



FCC Part 15E Test Report

FCC ID: 2BDS8-EONON

Applicant: SunBoBoDigital Co.Ltd

Address: Unit 3306, 33/F New Trend Centre, 704 Prince Edward Road East, Kowloon, Hong Kong

Manufacturer: SunBoBoDigital Co.Ltd

Address: Unit 3306, 33/F New Trend Centre, 704 Prince Edward Road East, Kowloon, Hong Kong

EUT: Car Media Player

Trade Mark: EONON

Model Number: E90A12S
E20S, E39A12, E39A12S, E46A12, E46A12S, E46A12S-6G, E90A12, E90A12S-6G, GMA12, GMA12S, GMA12S-6G, GMA12S2-U, GMA12S-6G, M3BKA12, M3BKA12S, M3BKA12S-6G, M3BLA12, M3BLA12S, M3BLA12S-6G, MIN SE Plus, MIN T, MIN T Plus, MIN TYT, P3, P4, P5, S1, S6, Q01SE, Q02SE, Q03PRO, Q03SE, Q04PRO, Q04SE, Q05SE, Q49PRO, Q49SE, Q50PRO, Q50SE, Q51PRO, Q51SE, Q53PRO, Q53SE, Q63PRO, Q63SE, Q65PRO, Q65SE, Q67PRO, Q67SE, Q80Plus, Q80PRO, Q80SE, TYTA12, TYTA12S, TYTA12S-6G, UA12 Plus, UA12S Plus, UA12S Plus-6G, UA12T, UA12T Plus, UA12TS, UA12TS-6G, UA12TS Plus, UA12TS Plus-6G, VWA12, VWA12S, VWA12S-6G, X20, X20 Plus, X3, X3 Plus, X3T, X3U, X3U Plus, X4

Date of Receipt: Nov. 06, 2023

Test Date: Nov. 06, 2023 - Nov. 24, 2023

Date of Report: Nov. 24, 2023

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: FCC PART 15 E 15.407
ANSI C63.10:2013

Test Result: Pass

Report Number: DL-20231124023E

Prepared (Test Engineer): Alisa Song

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.407(b), 15.209	Radiated Spurious Emission	PASS	
15.407 (b)	Band Edge Emission	PASS	
15.407 (a)	Peak Output Power	PASS*	
15.407 (a)	Power Spectral Density	PASS*	
15.407(e)	26dB bandwidth and 99%dB Bandwidth 6dB bandwidth and 99%dB Bandwidth	PASS*	
15.407(g)	Frequency Stability	PASS*	
15.407(c)	Transmission in case of Absence of Information	PASS*	
15.203	Antenna Requirement	PASS*	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) "*": The module has been certified, the FCC ID is AMOSC138NA, and the Conducted part test data is referenced in the report (report number: BTL-FCCP-10-2111C042).

Test lab: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118

1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$ providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	Bandwidth	$\pm 0.2\text{MHz}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Car Media Player
Trademark	EONON
Model No.:	E90A12S E20S, E39A12, E39A12S, E46A12, E46A12S, E46A12S-6G, E90A12, E90A12S-6G, GMA12, GMA12S, GMA12S-6G, GMA12S2-U, GMA12S-6G, M3BKA12, M3BKA12S, M3BKA12S-6G, M3BLA12, M3BLA12S, M3BLA12S-6G, MIN SE Plus, MIN T, MIN T Plus, MIN TYT, P3, P4, P5, S1, S6, Q01SE, Q02SE, Q03PRO, Q03SE, Q04PRO, Q04SE, Q05SE, Q49PRO, Q49SE, Q50PRO, Q50SE, Q51PRO, Q51SE, Q53PRO, Q53SE, Q63PRO, Q63SE, Q65PRO, Q65SE, Q67PRO, Q67SE, Q80Plus, Q80PRO, Q80SE, TYTA12, TYTA12S, TYTA12S-6G, UA12 Plus, UA12S Plus, UA12S Plus-6G, UA12T, UA12T Plus, UA12TS, UA12TS-6G, UA12TS Plus, UA12TS Plus-6G, VWA12, VWA12S, VWA12S-6G, X20, X20 Plus, X3, X3 Plus, X3T, X3U, X3U Plus, X4
Model Difference	The product's different for model number and appearance color.
Operation Frequency:	5180-5240, 5745-5825MHz(802.11a/n/ac(HT20)) 5190-5230, 5755-5795MHz(802.11n/ac(HT40)) 5210MHz , 5775MHz (802.11ac(HT80))
Channel numbers:	See channel list
Channel separation:	20MHz/40MHz/80MHz
Modulation technology:	64QAM, 16QAM, QPSK, BPSK for OFDM
Rate of Transmitter	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps 802.11n: Up to 300Mbps 802.11ac: up to 867Mbps
Antenna Type:	External Antenna
Antenna gain:	5GHz:2dBi 5.8GHz: 2dBi
Power supply:	DC 12V

Note:

1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.The EUT's all information provided by client.



2. Channel List

Channel List for 802.11a/n(HT20)/ac(HT20)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

Channel List for 802.11n(HT40)/ac(HT40)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

Channel List for 802.11ac(HT80)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	/	/

Channel List for 802.11a/n(HT20)/ac(HT20)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

Channel List for 802.11n(HT40)/ac(HT40)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

Channel List for 802.11ac(HT80)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775	/	/



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Description			
Pretest Mode	Channel	Band 1	Band 4
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48	CH149, CH157, CH165
Mode 2	802.11n/acHT40	CH38, CH46	CH151, CH159
Mode 3	802.11acHT80	CH42	CH155
Mode 4	Link Mode		

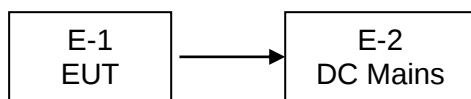
For Radiated Emission			
Pretest Mode	Channel	Band 1	Band 4
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48	CH149, CH157, CH165
Mode 2	802.11n/acHT40	CH38, CH46	CH151, CH159
Mode 3	802.11acHT80	CH42	CH155
Mode 4	Link Mode		

Note: 1. The measurements are performed at the highest, middle, lowest available channels.
2. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.



2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Car Media Player	E90A12S	N/A	EUT
E-2	D.C. Power Supply	PS-305D		Input:AC100-240V Output: DC0-36V Provide by lab

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

Max output power Setting				
Test software Version	Test program: Qualcomm Radio Control Toolkit v4.0			
Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20/HT40/HT80
Data Rate	6Mbps	MSC0	MSC0	MSC0
Power Setting of Software	60	60	66	66



2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 04, 2023	Nov. 03, 2024
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 04, 2023	Nov. 03, 2024
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 04, 2023	Nov. 03, 2024
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 04, 2023	Nov. 03, 2024
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 04, 2023	Nov. 03, 2024
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 04, 2023	Nov. 03, 2024
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 04, 2023	Nov. 03, 2024
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 04, 2023	Nov. 03, 2024
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 04, 2023	Nov. 03, 2024
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 04, 2023	Nov. 03, 2024
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 04, 2023	Nov. 03, 2024
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 04, 2023	Nov. 03, 2024
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 04, 2023	Nov. 03, 2024
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 04, 2023	Nov. 03, 2024
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 04, 2023	Nov. 03, 2024
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 04, 2023	Nov. 03, 2024

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	ChengYu	843 Room	843	Sep. 20, 2022	Sep. 19, 2025
2	EMI Receiver	R&S	ESR	101421	Nov. 04, 2023	Nov. 03, 2024
3	LISN	R&S	ENV216	102417	Nov. 04, 2023	Nov. 03, 2024
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 04, 2023	Nov. 03, 2024

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



3. EMC EMISSION TEST

3.1 RADIATED EMISSION MEASUREMENT

3.1.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40GHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

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



3.1.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

Above 1GHz test procedure as below:

- Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
- Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

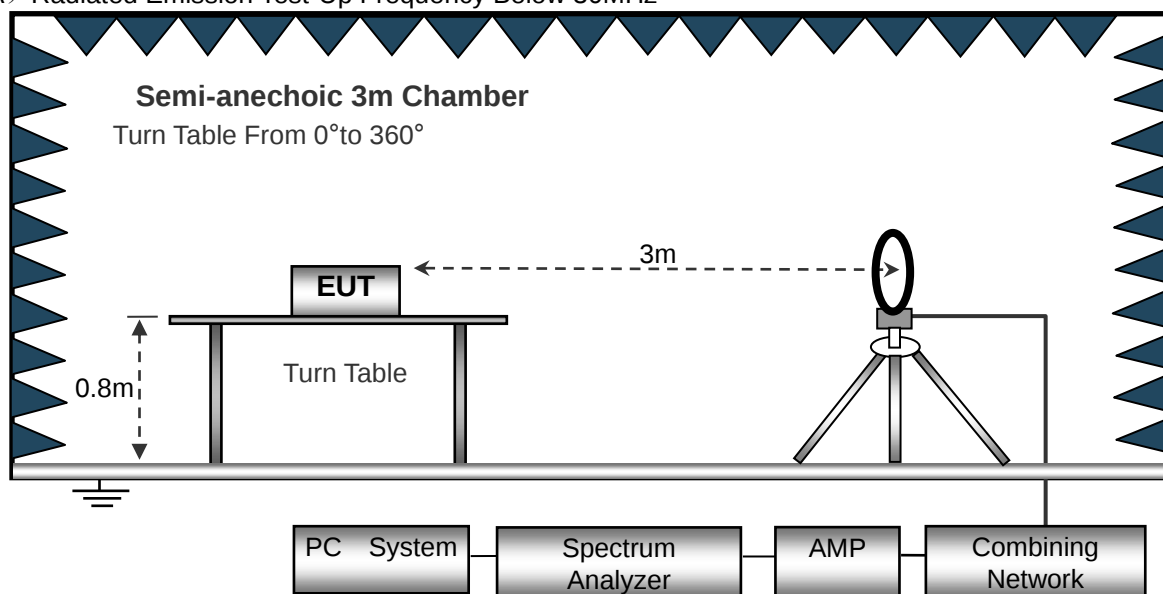
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.1.3 DEVIATION FROM TEST STANDARD

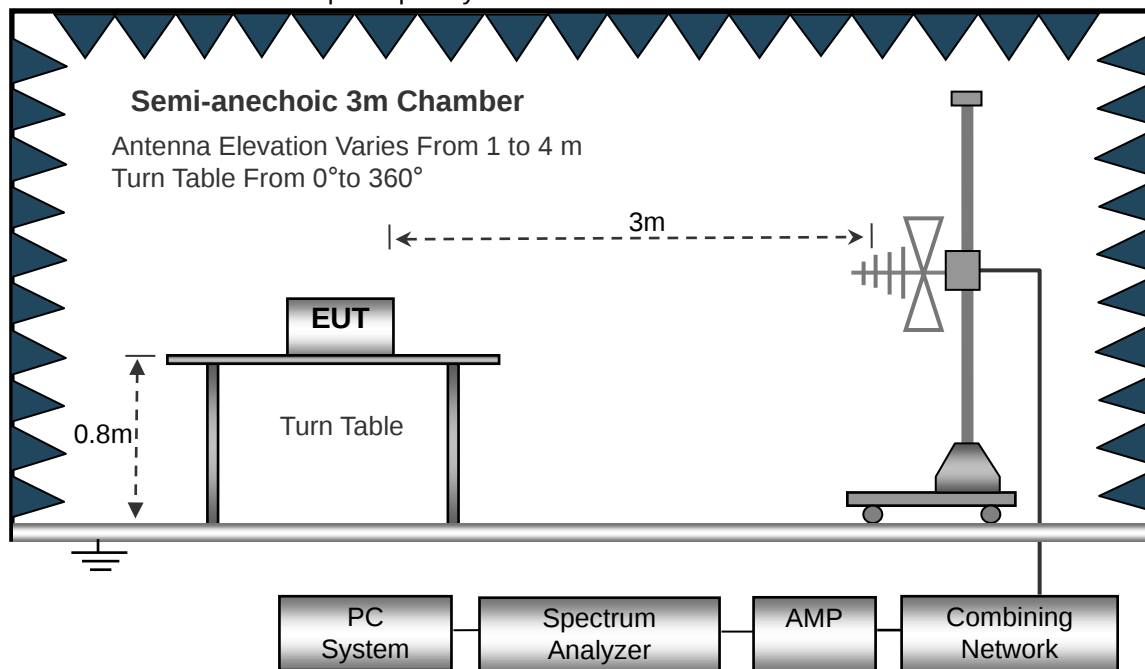
No deviation

3.1.4 TEST SETUP

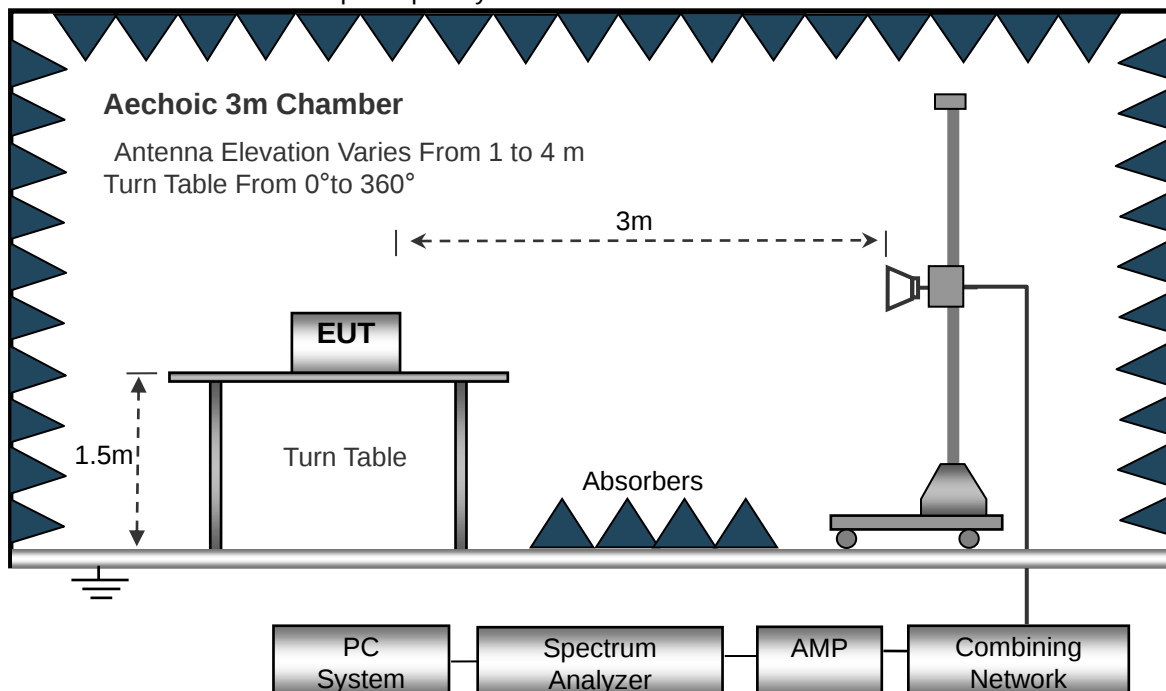
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.1.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.1.6 TEST RESULTS (Between 9KHz – 30 MHz)**

Temperature:	20℃	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 4	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

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

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

**3.1.7 TEST RESULTS (Between 30MHz – 1GHz)**

Temperature:	26°C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 12V		
Test Mode :	Mode 4		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Margin dB	Detector
1		50.0566	32.27	-11.50	20.77	40.00	-19.23	QP
2		87.7245	36.99	-15.81	21.18	40.00	-18.82	QP
3		151.5971	36.54	-16.21	20.33	43.50	-23.17	QP
4		208.5800	38.66	-13.03	25.63	43.50	-17.87	QP
5	*	354.1831	44.96	-9.93	35.03	46.00	-10.97	QP
6		463.9696	41.09	-7.67	33.42	46.00	-12.58	QP

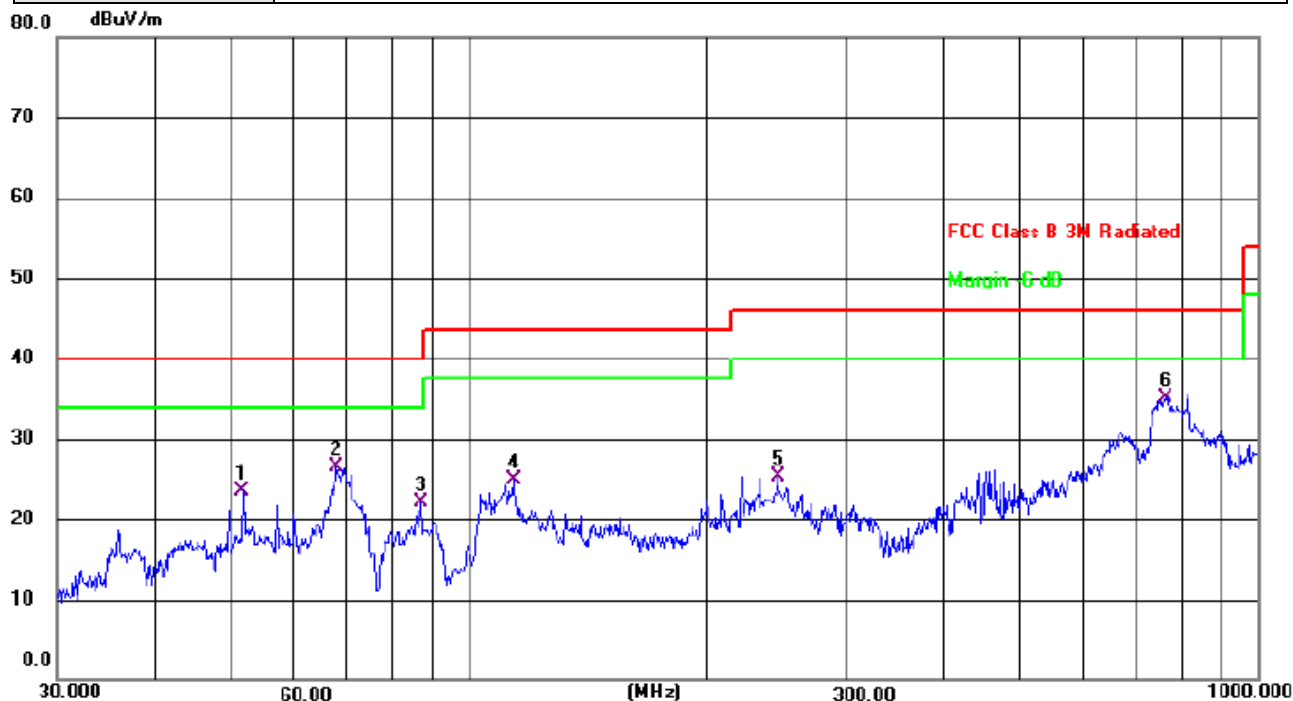
Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;



Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
test voltage :	DC 12V		
Test Mode :	Mode 4		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dB/m	dB	
1		51.6613	34.84	-11.24	23.60	40.00	-16.40	QP
2		67.6751	40.90	-14.31	26.59	40.00	-13.41	QP
3		86.8067	37.75	-15.65	22.10	40.00	-17.90	QP
4		113.7142	40.28	-15.46	24.82	43.50	-18.68	QP
5		245.9507	36.51	-11.11	25.40	46.00	-20.60	QP
6	*	763.3757	36.87	-1.77	35.10	46.00	-10.90	QP

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

**3.1.8 TEST RESULTS (1ghz~40ghZ)**

802.11a band 1

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	10360	56.28	49.05	15.3	37.39	59.92	74	-14.08	PK
V	10360	41.74	49.05	15.3	37.39	45.38	54	-8.62	AV
V	15540	56.33	49.16	15.27	40.45	62.89	74	-11.11	PK
V	15540	39.18	49.16	15.27	40.45	45.74	54	-8.26	AV
H	10360	56.82	49.05	15.3	37.39	60.46	74	-13.54	PK
H	10360	40.48	49.05	15.3	37.39	44.12	54	-9.88	AV
H	15540	59.11	49.16	15.27	40.45	65.67	74	-8.33	PK
H	15540	38.26	49.16	15.27	40.45	44.82	54	-9.18	AV
operation frequency:5200									
V	10400	57.46	49.09	15.34	37.42	61.13	74	-12.87	PK
V	10400	39.37	49.09	15.34	37.42	43.04	54	-10.96	AV
V	15600	59.25	49.18	15.29	40.47	65.83	74	-8.17	PK
V	15600	38.18	49.18	15.29	40.47	44.76	54	-9.24	AV
H	10400	56.46	49.09	15.34	37.42	60.13	74	-13.87	PK
H	10400	39.77	49.09	15.34	37.42	43.44	54	-10.56	AV
H	15600	59.13	49.18	15.29	40.47	65.71	74	-8.29	PK
H	15600	38.65	49.18	15.29	40.47	45.23	54	-8.77	AV
operation frequency:5240									
V	10480	58.49	49.11	15.37	37.46	62.21	74	-11.79	PK
V	10480	39.78	49.11	15.37	37.46	43.5	54	-10.50	AV
V	15720	59.14	49.21	15.34	40.51	65.78	74	-8.22	PK
V	15720	38.33	49.21	15.34	40.51	44.97	54	-9.03	AV
H	10480	57.18	49.11	15.37	31.31	54.75	74	-19.25	PK
H	10480	45.54	49.11	15.37	31.31	43.11	54	-10.89	AV
H	15720	57.43	49.21	15.34	40.51	64.07	74	-9.93	PK
H	15720	37.57	49.21	15.34	40.51	44.21	54	-9.79	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



802.11n HT20

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	10360	56.22	49.05	15.3	37.39	59.86	74	-14.14	PK
V	10360	38.18	49.05	15.3	37.39	41.82	54	-12.18	AV
V	15540	56.43	49.16	15.27	40.45	62.99	74	-11.01	PK
V	15540	38.28	49.16	15.27	40.45	44.84	54	-9.16	AV
H	10360	56.94	49.05	15.3	37.39	60.58	74	-13.42	PK
H	10360	39.46	49.05	15.3	37.39	43.1	54	-10.90	AV
H	15540	54.12	49.16	15.27	40.45	60.68	74	-13.32	PK
H	15540	38.66	49.16	15.27	40.45	45.22	54	-8.78	AV
operation frequency:5200									
V	10400	56.85	49.09	15.34	37.42	60.52	74	-13.48	PK
V	10400	39.34	49.09	15.34	37.42	43.01	54	-10.99	AV
V	15600	55.13	49.18	15.29	40.47	61.71	74	-12.29	PK
V	15600	38.27	49.18	15.29	40.47	44.85	54	-9.15	AV
H	10400	55.56	49.09	15.34	37.42	59.23	74	-14.77	PK
H	10400	40.67	49.09	15.34	37.42	44.34	54	-9.66	AV
H	15600	55.39	49.18	15.29	40.47	61.97	74	-12.03	PK
H	15600	39.27	49.18	15.29	40.47	45.85	54	-8.15	AV
operation frequency:5240									
V	10480	57.16	49.11	15.37	37.46	60.88	74	-13.12	PK
V	10480	40.58	49.11	15.37	37.46	44.3	54	-9.70	AV
V	15720	54.26	49.21	15.34	40.51	60.9	74	-13.10	PK
V	15720	38.48	49.21	15.34	40.51	45.12	54	-8.88	AV
H	10480	57.16	49.11	15.37	31.31	54.73	74	-19.27	PK
H	10480	44.52	49.11	15.37	31.31	42.09	54	-11.91	AV
H	15720	55.34	49.21	15.34	40.51	61.98	74	-12.02	PK
H	15720	39.28	49.21	15.34	40.51	45.92	54	-8.08	AV
Remark:									
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit									
2. If peak below the average limit, the average emission was no test.									
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



802.11n HT40

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5190									
V	10380	56.76	49.07	15.33	37.41	60.43	74	-13.57	PK
V	10380	39.38	49.07	15.33	37.41	43.05	54	-10.95	AV
V	15570	56.68	49.17	15.28	40.46	63.25	74	-10.75	PK
V	15570	38.33	49.17	15.28	40.46	44.9	54	-9.10	AV
H	10380	56.29	49.07	15.33	37.41	59.96	74	-14.04	PK
H	10380	40.17	49.07	15.33	37.41	43.84	54	-10.16	AV
H	15570	54.63	49.17	15.28	40.46	61.2	74	-12.80	PK
H	15570	38.34	49.17	15.28	40.46	44.91	54	-9.09	AV
operation frequency:5230									
V	10460	57.49	49.11	15.37	37.46	61.21	74	-12.79	PK
V	10460	39.28	49.11	15.37	37.46	43	54	-11.00	AV
V	15690	54.39	49.21	15.34	40.51	61.03	74	-12.97	PK
V	15690	38.38	49.21	15.34	40.51	45.02	54	-8.98	AV
H	10460	57.45	49.11	15.37	31.31	55.02	74	-18.98	PK
H	10460	44.39	49.11	15.37	31.31	41.96	54	-12.04	AV
H	15690	55.41	49.21	15.34	40.51	62.05	74	-11.95	PK
H	15690	39.85	49.21	15.34	40.51	46.49	54	-7.51	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	10360	56.73	49.05	15.3	37.39	60.37	74	-13.63	PK
V	10360	39.18	49.05	15.3	37.39	42.82	54	-11.18	AV
V	15540	56.41	49.16	15.27	40.45	62.97	74	-11.03	PK
V	15540	38.38	49.16	15.27	40.45	44.94	54	-9.06	AV
H	10360	56.73	49.05	15.3	37.39	60.37	74	-13.63	PK
H	10360	38.28	49.05	15.3	37.39	41.92	54	-12.08	AV
H	15540	54.96	49.16	15.27	40.45	61.52	74	-12.48	PK
H	15540	39.85	49.16	15.27	40.45	46.41	54	-7.59	AV
operation frequency:5200									
V	10400	56.14	49.09	15.34	37.42	59.81	74	-14.19	PK
V	10400	41.88	49.09	15.34	37.42	45.55	54	-8.45	AV
V	15600	55.53	49.18	15.29	40.47	62.11	74	-11.89	PK
V	15600	40.18	49.18	15.29	40.47	46.76	54	-7.24	AV
H	10400	55.74	49.09	15.34	37.42	59.41	74	-14.59	PK
H	10400	40.56	49.09	15.34	37.42	44.23	54	-9.77	AV
H	15600	55.28	49.18	15.29	40.47	61.86	74	-12.14	PK
H	15600	41.24	49.18	15.29	40.47	47.82	54	-6.18	AV
operation frequency:5240									
V	10480	57.63	49.11	15.37	37.46	61.35	74	-12.65	PK
V	10480	40.78	49.11	15.37	37.46	44.5	54	-9.50	AV
V	15720	54.14	49.21	15.34	40.51	60.78	74	-13.22	PK
V	15720	39.98	49.21	15.34	40.51	46.62	54	-7.38	AV
H	10480	57.36	49.11	15.37	31.31	54.93	74	-19.07	PK
H	10480	44.94	49.11	15.37	31.31	42.51	54	-11.49	AV
H	15720	55.87	49.21	15.34	40.51	62.51	74	-11.49	PK
H	15720	40.63	49.21	15.34	40.51	47.27	54	-6.73	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5190									
V	10380	56.94	49.07	15.33	37.41	60.61	74	-13.39	PK
V	10380	40.48	49.07	15.33	37.41	44.15	54	-9.85	AV
V	15570	56.62	49.17	15.28	40.46	63.19	74	-10.81	PK
V	15570	39.58	49.17	15.28	40.46	46.15	54	-7.85	AV
H	10380	56.44	49.07	15.33	37.41	60.11	74	-13.89	PK
H	10380	40.39	49.07	15.33	37.41	44.06	54	-9.94	AV
H	15570	54.28	49.17	15.28	40.46	60.85	74	-13.15	PK
H	15570	39.84	49.17	15.28	40.46	46.41	54	-7.59	AV
operation frequency:5230									
V	10460	57.69	49.11	15.37	37.46	61.41	74	-12.59	PK
V	10460	41.18	49.11	15.37	37.46	44.9	54	-9.10	AV
V	15690	54.25	49.21	15.34	40.51	60.89	74	-13.11	PK
V	15690	39.84	49.21	15.34	40.51	46.48	54	-7.52	AV
H	10460	57.87	49.11	15.37	31.31	55.44	74	-18.56	PK
H	10460	44.79	49.11	15.37	31.31	42.36	54	-11.64	AV
H	15690	55.37	49.21	15.34	40.51	62.01	74	-11.99	PK
H	15690	40.41	49.21	15.34	40.51	47.05	54	-6.95	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5210									
V	10420	56.36	49.07	15.33	37.41	60.03	74	-13.97	PK
V	10420	41.48	49.07	15.33	37.41	45.15	54	-8.85	AV
V	15630	56.25	49.17	15.28	40.46	62.82	74	-11.18	PK
V	15630	39.19	49.17	15.28	40.46	45.76	54	-8.24	AV
H	10420	56.87	49.07	15.33	37.41	60.54	74	-13.46	PK
H	10420	41.34	49.07	15.33	37.41	45.01	54	-8.99	AV
H	15630	54.38	49.17	15.28	40.46	60.95	74	-13.05	PK
H	15630	40.29	49.17	15.28	40.46	46.86	54	-7.14	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11a band 4

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5745									
V	11490	54.52	49.05	15.3	37.39	58.16	74	-15.84	PK
V	11490	41.08	49.05	15.3	37.39	44.72	54	-9.28	AV
V	17235	55.34	49.16	15.27	40.45	61.9	68.2	-6.30	PK
V	17235	40.63	49.16	15.27	40.45	47.19	54	-6.81	AV
H	11490	52.37	49.05	15.3	37.39	56.01	74	-17.99	PK
H	11490	42.41	49.05	15.3	37.39	46.05	54	-7.95	AV
H	17235	51.39	49.16	15.27	40.45	57.95	68.2	-10.25	PK
H	17235	40.85	49.16	15.27	40.45	47.41	54	-6.59	AV
operation frequency:5785									
V	11570	51.96	49.09	15.34	37.42	55.63	74	-18.37	PK
V	11570	41.17	49.09	15.34	37.42	44.84	54	-9.16	AV
V	17355	50.34	49.18	15.29	40.47	56.92	68.2	-11.28	PK
V	17355	40.76	49.18	15.29	40.47	47.34	54	-6.66	AV
H	11570	50.85	49.09	15.34	37.42	54.52	74	-19.48	PK
H	11570	42.04	49.09	15.34	37.42	45.71	54	-8.29	AV
H	17355	48.79	49.18	15.29	40.47	55.37	68.2	-12.83	PK
H	17355	40.18	49.18	15.29	40.47	46.76	54	-7.24	AV
operation frequency:5825									
V	11650	52.41	49.11	15.37	37.46	56.13	74	-17.87	PK
V	11650	41.38	49.11	15.37	37.46	45.1	54	-8.90	AV
V	17475	49.23	49.21	15.34	40.51	55.87	68.2	-12.33	PK
V	17475	40.44	49.21	15.34	40.51	47.08	54	-6.92	AV
H	11650	57.96	49.11	15.37	31.31	55.53	74	-18.47	PK
H	11650	48.04	49.11	15.37	31.31	45.61	54	-8.39	AV
H	17475	49.33	49.21	15.34	40.51	55.97	68.2	-12.23	PK
H	17475	40.85	49.21	15.34	40.51	47.49	54	-6.51	AV
Remark:									
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit									
2. If peak below the average limit, the average emission was no test.									
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5745									
V	11490	49.26	49.05	15.3	37.39	52.9	74	-21.10	PK
V	11490	42.85	49.05	15.3	37.39	46.49	54	-7.51	AV
V	17235	48.36	49.16	15.27	40.45	54.92	68.2	-13.28	PK
V	17235	40.22	49.16	15.27	40.45	46.78	54	-7.22	AV
H	11490	49.85	49.05	15.3	37.39	53.49	74	-20.51	PK
H	11490	41.16	49.05	15.3	37.39	44.8	54	-9.20	AV
H	17235	48.28	49.16	15.27	40.45	54.84	68.2	-13.36	PK
H	17235	40.41	49.16	15.27	40.45	46.97	54	-7.03	AV
operation frequency:5785									
V	11570	52.63	49.09	15.34	37.42	56.3	74	-17.70	PK
V	11570	42.28	49.09	15.34	37.42	45.95	54	-8.05	AV
V	17355	49.94	49.18	15.29	40.47	56.52	68.2	-11.68	PK
V	17355	40.56	49.18	15.29	40.47	47.14	54	-6.86	AV
H	11570	49.38	49.09	15.34	37.42	53.05	74	-20.95	PK
H	11570	43.69	49.09	15.34	37.42	47.36	54	-6.64	AV
H	17355	49.74	49.18	15.29	40.47	56.32	68.2	-11.88	PK
H	17355	40.73	49.18	15.29	40.47	47.31	54	-6.69	AV
operation frequency:5825									
V	11650	51.85	49.11	15.37	37.46	55.57	74	-18.43	PK
V	11650	41.43	49.11	15.37	37.46	45.15	54	-8.85	AV
V	17475	48.47	49.21	15.34	40.51	55.11	68.2	-13.09	PK
V	17475	40.63	49.21	15.34	40.51	47.27	54	-6.73	AV
H	11650	57.29	49.11	15.37	31.31	54.86	74	-19.14	PK
H	11650	44.34	49.11	15.37	31.31	41.91	54	-12.09	AV
H	17475	49.28	49.21	15.34	40.51	55.92	68.2	-12.28	PK
H	17475	40.63	49.21	15.34	40.51	47.27	54	-6.73	AV
Remark:									
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit									
2. If peak below the average limit, the average emission was no test.									
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5755									
V	11510	49.17	49.07	15.33	37.41	52.84	74	-21.16	PK
V	11510	41.56	49.07	15.33	37.41	45.23	54	-8.77	AV
V	17265	49.68	49.17	15.28	40.46	56.25	68.2	-11.95	PK
V	17265	40.23	49.17	15.28	40.46	46.8	54	-7.20	AV
H	11510	48.38	49.07	15.33	37.41	52.05	74	-21.95	PK
H	11510	41.16	49.07	15.33	37.41	44.83	54	-9.17	AV
H	17265	49.97	49.17	15.28	40.46	56.54	68.2	-11.66	PK
H	17265	40.41	49.17	15.28	40.46	46.98	54	-7.02	AV
operation frequency:5795									
V	11590	49.19	49.11	15.37	37.46	52.91	74	-21.09	PK
V	11590	41.28	49.11	15.37	37.46	45	54	-9.00	AV
V	17385	48.44	49.21	15.34	40.51	55.08	68.2	-13.12	PK
V	17385	40.29	49.21	15.34	40.51	46.93	54	-7.07	AV
H	11590	57.58	49.11	15.37	31.31	55.15	74	-18.85	PK
H	11590	44.79	49.11	15.37	31.31	42.36	54	-11.64	AV
H	17385	48.17	49.21	15.34	40.51	54.81	68.2	-13.39	PK
H	17385	40.96	49.21	15.34	40.51	47.6	54	-6.40	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5745									
V	11490	49.25	49.05	15.3	37.39	52.89	74	-21.11	PK
V	11490	42.47	49.05	15.3	37.39	46.11	54	-7.89	AV
V	17235	48.69	49.16	15.27	40.45	55.25	68.2	-12.95	PK
V	17235	40.24	49.16	15.27	40.45	46.8	54	-7.20	AV
H	11490	48.48	49.05	15.3	37.39	52.12	74	-21.88	PK
H	11490	41.33	49.05	15.3	37.39	44.97	54	-9.03	AV
H	17235	48.28	49.16	15.27	40.45	54.84	68.2	-13.36	PK
H	17235	40.47	49.16	15.27	40.45	47.03	54	-6.97	AV
operation frequency:5785									
V	11570	48.43	49.09	15.34	37.42	52.1	74	-21.90	PK
V	11570	41.19	49.09	15.34	37.42	44.86	54	-9.14	AV
V	17355	49.24	49.18	15.29	40.47	55.82	68.2	-12.38	PK
V	17355	40.43	49.18	15.29	40.47	47.01	54	-6.99	AV
H	11570	49.85	49.09	15.34	37.42	53.52	74	-20.48	PK
H	11570	43.41	49.09	15.34	37.42	47.08	54	-6.92	AV
H	17355	49.37	49.18	15.29	40.47	55.95	68.2	-12.25	PK
H	17355	40.89	49.18	15.29	40.47	47.47	54	-6.53	AV
operation frequency:5825									
V	11650	49.18	49.11	15.37	37.46	52.9	74	-21.10	PK
V	11650	41.63	49.11	15.37	37.46	45.35	54	-8.65	AV
V	17475	48.17	49.21	15.34	40.51	54.81	68.2	-13.39	PK
V	17475	40.62	49.21	15.34	40.51	47.26	54	-6.74	AV
H	11650	57.26	49.11	15.37	31.31	54.83	74	-19.17	PK
H	11650	44.28	49.11	15.37	31.31	41.85	54	-12.15	AV
H	17475	48.34	49.21	15.34	40.51	54.98	68.2	-13.22	PK
H	17475	40.57	49.21	15.34	40.51	47.21	54	-6.79	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



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Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5755									
V	11510	49.23	49.07	15.33	37.41	52.9	74	-21.10	PK
V	11510	42.88	49.07	15.33	37.41	46.55	54	-7.45	AV
V	17265	48.68	49.17	15.28	40.46	55.25	68.2	-12.95	PK
V	17265	41.41	49.17	15.28	40.46	47.98	54	-6.02	AV
H	11510	48.39	49.07	15.33	37.41	52.06	74	-21.94	PK
H	11510	42.78	49.07	15.33	37.41	46.45	54	-7.55	AV
H	17265	48.86	49.17	15.28	40.46	55.43	68.2	-12.77	PK
H	17265	40.28	49.17	15.28	40.46	46.85	54	-7.15	AV

operation frequency:5795

V	11590	49.43	49.11	15.37	37.46	53.15	74	-20.85	PK
V	11590	41.38	49.11	15.37	37.46	45.1	54	-8.90	AV
V	17385	48.19	49.21	15.34	40.51	54.83	68.2	-13.37	PK
V	17385	40.85	49.21	15.34	40.51	47.49	54	-6.51	AV
H	11590	57.24	49.11	15.37	31.31	54.81	74	-19.19	PK
H	11590	44.78	49.11	15.37	31.31	42.35	54	-11.65	AV
H	17385	48.29	49.21	15.34	40.51	54.93	68.2	-13.27	PK
H	17385	40.85	49.21	15.34	40.51	47.49	54	-6.51	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5775									
V	11550	48.38	49.07	15.33	37.41	52.05	74	-21.95	PK
V	11550	42.29	49.07	15.33	37.41	45.96	54	-8.04	AV
V	17325	49.64	49.17	15.28	40.46	56.21	68.2	-11.99	PK
V	17325	40.85	49.17	15.28	40.46	47.42	54	-6.58	AV
H	11550	48.36	49.07	15.33	37.41	52.03	74	-21.97	PK
H	11550	41.24	49.07	15.33	37.41	44.91	54	-9.09	AV
H	17325	48.36	49.17	15.28	40.46	54.93	68.2	-13.27	PK
H	17325	40.67	49.17	15.28	40.46	47.24	54	-6.76	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

15.205(a), then the 15.209(a) 15.407

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

According to 15.407(b)(4)(i), 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.

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	5000MHz
Stop Frequency	5420MHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.
- Test the EUT in the lowest channel,the Highest channel

Note:

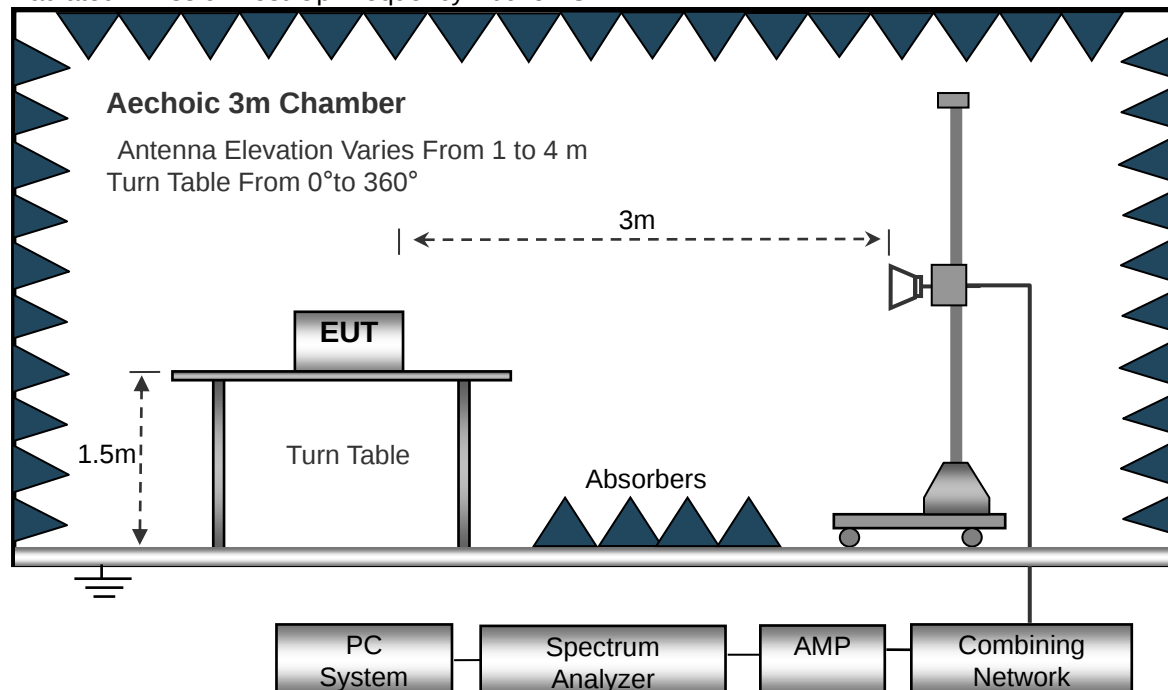
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



3.3.6 TEST RESULT

802.11a

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	53.19	49.12	15.6	37.34	57.01	74	-16.99	PK
V	5150	39.33	49.12	15.6	37.34	43.15	54	-10.85	AV
V	5145	54.25	49.19	15.24	40.43	60.73	74	-13.27	PK
V	5145	36.96	49.19	15.24	40.43	43.44	54	-10.56	AV
H	5150	52.41	49.12	15.6	37.34	56.23	74	-17.77	PK
H	5150	37.69	49.12	15.6	37.34	41.51	54	-12.49	AV
H	5145	54.25	49.19	15.24	40.43	60.73	74	-13.27	PK
H	5145	33.48	49.19	15.24	40.43	39.96	54	-14.04	AV
operation frequency:5240									
V	5350	53.26	49.13	15.32	37.46	56.91	74	-17.09	PK
V	5350	35.14	49.13	15.32	37.46	38.79	54	-15.21	AV
V	5370	53.63	49.24	15.36	40.51	60.26	74	-13.74	PK
V	5370	32.28	49.24	15.36	40.51	38.91	54	-15.09	AV
H	5350	52.39	49.13	15.32	31.31	49.89	74	-24.11	PK
H	5350	40.14	49.13	15.32	31.31	37.64	54	-16.36	AV
H	5370	52.48	49.24	15.36	40.51	59.11	74	-14.89	PK
H	5370	32.74	49.24	15.36	40.51	39.37	54	-14.63	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n HT20

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	51.36	49.12	15.6	37.34	55.18	74	-18.82	PK
V	5150	33.85	49.12	15.6	37.34	37.67	54	-16.33	AV
V	5145	51.24	49.19	15.24	40.43	57.72	74	-16.28	PK
V	5145	33.67	49.19	15.24	40.43	40.15	54	-13.85	AV
H	5150	51.29	49.12	15.6	37.34	55.11	74	-18.89	PK
H	5150	33.61	49.12	15.6	37.34	37.43	54	-16.57	AV
H	5145	50.85	49.19	15.24	40.43	57.33	74	-16.67	PK
H	5145	32.36	49.19	15.24	40.43	38.84	54	-15.16	AV
operation frequency:5240									
V	5350	53.19	49.13	15.32	37.46	56.84	74	-17.16	PK
V	5350	34.25	49.13	15.32	37.46	37.9	54	-16.1	AV
V	5370	50.63	49.24	15.36	40.51	57.26	74	-16.74	PK
V	5370	33.58	49.24	15.36	40.51	40.21	54	-13.79	AV
H	5350	54.27	49.13	15.32	31.31	51.77	74	-22.23	PK
H	5350	36.56	49.13	15.32	31.31	34.06	54	-19.94	AV
H	5370	51.29	49.24	15.36	40.51	57.92	74	-16.08	PK
H	5370	33.87	49.24	15.36	40.51	40.5	54	-13.5	AV
Remark: 1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit 2. If peak below the average limit, the average emission was no test. 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



802.11ac HT20

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5180									
V	5150	52.29	49.12	15.33	37.41	55.91	74	-18.09	PK
V	5150	34.21	49.12	15.33	37.41	37.83	54	-16.17	AV
V	5145	51.28	49.19	15.28	40.46	57.83	74	-16.17	PK
V	5145	33.36	49.19	15.28	40.46	39.91	54	-14.09	AV
H	5150	52.39	49.12	15.33	37.41	56.01	74	-17.99	PK
H	5150	34.14	49.12	15.33	37.41	37.76	54	-16.24	AV
H	5145	50.44	49.19	15.28	40.46	56.99	74	-17.01	PK
H	5145	33.49	49.19	15.28	40.46	40.04	54	-13.96	AV
operation frequency:5240									
V	5350	53.25	49.13	15.32	37.46	56.9	74	-17.1	PK
V	5350	36.36	49.13	15.32	37.46	40.01	54	-13.99	AV
V	5370	50.85	49.24	15.36	40.51	57.48	74	-16.52	PK
V	5370	33.63	49.24	15.36	40.51	40.26	54	-13.74	AV
H	5350	53.61	49.13	15.32	31.31	51.11	74	-22.89	PK
H	5350	40.95	49.13	15.32	31.31	38.45	54	-15.55	AV
H	5370	51.47	49.24	15.36	40.51	58.1	74	-15.9	PK
H	5370	35.59	49.24	15.36	40.51	42.22	54	-11.78	AV
Remark:									
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit									
2. If peak below the average limit, the average emission was no test.									
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



802.11n HT40

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:5190									
V	5150	52.25	49.12	15.6	37.39	56.12	74	-17.88	PK
V	5150	35.63	49.12	15.6	37.39	39.5	54	-14.5	AV
V	5145	51.17	49.19	15.24	40.45	57.67	74	-16.33	PK
V	5145	34.34	49.19	15.24	40.45	40.84	54	-13.16	AV
H	5150	52.68	49.12	15.6	37.39	56.55	74	-17.45	PK
H	5150	34.19	49.12	15.6	37.39	38.06	54	-15.94	AV
H	5145	50.74	49.19	15.24	40.45	57.24	74	-16.76	PK
H	5145	35.36	49.19	15.24	40.45	41.86	54	-12.14	AV
operation frequency:5230									
V	5350	53.14	49.13	15.34	37.46	56.81	74	-17.19	PK
V	5350	37.96	49.13	15.34	37.46	41.63	54	-12.37	AV
V	5370	50.25	49.24	15.35	40.51	56.87	74	-17.13	PK
V	5370	36.69	49.24	15.35	40.51	43.31	54	-10.69	AV
H	5350	54.25	49.13	15.34	31.31	51.77	74	-22.23	PK
H	5350	41.69	49.13	15.34	31.31	39.21	54	-14.79	AV
H	5370	52.67	49.24	15.35	40.51	59.29	74	-14.71	PK
H	5370	36.19	49.24	15.35	40.51	42.81	54	-11.19	AV
Remark:									
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit									
2. If peak below the average limit, the average emission was no test.									
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.									



802.11ac HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	5150	52.25	49.12	15.32	37.41	55.86	74	-18.14	PK
V	5150	37.69	49.12	15.32	37.41	41.30	54	-12.70	AV
V	5145	52.17	49.19	15.36	40.46	58.80	74	-15.20	PK
V	5145	36.63	49.19	15.36	40.46	43.26	54	-10.74	AV
H	5150	52.95	49.12	15.32	37.41	56.56	74	-17.44	PK
H	5150	37.69	49.12	15.32	37.41	41.30	54	-12.70	AV
H	5145	51.17	49.19	15.36	40.46	57.80	74	-16.20	PK
H	5145	36.55	49.19	15.36	40.46	43.18	54	-10.82	AV
operation frequency:5230									
V	5350	54.96	49.13	15.34	37.34	58.51	74	-15.49	PK
V	5350	36.47	49.13	15.34	37.34	40.02	54	-13.98	AV
V	5370	51.36	49.24	15.35	40.43	57.90	74	-16.10	PK
V	5370	36.58	49.24	15.35	40.43	43.12	54	-10.88	AV
H	5350	54.79	49.13	15.34	37.34	58.34	74	-15.66	PK
H	5350	41.41	49.13	15.34	37.34	44.96	54	-9.04	AV
H	5370	50.59	49.24	15.35	40.43	57.13	74	-16.87	PK
H	5370	35.73	49.24	15.35	40.43	42.27	54	-11.73	AV

802.11ac HT80

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5210									
V	5350	52.51	49.13	15.32	37.48	56.18	74	-17.82	PK
V	5350	35.88	49.13	15.32	37.48	39.55	54	-14.45	AV
V	5370	51.34	49.24	15.36	40.42	57.88	74	-16.12	PK
V	5370	35.63	49.24	15.36	40.42	42.17	54	-11.83	AV
H	5350	52.78	49.13	15.32	37.48	56.45	74	-17.55	PK
H	5350	36.24	49.13	15.32	37.48	39.91	54	-14.09	AV
H	5370	50.29	49.24	15.36	40.42	56.83	74	-17.17	PK
H	5370	35.85	49.24	15.36	40.42	42.39	54	-11.61	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

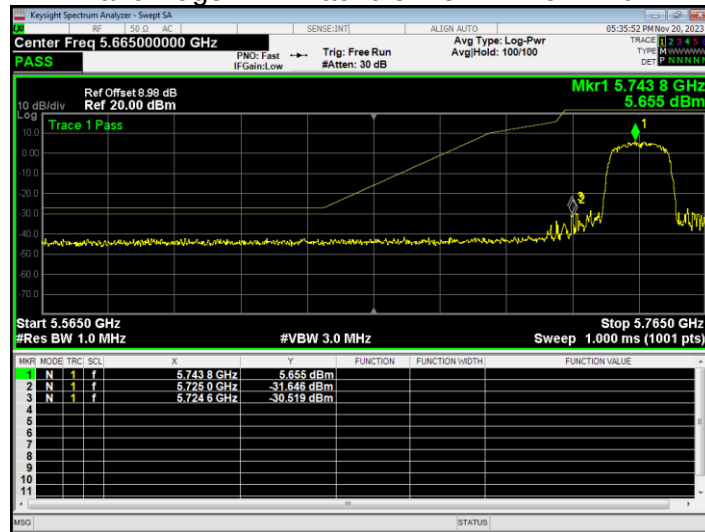
**band 4**

Note:Ref offerest=antenna gain+cable loss

Band Edge NVNT a 5745MHz Low Ant1**Band Edge NVNT a 5825MHz High Ant1**



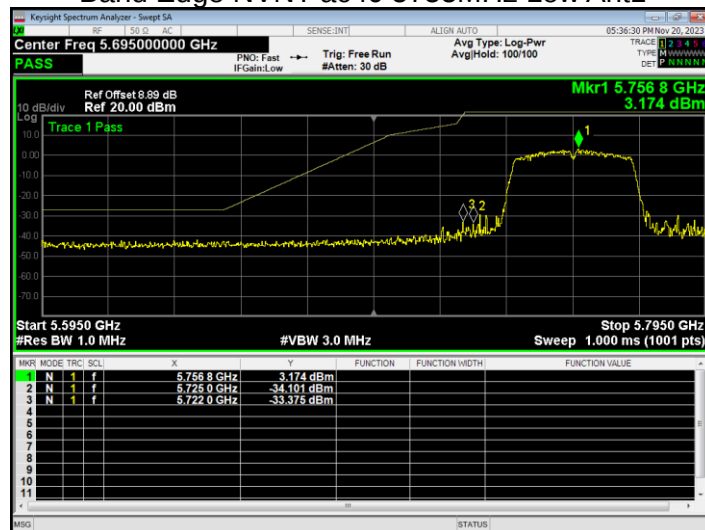
Band Edge NVNT ac20 5745MHz Low Ant1



Band Edge NVNT ac20 5825MHz High Ant1

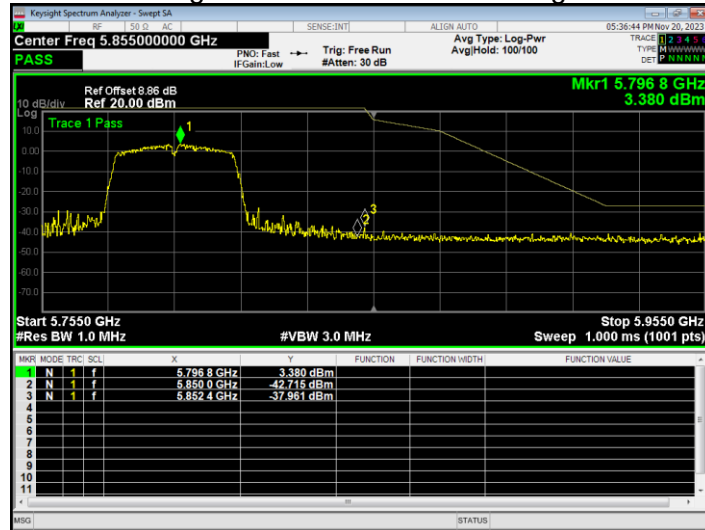


Band Edge NVNT ac40 5755MHz Low Ant1





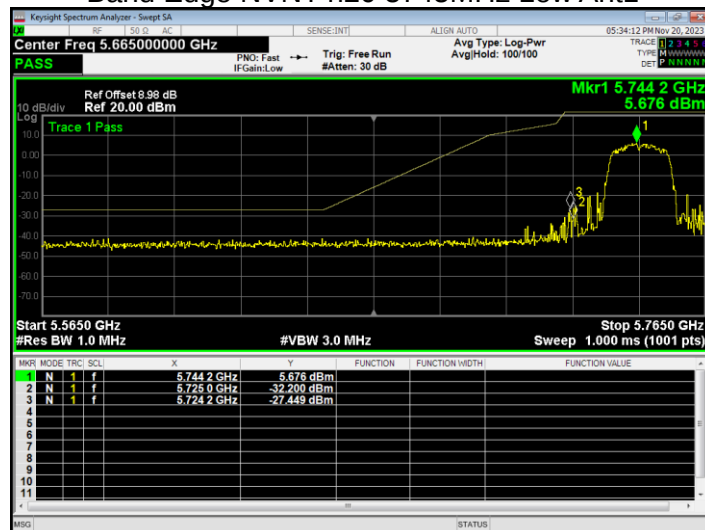
Band Edge NVNT ac40 5795MHz High Ant1



Band Edge NVNT ac80 5775MHz Low Ant1

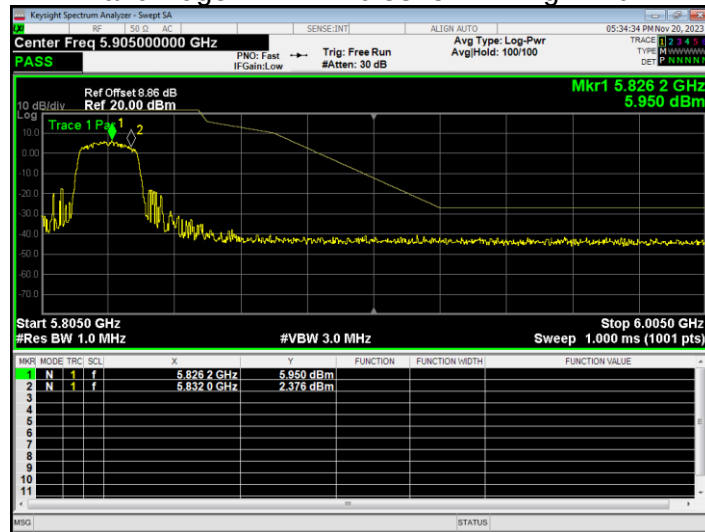


Band Edge NVNT n20 5745MHz Low Ant1

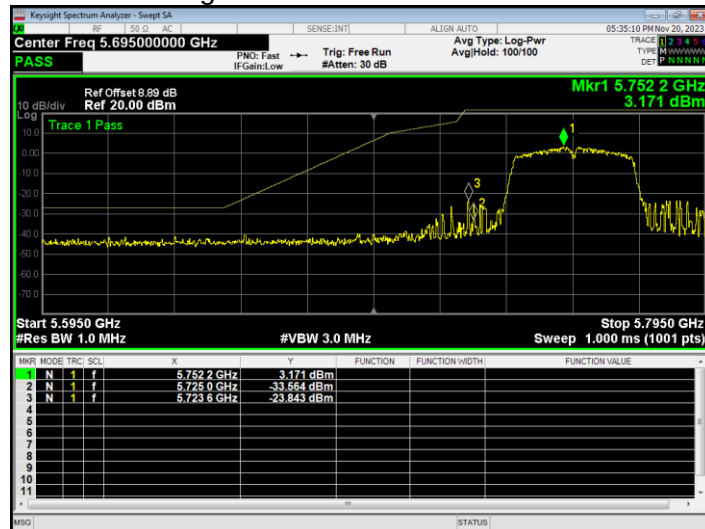




Band Edge NVNT n20 5825MHz High Ant1



Band Edge NVNT n40 5755MHz Low Ant1



Band Edge NVNT n40 5795MHz High Ant1





4. TRANSMISSION IN THE ABSENCE OF DATA

4.1 STANDARD REQUIREMENT

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

4.2 TEST RESULT

No non-compliance noted:
Refer to the theory of operation.

5. ANTENNA REQUIREMENT

5.1 STANDARD REQUIREMENT

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

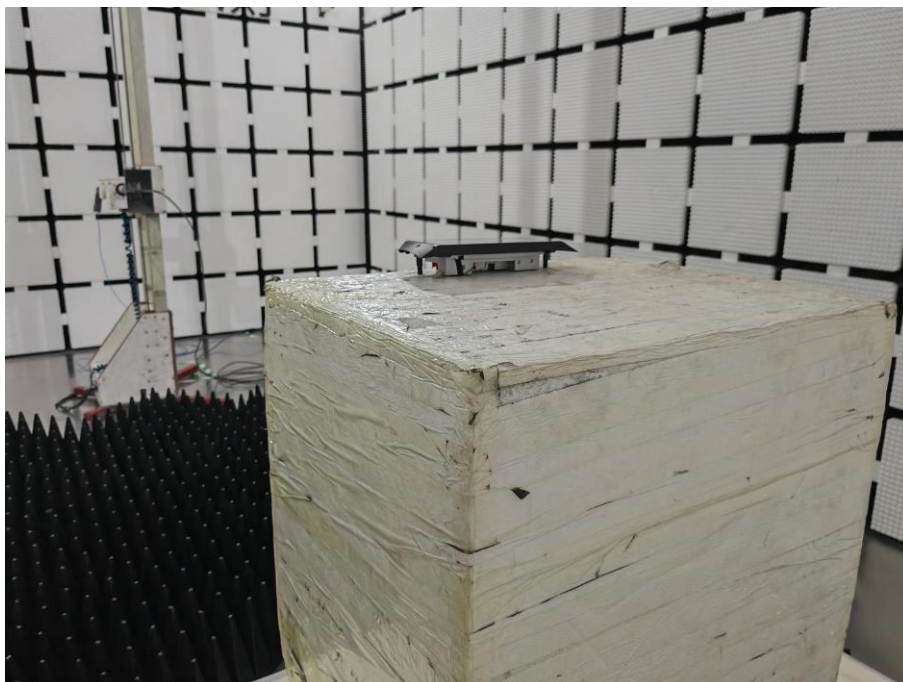
5.2 EUT ANTENNA

The EUT antenna is Internal Antenna, It comply with the standard requirement.



6. TEST SEUUP PHOTO

Radiated Measurement Photos

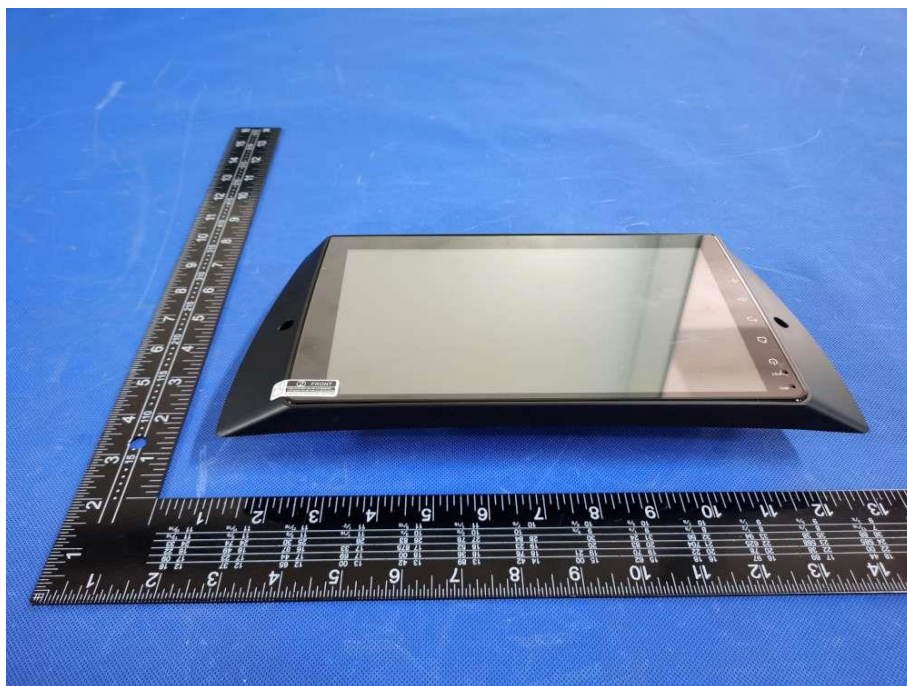
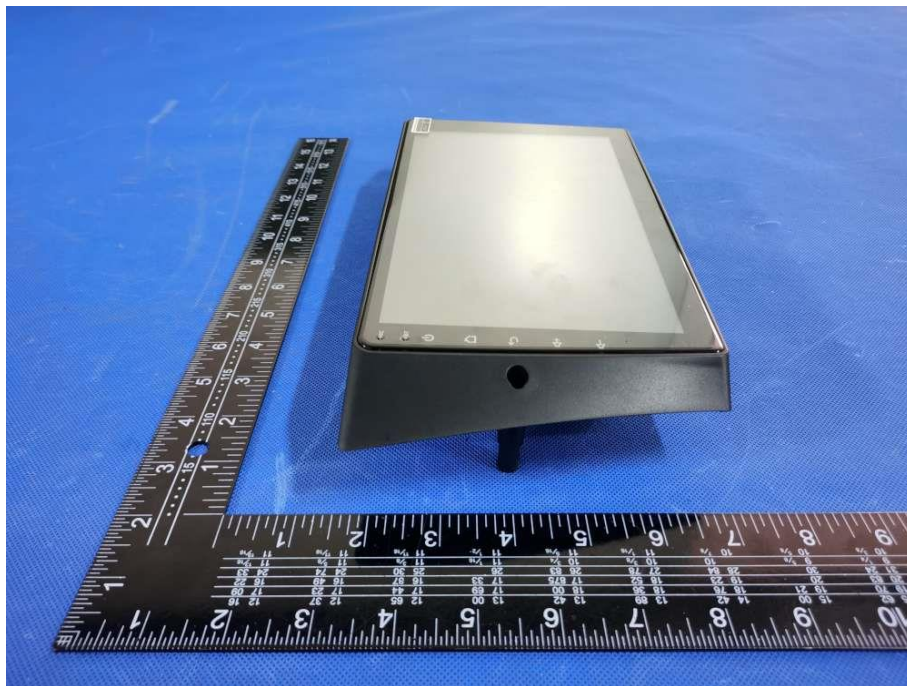




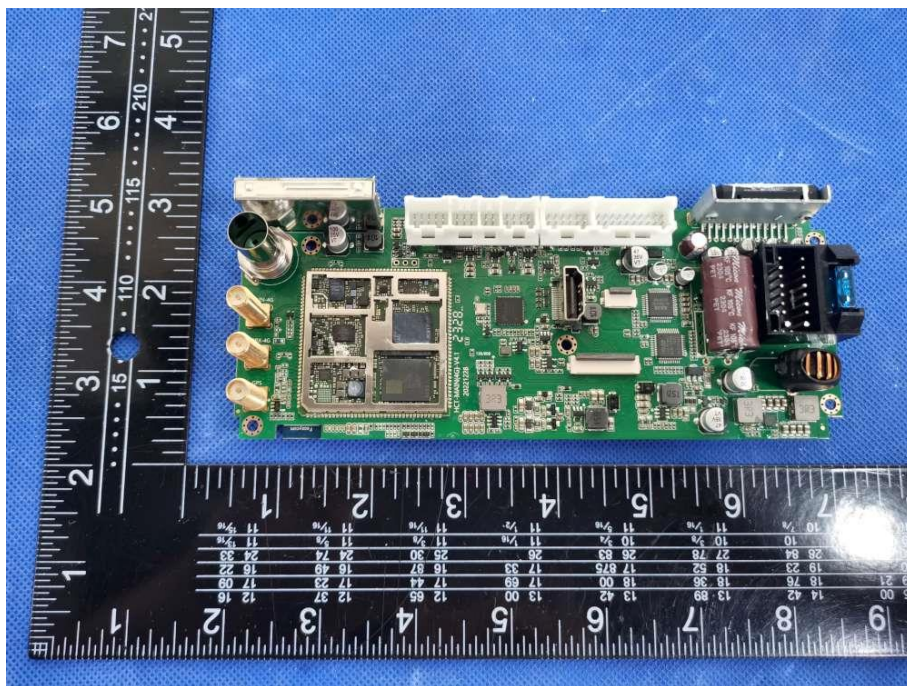
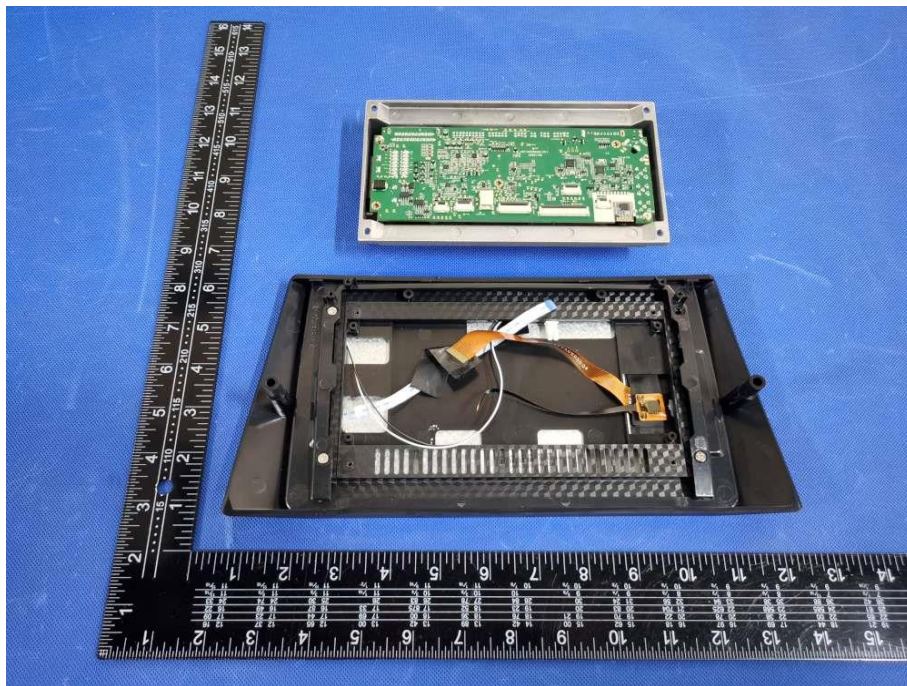
7. EUT PHOTO

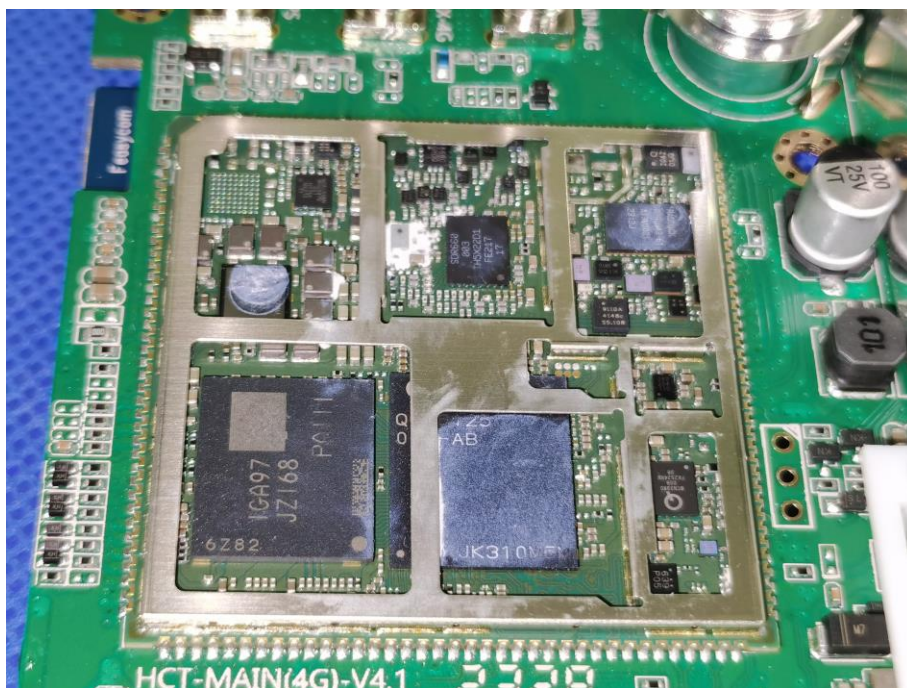


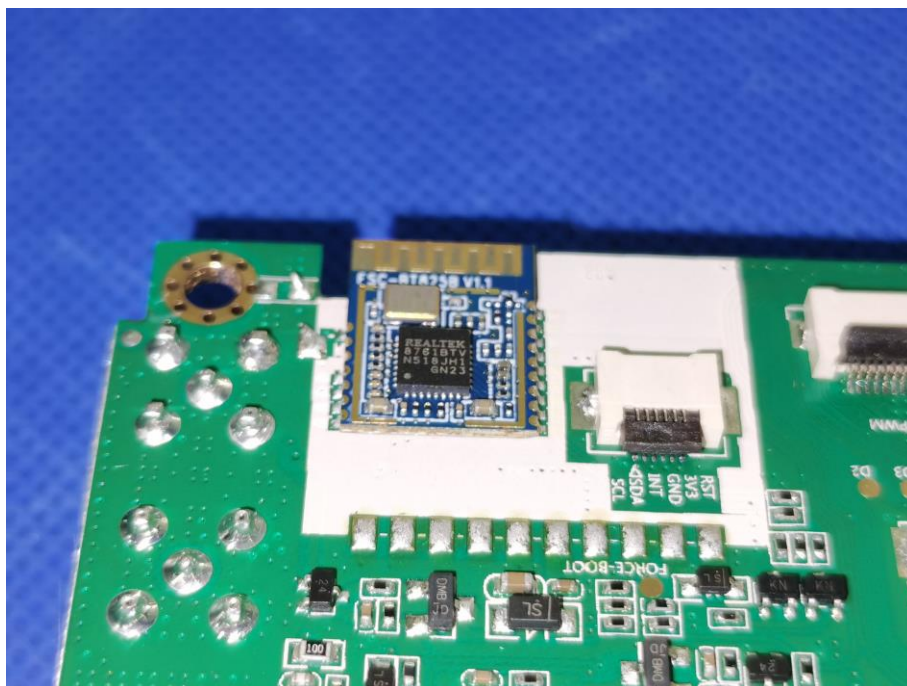
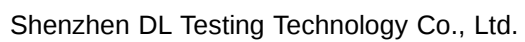












***** END OF REPORT *****