FCC RADIO TEST REPORT

Applicant	:	Allied Telesis K.K.
Address	:	2nd. TOC Bldg. 721-11 Nishi-Gotanda, Shinagawa-ku, Tokyo Japan, 141-0031
Equipment	:	802.11ac wave2 2x2 tri-radio 2.4G/5G/5G wireless AP
Model No.	:	AT-TQ5403, AT-TQm5403
Trade Name	:	Allied Telesis
FCC ID.	:	RSL-TQ5403

I HEREBY CERTIFY THAT :

The sample was received on Jun. 10, 2018 and the testing was carried out on Jul 19 2018 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

CONTENTS

History of this test report

Report No.	Issue Date	Description
TEFE1801057	Feb. 13, 2018	Original
TEFE1806048	Jul. 25, 2018	1. Add Model No.: AT-TQm5403 2. Add Frequency range: 5250MHz-5350MHz & 5470MHz-5725MHz.
TEFE1806048	Sep. 13, 2018	Replace the test report that issued on Jul. 25, 2018.

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 (a) & (a)(3)	Average Power	Pass
15.407(a)	Maximum Power Spectral Density	Pass
15.407(g)	Frequency Stability	Pass
15.407(c)	Automatically Discontinue Transmission	Pass
15.407	Dynamic Frequency Selection	Pass

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment and Model Description

Equipment	802.11ac wave2 2x2 tri-radio 2.4G/5G/5G wireless AP
Model No.	AT-TQ5403, AT-TQm5403
Brand Name	Allied Telesis
Product Description	Please refer to User's Manual.
Connecting I/O Port(s)	Please refer to User's Manual.
AC ADAPTER	Adapter Brand: APD Model No.: WA-24Q12R I/P: AC 100-240V~, 50-60Hz, 0.7A MAX. ; O/P: DC 12V, 2.0A
PoE	48Vdc/0.67A
Memo	A1
Frequency Range	802.11b/g/n: 2400-2483.5 MHz 802.11a/n/ac: 5150-5250 MHz, 5250MHz-5350 MHz, 5470MHz-5725 MHz, 5725-5850 MHz
Modulation Type	OFDM, DSSS
Data Rate	2.4GHz: 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40, VHT20/40 5GHz: 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40 802.11ac: MCS0 – MCS9, VHT20/40/80
Antenna Type	PCB Antenna
Antenna Gain	2.4GHz: ANT A: 4.85 dBi ; ANT B: 4.4 dBi 5150MHz-5250MHz: ANT A: 4.18 dBi ; ANT B: 4.81 dBi 5250MHz-5350MHz: ANT A: 4.02 dBi ; ANT B: 4.2 dBi 5470MHz-5725MHz: ANT A: 4.83 dBi ; ANT B: 4.05 dBi 5725MHz-5850MHz: ANT A: 4.9 dBi ; ANT B: 4.18 dBi

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The band from 5600-5650MHz will be disabled by the software during the manufacturing and cannot be changed by the end user.
3. This device supports DFS master mode.

2.2. Carrier Frequency of Channels

Band 2: 5250MHz -5350MHz
802.11a, 802.11an HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***52**	**5260**	***60**	**5300**
56	5280	***64**	**5320**

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***54**	**5270**	***62**	**5310**

802.11ac VHT80

Channel	Frequency(MHz)
***58**	**5290**

Band 3: 5470MHz -5725MHz
802.11a, 802.11an HT 20, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***100**	**5500**	***116**	**5580**
104	5520	132	5660
108	5540	136	5680
112	5560	***140**	**5700**

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***102**	**5510**	118	5590
***110**	**5550**	***134**	**5670**

802.11ac VHT80

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***106**	**5530**	**-**	**-**

Band 3: Straddle Channel
802.11a, 802.11an HT 20, 802.11ac VHT20

Channel	Frequency(MHz)
***144**	**5720**

802.11an HT 40, 802.11ac VHT40

Channel	Frequency(MHz)
***142**	**5710**

802.11ac VHT80

Channel	Frequency(MHz)
***138**	**5690**

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, ”QDART_CONN.WIN.1.0 Installer-00039.1” under WIN 7 was executed to transmit and receive data via WLAN.
d. The following test modes were performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	802.11a (6Mbps)
2	802.11ac VHT20 (6.5Mbps)
3	802.11ac VHT40 (13.5Mbps)
4	802.11ac VHT80 (29.3Mbps)
caused “Test Mode 1” generated the worst case, it was reported as the final data.	
Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	Band 2, 802.11a (6Mbps), Power from Adapter
2	Band 2, 802.11ac VHT20 (6.5Mbps), Power from Adapter
3	Band 2, 802.11ac VHT40 (13.5Mbps), Power from Adapter
4	Band 2, 802.11ac VHT80 (29.3Mbps), Power from Adapter
5	Band 2, 802.11a (6Mbps), Power from PoE
6	Band 2, 802.11ac VHT20 (6.5Mbps), Power from PoE
7	Band 2, 802.11ac VHT40 (13.5Mbps), Power from PoE
8	Band 2, 802.11ac VHT80 (29.3Mbps), Power from PoE
9	Band 3, 802.11a (6Mbps), Power from Adapter
10	Band 3, 802.11ac VHT20 (6.5Mbps), Power from Adapter
11	Band 3, 802.11ac VHT40 (13.5Mbps), Power from Adapter
12	Band 3, 802.11ac VHT80 (29.3Mbps), Power from Adapter
13	Band 3, 802.11a (6Mbps), Power from PoE
14	Band 3, 802.11ac VHT20 (6.5Mbps), Power from PoE
15	Band 3, 802.11ac VHT40 (13.5Mbps), Power from PoE
16	Band 3, 802.11ac VHT80 (29.3Mbps), Power from PoE
caused “Test Mode 3,7,12,16” generated the worst case, they were reported as the final data.	

Radiation Emissions (1GHz ~ 40GHz)	
Test Mode	Operating Description
1	Band 2, 802.11a (6Mbps), Power from Adapter
2	Band 2, 802.11ac VHT20 (6.5Mbps), Power from Adapter
3	Band 2, 802.11ac VHT40 (13.5Mbps), Power from Adapter
4	Band 2, 802.11ac VHT80 (29.3Mbps), Power from Adapter
5	Band 3, 802.11a (6Mbps), Power from Adapter
6	Band 3, 802.11ac VHT20 (6.5Mbps), Power from Adapter
7	Band 3, 802.11ac VHT40 (13.5Mbps), Power from Adapter
8	Band 3, 802.11ac VHT80 (29.3Mbps), Power from Adapter
9	Band 3, Straddle Channel, 802.11a (6Mbps), Power from Adapter
10	Band 3, Straddle Channel, 802.11ac VHT20 (6.5Mbps), Power from Adapter
11	Band 3, Straddle Channel, 802.11ac VHT40 (13.5Mbps), Power from Adapter
12	Band 3, Straddle Channel, 802.11ac VHT80 (29.3Mbps), Power from Adapter

2.4. Description of Test System

Device	Manufacturer	Model No.	Description
Remote workstation			
Notebook	DELL	LatitudeE5450/5450	Power Cable, Unshielding, 1.8m

2.5. General Information of Test

Test Site	**Cerpass Technology Corporation Test Laboratory** Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 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 40,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

2.6. Measurement Uncertainty

Measurement Item	Uncertainty
Radiated Spurious Emission(9KHz~30MHz)	±5.007dB
Radiated Spurious Emission(30MHz~1GHz)	±5.157dB
Radiated Spurious Emission(1GHz~18GHz)	±6.383dB
Radiated Spurious Emission(18GHz~40GHz)	±6.648dB
Conducted Spurious Emission	±1.253dB
6dB Bandwidth	±6.89%
Power Spectral Density	±0.630dB
26 dB Occupied Bandwidth	±6.10%
Frequency Stability	±375KHz
Channel Frequencies Separation	±6.10%
20dB Bandwidth	±6.12%
Dwell Time	±1.34%
Peak Output Power(Conducted Power Meter)	±0.86dB
Temperature	±1.2℃
Humidity	±2.7%
Channel Move Time	±4.53%
Channel Closing Transmission Time	±6.61%
Threshold	±0.631dB
Non occupancy period	±1.17%

3. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI3	100821	2017/09/08	2018/09/07
LISN	Schwarzbeck	NSLK 8127	8127-568	2018/02/26	2019/02/25
Pulse Limiter	R&S	ESH3-Z2	101934	2018/02/22	2019/02/21
Bilog Antenna	Schwarzbeck	VULB9168	275	2017/08/31	2018/08/30
Active Loop Antenna	EMCO	6507	40855	2018/05/22	2019/05/21
Horn Antenna	EMCO	3115	31601	2017/09/11	2018/09/10
Horn Antenna	EMCO	3116	31970	2018/03/23	2019/03/22
Preamplifier	EM	EM330	60658	2017/09/08	2018/09/07
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2017/09/20	2018/09/19
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2017/11/10	2018/11/09
MXG MW Analog Signal Generator	KEYSIGHT	N5183A	MY50142931	2018/04/10	2019/04/09
Spectrum Analyzer	R&S	FSP40	100219	2017/07/01	2018/06/30
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200207	2018/03/29	2019/03/28
BLUETOOTH TESTER	R&S	CBT	101133	2018/04/02	2019/04/01
Attenuator	KEYSIGHT	8491B	MY39250705	2017/09/04	2018/09/03
Rotary Attenuator	Agilent	8495B	MY42146680	2018/03/29	2019/03/28
Temp & Humi chamber	T-MACHINE	TMJ-9712	T-12-040111	2017/09/04	2018/09/03
Series Power Meter	Anritsu	ML2495A	1224005	2018/03/23	2019/03/22
Power Sensor	Anritsu	MA2411B	1207295	2018/03/23	2019/03/22
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	V3.0.0.0	N/A	N/A
Software	Keysight	Inservice MonitorUtility	N/A	N/A	N/A

4. Antenna Requirements

4.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.2. Antenna Construction and Directional Gain

Antenna Type	PCB Antenna
Antenna Gain	2.4GHz: ANT A: 4.85 dBi ; ANT B: 4.4 dBi 5250MHz-5350MHz: ANT A: 4.02 dBi ; ANT B: 4.2 dBi 5470MHz-5725MHz: ANT A: 4.83 dBi ; ANT B: 4.05 dBi 5725MHz-5850MHz: ANT A: 4.9 dBi ; ANT B: 4.18 dBi

(Non-Beamforming)

5250MHz -5350MHz
For Power directional gain= G_{ant}= 4.20 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.12 (dBi)
5470MHz -5725MHz
For Power directional gain= G_{ant}= 4.83 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.46 (dBi)
5725MHz-5850MHz
For Power directional gain= G_{ant}= 4.90 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.56 (dBi)

(Beamforming)

5250MHz -5350MHz
For Power directional gain= Gant= 7.12 dBi For PSD directional gain = 10 log[(10G1 /20 + 10G2 /20)2 /NANT] = 7.12 (dBi)
5470MHz -5725MHz
For Power directional gain= Gant= 7.46 dBi For PSD directional gain = 10 log[(10G1 /20 + 10G2 /20)2 /NANT] = 7.46 (dBi)
5725MHz-5850MHz
For Power directional gain= Gant= 7.56 dBi For PSD directional gain = 10 log[(10G1 /20 + 10G2 /20)2 /NANT] = 7.56 (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.

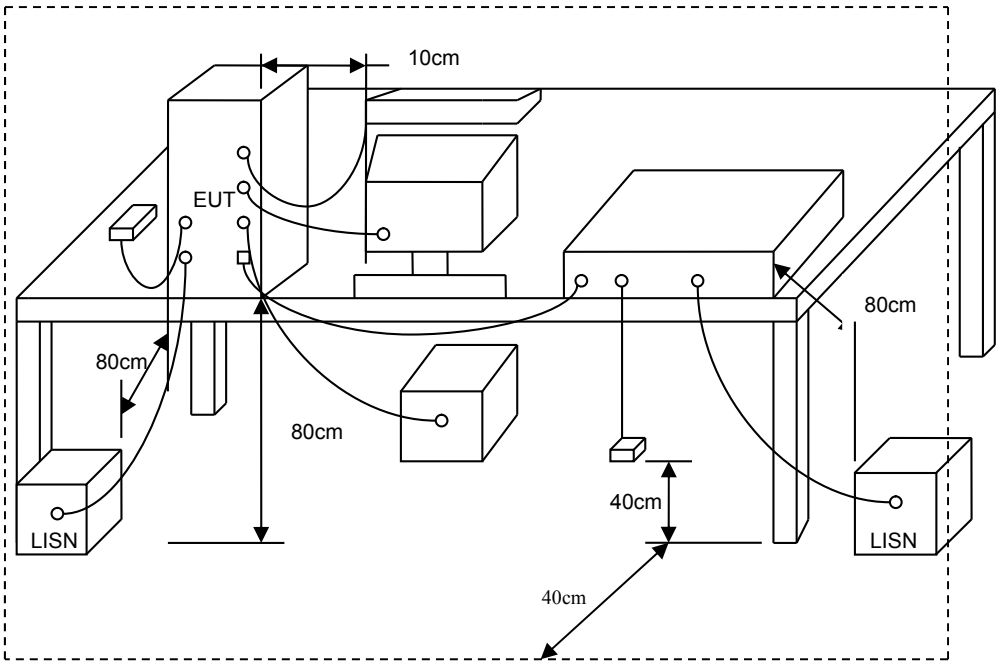
Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2. Test Procedures

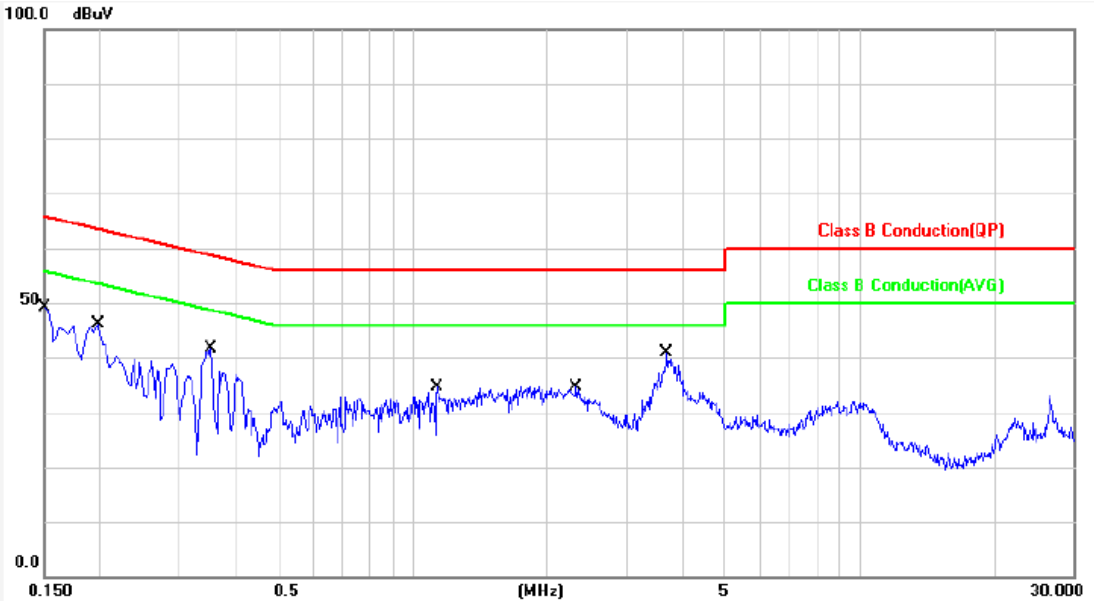
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
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

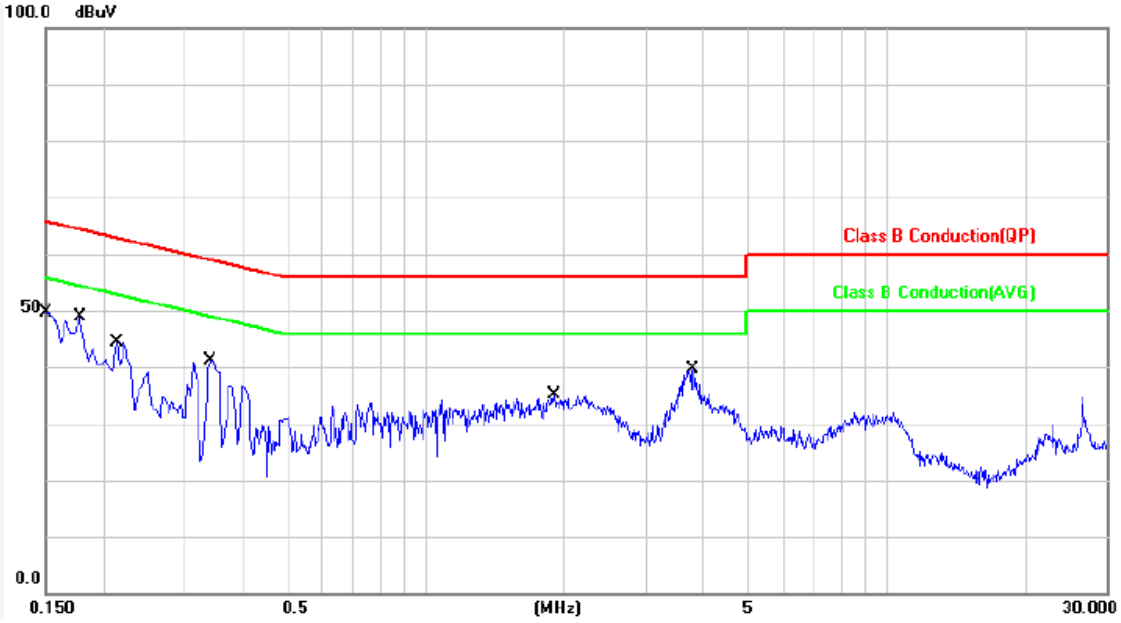
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	Mode 1	Temperature	:	20 °C
Test Date	:	Feb. 09, 2018	Humidity	:	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.91	38.22	48.13	65.99	-17.86	QP	P
2	0.1500	9.91	27.04	36.95	55.99	-19.04	AVG	P
3	0.1980	9.91	32.11	42.02	63.69	-21.67	QP	P
4	0.1980	9.91	25.29	35.20	53.69	-18.49	AVG	P
5	0.3540	9.93	28.72	38.65	58.87	-20.22	QP	P
6	0.3540	9.93	18.78	28.71	48.87	-20.16	AVG	P
7	1.1380	9.97	19.75	29.72	56.00	-26.28	QP	P
8	1.1380	9.97	12.23	22.20	46.00	-23.80	AVG	P
9	2.3300	10.03	20.95	30.98	56.00	-25.02	QP	P
10	2.3300	10.03	14.37	24.40	46.00	-21.60	AVG	P
11	3.7100	10.07	24.73	34.80	56.00	-21.20	QP	P
12	3.7100	10.07	14.97	25.04	46.00	-20.96	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator

Power	:	AC 120V	Pol/Phase	:	NEUTRAL
Test Mode	:	Mode 1	Temperature	:	20 °C
Test Date	:	Feb. 09, 2018	Humidity	:	40 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.91	37.10	47.01	65.99	-18.98	QP	P
2	0.1500	9.91	26.90	36.81	55.99	-19.18	AVG	P
3	0.1780	9.91	32.11	42.02	64.57	-22.55	QP	P
4	0.1780	9.91	23.37	33.28	54.57	-21.29	AVG	P
5	0.2140	9.91	29.62	39.53	63.04	-23.51	QP	P
6	0.2140	9.91	22.92	32.83	53.04	-20.21	AVG	P
7	0.3420	9.92	29.27	39.19	59.15	-19.96	QP	P
8	0.3420	9.92	24.67	34.59	49.15	-14.56	AVG	P
9	1.9020	10.02	21.86	31.88	56.00	-24.12	QP	P
10	1.9020	10.02	13.91	23.93	46.00	-22.07	AVG	P
11	3.8020	10.09	26.43	36.52	56.00	-19.48	QP	P
12	3.8020	10.09	15.98	26.07	46.00	-19.93	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator

5.5. Test Photographs

Front View

Rear View

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.

