FCC RADIO TEST REPORT

Applicant	:	TRENDnet, Inc.
Address	:	20675 Manhattan Place, Torrance, CA 90501 U.S.A.
Equipment	:	(1)AC1200 Dual Band PoE Indoor Wireless Access Point (2)AC1200 Dual Band PoE+ Wireless Controller Kit
Model No.	:	(1)TEW-821DAP (2)TEW-821DAP2KAP
Trade Name	:	TRENDnet
FCC ID	:	XU8TEW821DAPV2

I HEREBY CERTIFY THAT :

The sample was received on Nov. 27, 2017 and the testing was carried out on Jan. 15, 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

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History of this test report

Report No.	Issue Date	Description
TEFE1712100	Jan. 24, 2018	Original

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
15.407(g)	Frequency Stability	Pass
15.407(c)	Automatically Discontinue Transmission	Pass
2.1091	Radio Frequency Exposure	Pass

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment and Model Description

Equipment	(1) AC1200 Dual Band PoE Indoor Wireless Access Point (2) AC1200 Dual Band PoE+ Wireless Controller Kit
Model No.	(1) TEW-821DAP (2) TEW-821DAP2KAP
Brand Name	TRENDnet
Product Description	Please refer to User's Manual.
Connecting I/O Port(s)	Please refer to User's Manual.
AC ADAPTER	Adapter Brand: AMIGO Model No.: AMS135-1201000FU, AMS135-1201000FV AMS135-1201000FB, AMS135-1201000FS I/P: AC 100-240V~, 50/60Hz, 0.5A ; O/P: DC 12V, 1.0A
PoE	42.5-57Vdc/0.6A
Memo	V2.0R
Frequency Range	802.11b/g/n: 2412-2462 MHz 802.11a/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	PIFA Antenna 2412-2462MHz: ANT A, B: 3.0 dBi 5150MHz-5250MHz: ANT A, B: 4.0 dBi 5725MHz -5850MHz: ANT A, B: 4.0 dBi

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. The Difference of Model No.

The differences between all model numbers as below:

Model no.	Equipment	Remark
TEW-821DAP	AC1200 Dual Band PoE Indoor Wireless Access Point	The differences between these two model numbers are for marketing purpose, the circuit design and layout are the same.
TEW-821DAP2KAP	AC1200 Dual Band PoE+ Wireless Controller Kit	

2.3. Carrier Frequency of Channels

Band 1: 5150MHz-5250MHz

802.11a, 802.11ac VHT20

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***36**	**5180**	***44**	**5220**
40	5200	***48**	**5240**

802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***38**	**5190**	***46**	**5230**

802.11ac VHT80

Channel	Frequency(MHz)
***42**	**5210**

Band 4: 5725MHz -5850MHz

802.11a, 802.11ac VHT20

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

802.11ac VHT40

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***151**	**5755**	***159**	**5795**

802.11ac VHT80

Channel	Frequency(MHz)
***155**	**5775**

Note: Channels remarked * are selected to perform test.

2.4. 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, ”QRCT v3.0.219” under WIN 8 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	802.11a (6Mbps), Power from Adapter
2	802.11ac VHT20 (6.5Mbps), Power from Adapter
3	802.11ac VHT40 (13.5Mbps), Power from Adapter
4	802.11ac VHT80 (29.3Mbps), Power from Adapter
5	802.11a (6Mbps), Power from PoE
6	802.11ac VHT20 (6.5Mbps), Power from PoE
7	802.11ac VHT40 (13.5Mbps), Power from PoE
8	802.11ac VHT80 (29.3Mbps), Power from PoE
caused “Test Mode 1,5” generated the worst case, they were reported as the final data.	
Radiation Emissions (1GHz ~ 40GHz)	
Test Mode	Operating Description
1	802.11a (6Mbps), Power from Adapter
2	802.11ac VHT20 (6.5Mbps), Power from Adapter
3	802.11ac VHT40 (13.5Mbps), Power from Adapter
4	802.11ac VHT80 (29.3Mbps), Power from Adapter
caused “Test Mode 1~4” generated the worst case, they were reported as the final data.	

Note: Non-Beamforming was used for the test result.

2.5. Description of Test System

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

2.6. 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-1012, 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.	

