



# FCC RADIO TEST REPORT

Applicant : TRENDnet, Inc.  
Address : 20675 Manhattan Place, Torrance, CA 90501 U.S.A.  
Equipment : AC2600 MU-MIMO WiFi Router  
Model No. : TEW-827DRU  
Trade Name : TRENDnet  
FCC ID. : XU8TEW827DRUV2

## I HEREBY CERTIFY THAT :

The sample was received on Jun. 08, 2017 and the testing was carried out on Jul. 27, 2017 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:

Mark Liao / Assistant Manager

Tested by:

Spree Yei / Engineer

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory





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## History of this test report



## 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 E §15.407**

**First R&O 14-30**

**KDB662911**

**KDB789033**

**KDB644545**

FCC Rule	Description of Test	Result
15.203	Antenna Requirement	Pass
15.207(a)	AC Power Line Conducted Emission	Pass
15.407(b) 15.209	Radiated Spurious Emission	Pass
15.407(a)	26 dB Occupied Bandwidth	Pass
15.407	6 dB Bandwidth	Pass
15.407 (a) & (a)(3)	Average Power	Pass
15.407(a)	Output and PPSD	Pass



## 2. Test Configuration of Equipment under Test

### 2.1. Feature of Equipment

Equipment	AC2600 MU-MIMO WiFi Router
Model No.	TEW-827DRU
Brand Name	TRENDnet
Product Description	Please refer to User's Manual.
AC Adapter	Adapter Brand: CWT Model No.: 2ABB018F US Input: 100-240V~ 50/60Hz, 0.6A Output: 12V, 1.5A
	Adapter Brand: LEI Model No.: MU18A2120150-A1 Input: 100-240V~ 50/60Hz, 0.5A Output: 12V, 1.5A
	Adapter Brand: TOPOW Model No.: TPA158K-18120-US Input: 100-240V~ 50/60Hz, 0.8A Output: 12V, 1.5A
	Adapter Brand: CWT Model No.: 2ABL024F US Input: 100-240V~ 50/60Hz, 0.6A Output: 12V, 2A
	Adapter Brand: APD Model No.: WA-24Q12R Input: 100-240V~ 50-60Hz, 0.7A Max. Output: 12V, 2A
Connecting I/O Port(s)	Please refer to User's Manual.
Memo	V2.0R
Frequency Range	802.11b/g/n/ac: 2412-2462 MHz 802.11a/an/ac: 5150MHz-5250MHz, 5725MHz -5850MHz
Modulation Type	OFDM, DSSS
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS23, HT20/40 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11ac: MCS0 – MCS9, VHT20/40/80
Antenna Type/ gain	Dipole antenna 2412-2462MHz: ANT 0~3: 3dBi 5150MHz-5250MHz: ANT 0~3: 5dBi 5725MHz -5850MHz: ANT 0~3: 5dBi

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. 802.11ac VHT20, VHT40 and VHT80 support beamforming.



## 2.2. Carrier Frequency of Channels

Band 1: 5150MHz-5250MHz

802.11a, 802.11an HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*36	<b>5180</b>	*44	<b>5220</b>
40	5200	*48	<b>5240</b>

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*38	<b>5190</b>	*46	<b>5230</b>

802.11ac VHT80

Channel	Frequency(MHz)
*42	<b>5210</b>

Band 4: 5725MHz -5850MHz

802.11a, 802.11an HT20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*149	<b>5745</b>	161	5805
153	5765	*165	<b>5825</b>
*157	<b>5785</b>		

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
*151	<b>5755</b>	*159	<b>5795</b>

802.11ac VHT80

Channel	Frequency(MHz)
*155	<b>5775</b>

Note: Channels remarked \* are selected to perform test.

## 2.3. 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 Remote workstation and EUT for RF test. The Remote workstation included Notebook.
- c. An executive program, "QA Tool:v0.0.1.71" under WIN 7 was executed to transmit and receive data via WLAN.
- d. The following test modes were performed for the test:

Test Mode 1: 802.11a (6Mbps)

Test Mode 2: 802.11an HT20 (6.5Mbps)

Test Mode 3: 802.11an HT40 (13.5Mbps)

Test Mode 4: 802.11ac VHT20 (6.5Mbps)

Test Mode 5: 802.11ac VHT40 (13.5Mbps)

Test Mode 6: 802.11ac VHT80 (29.3Mbps)

For conduction test, caused "Test Mode 1" generated the worst case, it was reported as the final data.

For radiation test (below 1GHz), caused "Test Mode 1" generated the worst case, it was reported as the final data.

For radiation test (above 1GHz), caused "Test Mode 1, 4, 5, 6" generated the worst case, they were reported as the final data.

Note: Non-Beamforming was the worst case, so it was used for the test result.



## 2.4. Description of Test System

Device	Manufacturer	Model No.	Description
Remote workstation			
Notebook	DELL	LatitudeE5450	Power Cable, Unshielding, 1.8m

Use Cable:

Cable	Quantity	Description
Network	1	Unshielding, 15m



## 2.5. General Information of Test

Test Site	<b>Cerpass Technology Corporation Test Laboratory</b> 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, 390316, 228391, 641184			
	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-812, G-813 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.				

## 2.6. Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	Line / Neutral	±2.9076 dB
Radiated Emission	9 kHz ~ 25,000 MHz	Vertical / Horizontal	±0.948 dB
Spurious Emission (Conducted)	-	-	±4.011 dB
Maximum Peak and Average Output Power	-	-	±0.322 dB
Power Spectral Density	-	-	±0.322 dB
Bandwidth	-	-	74.224Hz



### 3. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI3	100443	2017/03/07	2018/03/06
LISN	Schwarzbeck	NSLK 8127	8127-740	2016/08/30	2017/08/29
LISN	Schwarzbeck	NSLK 8127	8127-516	2016/09/06	2017/09/05
Pulse Limiter	R&S	ESH3-Z2	101934	2017/02/14	2018/02/13
Bilog Antenna	Schwarzbeck	VULB9168	369	2017/03/15	2018/03/14
Active Loop Antenna	EMCO	6507	40855	2017/05/15	2018/05/14
Horn Antenna	EMCO	3115	31601	2016/09/05	2017/09/04
Horn Antenna	EMCO	3116	31970	2017/03/29	2018/03/28
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200207	2017/03/17	2018/03/16
Preamplifier	EM	EM330	60660	2017/02/25	2018/02/24
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2016/09/13	2017/09/12
Preamplifier	Agilent	8449B	3008A01954	2017/02/09	2018/02/08
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2016/11/04	2017/11/03
MXG MW Analog Signal Generator	KEYSIGHT	N5183A	MY50142931	2017/03/17	2018/03/16
Spectrum Analyzer	R&S	FSP40	100219	2016/09/01	2017/08/31
Bluetooth Tester	R&S	CBT	101133	2017/03/10	2018/03/09
Attenuator	KEYSIGHT	8491B	MY39250703	2017/03/07	2018/03/06
Rotary Attenuator	Agilent	8495B	MY42146680	2017/03/13	2018/03/12
Temp & Humi chamber	T-MACHINE	TMJ-9712	T-12-040111	2016/09/05	2017/09/04
Series Power Meter	Anritsu	ML2495A	1224005	2017/03/01	2018/02/28
Power Sensor	Anritsu	MA2411B	1207295	2017/03/01	2018/02/28
Cable	HUBER SUHNER	SUCOFLEX 102	28422/2	2017/02/25	2018/02/24
Cable	HUBER SUHNER	SUCOFLEX 102	28418/2	2017/02/25	2018/02/24
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A
Software	AUDIX	E3	V8.2014-8-6	N/A	N/A
Software	Keysight	N7607B Signal Studio	v2.0.0.1	N/A	N/A
Software	Keysight	Inservice MonitorUtility	N/A	N/A	N/A



## 4. Antenna Requirements

### 4.1. Antenna Construction and Directional Gain

Antenna Type	Dipole Antenna
Antenna Gain	2412-2462MHz: ANT 0~3: 3dBi 5150MHz-5250MHz: ANT 0~3: 5dBi 5725MHz -5850MHz: ANT 0~3: 5dBi

2412-2462MHz

For Power directional gain=  $G_{ant} = 3 \text{ dBi}$

$$\text{For PSD directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / NANT] \\ = 9.02 \text{ (dBi)}$$

5150MHz-5250MHz

For Power directional gain=  $G_{ant} = 5 \text{ dBi}$

$$\text{For PSD directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / NANT] \\ = 11.02 \text{ (dBi)}$$

5725MHz -5850MHz

For Power directional gain=  $G_{ant} = 5 \text{ dBi}$

$$\text{For PSD directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / NANT] \\ = 11.02 \text{ (dBi)}$$



## 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 $\mu$ V)	Average (dB $\mu$ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

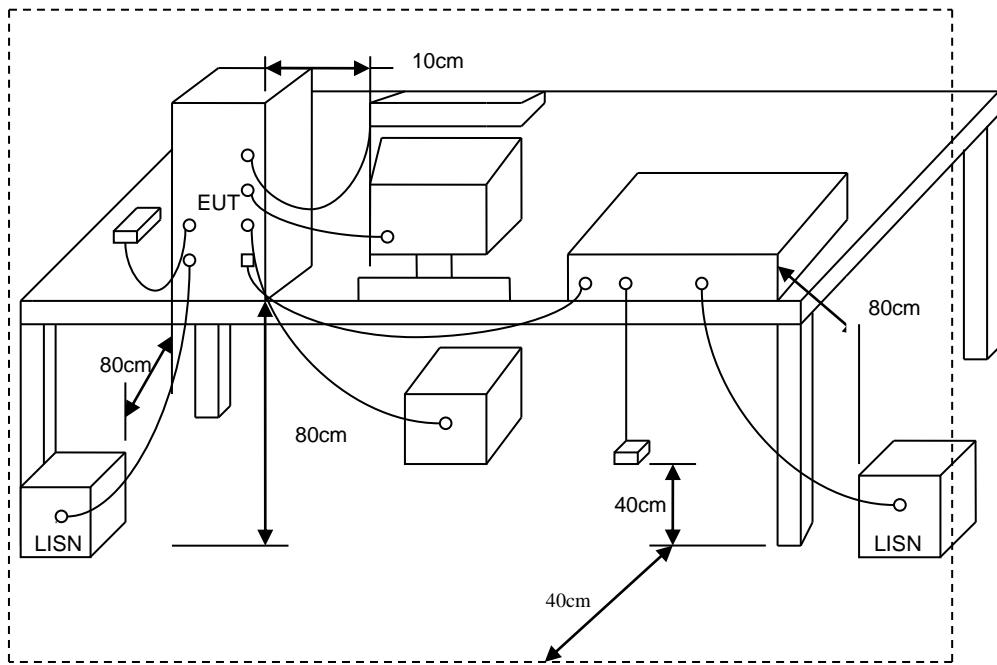
\*Decreases with the logarithm of the frequency.

### 5.2. Test Procedures

- 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.



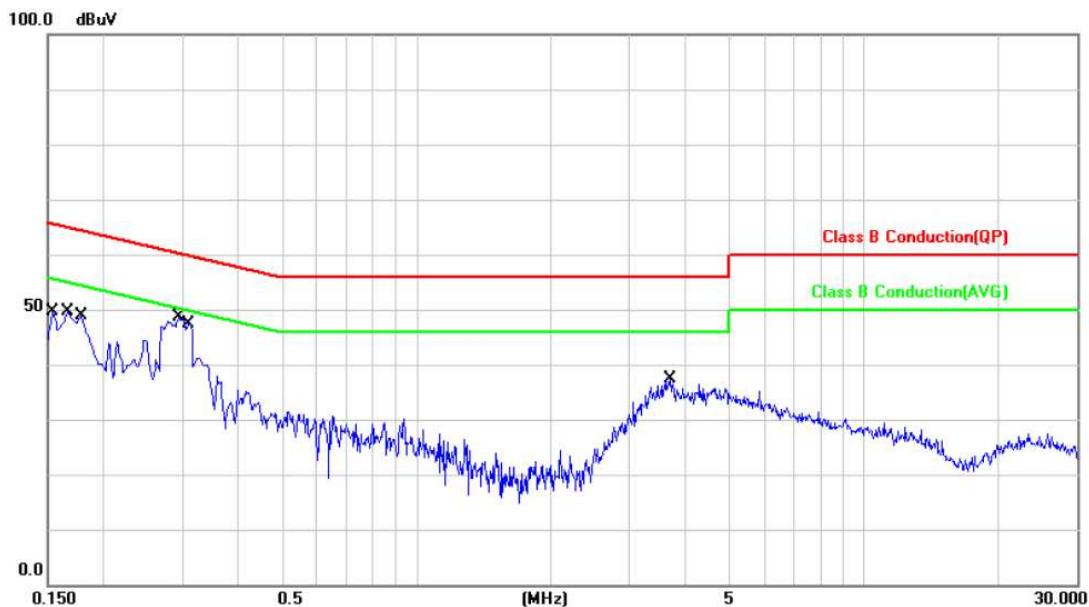
### 5.3. Typical Test Setup





## 5.4. Test Result and Data

Power :	AC 120V (2ABB018F US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	9.91	38.89	48.80	65.78	-16.98	QP	P
2	0.1539	9.91	29.06	38.97	55.78	-16.81	AVG	P
3	0.1660	9.91	36.97	46.88	65.15	-18.27	QP	P
4	0.1660	9.91	28.61	38.52	55.15	-16.63	AVG	P
5	0.1780	9.91	36.37	46.28	64.57	-18.29	QP	P
6	0.1780	9.91	29.19	39.10	54.57	-15.47	AVG	P
7	0.2940	9.91	36.33	46.24	60.41	-14.17	QP	P
8	0.2940	9.91	20.95	30.86	50.41	-19.55	AVG	P
9	0.3100	9.92	37.26	47.18	59.97	-12.79	QP	P
10	0.3100	9.92	34.03	43.95	49.97	-6.02	AVG	P
11	3.7020	10.12	22.41	32.53	56.00	-23.47	QP	P
12	3.7020	10.12	15.65	25.77	46.00	-20.23	AVG	P

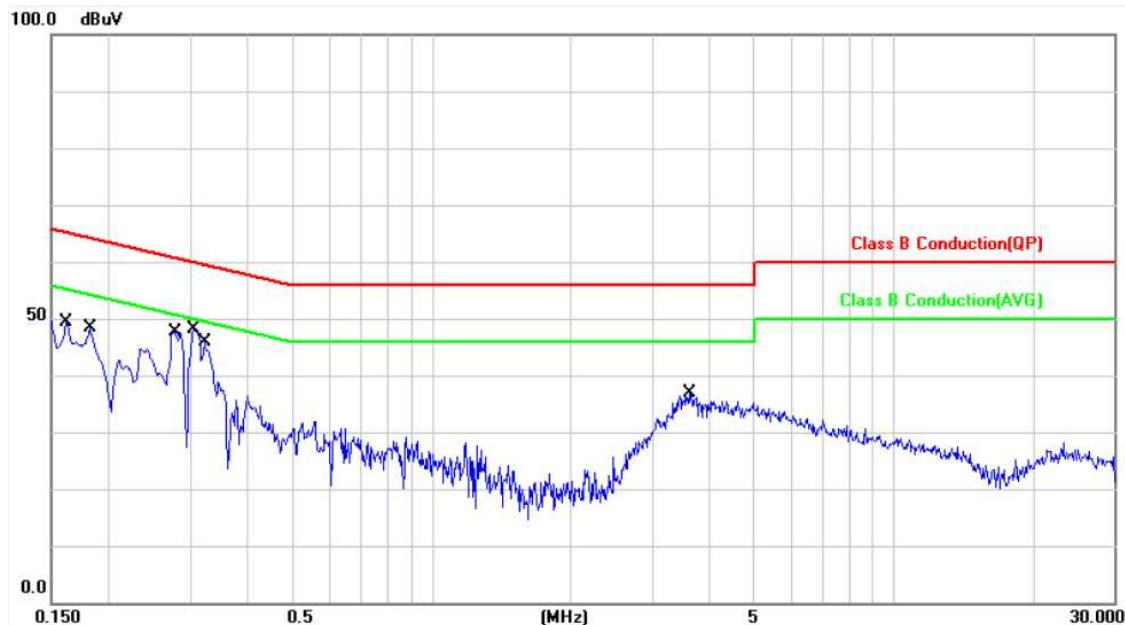
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABB018F US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.88	36.87	46.75	65.36	-18.61	QP	P
2	0.1620	9.88	28.77	38.65	55.36	-16.71	Avg	P
3	0.1819	9.88	36.65	46.53	64.39	-17.86	QP	P
4	0.1819	9.88	29.70	39.58	54.39	-14.81	Avg	P
5	0.2779	9.88	37.14	47.02	60.88	-13.86	QP	P
6	0.2779	9.88	33.37	43.25	50.88	-7.63	Avg	P
7	0.3060	9.88	36.99	46.87	60.08	-13.21	QP	P
8	0.3060	9.88	32.21	42.09	50.08	-7.99	Avg	P
9	0.3220	9.88	33.22	43.10	59.65	-16.55	QP	P
10	0.3220	9.88	18.61	28.49	49.65	-21.16	Avg	P
11	3.6220	10.06	22.94	33.00	56.00	-23.00	QP	P
12	3.6220	10.06	15.91	25.97	46.00	-20.03	Avg	P

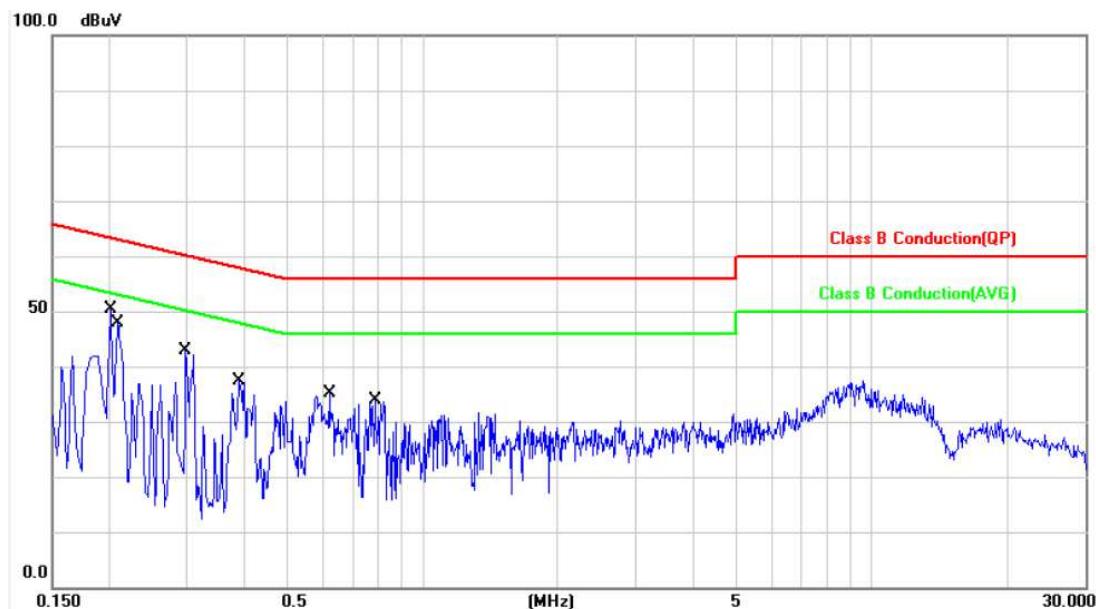
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2020	9.88	37.40	47.28	63.52	-16.24	QP	P
2	0.2020	9.88	19.83	29.71	53.52	-23.81	AVG	P
3	0.2100	9.88	35.03	44.91	63.20	-18.29	QP	P
4	0.2100	9.88	14.91	24.79	53.20	-28.41	AVG	P
5	0.2980	9.88	28.29	38.17	60.30	-22.13	QP	P
6	0.2980	9.88	8.62	18.50	50.30	-31.80	AVG	P
7	0.3899	9.89	22.46	32.35	58.06	-25.71	QP	P
8	0.3899	9.89	7.58	17.47	48.06	-30.59	AVG	P
9	0.6220	9.90	22.18	32.08	56.00	-23.92	QP	P
10	0.6220	9.90	9.12	19.02	46.00	-26.98	AVG	P
11	0.7860	9.91	21.02	30.93	56.00	-25.07	QP	P
12	0.7860	9.91	5.55	15.46	46.00	-30.54	AVG	P

