

FCC PART 15E TEST REPORT FOR CERTIFICATION
On Behalf of

Funai Electric R & D (Shenzhen) Co., Ltd.

WiFi module

Model No.: U9W34

FCC ID: 2AU3BU9W34

Prepared for : Funai Electric R & D (Shenzhen) Co., Ltd.
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Appendix A. Photograph of Test

Appendix B. Photo of the EUT

TEST REPORT

Applicant : Funai Electric R & D (Shenzhen) Co., Ltd.
 Manufacturer : Funai Electric R & D (Shenzhen) Co., Ltd.
 Product : WiFi module
 FCC ID : 2AU3BU9W34
 (A) Model No. : U9W34
 (B) Serial No. : N/A
 (C) Test Voltage : DC 5V From Notebook Input AC 120V/60Hz

Tested for comply with:
 FCC CFR47 Part 15 Subpart E

Test procedure used:
 ANSI C63.10: 2013
 KDB 789033 D02 v02r01

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart E requirements. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

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

This report applies to single evaluation of one sample of above mentioned product. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

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

Date of Test : Oct.17~28,2020 Report of date: Nov.24,2020

Prepared by : Brave Zhang Reviewed by : Sunny Lu
 Brave Zhang / Assistant Audix Technology (Shenzhen) Co., Ltd. Sunny Lu / Deputy Manager

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

Approved & Authorized Signer :

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

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

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission	FCC Part 15: 15.207 FCC Part 15: 15.407(b)(6)	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.205 FCC Part 15.407(b)	PASS
Band Edge Compliance	FCC Part 15: 15.407(b) FCC Part 15.205	PASS
6dB&26dB&99% Bandwidth Test	FCC Part 15: 15.407(e)	PASS
Output Power Test	FCC Part 15: 15.407(a)(5)	PASS
Equivalent Isotropic Radiated Power Test	FCC Part 15: 15.407(h)(1)	PASS
Power Spectral Density Test	FCC Part 15: 15.407(a)	PASS
Frequency Stability	FCC Part 15: 15.407(a)	PASS
Antenna requirement	FCC Part 15: 15.407(g)	PASS

2. GENERAL INFORMATION

2.1. Description of Equipment Under Test

Applicant	Funai Electric R & D (Shenzhen) Co., Ltd.
Applicant Address	B303 Technology Building II, 1057 Nanhai Road, Nanshan District, Shenzhen, China 518067
Manufacturer	Funai Electric R & D (Shenzhen) Co., Ltd.
Manufacturer Address	B303 Technology Building II, 1057 Nanhai Road, Nanshan District, Shenzhen, China 518067
Factory	Funai (Thailand) Company Limited
Factory Address	835 Moo18, Pakchong-Lumsompung Road, Tambon, Chantuek, Amphur Pakchong, Nakhon Ratchasima 30130, Thailand
Product	WiFi module
Model No.	U9W34
FCC ID	2AU3BU9W34
Sample Type	Prototype production
Date of Receipt	Sep.23,2020
Date of Test	Oct.17~28,2020
Remark: This report only for WIFI 5GHz.	

2.2.Feature of Equipment Under Test

Product Feature & Specification		
Product	WiFi module	
Model No.	U9W34	
Radio	IEEE802.11 a/b/g/n/ac	
Power Source	<input type="checkbox"/> Commercial Power	AC 100 ~ 240V
	<input checked="" type="checkbox"/> External Power Source	DC 5V
	<input type="checkbox"/> Lithium battery	DC V, mAh
	<input type="checkbox"/> UM battery	DC V
2.4GHz Wi-Fi		
Support Modes	802.11b/g/n20/n40	
Frequency Range	2412-2462MHz	
Type of Modulation	802.11b(DSSS): CCK, QPSK, BPSK; 802.11g/n(OFDM): 64QAM,16QAM, QPSK, BPSK	
Data Rate	802.11b: 1/2/5.5/11 Mbps; 802.11g: 6/9/12/18/24/36/48/54 Mbps; 802.11n: up to 150Mbps	
Channel Separation	5MHz	
5GHz Wi-Fi		
Support Modes	802.11a/n20/n40/ac20/ac40/ac80	
Frequency Range	5180-5240MHz, 5745-5825MHz	
Type of Modulation	802.11a/n (OFDM): QPSK, BPSK, 16QAM, 64QAM 802.11ac (OFDM): QPSK, BPSK, 16QAM, 64QAM,256QAM	
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps; 802.11n: up to 150Mbps; 802.11ac: up to 433Mbps	
Channel Separation	5MHz	

Antenna System	
Type of Antenna	monopole Antenna
Antenna Peak Gain	DTS Band (2400-2483.5MHz) Peak Gain: ANT A: 2.55dBi; ANT B: 0.94dBi. U-NII-1 Band(5150-5250MHz) Peak Gain: ANT A: 1.90dBi; ANT B: 0.8dBi. U-NII-3 Band (5725-5850MHz) Peak Gain: ANT A: -0.04dBi; ANT B: -3.17dBi.

2.3. Test Information

A special test software(MP Tool) was used to control EUT work in Continuous TX mode, and select test channel, wireless mode, power setting and data rate.

Tested mode, channel, power setting and data rate information				
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)	Power setting
IEEE 802.11a	6	Low :CH36	5180	47
	6	Middle: CH40	5200	47
	6	High: CH48	5240	47
	6	Low :CH149	5745	47
	6	Middle: CH157	5785	47
	6	High: CH165	5825	47
IEEE 802.11nHT20	MCS0	Low :CH36	5180	46
	MCS0	Middle: CH40	5200	46
	MCS0	High: CH48	5240	46
	MCS0	Low :CH149	5745	48
	MCS0	Middle: CH157	5785	48
	MCS0	High: CH165	5825	48
IEEE 802.11nHT40	MCS0	Low :CH38	5190	48
	MCS0	High: CH46	5230	48
	MCS0	Low :CH151	5755	46
	MCS0	High: CH159	5795	46
IEEE 802.11acVHT20	MCS0	Low :CH36	5180	47
	MCS0	Middle: CH40	5200	47
	MCS0	High: CH48	5240	47
	MCS0	Low :CH149	5745	47
	MCS0	Middle: CH157	5785	47
	MCS0	High: CH165	5825	47
IEEE 802.11acVHT40	MCS0	Low :CH38	5190	49
	MCS0	High: CH46	5230	49
	MCS0	Low :CH151	5755	47
	MCS0	High: CH159	5795	47
IEEE 802.11acVHT80	MCS0	CH42	5210	48
	MCS0	CH155	5775	47

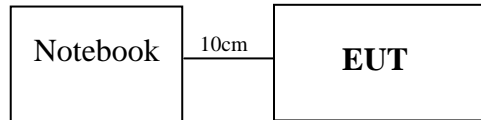
Note: 1. According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

Note: 2. This is SISO device for 5GHz band, Use ANTB which has the worst case emission for the radiated emission and band edge measurement, test compliance with KDB 662911 D01.

2.4. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number
1.	Notebook	N/A	acer	ZOW	NVX7C
USB Cable: Shielded, Detachable, 1.0m					

2.5. Block diagram of connection between the EUT and simulators



(EUT: WiFi module)

2.6. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
 : No. 6, Kefeng Road, Science & Technology Park,
 Nanshan District , Shenzhen, Guangdong, China

EMC Lab. : Accredited by Industry Canada
 : Registration Number: IC 5183A-1
 Valid Date: Mar.31, 2021

: Accredited by DAkkS, Germany
 : Registration No: D-PL-12151-01-00
 Valid Date: Dec.07, 2021

: Accredited by NVLAP, USA
 : NVLAP Code: 200372-0
 Valid Date: Mar.31, 2021

: Certificated by FCC USA.
 : Designation No.: CN5022
 Valid Date: Mar.31, 2021

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

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	2.6dB(150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	3.6dB(30~200MHz, Polarization: H)
	4.0dB(30~200MHz, Polarization: V)
	3.6dB(200M~1GHz, Polarization: H)
	3.8dB(200M~1GHz, Polarization: V)
Uncertainty for Radiation Emission test in 3m chamber	4.6dB(1~6GHz, Distance: 3m)
	4.6dB(6~25GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.7dB (30MHz~1000MHz)
	3.3dB (1GHz~26.5MHz)
Uncertainty for Conduction Spurious emission test	2.0dB
Uncertainty for Output power test	0.8dB
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	1.9%
Uncertainty for test site temperature and humidity	0.6°C
	3%

Note: EMI uncertainty is evaluated by CISPR16-4-2.

The value of measurement uncertainty of EMI is less than U_{CISPR} .

The value is not calculated in the test results.

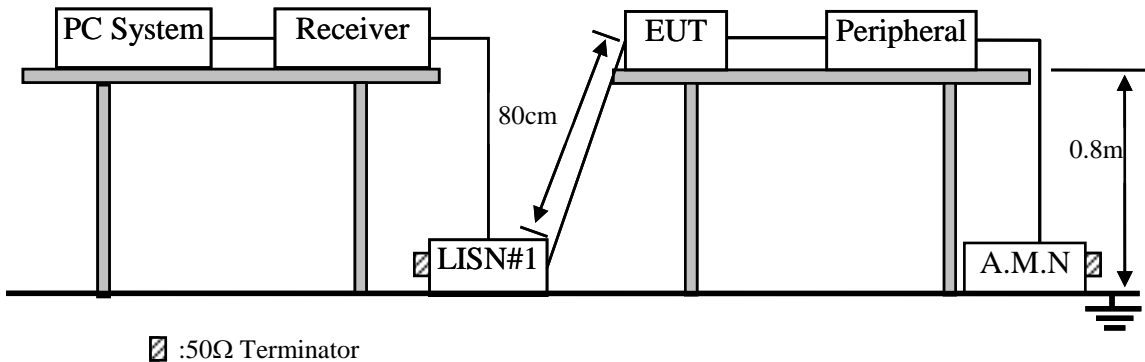
3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	May.17,18	3 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100842	Apr.12,20	1 Year
3.	L.I.S.N.#1	Rohde & Schwarz	ENV216	102160	Oct.11,20	1 Year
4.	A.M.N	Kyoritsu	KNW-403D	8-1750-2	Apr.12,20	1 Year
5.	Terminator	Hubersuhner	50Ω	No.1	Apr.12,20	1 Year
6.	Terminator	Hubersuhner	50Ω	No.2	Apr.12,20	1 Year
7.	RF Cable	EMCI	EMCCFD30 0-BM-NM-2 000	190422	Apr.12,20	1 Year
8.	Test Software	AUDIX	e3	6.100913a	N/A	N/A

Note: N/A means Not applicable.

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

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

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

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

3.4. Configuration of EUT on Test

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

3.4.1. WiFi module (EUT)

Model No. : U9W34

Serial No. : N/A

3.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT as shown as Section 3.2.
- 3.5.2. Turn on the power of EUT.
- 3.5.3. PC run test software to control EUT work in Tx mode.

3.6. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via AC unit connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.

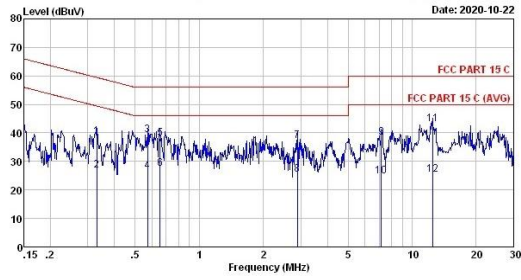
The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

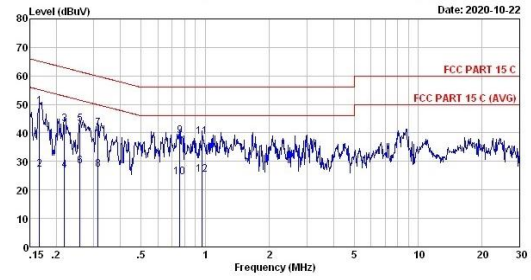
3.7. Power Line Conducted Emission Test Results

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

FCC ID: 2AU3BU9W34



Site no :1# Conduction Data No :1
 Dis./Lish :2020 ENV216 L LISN phase:
 Limit :FCC PART 15 C
 Env./Ins. :23.8°C/51% Engineer :Evan
 EUT :
 Power Rating :DC 5V From Notebook Input AC 120V/60Hz
 Test Mode :WIFI 5G TX



Site no :1# Conduction Data No :2
 Dis./Lish :2020 ENV216 N LISN phase:
 Limit :FCC PART 15 C
 Env./Ins. :23.8°C/51% Engineer :Evan
 EUT :
 Power Rating :DC 5V From Notebook Input AC 120V/60Hz
 Test Mode :WIFI 5G TX

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Emission				Remark
				Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	
1	0.330	9.60	0.05	29.10	38.75	59.44	20.69	QP
2	0.330	9.60	0.05	17.26	26.91	49.44	22.53	Average
3	0.573	9.60	0.05	29.56	39.21	56.00	16.79	QP
4	0.573	9.60	0.05	16.86	26.51	46.00	19.49	Average
5	0.654	9.60	0.05	28.55	38.20	56.00	17.80	QP
6	0.654	9.60	0.05	17.86	27.51	46.00	18.49	Average
7	2.884	9.60	0.08	27.42	37.10	56.00	18.90	QP
8	2.884	9.60	0.08	15.85	25.53	46.00	20.47	Average
9	7.175	9.70	0.11	28.42	38.23	60.00	21.77	QP
10	7.175	9.70	0.11	14.86	24.67	50.00	25.33	Average
11	12.449	9.70	0.14	33.20	43.04	60.00	16.96	QP
12	12.449	9.70	0.14	15.56	25.40	50.00	24.60	Average

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

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Emission				Remark
				Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	
1	0.167	9.60	0.04	39.53	49.17	65.12	15.95	QP
2	0.167	9.60	0.04	17.56	27.20	55.12	27.92	Average
3	0.219	9.60	0.04	33.58	43.22	62.88	19.66	QP
4	0.219	9.60	0.04	17.26	26.90	52.88	25.98	Average
5	0.258	9.60	0.05	33.54	43.19	61.51	18.32	QP
6	0.258	9.60	0.05	18.77	28.42	51.51	23.09	Average
7	0.313	9.60	0.05	31.97	41.62	59.88	18.26	QP
8	0.313	9.60	0.05	17.53	27.18	49.88	22.70	Average
9	0.759	9.60	0.05	29.32	38.97	56.00	17.03	QP
10	0.759	9.60	0.05	14.88	24.53	46.00	21.47	Average
11	0.968	9.60	0.06	29.10	38.76	56.00	17.24	QP
12	0.968	9.60	0.06	15.85	25.51	46.00	20.49	Average

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

4. RADIATED EMISSION TEST

4.1. Test Equipment

4.1.1. For frequency range 30 MHz ~1000MHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber(NSA)	AUDIX	N/A	N/A	May.03,20	1 Year
2.	3#Chamber(SE)	AUDIX	N/A	N/A	May.17,18	3 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.11,20	1 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESR7	101547	Apr.12,20	1 Year
5.	Amplifier	HP	8447D	2648A04738	Apr.11,20	1 Year
6.	Bi log Antenna	TESEQ	CBL6112D	25237	Nov.26,19	1 Year
7.	NSA Cable	HUBER+SUHNER	CFD400NL-LW	No.3	Oct.11,20	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.11,20	1 Year
9.	NSA Cable	HUBER+SUHNER	CFD400NL-LW	No.3	Oct.11,20	N/A

Note: N/A means Not applicable.

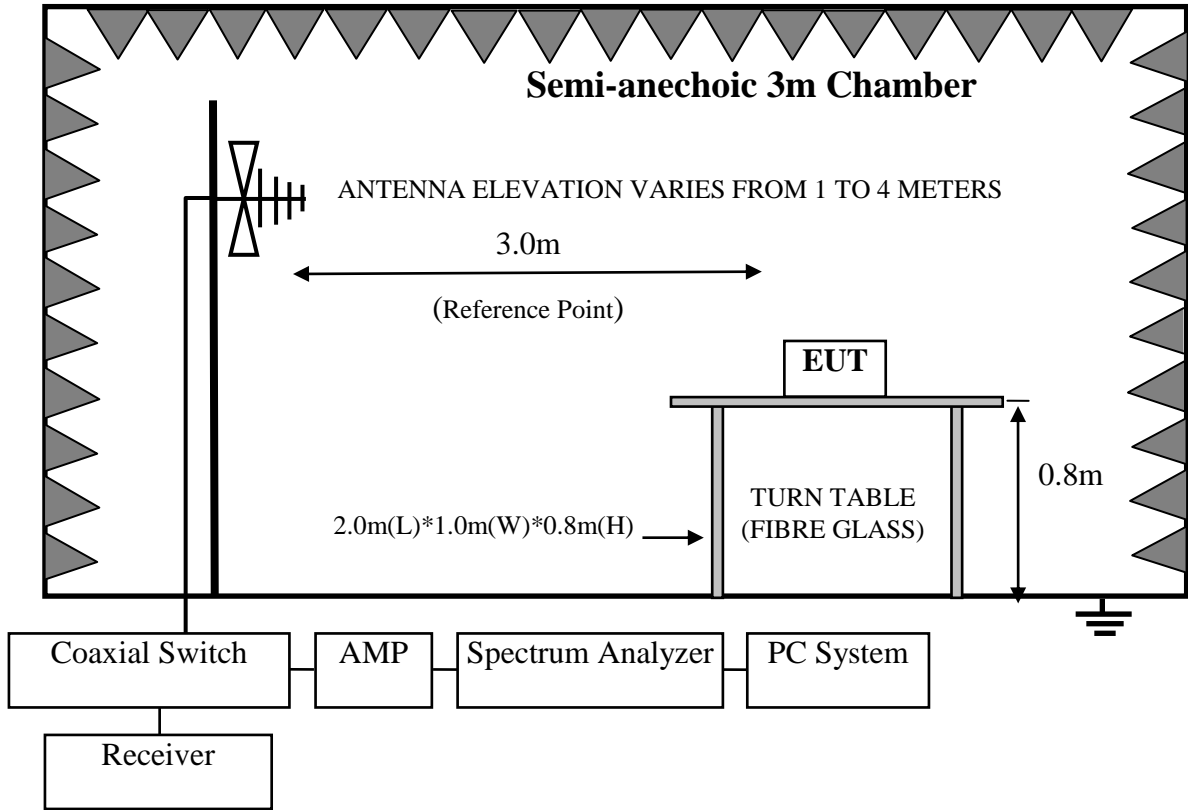
4.1.2. For frequency range 1GHz~40GHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber(Svswr)	AUDIX	N/A	N/A	Apr.15,20	1 Year
2.	3#Chamber(SE)	AUDIX	N/A	N/A	May.17,18	3 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.11,20	1 Year
4.	Horn Antenna	ETC	MCTD 1209	DRH15F03007	Jul.30,20	1 Year
5.	Horn Antenna	ETS	3116	00060089	Dec.02,19	1 Year
6.	Amplifier	Agilent	83017A	MY53270084	Oct.11,20	1 Year
7.	RF Cable	Hubersuhner	SUCOFLEX-106	505238/6	Apr.11,20	1 Year
8.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

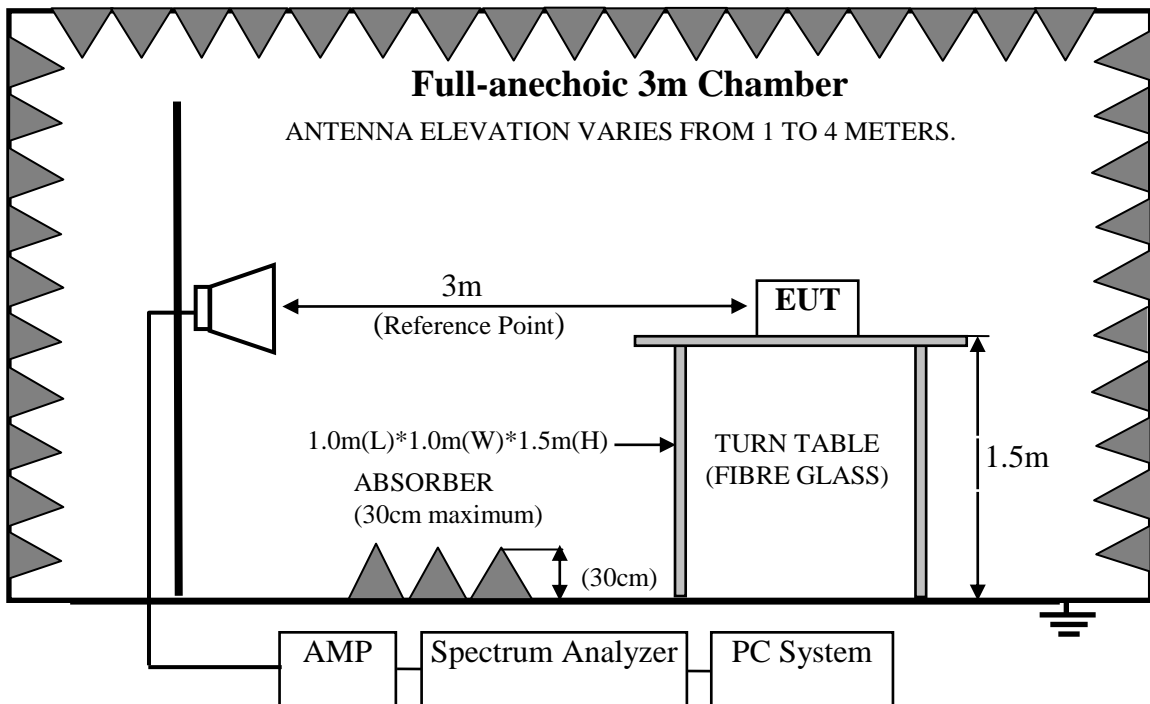
Note: N/A means Not applicable.

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-40GHz



4.3. Radiated Emission Limit

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz and those emissions appearing within 15.205 restricted frequency bands must comply with the general field strength limits set forth in Section 15.209.

4.3.1. 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		µV/m	dB(µV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(µV)/m (Peak) 54.0 dB(µV)/m (Average)	

Remarks : (1) Emission level dBµV = 20 log Emission level µV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.3.2. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

4.4.EUT Configuration on Test

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

4.4.1.WiFi module (EUT)

Model No. : U9W34

Serial No. : N/A

4.4.2.Support Equipment: As Tested Supporting System Details, in Section 2.2.

4.5.Operating Condition of EUT

4.5.1.Setup the EUT and simulator as shown as Section 4.2.

4.5.2.Turn on the power of all equipments.

4.5.3.Let EUT work in Tx mode.

4.6.Test Procedure

Frequency below 30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)*2.4m(W)*0.3m(H) on the ground . The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it.EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horn antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2013 on radiated emission Test.

For emissions below 1GHz and those emissions appearing within 15.205 restricted frequency bands use below procedure:

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as test photo indicated.

The bandwidth of the EMI test receiver (R&S ESR7) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

Maximum Peak emission levels are measured by setting the analyzer as follows:

- (a) RBW = 1 MHz.
- (b) VBW \geq 3 MHz.
- (c) Detector = Peak.
- (d) Sweep time = auto.
- (e) Trace mode = max hold.
- (f) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle. For example, at 50% duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

Maximum Average emission levels are measured by setting the analyzer as follows:

- (a) RBW = 1 MHz.
- (b) VBW \geq 3 MHz.
- (c) Detector = power averaging (rms), if $\text{span}/(\# \text{ of points in sweep}) \leq \text{RBW}/2$. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, the detector mode shall be set to peak.
- (d) Averaging type = power averaging (rms)
As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
- (e) Sweep time = auto.
- (f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, the number of traces shall be increased by a factor of $1/x$, where x is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—rather than turning on and off with the transmit cycle, at least 100 traces shall be averaged.)
- (g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, a correction factor shall be added to the measurement results prior to comparing to the emission limit to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
 - If power averaging (rms) mode was used in step (iv) above, the correction factor is $10 \log (1/x)$, where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB must be added to the measured emission levels.
 - If linear voltage averaging mode was used in step (iv) above, the correction factor is $20 \log (1/x)$, where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB must be added to the measured emission levels.
 - If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

For the emissions above 1GHz and not appearing within 15.205 restricted frequency bands use below procedure:

- (1).The maximum emission at 3m distance was measured and recorded with receive antenna in both vertical and horizontal by rotating the turntable and by lowering the receive antenna.
- (2).The EUT was then removed and replaced with a substitution antenna in the same position and the substitution antenna must have the same polarization with the receive antenna.
- (3). A signal which have the same frequency obtained in step 2 was fed to the substitution, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver, the level of the signal generator was adjusted until the measured field strength level in step 2 was obtained, recorded the level of the signal generator.
- (4).Repeated step 4 with both antenna polarizations
- (5).The spurious emissions is equal to the power supplied by the signal generator and corrections due to the gain of the substitution antenna and the cable loss between the signal generator and the substitution antenna. or use procedure (6).
- (6). Per KDB789033 clause H 2)d.if the test distance is 3m,the $EIRP(dBm)=E(dB\mu v/m)-95.2$
Get the result of all unwanted emission outside the restricted band is less than the $-27dBm/MHz$.

We had checked frequency range that is 30MHz to 10th harmonic (40GHz) and no any emissions were found from 18GHz to 40GHz, so the radiated emission from 18GHz to 40GHz were not record.

4.7.Radiated Emission Test Results

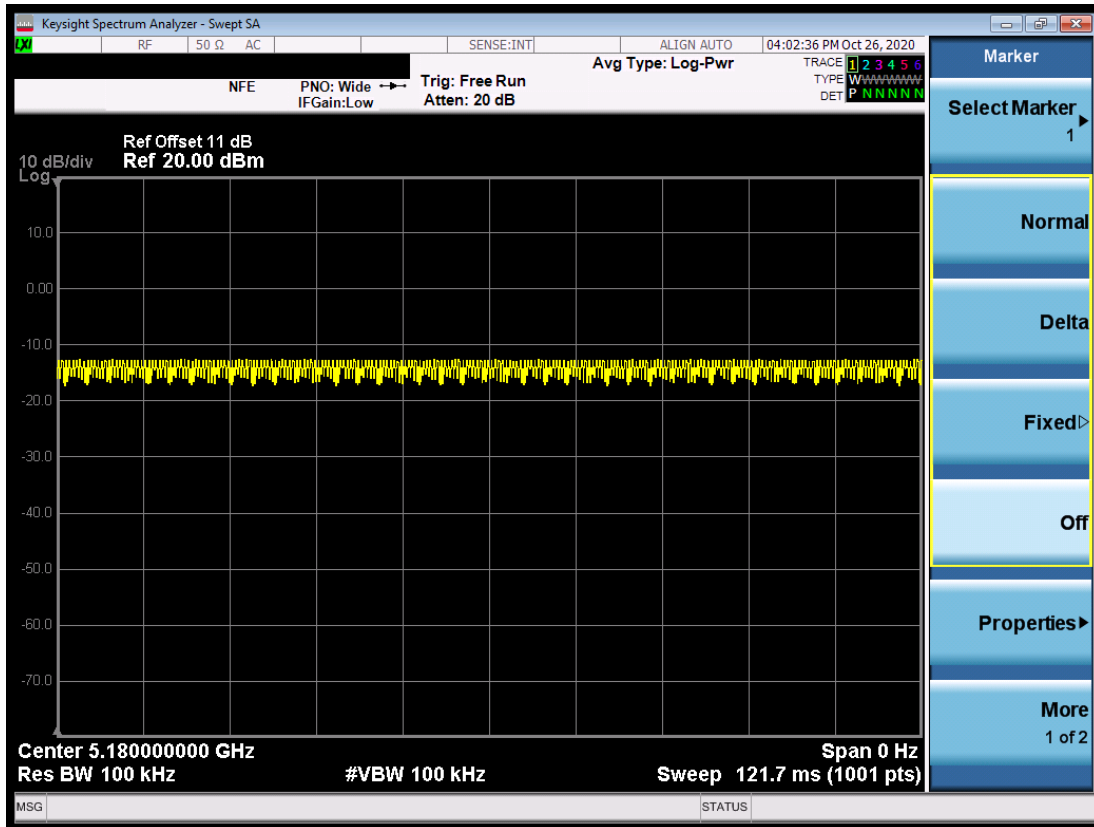
PASS.

All the emissions from 30MHz to 1 GHz were comply with 15.209 limits.

All other emission comply with 15.407 (b)(1) requirements.

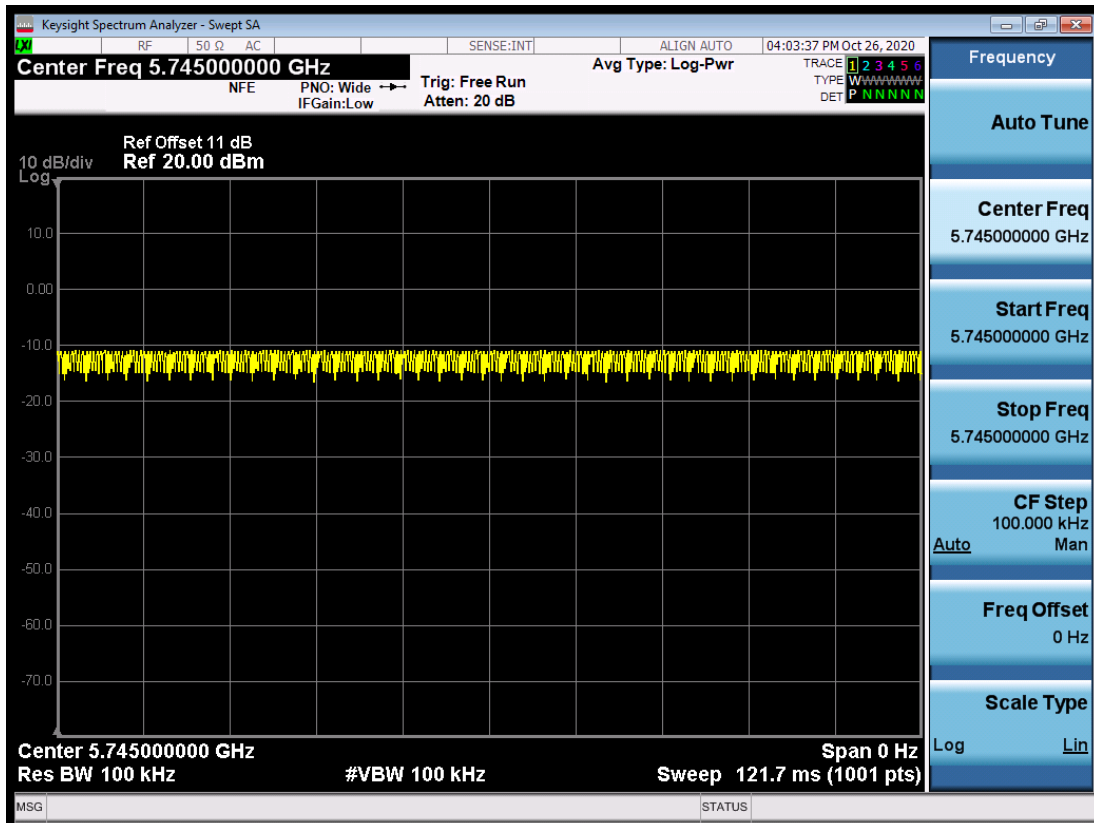
Note: The emissions (9kHz~30MHz) not reported for there is no emission be found.

**Duty cycle
U-NII-1 Band:**



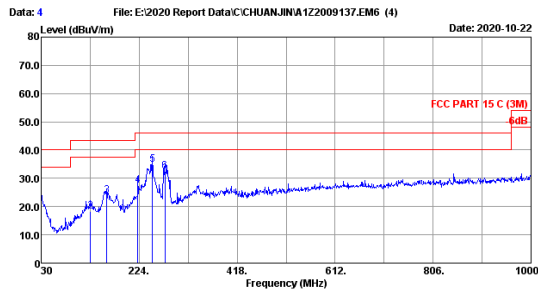
Note: The duty cycle of the test signal is 100%.

U-NII-3 Band:



Note: The duty cycle of the test signal is 100%.

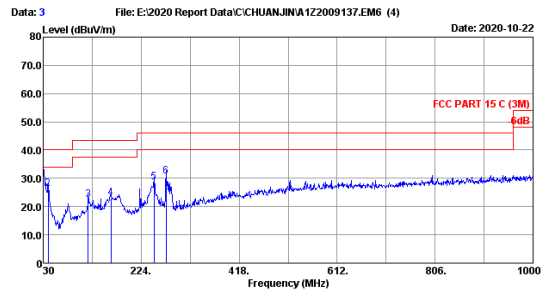
Frequency: 30MHz~1GHz



Data: 4 File: E:\2020 Report Data\C\CHUANJIN\122009137.EM6 (4) Date: 2020-10-22
 Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 2019 CBL6112D-25237 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 25.3°C/55% Engineer : The Shine
 EUT :
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	24.20	0.63	-3.02	21.81	40.00	18.19	QP
2	127.970	17.70	1.14	-0.63	18.21	43.50	25.29	QP
3	159.980	15.60	1.28	7.11	23.99	43.50	19.51	QP
4	221.090	15.10	1.50	10.78	27.38	46.00	18.62	QP
5	250.190	19.30	1.58	15.01	34.89	46.00	11.11	QP
6	275.410	18.79	1.66	11.99	32.44	46.00	13.56	QP

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

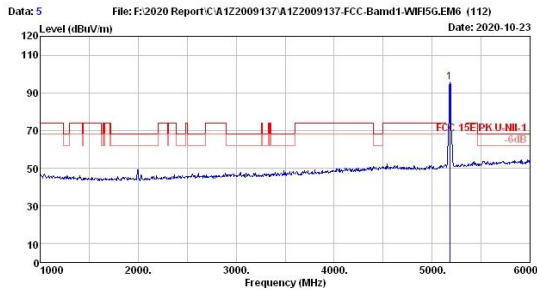


Data: 3 File: E:\2020 Report Data\C\CHUANJIN\122009137.EM6 (4) Date: 2020-10-22
 Site no. : 3m Chamber Data no. : 3
 Dis. / Ant. : 3m 2019 CBL6112D-25237 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 25.3°C/55% Engineer : The Shine
 EUT :
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	24.20	0.63	7.00	31.83	40.00	8.17	QP
2	39.700	19.10	0.69	6.60	26.39	40.00	13.61	QP
3	119.240	18.04	1.10	3.24	22.38	43.50	21.12	QP
4	163.860	15.47	1.30	6.32	23.09	43.50	20.41	QP
5	249.220	19.20	1.57	9.75	28.55	46.00	17.45	QP
6	279.470	18.87	1.65	10.23	30.75	46.00	15.25	QP

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

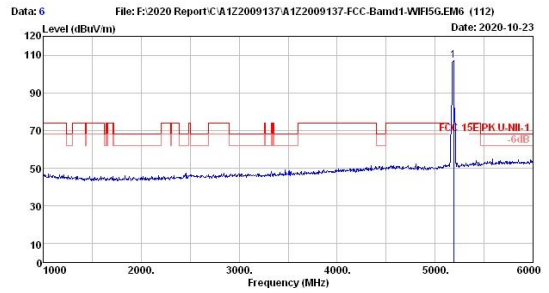
Frequency: 1GHz~18GHz
U-NII-1 Band:



Site no. : 3m Chamber Data no. : 5
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	33.26	7.61	87.79	33.13	95.53			Peak

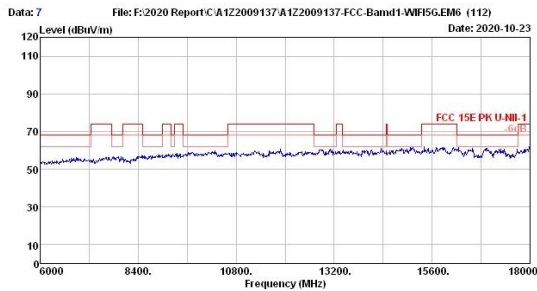
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



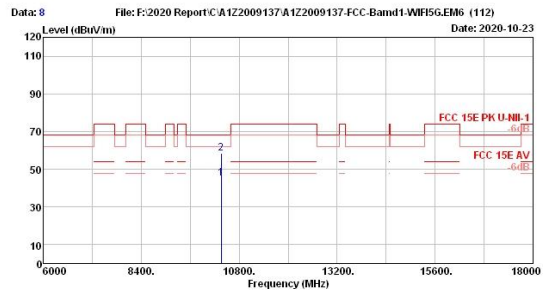
Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5190.00	33.26	7.61	99.21	33.13	106.95			Peak

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



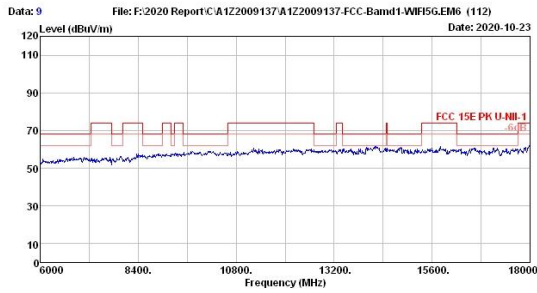
Site no. : 3m Chamber Data no. : 7
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode



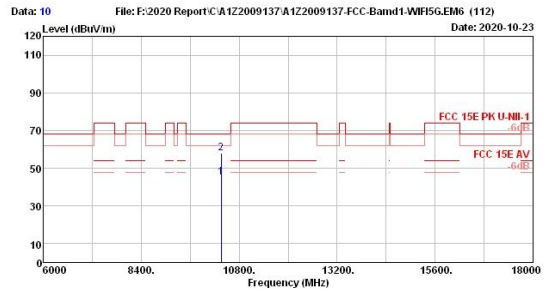
Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10360.00	38.21	10.46	29.88	33.30	45.25			Average
2	10360.00	38.21	10.46	43.16	33.30	58.53	68.20	9.67	Peak

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



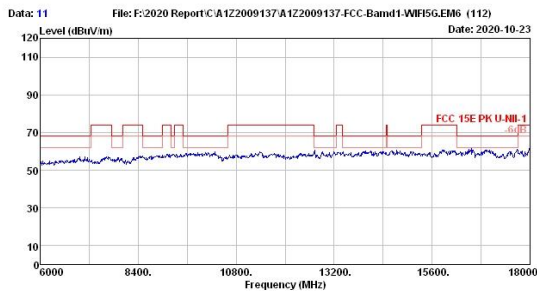
Site no. : 3m Chamber Data no. : 9
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode



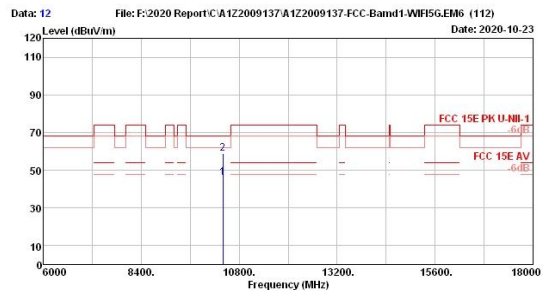
Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10360.00	38.21	10.46	29.85	33.30	45.22	68.20	10.24	Average
2	10360.00	38.21	10.46	42.59	33.30	57.96	68.20	10.24	Peak

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



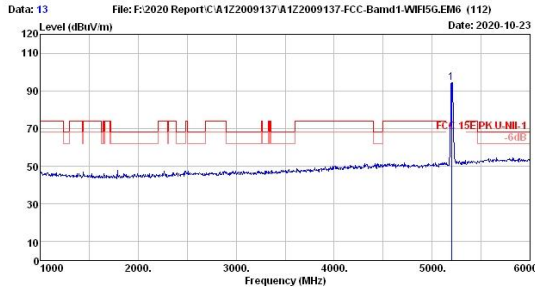
Site no. : 3m Chamber Data no. : 11
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode



Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10400.00	38.26	10.46	30.65	33.27	45.10	68.20	9.48	Average
2	10400.00	38.26	10.46	43.27	33.27	58.72	68.20	9.48	Peak

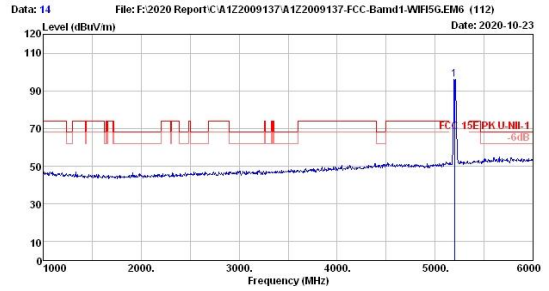
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Date: 2020-10-23
 File: F:\2020 Report\C\A1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112)
 Site no. : 3m Chamber Data no. : 13
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	86.67	33.12	94.49			Peak

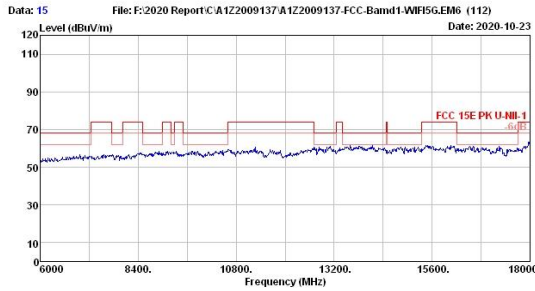
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



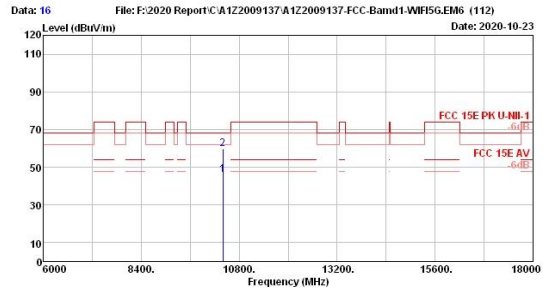
Date: 2020-10-23
 File: F:\2020 Report\C\A1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112)
 Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	88.28	33.12	96.10			Peak

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



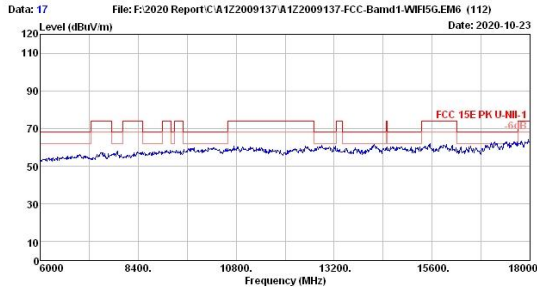
Date: 2020-10-23
 File: F:\2020 Report\C\A1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112)
 Site no. : 3m Chamber Data no. : 15
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode



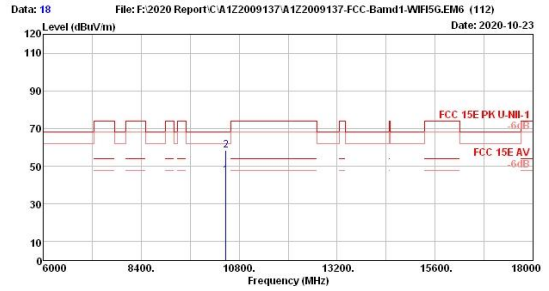
Date: 2020-10-23
 File: F:\2020 Report\C\A1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112)
 Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10400.00	38.26	10.46	30.47	33.27	45.92			Average
2	10400.00	38.26	10.46	44.15	33.27	59.60	68.20	8.60	Peak

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



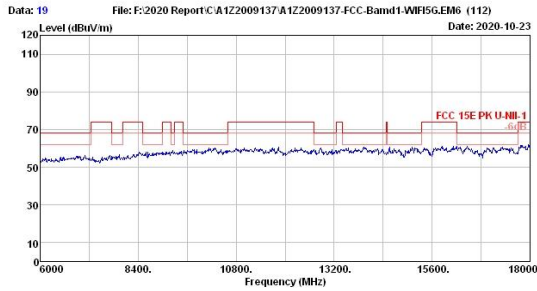
Site no. : 3m Chamber Data no. : 17
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode



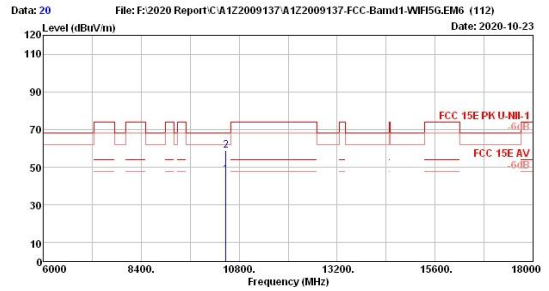
Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10480.00	38.38	10.46	29.42	33.21	48.05	68.20	9.86	Average
2	10480.00	38.38	10.46	42.71	33.21	58.34	68.20	9.86	Peak

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



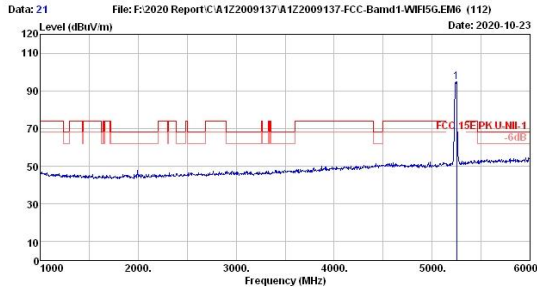
Site no. : 3m Chamber Data no. : 19
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode



Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10480.00	38.38	10.46	30.27	33.21	45.90	68.20	9.52	Average
2	10480.00	38.38	10.46	43.05	33.21	58.68	68.20	9.52	Peak

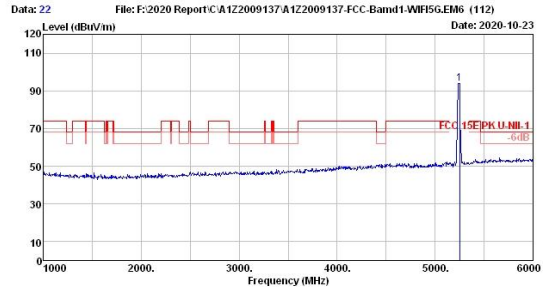
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 21
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5250.00	33.50	7.65	86.51	33.10	94.56			Peak

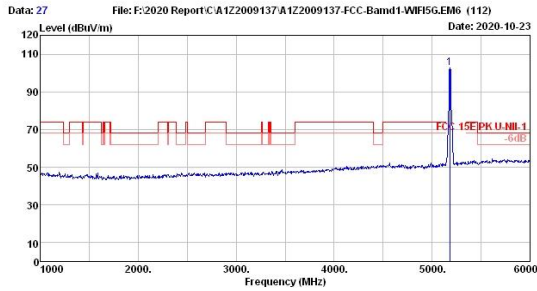
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 22
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11a 5240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5250.00	33.50	7.65	85.98	33.10	94.03			Peak

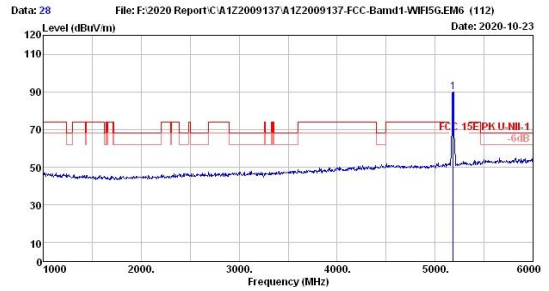
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 27
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	33.26	7.61	94.81	33.13	102.55			Peak

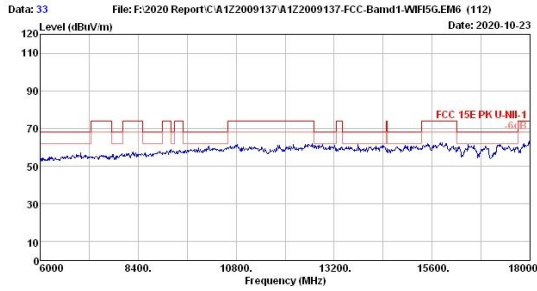
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



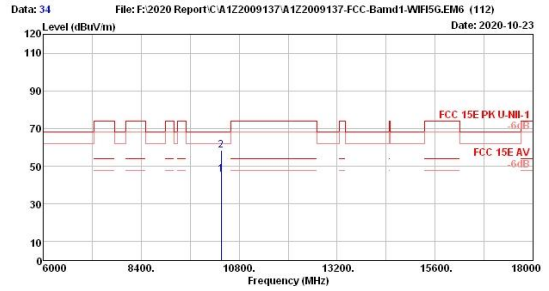
Site no. : 3m Chamber Data no. : 28
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 5180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5185.00	33.26	7.61	82.16	33.13	89.90			Peak

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



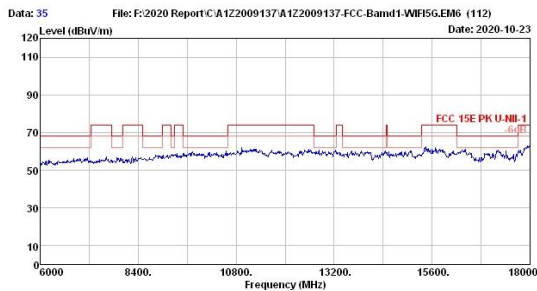
Site no. : 3m Chamber Data no. : 33
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S180MHz Tx Mode



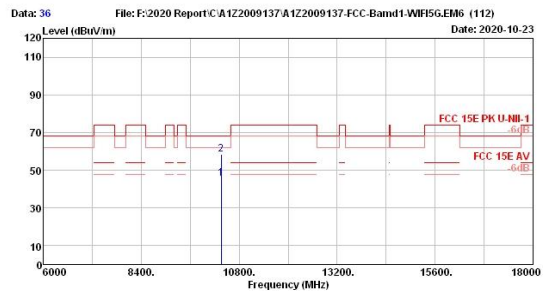
Site no. : 3m Chamber Data no. : 34
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10360.00	38.21	10.46	30.29	33.30	45.66	68.20	22.54	Average
2	10360.00	38.21	10.46	43.01	33.30	58.38	68.20	9.82	Peak

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



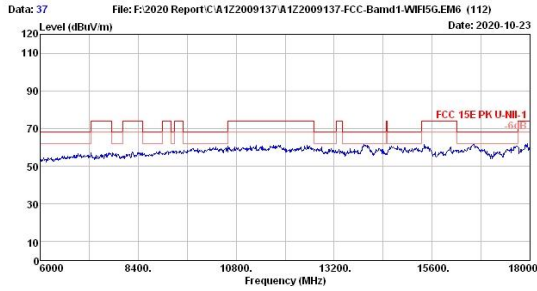
Site no. : 3m Chamber Data no. : 35
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S180MHz Tx Mode



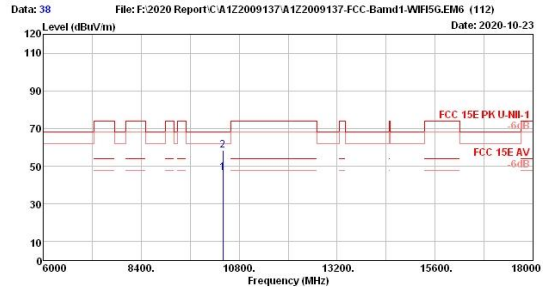
Site no. : 3m Chamber Data no. : 36
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10360.00	38.21	10.46	30.23	33.30	45.60	68.20	22.60	Average
2	10360.00	38.21	10.46	42.93	33.30	58.30	68.20	9.90	Peak

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



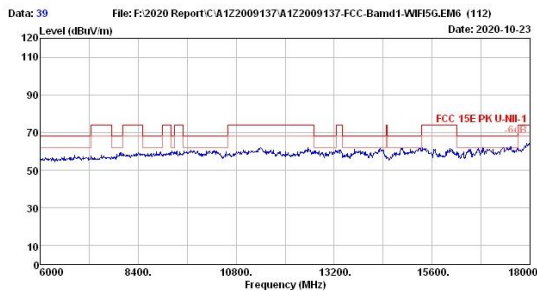
Site no. : 3m Chamber Data no. : 37
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode



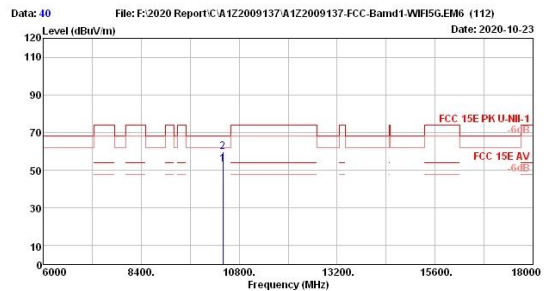
Site no. : 3m Chamber Data no. : 38
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10400.00	38.26	10.46	31.22	33.27	46.67	68.20	9.95	Average
2	10900.00	38.26	10.46	42.80	33.27	58.25	68.20	9.95	Peak

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



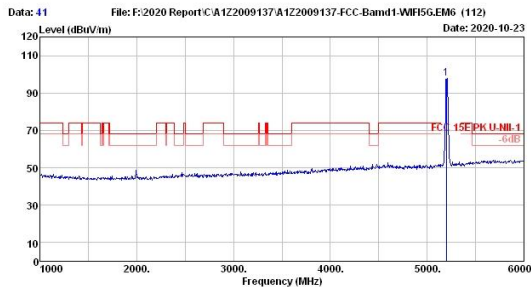
Site no. : 3m Chamber Data no. : 39
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode



Site no. : 3m Chamber Data no. : 40
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10400.00	38.26	11.46	36.57	33.27	53.02	68.20	8.25	Average
2	10400.00	38.26	11.46	43.50	33.27	59.95	68.20	8.25	Peak

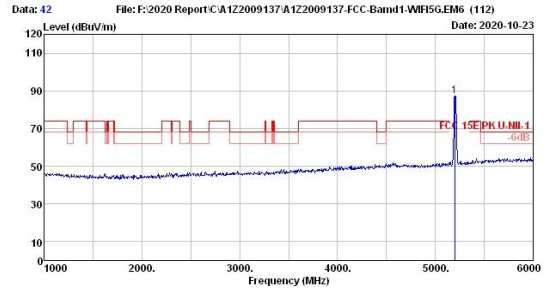
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Data: 41 File: F:2020 Report\CA1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112) Date: 2020-10-23
 Site no. : 3m Chamber Data no. : 41
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	90.23	33.12	96.05	70	-----	Peak

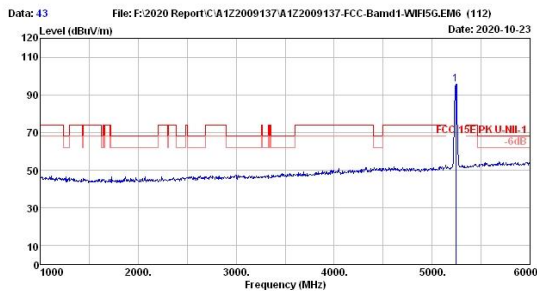
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Data: 42 File: F:2020 Report\CA1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112) Date: 2020-10-23
 Site no. : 3m Chamber Data no. : 42
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	79.56	33.12	87.38	70	-----	Peak

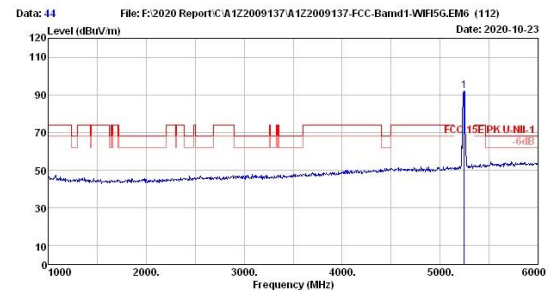
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



Data: 43 File: F:2020 Report\CA1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112) Date: 2020-10-23
 Site no. : 3m Chamber Data no. : 43
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5240.00	33.44	7.64	87.86	33.11	95.83	70	-----	Peak

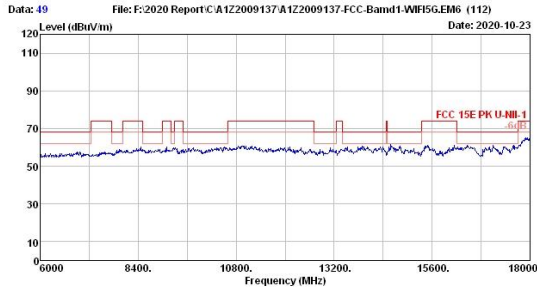
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp factor.
 2. The emission levels that are 20dB below the official limit are not reported.



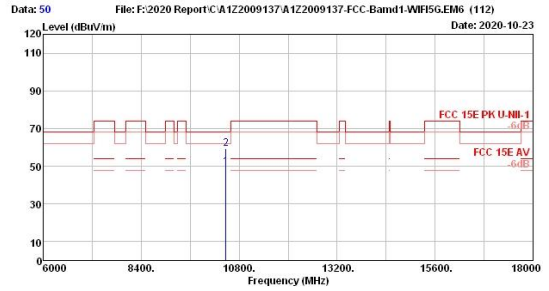
Data: 44 File: F:2020 Report\CA1Z2009137\A1Z2009137-FCC-Band1-WIFI5G.EM6 (112) Date: 2020-10-23
 Site no. : 3m Chamber Data no. : 44
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5245.00	33.50	7.65	89.94	33.10	91.99	70	-----	Peak

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



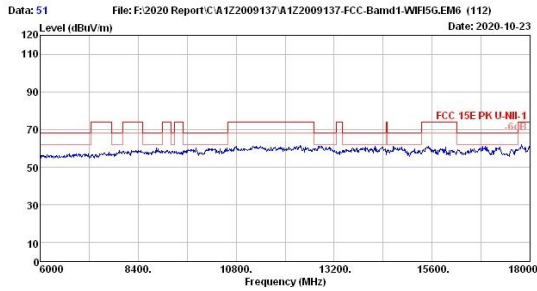
Site no. : 3m Chamber Data no. : 49
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode



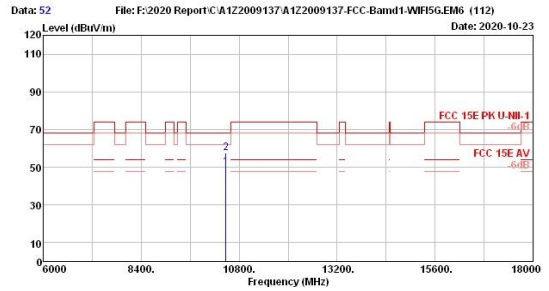
Site no. : 3m Chamber Data no. : 50
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10480.00	38.38	11.49	33.00	33.21	49.66	68.20	8.55	Average
2	10480.00	38.38	11.49	42.89	33.21	59.55	68.20	8.65	Peak

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



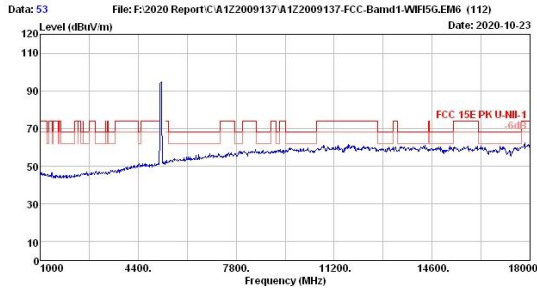
Site no. : 3m Chamber Data no. : 51
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode



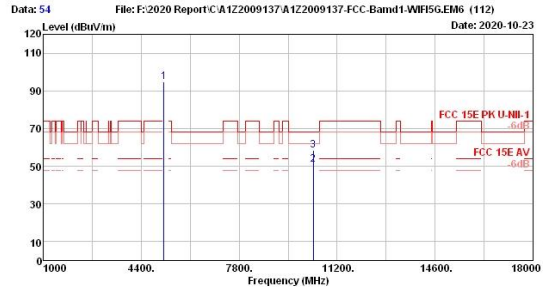
Site no. : 3m Chamber Data no. : 52
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT20 S240MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	10480.00	38.38	11.49	33.26	33.21	49.92	68.20	10.42	Average
2	10480.00	38.38	11.49	41.12	33.21	57.78	68.20	10.42	Peak

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



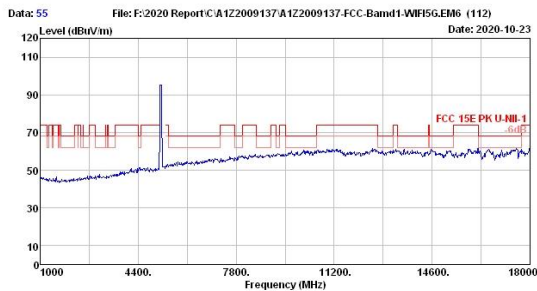
Site no. : 3m Chamber Data no. : 53
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S190MHz Tx Mode



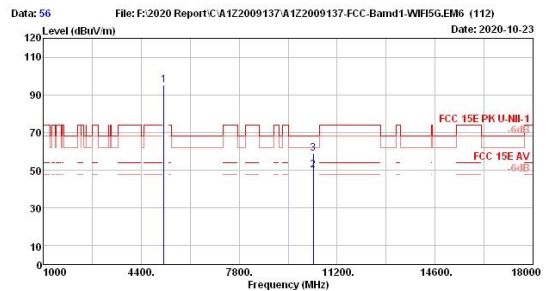
Site no. : 3m Chamber Data no. : 54
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S190MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5190.00	33.26	7.61	86.83	33.13	94.57	-----	-----	Peak
2	10380.00	38.24	10.46	35.39	33.29	50.60	-----	-----	Average
3	10380.00	38.24	10.46	42.95	33.29	58.36	68.20	9.84	Peak

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



Site no. : 3m Chamber Data no. : 55
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S190MHz Tx Mode

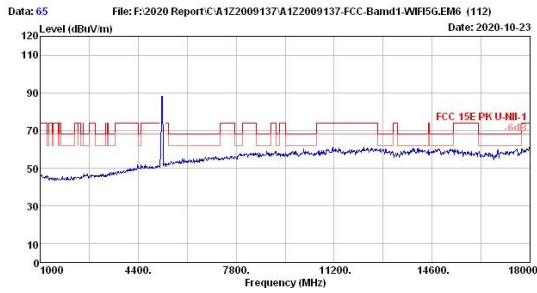


Site no. : 3m Chamber Data no. : 56
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S190MHz Tx Mode

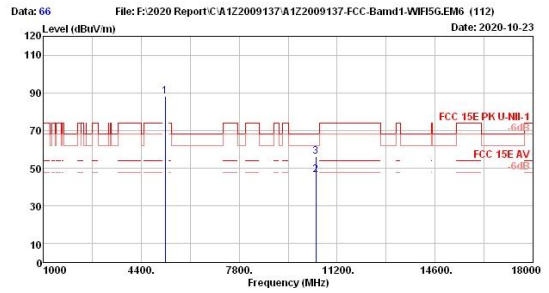
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5190.00	33.26	7.61	87.65	33.13	95.39	-----	-----	Peak
2	10380.00	38.24	10.46	34.50	33.29	49.91	-----	-----	Average
3	10380.00	38.24	10.46	43.30	33.29	58.71	68.20	9.49	Peak

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

FCC ID: 2AU3BU9W34



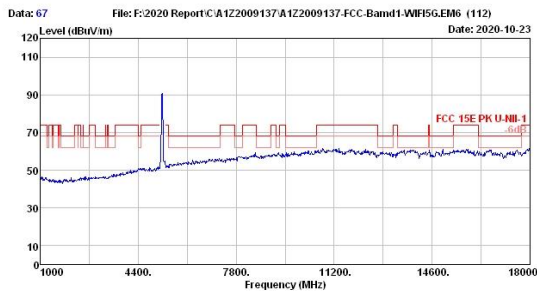
Site no. : 3m Chamber Data no. : 65
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S230MHz Tx Mode



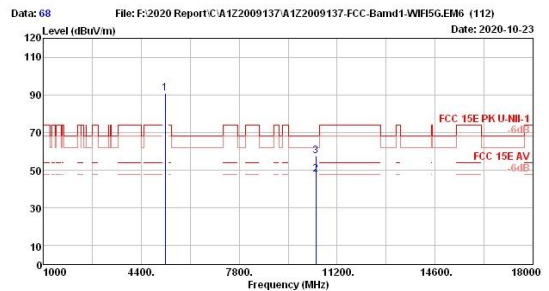
Site no. : 3m Chamber Data no. : 66
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S230MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5230.00	33.44	7.64	80.30	33.11	88.27	-----	-----	Peak
2	10460.00	38.33	10.46	31.00	33.23	45.56	-----	-----	Average
3	10460.00	38.33	10.46	40.88	33.23	56.44	68.20	11.76	Peak

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



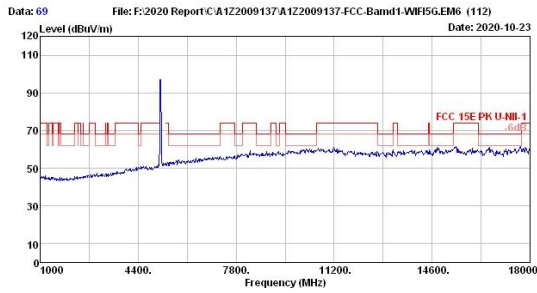
Site no. : 3m Chamber Data no. : 67
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S230MHz Tx Mode



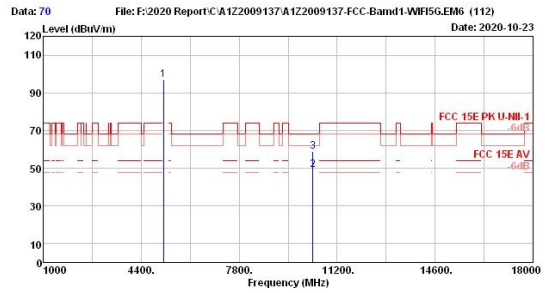
Site no. : 3m Chamber Data no. : 68
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11nHT40 S230MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5230.00	33.44	7.64	82.94	33.11	90.91	-----	-----	Peak
2	10460.00	38.33	10.46	32.26	33.23	47.82	-----	-----	Average
3	10460.00	38.33	10.46	41.86	33.23	57.42	68.20	10.78	Peak

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



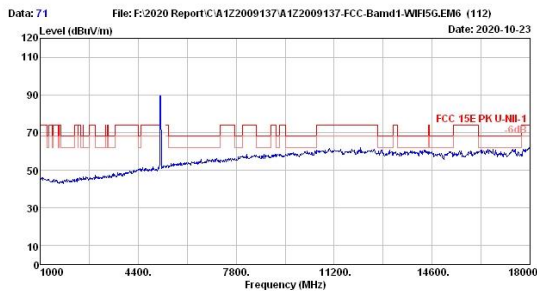
Site no. : 3m Chamber Data no. : 69
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S180MHz Tx Mode



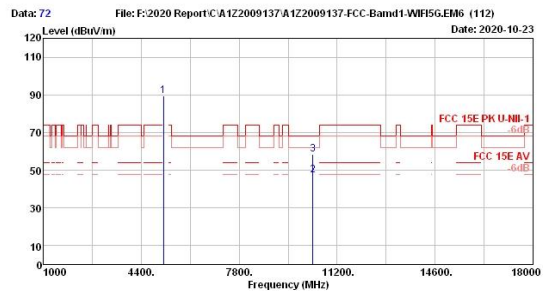
Site no. : 3m Chamber Data no. : 70
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	33.26	7.61	89.29	33.13	97.03	-----	-----	Peak
2	10360.00	38.21	10.46	33.80	33.30	49.17	-----	-----	Average
3	10360.00	38.21	10.46	43.38	33.30	58.75	68.20	9.45	Peak

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



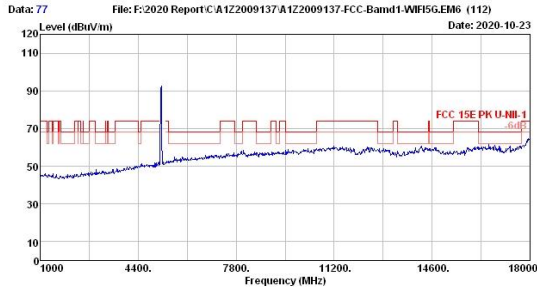
Site no. : 3m Chamber Data no. : 71
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S180MHz Tx Mode



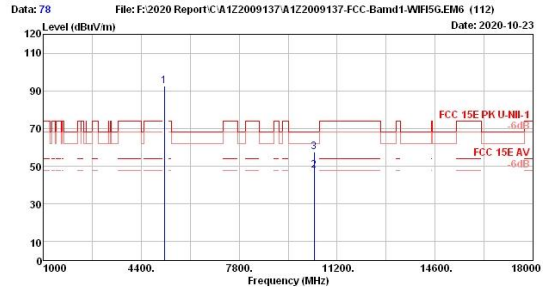
Site no. : 3m Chamber Data no. : 72
 Dis. / Ant. : 3m 2020 NCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S180MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	33.26	7.61	81.92	33.13	89.66	-----	-----	Peak
2	10360.00	38.21	10.46	32.23	33.30	47.60	-----	-----	Average
3	10360.00	38.21	10.46	43.12	33.30	58.49	68.20	9.71	Peak

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



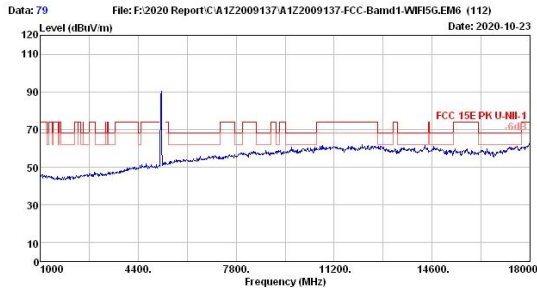
Site no. : 3m Chamber Data no. : 77
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S200MHz Tx Mode



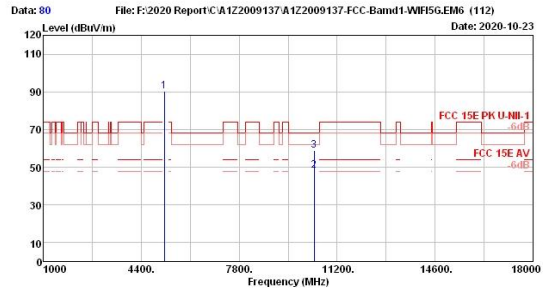
Site no. : 3m Chamber Data no. : 78
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : VERTICAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	84.71	33.12	92.53	-----	-----	Peak
2	10400.00	38.26	10.46	32.25	33.27	47.70	-----	-----	Average
3	10400.00	38.26	10.46	42.20	33.27	57.65	68.20	10.55	Peak

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



Site no. : 3m Chamber Data no. : 79
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S200MHz Tx Mode



Site no. : 3m Chamber Data no. : 80
 Dis. / Ant. : 3m 2020 MCTD1209-3007 Ant. pol. : HORIZONTAL
 Limit : FCC 15E PK U-NII-1
 Env. / Ins. : 23.6°C/52.5% Engineer : Garry
 Power rating : DC 5V From Notebook Input AC 120V/60Hz
 Test Mode : 802.11acVHT20 S200MHz Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	33.32	7.62	82.44	33.12	90.26	-----	-----	Peak
2	10400.00	38.26	10.46	32.89	33.27	48.34	-----	-----	Average
3	10400.00	38.26	10.46	43.43	33.27	58.88	68.20	9.32	Peak

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