



FCC RADIO TEST REPORT

Applicant : Partner Tech Corporation

Address : 10FL, 233-2, Baoqiao Road, Xindian,
New Taipei City, Taiwan

Equipment : Mobile POS Terminal

Model No. : M3a-2, EM-110, EMC-21X0 (X could be 0-9, -, A-Z or
blank)

Trade Name : PARTNER

FCC ID. : NDPM3A-2

I HEREBY CERTIFY THAT :

The sample was received on Jan. 17, 2019 and the testing was carried out on May. 22, 2019 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

Tested by:

Spree Yeh / Engineer

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





Contents

1. Summary of Test Procedure and Test Results.....	5
1.1 Applicable Standards	5
2. Test Configuration of Equipment under Test.....	6
2.1 Feature of Equipment.....	6
2.2 Model Difference	6
2.3 Carrier Frequency of Channels	7
2.4 Test Mode and Test Software	8
2.5 Description of Test System.....	9
2.6 General Information of Test	9
2.7 Measurement Uncertainty	10
3. Test Equipment and Ancillaries Used for Tests	11
4. Antenna Requirements	12
4.1 Antenna Construction and Directional Gain.....	12
5. Test of AC Power Line Conducted Emission	13
5.1 Test Limit	13
5.2 Test Procedures	13
5.3 Typical Test Setup	14
5.4 Test Result and Data	15
5.5 Test Photographs	17
6. Test of Radiated Spurious Emission.....	18
6.1 Test Limit	18
6.2 Test Procedures	18
6.3 Typical Test Setup	19
6.4 Test Result and Data (9KHz ~ 30MHz)	20
6.5 Test Result and Data (30MHz ~ 1GHz).....	20
6.6 Test Result and Data (1GHz ~ 25GHz).....	22
6.7 Restricted Bands of Operation	46
6.8 Test Photographs (30MHz ~ 1GHz)	47
6.9 Test Photographs (1GHz ~ 25GHz)	48
7. Test of Conducted Spurious Emission	49
7.1 Test Limit	49
7.2 Test Procedure	49
7.3 Test Setup Layout	49
7.4 Test Result and Data	49
8. On Time, Duty Cycle and Measurement methods	58
8.1 Test Limit	58
8.2 Test Procedure	58
8.3 Test Setup Layout	58
8.4 Test Result and Data	58
9. 6dB Bandwidth Measurement Data	60
9.1 Test Limit	60
9.2 Test Procedures	60



9.3	Test Setup Layout	60
9.4	Test Result and Data (6dB Bandwidth)	60
9.5	Test Result and Data (99% Bandwidth)	61
10.	Maximum Peak and Average Output Power	66
10.1	Test Limit	66
10.2	Test Procedures	66
10.3	Test Setup Layout	66
10.4	Test Result and Data	67
11.	Power Spectral Density	68
11.1	Test Limit	68
11.2	Test Procedures	68
11.3	Test Setup Layout	68
11.4	Test Result and Data	68

History of this test report

[illegible]



1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.4:2014

ANSI C63.10:2013

FCC Rules and Regulations Part 15 Subpart C §15.247

KDB558074

KDB662911

KDB447498

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	PASS
15.207	. AC Power Line Conducted Emission	PASS
15.209 15.205	. Radiated Spurious Emission	PASS
15.247(d)	. Conducted Spurious Emission	PASS
15.247(a)(2)	. 6dB Bandwidth	PASS
15.247(b)	. Maximum Peak and Average Output Power	PASS
15.247(e)	. Power Spectral Density	PASS
2.1091	. Radio Frequency Exposure	PASS

This EUT has been also tested and complied with the requirement of FCC Part 15, Subpart B, recorded in a separate test report (TEFV1901083).



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment

Frequency Range	BT / BLE: 2400-2483.5MHz 802.11b/g/n: 2400-2483.5MHz 802.11a/n/ac: 5150-5250MHz, 5725-5850MHz
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	Dipole Antenna
Antenna Gain	2400-2483.5MHz: 6.92dBi 5150-5250MHz: 4.12dBi 5725-5850MHz: 5.55dBi
Adapter	EDAC \ EA1024P1 Input: 100-240Vac, 1A, 50-60Hz Output: 12Vdc, 3A

Note:

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

2.2 Model Difference

M3a-2, EM-110, EMC-21X0 (X could be 0-9, -, A-Z or blank) for marketing purpose.



2.3 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT20 (2412MHz~2462MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	*11	2462
*06	2437	---	---

802.11n HT40 (2422MHz~2452MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
*03	2422	*09	2452
04	2427	---	---
05	2432	---	---
*06	2437	---	---

Note: Channels remarked * are selected to perform test.



2.4 Test Mode and Test Software

- During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- The complete test system included Notebook and EUT for RF test.
- An executive program, "qdart: win.4.8_installer_00039.311-11-17_08_03_48" was executed to transmit and receive data via WLAN.
- The following test modes were performed for the test:

AC Power Line Conducted Emission	
Test Mode	Operating Description
1	802.11b (1Mbps) , Adapter:EDAC \ EA1024P1
2	802.11g (6Mbps) , Adapter:EDAC \ EA1024P1
3	802.11n HT20 (6.5Mbps) , Adapter:EDAC \ EA1024P1
4	802.11n HT40 (13.5Mbps) , Adapter:EDAC \ EA1024P1
caused "Test Mode 2" generated the worst case, it was reported as the final data.	
Radiated Spurious Emission (below 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps) , Adapter:EDAC \ EA1024P1
2	802.11g (6Mbps) , Adapter:EDAC \ EA1024P1
3	802.11n HT20 (6.5Mbps) , Adapter:EDAC \ EA1024P1
4	802.11n HT40 (13.5Mbps) , Adapter:EDAC \ EA1024P1
caused "Test Mode 2" generated the worst case, it was reported as the final data.	
Radiated Spurious Emission (above 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps) , Adapter:EDAC \ EA1024P1
2	802.11g (6Mbps) , Adapter:EDAC \ EA1024P1
3	802.11n HT20 (6.5Mbps) , Adapter:EDAC \ EA1024P1
4	802.11n HT40 (13.5Mbps) , Adapter:EDAC \ EA1024P1
caused "Test Mode 1~4" generated the worst case, they were reported as the final data.	
Conducted Spurious Emission, 6dB Bandwidth, Maximum Peak Output Power, Power Spectral Density	
Test Mode	Operating Description
1	802.11b (1Mbps) , Adapter:EDAC \ EA1024P1
2	802.11g (6Mbps) , Adapter:EDAC \ EA1024P1
3	802.11n HT20 (6.5Mbps) , Adapter:EDAC \ EA1024P1
4	802.11n HT40 (13.5Mbps) , Adapter:EDAC \ EA1024P1
caused "Test Mode 1~4" generated the worst case, they were reported as the final data.	