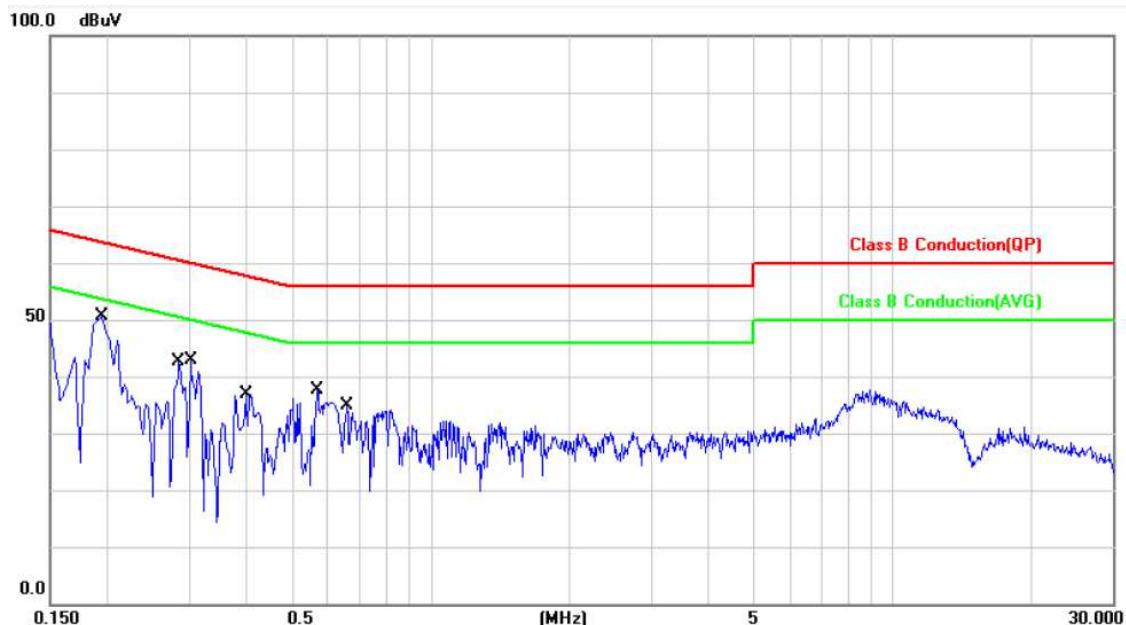
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1940	9.88	37.40	47.28	63.86	-16.58	QP	P
2	0.1940	9.88	19.73	29.61	53.86	-24.25	AVG	P
3	0.2860	9.88	28.16	38.04	60.64	-22.60	QP	P
4	0.2860	9.88	8.71	18.59	50.64	-32.05	AVG	P
5	0.3020	9.88	28.38	38.26	60.19	-21.93	QP	P
6	0.3020	9.88	8.69	18.57	50.19	-31.62	AVG	P
7	0.3980	9.89	21.47	31.36	57.89	-26.53	QP	P
8	0.3980	9.89	7.48	17.37	47.89	-30.52	AVG	P
9	0.5700	9.90	21.50	31.40	56.00	-24.60	QP	P
10	0.5700	9.90	9.54	19.44	46.00	-26.56	AVG	P
11	0.6580	9.91	20.06	29.97	56.00	-26.03	QP	P
12	0.6580	9.91	5.53	15.44	46.00	-30.56	AVG	P

Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	9.91	36.87	46.78	65.78	-19.00	QP	P
2	0.1539	9.91	20.30	30.21	55.78	-25.57	Avg	P
3	0.1780	9.91	33.85	43.76	64.57	-20.81	QP	P
4	0.1780	9.91	17.30	27.21	54.57	-27.36	Avg	P
5	0.2020	9.91	29.62	39.53	63.52	-23.99	QP	P
6	0.2020	9.91	12.56	22.47	53.52	-31.05	Avg	P
7	0.2500	9.91	25.08	34.99	61.75	-26.76	QP	P
8	0.2500	9.91	12.44	22.35	51.75	-29.40	Avg	P
9	0.3980	9.93	30.38	40.31	57.89	-17.58	QP	P
10	0.3980	9.93	27.74	37.67	47.89	-10.22	Avg	P
11	5.9140	10.22	23.52	33.74	60.00	-26.26	QP	P
12	5.9140	10.22	18.50	28.72	50.00	-21.28	Avg	P

Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.88	37.81	47.69	65.99	-18.30	QP	P
2	0.1500	9.88	20.78	30.66	55.99	-25.33	AVG	P
3	0.1620	9.88	36.72	46.60	65.36	-18.76	QP	P
4	0.1620	9.88	21.98	31.86	55.36	-23.50	AVG	P
5	0.1860	9.88	32.32	42.20	64.21	-22.01	QP	P
6	0.1860	9.88	16.87	26.75	54.21	-27.46	AVG	P
7	0.2340	9.88	26.26	36.14	62.30	-26.16	QP	P
8	0.2340	9.88	10.35	20.23	52.30	-32.07	AVG	P
9	0.3980	9.89	30.43	40.32	57.89	-17.57	QP	P
10	0.3980	9.89	27.69	37.58	47.89	-10.31	AVG	P
11	5.7500	10.16	24.07	34.23	60.00	-25.77	QP	P
12	5.7500	10.16	19.08	29.24	50.00	-20.76	AVG	P

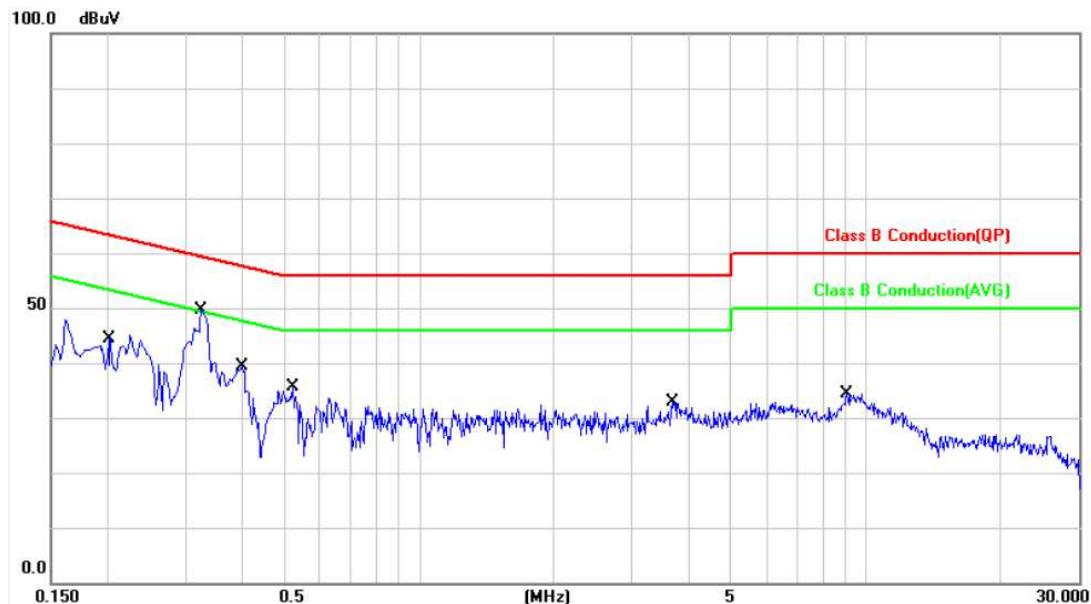
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABL024F US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2020	9.91	28.62	38.53	63.52	-24.99	QP	P
2	0.2020	9.91	19.45	29.36	53.52	-24.16	AVG	P
3	0.3260	9.92	38.98	48.90	59.55	-10.65	QP	P
4	0.3260	9.92	35.24	45.16	49.55	-4.39	AVG	P
5	0.4020	9.93	26.53	36.46	57.81	-21.35	QP	P
6	0.4020	9.93	18.80	28.73	47.81	-19.08	AVG	P
7	0.5220	9.93	21.45	31.38	56.00	-24.62	QP	P
8	0.5220	9.93	14.50	24.43	46.00	-21.57	AVG	P
9	3.6940	10.12	18.45	28.57	56.00	-27.43	QP	P
10	3.6940	10.12	11.60	21.72	46.00	-24.28	AVG	P
11	9.1059	10.31	19.00	29.31	60.00	-30.69	QP	P
12	9.1059	10.31	14.07	24.38	50.00	-25.62	AVG	P

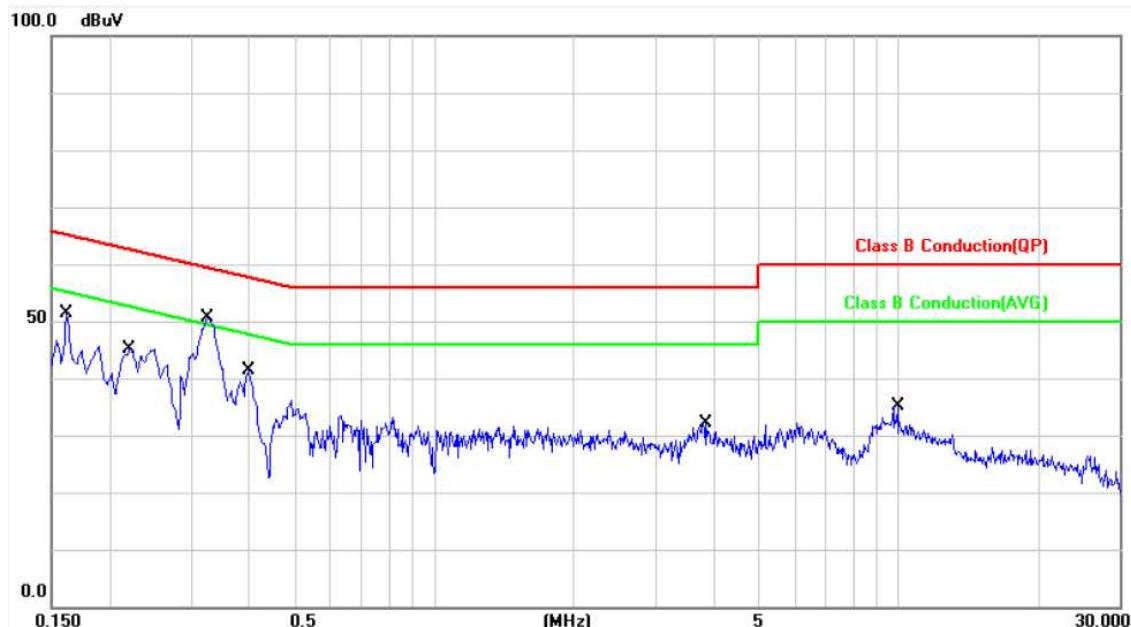
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABL024F US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	2ABL024F US	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.88	35.66	45.54	65.36	-19.82	QP	P
2	0.1620	9.88	27.19	37.07	55.36	-18.29	AVG	P
3	0.2220	9.88	32.71	42.59	62.74	-20.15	QP	P
4	0.2220	9.88	26.76	36.64	52.74	-16.10	AVG	P
5	0.3260	9.88	40.03	49.91	59.55	-9.64	QP	P
6	0.3260	9.88	36.29	46.17	49.55	-3.38	AVG	P
7	0.3980	9.89	27.72	37.61	57.89	-20.28	QP	P
8	0.3980	9.89	18.73	28.62	47.89	-19.27	AVG	P
9	3.8620	10.08	17.50	27.58	56.00	-28.42	QP	P
10	3.8620	10.08	10.56	20.64	46.00	-25.36	AVG	P
11	9.9859	10.32	17.79	28.11	60.00	-31.89	QP	P
12	9.9859	10.32	12.76	23.08	50.00	-26.92	AVG	P

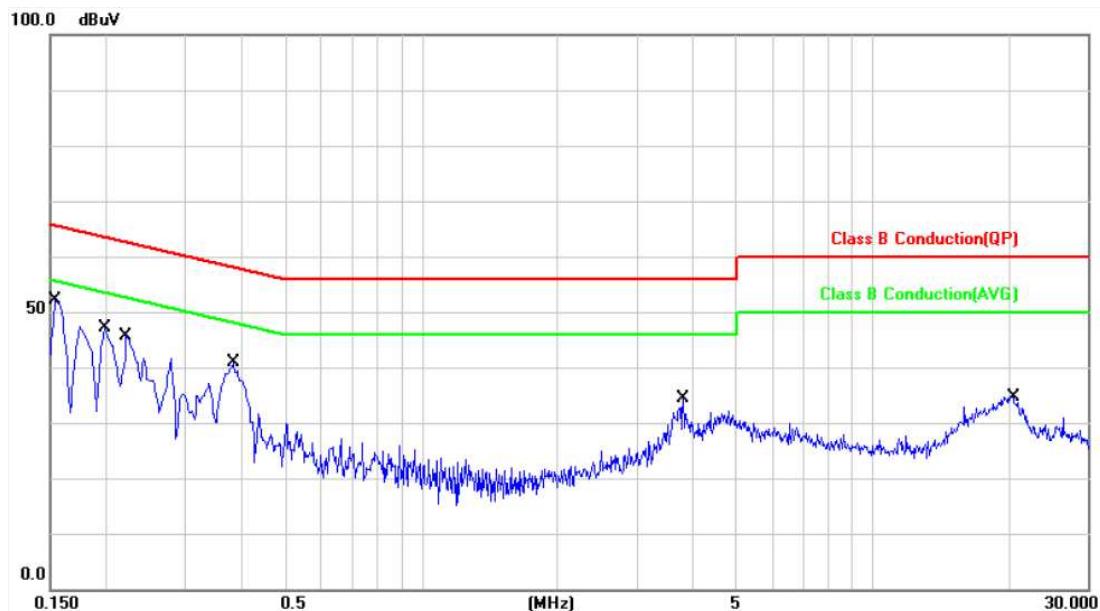
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	9.91	39.13	49.04	65.78	-16.74	QP	P
2	0.1539	9.91	25.97	35.88	55.78	-19.90	AVG	P
3	0.1980	9.91	33.72	43.63	63.69	-20.06	QP	P
4	0.1980	9.91	21.79	31.70	53.69	-21.99	AVG	P
5	0.2220	9.91	32.02	41.93	62.74	-20.81	QP	P
6	0.2220	9.91	22.66	32.57	52.74	-20.17	AVG	P
7	0.3820	9.93	29.62	39.55	58.23	-18.68	QP	P
8	0.3820	9.93	22.22	32.15	48.23	-16.08	AVG	P
9	3.8180	10.14	18.35	28.49	56.00	-27.51	QP	P
10	3.8180	10.14	9.49	19.63	46.00	-26.37	AVG	P
11	20.5740	10.62	18.33	28.95	60.00	-31.05	QP	P
12	20.5740	10.62	11.46	22.08	50.00	-27.92	AVG	P

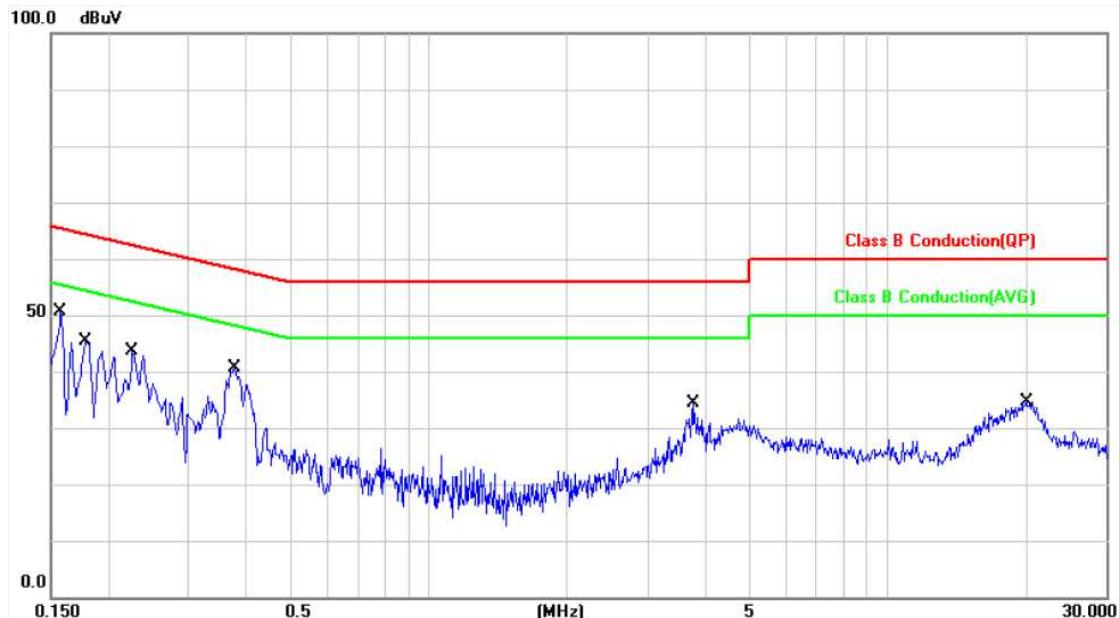
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 1	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1580	9.88	37.66	47.54	65.56	-18.02	QP	P
2	0.1580	9.88	24.93	34.81	55.56	-20.75	AVG	P
3	0.1780	9.88	34.30	44.18	64.57	-20.39	QP	P
4	0.1780	9.88	21.85	31.73	54.57	-22.84	AVG	P
5	0.2260	9.88	30.35	40.23	62.59	-22.36	QP	P
6	0.2260	9.88	21.12	31.00	52.59	-21.59	AVG	P
7	0.3780	9.89	29.84	39.73	58.32	-18.59	QP	P
8	0.3780	9.89	24.67	34.56	48.32	-13.76	AVG	P
9	3.7700	10.08	18.00	28.08	56.00	-27.92	QP	P
10	3.7700	10.08	9.09	19.17	46.00	-26.83	AVG	P
11	20.0700	10.64	18.96	29.60	60.00	-30.40	QP	P
12	20.0700	10.64	11.96	22.60	50.00	-27.40	AVG	P

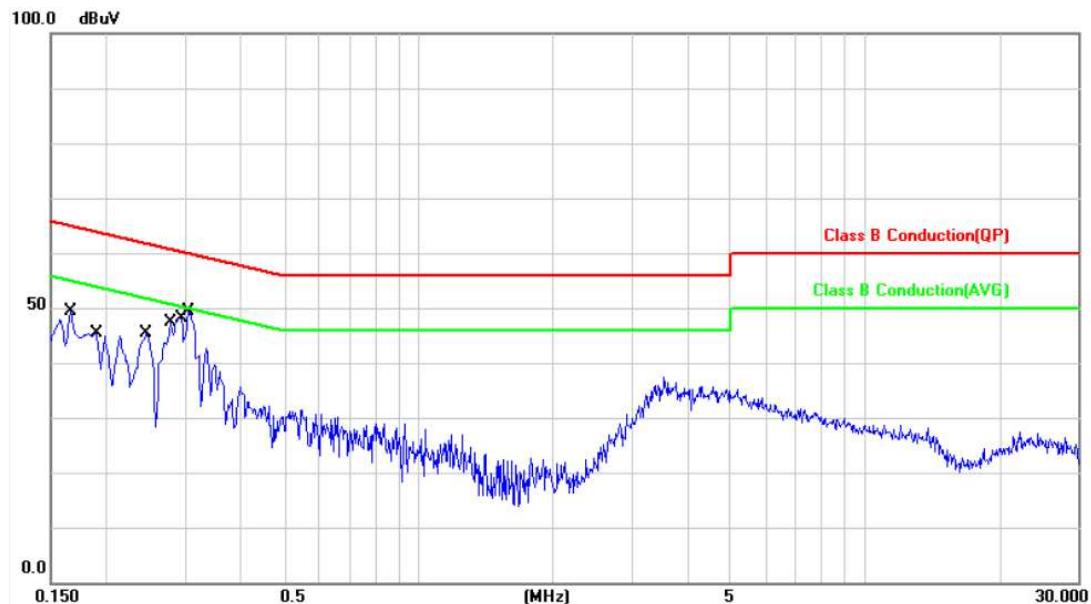
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABB018F US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1660	9.91	36.99	46.90	65.15	-18.25	QP	P
2	0.1660	9.91	28.84	38.75	55.15	-16.40	AVG	P
3	0.1900	9.91	34.06	43.97	64.03	-20.06	QP	P
4	0.1900	9.91	25.85	35.76	54.03	-18.27	AVG	P
5	0.2460	9.91	32.85	42.76	61.89	-19.13	QP	P
6	0.2460	9.91	27.68	37.59	51.89	-14.30	AVG	P
7	0.2779	9.91	37.19	47.10	60.88	-13.78	QP	P
8	0.2779	9.91	33.37	43.28	50.88	-7.60	AVG	P
9	0.2940	9.91	36.37	46.28	60.41	-14.13	QP	P
10	0.2940	9.91	20.99	30.90	50.41	-19.51	AVG	P
11	0.3060	9.92	37.26	47.18	60.08	-12.90	QP	P
12	0.3060	9.92	32.25	42.17	50.08	-7.91	AVG	P

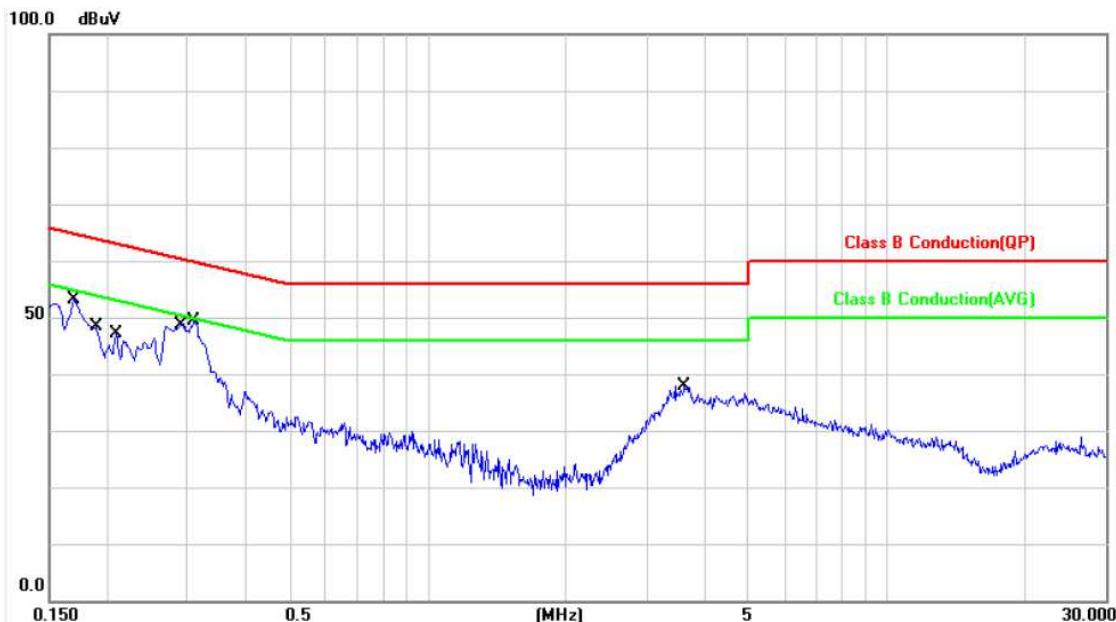
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABB018F US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1700	9.88	36.54	46.42	64.96	-18.54	QP	P
2	0.1700	9.88	28.27	38.15	54.96	-16.81	Avg	P
3	0.1900	9.88	34.01	43.89	64.03	-20.14	QP	P
4	0.1900	9.88	25.75	35.63	54.03	-18.40	Avg	P
5	0.2100	9.88	30.53	40.41	63.20	-22.79	QP	P
6	0.2100	9.88	23.34	33.22	53.20	-19.98	Avg	P
7	0.2878	9.88	36.54	46.42	60.59	-14.17	QP	P
8	0.2878	9.88	25.51	35.39	50.59	-15.20	Avg	P
9	0.3100	9.88	37.29	47.17	59.97	-12.80	QP	P
10	0.3100	9.88	34.02	43.90	49.97	-6.07	Avg	P
11	3.6340	10.06	22.56	32.62	56.00	-23.38	QP	P
12	3.6340	10.06	15.66	25.72	46.00	-20.28	Avg	P

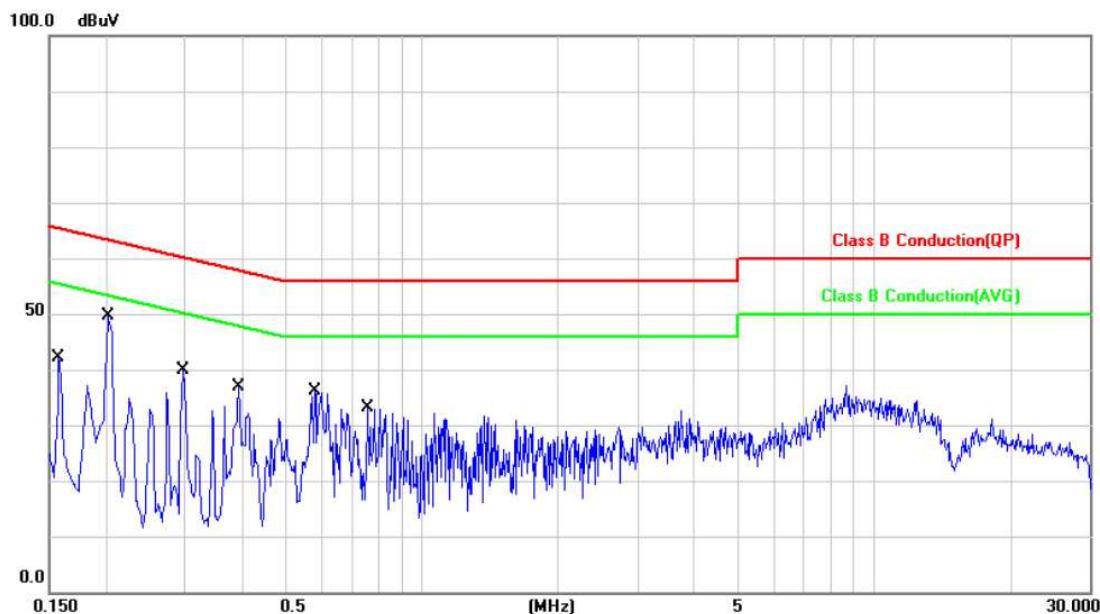
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1580	9.91	27.35	37.26	65.56	-28.30	QP	P
2	0.1580	9.91	7.08	16.99	55.56	-38.57	AVG	P
3	0.2020	9.91	36.82	46.73	63.52	-16.79	QP	P
4	0.2020	9.91	19.70	29.61	53.52	-23.91	AVG	P
5	0.2980	9.91	27.73	37.64	60.30	-22.66	QP	P
6	0.2980	9.91	8.04	17.95	50.30	-32.35	AVG	P
7	0.3940	9.93	21.71	31.64	57.98	-26.34	QP	P
8	0.3940	9.93	7.18	17.11	47.98	-30.87	AVG	P
9	0.5820	9.94	23.17	33.11	56.00	-22.89	QP	P
10	0.5820	9.94	10.51	20.45	46.00	-25.55	AVG	P
11	0.7620	9.95	19.65	29.60	56.00	-26.40	QP	P
12	0.7620	9.95	4.79	14.74	46.00	-31.26	AVG	P

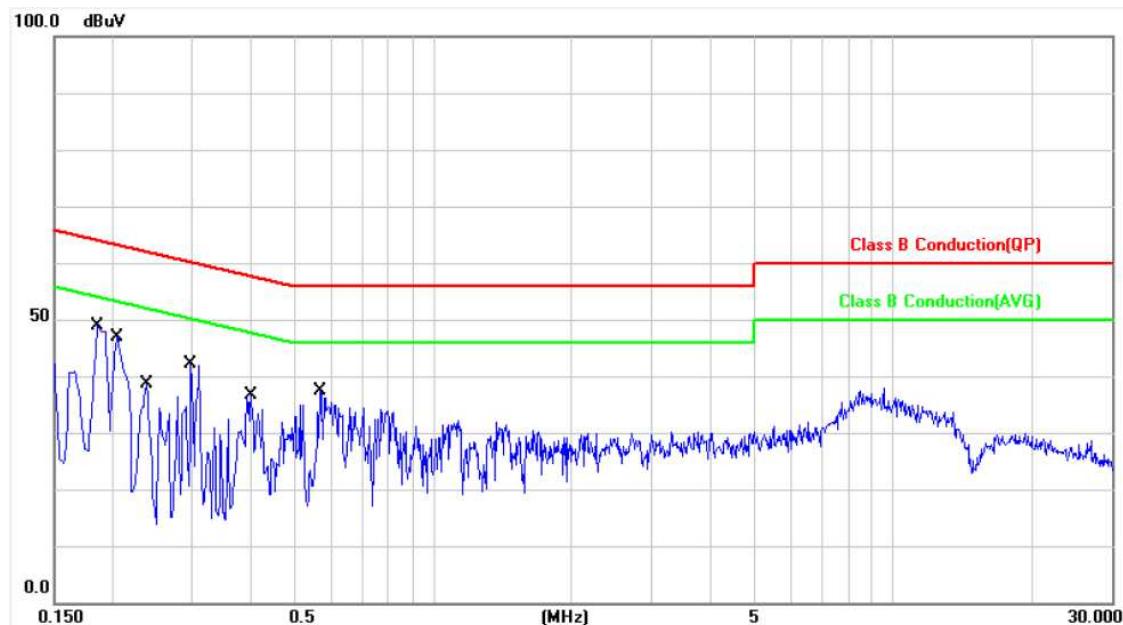
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1860	9.88	33.75	43.63	64.21	-20.58	QP	P
2	0.1860	9.88	14.03	23.91	54.21	-30.30	AVG	P
3	0.2060	9.88	35.81	45.69	63.36	-17.67	QP	P
4	0.2060	9.88	18.17	28.05	53.36	-25.31	AVG	P
5	0.2380	9.88	18.82	28.70	62.16	-33.46	QP	P
6	0.2380	9.88	1.69	11.57	52.16	-40.59	AVG	P
7	0.2980	9.88	27.49	37.37	60.30	-22.93	QP	P
8	0.2980	9.88	7.94	17.82	50.30	-32.48	AVG	P
9	0.4020	9.89	21.79	31.68	57.81	-26.13	QP	P
10	0.4020	9.89	8.15	18.04	47.81	-29.77	AVG	P
11	0.5700	9.90	21.83	31.73	56.00	-24.27	QP	P
12	0.5700	9.90	9.72	19.62	46.00	-26.38	AVG	P

Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power	: AC 120V (MU18A2120150-A1)	Pol/Phase	: LINE
Test Mode	: Mode 1, Band 4	Temperature	: 20 °C
Test date	: Jun. 10, 2017	Humidity	: 40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	9.91	36.56	46.47	65.78	-19.31	QP	P
2	0.1539	9.91	20.08	29.99	55.78	-25.79	AVG	P
3	0.1780	9.91	33.52	43.43	64.57	-21.14	QP	P
4	0.1780	9.91	17.11	27.02	54.57	-27.55	AVG	P
5	0.2020	9.91	29.64	39.55	63.52	-23.97	QP	P
6	0.2020	9.91	12.25	22.16	53.52	-31.36	AVG	P
7	0.2260	9.91	26.83	36.74	62.59	-25.85	QP	P
8	0.2260	9.91	10.02	19.93	52.59	-32.66	AVG	P
9	0.4020	9.93	30.45	40.38	57.81	-17.43	QP	P
10	0.4020	9.93	27.29	37.22	47.81	-10.59	AVG	P
11	5.5140	10.20	23.62	33.82	60.00	-26.18	QP	P
12	5.5140	10.20	18.52	28.72	50.00	-21.28	AVG	P

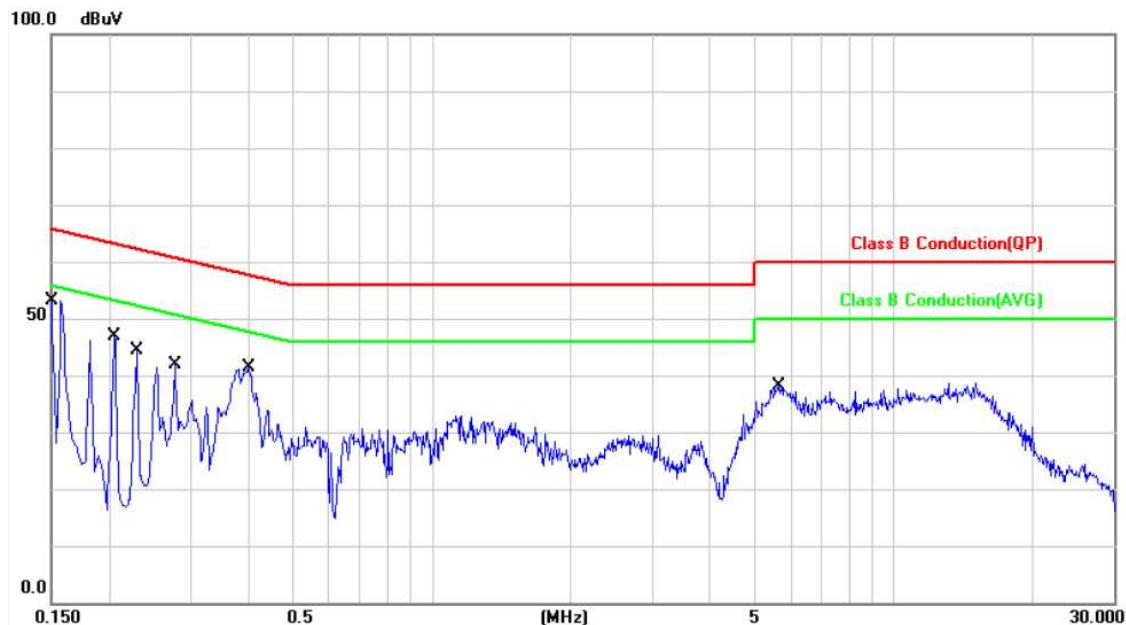
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jun. 10, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.88	37.63	47.51	65.99	-18.48	QP	P
2	0.1500	9.88	20.67	30.55	55.99	-25.44	AVG	P
3	0.2060	9.88	28.91	38.79	63.36	-24.57	QP	P
4	0.2060	9.88	11.84	21.72	53.36	-31.64	AVG	P
5	0.2300	9.88	26.14	36.02	62.45	-26.43	QP	P
6	0.2300	9.88	9.95	19.83	52.45	-32.62	AVG	P
7	0.2779	9.88	23.99	33.87	60.88	-27.01	QP	P
8	0.2779	9.88	16.67	26.55	50.88	-24.33	AVG	P
9	0.4020	9.89	30.51	40.40	57.81	-17.41	QP	P
10	0.4020	9.89	27.32	37.21	47.81	-10.60	AVG	P
11	5.6340	10.15	24.01	34.16	60.00	-25.84	QP	P
12	5.6340	10.15	19.04	29.19	50.00	-20.81	AVG	P

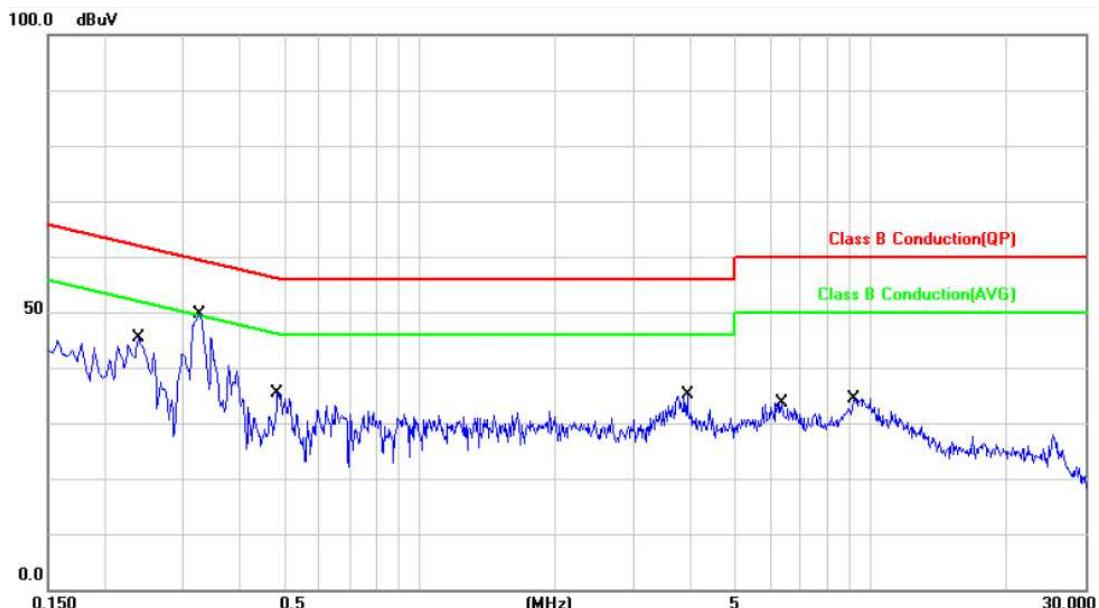
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABL024F US)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2380	9.91	31.55	41.46	62.16	-20.70	QP	P
2	0.2380	9.91	25.14	35.05	52.16	-17.11	AVG	P
3	0.3260	9.92	39.04	48.96	59.55	-10.59	QP	P
4	0.3260	9.92	35.39	45.31	49.55	-4.24	AVG	P
5	0.4860	9.93	23.18	33.11	56.24	-23.13	QP	P
6	0.4860	9.93	18.21	28.14	46.24	-18.10	AVG	P
7	3.9380	10.14	18.23	28.37	56.00	-27.63	QP	P
8	3.9380	10.14	11.55	21.69	46.00	-24.31	AVG	P
9	6.3540	10.22	17.95	28.17	60.00	-31.83	QP	P
10	6.3540	10.22	12.33	22.55	50.00	-27.45	AVG	P
11	9.1899	10.32	19.44	29.76	60.00	-30.24	QP	P
12	9.1899	10.32	14.52	24.84	50.00	-25.16	AVG	P