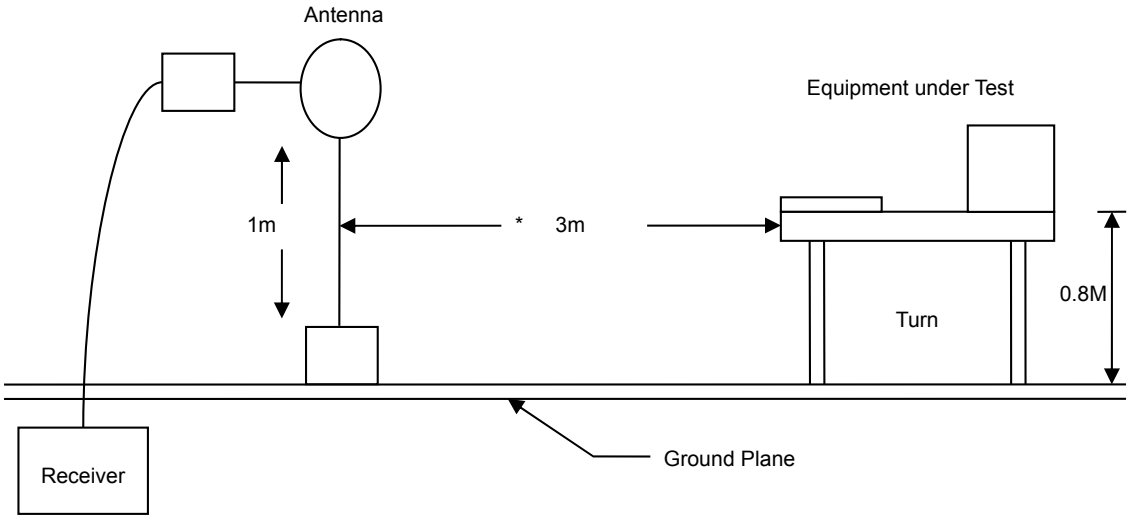
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.2. Test Procedures

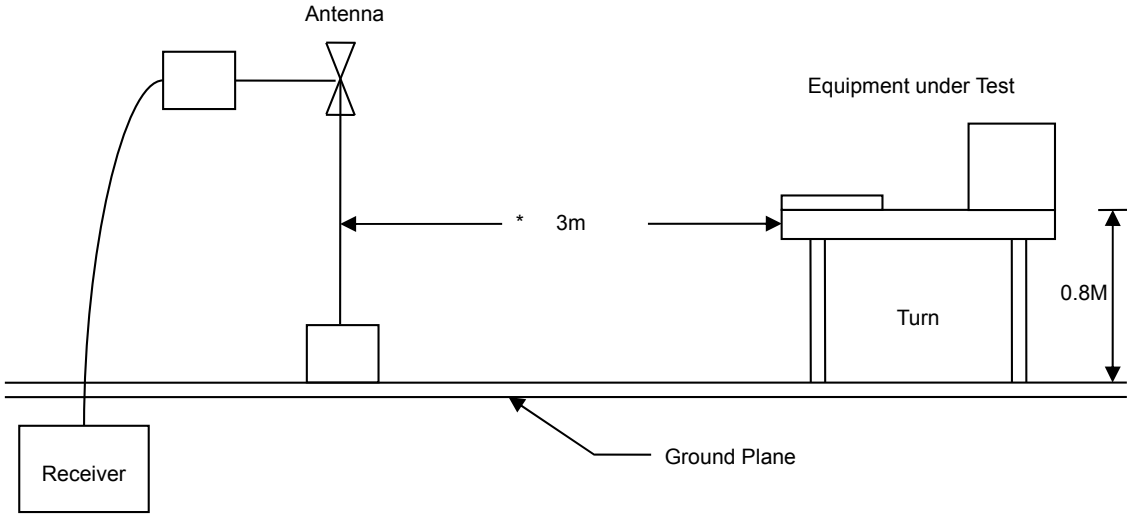
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna 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

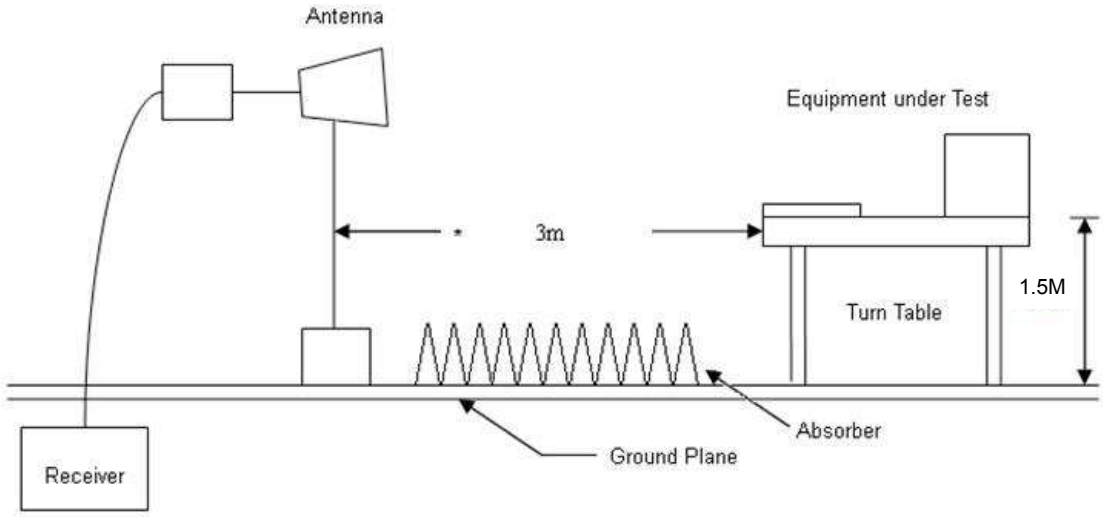
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

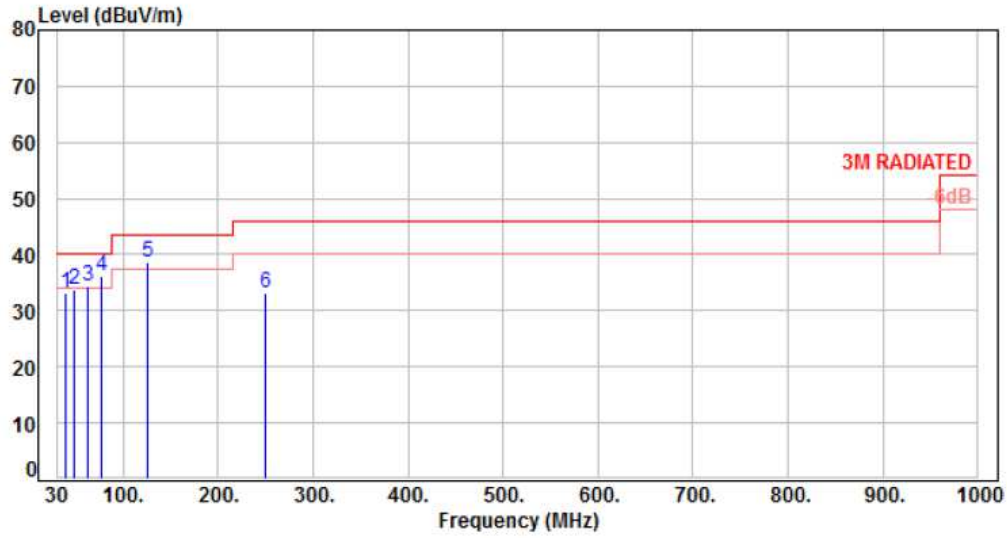


6.4. Test Result and Data (9kHz ~ 30MHz)

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

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

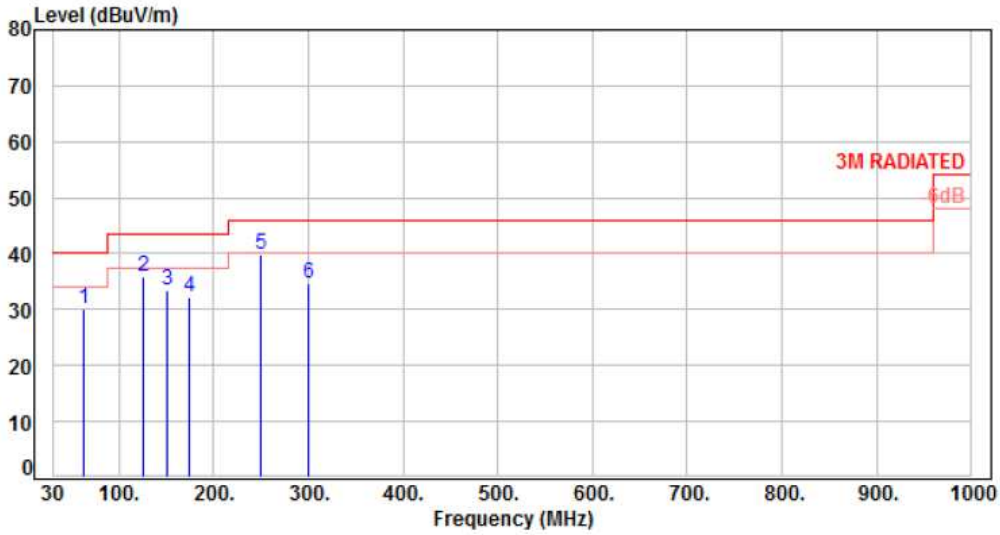
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, Band 2	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	39.88	-10.36	43.41	33.05	40.00	-6.95	QP	100	134	P
2	48.66	-9.75	43.52	33.77	40.00	-6.23	QP	100	263	P
3	63.55	-10.87	45.36	34.49	40.00	-5.51	QP	100	147	P
4	77.11	-13.59	49.81	36.22	40.00	-3.78	Peak	400	0	P
5	125.00	-11.96	50.59	38.63	43.50	-4.87	QP	110	103	P
6	250.11	-10.63	43.71	33.08	46.00	-12.92	Peak	400	0	P

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

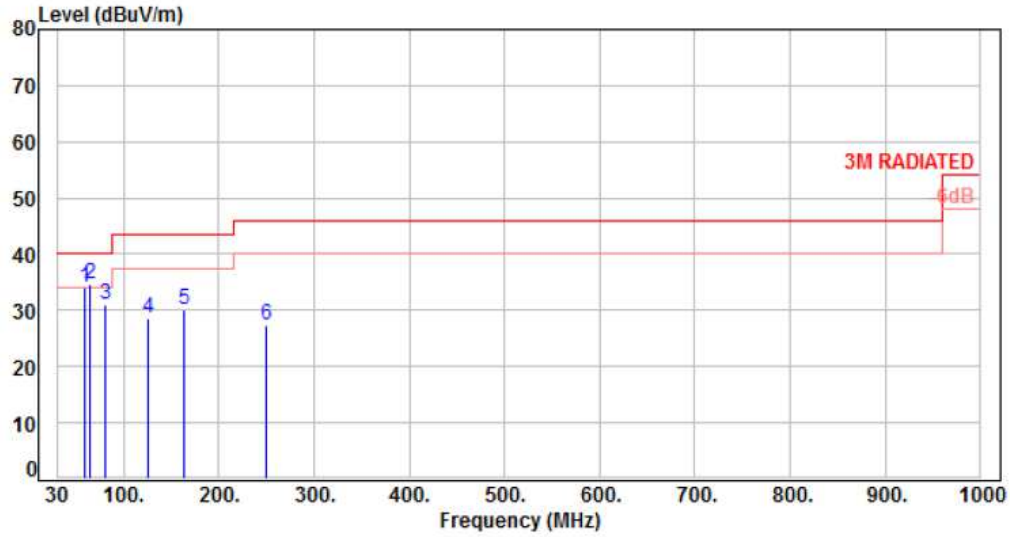
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, Band 2	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	62.53	-10.69	40.71	30.02	40.00	-9.98	Peak	100	0	P
2	125.05	-11.94	47.82	35.88	43.50	-7.62	Peak	100	0	P
3	150.49	-10.07	43.62	33.55	43.50	-9.95	Peak	100	0	P
4	173.55	-10.46	42.66	32.20	43.50	-11.30	Peak	100	0	P
5	250.50	-10.62	50.43	39.81	46.00	-6.19	Peak	100	0	P
6	300.66	-8.79	43.46	34.67	46.00	-11.33	Peak	100	0	P

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

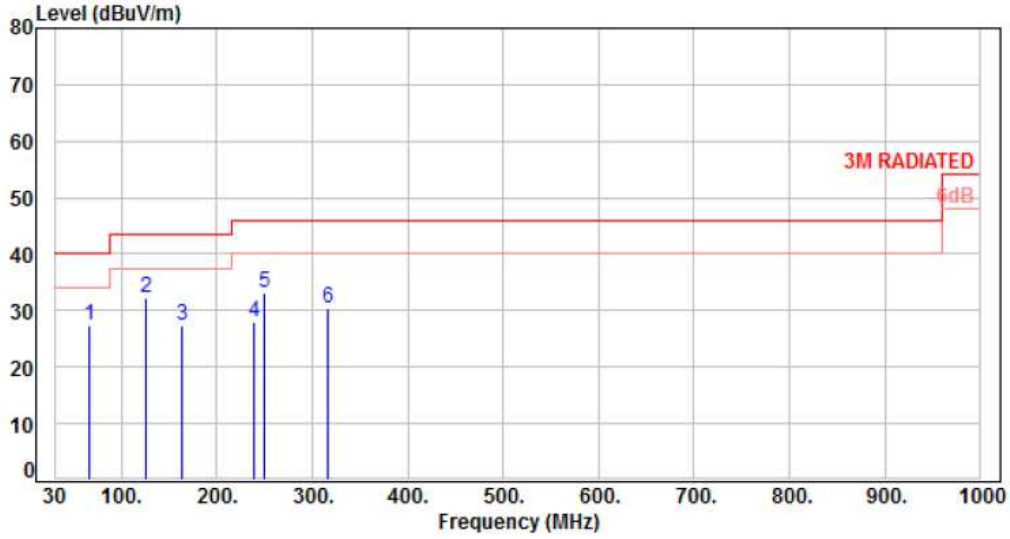
Power	:	PoE	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, Band 2	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	59.66	-10.23	44.35	34.12	40.00	-5.88	Peak	400	0	P
2	65.33	-11.18	45.82	34.64	40.00	-5.36	Peak	400	0	P
3	80.49	-14.32	45.37	31.05	40.00	-8.95	Peak	400	0	P
4	125.05	-11.94	40.47	28.53	43.50	-14.97	Peak	400	0	P
5	163.37	-9.92	39.88	29.96	43.50	-13.54	Peak	400	0	P
6	250.50	-10.62	37.91	27.29	46.00	-18.71	Peak	400	0	P

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

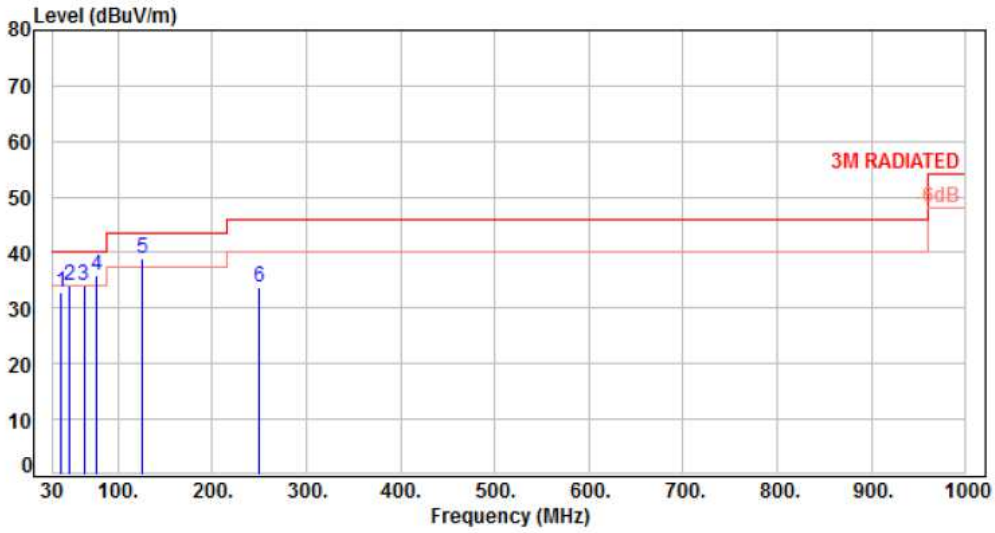
Power	:	PoE	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, Band 2	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	65.81	-11.27	38.67	27.40	40.00	-12.60	Peak	100	0	P
2	125.00	-11.96	44.21	32.25	43.50	-11.25	Peak	100	0	P
3	164.30	-9.94	37.42	27.48	43.50	-16.02	Peak	100	0	P
4	238.74	-10.90	38.93	28.03	46.00	-17.97	Peak	100	0	P
5	250.55	-10.62	43.66	33.04	46.00	-12.96	Peak	100	0	P
6	315.49	-8.39	38.69	30.30	46.00	-15.70	Peak	100	0	P

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

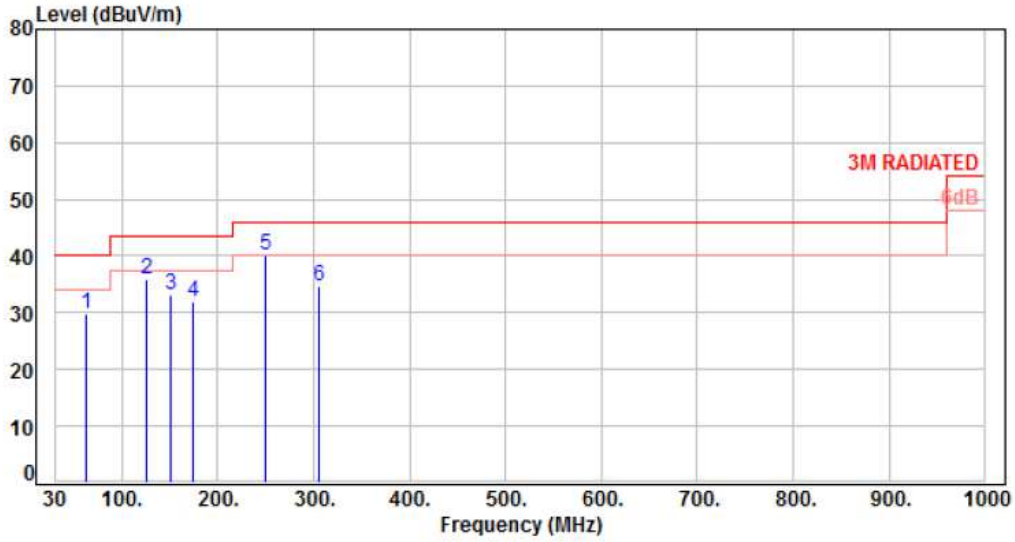
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 12, Band 3	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	39.41	-10.42	43.23	32.81	40.00	-7.19	QP	100	130	P
2	48.47	-9.76	43.88	34.12	40.00	-5.88	QP	100	217	P
3	63.65	-10.88	45.05	34.17	40.00	-5.83	QP	107	133	P
4	77.88	-13.76	49.61	35.85	40.00	-4.15	Peak	400	0	P
5	125.00	-11.96	50.82	38.86	43.50	-4.64	QP	100	99	P
6	250.50	-10.62	44.23	33.61	46.00	-12.39	Peak	400	0	P

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

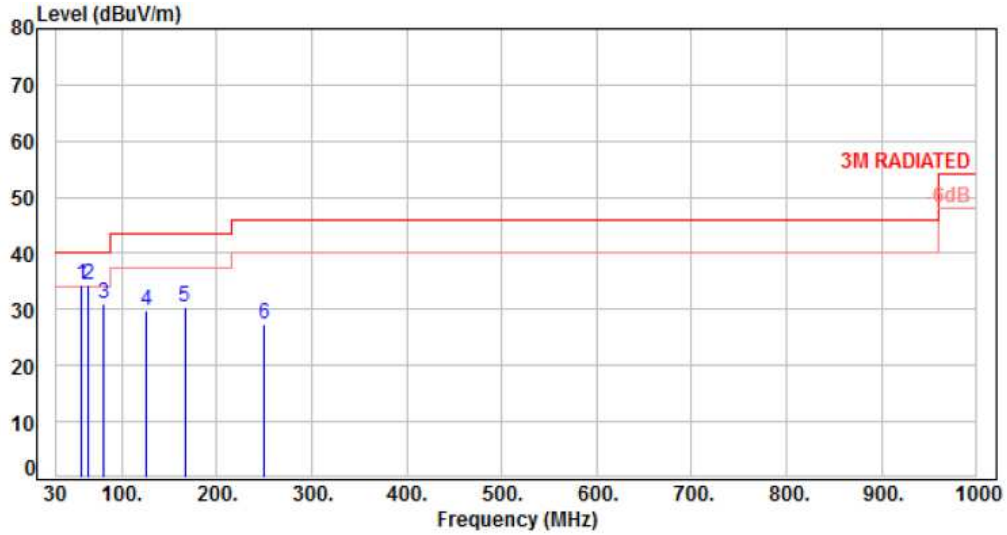
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 12, Band 3	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	62.44	-10.67	40.36	29.69	40.00	-10.31	Peak	100	0	P
2	125.50	-11.90	47.88	35.98	43.50	-7.52	Peak	100	0	P
3	150.86	-10.06	43.21	33.15	43.50	-10.35	Peak	100	0	P
4	173.84	-10.48	42.54	32.06	43.50	-11.44	Peak	100	0	P
5	250.33	-10.62	50.71	40.09	46.00	-5.91	Peak	100	0	P
6	305.36	-8.65	43.40	34.75	46.00	-11.25	Peak	100	0	P

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

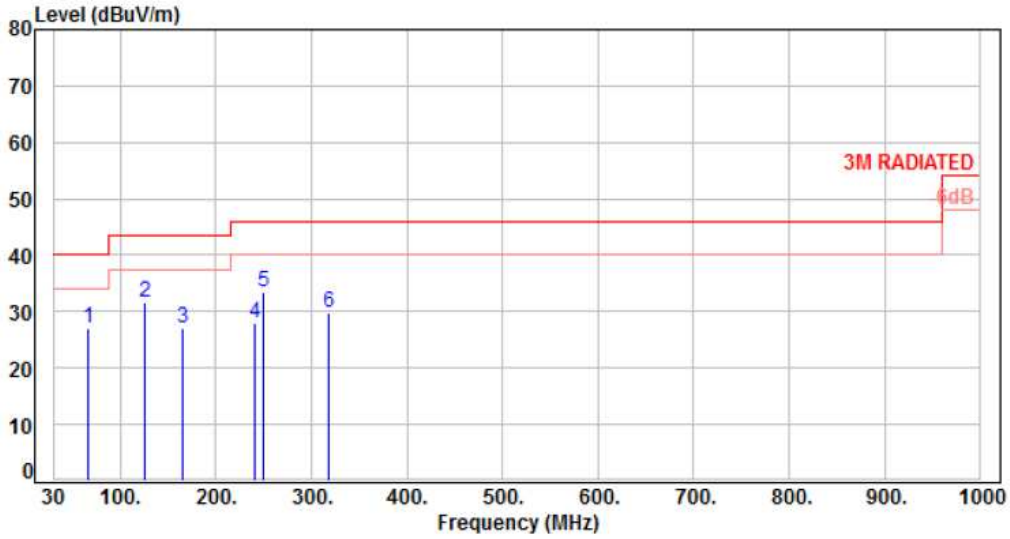
Power	:	PoE	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 16, Band 3	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	57.88	-10.13	44.53	34.40	40.00	-5.60	Peak	400	0	P
2	65.39	-11.19	45.44	34.25	40.00	-5.75	Peak	400	0	P
3	80.67	-14.35	45.37	31.02	40.00	-8.98	Peak	400	0	P
4	125.35	-11.91	41.83	29.92	43.50	-13.58	Peak	400	0	P
5	166.20	-10.00	40.32	30.32	43.50	-13.18	Peak	400	0	P
6	250.00	-10.63	37.87	27.24	46.00	-18.76	Peak	400	0	P

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

Power	:	PoE	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 16, Band 3	Temperature	:	24 °C
Test Date	:	Feb. 27, 2018	Humidity	:	59 %

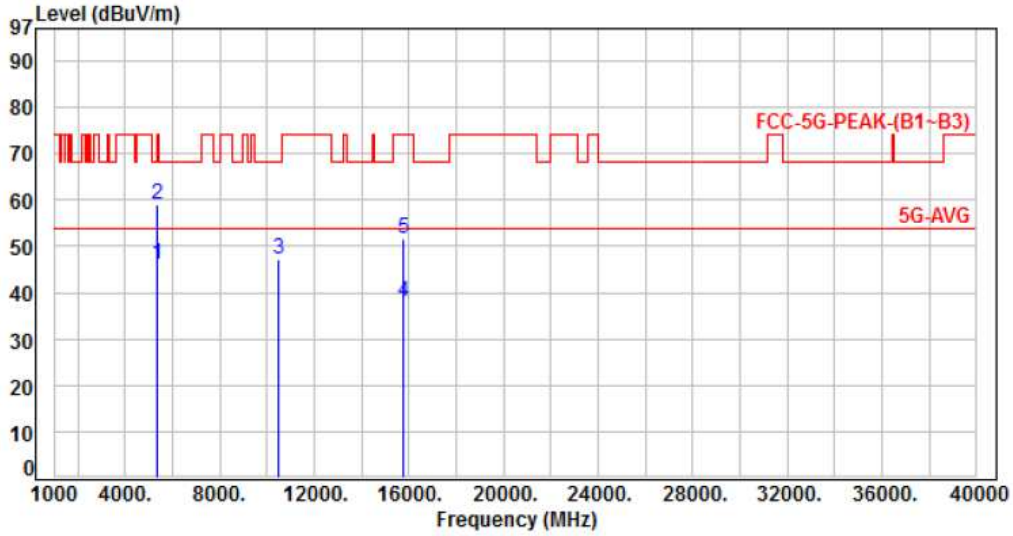


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	66.82	-11.44	38.49	27.05	40.00	-12.95	Peak	100	0	P
2	125.00	-11.96	43.60	31.64	43.50	-11.86	Peak	100	0	P
3	165.13	-9.96	37.11	27.15	43.50	-16.35	Peak	100	0	P
4	240.28	-10.76	38.69	27.93	46.00	-18.07	Peak	100	0	P
5	250.15	-10.63	44.20	33.57	46.00	-12.43	Peak	100	0	P
6	317.88	-8.33	38.29	29.96	46.00	-16.04	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)

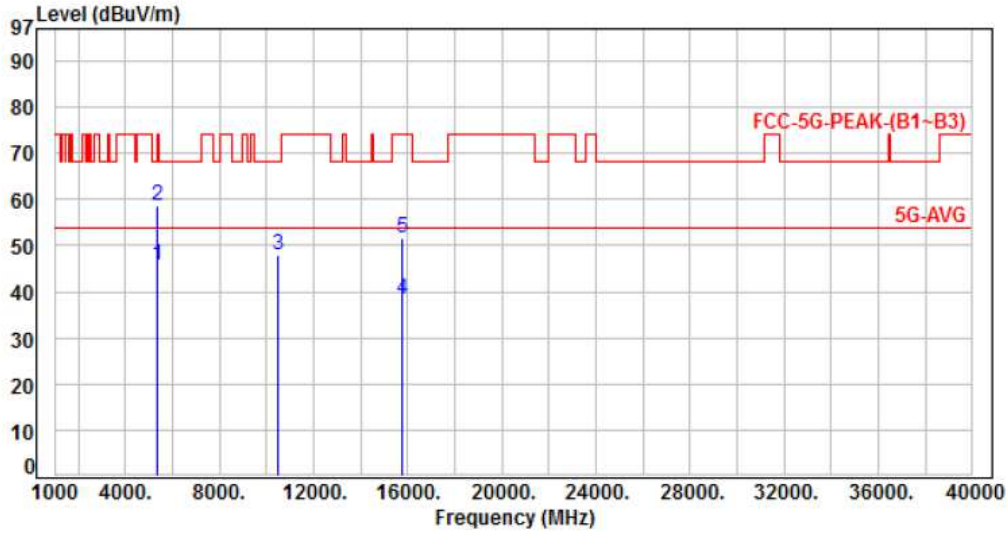
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, Band 2, CH52	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.41	46.08	54.00	-7.92	Average	390	3	P
2	5350.00	-5.33	64.49	59.16	74.00	-14.84	Peak	390	3	P
3	10520.00	2.72	44.63	47.35	68.20	-20.85	Peak	100	350	P
4	15780.00	9.07	29.03	38.10	54.00	-15.90	Average	100	100	P
5	15780.00	9.07	42.58	51.65	74.00	-22.35	Peak	100	100	P

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

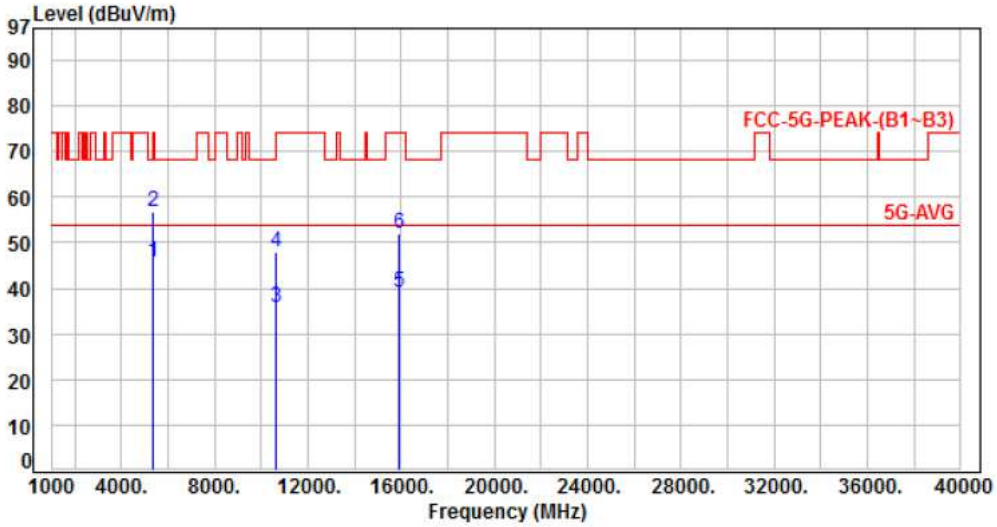
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, Band 2, CH52	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.19	45.86	54.00	-8.14	Average	382	287	P
2	5350.00	-5.33	64.03	58.70	74.00	-15.30	Peak	382	287	P
3	10520.00	2.72	45.32	48.04	68.20	-20.16	Peak	227	112	P
4	15780.00	9.07	29.12	38.19	54.00	-15.81	Average	100	150	P
5	15780.00	9.07	42.45	51.52	74.00	-22.48	Peak	100	150	P

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

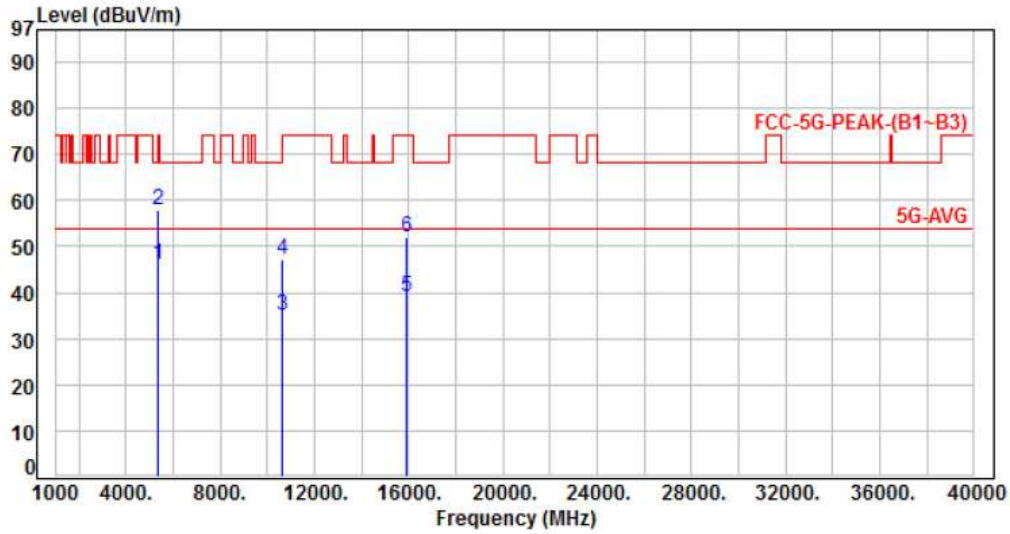
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, Band 2, CH60	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.11	45.78	54.00	-8.22	Average	396	1	P
2	5350.00	-5.33	62.00	56.67	74.00	-17.33	Peak	396	1	P
3	10600.00	2.84	32.93	35.77	54.00	-18.23	Average	100	351	P
4	10600.00	2.84	45.27	48.11	74.00	-25.89	Peak	100	351	P
5	15900.00	9.12	29.99	39.11	54.00	-14.89	Average	100	102	P
6	15900.00	9.12	42.79	51.91	74.00	-22.09	Peak	100	102	P

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

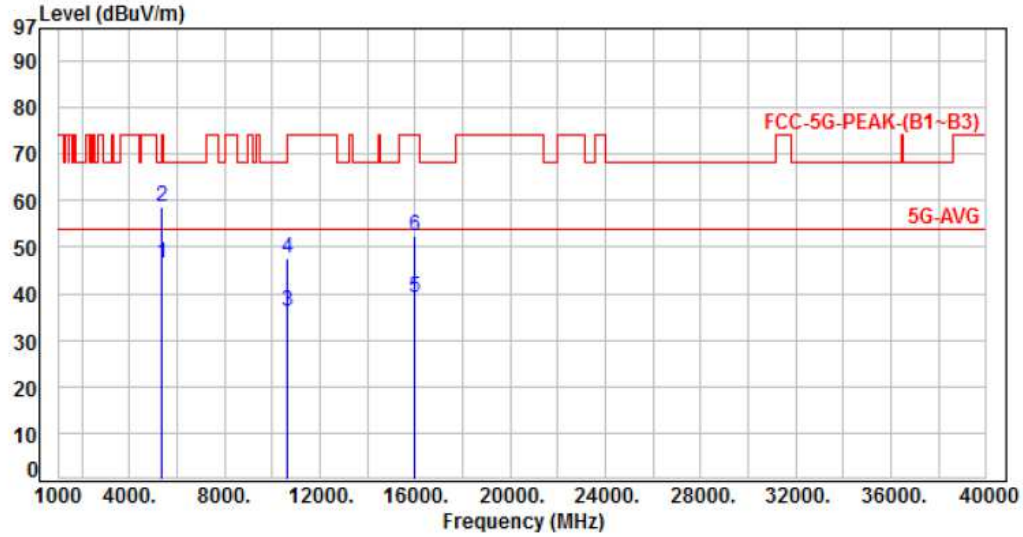
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, Band 2, CH60	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.29	45.96	54.00	-8.04	Average	396	276	P
2	5350.00	-5.33	63.39	58.06	74.00	-15.94	Peak	396	276	P
3	10600.00	2.84	32.07	34.91	54.00	-19.09	Average	227	124	P
4	10600.00	2.84	44.33	47.17	74.00	-26.83	Peak	227	124	P
5	15900.00	9.12	29.87	38.99	54.00	-15.01	Average	100	155	P
6	15900.00	9.12	42.72	51.84	74.00	-22.16	Peak	100	155	P

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

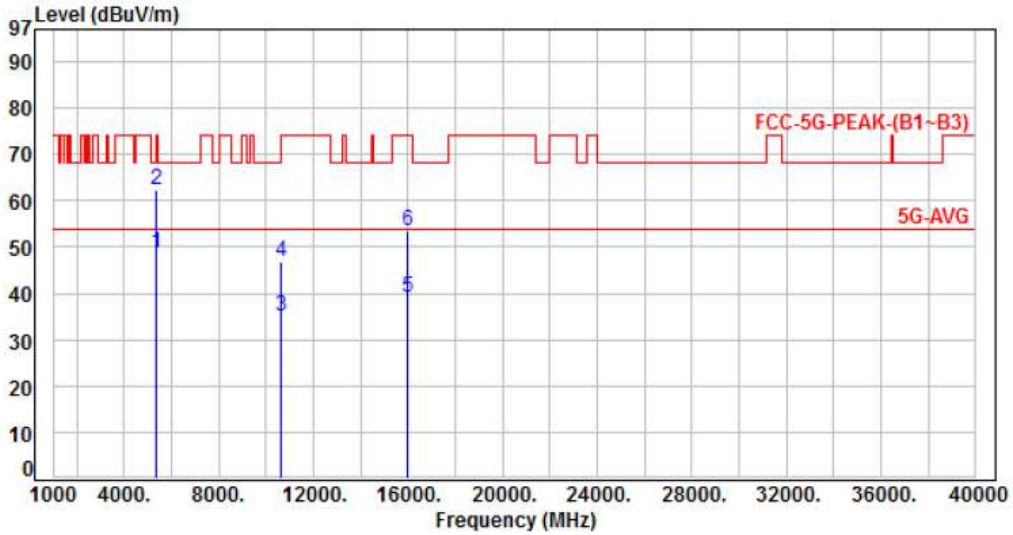
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, Band 2, CH64	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.96	46.63	54.00	-7.37	Average	387	357	P
2	5350.00	-5.33	63.86	58.53	74.00	-15.47	Peak	387	357	P
3	10640.00	2.90	33.36	36.26	54.00	-17.74	Average	100	355	P
4	10640.00	2.90	44.65	47.55	74.00	-26.45	Peak	100	355	P
5	15960.00	9.15	30.04	39.19	54.00	-14.81	Average	100	103	P
6	15960.00	9.15	43.20	52.35	74.00	-21.65	Peak	100	103	P

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

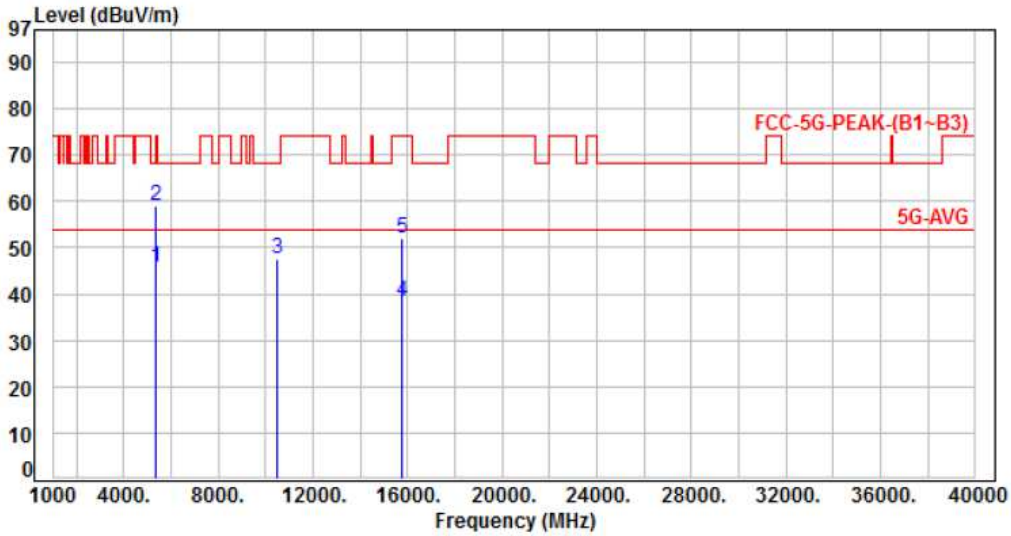
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, Band 2, CH64	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	53.90	48.57	54.00	-5.43	Average	367	286	P
2	5350.00	-5.33	67.61	62.28	74.00	-11.72	Peak	367	286	P
3	10640.00	2.90	32.00	34.90	54.00	-19.10	Average	227	111	P
4	10640.00	2.90	44.09	46.99	74.00	-27.01	Peak	227	111	P
5	15960.00	9.15	29.98	39.13	54.00	-14.87	Average	100	148	P
6	15960.00	9.15	44.42	53.57	74.00	-20.43	Peak	100	148	P

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

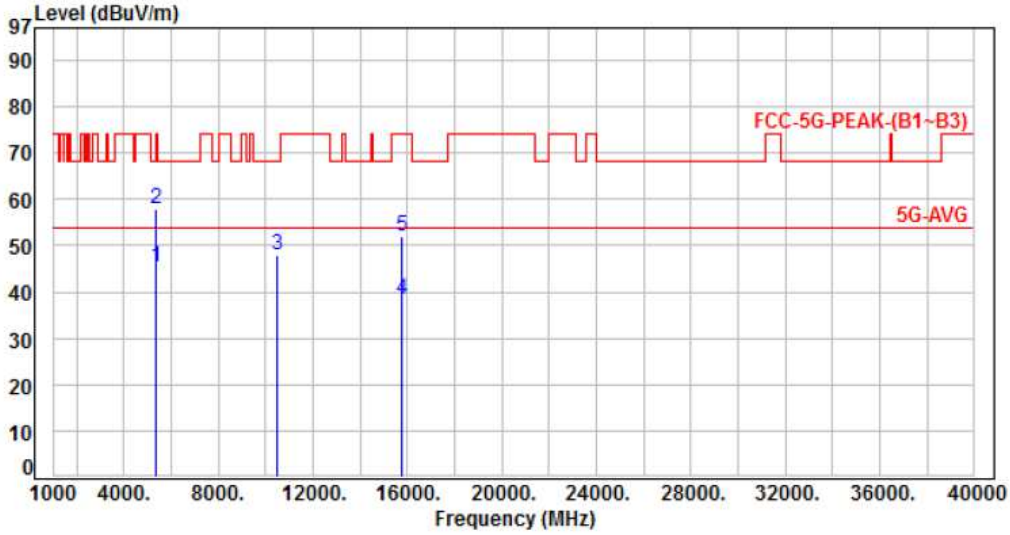
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, Band 2, CH52	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.24	45.91	54.00	-8.09	Average	400	360	P
2	5350.00	-5.33	64.27	58.94	74.00	-15.06	Peak	400	360	P
3	10520.00	2.72	44.90	47.62	68.20	-20.58	Peak	100	351	P
4	15780.00	9.07	29.26	38.33	54.00	-15.67	Average	100	98	P
5	15780.00	9.07	42.99	52.06	74.00	-21.94	Peak	100	98	P

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

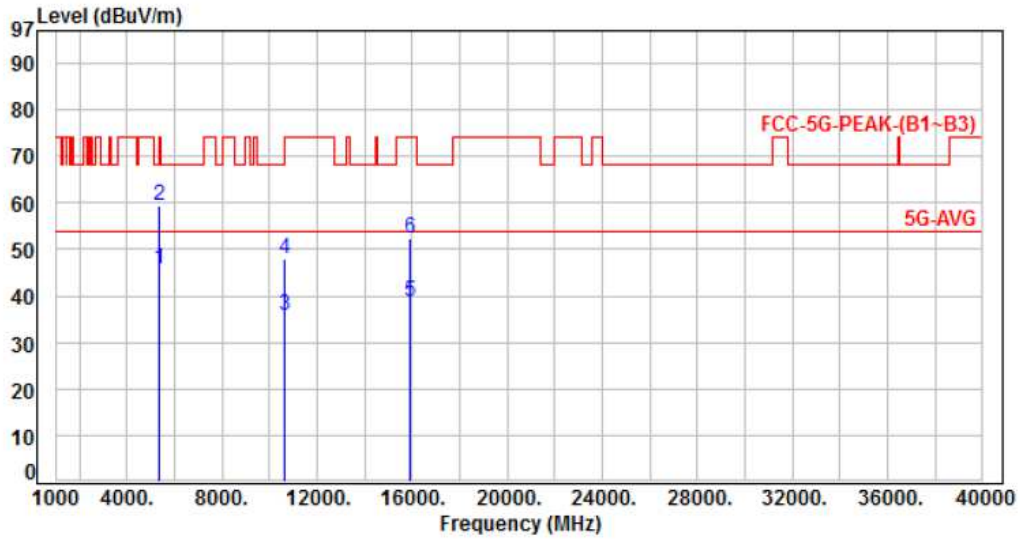
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, Band 2, CH52	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	50.71	45.38	54.00	-8.62	Average	383	288	P
2	5350.00	-5.33	63.32	57.99	74.00	-16.01	Peak	383	288	P
3	10520.00	2.72	45.25	47.97	68.20	-20.23	Peak	227	110	P
4	15780.00	9.07	29.40	38.47	54.00	-15.53	Average	100	152	P
5	15780.00	9.07	43.01	52.08	74.00	-21.92	Peak	100	152	P

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

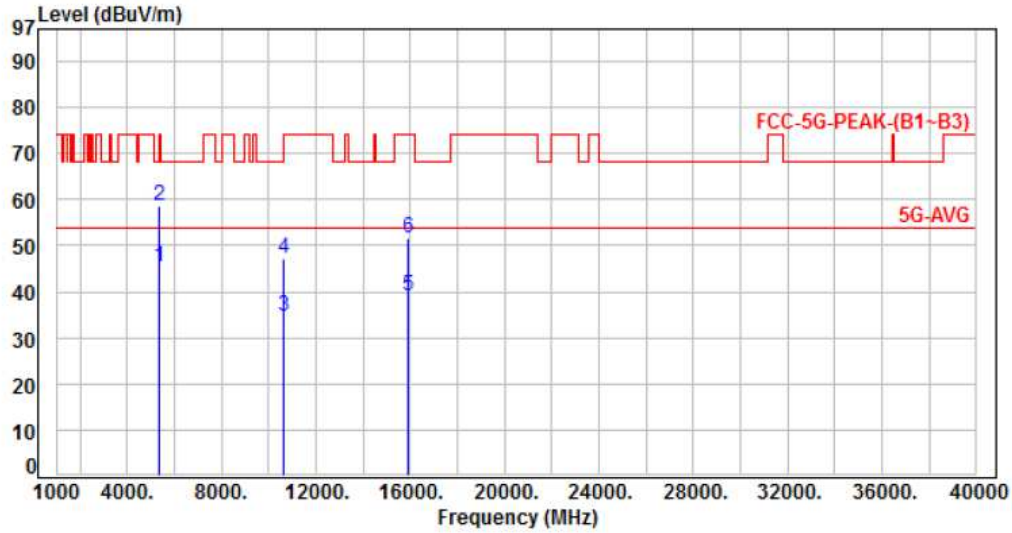
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, Band 2, CH60	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.21	45.88	54.00	-8.12	Average	394	360	P
2	5350.00	-5.33	64.66	59.33	74.00	-14.67	Peak	394	360	P
3	10600.00	2.84	32.97	35.81	54.00	-18.19	Average	100	353	P
4	10600.00	2.84	45.21	48.05	74.00	-25.95	Peak	100	353	P
5	15900.00	9.12	29.76	38.88	54.00	-15.12	Average	100	106	P
6	15900.00	9.12	43.23	52.35	74.00	-21.65	Peak	100	106	P

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

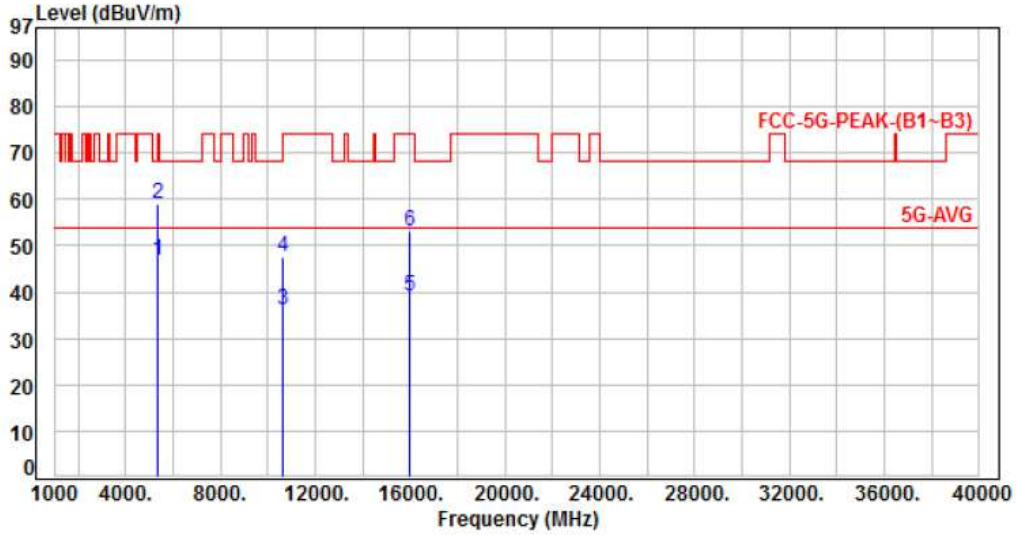
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, Band 2, CH60	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	50.87	45.54	54.00	-8.46	Average	397	284	P
2	5350.00	-5.33	63.94	58.61	74.00	-15.39	Peak	397	284	P
3	10600.00	2.84	31.77	34.61	54.00	-19.39	Average	100	62	P
4	10600.00	2.84	44.36	47.20	74.00	-26.80	Peak	100	62	P
5	15900.00	9.12	29.95	39.07	54.00	-14.93	Average	100	152	P
6	15900.00	9.12	42.67	51.79	74.00	-22.21	Peak	100	152	P

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

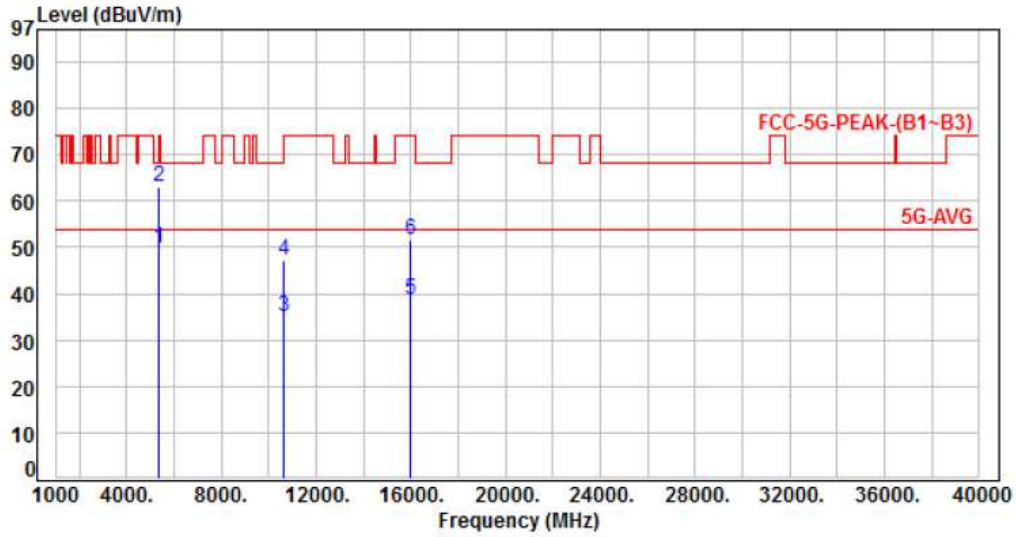
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, Band 2, CH64	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	52.02	46.69	54.00	-7.31	Average	383	360	P
2	5350.00	-5.33	64.38	59.05	74.00	-14.95	Peak	383	360	P
3	10640.00	2.90	33.29	36.19	54.00	-17.81	Average	100	349	P
4	10640.00	2.90	44.65	47.55	74.00	-26.45	Peak	100	349	P
5	15960.00	9.15	29.82	38.97	54.00	-15.03	Average	100	97	P
6	15960.00	9.15	44.02	53.17	74.00	-20.83	Peak	100	97	P

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

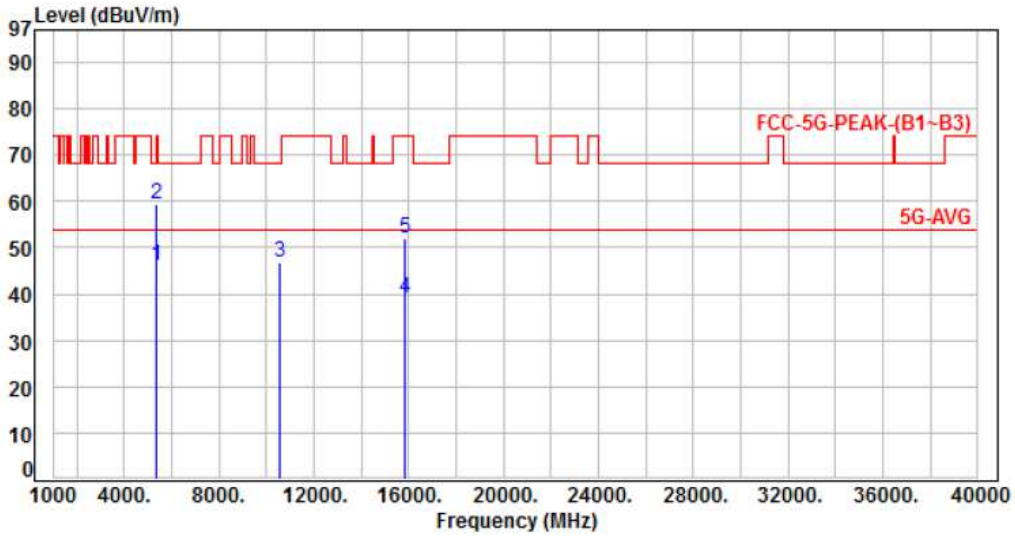
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, Band 2, CH64	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	55.23	49.90	54.00	-4.10	Average	243	296	P
2	5350.00	-5.33	68.47	63.14	74.00	-10.86	Peak	243	296	P
3	10640.00	2.90	32.14	35.04	54.00	-18.96	Average	228	111	P
4	10640.00	2.90	44.21	47.11	74.00	-26.89	Peak	228	111	P
5	15960.00	9.15	29.60	38.75	54.00	-15.25	Average	100	147	P
6	15960.00	9.15	42.59	51.74	74.00	-22.26	Peak	100	147	P

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

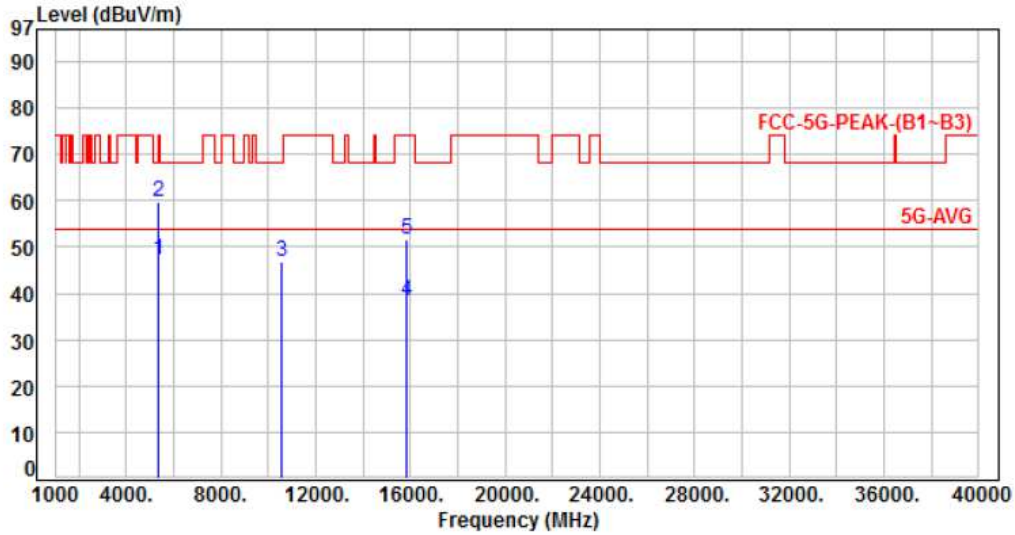
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, Band 2, CH54	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	51.34	46.01	54.00	-7.99	Average	349	0	P
2	5350.00	-5.33	64.71	59.38	74.00	-14.62	Peak	349	0	P
3	10540.00	2.76	44.19	46.95	68.20	-21.25	Peak	100	351	P
4	15810.00	9.08	30.03	39.11	54.00	-14.89	Average	100	105	P
5	15810.00	9.08	42.80	51.88	74.00	-22.12	Peak	100	105	P

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

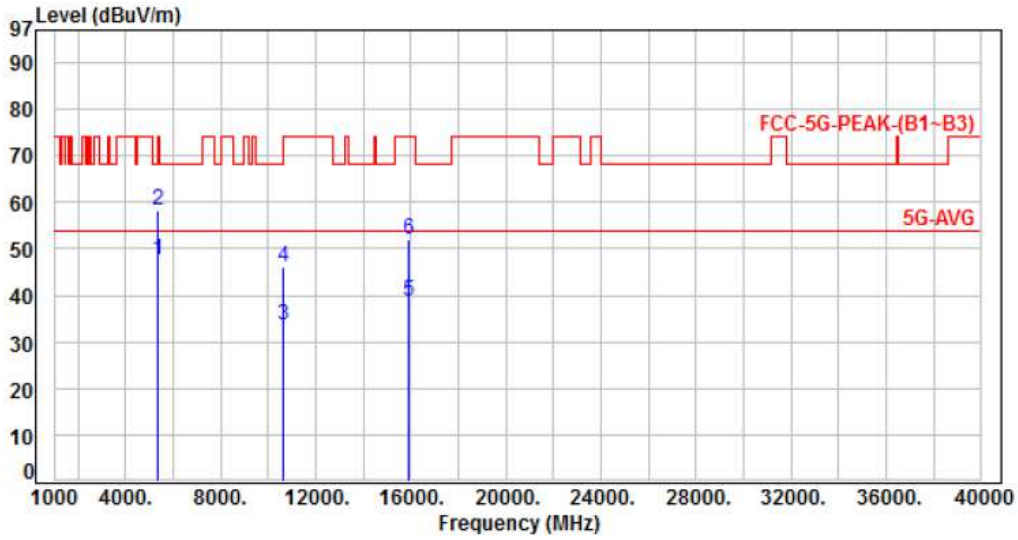
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, Band 2, CH54	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	52.48	47.15	54.00	-6.85	Average	369	280	P
2	5350.00	-5.33	64.97	59.64	74.00	-14.36	Peak	369	280	P
3	10540.00	2.76	44.15	46.91	68.20	-21.29	Peak	229	110	P
4	15810.00	9.08	29.42	38.50	54.00	-15.50	Average	102	150	P
5	15810.00	9.08	42.44	51.52	74.00	-22.48	Peak	102	150	P

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

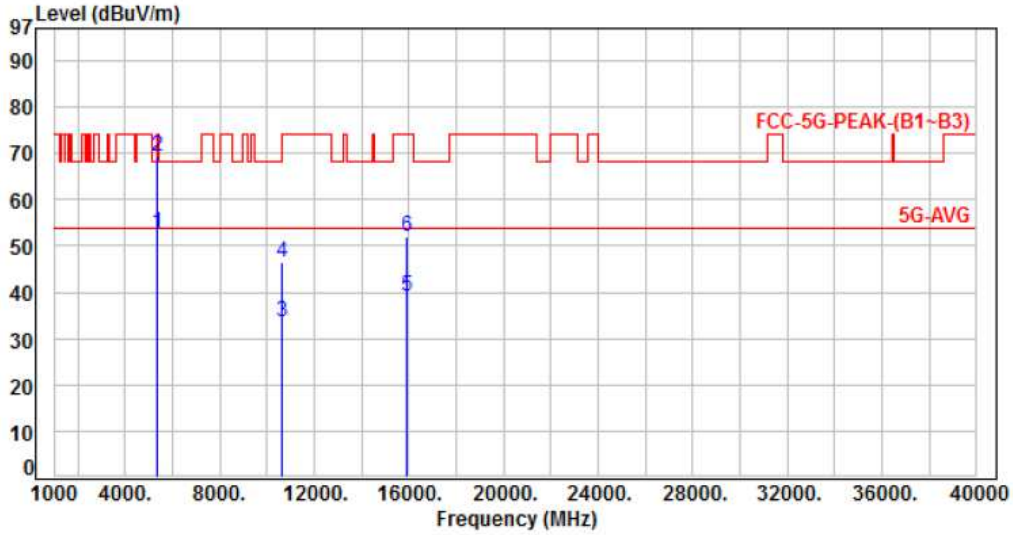
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, Band 2, CH62	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	52.95	47.62	54.00	-6.38	Average	386	0	P
2	5350.00	-5.33	63.71	58.38	74.00	-15.62	Peak	386	0	P
3	10620.00	2.87	30.83	33.70	54.00	-20.30	Average	100	348	P
4	10620.00	2.87	43.29	46.16	74.00	-27.84	Peak	100	348	P
5	15930.00	9.14	29.66	38.80	54.00	-15.20	Average	100	98	P
6	15930.00	9.14	42.98	52.12	74.00	-21.88	Peak	100	98	P

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

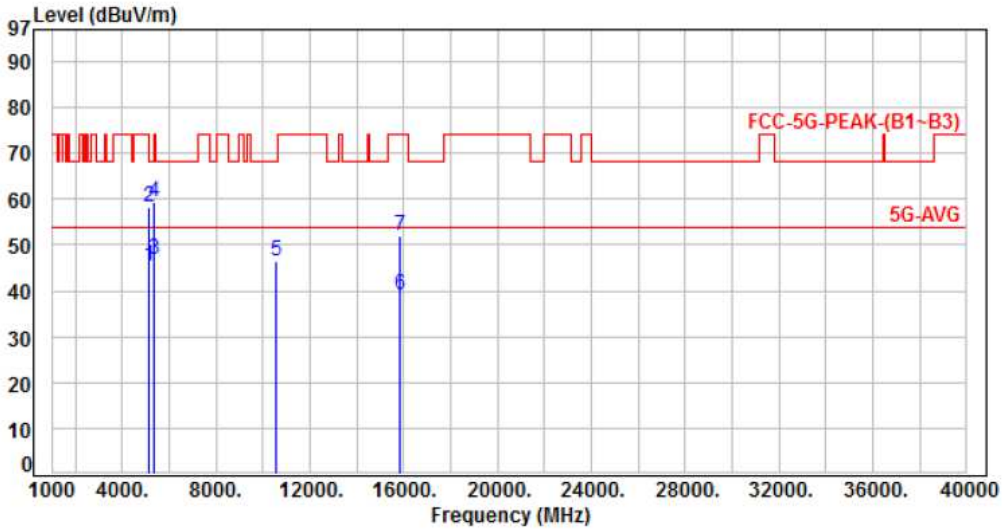
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, Band 2, CH62	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5350.00	-5.33	58.23	52.90	54.00	-1.10	Average	160	286	P
2	5350.00	-5.33	74.56	69.23	74.00	-4.77	Peak	160	286	P
3	10620.00	2.87	30.64	33.51	54.00	-20.49	Average	230	113	P
4	10620.00	2.87	43.73	46.60	74.00	-27.40	Peak	230	113	P
5	15930.00	9.14	29.88	39.02	54.00	-14.98	Average	100	146	P
6	15930.00	9.14	42.89	52.03	74.00	-21.97	Peak	100	146	P

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

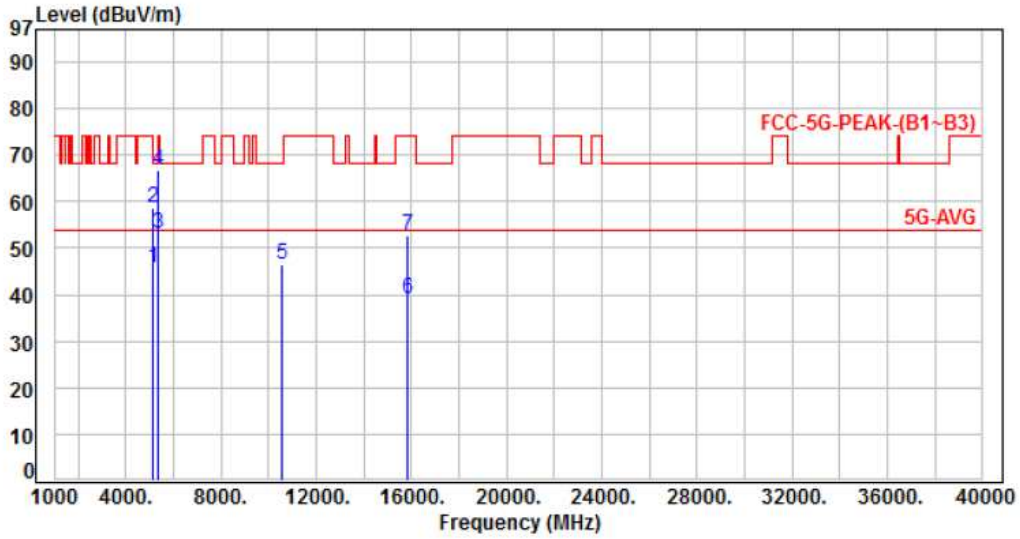
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, Band 2, CH58	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-5.71	51.03	45.32	54.00	-8.68	Average	384	0	P
2	5150.00	-5.71	63.87	58.16	74.00	-15.84	Peak	384	0	P
3	5350.00	-5.33	52.17	46.84	54.00	-7.16	Average	384	0	P
4	5350.00	-5.33	64.55	59.22	74.00	-14.78	Peak	384	0	P
5	10580.00	2.81	43.70	46.51	68.20	-21.69	Peak	100	353	P
6	15870.00	9.10	29.93	39.03	54.00	-14.97	Average	100	104	P
7	15870.00	9.10	42.87	51.97	74.00	-22.03	Peak	100	104	P

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

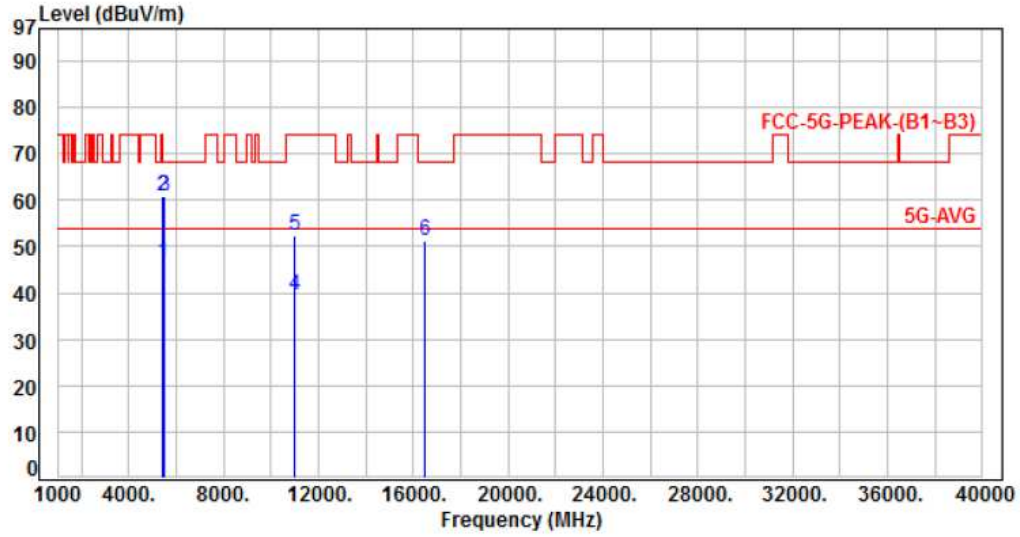
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 4, Band 2, CH58	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-5.71	51.45	45.74	54.00	-8.26	Average	223	284	P
2	5150.00	-5.71	64.27	58.56	74.00	-15.44	Peak	223	284	P
3	5350.00	-5.33	58.30	52.97	54.00	-1.03	Average	223	284	P
4	5350.00	-5.33	72.01	66.68	74.00	-7.32	Peak	223	284	P
5	10580.00	2.81	43.64	46.45	68.20	-21.75	Peak	230	110	P
6	15870.00	9.10	30.01	39.11	54.00	-14.89	Average	100	160	P
7	15870.00	9.10	43.75	52.85	74.00	-21.15	Peak	100	160	P

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

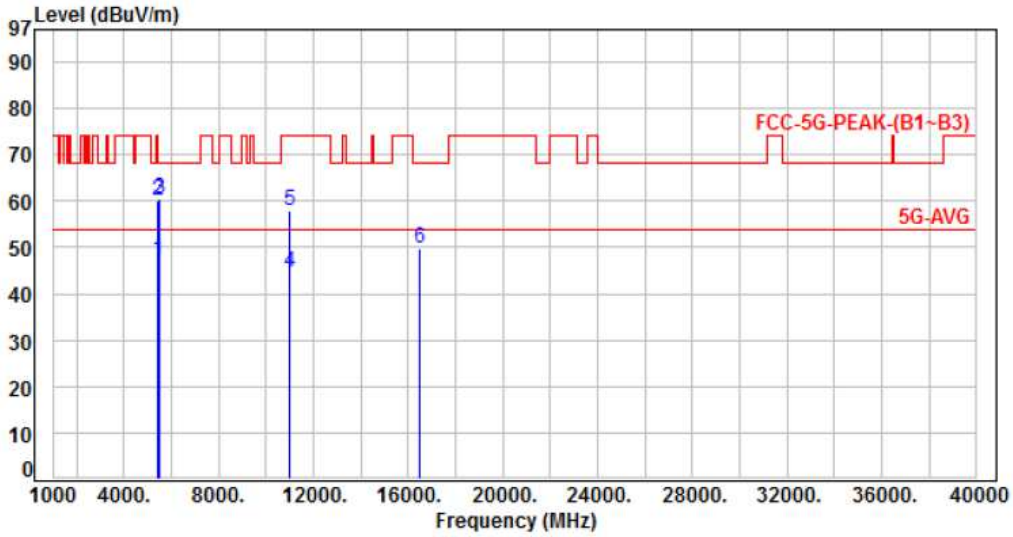
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 3, CH100	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	51.60	46.48	54.00	-7.52	Average	400	25	P
2	5460.00	-5.12	65.90	60.78	74.00	-13.22	Peak	400	25	P
3	5470.00	-5.09	65.89	60.80	68.20	-7.40	Peak	400	25	P
4	11000.00	3.43	36.10	39.53	54.00	-14.47	Average	123	225	P
5	11000.00	3.43	48.80	52.23	74.00	-21.77	Peak	123	225	P
6	16500.00	10.65	40.50	51.15	68.20	-17.05	Peak	115	173	P

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

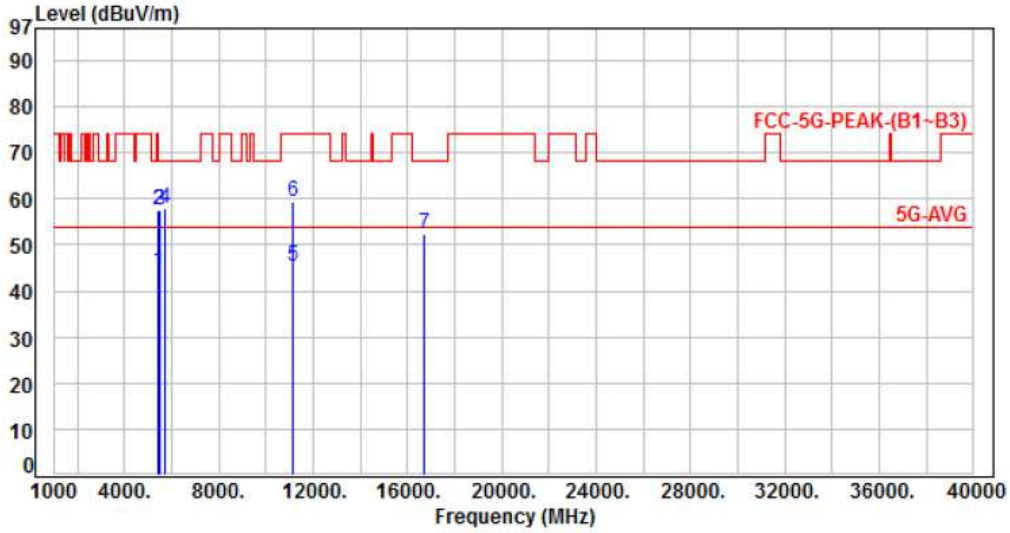
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 3, CH100	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	52.22	47.10	54.00	-6.90	Average	100	272	P
2	5460.00	-5.12	65.40	60.28	74.00	-13.72	Peak	100	272	P
3	5470.00	-5.09	65.69	60.60	68.20	-7.60	Peak	100	272	P
4	11000.00	3.43	41.20	44.63	54.00	-9.37	Average	105	142	P
5	11000.00	3.43	54.60	58.03	74.00	-15.97	Peak	105	142	P
6	16500.00	10.65	39.20	49.85	68.20	-18.35	Peak	100	78	P

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

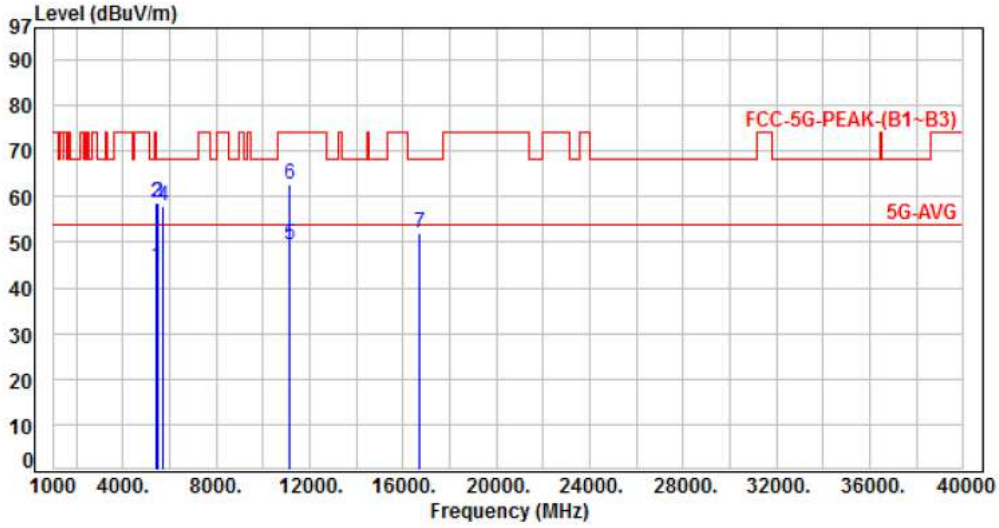
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 3, CH116	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	49.50	44.38	54.00	-9.62	Average	400	28	P
2	5460.00	-5.12	62.70	57.58	74.00	-16.42	Peak	400	28	P
3	5470.00	-5.09	62.59	57.50	68.20	-10.70	Peak	400	28	P
4	5725.00	-4.91	62.67	57.76	68.20	-10.44	Peak	400	28	P
5	11160.00	3.77	41.50	45.27	54.00	-8.73	Average	193	257	P
6	11160.00	3.77	55.50	59.27	74.00	-14.73	Peak	193	257	P
7	16740.00	12.01	40.30	52.31	68.20	-15.89	Peak	100	163	P

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

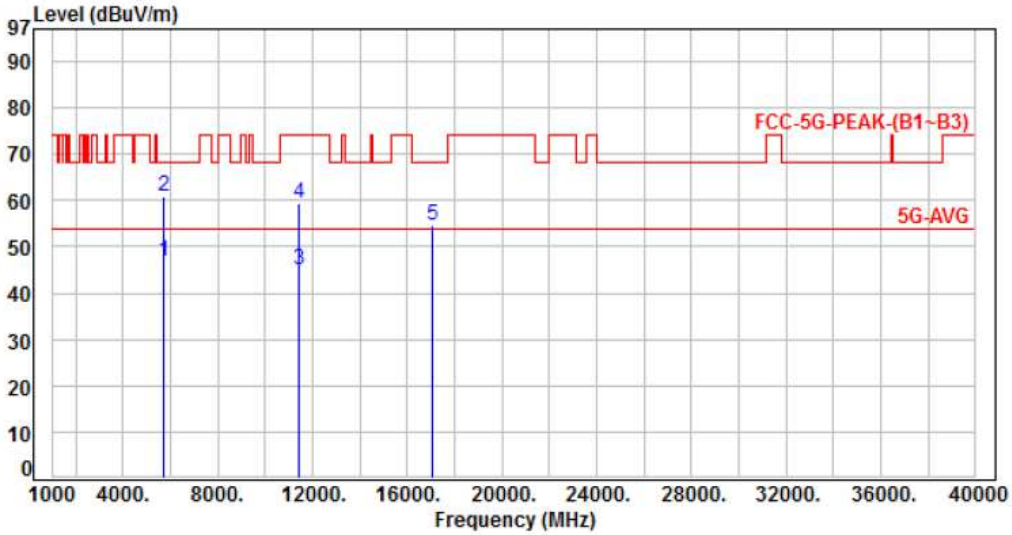
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 3, CH116	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	49.80	44.68	54.00	-9.32	Average	148	285	P
2	5460.00	-5.12	63.80	58.68	74.00	-15.32	Peak	148	285	P
3	5470.00	-5.09	63.89	58.80	68.20	-9.40	Peak	148	285	P
4	5725.00	-4.91	62.70	57.79	68.20	-10.41	Peak	148	285	P
5	11160.00	3.77	45.80	49.57	54.00	-4.43	Average	100	141	P
6	11160.00	3.77	58.90	62.67	74.00	-11.33	Peak	100	141	P
7	16740.00	12.01	39.84	51.85	68.20	-16.35	Peak	102	79	P

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

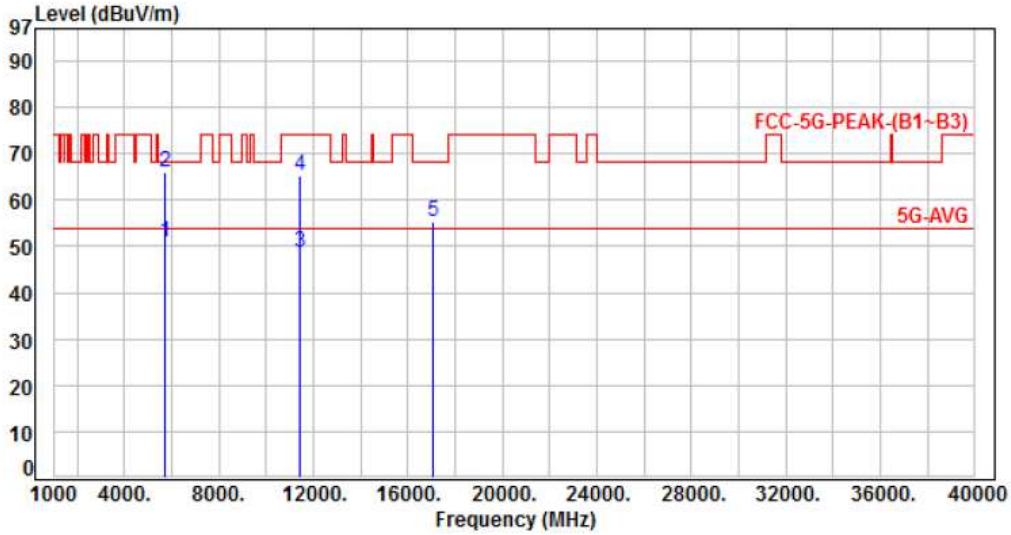
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 3, CH140	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	51.60	46.69	54.00	-7.31	Average	276	34	P
2	5725.00	-4.91	65.81	60.90	68.20	-7.30	Peak	276	34	P
3	11400.00	4.29	40.70	44.99	54.00	-9.01	Average	398	160	P
4	11400.00	4.29	55.20	59.49	74.00	-14.51	Peak	398	160	P
5	17100.00	14.05	40.52	54.57	68.20	-13.63	Peak	115	159	P

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

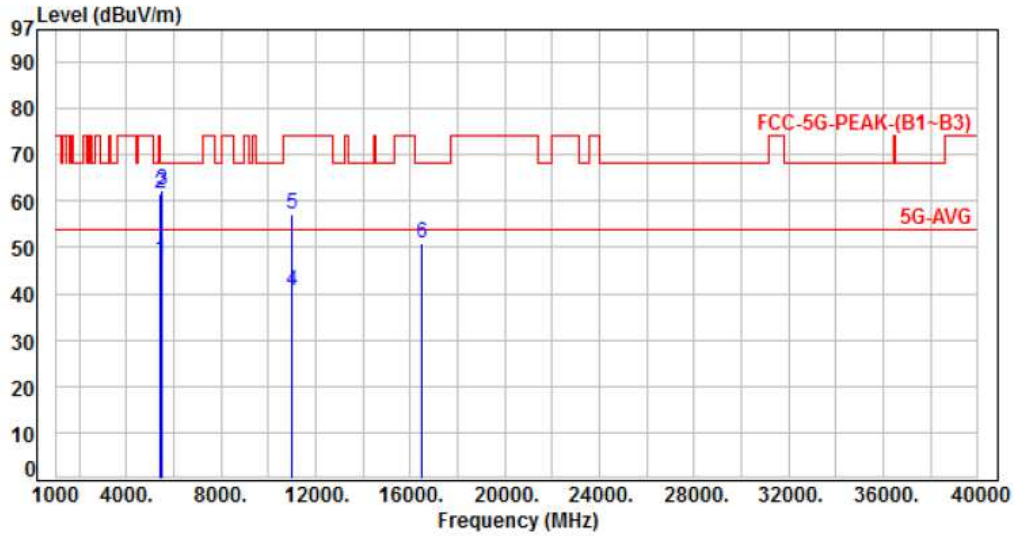
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 3, CH140	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	55.90	50.99	54.00	-3.01	Average	397	60	P
2	5725.00	-4.91	71.10	66.19	68.20	-2.01	Peak	397	60	P
3	11400.00	4.29	44.50	48.79	54.00	-5.21	Average	129	140	P
4	11400.00	4.29	60.90	65.19	74.00	-8.81	Peak	129	140	P
5	17100.00	14.05	41.20	55.25	68.20	-12.95	Peak	100	83	P

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

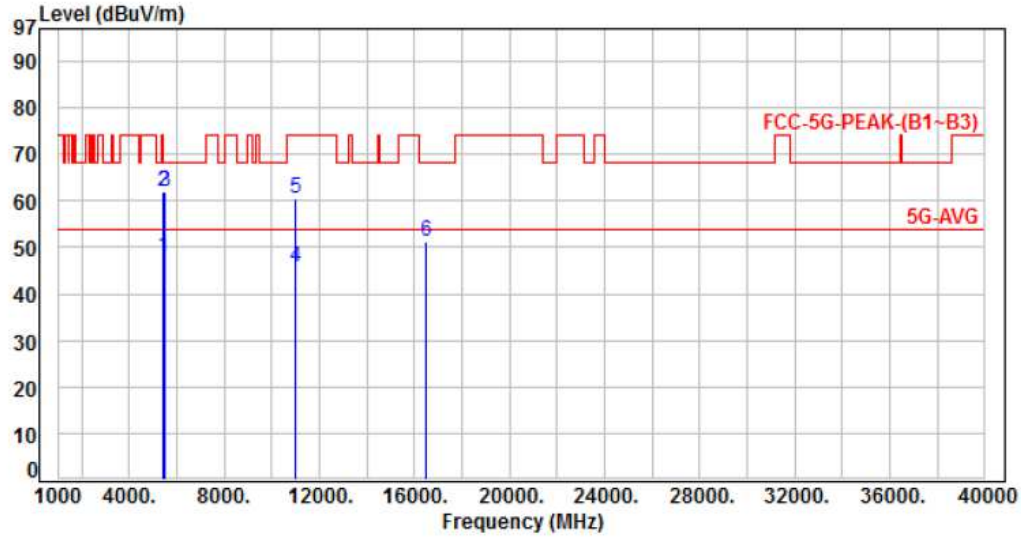
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, Band 3, CH100	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	52.30	47.18	54.00	-6.82	Average	400	14	P
2	5460.00	-5.12	66.80	61.68	74.00	-12.32	Peak	400	14	P
3	5470.00	-5.09	67.29	62.20	68.20	-6.00	Peak	400	14	P
4	11000.00	3.43	37.30	40.73	54.00	-13.27	Average	100	223	P
5	11000.00	3.43	53.60	57.03	74.00	-16.97	Peak	100	223	P
6	16500.00	10.65	40.37	51.02	68.20	-17.18	Peak	107	173	P

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

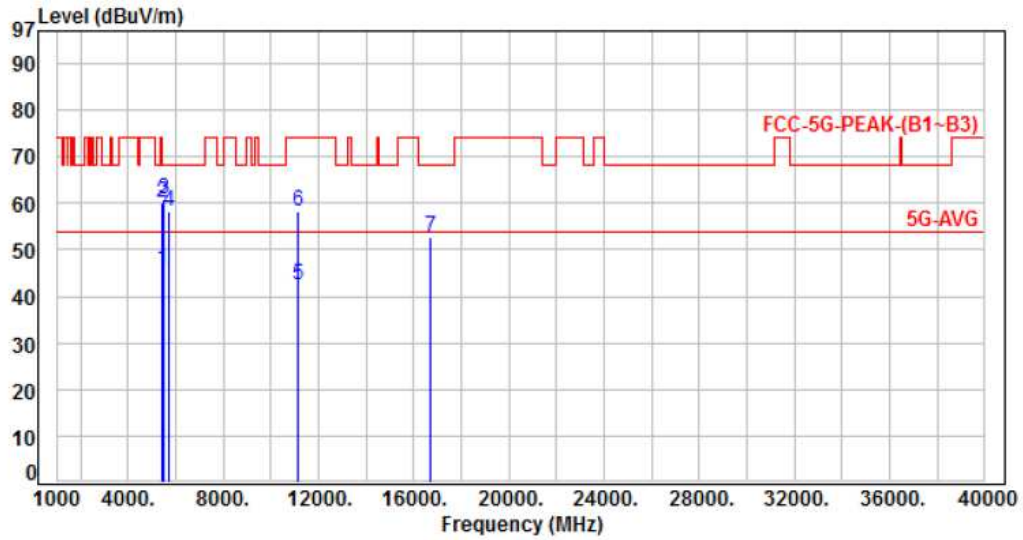
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, Band 3, CH100	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	53.10	47.98	54.00	-6.02	Average	104	45	P
2	5460.00	-5.12	66.90	61.78	74.00	-12.22	Peak	104	45	P
3	5470.00	-5.09	67.09	62.00	68.20	-6.20	Peak	104	45	P
4	11000.00	3.43	42.30	45.73	54.00	-8.27	Average	100	138	P
5	11000.00	3.43	57.20	60.63	74.00	-13.37	Peak	100	138	P
6	16500.00	10.65	40.57	51.22	68.20	-16.98	Peak	100	88	P

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

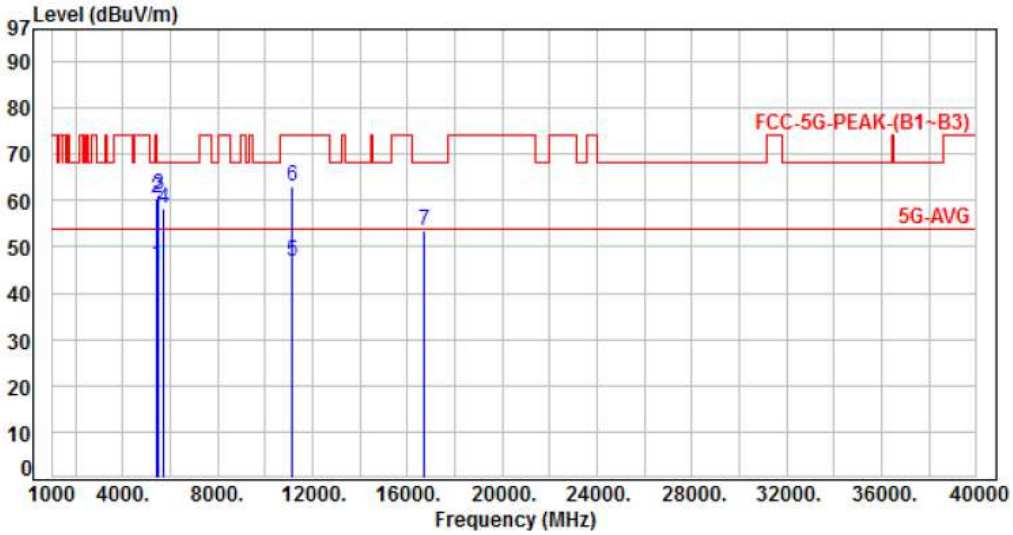
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, Band 3, CH116	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.70	45.58	54.00	-8.42	Average	377	15	P
2	5460.00	-5.12	65.20	60.08	74.00	-13.92	Peak	377	15	P
3	5470.00	-5.09	65.89	60.80	68.20	-7.40	Peak	377	15	P
4	5725.00	-4.91	63.10	58.19	68.20	-10.01	Peak	377	15	P
5	11160.00	3.77	38.50	42.27	54.00	-11.73	Average	100	166	P
6	11160.00	3.77	54.60	58.37	74.00	-15.63	Peak	100	166	P
7	16740.00	12.01	40.67	52.68	68.20	-15.52	Peak	113	152	P

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

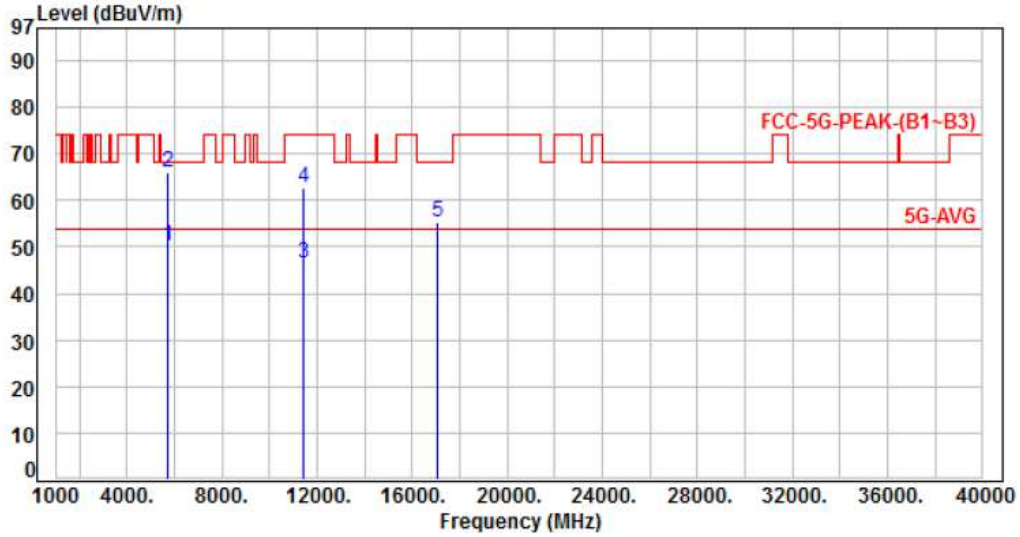
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, Band 3, CH116	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	51.10	45.98	54.00	-8.02	Average	100	281	P
2	5460.00	-5.12	65.60	60.48	74.00	-13.52	Peak	100	281	P
3	5470.00	-5.09	66.19	61.10	68.20	-7.10	Peak	100	281	P
4	5725.00	-4.91	63.13	58.22	68.20	-9.98	Peak	100	281	P
5	11160.00	3.77	42.90	46.67	54.00	-7.33	Average	100	139	P
6	11160.00	3.77	59.40	63.17	74.00	-10.83	Peak	100	139	P
7	16740.00	12.01	41.33	53.34	68.20	-14.86	Peak	100	85	P

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

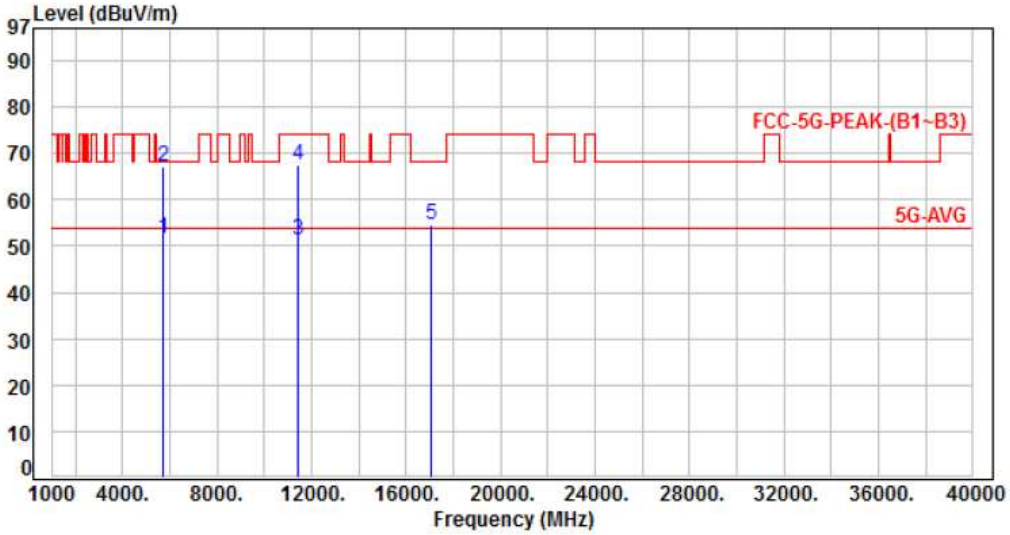
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6, Band 3, CH140	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	55.10	50.19	54.00	-3.81	Average	380	343	P
2	5725.00	-4.91	71.01	66.10	68.20	-2.10	Peak	380	343	P
3	11400.00	4.29	42.10	46.39	54.00	-7.61	Average	182	254	P
4	11400.00	4.29	58.30	62.59	74.00	-11.41	Peak	182	254	P
5	17100.00	14.05	41.33	55.38	68.20	-12.82	Peak	105	133	P

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

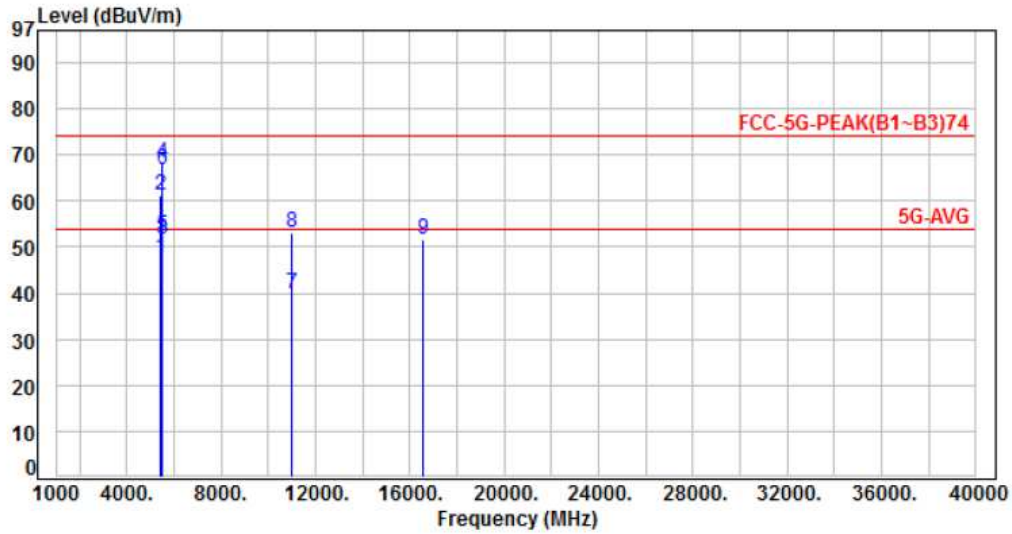
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 6, Band 3, CH140	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	56.50	51.59	54.00	-2.41	Average	393	34	P
2	5725.00	-4.91	72.01	67.10	68.20	-1.10	Peak	393	34	P
3	11400.00	4.29	47.00	51.29	54.00	-2.71	Average	120	141	P
4	11400.00	4.29	63.20	67.49	74.00	-6.51	Peak	120	141	P
5	17100.00	14.05	40.35	54.40	68.20	-13.80	Peak	100	73	P

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

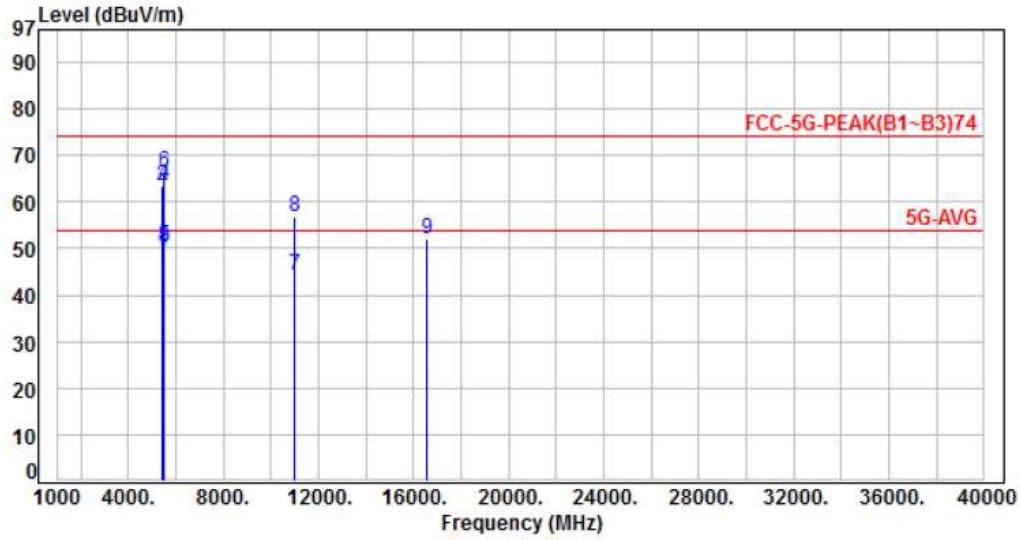
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, Band 3, CH102	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	52.80	47.68	54.00	-6.32	Average	398	12	P
2	5460.00	-5.12	66.40	61.28	74.00	-12.72	Peak	398	12	P
3	5467.60	-5.11	56.91	51.80	54.00	-2.20	Average	398	12	P
4	5467.60	-5.11	73.21	68.10	74.00	-5.90	Peak	398	12	P
5	5470.00	-5.09	57.59	52.50	54.00	-1.50	Average	398	12	P
6	5470.00	-5.09	71.79	66.70	74.00	-7.30	Peak	398	12	P
7	11020.00	3.47	36.50	39.97	54.00	-14.03	Average	100	141	P
8	11020.00	3.47	49.50	52.97	74.00	-21.03	Peak	100	141	P
9	16530.00	10.82	40.88	51.70	74.00	-22.30	Peak	112	163	P

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

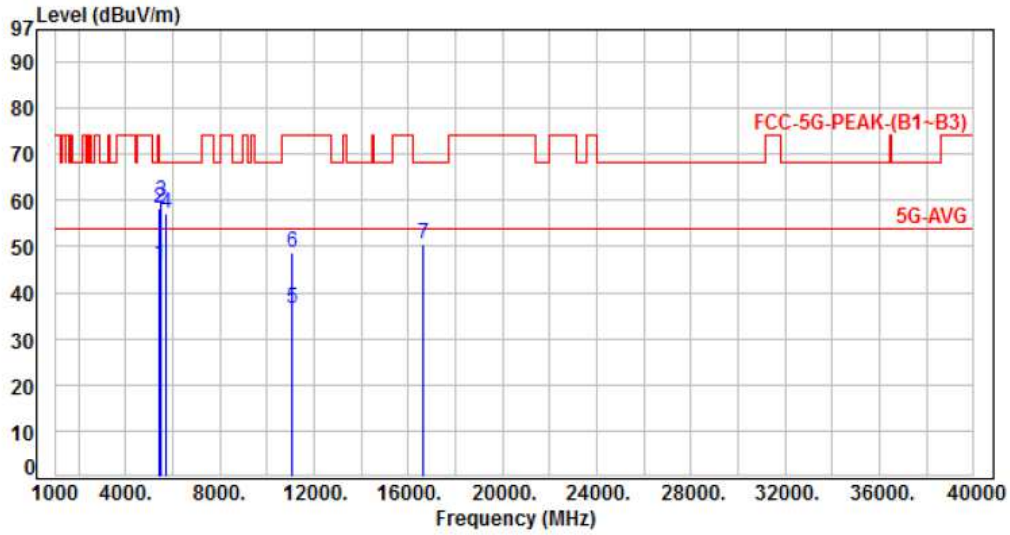
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, Band 3, CH102	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	54.20	49.08	54.00	-4.92	Average	117	278	P
2	5460.00	-5.12	68.70	63.58	74.00	-10.42	Peak	117	278	P
3	5467.60	-5.11	55.31	50.20	54.00	-3.80	Average	117	278	P
4	5467.60	-5.11	68.91	63.80	74.00	-10.20	Peak	117	278	P
5	5470.00	-5.09	55.79	50.70	54.00	-3.30	Average	117	278	P
6	5470.00	-5.09	71.59	66.50	74.00	-7.50	Peak	117	278	P
7	11020.00	3.47	40.80	44.27	54.00	-9.73	Average	107	140	P
8	11020.00	3.47	53.30	56.77	74.00	-17.23	Peak	107	140	P
9	16530.00	10.82	41.33	52.15	74.00	-21.85	Peak	100	91	P

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

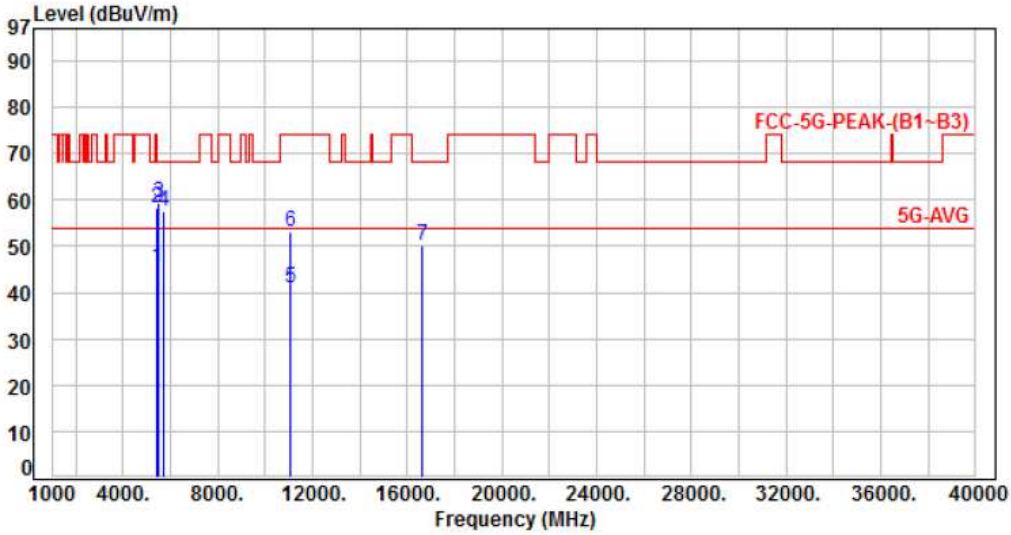
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, Band 3, CH110	Temperature	:	23 °C
Test Date	:	Jul. 19, 2018	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-7.50	53.43	45.93	54.00	-8.07	Average	393	0	P
2	5460.00	-7.50	65.91	58.41	74.00	-15.59	Peak	393	0	P
3	5470.00	-7.47	67.30	59.83	68.20	-8.37	Peak	393	0	P
4	5725.00	-7.35	64.61	57.26	68.20	-10.94	Peak	393	0	P
5	11100.00	0.05	36.30	36.35	54.00	-17.65	Average	100	320	P
6	11100.00	0.05	48.70	48.75	74.00	-25.25	Peak	100	320	P
7	16650.00	6.70	43.66	50.36	68.20	-17.84	Peak	100	123	P

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

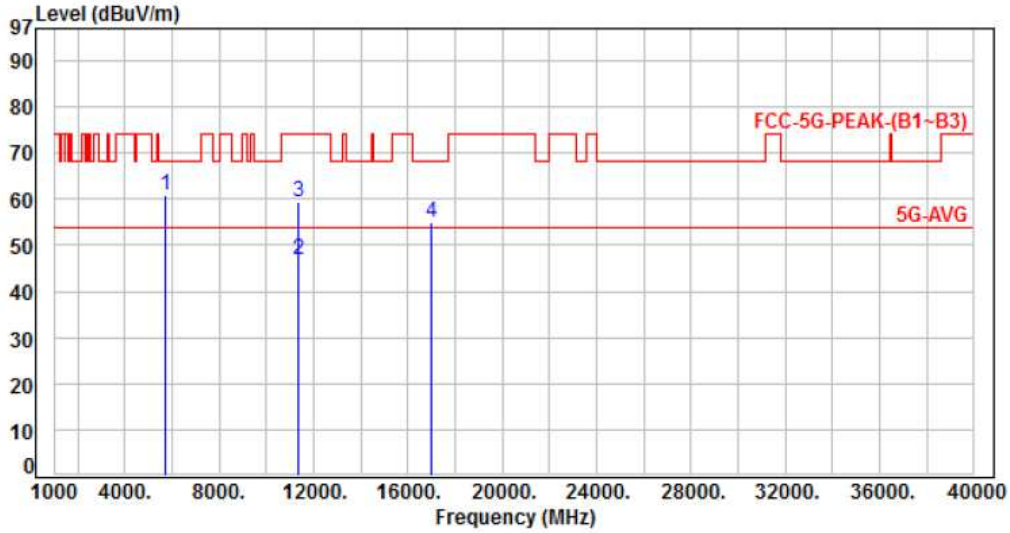
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, Band 3, CH110	Temperature	:	23 °C
Test Date	:	Jul. 19, 2018	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-7.50	52.81	45.31	54.00	-8.69	Average	400	282	P
2	5460.00	-7.50	65.61	58.11	74.00	-15.89	Peak	400	282	P
3	5470.00	-7.47	66.90	59.43	68.20	-8.77	Peak	400	282	P
4	5725.00	-7.35	64.91	57.56	68.20	-10.64	Peak	400	282	P
5	11100.00	0.05	40.80	40.85	54.00	-13.15	Average	190	280	P
6	11100.00	0.05	53.20	53.25	74.00	-20.75	Peak	190	280	P
7	16650.00	6.70	43.60	50.30	68.20	-17.90	Peak	100	66	P

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

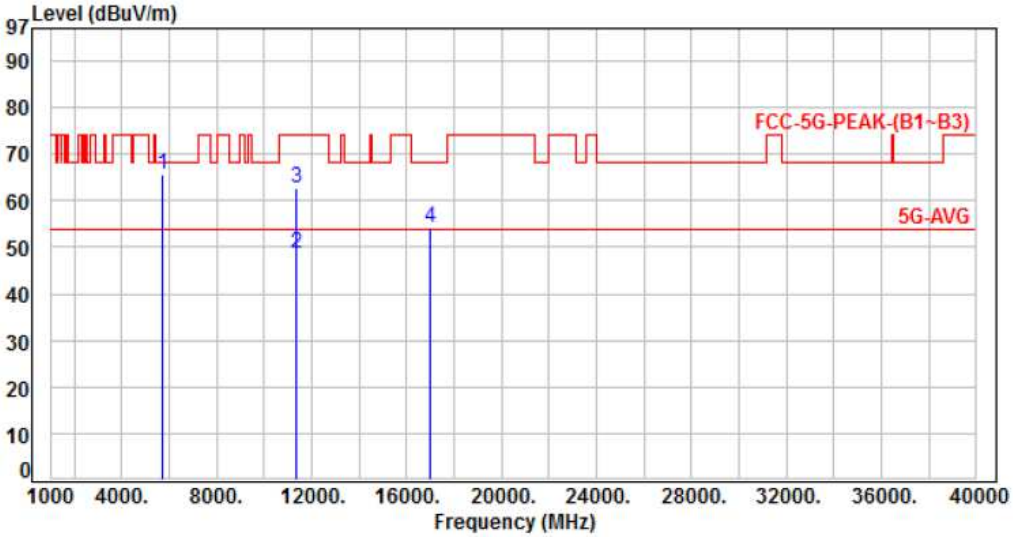
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 7, Band 3, CH134	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	65.70	60.79	68.20	-7.41	Peak	155	26	P
2	11340.00	4.16	42.70	46.86	54.00	-7.14	Average	256	187	P
3	11340.00	4.16	55.20	59.36	74.00	-14.64	Peak	256	187	P
4	17010.00	13.54	41.25	54.79	68.20	-13.41	Peak	100	163	P

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

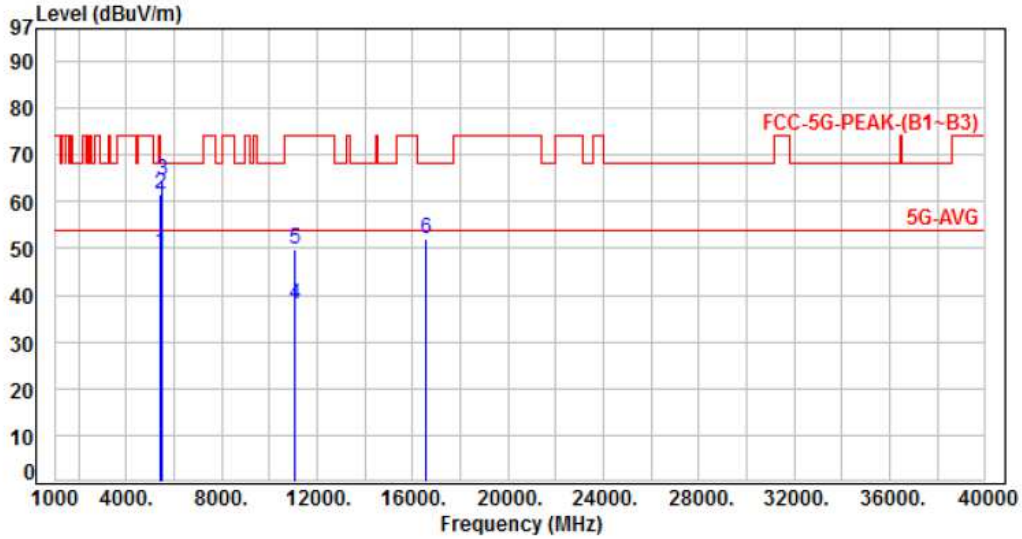
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 7, Band 3, CH134	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5725.00	-4.91	70.60	65.69	68.20	-2.51	Peak	120	60	P
2	11340.00	4.16	44.70	48.86	54.00	-5.14	Average	109	139	P
3	11340.00	4.16	58.60	62.76	74.00	-11.24	Peak	109	139	P
4	17010.00	13.54	40.50	54.04	68.20	-14.16	Peak	115	73	P

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

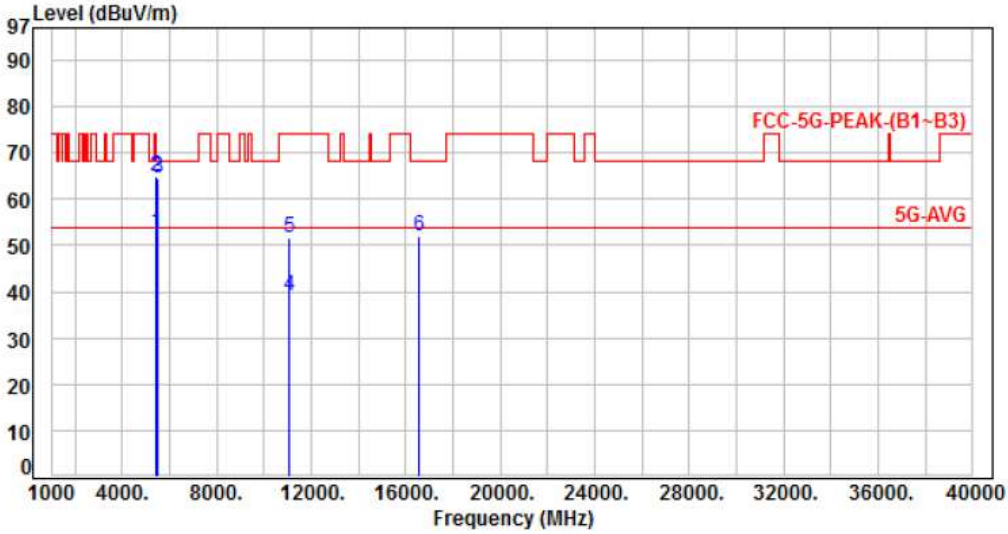
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, Band 3, CH106	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	54.20	49.08	54.00	-4.92	Average	397	21	P
2	5460.00	-5.12	66.80	61.68	74.00	-12.32	Peak	397	21	P
3	5470.00	-5.09	69.79	64.70	68.20	-3.50	Peak	397	21	P
4	11060.00	3.56	34.25	37.81	54.00	-16.19	Average	285	163	P
5	11060.00	3.56	46.11	49.67	74.00	-24.33	Peak	285	163	P
6	16590.00	11.16	40.68	51.84	68.20	-16.36	Peak	108	166	P

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

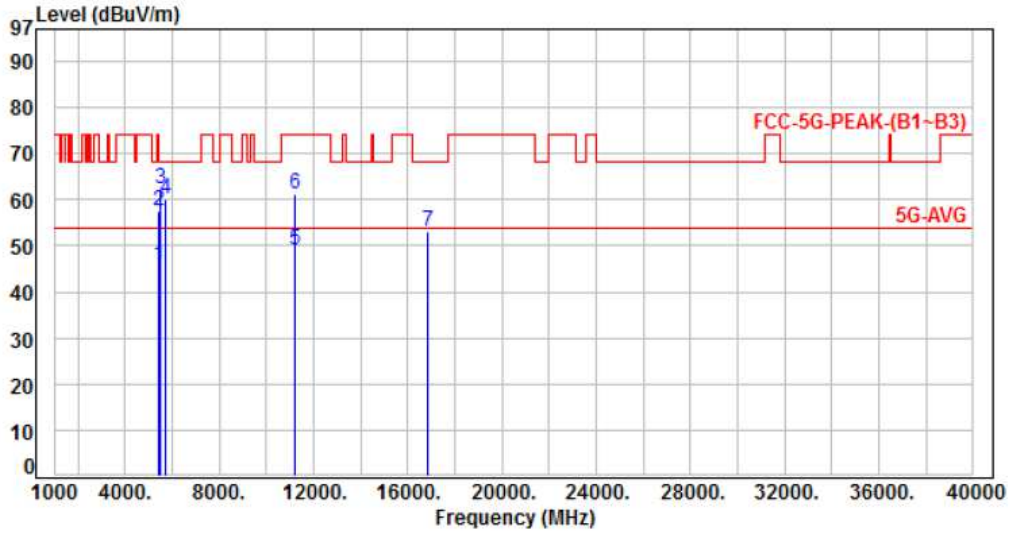
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, Band 3, CH106	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	57.80	52.68	54.00	-1.32	Average	117	44	P
2	5460.00	-5.12	70.20	65.08	74.00	-8.92	Peak	117	44	P
3	5470.00	-5.09	69.79	64.70	68.20	-3.50	Peak	117	44	P
4	11060.00	3.56	35.50	39.06	54.00	-14.94	Average	100	160	P
5	11060.00	3.56	48.10	51.66	74.00	-22.34	Peak	100	160	P
6	16590.00	11.16	40.88	52.04	68.20	-16.16	Peak	106	91	P

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

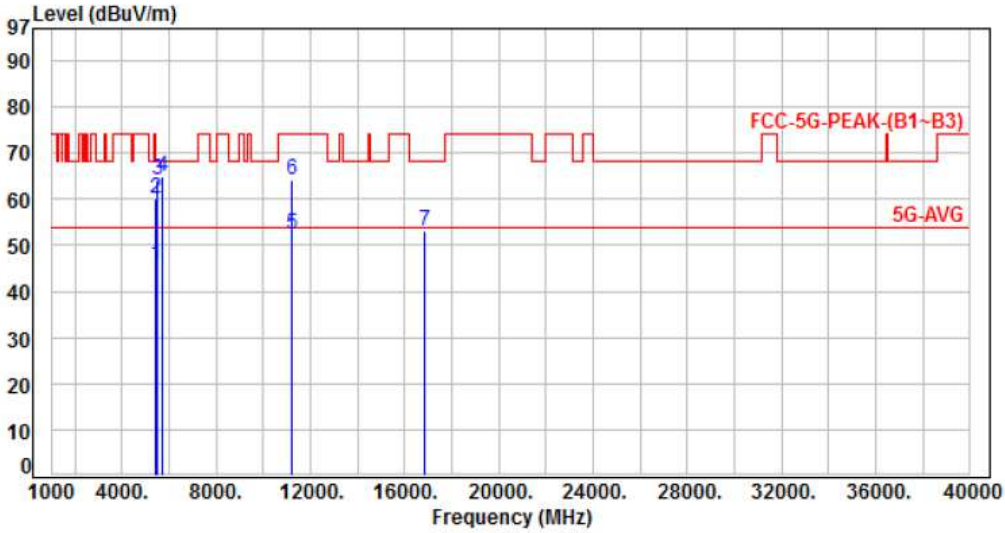
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 8, Band 3, CH122	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	51.00	45.88	54.00	-8.12	Average	172	26	P
2	5460.00	-5.12	62.50	57.38	74.00	-16.62	Peak	172	26	P
3	5470.00	-5.09	67.29	62.20	68.20	-6.00	Peak	172	26	P
4	5725.00	-4.91	64.90	59.99	68.20	-8.21	Peak	172	26	P
5	11220.00	3.90	45.30	49.20	54.00	-4.80	Average	183	256	P
6	11220.00	3.90	57.30	61.20	74.00	-12.80	Peak	183	256	P
7	16830.00	12.52	40.51	53.03	68.20	-15.17	Peak	100	142	P

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

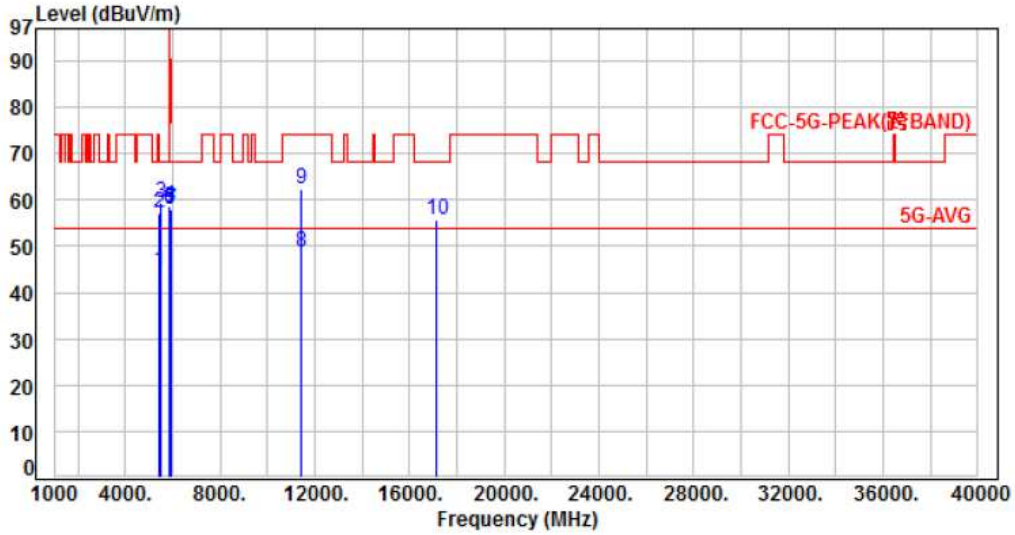
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 8, Band 3, CH122	Temperature	:	22 °C
Test Date	:	Feb. 27, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.80	45.68	54.00	-8.32	Average	121	57	P
2	5460.00	-5.12	65.30	60.18	74.00	-13.82	Peak	121	57	P
3	5470.00	-5.09	69.19	64.10	68.20	-4.10	Peak	121	57	P
4	5725.00	-4.91	69.90	64.99	68.20	-3.21	Peak	121	57	P
5	11220.00	3.90	48.40	52.30	54.00	-1.70	Average	100	140	P
6	11220.00	3.90	60.10	64.00	74.00	-10.00	Peak	100	140	P
7	16830.00	12.52	40.65	53.17	68.20	-15.03	Peak	123	78	P

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

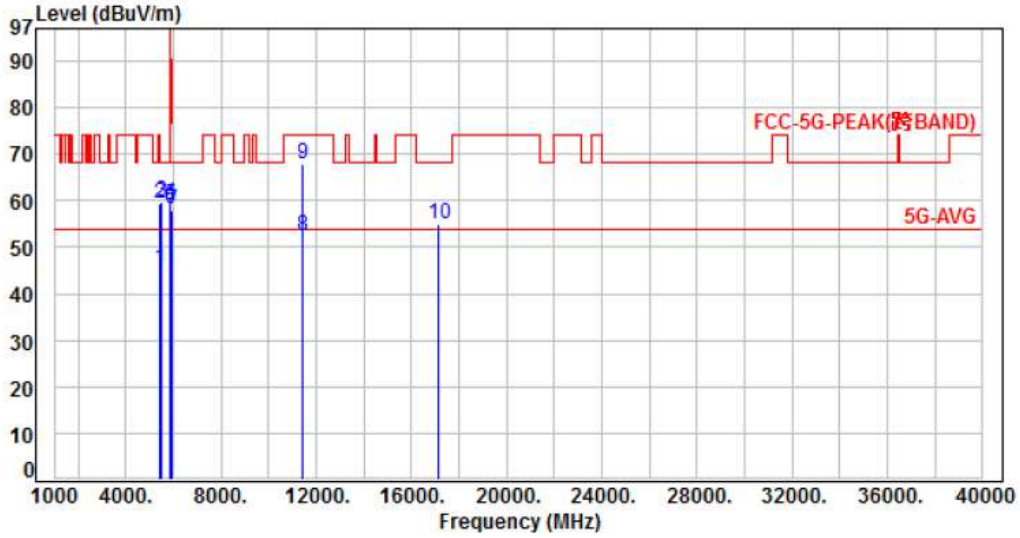
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 9, Band 3 Straddle Channel, CH144	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	49.90	44.78	54.00	-9.22	Average	105	21	P
2	5460.00	-5.12	62.10	56.98	68.20	-11.22	Peak	105	21	P
3	5470.00	-5.09	64.49	59.40	68.20	-8.80	Peak	105	21	P
4	5850.00	-4.83	63.60	58.77	122.20	-63.43	Peak	105	21	P
5	5855.00	-4.82	63.13	58.31	110.80	-52.49	Peak	105	21	P
6	5875.00	-4.82	62.70	57.88	105.20	-47.32	Peak	105	21	P
7	5925.00	-4.79	62.60	57.81	68.20	-10.39	Peak	105	21	P
8	11440.00	4.37	44.20	48.57	54.00	-5.43	Average	181	260	P
9	11440.00	4.37	57.90	62.27	74.00	-11.73	Peak	181	260	P
10	17160.00	14.40	41.33	55.73	68.20	-12.47	Peak	100	156	P

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

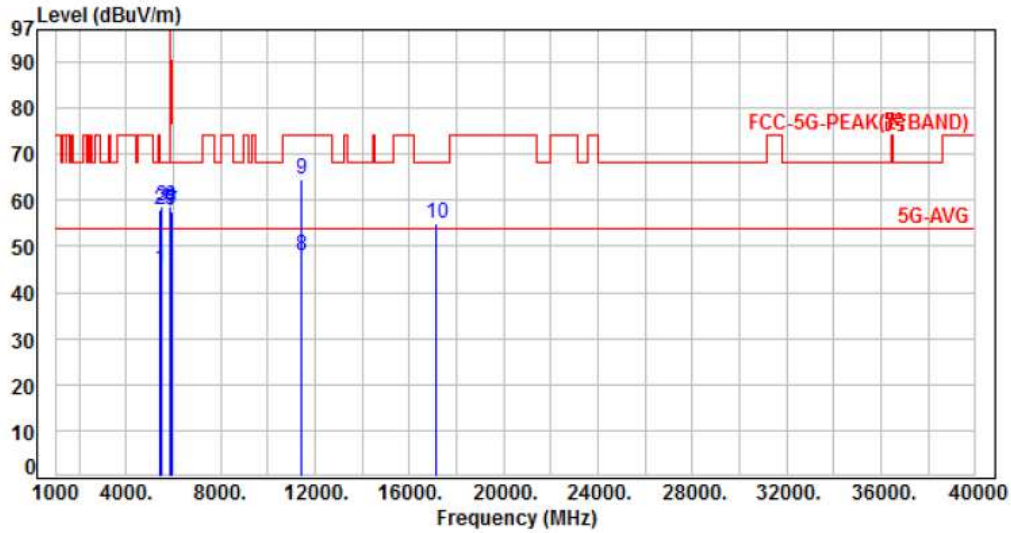
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 9, Band 3 Straddle Channel, CH144	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.50	45.38	54.00	-8.62	Average	391	65	P
2	5460.00	-5.12	64.50	59.38	68.20	-8.82	Peak	391	65	P
3	5470.00	-5.09	64.89	59.80	68.20	-8.40	Peak	391	65	P
4	5850.00	-4.83	64.30	59.47	122.20	-62.73	Peak	391	65	P
5	5855.00	-4.82	63.89	59.07	110.80	-51.73	Peak	391	65	P
6	5875.00	-4.82	62.92	58.10	105.20	-47.10	Peak	391	65	P
7	5925.00	-4.79	62.60	57.81	68.20	-10.39	Peak	391	65	P
8	11440.00	4.37	48.10	52.47	54.00	-1.53	Average	128	141	P
9	11440.00	4.37	63.50	67.87	74.00	-6.13	Peak	128	141	P
10	17160.00	14.40	40.52	54.92	68.20	-13.28	Peak	108	92	P

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

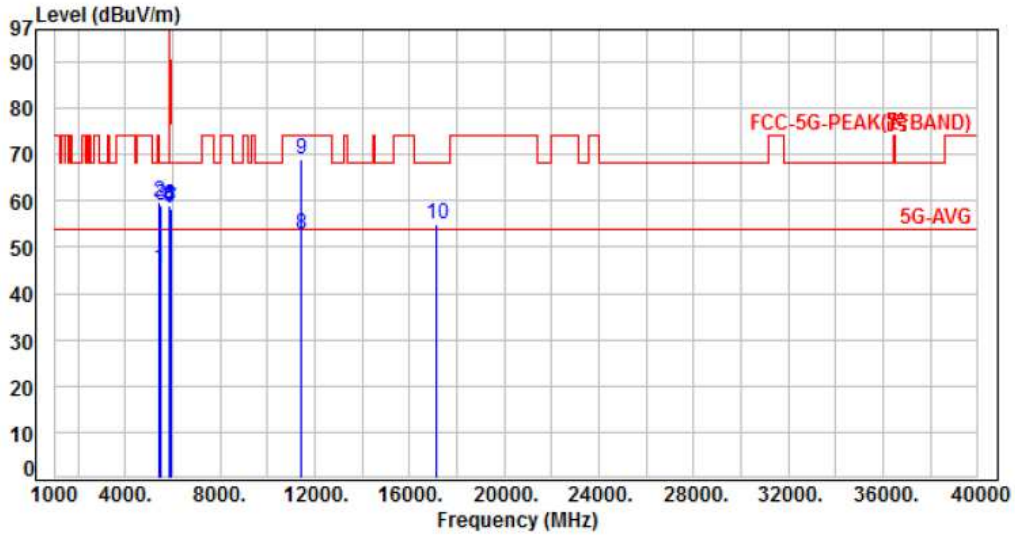
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 10, Band 3 Straddle Channel, CH144	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.00	44.88	54.00	-9.12	Average	114	20	P
2	5460.00	-5.12	63.20	58.08	68.20	-10.12	Peak	114	20	P
3	5470.00	-5.09	63.79	58.70	68.20	-9.50	Peak	114	20	P
4	5850.00	-4.83	63.10	58.27	122.20	-63.93	Peak	114	20	P
5	5855.00	-4.82	62.59	57.77	110.80	-53.03	Peak	114	20	P
6	5875.00	-4.82	63.30	58.48	105.20	-46.72	Peak	114	20	P
7	5925.00	-4.79	62.50	57.71	68.20	-10.49	Peak	114	20	P
8	11440.00	4.37	43.60	47.97	54.00	-6.03	Average	396	162	P
9	11440.00	4.37	60.10	64.47	74.00	-9.53	Peak	396	162	P
10	17160.00	14.40	40.43	54.83	68.20	-13.37	Peak	133	164	P

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

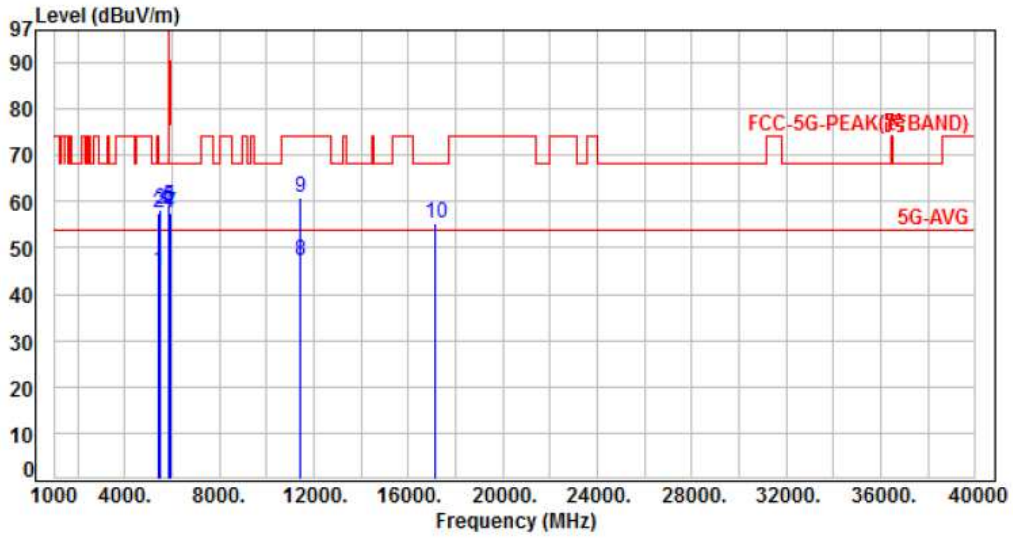
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 10, Band 3 Straddle Channel, CH144	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.50	45.38	54.00	-8.62	Average	119	60	P
2	5460.00	-5.12	64.70	59.58	68.20	-8.62	Peak	119	60	P
3	5470.00	-5.09	64.19	59.10	68.20	-9.10	Peak	119	60	P
4	5850.00	-4.83	63.60	58.77	122.20	-63.43	Peak	119	60	P
5	5855.00	-4.82	63.39	58.57	110.80	-52.23	Peak	119	60	P
6	5875.00	-4.82	63.90	59.08	105.20	-46.12	Peak	119	60	P
7	5925.00	-4.79	63.10	58.31	68.20	-9.89	Peak	119	60	P
8	11440.00	4.37	48.30	52.67	54.00	-1.33	Average	121	141	P
9	11440.00	4.37	64.70	69.07	74.00	-4.93	Peak	121	141	P
10	17160.00	14.40	40.67	55.07	68.20	-13.13	Peak	100	83	P

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

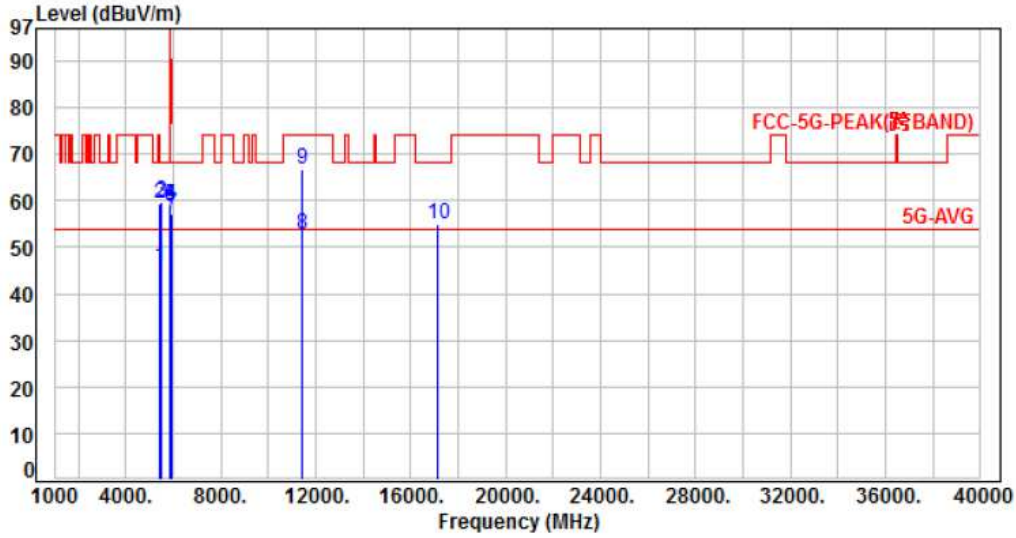
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 11, Band 3 Straddle Channel, CH142	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.20	45.08	54.00	-8.92	Average	105	17	P
2	5460.00	-5.12	62.70	57.58	68.20	-10.62	Peak	105	17	P
3	5470.00	-5.09	63.49	58.40	68.20	-9.80	Peak	105	17	P
4	5850.00	-4.83	62.20	57.37	122.20	-64.83	Peak	105	17	P
5	5855.00	-4.82	63.69	58.87	110.80	-51.93	Peak	105	17	P
6	5875.00	-4.82	63.40	58.58	105.20	-46.62	Peak	105	17	P
7	5925.00	-4.79	62.40	57.61	68.20	-10.59	Peak	105	17	P
8	11420.00	4.32	42.97	47.29	54.00	-6.71	Average	186	258	P
9	11420.00	4.32	56.51	60.83	74.00	-13.17	Peak	186	258	P
10	17130.00	14.23	41.05	55.28	68.20	-12.92	Peak	100	143	P

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

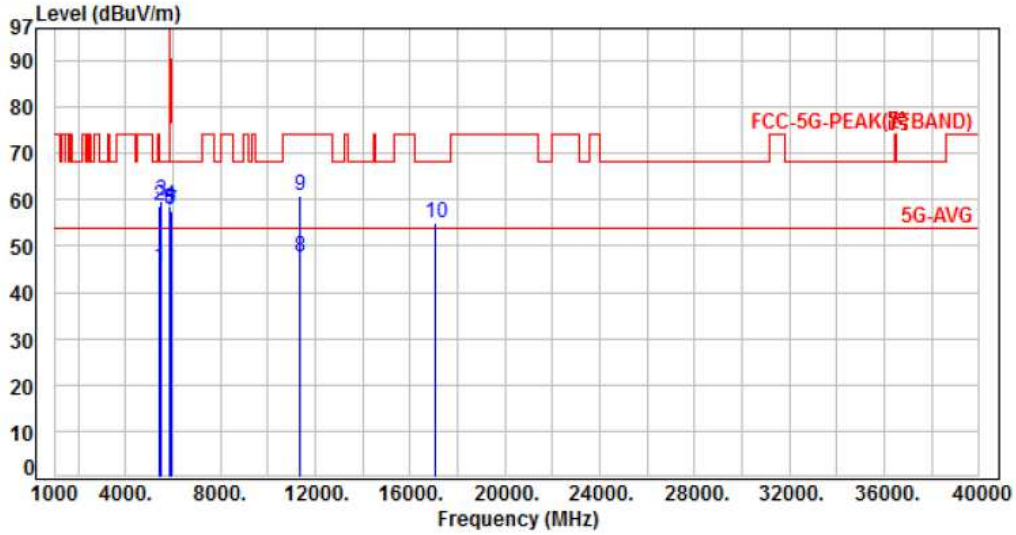
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 11, Band 3 Straddle Channel, CH142	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.90	45.78	54.00	-8.22	Average	372	58	P
2	5460.00	-5.12	64.50	59.38	68.20	-8.82	Peak	372	58	P
3	5470.00	-5.09	64.95	59.86	68.20	-8.34	Peak	372	58	P
4	5850.00	-4.83	63.80	58.97	122.20	-63.23	Peak	372	58	P
5	5855.00	-4.82	63.69	58.87	110.80	-51.93	Peak	372	58	P
6	5875.00	-4.82	63.40	58.58	105.20	-46.62	Peak	372	58	P
7	5925.00	-4.79	62.10	57.31	68.20	-10.89	Peak	372	58	P
8	11420.00	4.32	48.51	52.83	54.00	-1.17	Average	118	142	P
9	11420.00	4.32	62.31	66.63	74.00	-7.37	Peak	118	142	P
10	17130.00	14.23	40.88	55.11	68.20	-13.09	Peak	106	67	P

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

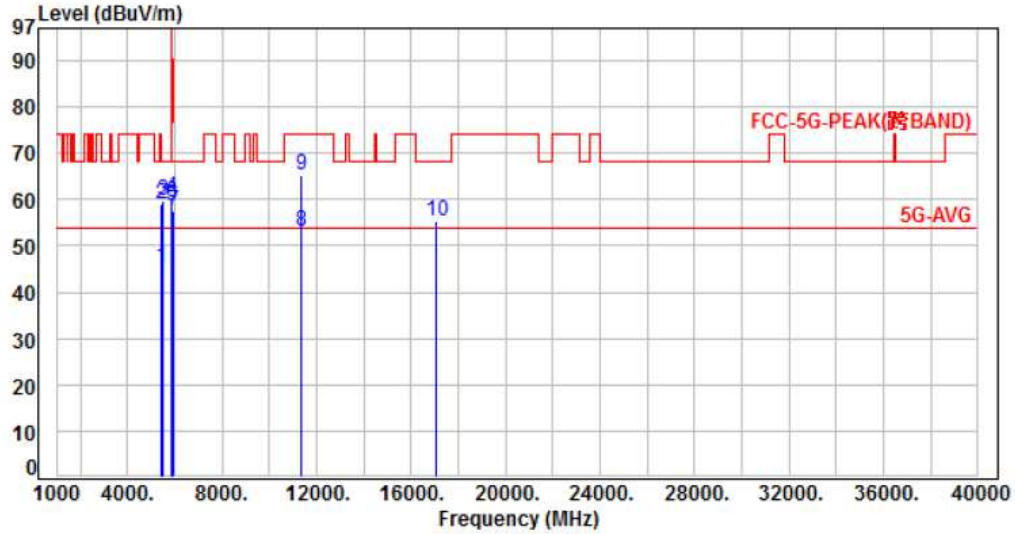
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 12, Band 3 Straddle Channel, CH138	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.30	45.18	54.00	-8.82	Average	118	22	P
2	5460.00	-5.12	63.80	58.68	68.20	-9.52	Peak	118	22	P
3	5470.00	-5.09	64.89	59.80	68.20	-8.40	Peak	118	22	P
4	5850.00	-4.83	63.30	58.47	122.20	-63.73	Peak	118	22	P
5	5855.00	-4.82	62.89	58.07	110.80	-52.73	Peak	118	22	P
6	5875.00	-4.82	62.80	57.98	105.20	-47.22	Peak	118	22	P
7	5925.00	-4.79	62.43	57.64	68.20	-10.56	Peak	118	22	P
8	11380.00	4.25	43.49	47.74	54.00	-6.26	Average	191	261	P
9	11380.00	4.25	56.69	60.94	74.00	-13.06	Peak	191	261	P
10	17070.00	13.88	40.93	54.81	68.20	-13.39	Peak	105	144	P

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

Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 12, Band 3 Straddle Channel, CH138	Temperature	:	22 °C
Test Date	:	Mar. 05, 2018	Humidity	:	63 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5460.00	-5.12	50.50	45.38	54.00	-8.62	Average	400	50	P
2	5460.00	-5.12	64.20	59.08	68.20	-9.12	Peak	400	50	P
3	5470.00	-5.09	64.89	59.80	68.20	-8.40	Peak	400	50	P
4	5850.00	-4.83	65.30	60.47	122.20	-61.73	Peak	400	50	P
5	5855.00	-4.82	63.39	58.57	110.80	-52.23	Peak	400	50	P
6	5875.00	-4.82	64.10	59.28	105.20	-45.92	Peak	400	50	P
7	5925.00	-4.79	62.40	57.61	68.20	-10.59	Peak	400	50	P
8	11380.00	4.25	48.69	52.94	54.00	-1.06	Average	120	139	P
9	11380.00	4.25	61.19	65.44	74.00	-8.56	Peak	120	139	P
10	17070.00	13.88	41.36	55.24	68.20	-12.96	Peak	108	113	P

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

6.7. Restricted Bands of Operation

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

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.150
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

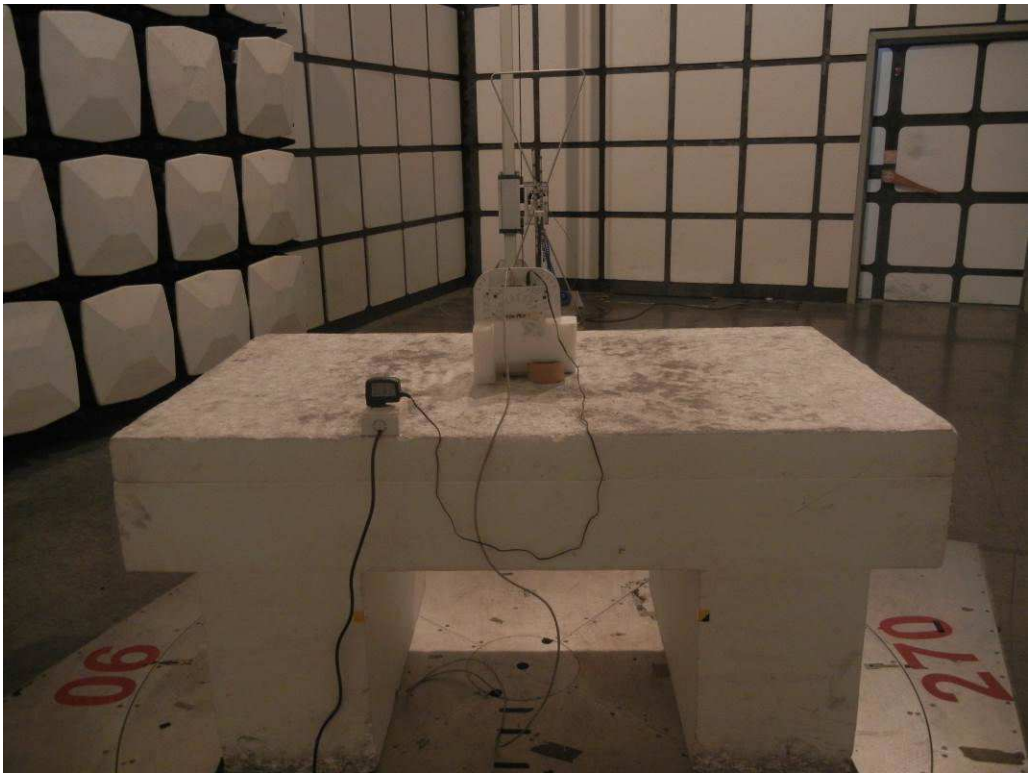
**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

6.8. Test Photographs (30MHz ~ 1GHz)

Power from Adapter

Front View

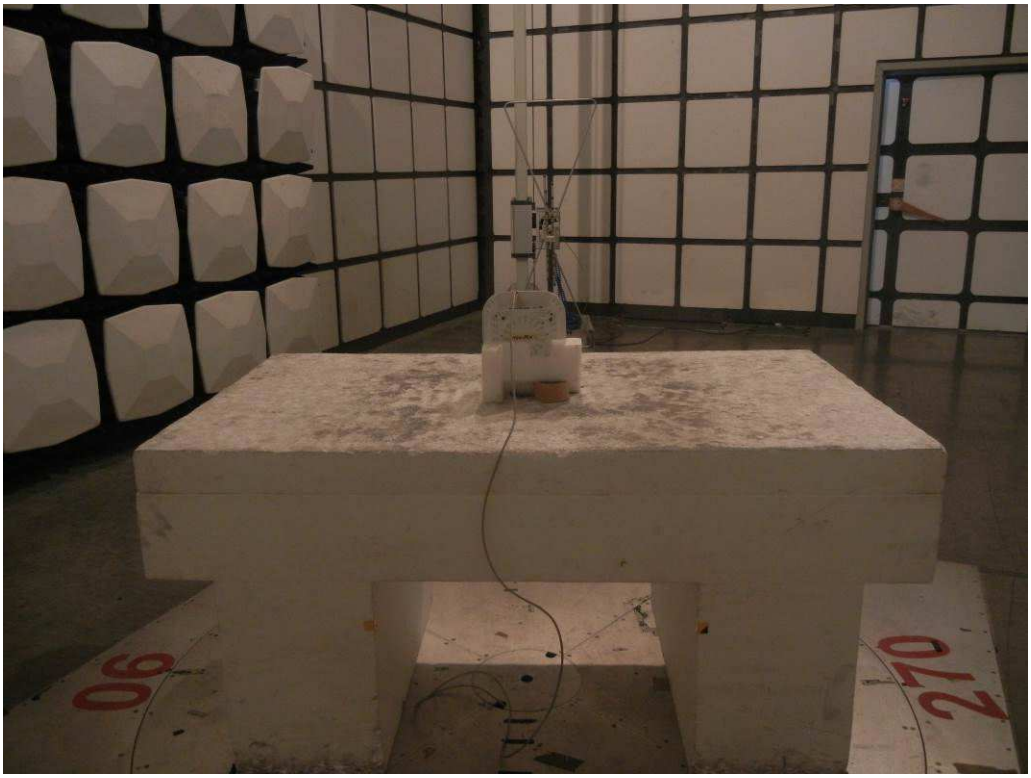
Rear View



Power from PoE

Front View

Rear View



6.9. Test Photographs (1GHz ~ 40GHz)

Front View

Rear View