2.5 Description of Test System

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5450	N/A	Adapter / 1.8m / NS
USB cable	N/A	N/A	1.2m / SH	N/A
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	ASUS	P2430U	N/A	Adapter / 1.8m / NS
USB cable	N/A	N/A	1.2m / SH	N/A
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	ASUS	P2430U	N/A	Adapter / 1.8m / NS
USB cable	N/A	N/A	1.2m / SH	N/A

2.6 General Information of Test

Test Site	CerpPASS 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 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582	
	FCC	TW1079, TW1061, TW1439
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication test C-4663 for Conducted emission test R-4399, 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 25,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

**2.7 Measurement Uncertainty**

Measurement Item	Uncertainty
Radiated Spurious Emission(9KHz~30MHz)	$\pm 3.405\text{dB}$
Radiated Spurious Emission(30MHz~1GHz)	$\pm 5.326\text{dB}$
Radiated Spurious Emission(1GHz~25GHz)	$\pm 5.918\text{dB}$
Conducted Spurious Emission	$\pm 2.156\text{dB}$
6dB Bandwidth	$\pm 4.401\%$
20dB Bandwidth	$\pm 4.40\%$
Occupied Bandwidth	$\pm 4.41\%$
Peak Output Power(Conducted Power Meter)	$\pm 1.31\text{dB}$
Dwell Time	$\pm 0.11\%$
Power Spectral Density	$\pm 2.146\text{dB}$
Duty Cycle	$\pm 0.17\%$



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	2018/09/17	2019/09/16
Active Loop Antenna	EMCO	6507	40855	2018/05/22	2019/05/21
Horn Antenna	EMCO	3115	31601	2018/09/26	2019/09/25
Horn Antenna	EMCO	3116	31974	2018/09/07	2019/09/06
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2018/06/11	2019/06/10
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100219	2018/07/03	2019/07/02
Preamplifier	EM	EM330	60659	2018/03/20	2019/03/19
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2018/09/18	2019/09/17
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1315	2018/04/20	2019/04/19
Cable-0.5m(1G-40G)	Rapidtek	40GHZ 50CM	38MS-38MS50314	2018/03/27	2019/03/26
Cable-3m(1G-40G)	Rapidtek	40GHZ 300CM	38MS-38MS300314	2018/03/27	2019/03/26
Cable-8m(1G-40G)	Rapidtek	40GHZ 800CM	38MS-38MS800314	2018/03/27	2019/03/26
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	2018/07/03	2019/07/02
Attenuator	KEYSIGHT	8491B	MY39250705	2018/09/04	2019/09/03
TEMP & HUMI CHAMBER	T-MACHINE	TMJ-9712	T-12-040111	2018/08/30	2019/08/29
Power Sensor	Anritsu	MA2411B	1207295	2019/04/11	2020/04/10

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	2018/9/12	2019/09/11
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-740	2018/6/13	2019/06/12
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101933	2018/9/4	2019/09/03
E3	AUDIX	v8.2014-8-6	RK-000531	NA	NA



4. Antenna Requirements

4.1 Antenna Construction and Directional Gain

Antenna Type	Dipole Antenna
Antenna Gain	2400-2483.5MHz: 6.92dBi 5150-5250MHz: 4.12dBi 5725-5850MHz: 5.55dBi

2400-2483.5MHz

For Power directional gain= G_{ant} = 6.92 dBi

For PSD directional gain = G_{ant} = 6.92 dBi

5150-5250MHz

For Power directional gain= G_{ant} = 4.12 dBi

For PSD directional gain = G_{ant} = 4.12 dBi

5725-5850MHz

For Power directional gain= G_{ant} = 5.55 dBi

For PSD directional gain = G_{ant} = 5.55 dBi



5. Test of AC Power Line Conducted Emission

5.1 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 C63.4-2014. 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

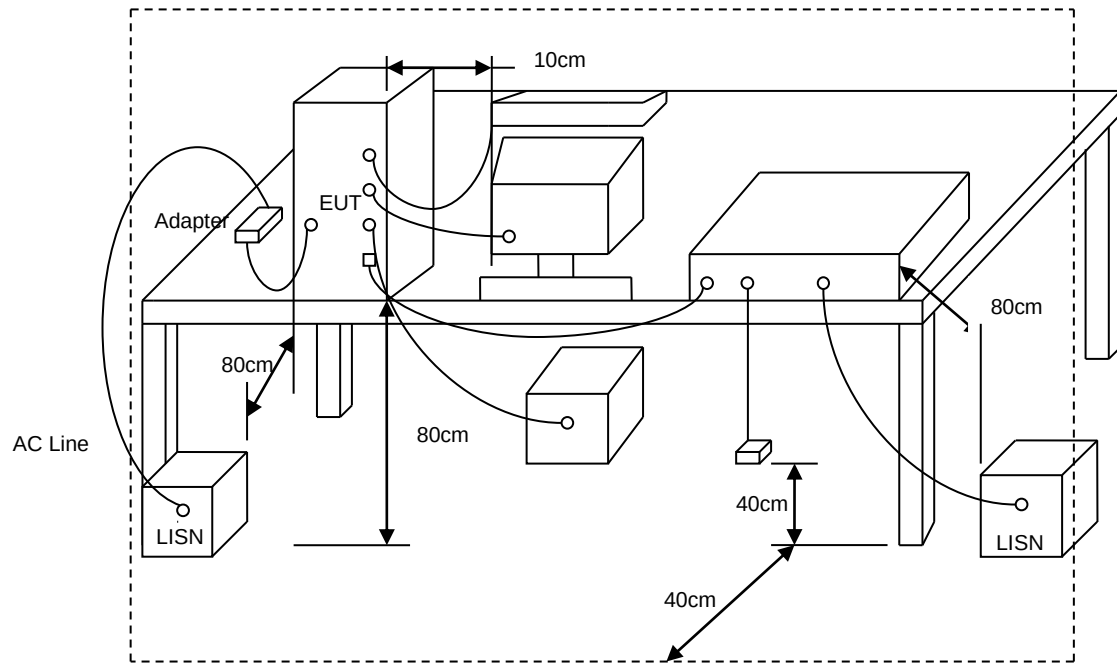
*Decreases with the logarithm of the frequency.

5.2 Test Procedures

- 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.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



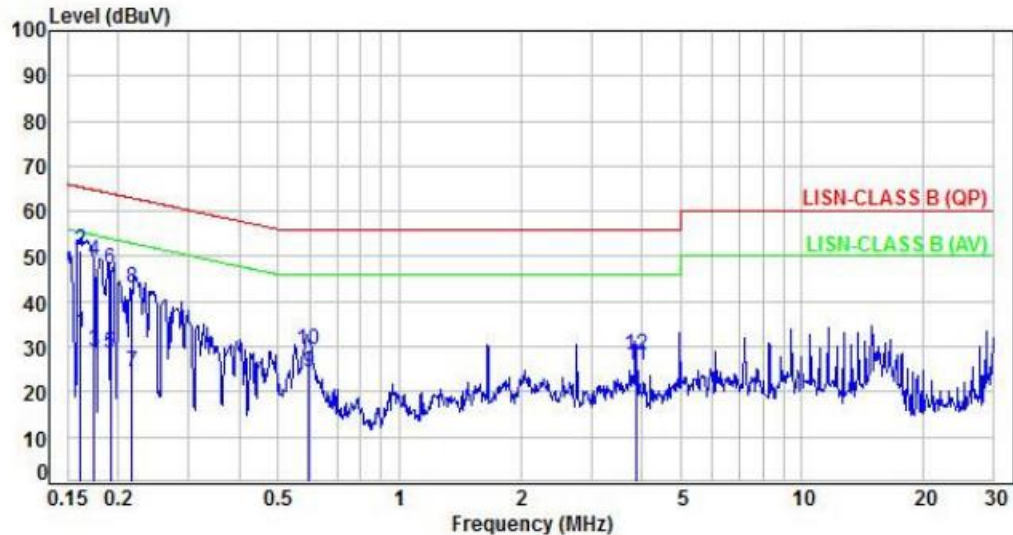
5.3 Typical Test Setup





5.4 Test Result and Data

Power	: AC 120V	Pol/Phase	: LINE
Test Mode	: Mode 2	Temperature	: 22 °C
Test date	: Mar. 05, 2019	Humidity	: 52 %

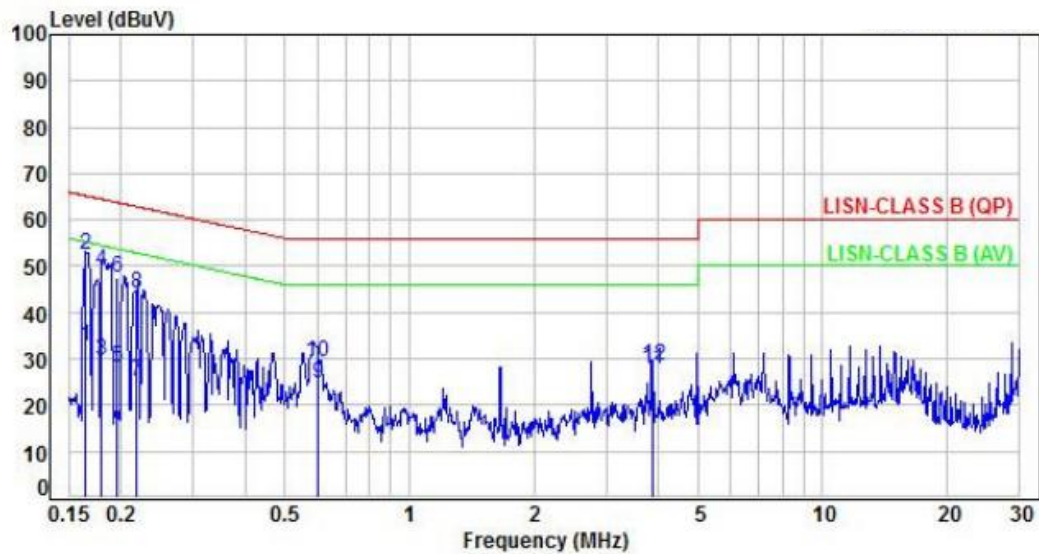


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	9.94	23.03	32.97	55.40	-22.43	Average	P
2	0.16	9.94	41.35	51.29	65.40	-14.11	QP	P
3	0.17	9.94	18.89	28.83	54.75	-25.92	Average	P
4	0.17	9.94	39.03	48.97	64.75	-15.78	QP	P
5	0.19	9.94	18.55	28.49	53.98	-25.49	Average	P
6	0.19	9.94	37.36	47.30	63.98	-16.68	QP	P
7	0.22	9.94	14.55	24.49	52.97	-28.48	Average	P
8	0.22	9.94	32.94	42.88	62.97	-20.09	QP	P
9	0.59	9.95	14.34	24.29	46.00	-21.71	Average	P
10	0.59	9.95	19.34	29.29	56.00	-26.71	QP	P
11	3.86	10.12	15.71	25.83	46.00	-20.17	Average	P
12	3.86	10.12	17.89	28.01	56.00	-27.99	QP	P

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



Power	: AC 120V	Pol/Phase	: NEUTRAL
Test Mode	: Mode 2	Temperature	: 22 °C
Test date	: Mar. 05, 2019	Humidity	: 52 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Detector	P/F
1	0.16	9.94	22.95	32.89	55.21	-22.32	Average	P
2	0.16	9.94	42.50	52.44	65.21	-12.77	QP	P
3	0.18	9.94	19.77	29.71	54.54	-24.83	Average	P
4	0.18	9.94	39.10	49.04	64.54	-15.50	QP	P
5	0.20	9.94	18.37	28.31	53.74	-25.43	Average	P
6	0.20	9.94	37.61	47.55	63.74	-16.19	QP	P
7	0.22	9.94	15.32	25.26	52.90	-27.64	Average	P
8	0.22	9.94	34.02	43.96	62.90	-18.94	QP	P
9	0.60	9.96	14.67	24.63	46.00	-21.37	Average	P
10	0.60	9.96	19.44	29.40	56.00	-26.60	QP	P
11	3.87	10.12	17.73	27.85	46.00	-18.15	Average	P
12	3.87	10.12	18.55	28.67	56.00	-27.33	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



6. Test of Radiated Spurious Emission

6.1 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

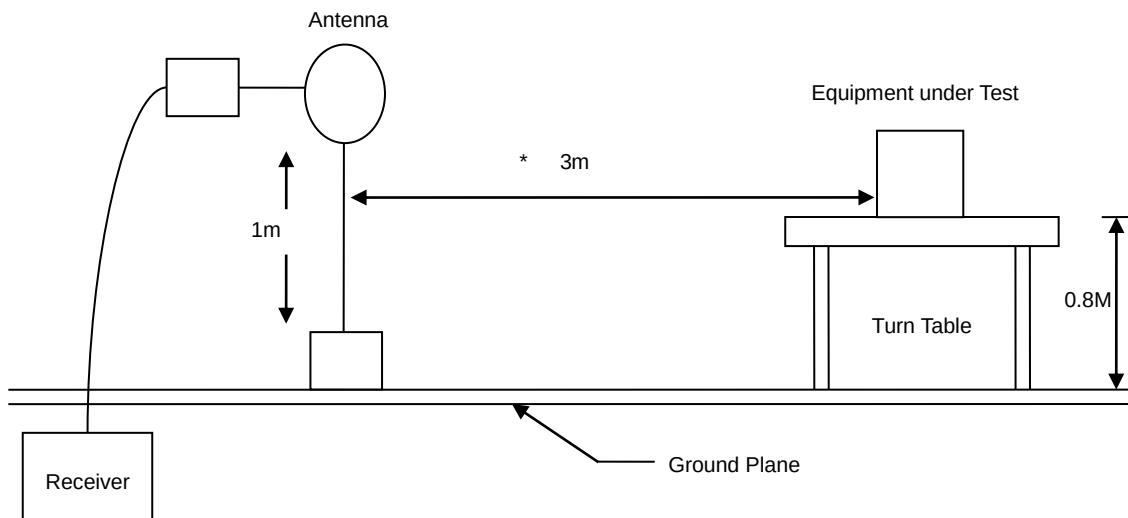
6.2 Test Procedures

- 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.

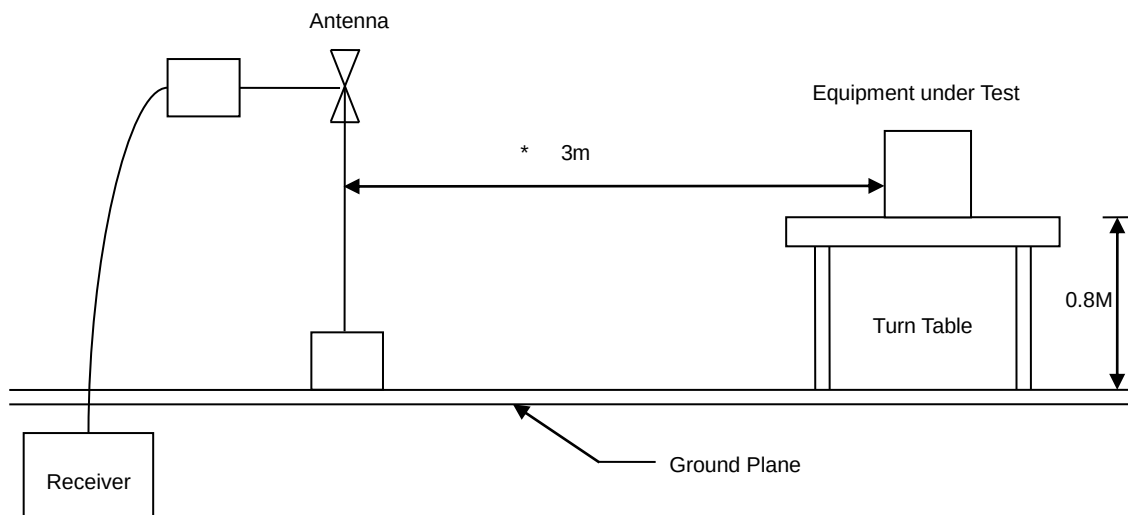


6.3 Typical Test Setup

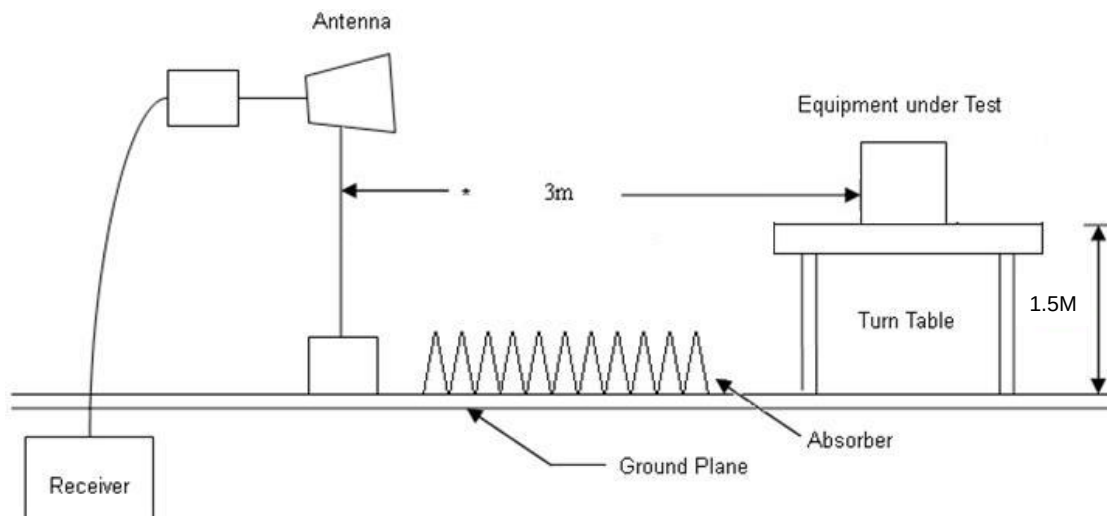
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



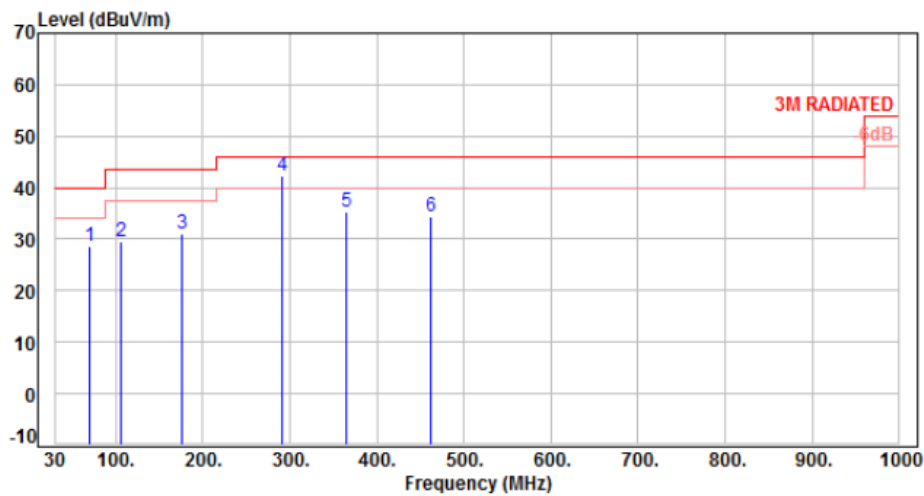


6.4 Test Result and Data (9KHz ~ 30MHz)

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

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

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2	Temperature	: 23 °C
Test Date	: Feb. 19, 2019	Humidity	: 61 %



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	-11.62	40.26	28.64	40.00	-11.36	Peak	400	0	P
2	105.66	-13.40	43.07	29.67	43.50	-13.83	Peak	400	0	P
3	175.50	-10.26	41.34	31.08	43.50	-12.42	Peak	400	0	P
4	291.90	-8.79	51.26	42.47	46.00	-3.53	Peak	400	0	P
5	365.62	-6.68	41.88	35.20	46.00	-10.80	Peak	400	0	P
6	461.65	-4.48	38.93	34.45	46.00	-11.55	Peak	400	0	P

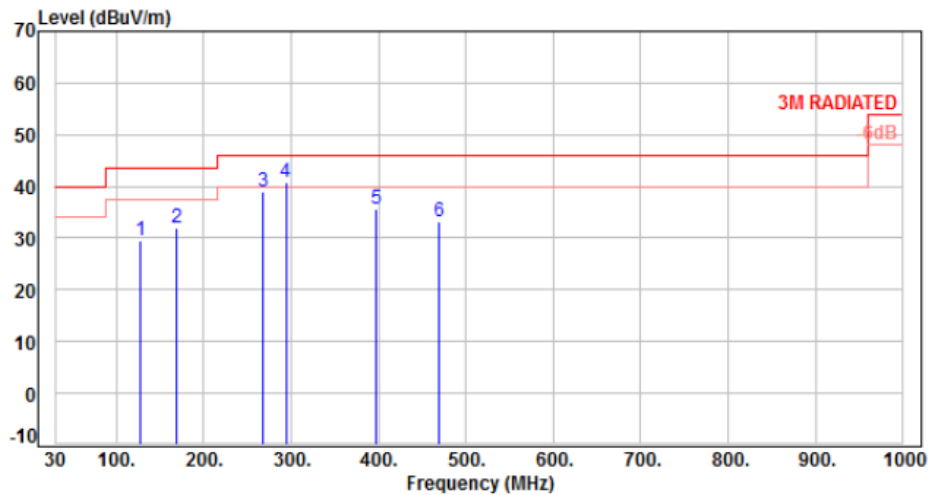
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2	Temperature	: 23 °C
Test Date	: Feb. 19, 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	127.97	-10.95	40.49	29.54	43.50	-13.96	Peak	100	0	P
2	169.68	-9.51	41.40	31.89	43.50	-11.61	Peak	100	0	P
3	268.62	-9.53	48.43	38.90	46.00	-7.10	Peak	100	0	P
4	293.84	-8.76	49.65	40.89	46.00	-5.11	Peak	100	0	P
5	396.66	-5.85	41.40	35.55	46.00	-10.45	Peak	100	0	P
6	468.44	-4.36	37.42	33.06	46.00	-12.94	Peak	100	0	P

Note: Level=Reading+Factor

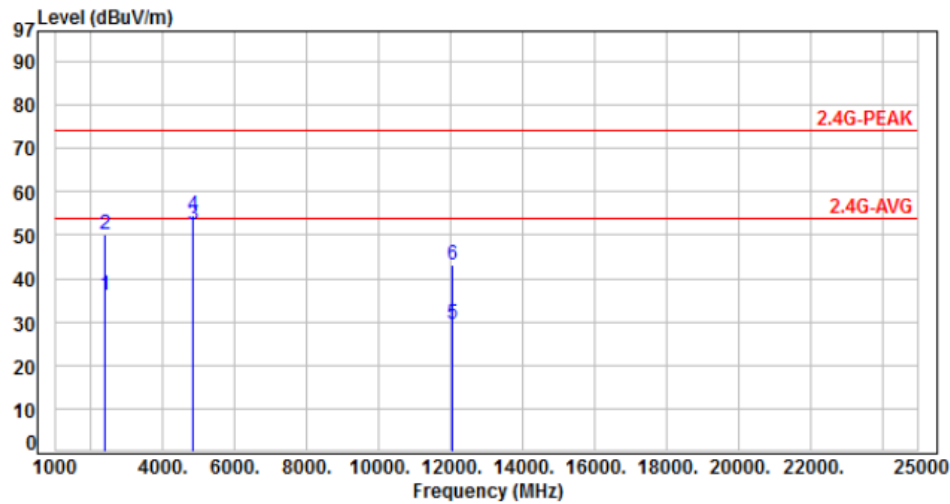
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



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

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH01	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	51.80	36.12	54.00	-17.88	Average	220	300	P
2	2390.00	-15.68	65.90	50.22	74.00	-23.78	Peak	220	300	P
3	4824.00	-8.47	61.00	52.53	54.00	-1.47	Average	100	300	P
4	4824.00	-8.47	63.20	54.73	74.00	-19.27	Peak	100	300	P
5	12060.00	1.79	27.58	29.37	54.00	-24.63	Average	100	83	P
6	12060.00	1.79	41.32	43.11	74.00	-30.89	Peak	100	83	P

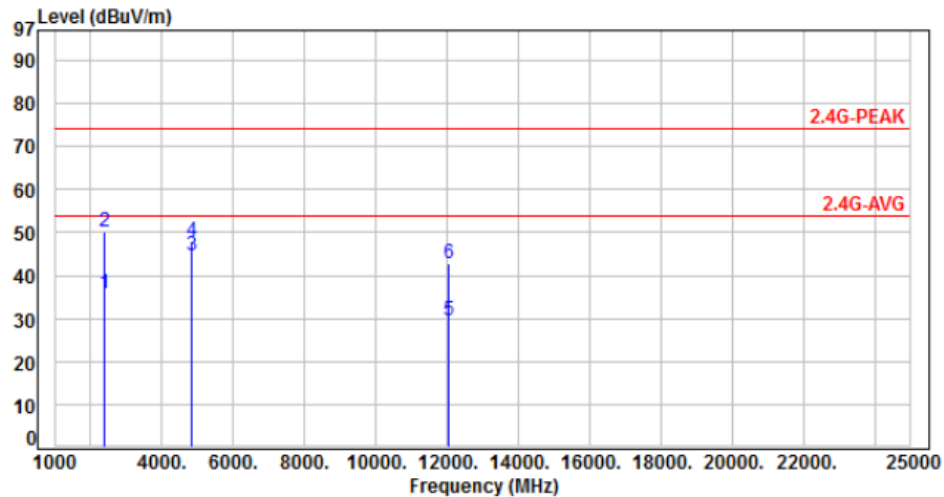
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH01	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	51.40	35.72	54.00	-18.28	Average	100	254	P
2	2390.00	-15.68	65.80	50.12	74.00	-23.88	Peak	100	254	P
3	4824.00	-8.47	53.10	44.63	54.00	-9.37	Average	100	160	P
4	4824.00	-8.47	56.60	48.13	74.00	-25.87	Peak	100	160	P
5	12060.00	1.79	27.66	29.45	54.00	-24.55	Average	100	144	P
6	12060.00	1.79	40.90	42.69	74.00	-31.31	Peak	100	144	P

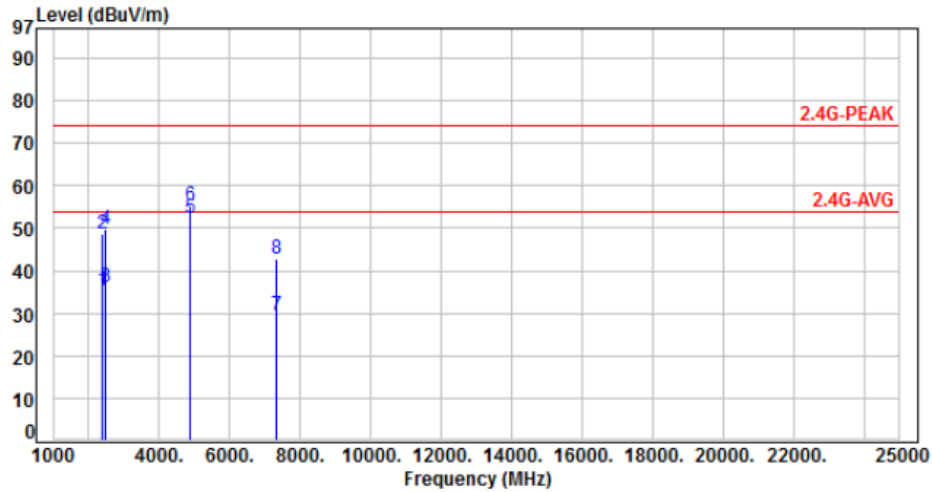
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH06	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	51.10	35.42	54.00	-18.58	Average	190	286	P
2	2390.00	-15.68	64.50	48.82	74.00	-25.18	Peak	190	286	P
3	2483.50	-15.36	51.52	36.16	54.00	-17.84	Average	190	286	P
4	2483.50	-15.36	65.20	49.84	74.00	-24.16	Peak	190	286	P
5	4874.00	-8.33	60.80	52.47	54.00	-1.53	Average	100	290	P
6	4874.00	-8.33	63.50	55.17	74.00	-18.83	Peak	100	290	P
7	7311.00	-3.86	33.50	29.64	54.00	-24.36	Average	100	73	P
8	7311.00	-3.86	46.80	42.94	74.00	-31.06	Peak	100	73	P

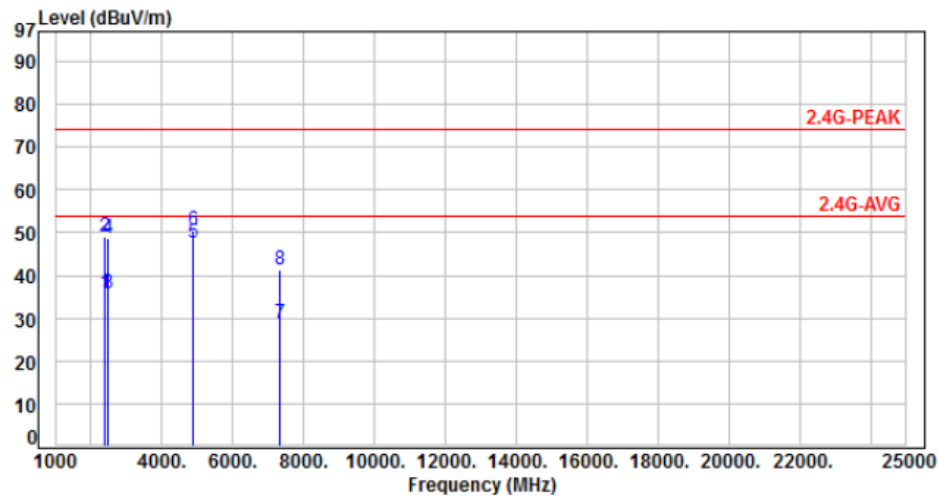
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH06	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	51.40	35.72	54.00	-18.28	Average	100	267	P
2	2390.00	-15.68	64.80	49.12	74.00	-24.88	Peak	100	267	P
3	2483.50	-15.36	51.20	35.84	54.00	-18.16	Average	100	267	P
4	2483.50	-15.36	64.16	48.80	74.00	-25.20	Peak	100	267	P
5	4874.00	-8.33	56.00	47.67	54.00	-6.33	Average	100	158	P
6	4874.00	-8.33	58.70	50.37	74.00	-23.63	Peak	100	158	P
7	7311.00	-3.86	32.56	28.70	54.00	-25.30	Average	100	327	P
8	7311.00	-3.86	45.30	41.44	74.00	-32.56	Peak	100	327	P

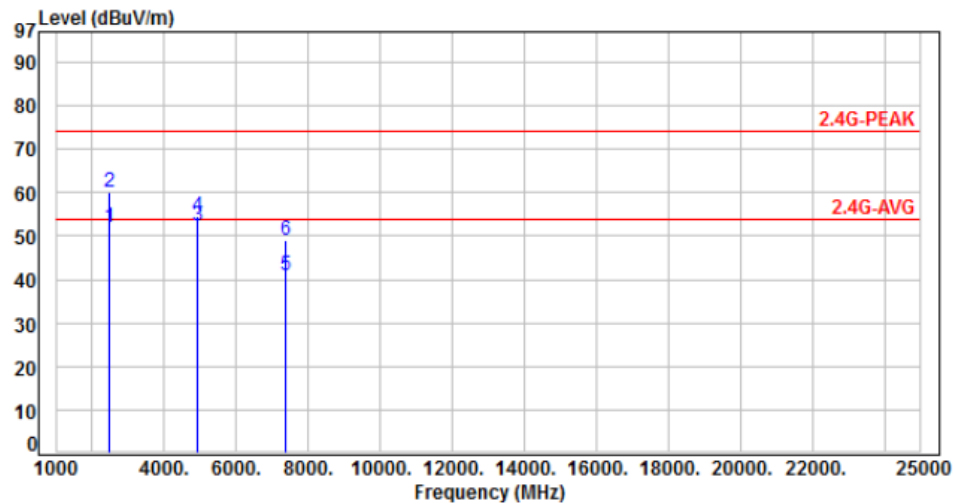
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH11	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.36	67.20	51.84	54.00	-2.16	Average	100	284	P
2	2483.50	-15.36	75.50	60.14	74.00	-13.86	Peak	100	284	P
3	4924.00	-8.18	60.50	52.32	54.00	-1.68	Average	100	280	P
4	4924.00	-8.18	62.90	54.72	74.00	-19.28	Peak	100	280	P
5	7386.00	-3.67	44.71	41.04	54.00	-12.96	Average	100	25	P
6	7386.00	-3.67	52.61	48.94	74.00	-25.06	Peak	100	25	P

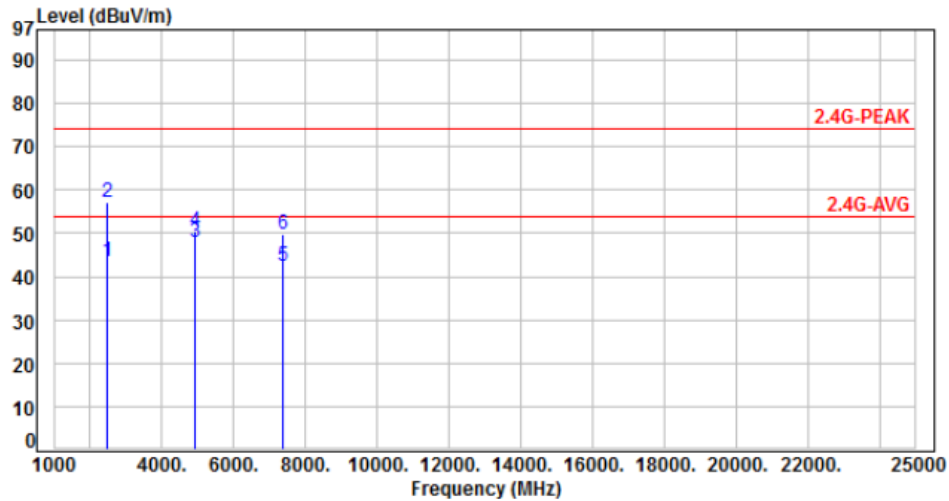
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH11	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.36	58.70	43.34	54.00	-10.66	Average	288	15	P
2	2483.50	-15.36	72.60	57.24	74.00	-16.76	Peak	288	15	P
3	4924.00	-8.18	56.20	48.02	54.00	-5.98	Average	100	158	P
4	4924.00	-8.18	58.70	50.52	74.00	-23.48	Peak	100	158	P
5	7386.00	-3.67	46.21	42.54	54.00	-11.46	Average	100	277	P
6	7386.00	-3.67	53.61	49.94	74.00	-24.06	Peak	100	277	P

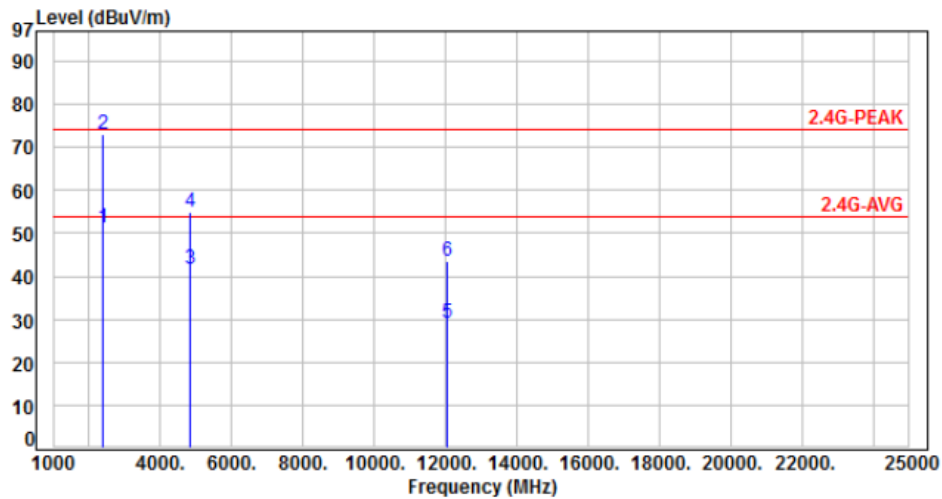
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH01	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	66.90	51.22	54.00	-2.78	Average	162	268	P
2	2390.00	-15.68	88.60	72.92	74.00	-1.08	Peak	162	268	P
3	4824.00	-8.47	50.20	41.73	54.00	-12.27	Average	100	300	P
4	4824.00	-8.47	63.50	55.03	74.00	-18.97	Peak	100	300	P
5	12060.00	1.79	27.53	29.32	54.00	-24.68	Average	100	347	P
6	12060.00	1.79	41.55	43.34	74.00	-30.66	Peak	100	347	P

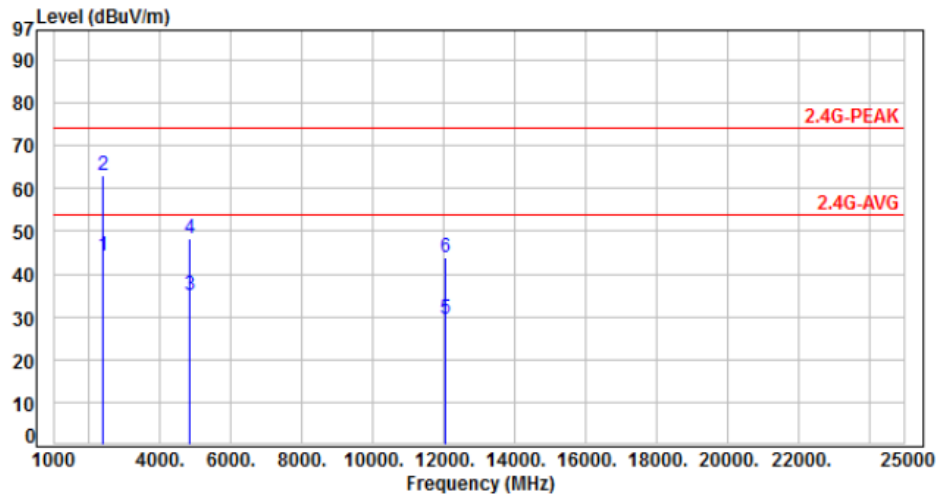
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH01	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	59.80	44.12	54.00	-9.88	Average	100	20	P
2	2390.00	-15.68	78.90	63.22	74.00	-10.78	Peak	100	20	P
3	4824.00	-8.47	43.40	34.93	54.00	-19.07	Average	100	162	P
4	4824.00	-8.47	56.70	48.23	74.00	-25.77	Peak	100	162	P
5	12060.00	1.79	27.83	29.62	54.00	-24.38	Average	100	299	P
6	12060.00	1.79	42.01	43.80	74.00	-30.20	Peak	100	299	P

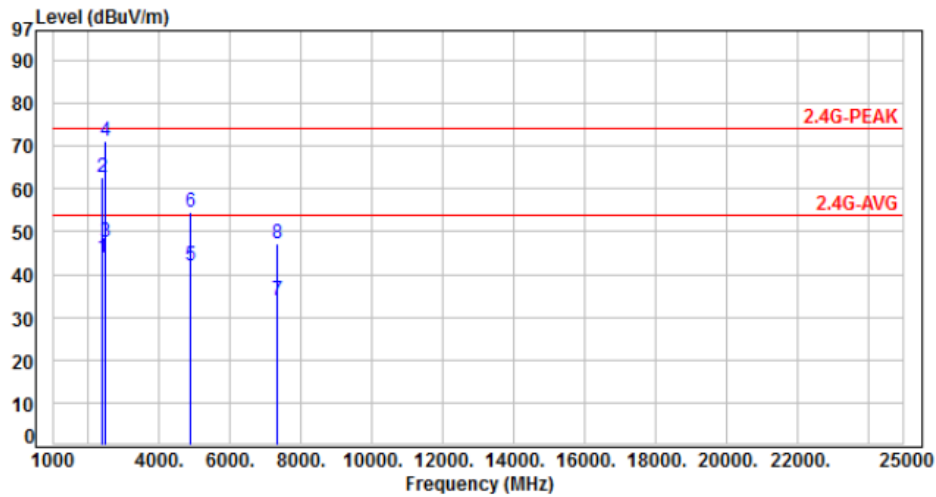
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH06	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	59.60	43.92	54.00	-10.08	Average	118	284	P
2	2390.00	-15.68	78.20	62.52	74.00	-11.48	Peak	118	284	P
3	2483.50	-15.36	62.90	47.54	54.00	-6.46	Average	118	284	P
4	2483.50	-15.36	86.50	71.14	74.00	-2.86	Peak	118	284	P
5	4874.00	-8.33	50.50	42.17	54.00	-11.83	Average	100	300	P
6	4874.00	-8.33	62.90	54.57	74.00	-19.43	Peak	100	300	P
7	7311.00	-3.86	37.80	33.94	54.00	-20.06	Average	100	280	P
8	7311.00	-3.86	51.20	47.34	74.00	-26.66	Peak	100	280	P

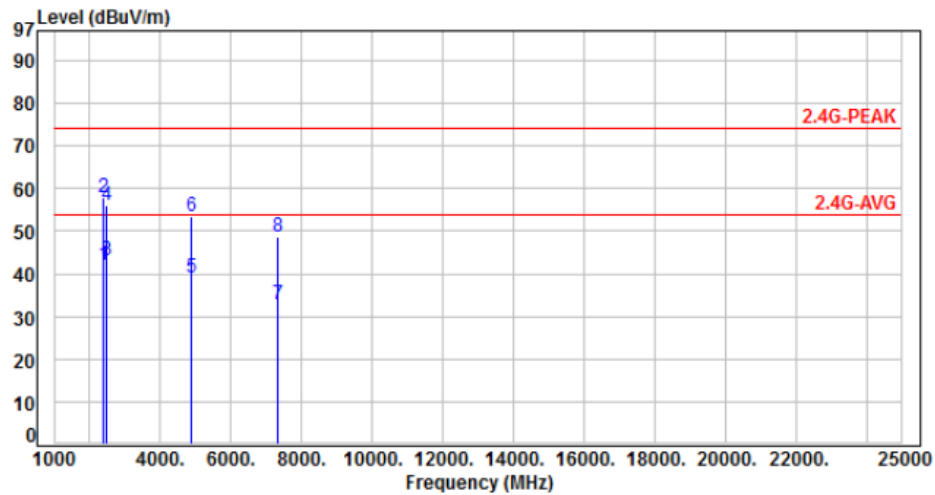
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH06	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	57.90	42.22	54.00	-11.78	Average	100	303	P
2	2390.00	-15.68	73.70	58.02	74.00	-15.98	Peak	100	303	P
3	2483.50	-15.36	58.40	43.04	54.00	-10.96	Average	100	303	P
4	2483.50	-15.36	71.60	56.24	74.00	-17.76	Peak	100	303	P
5	4874.00	-8.33	47.50	39.17	54.00	-14.83	Average	100	156	P
6	4874.00	-8.33	61.80	53.47	74.00	-20.53	Peak	100	156	P
7	7311.00	-3.86	36.78	32.92	54.00	-21.08	Average	100	272	P
8	7311.00	-3.86	52.50	48.64	74.00	-25.36	Peak	100	272	P

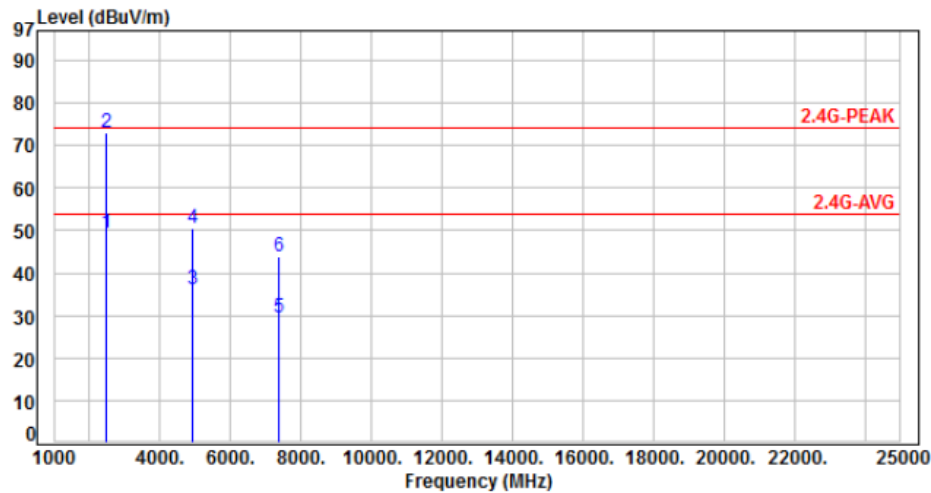
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH11	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.36	64.70	49.34	54.00	-4.66	Average	130	283	P
2	2483.50	-15.36	88.20	72.84	74.00	-1.16	Peak	130	283	P
3	4924.00	-8.18	44.20	36.02	54.00	-17.98	Average	100	295	P
4	4924.00	-8.18	58.60	50.42	74.00	-23.58	Peak	100	295	P
5	7386.00	-3.67	33.26	29.59	54.00	-24.41	Average	100	88	P
6	7386.00	-3.67	47.53	43.86	74.00	-30.14	Peak	100	88	P

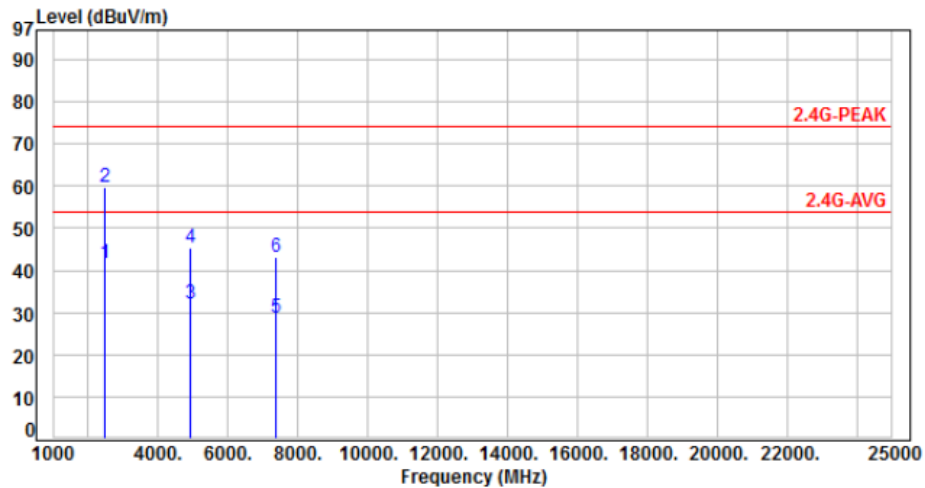
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH11	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-15.36	57.20	41.84	54.00	-12.16	Average	311	67	P
2	2483.50	-15.36	75.10	59.74	74.00	-14.26	Peak	311	67	P
3	4924.00	-8.18	40.10	31.92	54.00	-22.08	Average	100	152	P
4	4924.00	-8.18	53.50	45.32	74.00	-28.68	Peak	100	152	P
5	7386.00	-3.67	32.48	28.81	54.00	-25.19	Average	100	324	P
6	7386.00	-3.67	46.89	43.22	74.00	-30.78	Peak	100	324	P

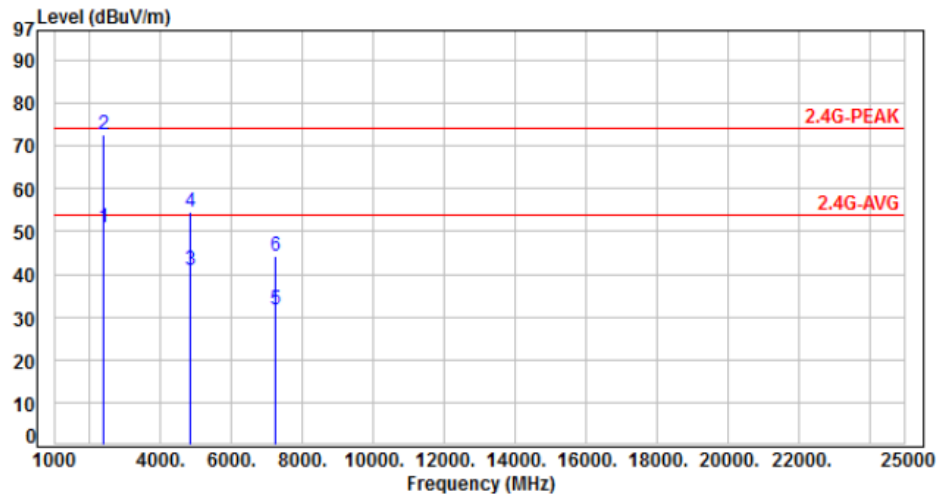
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH01	Temperature	: 23 °C
Test Date	: Feb. 19. 2019	Humidity	: 61 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-15.68	66.40	50.72	54.00	-3.28	Average	100	284	P
2	2390.00	-15.68	88.20	72.52	74.00	-1.48	Peak	100	284	P
3	4824.00	-8.47	49.50	41.03	54.00	-12.97	Average	100	300	P
4	4824.00	-8.47	63.20	54.73	74.00	-19.27	Peak	100	300	P
5	7236.00	-4.06	35.60	31.54	54.00	-22.46	Average	100	30	P
6	7236.00	-4.06	48.20	44.14	74.00	-29.86	Peak	100	30	P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor