



FCC RADIO TEST REPORT

Applicant : ViewSonic Corporation
Address : 10 Pointe Dr. Suite 200. Brea. CA 92821. USA
Equipment : RF Module
Model No. : VS18201
Trade Name : ViewSonic
FCC ID : GSS-VS18201

I HEREBY CERTIFY THAT :

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

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

CerpPASS 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 Result and Data	10
4.2 Test Photographs (30MHz ~ 1GHz)	14
5. Test of Spurious Emission (Radiated)	15
5.1 Test Limit	15
5.2 Test Procedures	15
5.3 Typical Test Setup	16
5.4 Test Result and Data (9kHz ~ 30MHz).....	17
5.5 Test Result and Data (30MHz ~ 1GHz).....	17
5.6 Test Result and Data (1GHz ~ 40GHz).....	21
5.7 Restricted Bands of Operation	25
5.8 Test Photographs (30MHz ~ 1GHz)	26
5.9 Test Photographs (1GHz ~ 40GHz)	28
6. Test of Conducted Spurious Emission	32
6.1 Test Limit	32
6.2 Test Procedure	32
6.3 Test Setup Layout	32
6.4 Test Result and Data	32



History of this test report

Report No.	Issue Date	Description
TEFU2005014	Jun. 08, 2020	Original



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, $\pi/4$ -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, $\pi/4$ -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

- During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- The complete test system included Notebook and EUT for RF test.
- An executive program, "MP Tool ver.0.0003.06.30180928L" under Windows OS system was executed to transmit and receive data via WLAN.
- 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.
- 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°C / 61%	Vic Yeh
Radiated Emissions	3M02-NK	2020/05/19	22°C / 42%	Vic Yeh
AC Power Line Conducted Emission	CON01-NK	2020/05/22	28°C / 51%	Leon Huang

2.5 Measurement Uncertainty

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 Antenna	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-38MS50314	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



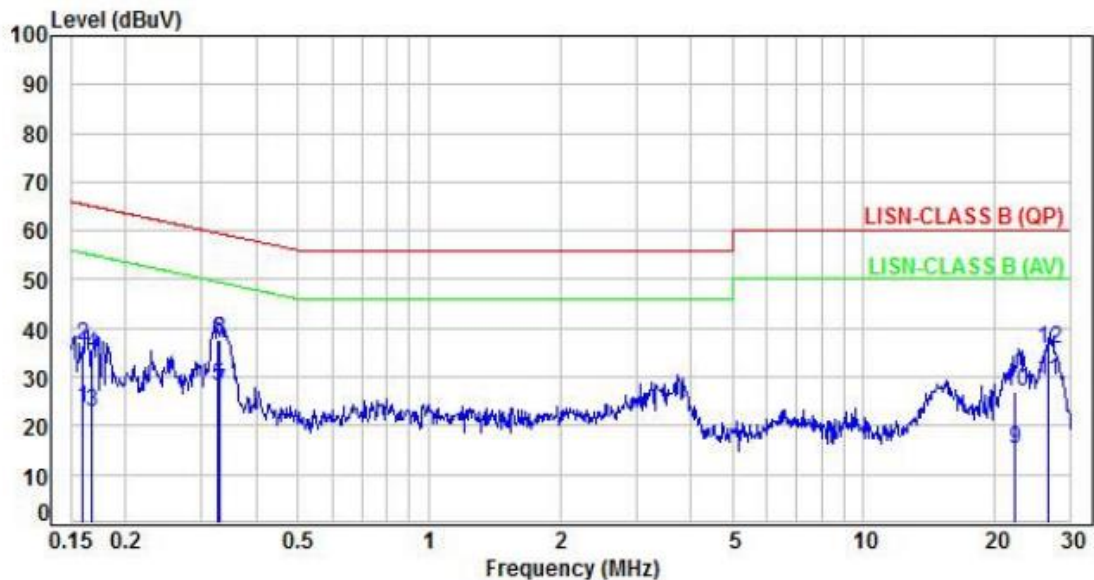
Test Item	AC Power Line Conducted Emission				
Test Site	CON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESCI	100821	2019/09/16	2020/09/15
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-516	2019/09/19	2020/09/18
Pulse Limiter	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 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

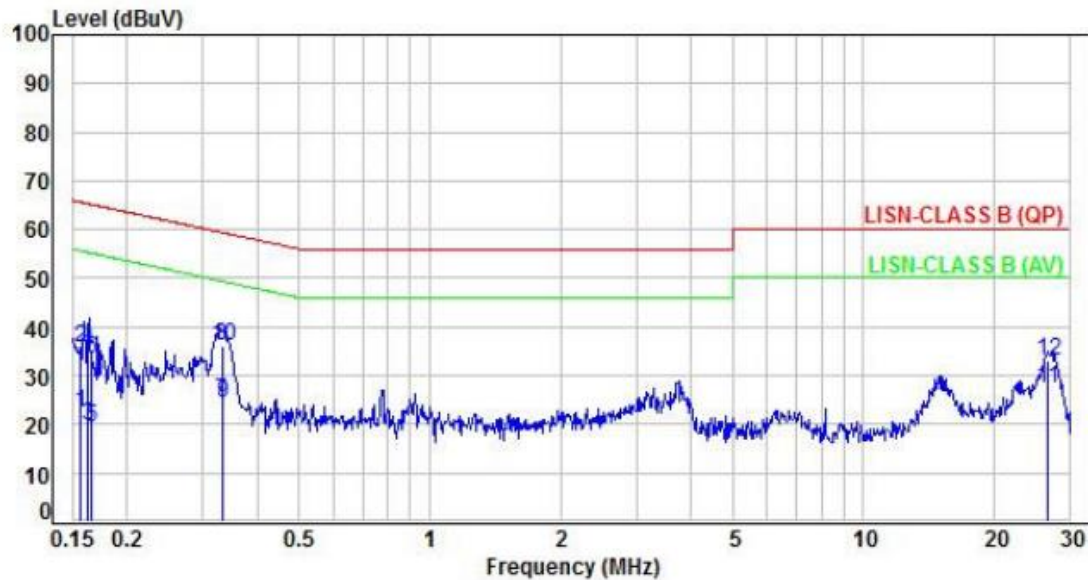
Note: Level=Reading+Factor

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

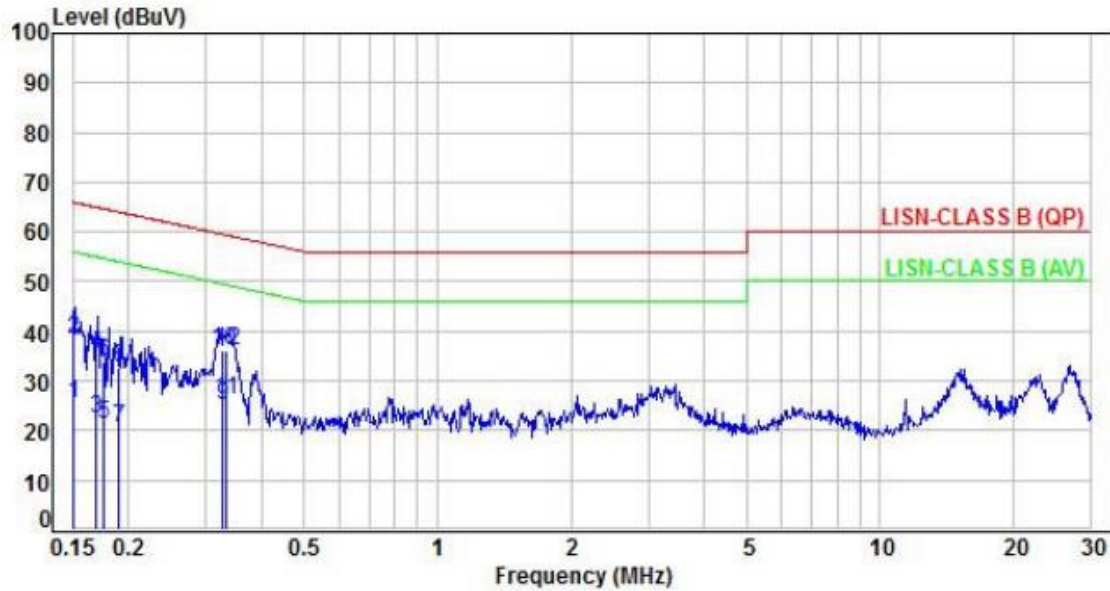
Note: Level=Reading+Factor

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

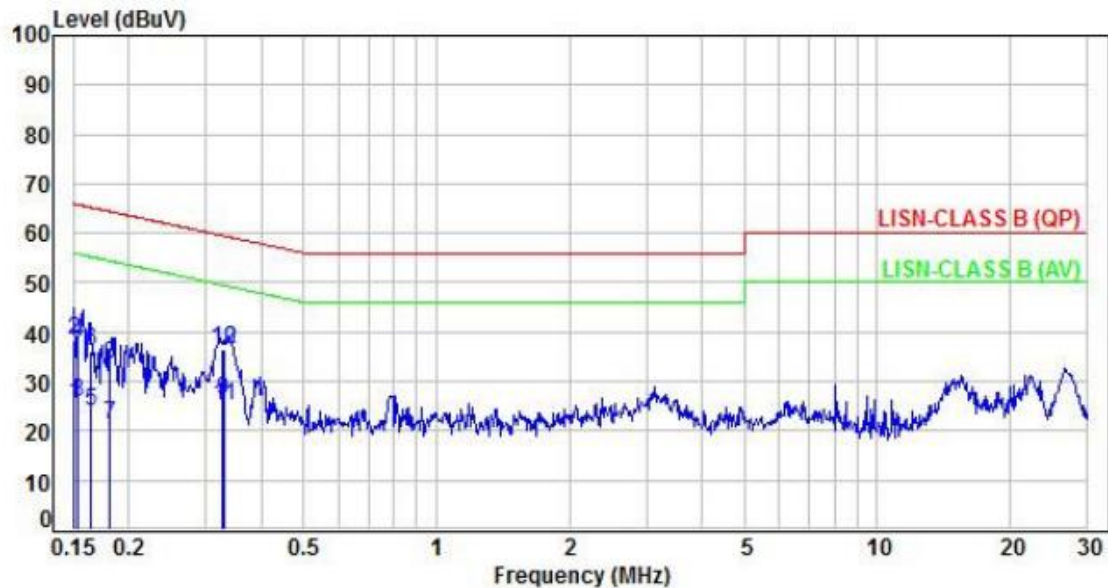
Note: Level=Reading+Factor

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

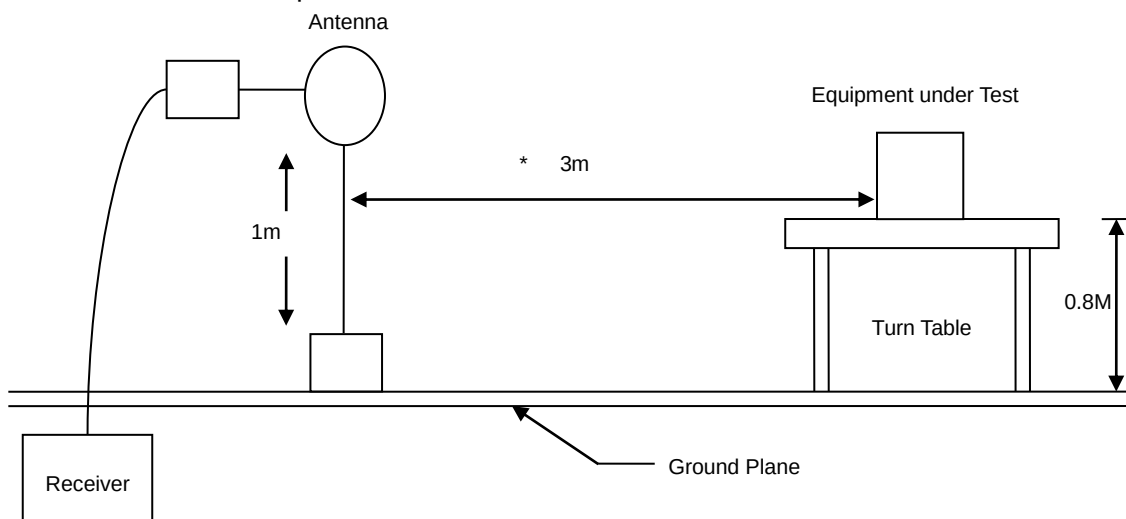
5.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- 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.
- 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.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- 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.
- 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.
- "Cone of radiation" has been considered to be 3dB bandwidth of the measurement antenna.

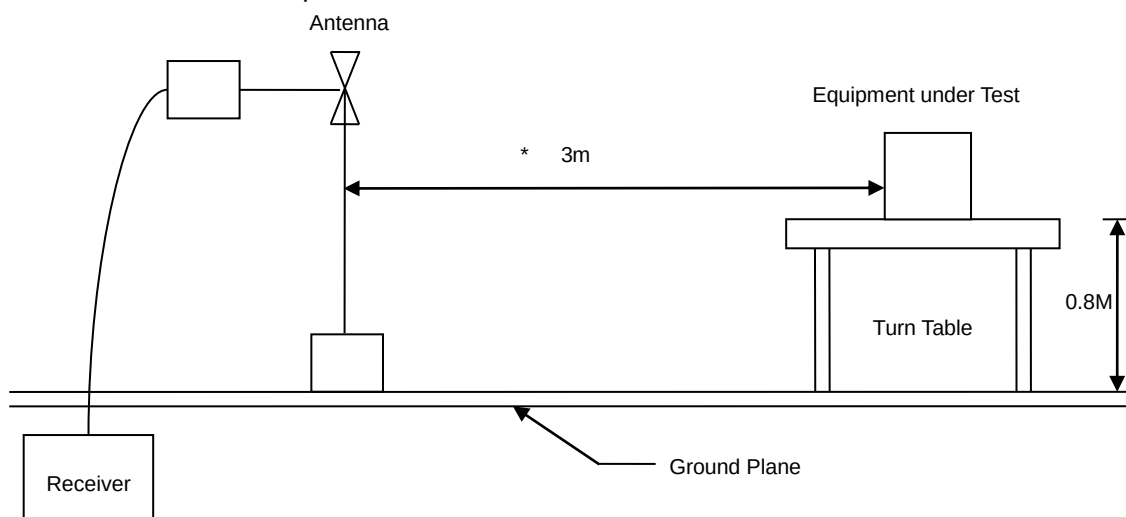


5.3 Typical Test Setup

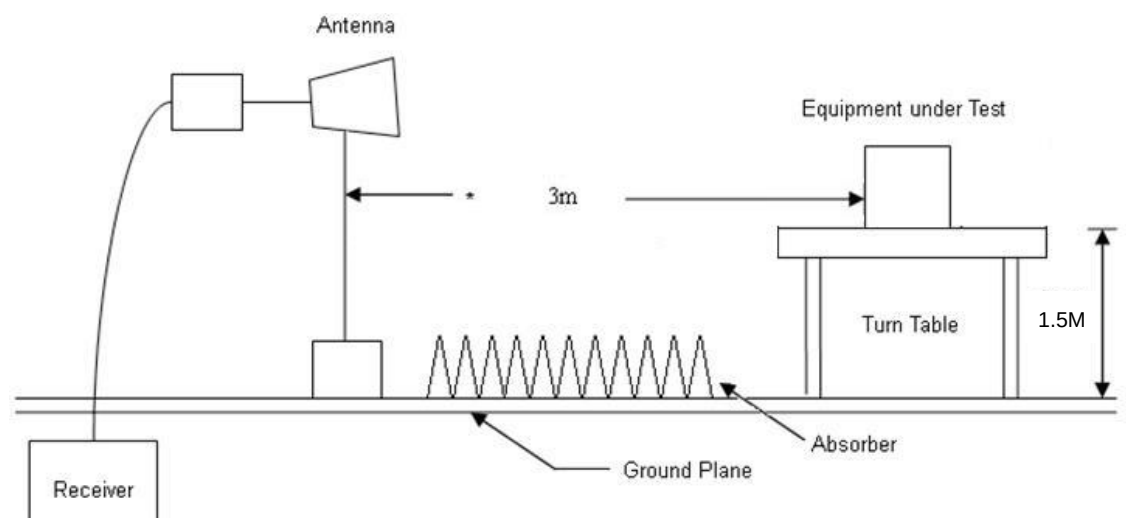
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



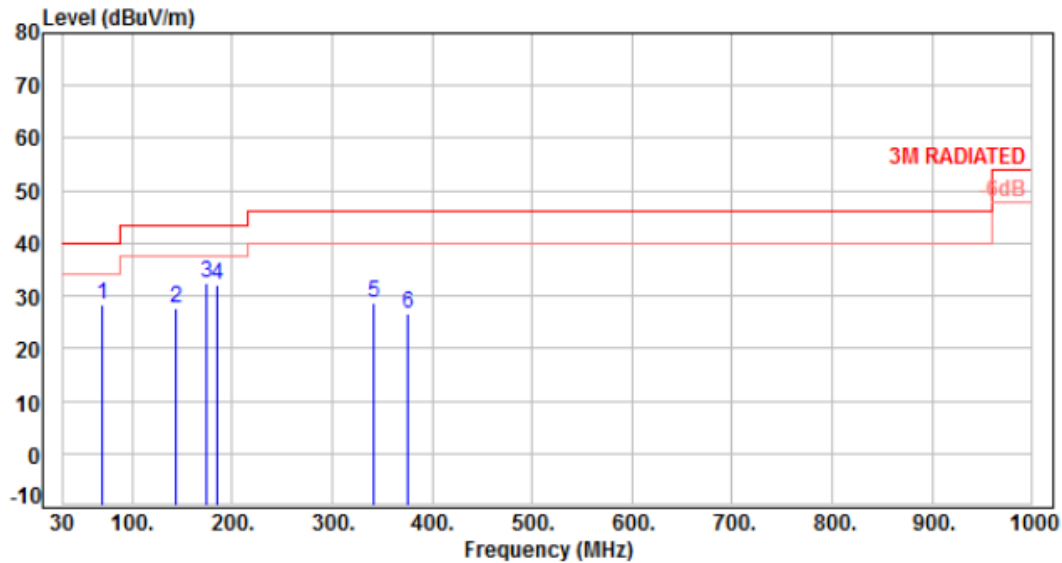


5.4 Test Result and Data (9kHz ~ 30MHz)

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

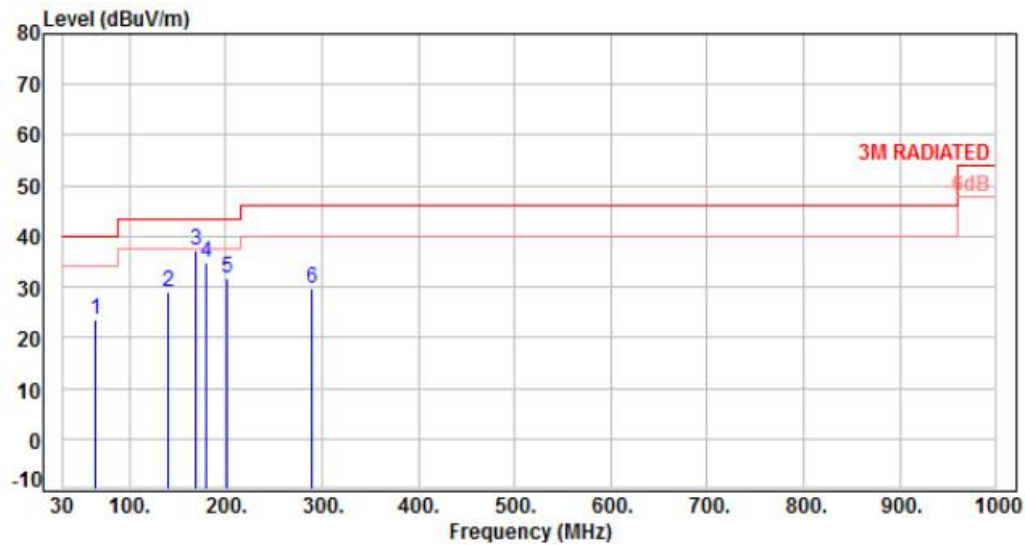
Note: Level=Reading+Factor

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

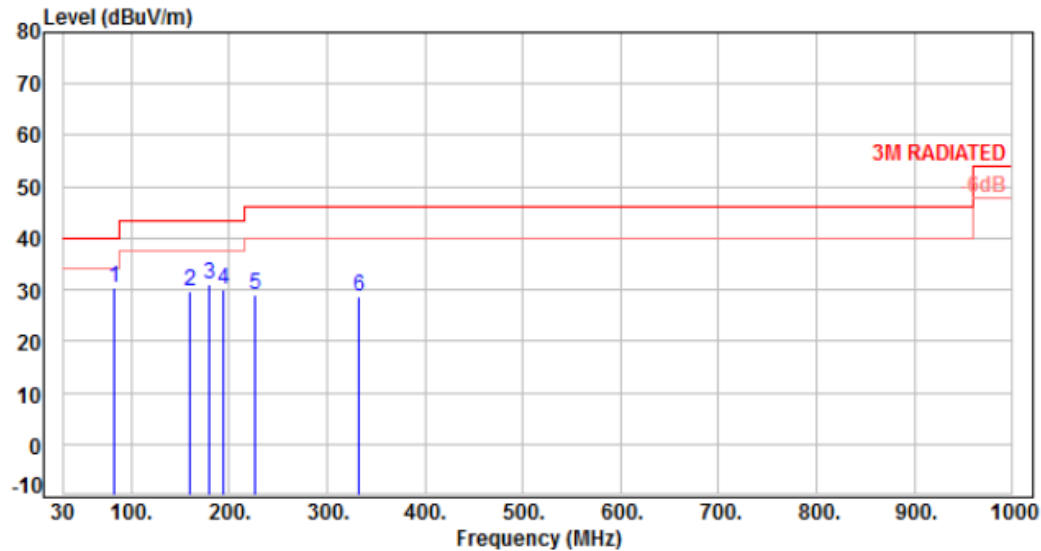
Note: Level=Reading+Factor

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

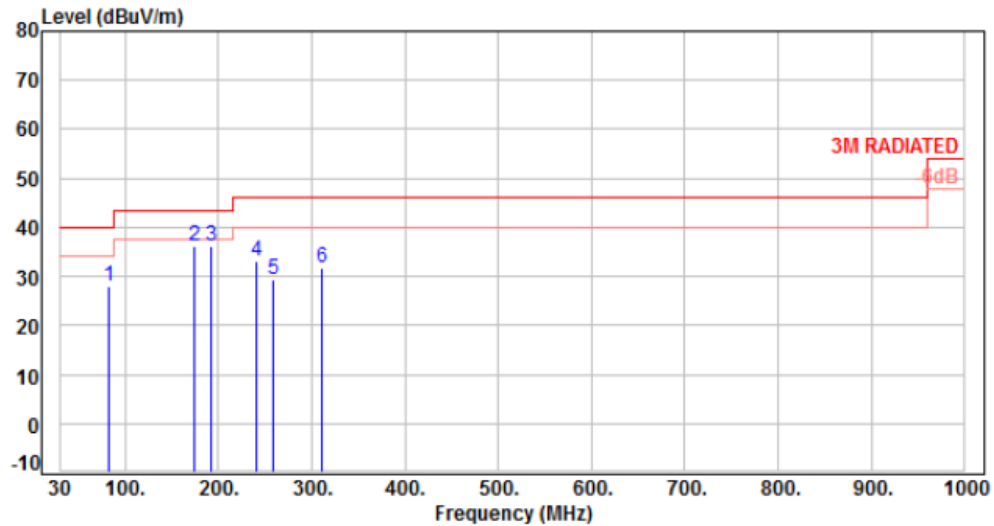
Note: Level=Reading+Factor

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

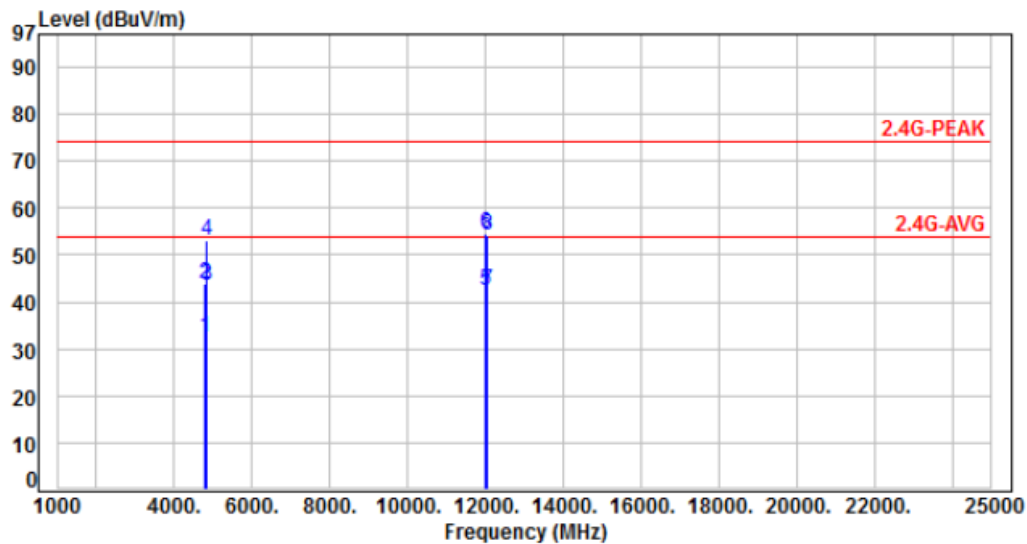
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



5.6 Test Result and Data (1GHz ~ 40GHz)

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

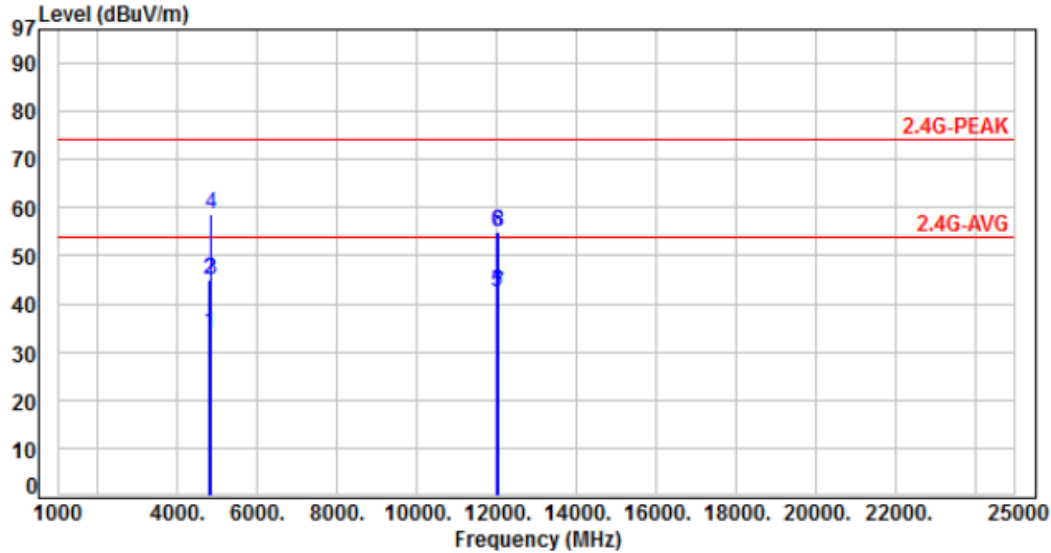
Note: Level=Reading+Factor

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

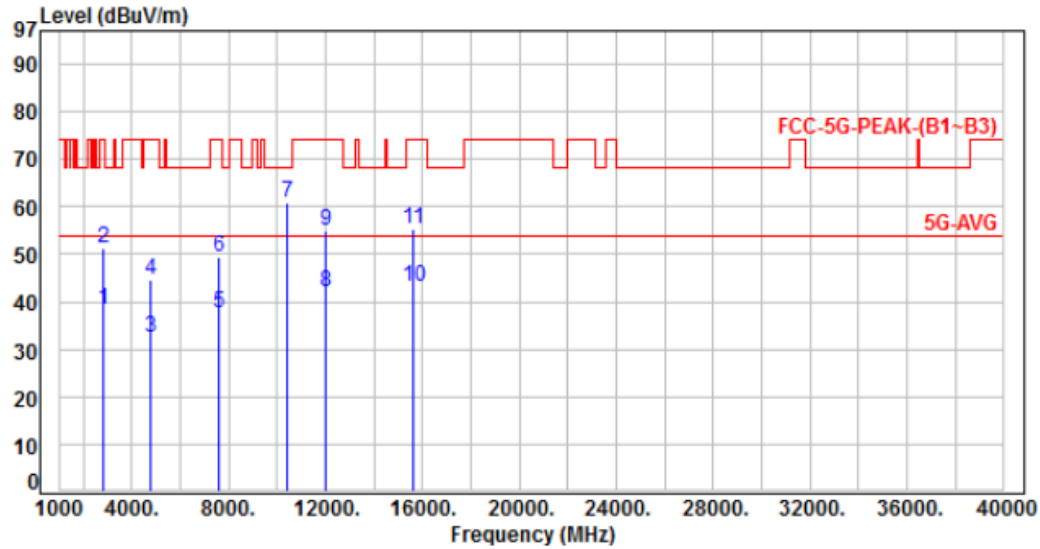
Note: Level=Reading+Factor

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

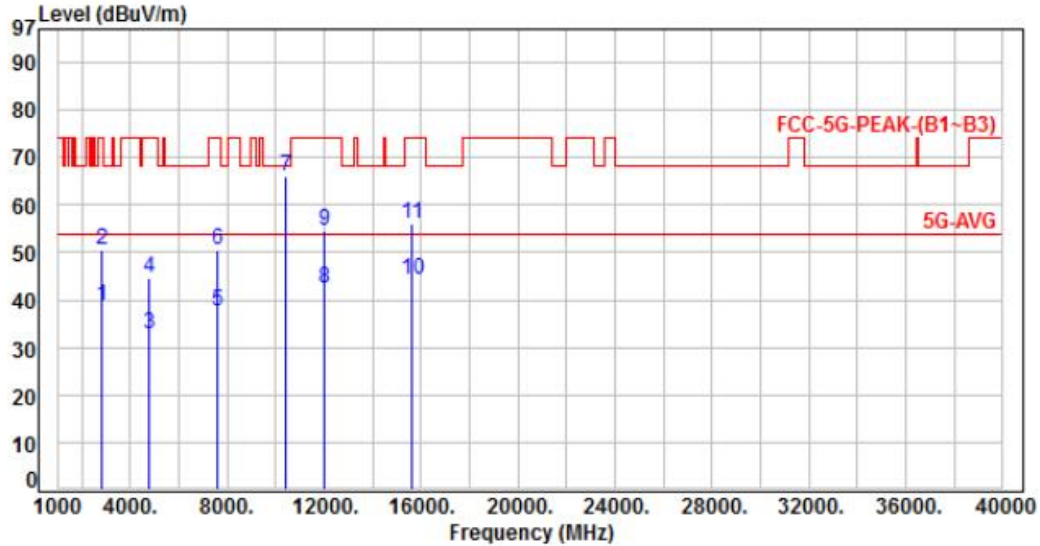
Note: Level=Reading+Factor

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

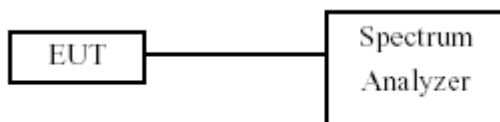
6.1 Test Limit

Below -20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

6.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 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.
- 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.
- 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

