertical

Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	45.26	31.03	7.69	41.94	42.04	78.20	-36.16	Horizontal
5725.00	46.31	31.03	7.69	41.94	43.09	78.20	-35.11	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	36.79	31.03	7.69	41.94	33.57	54.00	-20.43	Horizontal
5725.00	35.49	31.03	7.69	41.94	32.27	54.00	-21.73	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	45.16	31.37	7.90	42.03	42.40	78.20	-35.80	Horizontal
5850.00	46.29	31.37	7.90	42.03	43.53	78.20	-34.67	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	35.15	31.37	7.90	42.03	32.39	54.00	-21.61	Horizontal
5850.00	36.79	31.37	7.90	42.03	34.03	54.00	-19.97	Vertical

802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	45.79	31.03	7.69	41.94	42.57	78.20	-35.63	Horizontal
5725.00	46.39	31.03	7.69	41.94	43.17	78.20	-35.03	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	36.52	31.03	7.69	41.94	33.30	54.00	-20.70	Horizontal
5725.00	35.15	31.03	7.69	41.94	31.93	54.00	-22.07	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	45.78	31.37	7.90	42.03	43.02	78.20	-35.18	Horizontal
5850.00	46.15	31.37	7.90	42.03	43.39	78.20	-34.81	Vertical
802.11ac-HT80								
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	36.25	31.37	7.90	42.03	33.49	54.00	-20.51	Horizontal
5850.00	35.17	31.37	7.90	42.03	32.41	54.00	-21.59	Vertical

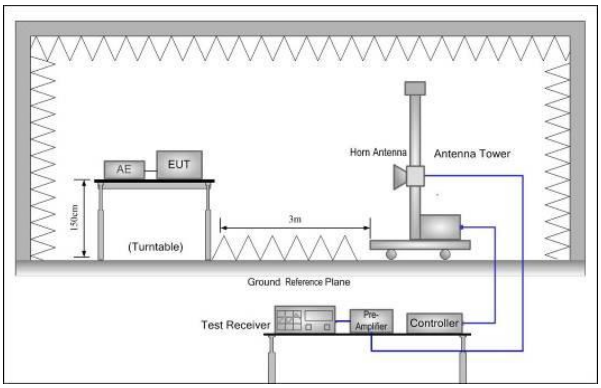
Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

6.7 Spurious Emission

6.7.1 Restricted Band

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 E Section 15.407(b)</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10: 2013</td></tr>
<tr><td>TestFrequencyRange:</td><td colspan="5">Band 1: 4.5 GHz to 5.15 GHz and 5.35GHz to 5.46GHz
Band 4: 5.35 GHz to 5.46 GHz</td></tr>
<tr><td>Test site:</td><td colspan="5">Measurement Distance: 3m</td></tr>
<tr><td rowspan="3">Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td rowspan="3">Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">74.00</td><td>Peak Value</td></tr>
<tr><td colspan="2">54.00</td><td>Average Value</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 
</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="5">Passed</td></tr>
</table>

LigoDLB 5ac:
Band 1:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	48.65	29.30	6.80	42.05	42.70	74.00	-31.30	Horizontal
4500.00	48.25	29.30	6.80	42.05	42.30	74.00	-31.70	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	37.52	29.30	6.80	42.05	31.57	54.00	-22.43	Horizontal
4500.00	38.69	29.30	6.80	42.05	32.74	54.00	-21.26	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.32	30.54	7.18	41.85	44.19	74.00	-29.81	Horizontal
5460.00	48.27	30.54	7.18	41.85	44.14	74.00	-29.86	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.12	30.54	7.18	41.85	33.99	54.00	-20.01	Horizontal
5460.00	38.36	30.54	7.18	41.85	34.23	54.00	-19.77	Vertical

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	48.52	29.30	6.80	42.05	42.57	74.00	-31.43	Horizontal
4500.00	48.62	29.30	6.80	42.05	42.67	74.00	-31.33	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	38.52	29.30	6.80	42.05	32.57	54.00	-21.43	Horizontal
4500.00	38.22	29.30	6.80	42.05	32.27	54.00	-21.73	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.21	30.54	7.18	41.85	44.08	74.00	-29.92	Horizontal
5460.00	48.63	30.54	7.18	41.85	44.50	74.00	-29.50	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.62	30.54	7.18	41.85	34.49	54.00	-19.51	Horizontal
5460.00	38.71	30.54	7.18	41.85	34.58	54.00	-19.42	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Both models were tested, just the worst case model (LigoDLB 5-20ac) shown in report.*

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	48.69	29.30	6.80	42.05	42.74	74.00	-31.26	Horizontal
4500.00	48.64	29.30	6.80	42.05	42.69	74.00	-31.31	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	38.32	29.30	6.80	42.05	32.37	54.00	-21.63	Horizontal
4500.00	38.15	29.30	6.80	42.05	32.20	54.00	-21.80	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.22	30.54	7.18	41.85	44.09	74.00	-29.91	Horizontal
5460.00	48.37	30.54	7.18	41.85	44.24	74.00	-29.76	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.19	30.54	7.18	41.85	34.06	54.00	-19.94	Horizontal
5460.00	38.47	30.54	7.18	41.85	34.34	54.00	-19.66	Vertical

802.11ac-HT80

Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	48.55	29.30	6.80	42.05	42.60	74.00	-31.40	Horizontal
4500.00	48.65	29.30	6.80	42.05	42.70	74.00	-31.30	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	38.34	29.30	6.80	42.05	32.39	54.00	-21.61	Horizontal
4500.00	38.28	29.30	6.80	42.05	32.33	54.00	-21.67	Vertical
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.54	30.54	7.18	41.85	44.41	74.00	-29.59	Horizontal
5460.00	48.66	30.54	7.18	41.85	44.53	74.00	-29.47	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.41	30.54	7.18	41.85	34.28	54.00	-19.72	Horizontal
5460.00	38.83	30.54	7.18	41.85	34.70	54.00	-19.30	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Both models were tested, just the worst case model (LigoDLB 5-20ac) shown in report.*

Band 4:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.21	30.82	7.11	41.89	44.25	74.00	-29.75	Horizontal
5350.00	48.23	30.82	7.11	41.89	44.27	74.00	-29.73	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.52	30.82	7.11	41.89	34.56	54.00	-19.44	Horizontal
5350.00	38.44	30.82	7.11	41.89	34.48	54.00	-19.52	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.25	30.54	7.18	41.85	44.12	74.00	-29.88	Horizontal
5460.00	48.62	30.54	7.18	41.85	44.49	74.00	-29.51	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.15	30.54	7.18	41.85	34.02	54.00	-19.98	Horizontal
5460.00	38.24	30.54	7.18	41.85	34.11	54.00	-19.89	Vertical

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.52	30.82	7.11	41.89	44.56	74.00	-29.44	Horizontal
5350.00	48.75	30.82	7.11	41.89	44.79	74.00	-29.21	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.47	30.82	7.11	41.89	34.51	54.00	-19.49	Horizontal
5350.00	38.65	30.82	7.11	41.89	34.69	54.00	-19.31	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.41	30.54	7.18	41.85	44.28	74.00	-29.72	Horizontal
5460.00	48.52	30.54	7.18	41.85	44.39	74.00	-29.61	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.54	30.54	7.18	41.85	34.41	54.00	-19.59	Horizontal
5460.00	38.64	30.54	7.18	41.85	34.51	54.00	-19.49	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Both models were tested, just the worst case model (LigoDLB 5-20ac) shown in report.*

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.66	30.82	7.11	41.89	44.70	74.00	-29.30	Horizontal
5350.00	48.36	30.82	7.11	41.89	44.40	74.00	-29.60	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.74	30.82	7.11	41.89	34.78	54.00	-19.22	Horizontal
5350.00	38.36	30.82	7.11	41.89	34.40	54.00	-19.60	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.56	30.54	7.18	41.85	44.43	74.00	-29.57	Horizontal
5460.00	48.25	30.54	7.18	41.85	44.12	74.00	-29.88	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.35	30.54	7.18	41.85	34.22	54.00	-19.78	Horizontal
5460.00	38.46	30.54	7.18	41.85	34.33	54.00	-19.67	Vertical

802.11ac-HT80

Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.51	30.82	7.11	41.89	44.55	74.00	-29.45	Horizontal
5350.00	48.36	30.82	7.11	41.89	44.40	74.00	-29.60	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.41	30.82	7.11	41.89	34.45	54.00	-19.55	Horizontal
5350.00	38.10	30.82	7.11	41.89	34.14	54.00	-19.86	Vertical
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	48.36	34.90	30.54	7.18	41.85	74.00	-32.15	Horizontal
5460.00	48.25	34.90	30.54	7.18	41.85	74.00	-32.15	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	38.62	34.90	30.54	7.18	41.85	54.00	-12.15	Horizontal
5460.00	38.47	34.90	30.54	7.18	41.85	54.00	-12.15	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Both models were tested, just the worst case model (LigoDLB 5-20ac) shown in report.*

LigoDLB 5-90ac:
Band 1:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	46.25	29.30	6.80	42.05	40.30	74.00	-33.70	Horizontal
4500.00	46.39	29.30	6.80	42.05	40.44	74.00	-33.56	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	35.21	29.30	6.80	42.05	29.26	54.00	-24.74	Horizontal
4500.00	36.98	29.30	6.80	42.05	31.03	54.00	-22.97	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	46.25	30.54	7.18	41.85	42.12	74.00	-31.88	Horizontal
5460.00	45.78	30.54	7.18	41.85	41.65	74.00	-32.35	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.25	30.54	7.18	41.85	32.12	54.00	-21.88	Horizontal
5460.00	34.91	30.54	7.18	41.85	30.78	54.00	-23.22	Vertical

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	45.26	29.30	6.80	42.05	39.31	74.00	-34.69	Horizontal
4500.00	46.98	29.30	6.80	42.05	41.03	74.00	-32.97	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	35.19	29.30	6.80	42.05	29.24	54.00	-24.76	Horizontal
4500.00	36.45	29.30	6.80	42.05	30.50	54.00	-23.50	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	46.25	30.54	7.18	41.85	42.12	74.00	-31.88	Horizontal
5460.00	45.79	30.54	7.18	41.85	41.66	74.00	-32.34	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.25	30.54	7.18	41.85	32.12	54.00	-21.88	Horizontal
5460.00	35.19	30.54	7.18	41.85	31.06	54.00	-22.94	Vertical

Remark:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	45.26	29.30	6.80	42.05	39.31	74.00	-34.69	Horizontal
4500.00	46.90	29.30	6.80	42.05	40.95	74.00	-33.05	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	36.15	29.30	6.80	42.05	30.20	54.00	-23.80	Horizontal
4500.00	37.49	29.30	6.80	42.05	31.54	54.00	-22.46	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	46.52	30.54	7.18	41.85	42.39	74.00	-31.61	Horizontal
5460.00	45.19	30.54	7.18	41.85	41.06	74.00	-32.94	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.52	30.54	7.18	41.85	32.39	54.00	-21.61	Horizontal
5460.00	35.79	30.54	7.18	41.85	31.66	54.00	-22.34	Vertical

802.11ac-HT80

Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	45.29	29.30	6.80	42.05	39.34	74.00	-34.66	Horizontal
4500.00	46.78	29.30	6.80	42.05	40.83	74.00	-33.17	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	37.64	29.30	6.80	42.05	31.69	54.00	-22.31	Horizontal
4500.00	36.21	29.30	6.80	42.05	30.26	54.00	-23.74	Vertical
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	45.26	30.54	7.18	41.85	41.13	74.00	-32.87	Horizontal
5460.00	46.98	30.54	7.18	41.85	42.85	74.00	-31.15	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.23	30.54	7.18	41.85	32.10	54.00	-21.90	Horizontal
5460.00	35.22	30.54	7.18	41.85	31.09	54.00	-22.91	Vertical

Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	43.26	30.82	7.11	41.89	39.30	74.00	-34.70	Horizontal
5350.00	41.75	30.82	7.11	41.89	37.79	74.00	-36.21	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.65	30.82	7.11	41.89	28.69	54.00	-25.31	Horizontal
5350.00	32.19	30.82	7.11	41.89	28.23	54.00	-25.77	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.52	30.54	7.18	41.85	38.39	74.00	-35.61	Horizontal
5460.00	43.17	30.54	7.18	41.85	39.04	74.00	-34.96	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.56	30.54	7.18	41.85	28.43	54.00	-25.57	Horizontal
5460.00	31.79	30.54	7.18	41.85	27.66	54.00	-26.34	Vertical

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	43.26	30.82	7.11	41.89	39.30	74.00	-34.70	Horizontal
5350.00	42.52	30.82	7.11	41.89	38.56	74.00	-35.44	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.65	30.82	7.11	41.89	28.69	54.00	-25.31	Horizontal
5350.00	32.19	30.82	7.11	41.89	28.23	54.00	-25.77	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	43.25	30.54	7.18	41.85	39.12	74.00	-34.88	Horizontal
5460.00	43.19	30.54	7.18	41.85	39.06	74.00	-34.94	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.52	30.54	7.18	41.85	28.39	54.00	-25.61	Horizontal
5460.00	31.49	30.54	7.18	41.85	27.36	54.00	-26.64	Vertical

Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	43.26	30.82	7.11	41.89	39.30	74.00	-34.70	Horizontal
5350.00	43.95	30.82	7.11	41.89	39.99	74.00	-34.01	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.25	30.82	7.11	41.89	28.29	54.00	-25.71	Horizontal
5350.00	31.46	30.82	7.11	41.89	27.50	54.00	-26.50	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	43.26	30.54	7.18	41.85	39.13	74.00	-34.87	Horizontal
5460.00	44.79	30.54	7.18	41.85	40.66	74.00	-33.34	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.17	30.54	7.18	41.85	28.04	54.00	-25.96	Horizontal
5460.00	33.45	30.54	7.18	41.85	29.32	54.00	-24.68	Vertical

802.11ac-HT80

Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.26	30.82	7.11	41.89	38.30	74.00	-35.70	Horizontal
5350.00	41.76	30.82	7.11	41.89	37.80	74.00	-36.20	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.24	30.82	7.11	41.89	28.28	54.00	-25.72	Horizontal
5350.00	30.19	30.82	7.11	41.89	26.23	54.00	-27.77	Vertical
Test channel		Middle			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	43.15	34.90	30.54	7.18	41.85	74.00	-32.15	Horizontal
5460.00	42.20	34.90	30.54	7.18	41.85	74.00	-32.15	Vertical
Test channel		Middle			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.49	34.90	30.54	7.18	41.85	54.00	-12.15	Horizontal
5460.00	33.16	34.90	30.54	7.18	41.85	54.00	-12.15	Vertical

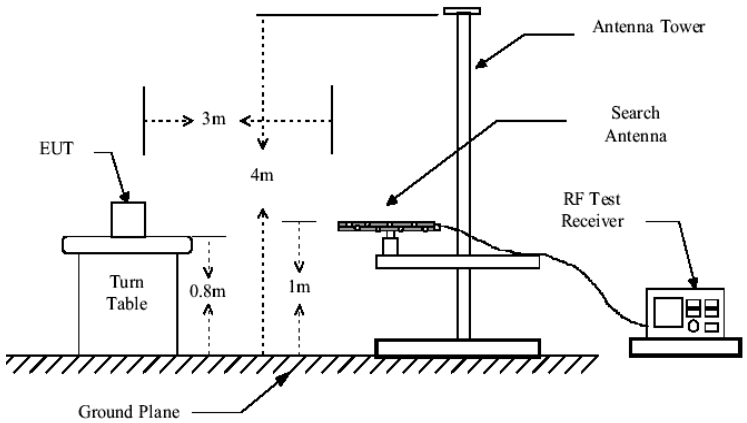
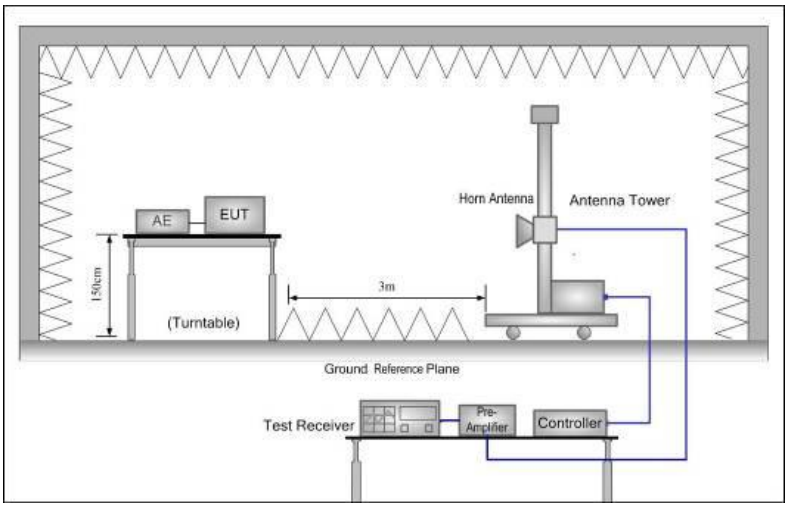
Remark:

1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2.The emission levels of other frequencies are very lower than the limit and not show in test report.

6.7.2 Unwanted Emissions out of the Restricted Bands

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10:2013</td></tr>
<tr><td>TestFrequencyRange:</td><td colspan="5">30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td colspan="5">Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td></td><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td></td><td colspan="2">30MHz-88MHz</td><td colspan="2">40.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">88MHz-216MHz</td><td colspan="2">43.5</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">216MHz-960MHz</td><td colspan="2">46.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">960MHz-1GHz</td><td colspan="2">54.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">Frequency</td><td colspan="2">Limit (dBm/MHz)</td><td>Remark</td></tr>
<tr><td></td><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">68.20</td><td>Peak Value</td></tr>
<tr><td></td><td colspan="2">54.00</td><td>Average Value</td></tr>
<tr><td></td><td colspan="5">Remark:
1. Above 1GHz limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
</table>

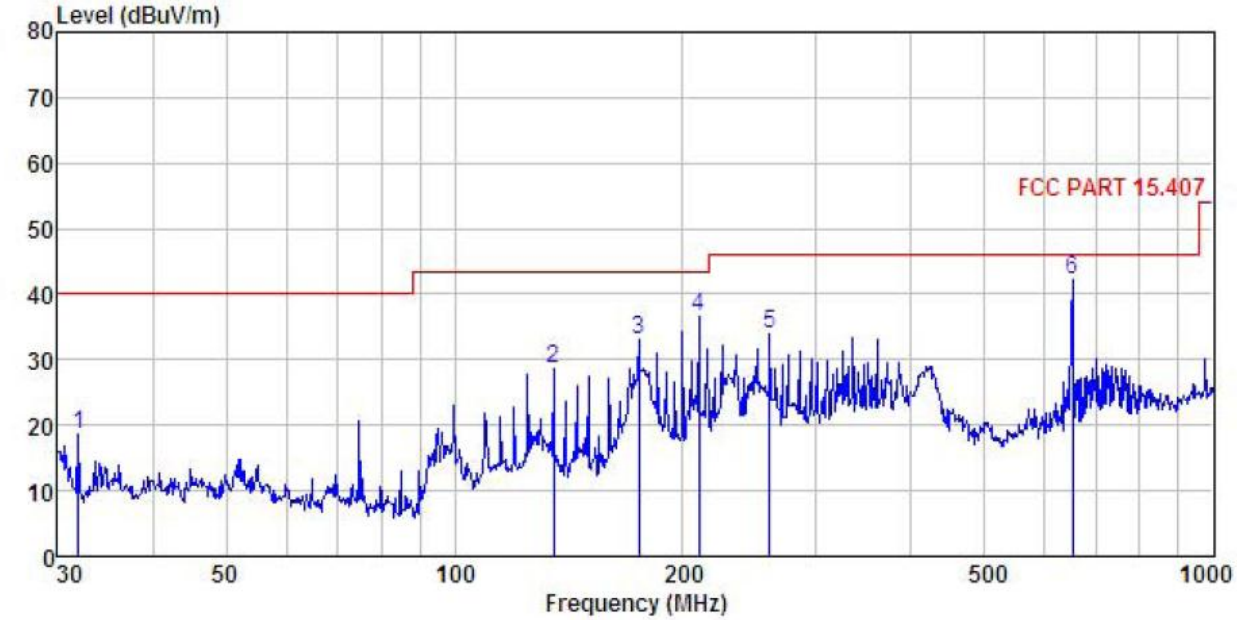
Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Adapter (1)

Below 1GHz

LigoDLB 5ac:

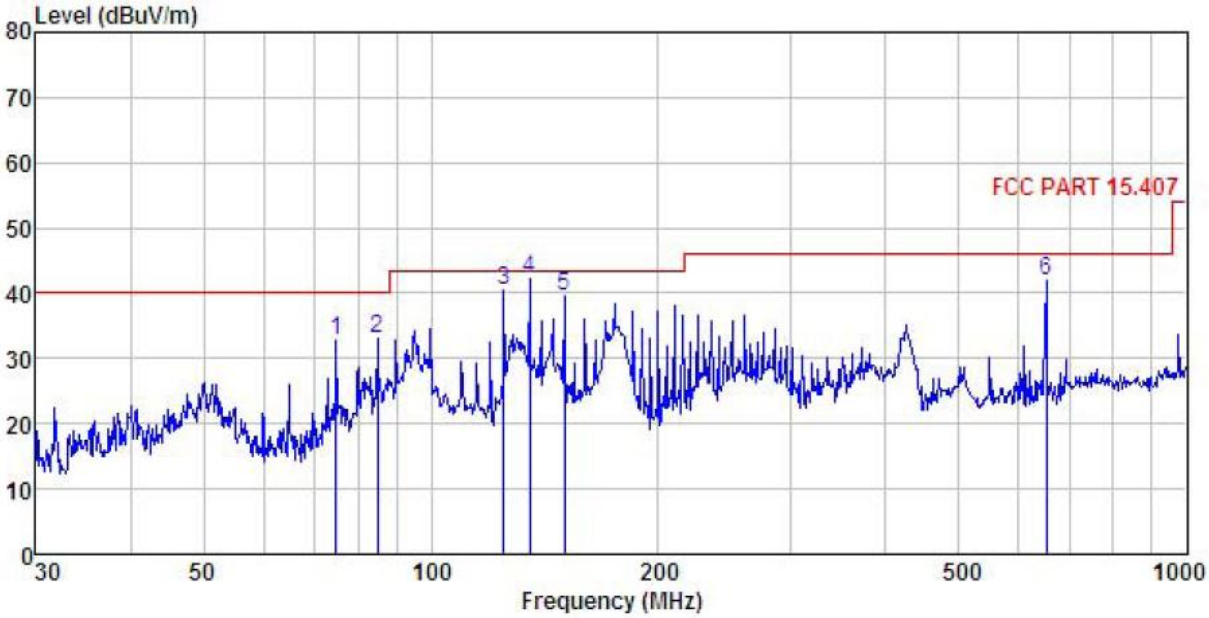
Horizontal:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) HORIZONTAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: YT
Remark : G0720-240-050

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	31.955	36.24	11.43	0.85	29.97	18.55	40.00	-21.45	QP
2	135.032	47.11	8.48	2.34	29.30	28.63	43.50	-14.87	QP
3	175.037	49.97	9.30	2.69	29.01	32.95	43.50	-10.55	QP
4	210.048	51.33	11.30	2.86	28.77	36.72	43.50	-6.78	QP
5	260.144	47.37	12.37	2.84	28.52	34.06	46.00	-11.94	QP
6	651.942	48.74	18.50	3.87	28.77	42.34	46.00	-3.66	QP

Vertical:

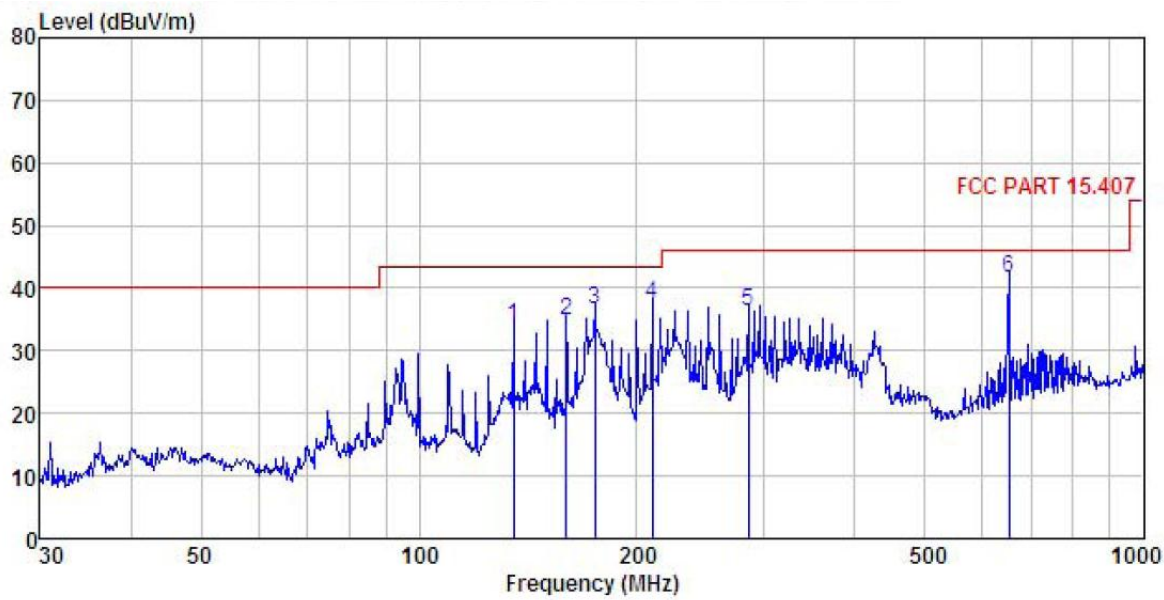


Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) VERTICAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
Remark : G0720-240-050

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	74.919	51.76	9.18	1.63	29.68	32.89	40.00	-7.11	QP
2	84.999	51.06	9.76	1.83	29.60	33.05	40.00	-6.95	QP
3	125.007	57.99	9.62	2.22	29.36	40.47	43.50	-3.03	QP
4	135.032	60.76	8.48	2.34	29.30	42.28	43.50	-1.22	QP
5	150.011	57.82	8.50	2.52	29.22	39.62	43.50	-3.88	QP
6	651.942	48.34	18.50	3.87	28.77	41.94	46.00	-4.06	QP

LigoDLB 5-90ac:

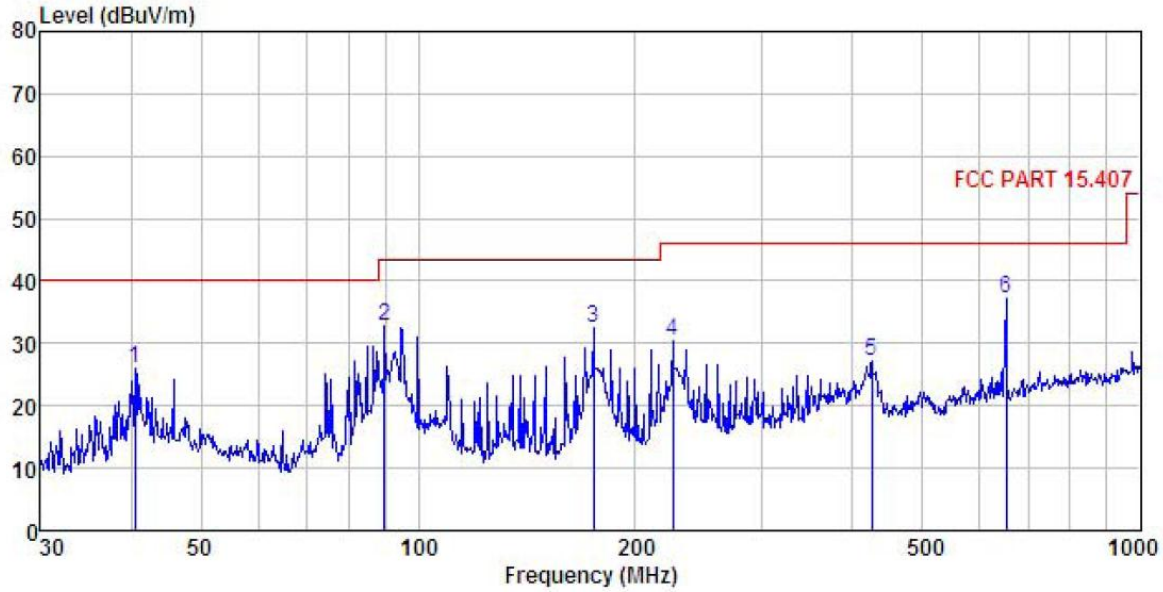
Horizontal:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) HORIZONTAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5-90ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: YT
Remark : G0720-240-050

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	135.032	52.57	8.48	2.34	29.30	34.09	43.50	-9.41	QP
2	159.784	52.66	8.60	2.59	29.13	34.72	43.50	-8.78	QP
3	175.037	53.50	9.30	2.69	29.01	36.48	43.50	-7.02	QP
4	210.048	52.13	11.30	2.86	28.77	37.52	43.50	-5.98	QP
5	284.977	48.87	12.91	2.90	28.48	36.20	46.00	-9.80	QP
6	651.942	48.10	18.50	3.87	28.77	41.70	46.00	-4.30	QP

Vertical:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) VERTICAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5-90ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: YT
Remark : G0720-240-050

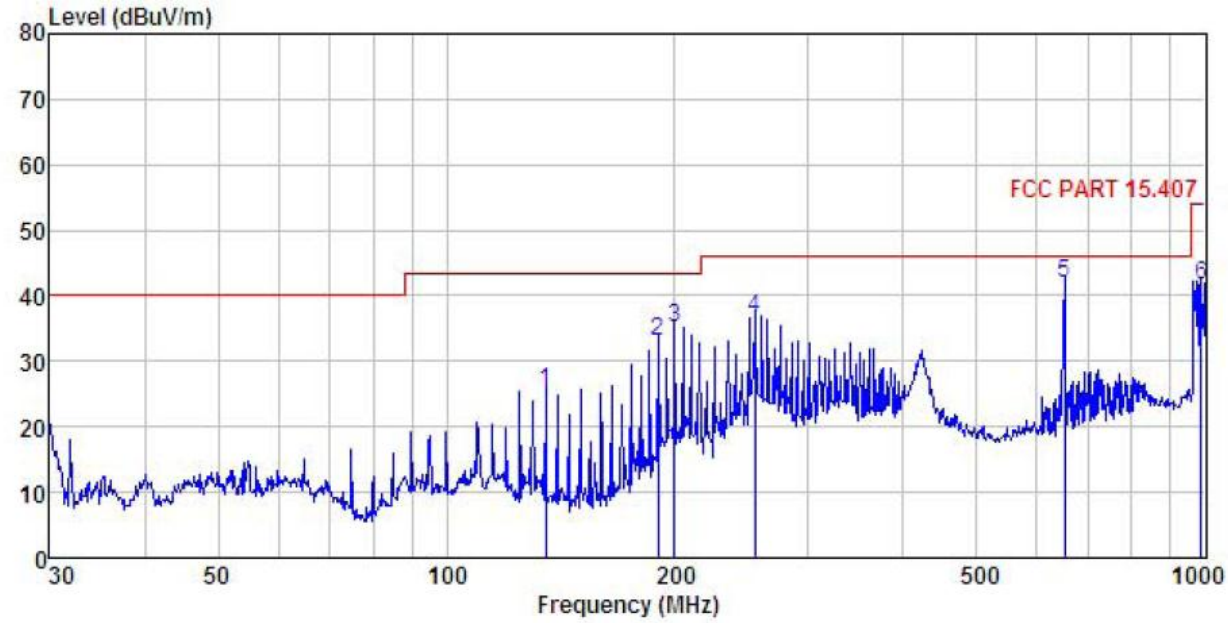
	Freq	ReadAnterna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.559	41.30	13.40	1.22	29.90	26.02	40.00	-13.98	QP
2	89.905	49.56	10.60	2.04	29.57	32.63	43.50	-10.87	QP
3	175.037	49.36	9.30	2.69	29.01	32.34	43.50	-11.16	QP
4	225.308	44.82	11.30	2.84	28.68	30.28	46.00	-15.72	QP
5	425.028	37.38	15.60	3.14	28.83	27.29	46.00	-18.71	QP
6	651.942	43.60	18.50	3.87	28.77	37.20	46.00	-8.80	QP

Adapter (2)

Below 1GHz

LigoDLB 5ac:

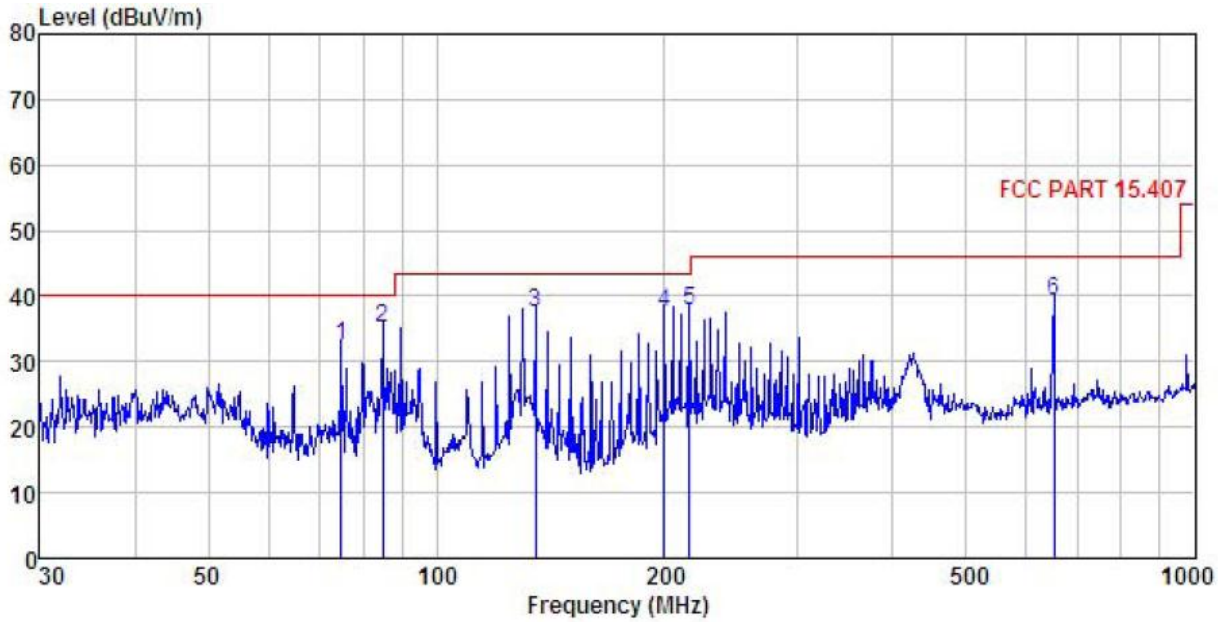
Horizontal:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) HORIZONTAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	135.032	43.83	8.48	2.34	29.30	25.35	43.50	-18.15	QP
2	189.739	48.66	10.40	2.79	28.90	32.95	43.50	-10.55	QP
3	199.986	49.83	11.30	2.87	28.83	35.17	43.50	-8.33	QP
4	254.728	50.15	12.27	2.82	28.53	36.71	46.00	-9.29	QP
5	651.942	48.18	18.50	3.87	28.77	41.78	46.00	-4.22	QP
6	986.072	43.04	21.62	4.40	27.51	41.55	54.00	-12.45	QP

Vertical:

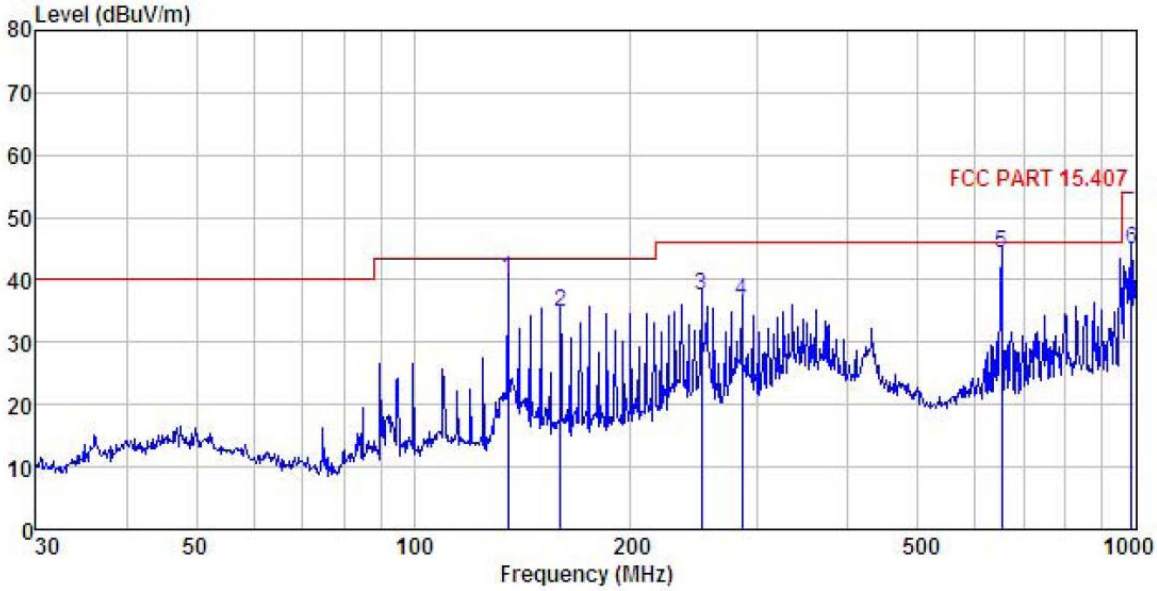


Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) VERTICAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	74.919	51.20	9.18	1.63	29.68	32.33	40.00	-7.67	QP
2	84.999	53.25	9.76	1.83	29.60	35.24	40.00	-4.76	QP
3	135.032	55.90	8.48	2.34	29.30	37.42	43.50	-6.08	QP
4	199.986	52.23	11.30	2.87	28.83	37.57	43.50	-5.93	QP
5	215.268	52.33	11.30	2.85	28.73	37.75	43.50	-5.75	QP
6	651.942	45.75	18.50	3.87	28.77	39.35	46.00	-6.65	QP

LigoDLB 5-90ac:

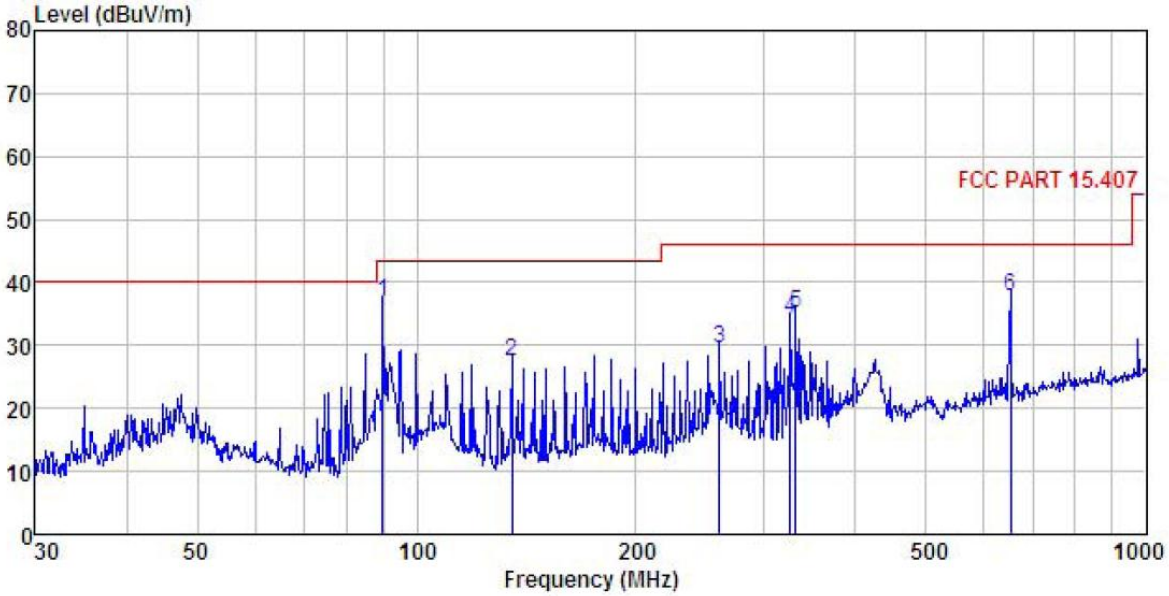
Horizontal:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) HORIZONTAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5-90ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	135.032	58.61	8.48	2.34	29.30	40.13	43.50	-3.37	QP
2	159.784	52.77	8.60	2.59	29.13	34.83	43.50	-8.67	QP
3	250.301	51.17	12.20	2.81	28.54	37.64	46.00	-8.36	QP
4	284.977	49.23	12.91	2.90	28.48	36.56	46.00	-9.44	QP
5	651.942	50.66	18.50	3.87	28.77	44.26	46.00	-1.74	QP
6	986.072	46.32	21.62	4.40	27.51	44.83	54.00	-9.17	QP

Vertical:



Site : 3m chamber
Condition : FCC PART 15.407 3m VULB9163(30M2G) VERTICAL
EUT : Broadband Digital Transmission System
Model : LigoDLB 5-90ac
Test mode : 5GWIFI mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
Remark : GRT-POE20-240050A

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	89.905	53.86	10.60	2.04	29.57	36.93	43.50	-6.57	QP
2	135.032	46.06	8.48	2.34	29.30	27.58	43.50	-15.92	QP
3	260.144	42.69	12.37	2.84	28.52	29.38	46.00	-16.62	QP
4	325.596	46.14	13.60	3.02	28.51	34.25	46.00	-11.75	QP
5	331.355	46.65	13.90	3.04	28.52	35.07	46.00	-10.93	QP
6	651.942	44.22	18.50	3.87	28.77	37.82	46.00	-8.18	QP

Above 1GHz:

LigoDLB 5ac:
Band 1:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	51.25	36.95	9.82	41.97	56.05	68.20	-12.15	Vertical
10360.00	51.30	36.95	9.82	41.97	56.10	68.20	-12.10	Horizontal
802.11a mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	41.20	36.95	9.82	41.97	46.00	54.00	-8.00	Vertical
10360.00	41.23	36.95	9.82	41.97	46.03	54.00	-7.97	Horizontal
802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	51.01	36.96	9.85	41.95	55.87	68.20	-12.33	Vertical
10400.00	50.89	36.96	9.85	41.95	55.75	68.20	-12.45	Horizontal
802.11a mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	40.31	36.96	9.85	41.95	45.17	54.00	-8.83	Vertical
10400.00	41.02	36.96	9.85	41.95	45.88	54.00	-8.12	Horizontal
802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	51.02	37.00	9.96	41.88	56.10	68.20	-12.10	Vertical
10480.00	51.36	37.00	9.96	41.88	56.44	68.20	-11.76	Horizontal
802.11a mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	40.12	37.00	9.96	41.88	45.20	54.00	-8.80	Vertical
10480.00	40.36	37.00	9.96	41.88	45.44	54.00	-8.56	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	51.41	36.95	9.82	41.97	56.21	68.20	-11.99	Vertical
10360.00	51.32	36.95	9.82	41.97	56.12	68.20	-12.08	Horizontal
802.11n20 mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	40.12	36.95	9.82	41.97	44.92	54.00	-9.08	Vertical
10360.00	41.02	36.95	9.82	41.97	45.82	54.00	-8.18	Horizontal
802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	51.36	36.96	9.85	41.95	56.22	68.20	-11.98	Vertical
10400.00	51.22	36.96	9.85	41.95	56.08	68.20	-12.12	Horizontal
802.11n20 mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	40.32	36.96	9.85	41.95	45.18	54.00	-8.82	Vertical
10400.00	40.41	36.96	9.85	41.95	45.27	54.00	-8.73	Horizontal
802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	51.32	37.00	9.96	41.88	56.40	68.20	-11.80	Vertical
10480.00	51.32	37.00	9.96	41.88	56.40	68.20	-11.80	Horizontal
802.11n20 mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	40.26	37.00	9.96	41.88	45.34	54.00	-8.66	Vertical
10480.00	41.20	37.00	9.96	41.88	46.28	54.00	-7.72	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	50.96	36.96	9.85	41.95	55.82	68.20	-12.38	Vertical
10380.00	51.10	36.96	9.85	41.95	55.96	68.20	-12.24	Horizontal
802.11n40 mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	40.13	36.96	9.85	41.95	44.99	54.00	-9.01	Vertical
10380.00	40.32	36.96	9.85	41.95	45.18	54.00	-8.82	Horizontal
802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	51.32	36.98	9.92	41.90	56.32	68.20	-11.88	Vertical
10460.00	51.02	36.98	9.92	41.90	56.02	68.20	-12.18	Horizontal
802.11n40 mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	40.63	36.98	9.92	41.90	45.63	54.00	-8.37	Vertical
10460.00	40.15	36.98	9.92	41.90	45.15	54.00	-8.85	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11ac80 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	50.14	36.97	9.89	41.93	55.07	68.20	-13.13	Vertical
10420.00	50.67	36.97	9.89	41.93	55.60	68.20	-12.60	Horizontal
802.11ac80 mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	40.14	36.97	9.89	41.93	45.07	54.00	-8.93	Vertical
10420.00	40.63	36.97	9.89	41.93	45.56	54.00	-8.44	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	50.21	37.49	10.81	42.29	56.22	74.00	-17.78	Vertical
11490.00	51.23	37.49	10.81	42.29	57.24	74.00	-16.76	Horizontal
802.11a mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	38.36	37.49	10.81	42.29	44.37	54.00	-9.63	Vertical
11490.00	38.41	37.49	10.81	42.29	44.42	54.00	-9.58	Horizontal
802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	51.23	37.55	10.78	42.27	57.29	74.00	-16.71	Vertical
11570.00	51.84	37.55	10.78	42.27	57.90	74.00	-16.10	Horizontal
802.11a mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	39.32	37.55	10.78	42.27	45.38	54.00	-8.62	Vertical
11570.00	38.74	37.55	10.78	42.27	44.80	54.00	-9.20	Horizontal
802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	51.52	37.59	10.76	42.26	57.61	74.00	-16.39	Vertical
11650.00	51.69	37.59	10.76	42.26	57.78	74.00	-16.22	Horizontal
802.11a mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	38.46	37.59	10.76	42.26	44.55	54.00	-9.45	Vertical
11650.00	38.69	37.59	10.76	42.26	44.78	54.00	-9.22	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	51.32	37.49	10.81	42.29	57.33	74.00	-16.67	Vertical
11490.00	51.42	37.49	10.81	42.29	57.43	74.00	-16.57	Horizontal
802.11n20 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	39.74	37.49	10.81	42.29	45.75	54.00	-8.25	Vertical
11490.00	38.69	37.49	10.81	42.29	44.70	54.00	-9.30	Horizontal
802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	51.42	37.55	10.78	42.27	57.48	74.00	-16.52	Vertical
11570.00	51.63	37.55	10.78	42.27	57.69	74.00	-16.31	Horizontal
802.11n20 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	39.68	37.55	10.78	42.27	45.74	54.00	-8.26	Vertical
11570.00	39.41	37.55	10.78	42.27	45.47	54.00	-8.53	Horizontal
802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	51.47	37.59	10.76	42.26	57.56	74.00	-16.44	Vertical
11650.00	51.85	37.59	10.76	42.26	57.94	74.00	-16.06	Horizontal
802.11n20 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	38.75	37.59	10.76	42.26	44.84	54.00	-9.16	Vertical
11650.00	38.95	37.59	10.76	42.26	45.04	54.00	-8.96	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	51.55	37.51	10.81	42.29	57.58	74.00	-16.42	Vertical
11510.00	51.74	37.51	10.81	42.29	57.77	74.00	-16.23	Horizontal
802.11n40 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	39.87	37.51	10.81	42.29	45.90	54.00	-8.10	Vertical
11510.00	39.32	37.51	10.81	42.29	45.35	54.00	-8.65	Horizontal
802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	51.25	37.56	10.78	42.27	57.32	74.00	-16.68	Vertical
11590.00	51.36	37.56	10.78	42.27	57.43	74.00	-16.57	Horizontal
802.11n40 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	39.65	37.56	10.78	42.27	45.72	54.00	-8.28	Vertical
11590.00	39.41	37.56	10.78	42.27	45.48	54.00	-8.52	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11ac80 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	51.42	37.54	10.80	42.28	57.48	74.00	-16.52	Vertical
11550.00	51.82	37.54	10.80	42.28	57.88	74.00	-16.12	Horizontal
802.11ac80 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	38.22	37.54	10.80	42.28	44.28	54.00	-9.72	Vertical
11550.00	39.65	37.54	10.80	42.28	45.71	54.00	-8.29	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

LigoDLB 5-90ac:
Band 1:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	50.62	36.95	9.82	41.97	55.42	68.20	-12.78	Vertical
10360.00	49.32	36.95	9.82	41.97	54.12	68.20	-14.08	Horizontal
802.11a mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	41.23	36.95	9.82	41.97	46.03	54.00	-7.97	Vertical
10360.00	39.62	36.95	9.82	41.97	44.42	54.00	-9.58	Horizontal
802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	48.25	36.96	9.85	41.95	53.11	68.20	-15.09	Vertical
10400.00	50.19	36.96	9.85	41.95	55.05	68.20	-13.15	Horizontal
802.11a mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	40.19	36.96	9.85	41.95	45.05	54.00	-8.95	Vertical
10400.00	39.65	36.96	9.85	41.95	44.51	54.00	-9.49	Horizontal
802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	49.58	37.00	9.96	41.88	54.66	68.20	-13.54	Vertical
10480.00	49.13	37.00	9.96	41.88	54.21	68.20	-13.99	Horizontal
802.11a mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	40.13	37.00	9.96	41.88	45.21	54.00	-8.79	Vertical
10480.00	41.67	37.00	9.96	41.88	46.75	54.00	-7.25	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	50.63	36.95	9.82	41.97	55.43	68.20	-12.77	Vertical
10360.00	49.21	36.95	9.82	41.97	54.01	68.20	-14.19	Horizontal
802.11n20 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	39.32	36.95	9.82	41.97	44.12	54.00	-9.88	Vertical
10360.00	40.19	36.95	9.82	41.97	44.99	54.00	-9.01	Horizontal
802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	49.82	36.96	9.85	41.95	54.68	68.20	-13.52	Vertical
10400.00	48.15	36.96	9.85	41.95	53.01	68.20	-15.19	Horizontal
802.11n20 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	40.23	36.96	9.85	41.95	45.09	54.00	-8.91	Vertical
10400.00	40.19	36.96	9.85	41.95	45.05	54.00	-8.95	Horizontal
802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	49.62	37.00	9.96	41.88	54.70	68.20	-13.50	Vertical
10480.00	48.52	37.00	9.96	41.88	53.60	68.20	-14.60	Horizontal
802.11n20 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	40.16	37.00	9.96	41.88	45.24	54.00	-8.76	Vertical
10480.00	39.62	37.00	9.96	41.88	44.70	54.00	-9.30	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	48.26	36.96	9.85	41.95	53.12	68.20	-15.08	Vertical
10380.00	49.32	36.96	9.85	41.95	54.18	68.20	-14.02	Horizontal
802.11n40 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	40.21	36.96	9.85	41.95	45.07	54.00	-8.93	Vertical
10380.00	39.62	36.96	9.85	41.95	44.48	54.00	-9.52	Horizontal
802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	49.31	36.98	9.92	41.90	54.31	68.20	-13.89	Vertical
10460.00	48.52	36.98	9.92	41.90	53.52	68.20	-14.68	Horizontal
802.11n40 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	39.62	36.98	9.92	41.90	44.62	54.00	-9.38	Vertical
10460.00	40.13	36.98	9.92	41.90	45.13	54.00	-8.87	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11ac80 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	49.62	36.97	9.89	41.93	54.55	68.20	-13.65	Vertical
10420.00	50.47	36.97	9.89	41.93	55.40	68.20	-12.80	Horizontal
802.11ac80 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	41.62	36.97	9.89	41.93	46.55	54.00	-7.45	Vertical
10420.00	39.46	36.97	9.89	41.93	44.39	54.00	-9.61	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	49.32	37.49	10.81	42.29	55.33	74.00	-18.67	Vertical
11490.00	48.25	37.49	10.81	42.29	54.26	74.00	-19.74	Horizontal
802.11a mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	39.32	37.49	10.81	42.29	45.33	54.00	-8.67	Vertical
11490.00	39.64	37.49	10.81	42.29	45.65	54.00	-8.35	Horizontal
802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	49.25	37.55	10.78	42.27	55.31	74.00	-18.69	Vertical
11570.00	48.15	37.55	10.78	42.27	54.21	74.00	-19.79	Horizontal
802.11a mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	40.31	37.55	10.78	42.27	46.37	54.00	-7.63	Vertical
11570.00	39.67	37.55	10.78	42.27	45.73	54.00	-8.27	Horizontal
802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	48.26	37.59	10.76	42.26	54.35	74.00	-19.65	Vertical
11650.00	47.16	37.59	10.76	42.26	53.25	74.00	-20.75	Horizontal
802.11a mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	36.54	37.59	10.76	42.26	42.63	54.00	-11.37	Vertical
11650.00	38.45	37.59	10.76	42.26	44.54	54.00	-9.46	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	48.26	37.49	10.81	42.29	54.27	74.00	-19.73	Vertical
11490.00	47.12	37.49	10.81	42.29	53.13	74.00	-20.87	Horizontal
802.11n20 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	39.64	37.49	10.81	42.29	45.65	54.00	-8.35	Vertical
11490.00	37.58	37.49	10.81	42.29	43.59	54.00	-10.41	Horizontal
802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	49.62	37.55	10.78	42.27	55.68	74.00	-18.32	Vertical
11570.00	48.17	37.55	10.78	42.27	54.23	74.00	-19.77	Horizontal
802.11n20 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	39.32	37.55	10.78	42.27	45.38	54.00	-8.62	Vertical
11570.00	38.59	37.55	10.78	42.27	44.65	54.00	-9.35	Horizontal
802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	49.62	37.59	10.76	42.26	55.71	74.00	-18.29	Vertical
11650.00	48.75	37.59	10.76	42.26	54.84	74.00	-19.16	Horizontal
802.11n20 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	37.24	37.59	10.76	42.26	43.33	54.00	-10.67	Vertical
11650.00	36.26	37.59	10.76	42.26	42.35	54.00	-11.65	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

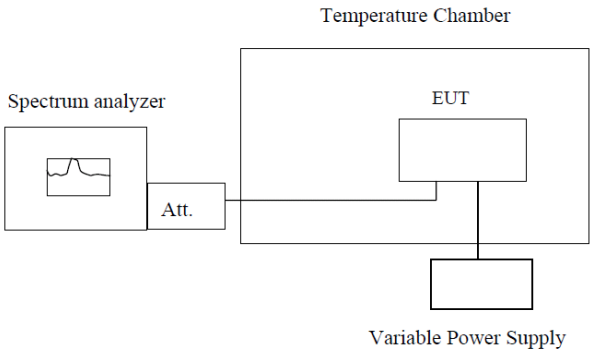
802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	48.52	37.51	10.81	42.29	54.55	74.00	-19.45	Vertical
11510.00	47.61	37.51	10.81	42.29	53.64	74.00	-20.36	Horizontal
802.11n40 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	40.23	37.51	10.81	42.29	46.26	54.00	-7.74	Vertical
11510.00	39.62	37.51	10.81	42.29	45.65	54.00	-8.35	Horizontal
802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	48.24	37.56	10.78	42.27	54.31	74.00	-19.69	Vertical
11590.00	47.19	37.56	10.78	42.27	53.26	74.00	-20.74	Horizontal
802.11n40 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	38.56	37.56	10.78	42.27	44.63	54.00	-9.37	Vertical
11590.00	36.15	37.56	10.78	42.27	42.22	54.00	-11.78	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11ac80 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	48.21	37.54	10.80	42.28	54.27	74.00	-19.73	Vertical
11550.00	47.34	37.54	10.80	42.28	53.40	74.00	-20.60	Horizontal
802.11ac80 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	39.32	37.54	10.80	42.28	45.38	54.00	-8.62	Vertical
11550.00	38.61	37.54	10.80	42.28	44.67	54.00	-9.33	Horizontal

Remark:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

6.8 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers of U-NII devices are responsible for ensuringfrequency stability such that anemission is maintained within the band of operation under all conditions of normal operation asspecified in the user's manual.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. The EUT is installed in an environment test chamber with external power source. 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage ofEUT. 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement. 4. When temperature is stabled, measure the frequency stability. 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Refer to FCC ID: V2V-FWBD3200