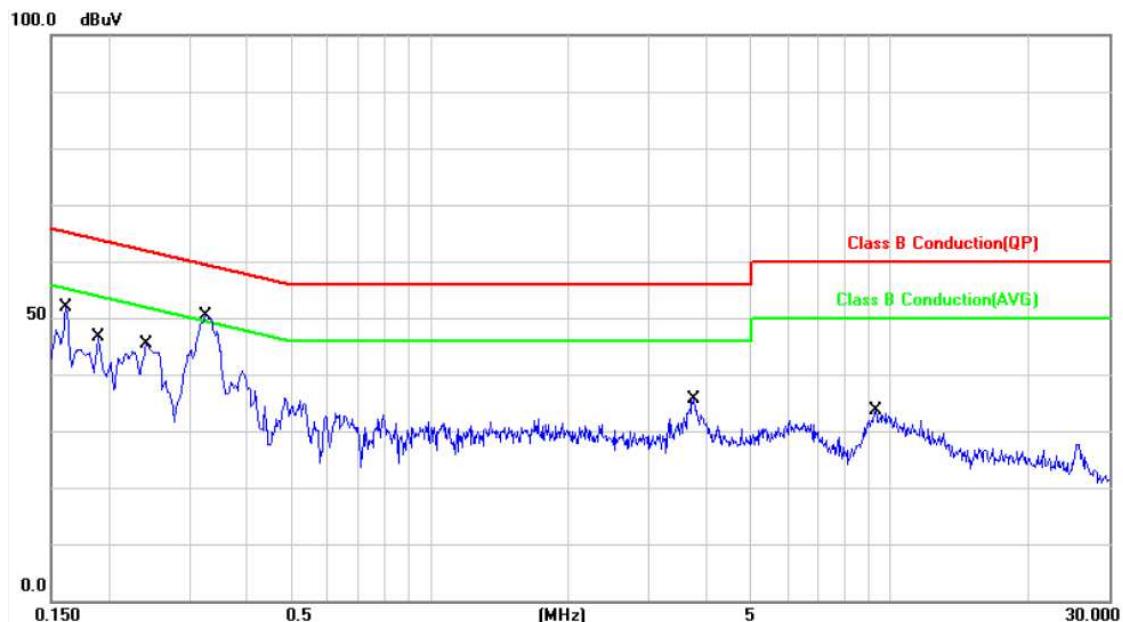
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (2ABL024F US)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	2ABL024F US	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.88	36.99	46.87	65.36	-18.49	QP	P
2	0.1620	9.88	27.89	37.77	55.36	-17.59	AVG	P
3	0.1900	9.88	33.41	43.29	64.03	-20.74	QP	P
4	0.1900	9.88	25.62	35.50	54.03	-18.53	AVG	P
5	0.2420	9.88	34.78	44.66	62.02	-17.36	QP	P
6	0.2420	9.88	30.29	40.17	52.02	-11.85	AVG	P
7	0.3260	9.88	40.10	49.98	59.55	-9.57	QP	P
8	0.3260	9.88	36.51	46.39	49.55	-3.16	AVG	P
9	3.7580	10.08	19.82	29.90	56.00	-26.10	QP	P
10	3.7580	10.08	11.51	21.59	46.00	-24.41	AVG	P
11	9.3220	10.29	18.29	28.58	60.00	-31.42	QP	P
12	9.3220	10.29	13.37	23.66	50.00	-26.34	AVG	P

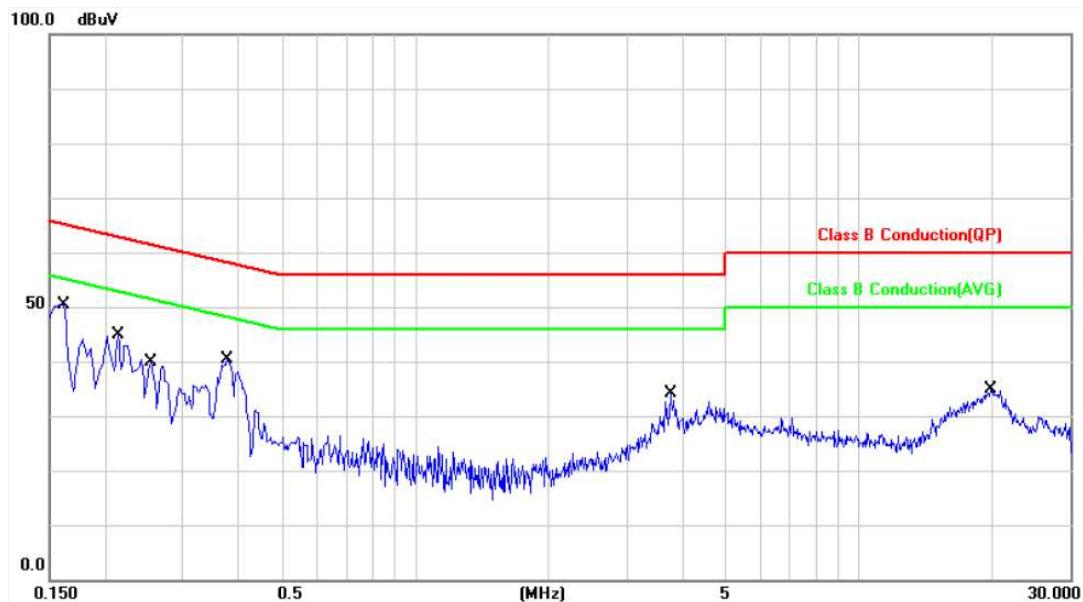
Note: Level = Reading + Factor

Margin = Level - Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	LINE
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.91	36.06	45.97	65.36	-19.39	QP	P
2	0.1620	9.91	23.53	33.44	55.36	-21.92	AVG	P
3	0.2140	9.91	32.87	42.78	63.04	-20.26	QP	P
4	0.2140	9.91	23.12	33.03	53.04	-20.01	AVG	P
5	0.2540	9.91	26.77	36.68	61.62	-24.94	QP	P
6	0.2540	9.91	15.91	25.82	51.62	-25.80	AVG	P
7	0.3780	9.93	29.63	39.56	58.32	-18.76	QP	P
8	0.3780	9.93	24.34	34.27	48.32	-14.05	AVG	P
9	3.7700	10.13	17.64	27.77	56.00	-28.23	QP	P
10	3.7700	10.13	9.01	19.14	46.00	-26.86	AVG	P
11	19.8860	10.61	18.74	29.35	60.00	-30.65	QP	P
12	19.8860	10.61	11.76	22.37	50.00	-27.63	AVG	P

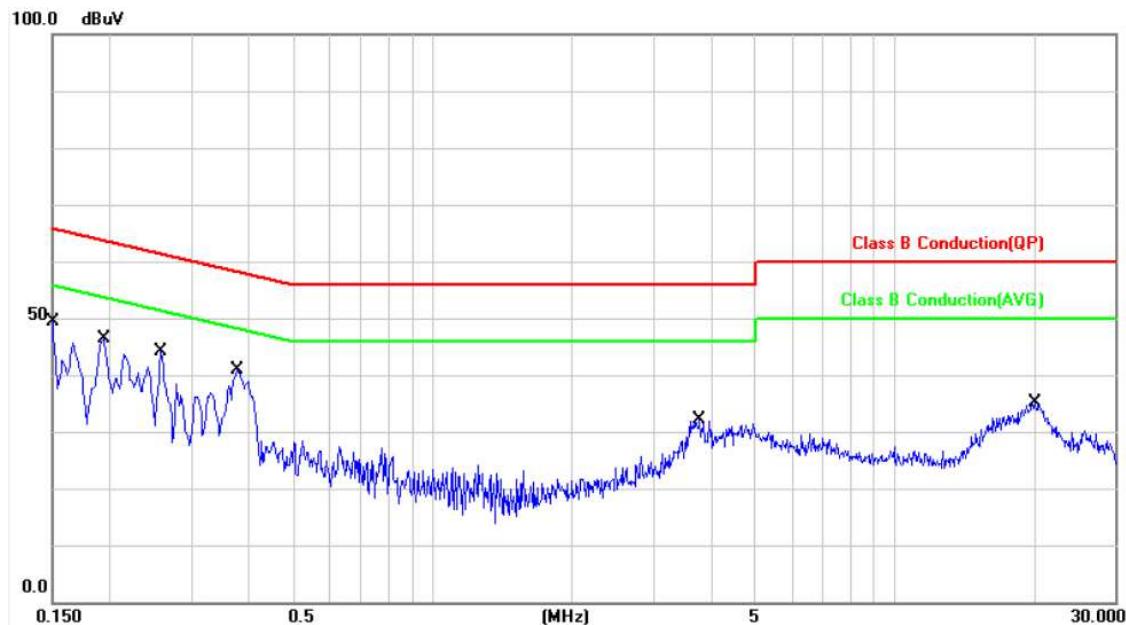
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	NEUTRAL
Test Mode :	Mode 1, Band 4	Temperature :	20 °C
Test date :	Jul. 22, 2017	Humidity :	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.88	38.34	48.22	65.99	-17.77	QP	P
2	0.1500	9.88	25.77	35.65	55.99	-20.34	AVG	P
3	0.1940	9.88	33.29	43.17	63.86	-20.69	QP	P
4	0.1940	9.88	21.78	31.66	53.86	-22.20	AVG	P
5	0.2580	9.88	27.44	37.32	61.49	-24.17	QP	P
6	0.2580	9.88	16.62	26.50	51.49	-24.99	AVG	P
7	0.3780	9.89	29.60	39.49	58.32	-18.83	QP	P
8	0.3780	9.89	24.26	34.15	48.32	-14.17	AVG	P
9	3.7860	10.08	17.24	27.32	56.00	-28.68	QP	P
10	3.7860	10.08	9.21	19.29	46.00	-26.71	AVG	P
11	20.1060	10.64	18.97	29.61	60.00	-30.39	QP	P
12	20.1060	10.64	11.99	22.63	50.00	-27.37	AVG	P

Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



## 6. Test of Spurious Emission (Radiated)

### 6.1. Test Limit

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:  
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz 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 27dBm/MHz at the band edge.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

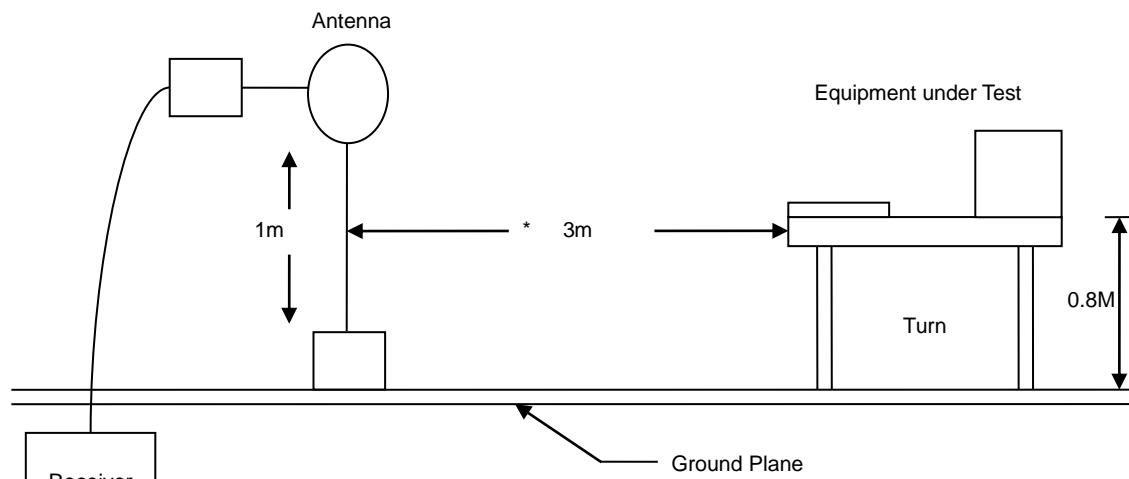
### 6.2. Test Procedures

- 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.

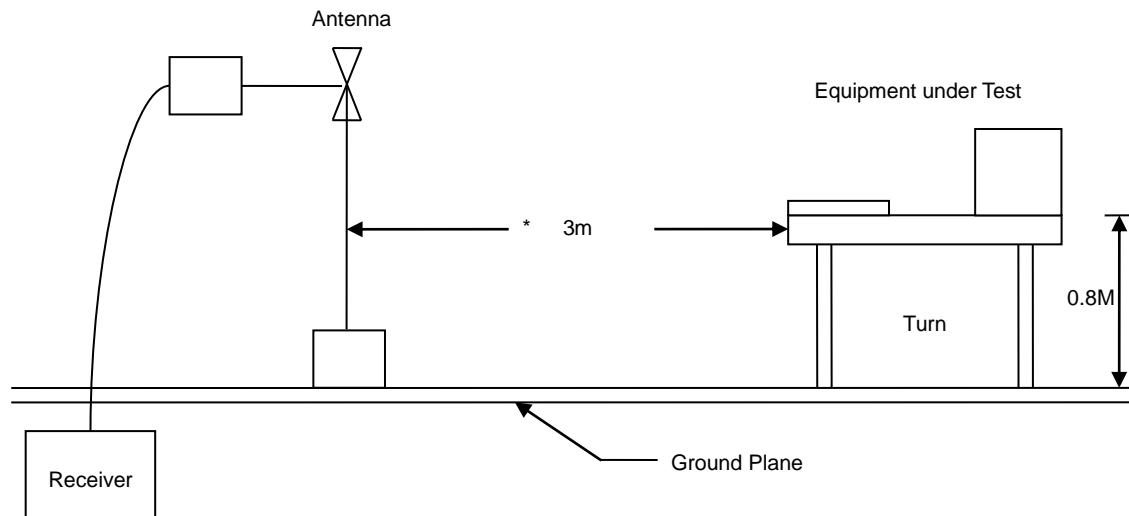


### 6.3. Typical Test Setup

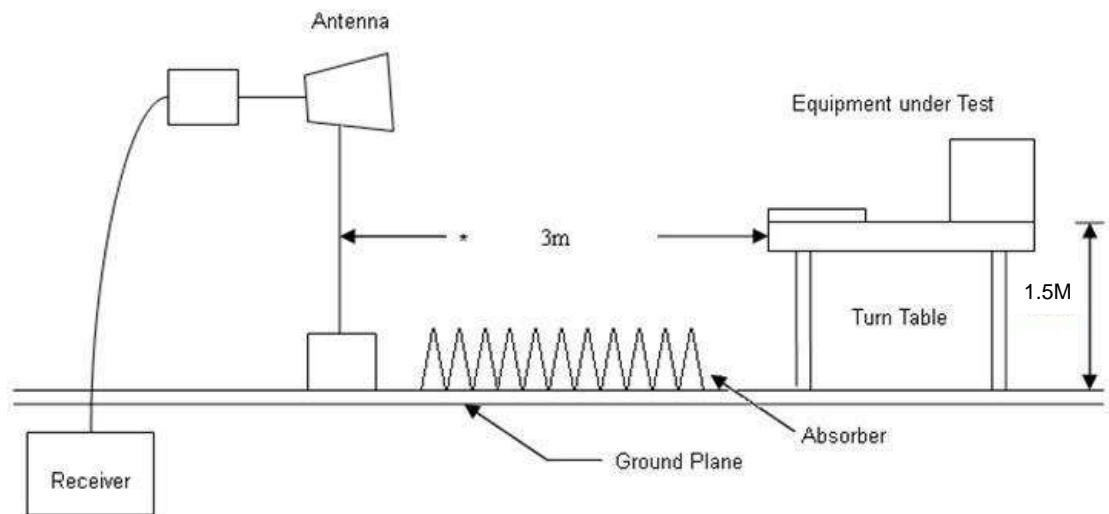
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



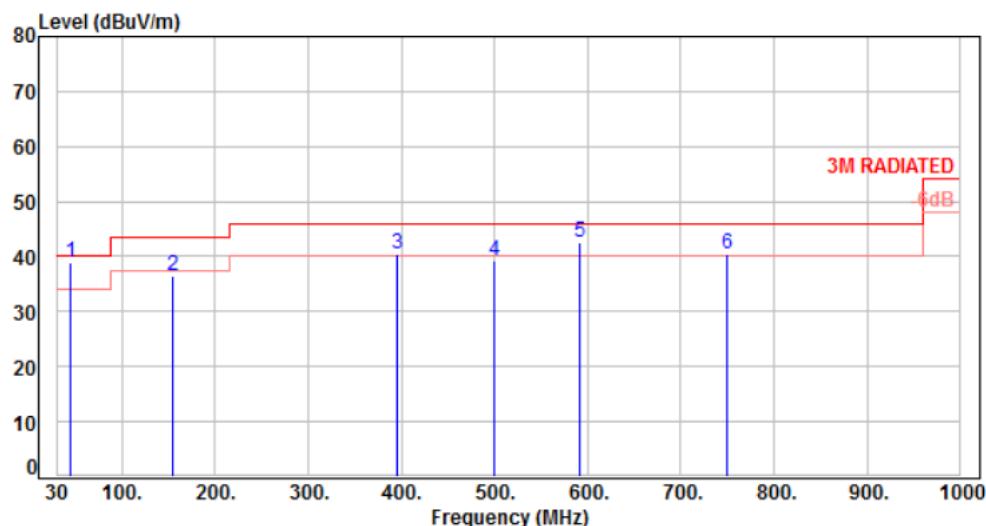


## 6.4. Test Result and Data (9kHz ~ 30MHz)

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

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

Power :	AC 120V (2ABB018F US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %

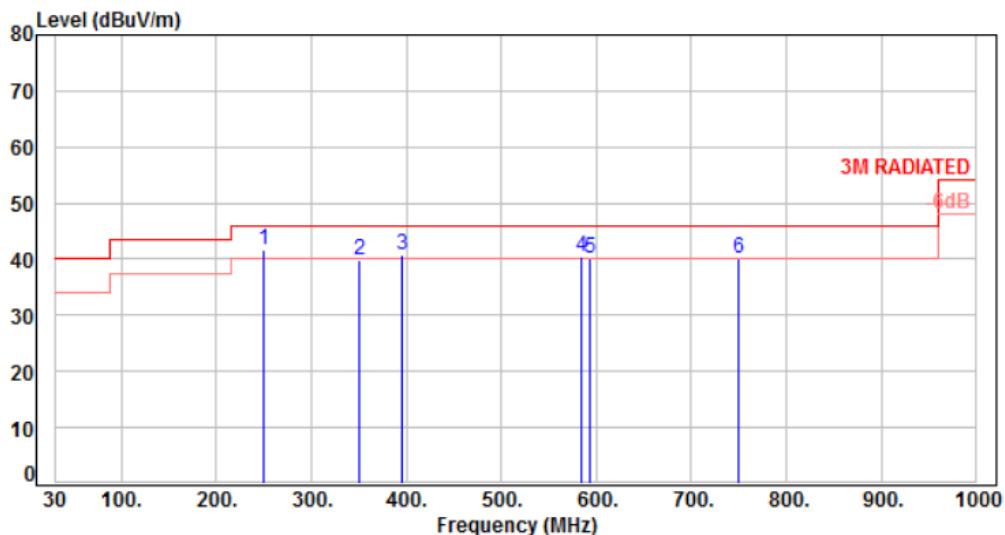


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	45.52	-9.48	48.44	38.96	40.00	-1.04	QP	100	178	P
2	154.16	-9.91	46.35	36.44	43.50	-7.06	Peak	100	0	P
3	394.72	-6.39	46.80	40.41	46.00	-5.59	Peak	100	0	P
4	499.48	-3.97	43.19	39.22	46.00	-6.78	Peak	100	0	P
5	590.66	-2.01	44.46	42.45	46.00	-3.55	Peak	100	0	P
6	749.74	0.44	40.07	40.51	46.00	-5.49	Peak	100	0	P

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



Power :	AC 120V (2ABB018F US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	249.22	-10.62	52.41	41.79	46.00	-4.21	Peak	100	0	P
2	350.10	-7.63	47.54	39.91	46.00	-6.09	Peak	100	0	P
3	394.72	-6.39	47.20	40.81	46.00	-5.19	Peak	100	0	P
4	584.84	-2.13	42.45	40.32	46.00	-5.68	Peak	100	0	P
5	592.60	-1.96	42.21	40.25	46.00	-5.75	Peak	100	0	P
6	749.74	0.44	39.75	40.19	46.00	-5.81	Peak	100	0	P

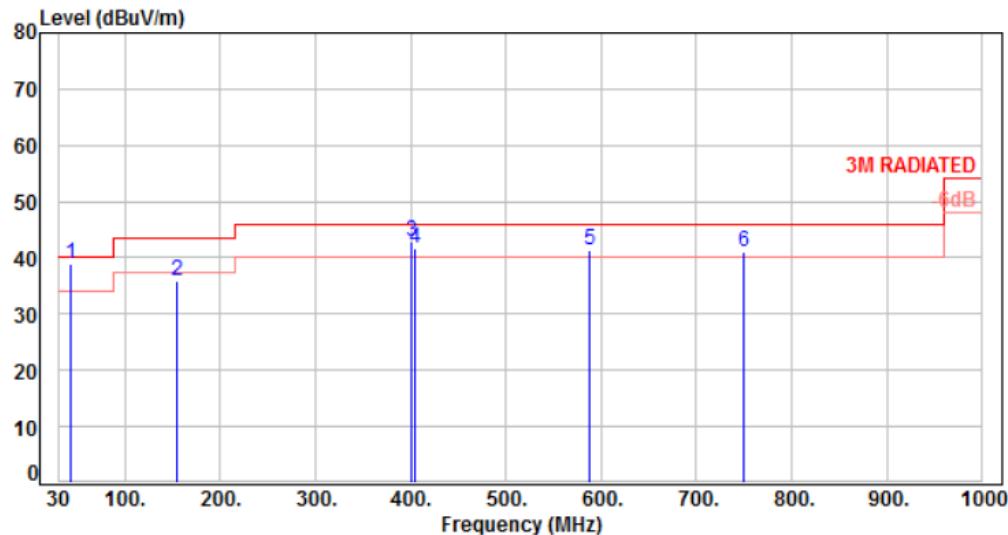
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	43.58	-9.61	48.42	38.81	40.00	-1.19	QP	100	179	P
2	154.16	-9.91	45.78	35.87	43.50	-7.63	Peak	100	0	P
3	400.54	-6.23	49.05	42.82	46.00	-3.18	Peak	100	0	P
4	404.42	-6.12	47.89	41.77	46.00	-4.23	Peak	100	0	P
5	588.72	-2.05	43.41	41.36	46.00	-4.64	Peak	100	0	P
6	749.74	0.44	40.75	41.19	46.00	-4.81	Peak	100	0	P

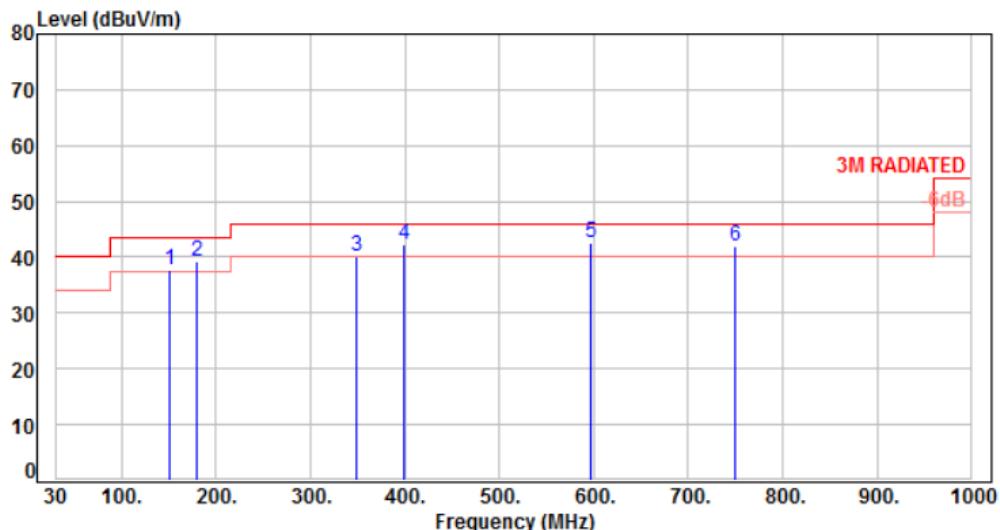
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	150.28	-10.06	47.79	37.73	43.50	-5.77	Peak	100	0	P
2	179.38	-11.15	50.46	39.31	43.50	-4.19	Peak	100	0	P
3	348.16	-7.67	47.68	40.01	46.00	-5.99	Peak	100	0	P
4	398.60	-6.27	48.42	42.15	46.00	-3.85	Peak	100	0	P
5	596.48	-1.89	44.53	42.64	46.00	-3.36	Peak	100	0	P
6	749.74	0.44	41.54	41.98	46.00	-4.02	Peak	100	0	P

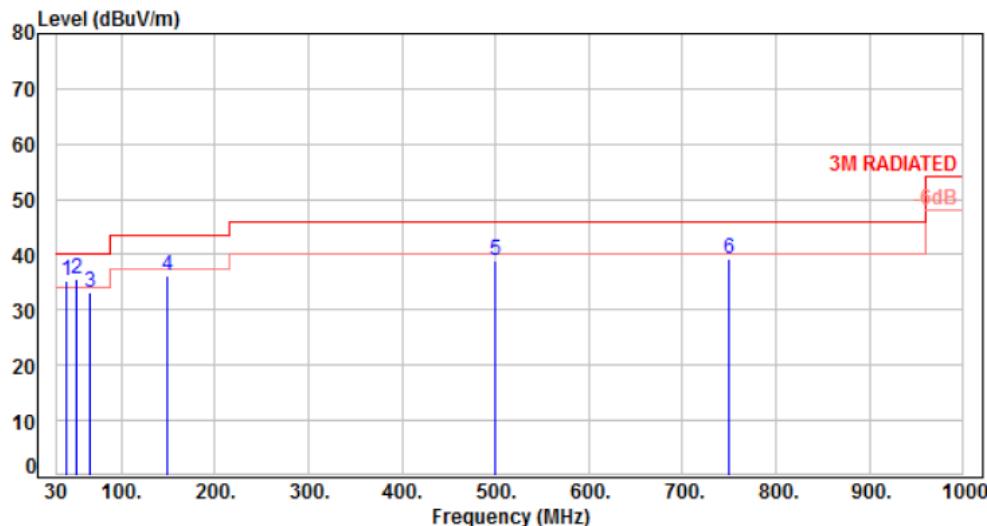
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	41.52	-9.81	45.23	35.42	40.00	-4.58	QP	100	181	P
2	51.32	-9.66	45.24	35.58	40.00	-4.42	QP	100	178	P
3	66.86	-11.53	44.79	33.26	40.00	-6.74	QP	100	182	P
4	148.34	-10.12	46.24	36.12	43.50	-7.38	Peak	100	0	P
5	499.48	-3.97	42.78	38.81	46.00	-7.19	Peak	100	0	P
6	749.74	0.44	38.70	39.14	46.00	-6.86	Peak	100	0	P

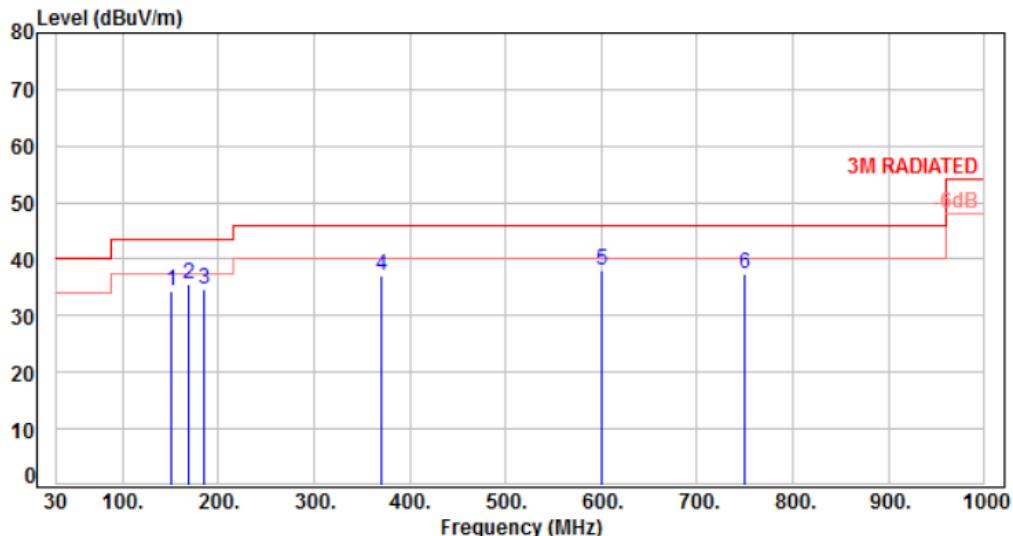
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	150.28	-10.06	44.47	34.41	43.50	-9.09	Peak	100	0 P
2	169.68	-10.08	45.67	35.59	43.50	-7.91	Peak	100	0 P
3	185.20	-11.68	46.46	34.78	43.50	-8.72	Peak	100	0 P
4	369.50	-7.09	44.13	37.04	46.00	-8.96	Peak	100	0 P
5	600.36	-1.81	39.91	38.10	46.00	-7.90	Peak	100	0 P
6	749.74	0.44	36.89	37.33	46.00	-8.67	Peak	100	0 P

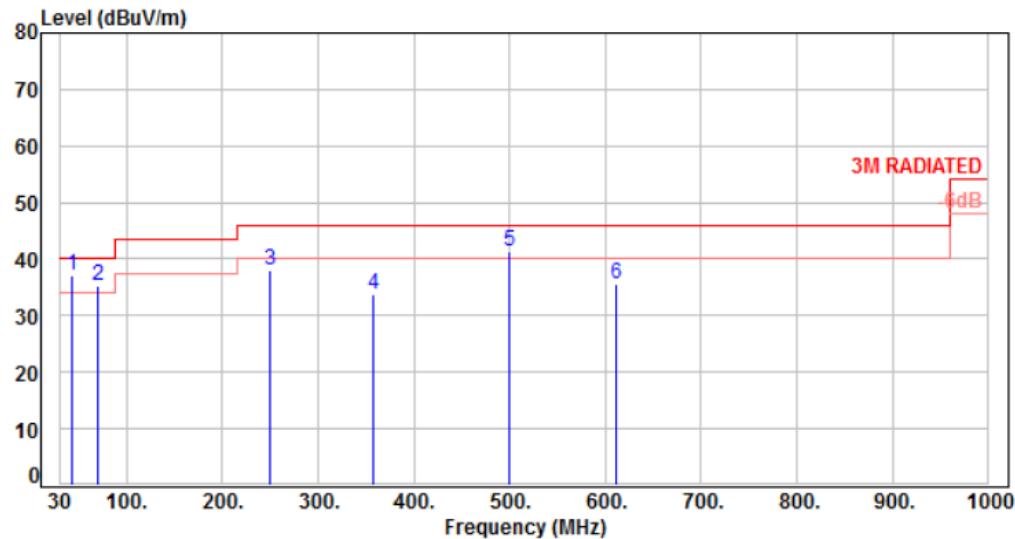
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABL024F US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	43.58	-9.61	46.59	36.98	40.00	-3.02	Peak	100	0	P
2	70.74	-12.16	47.41	35.25	40.00	-4.75	QP	100	177	P
3	249.22	-10.62	48.55	37.93	46.00	-8.07	Peak	100	0	P
4	357.86	-7.41	41.03	33.62	46.00	-12.38	Peak	100	0	P
5	499.48	-3.97	45.46	41.49	46.00	-4.51	Peak	100	0	P
6	612.00	-1.71	37.17	35.46	46.00	-10.54	Peak	100	0	P

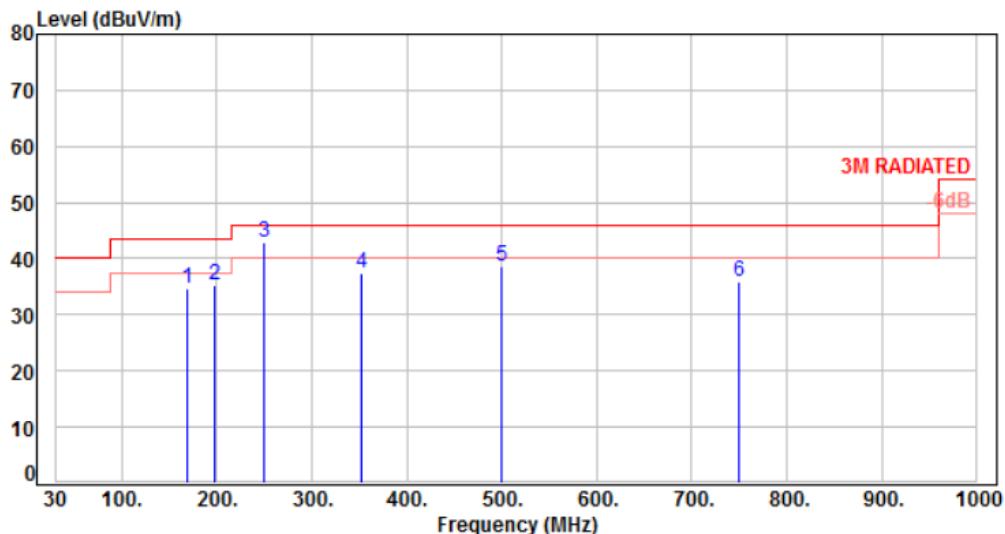
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABL024F US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	169.68	-10.08	44.67	34.59	43.50	-8.91	Peak	100	0	P
2	196.84	-12.27	47.45	35.18	43.50	-8.32	Peak	100	0	P
3	249.22	-10.62	53.54	42.92	46.00	-3.08	QP	100	192	P
4	352.04	-7.58	44.87	37.29	46.00	-8.71	Peak	100	0	P
5	499.48	-3.97	42.74	38.77	46.00	-7.23	Peak	100	0	P
6	749.74	0.44	35.56	36.00	46.00	-10.00	Peak	100	0	P

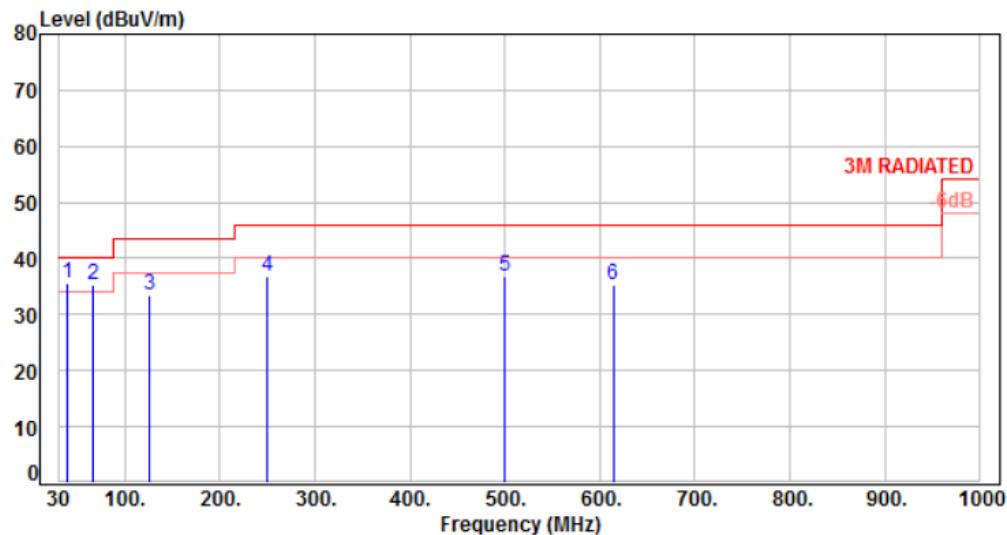
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V (WA-24Q12R)	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, Band 1	Temperature	: 24 °C
Test Date	: Jul. 17, 2017	Humidity	: 66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	39.70	-10.00	45.60	35.60	40.00	-4.40	QP	100	166	P
2	66.86	-11.53	46.81	35.28	40.00	-4.72	QP	100	169	P
3	125.06	-11.45	44.98	33.53	43.50	-9.97	Peak	100	0	P
4	249.22	-10.62	47.48	36.86	46.00	-9.14	Peak	100	0	P
5	499.48	-3.97	40.89	36.92	46.00	-9.08	Peak	100	0	P
6	613.94	-1.69	37.09	35.40	46.00	-10.60	Peak	100	0	P

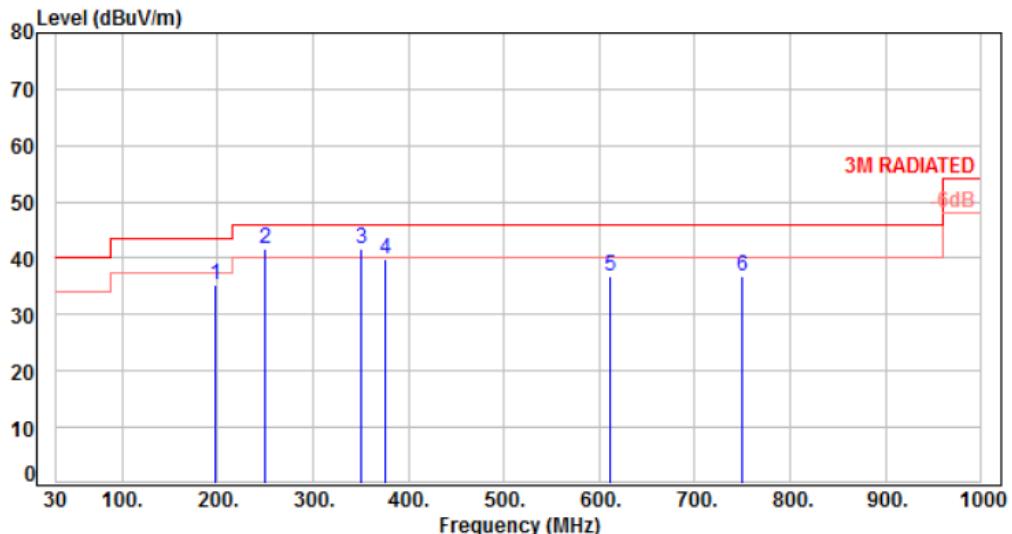
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 1	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	196.84	-12.27	47.41	35.14	43.50	-8.36	Peak	100	0	P
2	249.22	-10.62	52.18	41.56	46.00	-4.44	Peak	100	0	P
3	350.10	-7.63	49.41	41.78	46.00	-4.22	Peak	100	0	P
4	375.32	-6.92	46.65	39.73	46.00	-6.27	Peak	100	0	P
5	612.00	-1.71	38.47	36.76	46.00	-9.24	Peak	100	0	P
6	749.74	0.44	36.50	36.94	46.00	-9.06	Peak	100	0	P

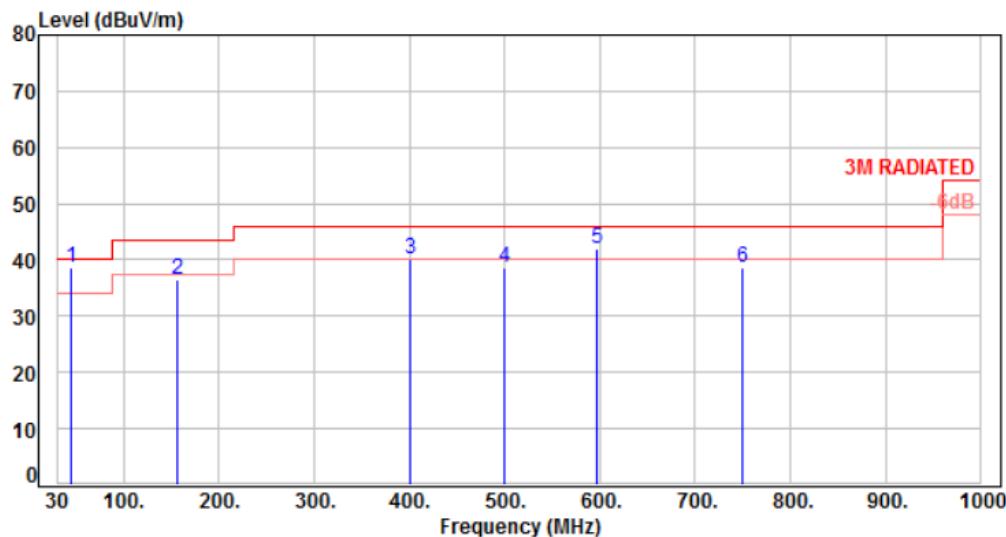
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABB018F US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	45.52	-9.48	48.00	38.52	40.00	-1.48	QP	100	171	P
2	156.10	-9.84	46.39	36.55	43.50	-6.95	Peak	100	0	P
3	400.54	-6.23	46.50	40.27	46.00	-5.73	Peak	100	0	P
4	499.48	-3.97	42.61	38.64	46.00	-7.36	Peak	100	0	P
5	596.48	-1.89	44.00	42.11	46.00	-3.89	Peak	100	0	P
6	749.74	0.44	38.18	38.62	46.00	-7.38	Peak	100	0	P

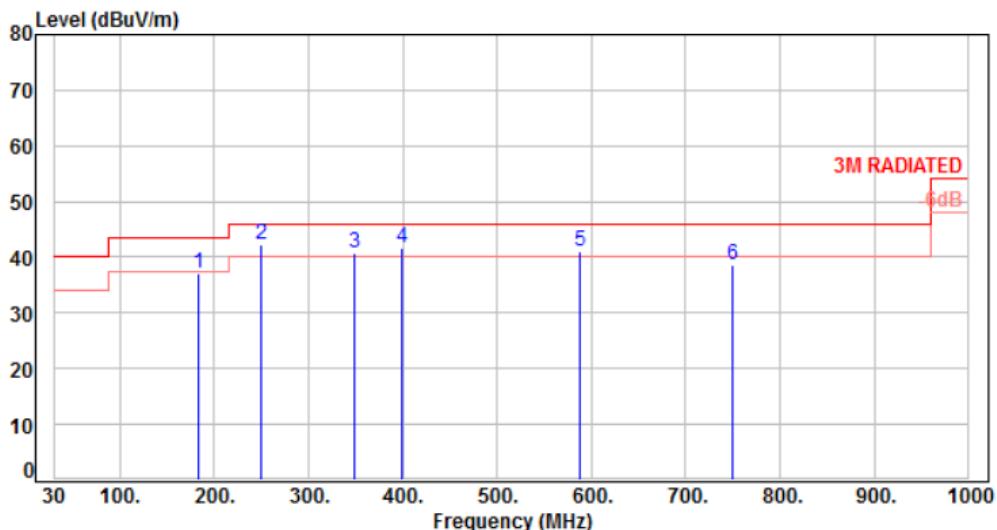
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABB018F US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	183.26	-11.50	48.63	37.13	43.50	-6.37	Peak	100	0	P
2	249.22	-10.62	52.81	42.19	46.00	-3.81	Peak	100	0	P
3	348.16	-7.67	48.50	40.83	46.00	-5.17	Peak	100	0	P
4	398.60	-6.27	47.89	41.62	46.00	-4.38	Peak	100	0	P
5	588.72	-2.05	43.25	41.20	46.00	-4.80	Peak	100	0	P
6	749.74	0.44	38.22	38.66	46.00	-7.34	Peak	100	0	P

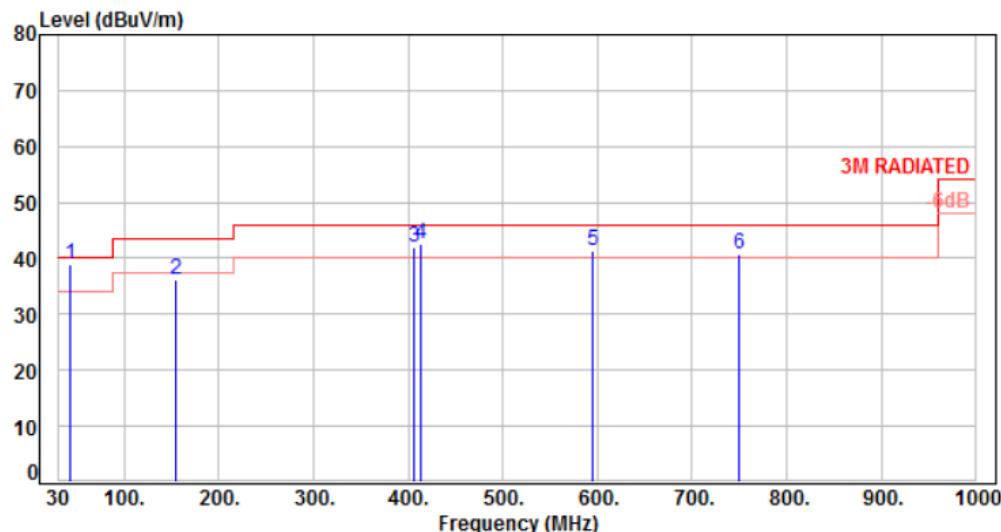
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	43.58	-9.61	48.57	38.96	40.00	-1.04	QP	100	173	P
2	154.16	-9.91	46.18	36.27	43.50	-7.23	Peak	100	0	P
3	406.36	-6.06	48.17	42.11	46.00	-3.89	Peak	100	0	P
4	414.12	-5.86	48.42	42.56	46.00	-3.44	Peak	100	0	P
5	594.54	-1.93	43.35	41.42	46.00	-4.58	Peak	100	0	P
6	749.74	0.44	40.27	40.71	46.00	-5.29	Peak	100	0	P

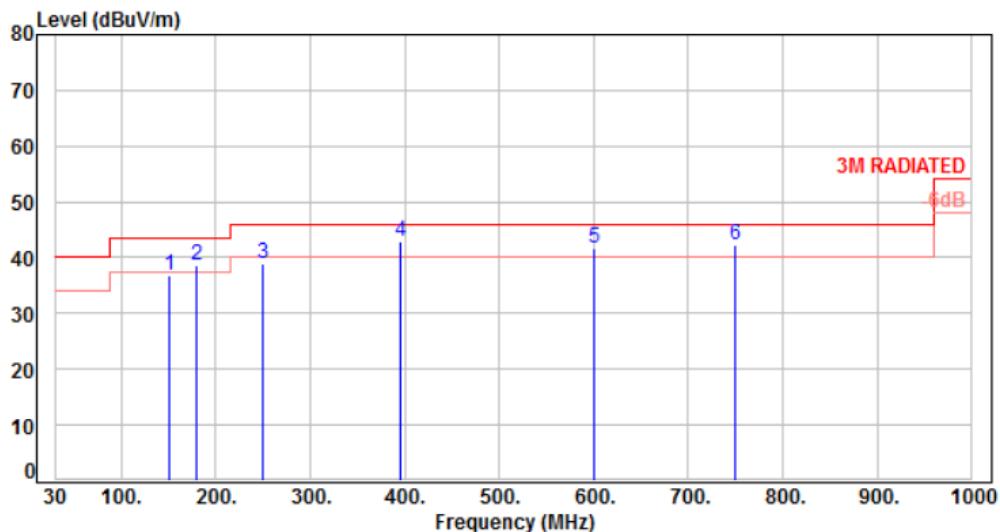
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (TPA158K-18120-US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	150.28	-10.06	46.91	36.85	43.50	-6.65	Peak	100	0	P
2	179.38	-11.15	49.92	38.77	43.50	-4.73	Peak	100	0	P
3	249.22	-10.62	49.47	38.85	46.00	-7.15	Peak	100	0	P
4	394.72	-6.39	49.38	42.99	46.00	-3.01	Peak	100	0	P
5	600.36	-1.81	43.44	41.63	46.00	-4.37	Peak	100	0	P
6	749.74	0.44	41.95	42.39	46.00	-3.61	Peak	100	0	P

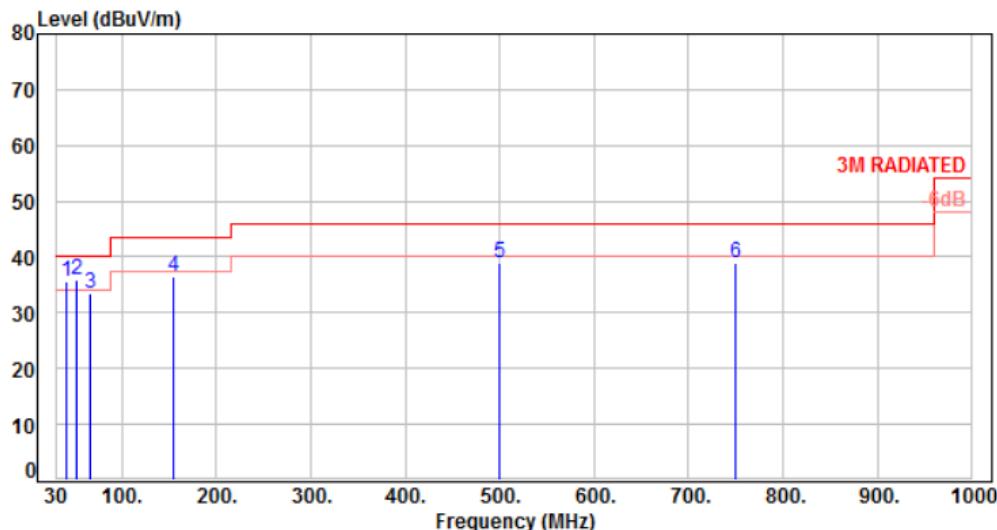
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	41.52	-9.81	45.27	35.46	40.00	-4.54	QP	100	177	P
2	51.44	-9.67	45.47	35.80	40.00	-4.20	QP	100	183	P
3	66.92	-11.54	44.92	33.38	40.00	-6.62	QP	100	179	P
4	154.16	-9.91	46.38	36.47	43.50	-7.03	Peak	100	0	P
5	499.48	-3.97	42.79	38.82	46.00	-7.18	Peak	100	0	P
6	749.74	0.44	38.61	39.05	46.00	-6.95	Peak	100	0	P

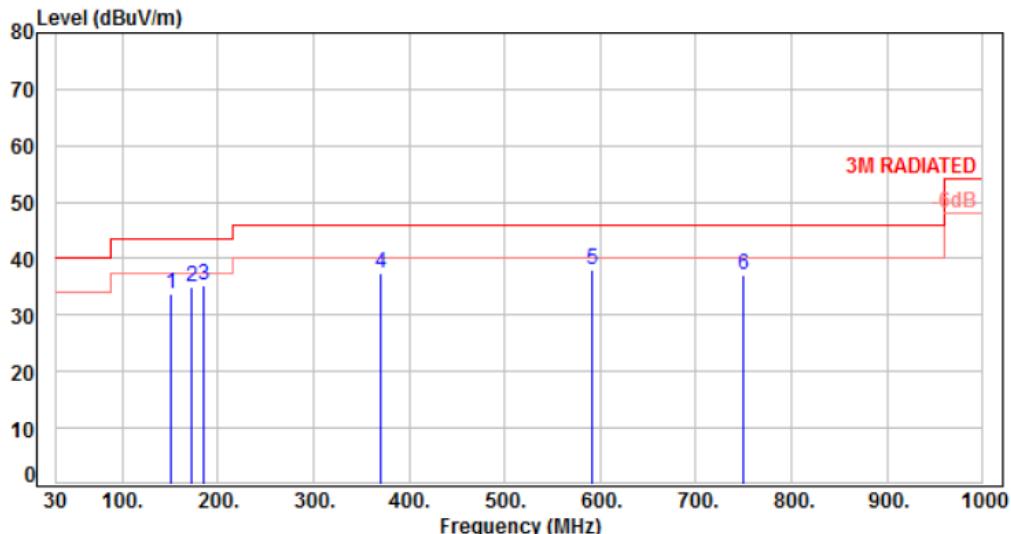
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (MU18A2120150-A1)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jun. 08, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	150.28	-10.06	43.69	33.63	43.50	-9.87	Peak	100	0	P
2	171.62	-10.27	45.32	35.05	43.50	-8.45	Peak	100	0	P
3	185.20	-11.68	46.92	35.24	43.50	-8.26	Peak	100	0	P
4	369.50	-7.09	44.41	37.32	46.00	-8.68	Peak	100	0	P
5	590.66	-2.01	40.13	38.12	46.00	-7.88	Peak	100	0	P
6	749.74	0.44	36.56	37.00	46.00	-9.00	Peak	100	0	P

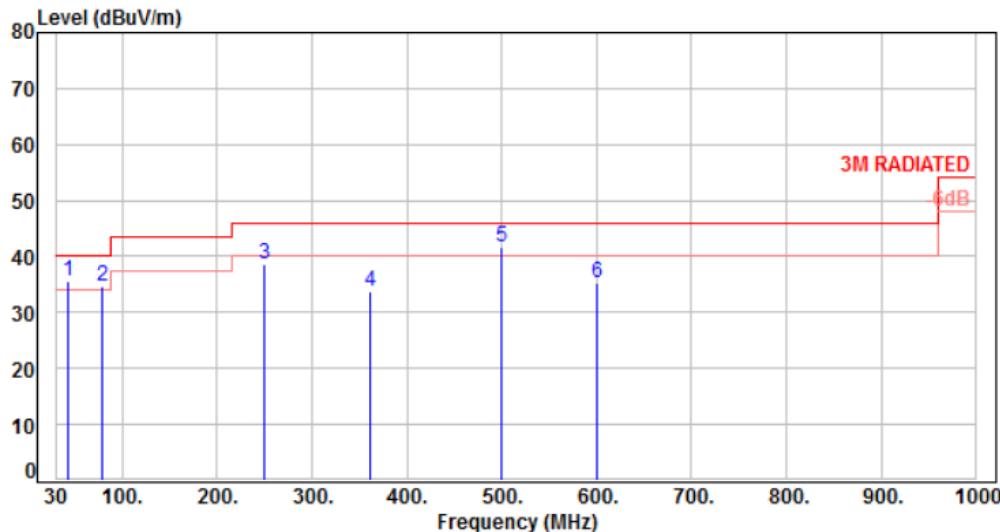
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABL024F US)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	43.58	-9.61	45.20	35.59	40.00	-4.41	Peak	100	0	P
2	78.50	-13.68	48.35	34.67	40.00	-5.33	QP	100	178	P
3	249.22	-10.62	49.15	38.53	46.00	-7.47	Peak	100	0	P
4	361.74	-7.30	41.20	33.90	46.00	-12.10	Peak	100	0	P
5	499.48	-3.97	45.61	41.64	46.00	-4.36	Peak	100	0	P
6	600.36	-1.81	37.21	35.40	46.00	-10.60	Peak	100	0	P

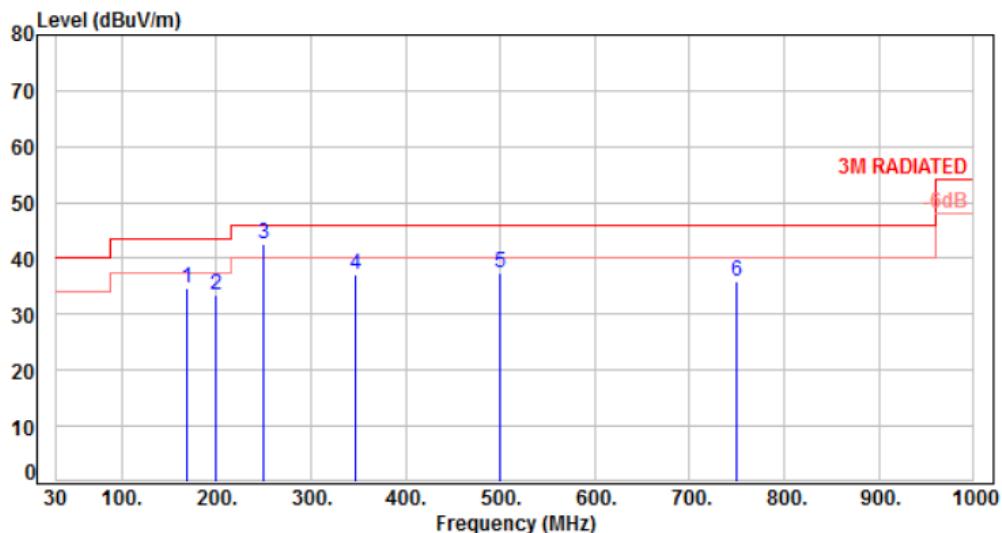
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (2ABL024F US)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	169.68	-10.08	44.61	34.53	43.50	-8.97	Peak	100	0	P
2	198.78	-12.31	45.78	33.47	43.50	-10.03	Peak	100	0	P
3	249.22	-10.62	53.29	42.67	46.00	-3.33	QP	100	189	P
4	346.22	-7.72	44.91	37.19	46.00	-8.81	Peak	100	0	P
5	499.48	-3.97	41.47	37.50	46.00	-8.50	Peak	100	0	P
6	749.74	0.44	35.50	35.94	46.00	-10.06	Peak	100	0	P

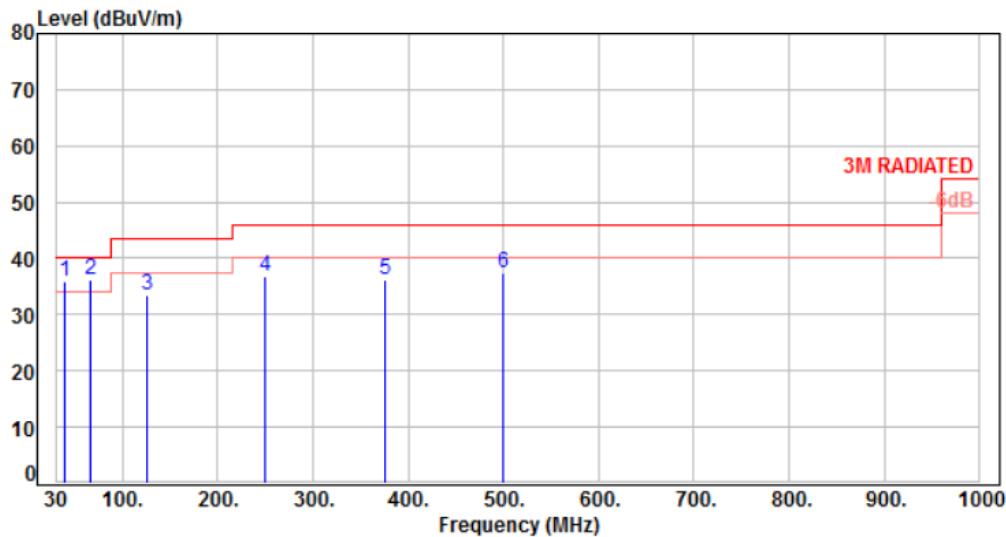
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	39.70	-10.00	45.86	35.86	40.00	-4.14	QP	100	174	P
2	66.86	-11.53	47.62	36.09	40.00	-3.91	QP	100	177	P
3	125.06	-11.45	44.80	33.35	43.50	-10.15	Peak	100	0	P
4	249.22	-10.62	47.44	36.82	46.00	-9.18	Peak	100	0	P
5	375.32	-6.92	43.15	36.23	46.00	-9.77	Peak	100	0	P
6	499.48	-3.97	41.26	37.29	46.00	-8.71	Peak	100	0	P

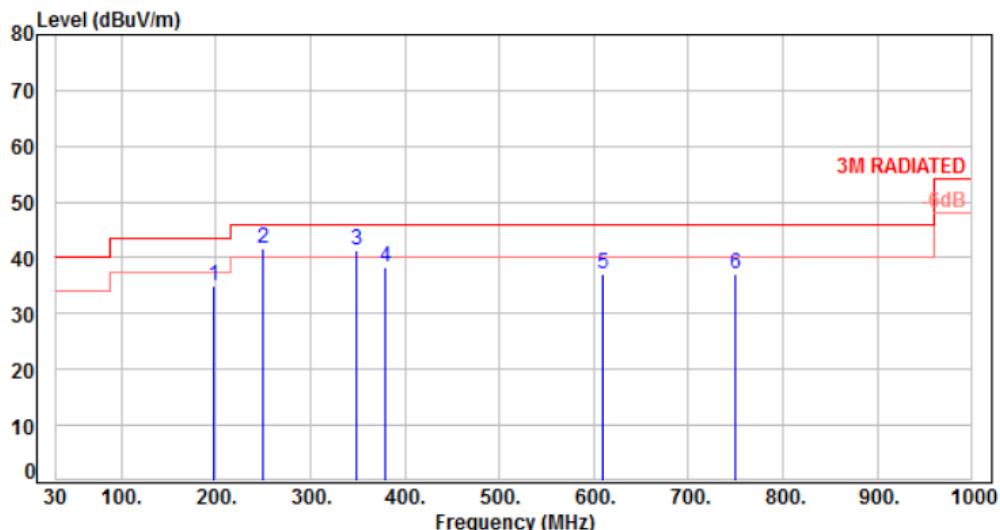
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V (WA-24Q12R)	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, Band 4	Temperature :	24 °C
Test Date :	Jul. 17, 2017	Humidity :	66 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	196.84	-12.27	47.38	35.11	43.50	-8.39	Peak	100	0	P
2	249.22	-10.62	52.39	41.77	46.00	-4.23	Peak	100	0	P
3	348.16	-7.67	48.94	41.27	46.00	-4.73	Peak	100	0	P
4	379.20	-6.82	45.09	38.27	46.00	-7.73	Peak	100	0	P
5	610.06	-1.72	38.73	37.01	46.00	-8.99	Peak	100	0	P
6	749.74	0.44	36.73	37.17	46.00	-8.83	Peak	100	0	P

Note: Level=Reading+Factor

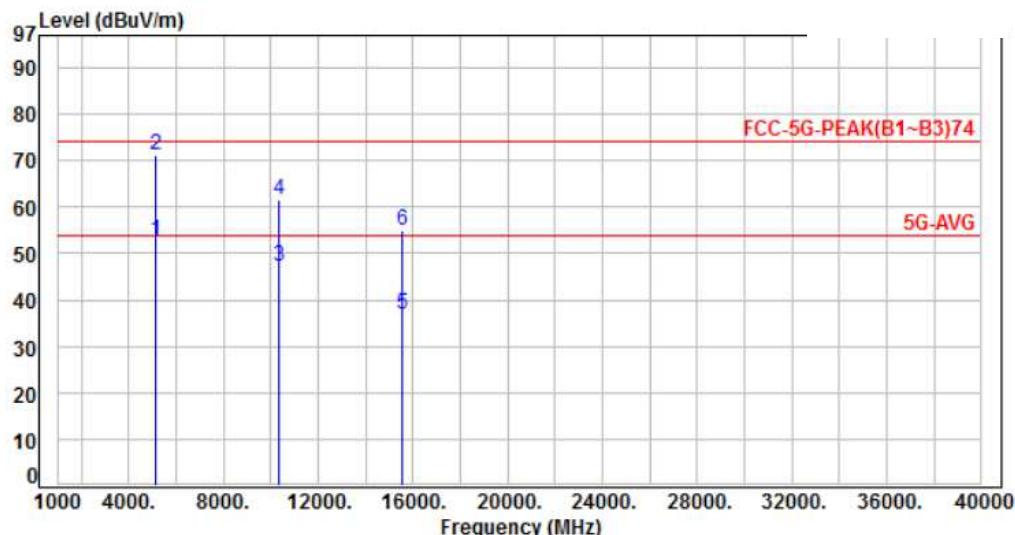
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



## 6.6. Test Result and Data (1GHz ~ 40GHz)

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH36	Temperature	: 24°C
Test Date	: Jun. 13, 2017	Humidity	: 66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5150.00	-12.71	65.53	52.82	54.00	-1.18	Average	397	223 P
2	5150.00	-12.71	83.93	71.22	74.00	-2.78	Peak	397	223 P
3	10360.00	-7.44	54.71	47.27	54.00	-6.73	Average	100	79 P
4	10360.00	-7.44	68.96	61.52	74.00	-12.48	Peak	100	79 P
5	15540.00	-3.78	40.59	36.81	54.00	-17.19	Average	100	338 P
6	15540.00	-3.78	58.62	54.84	74.00	-19.16	Peak	100	338 P

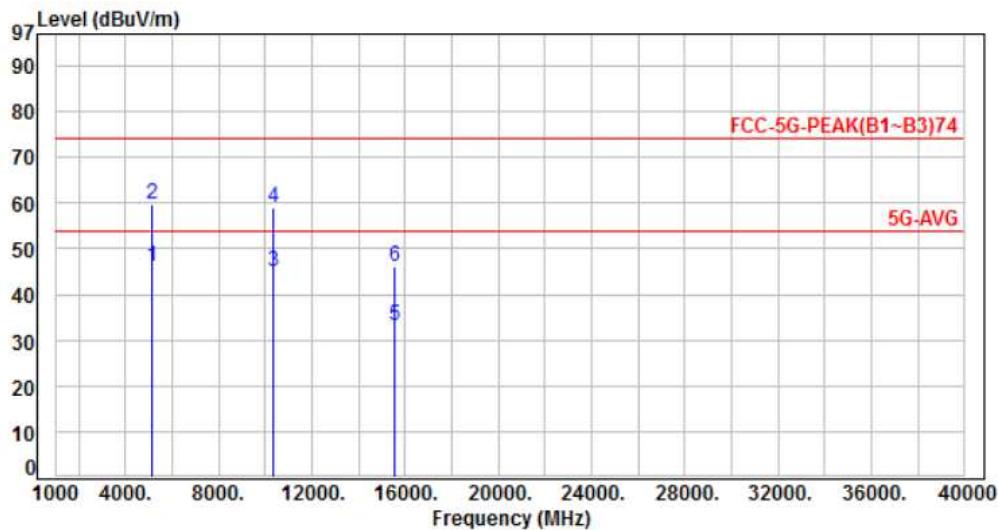
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, CH36	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5150.00	-12.71	58.72	46.01	54.00	-7.99	Average	296	118 P
2	5150.00	-12.71	72.47	59.76	74.00	-14.24	Peak	296	118 P
3	10360.00	-7.44	52.54	45.10	54.00	-8.90	Average	100	215 P
4	10360.00	-7.44	66.53	59.09	74.00	-14.91	Peak	100	215 P
5	15540.00	-3.78	36.87	33.09	54.00	-20.91	Average	102	249 P
6	15540.00	-3.78	49.82	46.04	74.00	-27.96	Peak	102	249 P

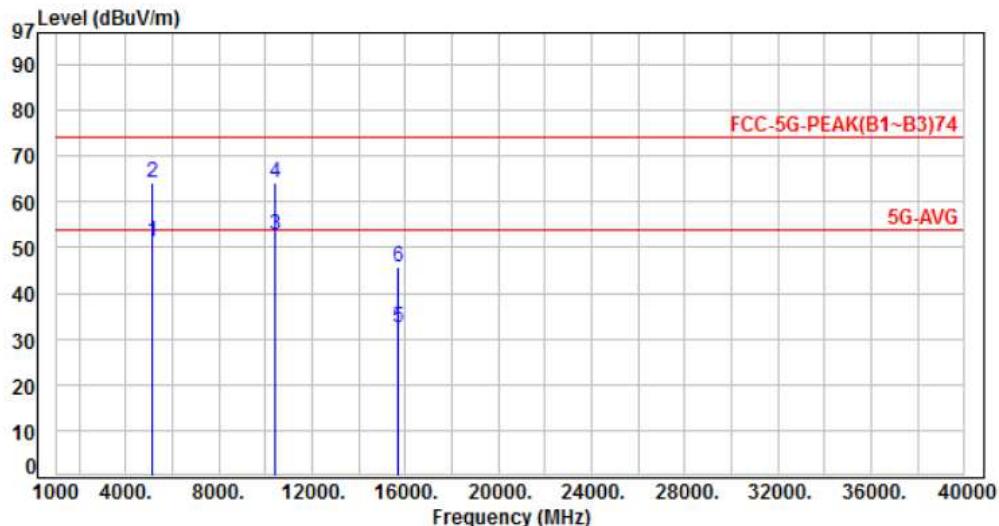
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, CH44	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.71	63.92	51.21	54.00	-2.79	Average	332	163	P
2	5150.00	-12.71	77.06	64.35	74.00	-9.65	Peak	332	163	P
3	10440.00	-7.43	60.23	52.80	54.00	-1.20	Average	100	80	P
4	10440.00	-7.43	71.43	64.00	74.00	-10.00	Peak	100	80	P
5	15660.00	-3.80	36.26	32.46	54.00	-21.54	Average	100	341	P
6	15660.00	-3.80	49.67	45.87	74.00	-28.13	Peak	100	341	P

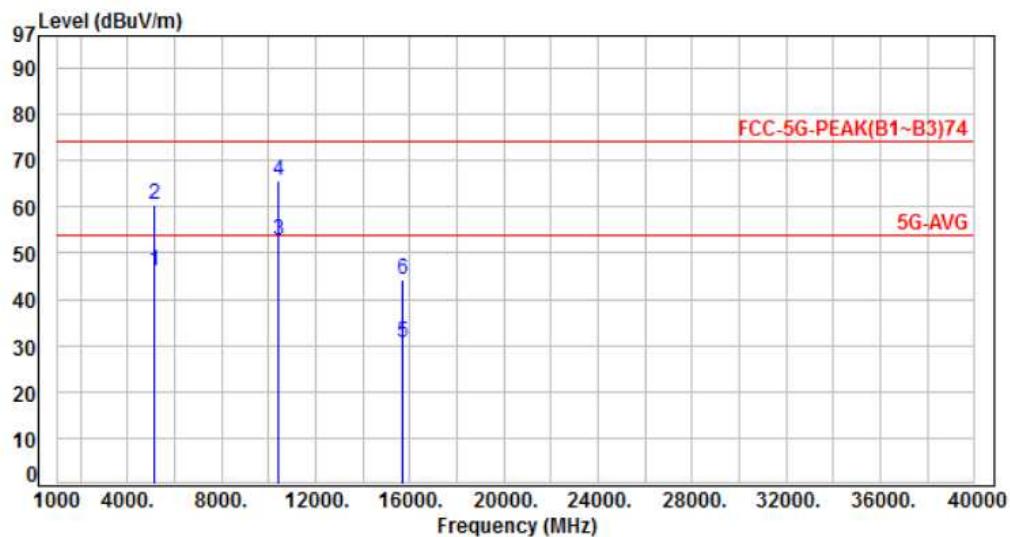
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, CH44	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)	P/F
1	5150.00	-12.71	58.74	46.03	54.00	-7.97	Average	288	137	P
2	5150.00	-12.71	73.31	60.60	74.00	-13.40	Peak	288	137	P
3	10440.00	-7.43	60.21	52.78	54.00	-1.22	Average	100	211	P
4	10440.00	-7.43	73.17	65.74	74.00	-8.26	Peak	100	211	P
5	15660.00	-3.80	34.47	30.67	54.00	-23.33	Average	100	254	P
6	15660.00	-3.80	48.06	44.26	74.00	-29.74	Peak	100	254	P

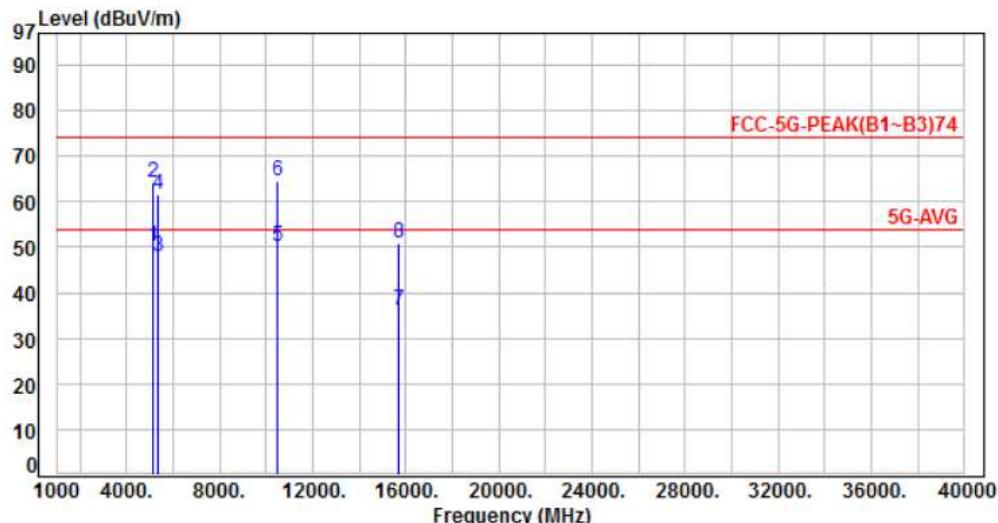
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, CH48	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5150.00	-12.71	62.79	50.08	54.00	-3.92	Average	387	222 P
2	5150.00	-12.71	76.85	64.14	74.00	-9.86	Peak	387	222 P
3	5350.00	-12.32	60.38	48.06	54.00	-5.94	Average	387	222 P
4	5350.00	-12.32	74.06	61.74	74.00	-12.26	Peak	387	222 P
5	10480.00	-7.42	57.65	50.23	54.00	-3.77	Average	103	74 P
6	10480.00	-7.42	71.91	64.49	74.00	-9.51	Peak	103	74 P
7	15720.00	-3.81	39.87	36.06	54.00	-17.94	Average	303	338 P
8	15720.00	-3.81	54.59	50.78	74.00	-23.22	Peak	303	338 P

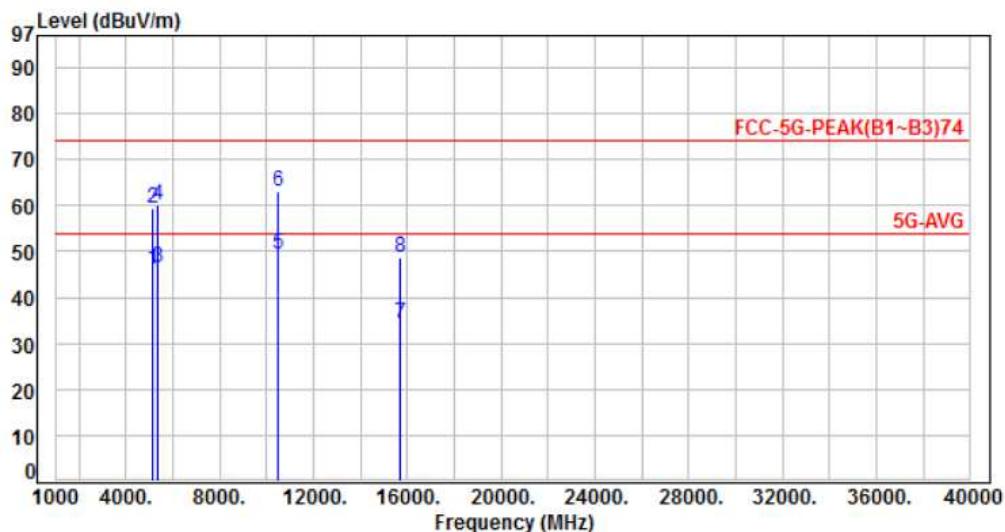
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, CH48	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.71	58.92	46.21	54.00	-7.79	Average	293	129	P
2	5150.00	-12.71	72.11	59.40	74.00	-14.60	Peak	293	129	P
3	5350.00	-12.32	58.85	46.53	54.00	-7.47	Average	293	129	P
4	5350.00	-12.32	72.40	60.08	74.00	-13.92	Peak	293	129	P
5	10480.00	-7.42	56.92	49.50	54.00	-4.50	Average	112	216	P
6	10480.00	-7.42	70.44	63.02	74.00	-10.98	Peak	112	216	P
7	15720.00	-3.81	37.93	34.12	54.00	-19.88	Average	110	169	P
8	15720.00	-3.81	52.40	48.59	74.00	-25.41	Peak	110	169	P

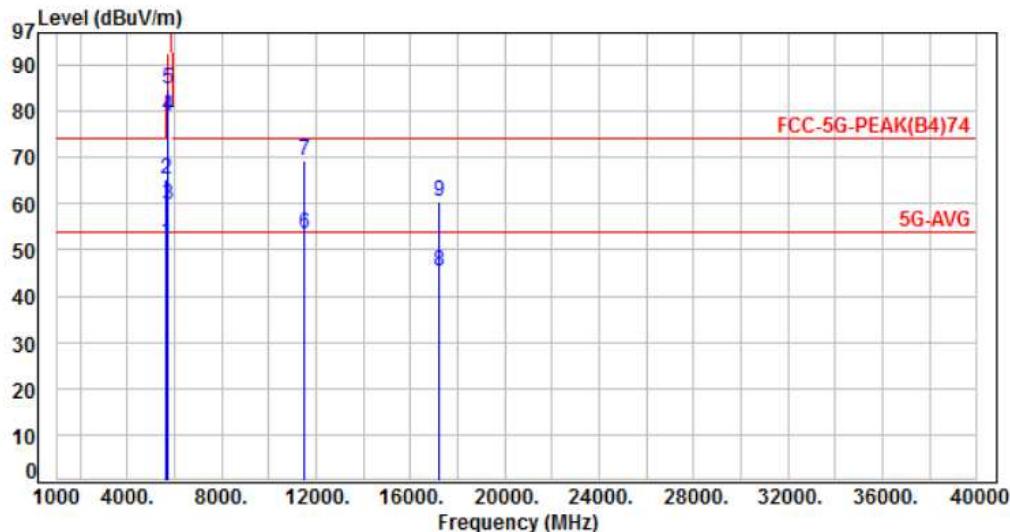
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, CH149	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.09	63.76	51.67	54.00	-2.33	Average	304	261	P
2	5650.00	-12.09	77.46	65.37	74.00	-8.63	Peak	304	261	P
3	5700.00	-12.11	71.76	59.65	105.20	-45.55	Peak	304	261	P
4	5720.00	-12.12	91.14	79.02	110.80	-31.78	Peak	304	261	P
5	5725.00	-12.12	96.95	84.83	122.20	-37.37	Peak	304	261	P
6	11490.00	-6.25	59.60	53.35	54.00	-0.65	Average	100	275	P
7	11490.00	-6.25	75.50	69.25	74.00	-4.75	Peak	100	275	P
8	17235.00	1.48	43.91	45.39	54.00	-8.61	Average	254	341	P
9	17235.00	1.48	58.94	60.42	74.00	-13.58	Peak	254	341	P

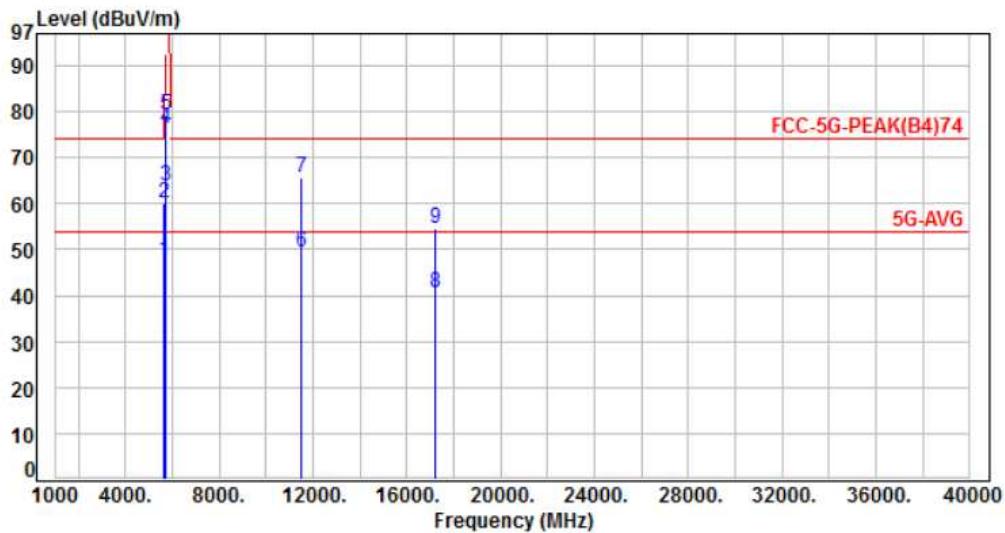
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, CH149	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%

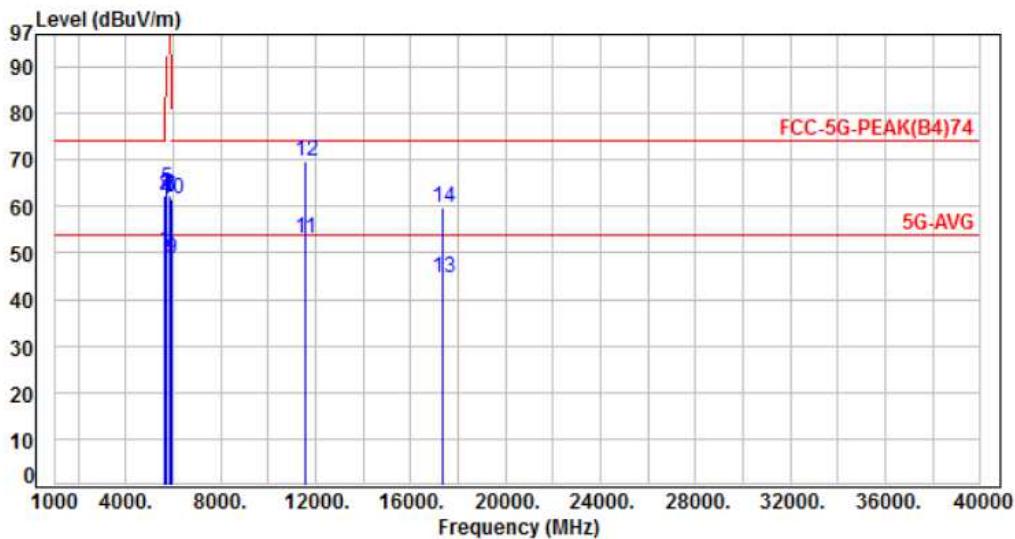


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5650.00	-12.09	59.49	47.40	54.00	-6.60	Average	100	297 P
2	5650.00	-12.09	72.32	60.23	74.00	-13.77	Peak	100	297 P
3	5700.00	-12.11	75.80	63.69	105.20	-41.51	Peak	100	297 P
4	5720.00	-12.12	88.46	76.34	110.80	-34.46	Peak	100	297 P
5	5725.00	-12.12	91.29	79.17	122.20	-43.03	Peak	100	297 P
6	11490.00	-6.25	55.77	49.52	54.00	-4.48	Average	100	166 P
7	11490.00	-6.25	72.06	65.81	74.00	-8.19	Peak	100	166 P
8	17235.00	1.48	39.14	40.62	54.00	-13.38	Average	285	180 P
9	17235.00	1.48	53.08	54.56	74.00	-19.44	Peak	285	180 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, CH157	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%

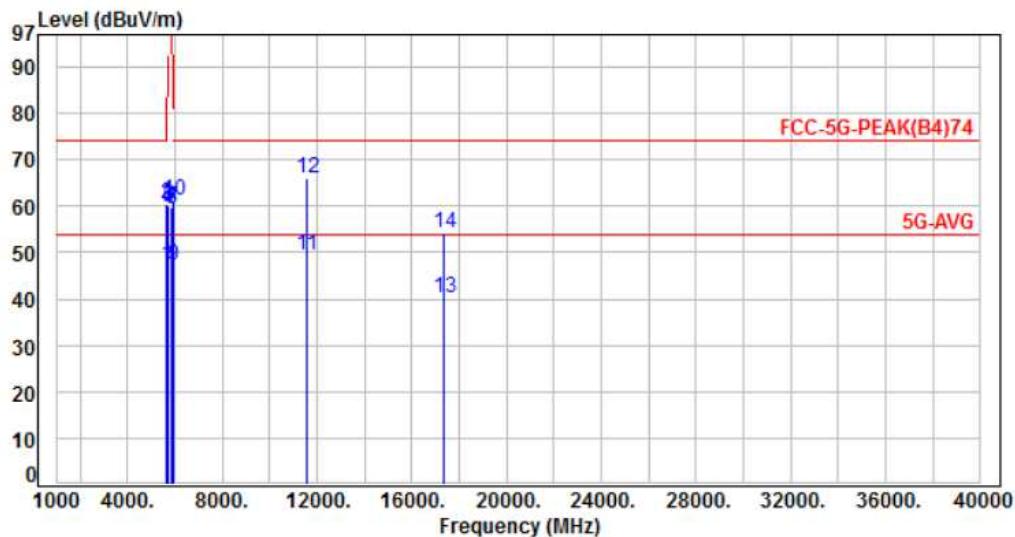


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5650.00	-12.09	62.47	50.38	54.00	-3.62	Average	277	234 P
2	5650.00	-12.09	74.40	62.31	74.00	-11.69	Peak	277	234 P
3	5700.00	-12.11	74.54	62.43	105.20	-42.77	Peak	277	234 P
4	5720.00	-12.12	74.45	62.33	110.80	-48.47	Peak	277	234 P
5	5725.00	-12.12	76.04	63.92	122.20	-58.28	Peak	277	234 P
6	5850.00	-12.16	74.10	61.94	122.20	-60.26	Peak	268	219 P
7	5855.00	-12.16	74.06	61.90	110.80	-48.90	Peak	268	219 P
8	5875.00	-12.17	74.67	62.50	105.20	-42.70	Peak	268	219 P
9	5925.00	-12.18	60.84	48.66	54.00	-5.34	Average	268	219 P
10	5925.00	-12.18	73.82	61.64	74.00	-12.36	Peak	268	219 P
11	11570.00	-6.23	59.21	52.98	54.00	-1.02	Average	100	276 P
12	11570.00	-6.23	75.80	69.57	74.00	-4.43	Peak	100	276 P
13	17355.00	2.11	42.56	44.67	54.00	-9.33	Average	225	291 P
14	17355.00	2.11	57.60	59.71	74.00	-14.29	Peak	225	291 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, CH157	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.09	59.28	47.19	54.00	-6.81	Average	100	319	P
2	5650.00	-12.09	72.41	60.32	74.00	-13.68	Peak	100	319	P
3	5700.00	-12.11	72.37	60.26	105.20	-44.94	Peak	100	319	P
4	5720.00	-12.12	71.96	59.84	110.80	-50.96	Peak	100	319	P
5	5725.00	-12.12	71.70	59.58	122.20	-62.62	Peak	100	319	P
6	5850.00	-12.16	71.72	59.56	122.20	-62.64	Peak	100	319	P
7	5855.00	-12.16	71.73	59.57	110.80	-51.23	Peak	100	319	P
8	5875.00	-12.17	71.66	59.49	105.20	-45.71	Peak	100	319	P
9	5925.00	-12.18	59.45	47.27	54.00	-6.73	Average	100	319	P
10	5925.00	-12.18	73.40	61.22	74.00	-12.78	Peak	100	319	P
11	11570.00	-6.23	55.57	49.34	54.00	-4.66	Average	100	168	P
12	11570.00	-6.23	72.34	66.11	74.00	-7.89	Peak	100	168	P
13	17355.00	2.11	37.94	40.05	54.00	-13.95	Average	273	192	P
14	17355.00	2.11	52.12	54.23	74.00	-19.77	Peak	273	192	P

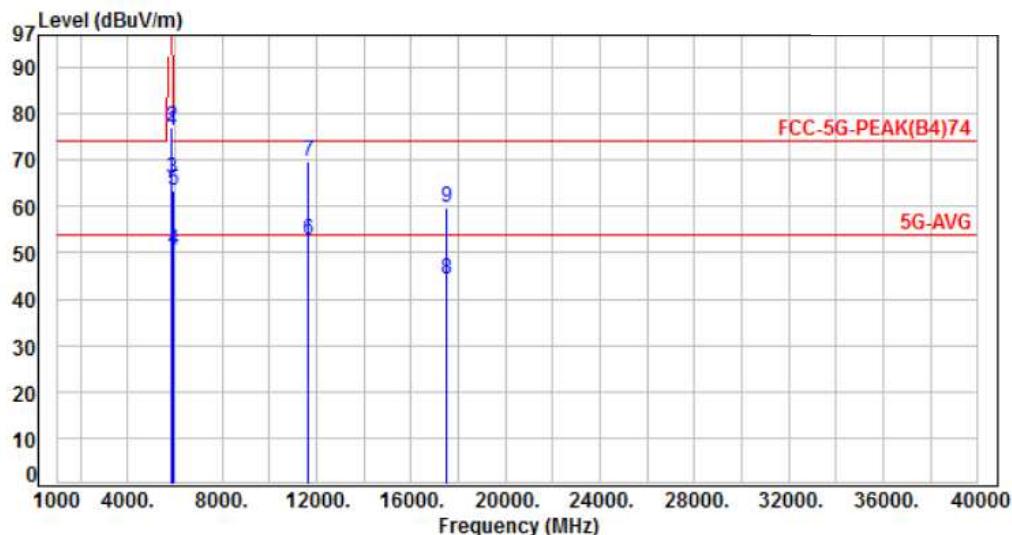
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 1, CH165	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5850.00	-12.16	88.41	76.25	122.20	-45.95	Peak	265	148 P
2	5855.00	-12.16	89.36	77.20	110.80	-33.60	Peak	265	148 P
3	5875.00	-12.17	78.26	66.09	105.20	-39.11	Peak	265	148 P
4	5925.00	-12.18	62.59	50.41	54.00	-3.59	Average	265	148 P
5	5925.00	-12.18	75.52	63.34	74.00	-10.66	Peak	265	148 P
6	11650.00	-6.21	59.13	52.92	54.00	-1.08	Average	108	277 P
7	11650.00	-6.21	75.87	69.66	74.00	-4.34	Peak	108	277 P
8	17475.00	2.74	41.56	44.30	54.00	-9.70	Average	310	187 P
9	17475.00	2.74	56.83	59.57	74.00	-14.43	Peak	310	187 P

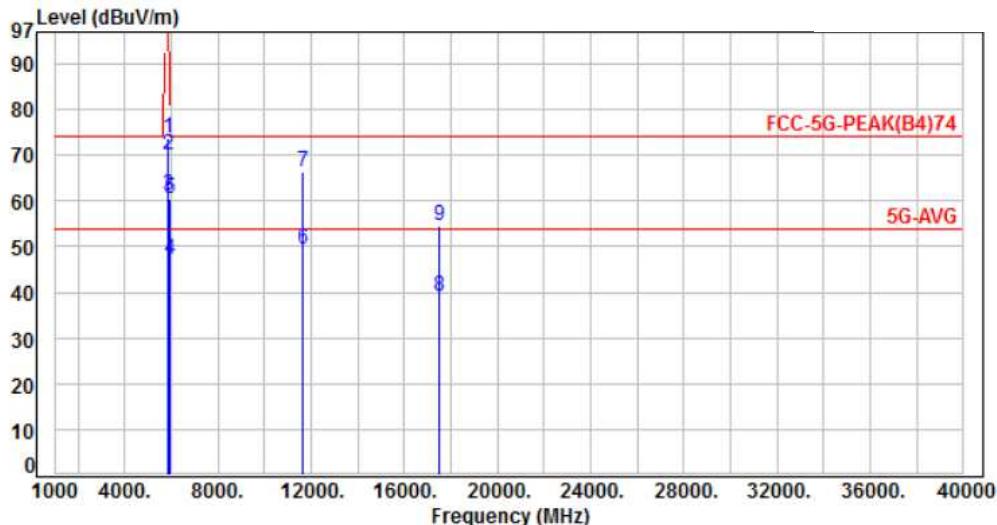
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 1, CH165	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%

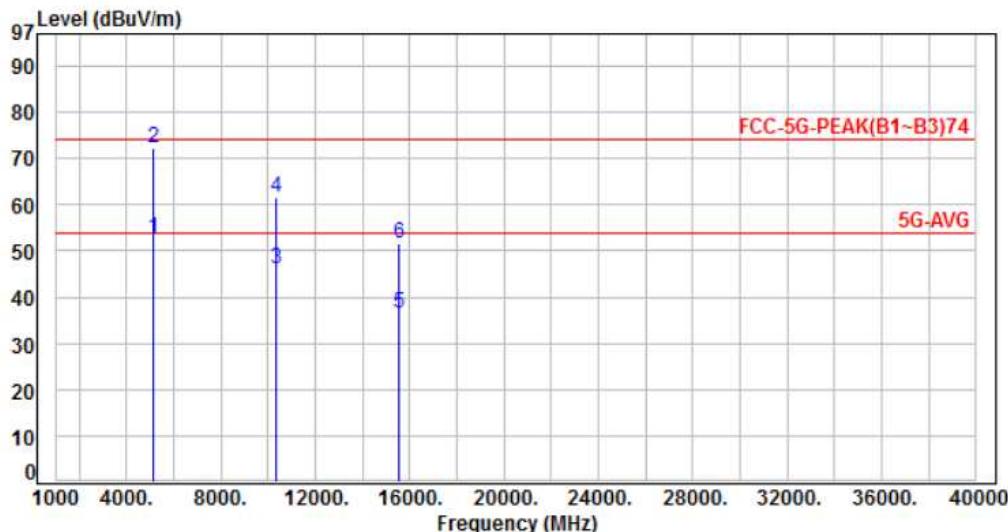


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5850.00	-12.16	86.10	73.94	122.20	-48.26	Peak	100	317 P
2	5855.00	-12.16	82.38	70.22	110.80	-40.58	Peak	100	317 P
3	5875.00	-12.17	73.39	61.22	105.20	-43.98	Peak	100	317 P
4	5925.00	-12.18	59.51	47.33	54.00	-6.67	Average	100	317 P
5	5925.00	-12.18	72.82	60.64	74.00	-13.36	Peak	100	317 P
6	11650.00	-6.21	55.61	49.40	54.00	-4.60	Average	100	164 P
7	11650.00	-6.21	72.44	66.23	74.00	-7.77	Peak	100	164 P
8	17475.00	2.74	36.28	39.02	54.00	-14.98	Average	285	191 P
9	17475.00	2.74	51.76	54.50	74.00	-19.50	Peak	285	191 P

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



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 4, CH36	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5150.00	-12.71	65.62	52.91	54.00	-1.09	Average	377	179 P
2	5150.00	-12.71	84.82	72.11	74.00	-1.89	Peak	377	179 P
3	10360.00	-7.44	53.44	46.00	54.00	-8.00	Average	100	52 P
4	10360.00	-7.44	68.94	61.50	74.00	-12.50	Peak	100	52 P
5	15540.00	-3.78	40.21	36.43	54.00	-17.57	Average	100	339 P
6	15540.00	-3.78	55.57	51.79	74.00	-22.21	Peak	100	339 P

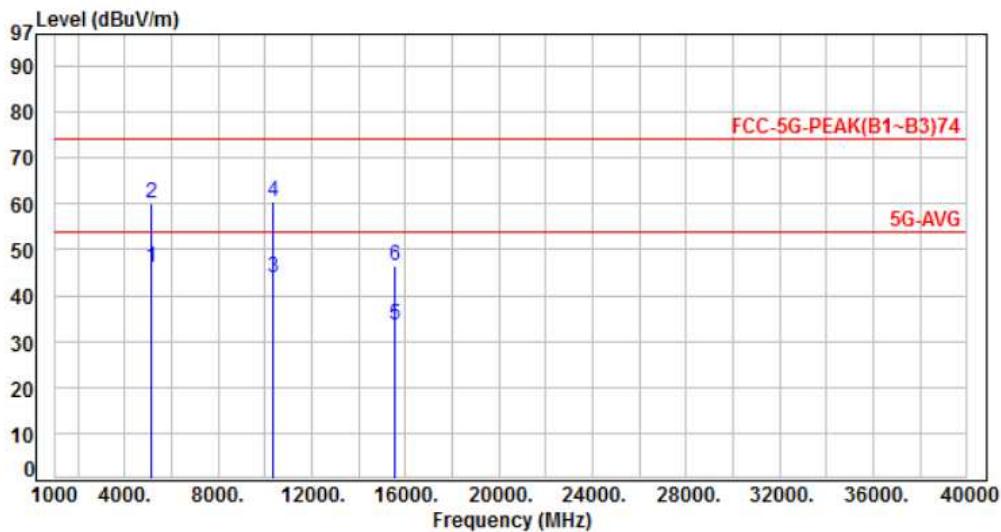
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	Mode 4, CH36	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%

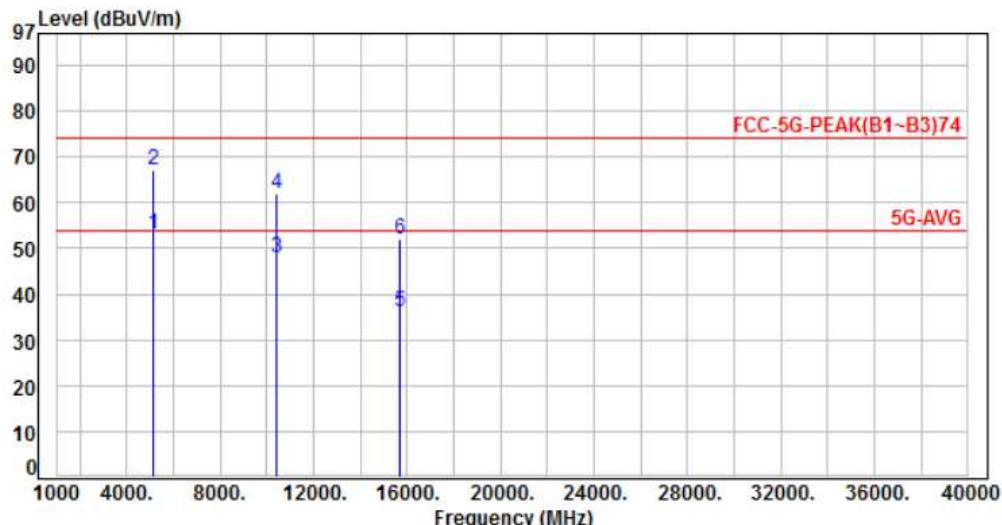


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.71	58.95	46.24	54.00	-7.76	Average	292	134	P
2	5150.00	-12.71	72.70	59.99	74.00	-14.01	Peak	292	134	P
3	10360.00	-7.44	51.47	44.03	54.00	-9.97	Average	100	231	P
4	10360.00	-7.44	67.98	60.54	74.00	-13.46	Peak	100	231	P
5	15540.00	-3.78	37.17	33.39	54.00	-20.61	Average	101	254	P
6	15540.00	-3.78	50.13	46.35	74.00	-27.65	Peak	101	254	P

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



Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	Mode 4, CH44	Temperature :	24°C
Test Date :	Jun. 13, 2017	Humidity :	66%



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth P/F (deg)
1	5150.00	-12.71	65.79	53.08	54.00	-0.92	Average	362	186 P
2	5150.00	-12.71	79.97	67.26	74.00	-6.74	Peak	362	186 P
3	10440.00	-7.43	55.49	48.06	54.00	-5.94	Average	100	79 P
4	10440.00	-7.43	69.50	62.07	74.00	-11.93	Peak	100	79 P
5	15660.00	-3.80	39.85	36.05	54.00	-17.95	Average	100	340 P
6	15660.00	-3.80	55.82	52.02	74.00	-21.98	Peak	100	340 P

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor