FCC RADIO TEST REPORT

Applicant	:	NOMVDIC Corporation
Address	:	1209 Orange Street, Wilmington, New Castle Delaware 19801, USA
Equipment	:	RF Module
Model No.	:	WP100, ND10005
Trade Name	:	NOMVDIC
FCC ID	:	2A4GSND10005

I HEREBY CERTIFY THAT :

The sample was received on May. 09, 2020 and the testing was completed on May. 26, 2020 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Vic Hsiao / Supervisor

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory

Contents

1. Summary of Test Procedure and Test Results 4
1.1 Applicable Standards 4
2. Test Configuration of Equipment under Test 5
2.1 Feature of Equipment under Test 5
2.2 Test Mode and Test Software 6
2.3 Description of Test System 6
2.4 General Information of Test 7
2.5 Measurement Uncertainty 7
3. Test Equipment and Ancillaries Used for Tests 8
4. Test of AC Power Line Conducted Emission 10
4.1 Test Limit 10
4.2 Test Procedures 10
4.3 Typical Test Setup 11
4.4 Test Result and Data 12
4.5 Test Photographs 16
5. Test of Spurious Emission (Radiated) 17
5.1 Test Limit 17
5.2 Test Procedures 18
5.3 Typical Test Setup 19
5.4 Test Result and Data (9kHz ~ 30MHz) 21
5.5 Test Result and Data (30MHz ~ 1GHz) 21
5.6 Test Result and Data (1GHz ~ 25GHz) 25
5.7 Restricted Bands of Operation 29
5.8 Test Photographs (30MHz ~ 1GHz) 30
5.9 Test Photographs (1GHz ~ 25GHz) 32
6. Test of Conducted Spurious Emission 36
6.1 Test Limit 36
6.2 Test Procedure 36
6.3 Test Setup Layout 36
6.4 Test Result and Data 36

History of this test report

Report No.	Issued Date	Description
22050137-TRFCC05	Jun. 27, 2022	Original

Report Type		Description
☐	Original report	NA
■	Derivative Report	This sample provided has been confirmed to be identical to the original report sample. The only difference are as listed below. As it doesn’t affect the test result, the original report number: TEFU2005014 and content will be used. 1. Applicant information. 2. Model number. 3. Trade name. 4. FCC ID.

1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10:2013

. Description of Test	Result
. CO-LOCATION	PASS

*The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement.

2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Frequency Range	BT / BLE: 2402-2480MHz 802.11b/g/n: 2412-2462MHz 802.11a/n/ac: 5180-5240MHz, 5745-5825MHz
Modulation Type	BT: GFSK, π/4-DQPSK, 8DPSK BLE: GFSK 802.11b: CCK, DQPSK, DBPSK 802.11g/n/a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM
Modulation Technology	DSSS, OFDM, FHSS, DTS
Data Rate	BT: GFSK: 1Mbps, π/4-DQPSK: 2Mbps, 8DPSK: 3Mbps BLE: GFSK: 1Mbps WLAN: 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS7, HT20/40 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11ac: MCS0 – MCS9, VHT20/40/80
Antenna Type	PCB Antenna
Antenna Gain	For BT/BLE: 2400-2483.5MHz: ANT B: 2.62dBi For WLAN 2.4G: 2412-2462MHz: ANT A:2.60dBi For WLAN 5G: 5180-5240MHz: ANT B:2.80dBi 5745-5825MHz: ANT B:2.11dBi

Note:

1. WLAN and BT can simultaneously transmission.
2. For more details, please refer to the User's manual of the EUT.

2.2 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b. The complete test system included Notebook and EUT for RF test.
c. An executive program, ” MP Tool ver.0.0003.06.30180928L” under Windows OS system was executed to transmit and receive data via WLAN.
d. An executive program, ” BlueTooth RF Test Tool ver.5.5.1.21” under Windows OS system was executed to transmit and receive data via Bluetooth.
e. The following test modes were performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	11g CH01 + 8DPSK CH00
2	11ac VHT20 CH40 + 8DPSK CH00
Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	11g CH01 + 8DPSK CH00
2	11ac VHT20 CH40 + 8DPSK CH00
Radiation Emissions (1GHz ~ 25GHz)	
Test Mode	Operating Description
1	11g CH01 + 8DPSK CH00
2	11ac VHT20 CH40 + 8DPSK CH00

2.3 Description of Test System

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
USB Cable	BENEVO	BUSB3100AMF	1m / NS	N/A
Adapter	APD	WB-18D12R	1.8m / NS	N/A
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
USB Cable	BENEVO	BUSB3100AMF	1m / NS	N/A
Adapter	APD	WB-18D12R	1.8m / NS	N/A
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
USB Cable	BENEVO	BUSB3100AMF	1m / NS	N/A
Adapter	APD	WB-18D12R	1.8m / NS	N/A

2.4 General Information of Test

Test Site	**Cerpass Technology Corporation Test Laboratory** Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881	
	FCC	TW1439, TW1079
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication test C-4663 for Conducted emission test R-4218 for Radiated emission test G-10812, G-10813 for radiated disturbance above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 40,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

Test Item	Test Site	Finish Date	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2020/05/26	24℃ / 61%	Vic Yeh
Radiated Emissions	3M02-NK	2020/05/19	22℃ / 42%	Vic Yeh
AC Power Line Conducted Emission	CON01-NK	2020/05/22	28℃ / 51%	Leon Huang

2.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±1.60dB
Radiated Spurious Emission(9KHz~30MHz)	±3.404dB
Radiated Spurious Emission(30MHz~1GHz)	±5.686dB
Radiated Spurious Emission(1GHz~25GHz)	±6.597dB
Conducted Spurious Emission	±2.022dB

3. Test Equipment and Ancillaries Used for Tests

Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	**Manufacturer**	**Model No**	**Serial No**	**Calibration Date**	**Valid Date**
Bilog Antenna	Schwarzbeck	VULB9168	275	2019/09/24	2020/09/23
Active Loop Antenna	EMCO	6507	40855	2019/05/24	2020/05/23
Horn Antenna	EMCO	3115	31589	2020/03/26	2021/03/25
Horn Anrenna	EMCO	3116	31974	2019/09/17	2020/09/16
EMI Receiver	ROHDE & SCHWARZ	ESCI	100821	2019/09/16	2020/09/15
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	102151	2019/08/02	2020/08/01
Preamplifier	EM Electronics corp.	EM330	60660	2020/03/16	2021/03/15
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2019/09/20	2020/09/19
Preamplifier	Agilent	8449B	3008A01954	2020/03/16	2021/03/15
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2019/11/07	2020/11/06
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2020/04/07	2021/04/06
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1316	2019/09/20	2020/09/19
Cable-0.5m(1G-18G)	HUBER SUHNER	SUCOFLEX 100	805443/4	2019/05/20	2020/05/19
Cable-3m(1G-18G)	HUBER SUHNER	SUCOFLEX 100	805796/4	2019/05/20	2020/05/19
Cable-8m(1G-18G)	HUBER SUHNER	SUCOFLEX 100	805795/4	2019/05/20	2020/05/19
Cable-0.5m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	28420/2	2020/04/01	2021/03/31
Cable-3m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	MY2608/2	2020/04/01	2021/03/31
Cable-0.5m(1G-40G)	Rapidtek	40GHZ 50CM	38MS-38MS50 314	2020/04/09	2021/04/08
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	**Manufacturer**	**Model No**	**Serial No**	**Calibration Date**	**Valid Date**
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100219	2019/07/22	2020/07/21
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	102151	2019/08/02	2020/08/01
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2020/04/07	2021/04/06
CAX Signal Analyzer	KEYSIGHT	N9000B	MY57100339	2019/11/25	2020/11/24
Attenuator	KEYSIGHT	8491B	MY39250703	2020/04/17	2021/04/16
TEMP & HUMI CHAMBER	T-MACHINE	TMJ-9712	T-12-040111	2019/08/28	2020/08/27
Power Meter	Anritsu	ML2495A	1224005	2020/04/17	2021/04/16
Power Sensor	Anritsu	MA2411B	1207295	2020/04/17	2021/04/16

Test Item	AC Power Line Conducted Emission				
Test Site	CON01-NK				
Instrument	**Manufacturer**	**Model No**	**Serial No**	**Calibration Date**	**Valid Date**
EMI Receiver	ROHDE & SCHWARZ	ESCI	100821	2019/09/16	2020/09/15
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-516	2019/09/19	2020/09/18
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101933	2019/09/11	2020/09/10
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2019/09/11	2020/09/10
E3	AUDIX	v8.2014-8-6	RK-000531	NA	NA

4. Test of AC Power Line Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.10-2013. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

4.2 Test Procedures

a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.

b. Connect EUT to the power mains through a line impedance stabilization network (LISN).

c. All the support units are connecting to the other LISN.

d. The LISN provides 50 ohm coupling impedance for the measuring instrument.

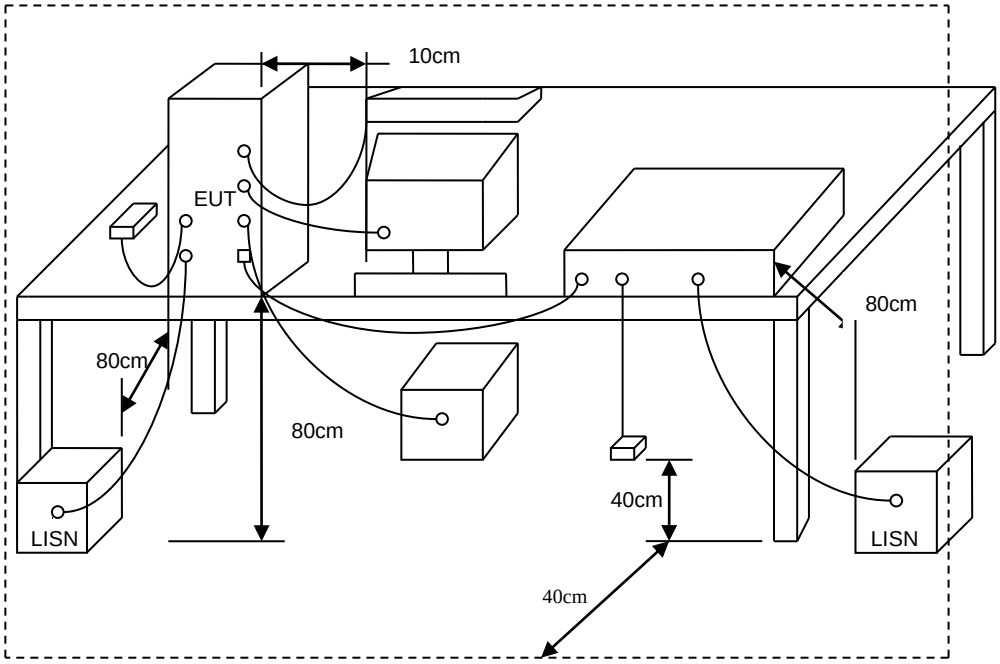
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.

f. Both sides of AC line were checked for maximum conducted interference.

g. The frequency range from 150 kHz to 30 MHz was searched.

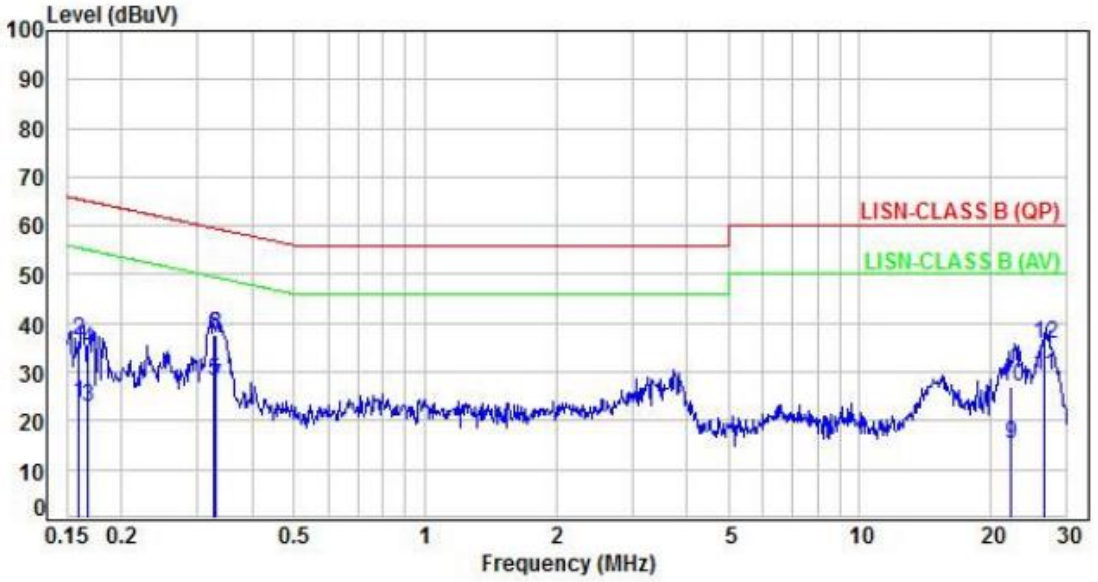
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3 Typical Test Setup



4.4 Test Result and Data

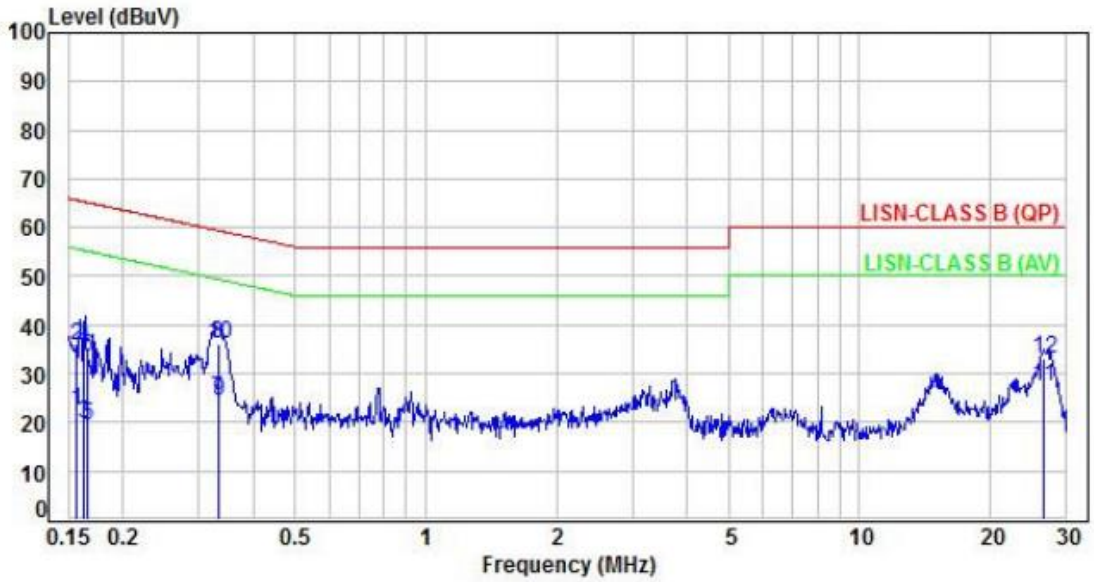
Power :	AC 120V / 60Hz	Pol/Phase :	LINE
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	9.92	13.83	23.75	55.49	-31.74	Average	P
2	0.16	9.92	26.77	36.69	65.49	-28.80	QP	P
3	0.17	9.92	12.75	22.67	55.08	-32.41	Average	P
4	0.17	9.92	24.75	34.67	65.08	-30.41	QP	P
5	0.33	9.94	18.37	28.31	49.57	-21.26	Average	P
6	0.33	9.94	27.82	37.76	59.57	-21.81	QP	P
7	0.33	9.94	17.15	27.09	49.49	-22.40	Average	P
8	0.33	9.94	27.84	37.78	59.49	-21.71	QP	P
9	22.32	10.67	4.51	15.18	50.00	-34.82	Average	P
10	22.32	10.67	16.22	26.89	60.00	-33.11	QP	P
11	26.62	10.83	18.49	29.32	50.00	-20.68	Average	P
12	26.62	10.83	24.82	35.65	60.00	-24.35	QP	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

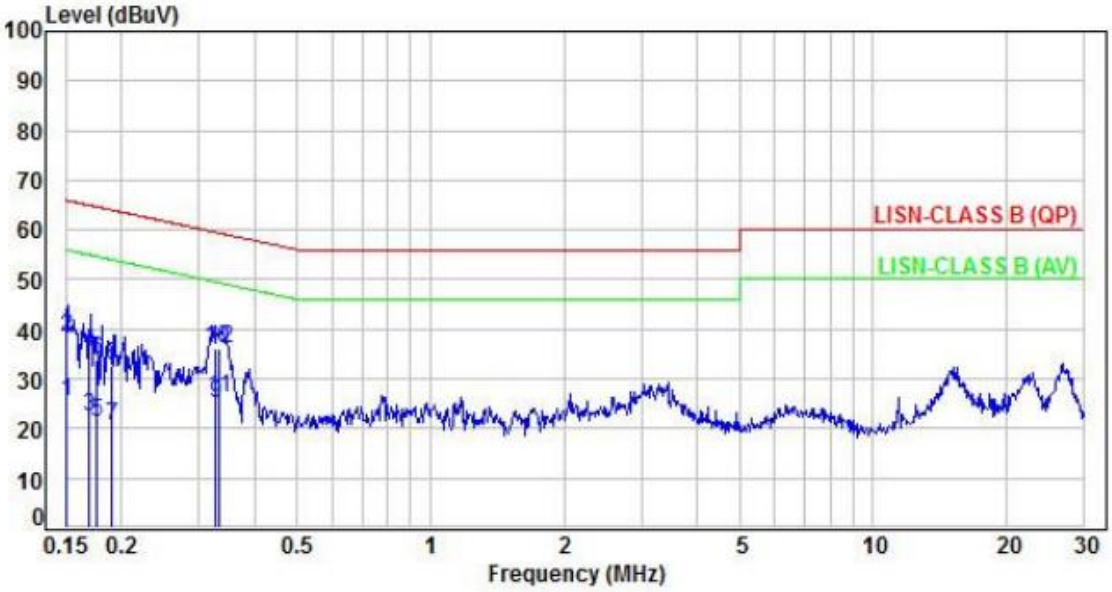
Power :	AC 120V / 60Hz	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	9.95	12.42	22.37	55.63	-33.26	Average	P
2	0.16	9.95	25.62	35.57	65.63	-30.06	QP	P
3	0.16	9.95	9.91	19.86	55.36	-35.50	Average	P
4	0.16	9.95	25.06	35.01	65.36	-30.35	QP	P
5	0.17	9.95	9.58	19.53	55.15	-35.62	Average	P
6	0.17	9.95	23.50	33.45	65.15	-31.70	QP	P
7	0.33	9.96	14.73	24.69	49.41	-24.72	Average	P
8	0.33	9.96	26.19	36.15	59.41	-23.26	QP	P
9	0.33	9.96	14.38	24.34	49.38	-25.04	Average	P
10	0.33	9.96	26.17	36.13	59.38	-23.25	QP	P
11	26.62	10.85	16.48	27.33	50.00	-22.67	Average	P
12	26.62	10.85	22.18	33.03	60.00	-26.97	QP	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

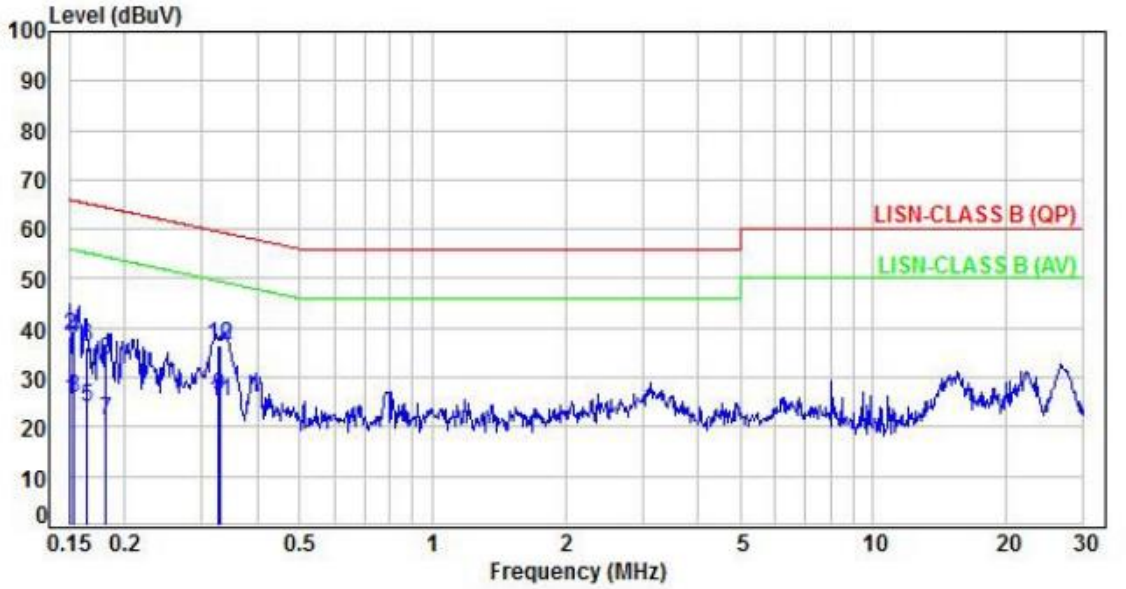
Power :	AC 120V / 60Hz	Pol/Phase :	LINE
Test Mode :	Mode 2	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	9.95	15.43	25.38	55.95	-30.57	Average	P
2	0.15	9.95	28.47	38.42	65.95	-27.53	QP	P
3	0.17	9.95	12.57	22.52	55.01	-32.49	Average	P
4	0.17	9.95	25.52	35.47	65.01	-29.54	QP	P
5	0.18	9.95	11.20	21.15	54.64	-33.49	Average	P
6	0.18	9.95	23.95	33.90	64.64	-30.74	QP	P
7	0.19	9.95	10.61	20.56	54.02	-33.46	Average	P
8	0.19	9.95	22.71	32.66	64.02	-31.36	QP	P
9	0.33	9.96	15.10	25.06	49.50	-24.44	Average	P
10	0.33	9.96	26.33	36.29	59.50	-23.21	QP	P
11	0.33	9.96	16.44	26.40	49.36	-22.96	Average	P
12	0.33	9.96	26.12	36.08	59.36	-23.28	QP	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

Power :	AC 120V / 60Hz	Pol/Phase :	NEUTRAL
Test Mode :	Mode 2	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	9.92	15.58	25.50	55.95	-30.45	Average	P
2	0.15	9.92	28.65	38.57	65.95	-27.38	QP	P
3	0.15	9.92	15.77	25.69	55.80	-30.11	Average	P
4	0.15	9.92	28.19	38.11	65.80	-27.69	QP	P
5	0.16	9.92	13.90	23.82	55.26	-31.44	Average	P
6	0.16	9.92	26.38	36.30	65.26	-28.96	QP	P
7	0.18	9.92	11.50	21.42	54.41	-32.99	Average	P
8	0.18	9.92	23.56	33.48	64.41	-30.93	QP	P
9	0.33	9.94	16.20	26.14	49.55	-23.41	Average	P
10	0.33	9.94	26.61	36.55	59.55	-23.00	QP	P
11	0.33	9.94	15.23	25.17	49.50	-24.33	Average	P
12	0.33	9.94	26.48	36.42	59.50	-23.08	QP	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

5. Test of Spurious Emission (Radiated)

5.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

Frequency (MHz)	Field Strength (microvolt/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

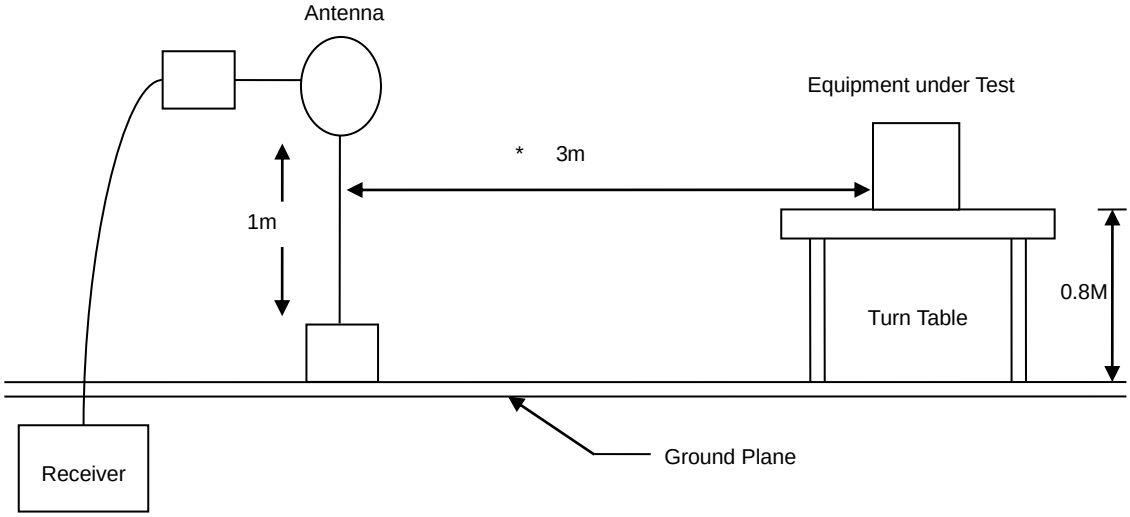
5.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

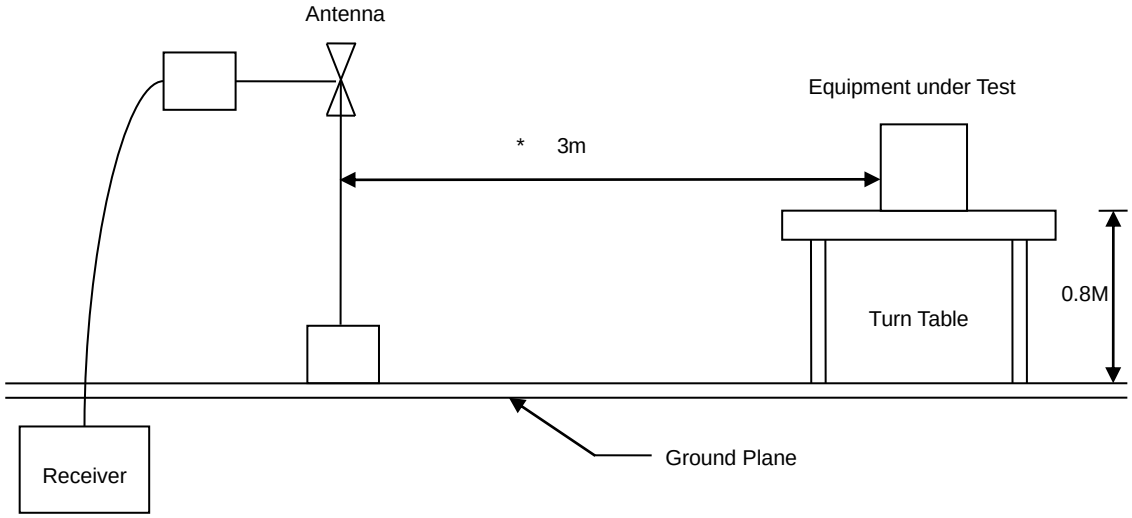
Note: The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions such that emissions from the EUT are maximized.
(For BT+WLAN 2.4G:X-AXIS is the worst.)
(For BT+WLAN 5G:Y-AXIS is the worst.)

5.3 Typical Test Setup

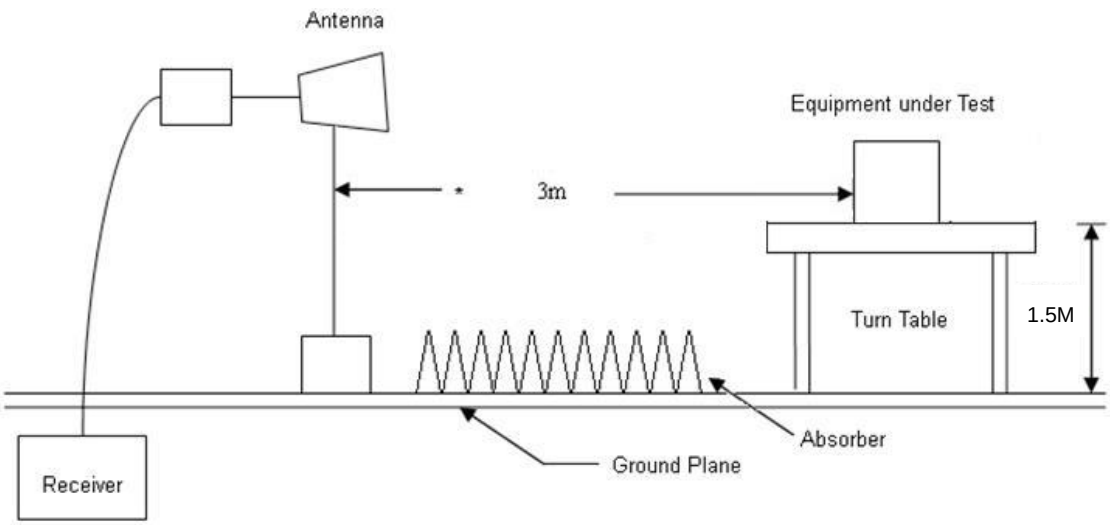
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

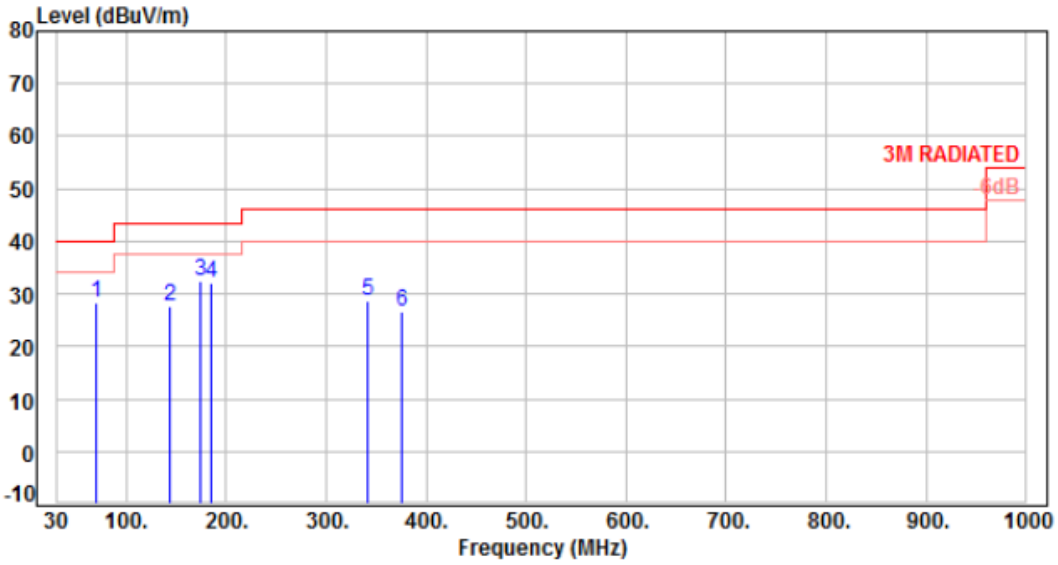


5.4 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

5.5 Test Result and Data (30MHz ~ 1GHz)

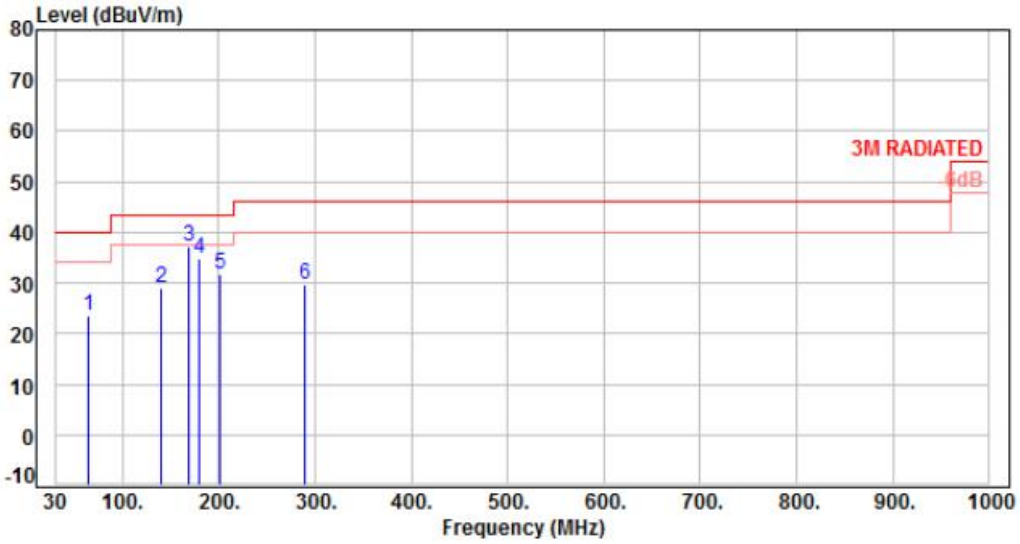
Power :	AC 120V / 60Hz	Pol/Phase :	VERTICAL
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	70.74	-11.74	40.03	28.29	40.00	-11.71	Peak	100	0	P
2	144.46	-9.82	37.57	27.75	43.50	-15.75	Peak	100	0	P
3	173.56	-10.24	42.68	32.44	43.50	-11.06	Peak	100	0	P
4	185.20	-11.40	43.65	32.25	43.50	-11.25	Peak	100	0	P
5	342.34	-7.49	36.22	28.73	46.00	-17.27	Peak	100	0	P
6	375.32	-6.51	33.28	26.77	46.00	-19.23	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

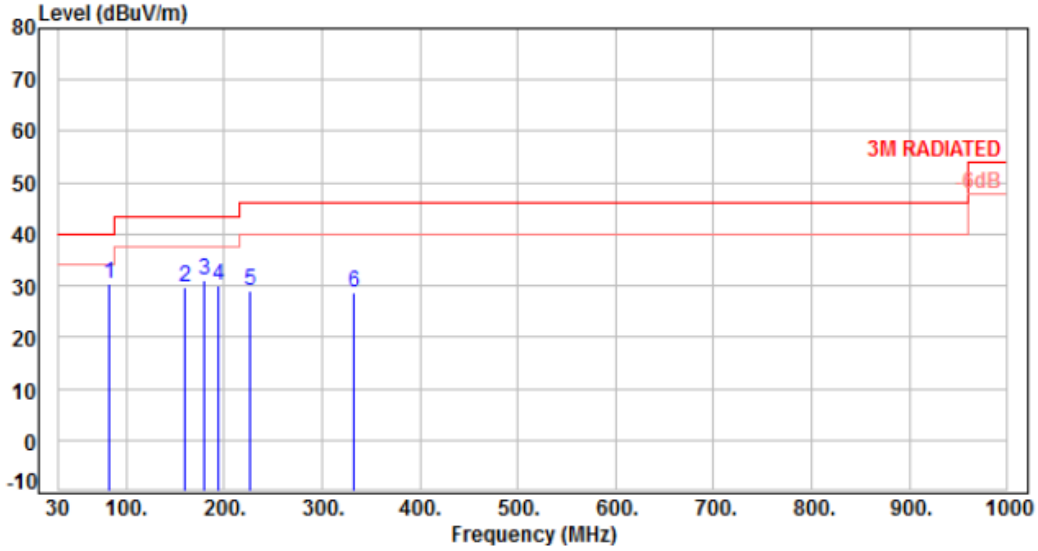
Power :	AC 120V / 60Hz	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	64.92	-10.60	34.24	23.64	40.00	-16.36	Peak	100	0	P
2	140.58	-10.08	38.98	28.90	43.50	-14.60	Peak	100	0	P
3	169.68	-9.81	47.16	37.35	43.50	-6.15	Peak	100	0	P
4	179.38	-10.85	45.53	34.68	43.50	-8.82	Peak	100	0	P
5	200.72	-12.08	43.84	31.76	43.50	-11.74	Peak	100	0	P
6	289.96	-8.95	38.70	29.75	46.00	-16.25	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

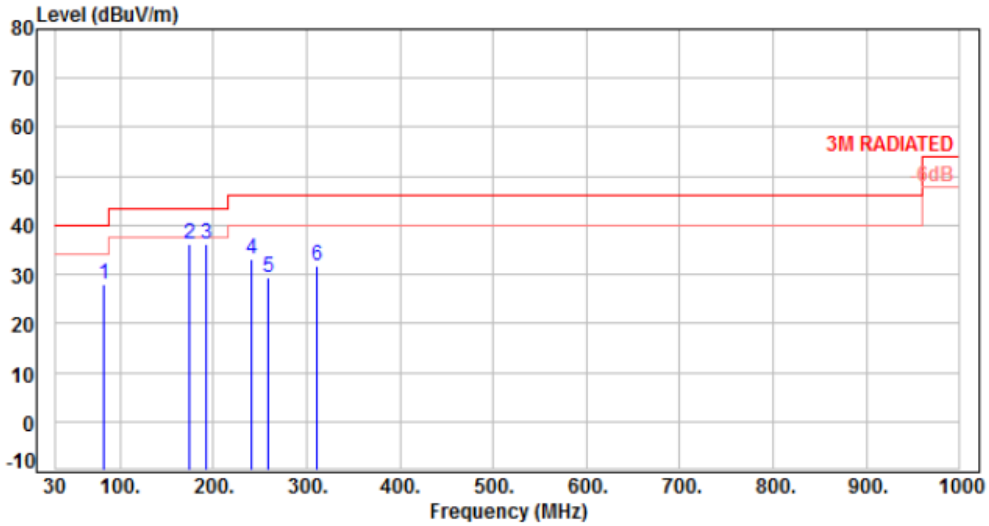
Power :	AC 120V / 60Hz	Pol/Phase :	VERTICAL
Test Mode :	Mode 2	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	82.38	-14.31	44.76	30.45	40.00	-9.55	Peak	100	0	P
2	159.98	-9.58	39.35	29.77	43.50	-13.73	Peak	100	0	P
3	179.38	-10.85	41.76	30.91	43.50	-12.59	Peak	100	0	P
4	194.90	-12.01	42.03	30.02	43.50	-13.48	Peak	100	0	P
5	225.94	-11.69	40.59	28.90	46.00	-17.10	Peak	100	0	P
6	332.64	-7.73	36.38	28.65	46.00	-17.35	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

Power :	AC 120V / 60Hz	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 2	:	

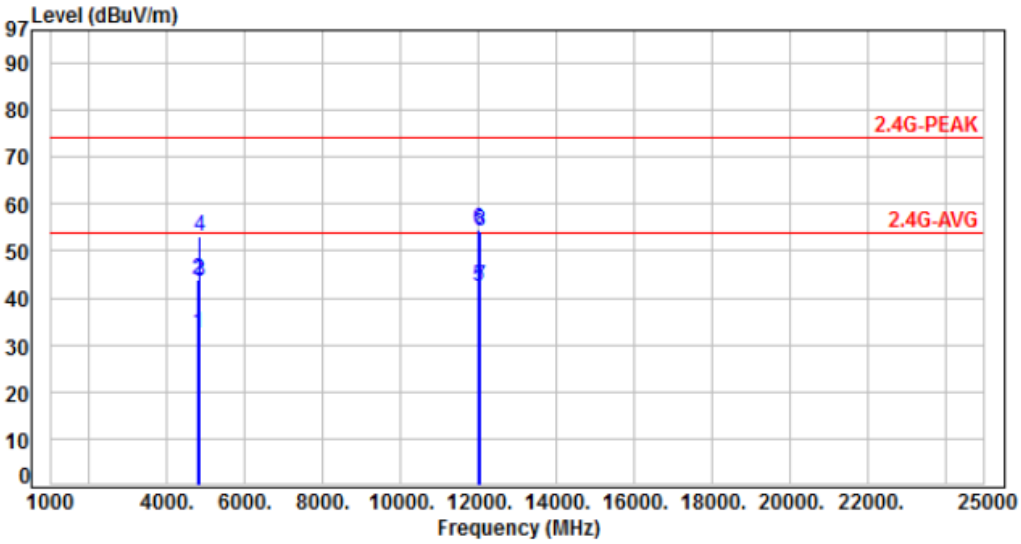


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	82.38	-14.31	42.46	28.15	40.00	-11.85	Peak	100	0	P
2	173.56	-10.24	46.27	36.03	43.50	-7.47	Peak	100	0	P
3	192.96	-11.93	48.11	36.18	43.50	-7.32	Peak	100	0	P
4	241.46	-10.69	43.75	33.06	46.00	-12.94	Peak	100	0	P
5	258.92	-10.11	39.45	29.34	46.00	-16.66	Peak	100	0	P
6	311.30	-8.33	40.20	31.87	46.00	-14.13	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

5.6 Test Result and Data (1GHz ~ 25GHz)

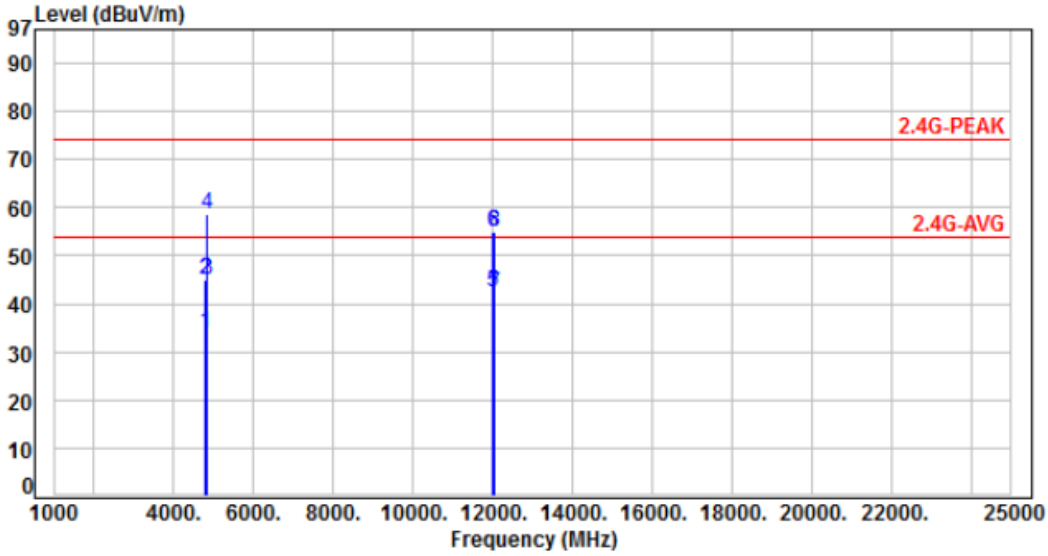
Power :	AC 120V / 60Hz	Pol/Phase :	VERTICAL
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	4804.00	3.59	29.03	32.62	54.00	-21.38	Average	302	262	P
2	4804.00	3.59	40.20	43.79	74.00	-30.21	Peak	302	262	P
3	4824.00	3.69	39.82	43.51	54.00	-10.49	Average	366	0	P
4	4824.00	3.69	49.51	53.20	74.00	-20.80	Peak	366	0	P
5	12010.00	13.26	29.17	42.43	54.00	-11.57	Average	100	169	P
6	12010.00	13.26	41.31	54.57	74.00	-19.43	Peak	100	169	P
7	12060.00	13.22	29.13	42.35	54.00	-11.65	Average	100	146	P
8	12060.00	13.22	40.98	54.20	74.00	-19.80	Peak	100	146	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

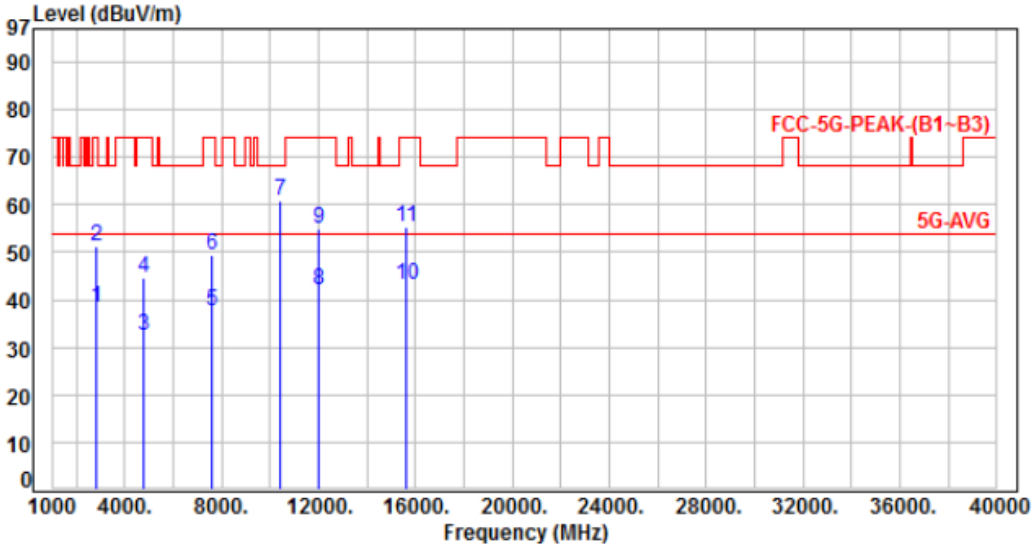
Power :	AC 120V / 60Hz	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	4804.00	3.59	30.39	33.98	54.00	-20.02	Average	100	215	P
2	4804.00	3.59	41.39	44.98	74.00	-29.02	Peak	100	215	P
3	4824.00	3.69	41.26	44.95	54.00	-9.05	Average	100	72	P
4	4824.00	3.69	55.03	58.72	74.00	-15.28	Peak	100	72	P
5	12010.00	13.26	29.03	42.29	54.00	-11.71	Average	100	76	P
6	12010.00	13.26	41.81	55.07	74.00	-18.93	Peak	100	76	P
7	12060.00	13.22	28.80	42.02	54.00	-11.98	Average	100	202	P
8	12060.00	13.22	41.58	54.80	74.00	-19.20	Peak	100	202	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

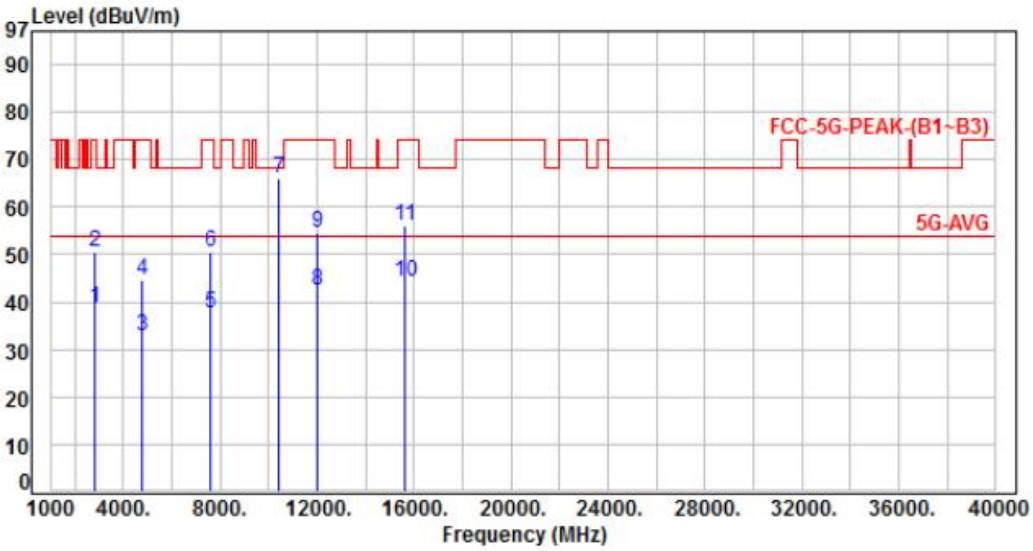
Power :	AC 120V / 60Hz	Pol/Phase :	VERTICAL
Test Mode :	Mode 2	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2798.00	-2.49	40.85	38.36	54.00	-15.64	Average	100	225	P
2	2798.00	-2.49	53.70	51.21	74.00	-22.79	Peak	100	225	P
3	4804.00	3.59	29.02	32.61	54.00	-21.39	Average	100	99	P
4	4804.00	3.59	41.04	44.63	74.00	-29.37	Peak	100	99	P
5	7602.00	8.51	28.96	37.47	54.00	-16.53	Average	100	162	P
6	7602.00	8.51	40.79	49.30	74.00	-24.70	Peak	100	162	P
7	10400.00	11.42	49.42	60.84	68.20	-7.36	Peak	160	0	P
8	12010.00	13.26	28.69	41.95	54.00	-12.05	Average	100	130	P
9	12010.00	13.26	41.67	54.93	74.00	-19.07	Peak	100	130	P
10	15600.00	13.75	29.50	43.25	54.00	-10.75	Average	100	0	P
11	15600.00	13.75	41.43	55.18	74.00	-18.82	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

Power :	AC 120V / 60Hz	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 2	:	



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2798.00	-2.49	41.24	38.75	54.00	-15.25	Average	100	138	P
2	2798.00	-2.49	52.93	50.44	74.00	-23.56	Peak	100	138	P
3	4804.00	3.59	29.10	32.69	54.00	-21.31	Average	100	111	P
4	4804.00	3.59	40.93	44.52	74.00	-29.48	Peak	100	111	P
5	7602.00	8.51	29.18	37.69	54.00	-16.31	Average	100	260	P
6	7602.00	8.51	42.03	50.54	74.00	-23.46	Peak	100	260	P
7	10400.00	11.42	54.55	65.97	68.20	-2.23	Peak	100	2	P
8	12010.00	13.26	29.07	42.33	54.00	-11.67	Average	100	308	P
9	12010.00	13.26	41.40	54.66	74.00	-19.34	Peak	100	308	P
10	15600.00	13.75	30.51	44.26	54.00	-9.74	Average	100	342	P
11	15600.00	13.75	42.25	56.00	74.00	-18.00	Peak	100	342	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

5.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

6. Test of Conducted Spurious Emission

6.1 Test Limit

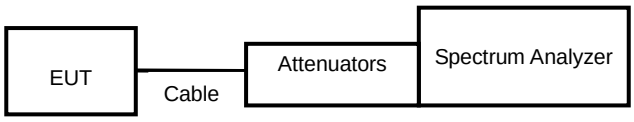
According to the methods defined in ANSI C63.10-2013 Section 11.11.1
Below –20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

6.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.11.2 & 11.11.3

a. The transmitter output was connected to the spectrum analyzer via a low loss cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
d. The band edges was measured and recorded.

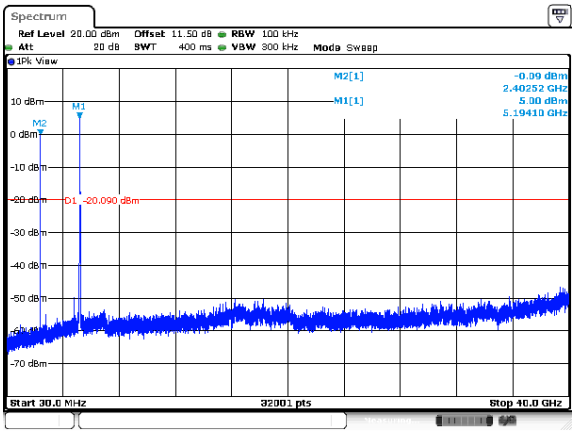
6.3 Test Setup Layout



6.4 Test Result and Data

Note: Test plots refers to the following pages.

BT+WIFI 5G Co-Located 20dBc



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