2.7. 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	8127-568	2017/02/15	2018/02/14
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	31589	2017/02/18	2018/02/17
Horn Anrenna	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	2017/09/20	2018/09/19
Preamplifier	Agilent	8449B	3008A01954	2017/02/09	2018/02/08
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2017/11/10	2018/11/09
MXG MW Analog Signal Generator	KEYSIGHT	N5183A	MY50142931	2017/03/17	2018/03/16
Spectrum Analyzer	R&S	FSP40	100219	2017/07/01	2018/06/30
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	2017/09/04	2018/09/03
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. 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	PIFA Antenna
Antenna Gain	2412-2462MHz: ANT A, B: 3.0 dBi 5150MHz-5250MHz: ANT A, B: 4.0 dBi 5725MHz -5850MHz: ANT A, B: 4.0 dBi

(Non-Beamforming)

2412-2462MHz
For Power directional gain= G_{ant}= 3.0 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 6.01 (dBi)
5150MHz -5250MHz
For Power directional gain= G_{ant}= 4.0 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.01 (dBi)
5725MHz -5850MHz
For Power directional gain= G_{ant}= 4.0 dBi For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.01 (dBi)

(Beamforming)

5150MHz -5250MHz
For Power directional gain= 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.01 (dBi) For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT]= 7.01 (dBi)
5725MHz -5850MHz
For Power directional gain= 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT] = 7.01 (dBi) For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /NANT]= 7.01 (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.

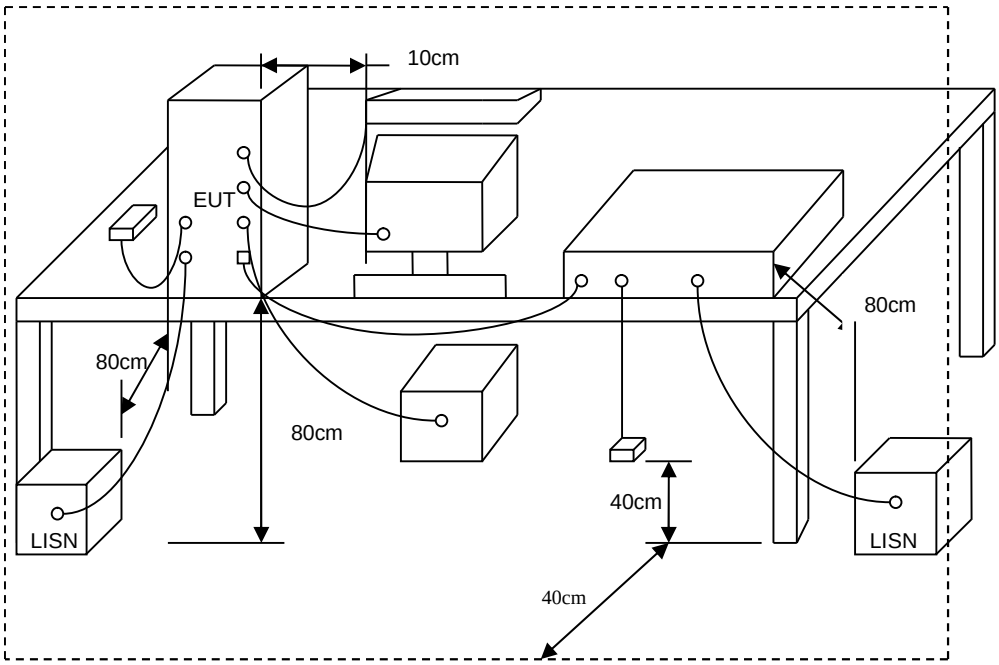
Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2. Test Procedures

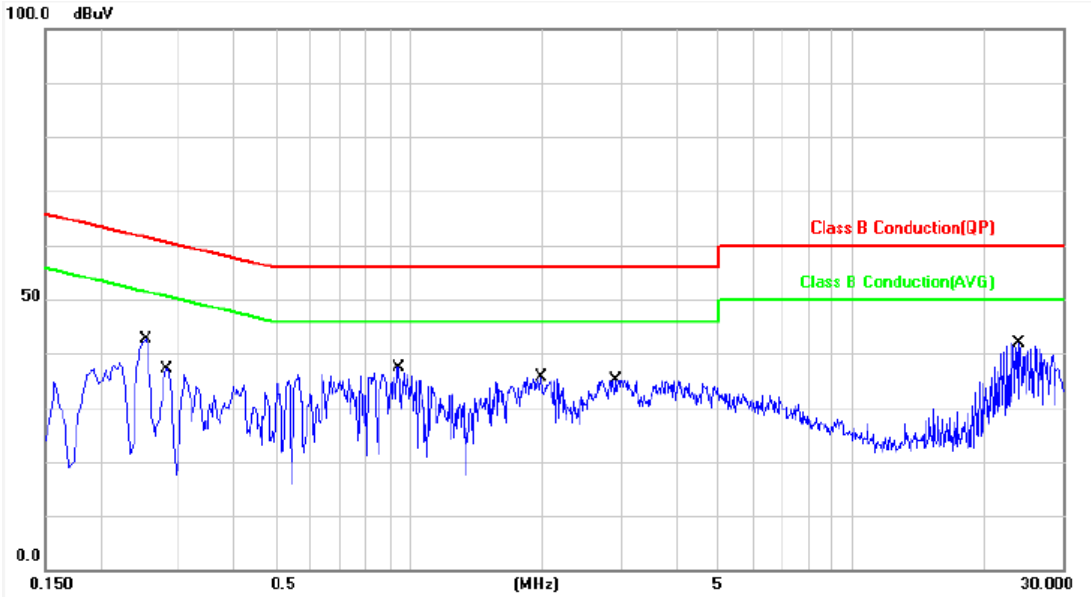
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.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

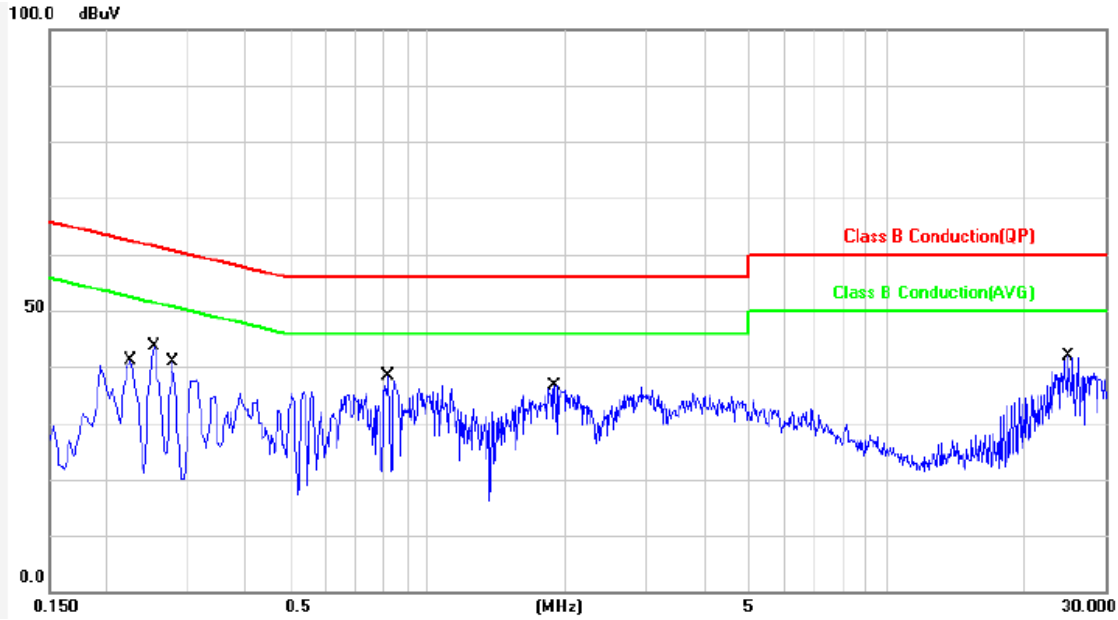
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	Mode 1, Band 1	Temperature	:	24 °C
Test Date	:	Jan. 10, 2018	Humidity	:	62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2540	9.91	32.68	42.59	61.62	-19.03	QP	P
2	0.2540	9.91	30.89	40.80	51.62	-10.82	AVG	P
3	0.2819	9.91	29.57	39.48	60.76	-21.28	QP	P
4	0.2819	9.91	26.82	36.73	50.76	-14.03	AVG	P
5	0.9460	9.96	23.95	33.91	56.00	-22.09	QP	P
6	0.9460	9.96	18.37	28.33	46.00	-17.67	AVG	P
7	1.9900	10.02	22.16	32.18	56.00	-23.82	QP	P
8	1.9900	10.02	16.49	26.51	46.00	-19.49	AVG	P
9	2.9260	10.05	22.03	32.08	56.00	-23.92	QP	P
10	2.9260	10.05	15.28	25.33	46.00	-20.67	AVG	P
11	23.9260	10.52	28.41	38.93	60.00	-21.07	QP	P
12	23.9260	10.52	20.46	30.98	50.00	-19.02	AVG	P

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

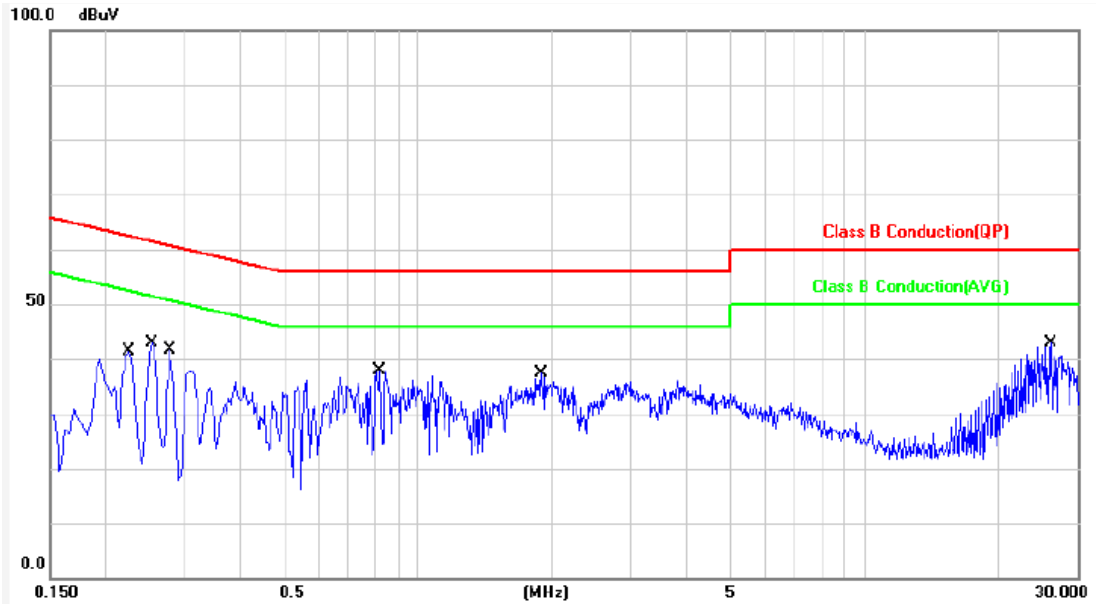
Power	:	AC 120V	Pol/Phase	:	NEUTRAL
Test Mode	:	Mode 1, Band 1	Temperature	:	24 °C
Test Date	:	Jan. 10, 2018	Humidity	:	62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2260	9.91	28.51	38.42	62.59	-24.17	QP	P
2	0.2260	9.91	25.50	35.41	52.59	-17.18	AVG	P
3	0.2540	9.91	32.70	42.61	61.62	-19.01	QP	P
4	0.2540	9.91	30.90	40.81	51.62	-10.81	AVG	P
5	0.2779	9.91	30.28	40.19	60.88	-20.69	QP	P
6	0.2779	9.91	25.90	35.81	50.88	-15.07	AVG	P
7	0.8220	9.95	25.91	35.86	56.00	-20.14	QP	P
8	0.8220	9.95	17.23	27.18	46.00	-18.82	AVG	P
9	1.8900	10.02	23.65	33.67	56.00	-22.33	QP	P
10	1.8900	10.02	15.45	25.47	46.00	-20.53	AVG	P
11	24.8140	10.53	29.76	40.29	60.00	-19.71	QP	P
12	24.8140	10.53	22.60	33.13	50.00	-16.87	AVG	P

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

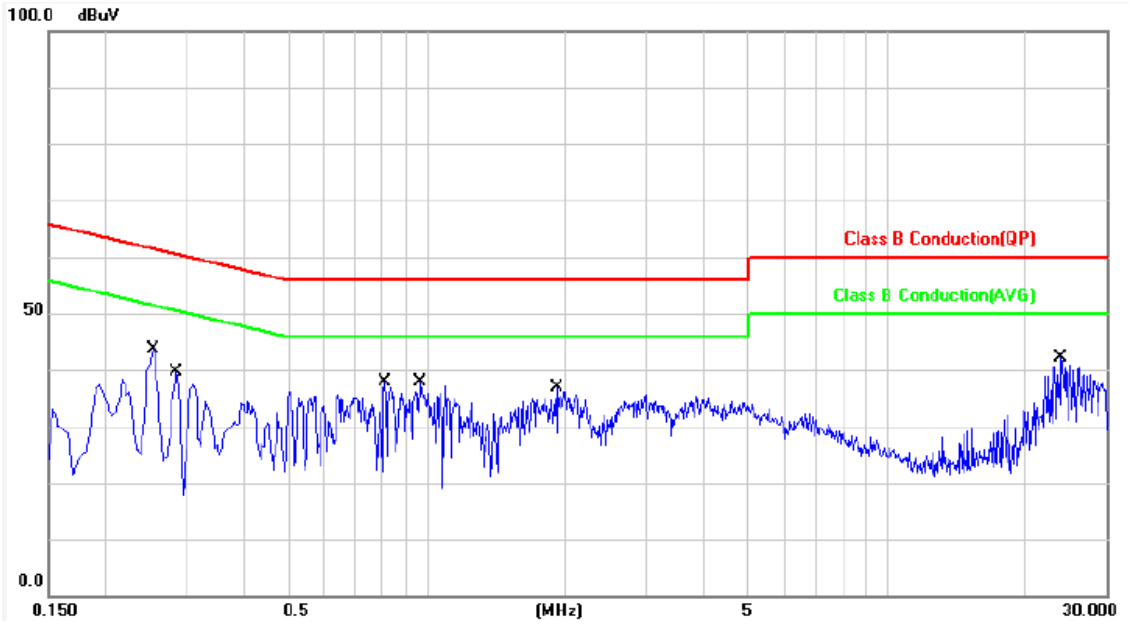
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	Mode 1, Band 4	Temperature	:	24 °C
Test Date	:	Jan. 10, 2018	Humidity	:	62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2260	9.91	28.60	38.51	62.59	-24.08	QP	P
2	0.2260	9.91	25.51	35.42	52.59	-17.17	AVG	P
3	0.2540	9.91	32.70	42.61	61.62	-19.01	QP	P
4	0.2540	9.91	30.91	40.82	51.62	-10.80	AVG	P
5	0.2779	9.91	30.28	40.19	60.88	-20.69	QP	P
6	0.2779	9.91	25.86	35.77	50.88	-15.11	AVG	P
7	0.8220	9.95	25.95	35.90	56.00	-20.10	QP	P
8	0.8220	9.95	17.24	27.19	46.00	-18.81	AVG	P
9	1.8940	10.02	24.32	34.34	56.00	-21.66	QP	P
10	1.8940	10.02	16.12	26.14	46.00	-19.86	AVG	P
11	26.2380	10.56	28.50	39.06	60.00	-20.94	QP	P
12	26.2380	10.56	21.56	32.12	50.00	-17.88	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, Band 4	Temperature	:	24 °C
Test Date	:	Jan. 10, 2018	Humidity	:	62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2540	9.91	32.68	42.59	61.62	-19.03	QP	P
2	0.2540	9.91	30.90	40.81	51.62	-10.81	AVG	P
3	0.2860	9.91	27.43	37.34	60.64	-23.30	QP	P
4	0.2860	9.91	21.66	31.57	50.64	-19.07	AVG	P
5	0.8100	9.95	26.00	35.95	56.00	-20.05	QP	P
6	0.8100	9.95	18.84	28.79	46.00	-17.21	AVG	P
7	0.9660	9.96	23.94	33.90	56.00	-22.10	QP	P
8	0.9660	9.96	18.34	28.30	46.00	-17.70	AVG	P
9	1.9220	10.02	23.37	33.39	56.00	-22.61	QP	P
10	1.9220	10.02	16.07	26.09	46.00	-19.91	AVG	P
11	23.9260	10.52	29.15	39.67	60.00	-20.33	QP	P
12	23.9260	10.52	22.38	32.90	50.00	-17.10	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.

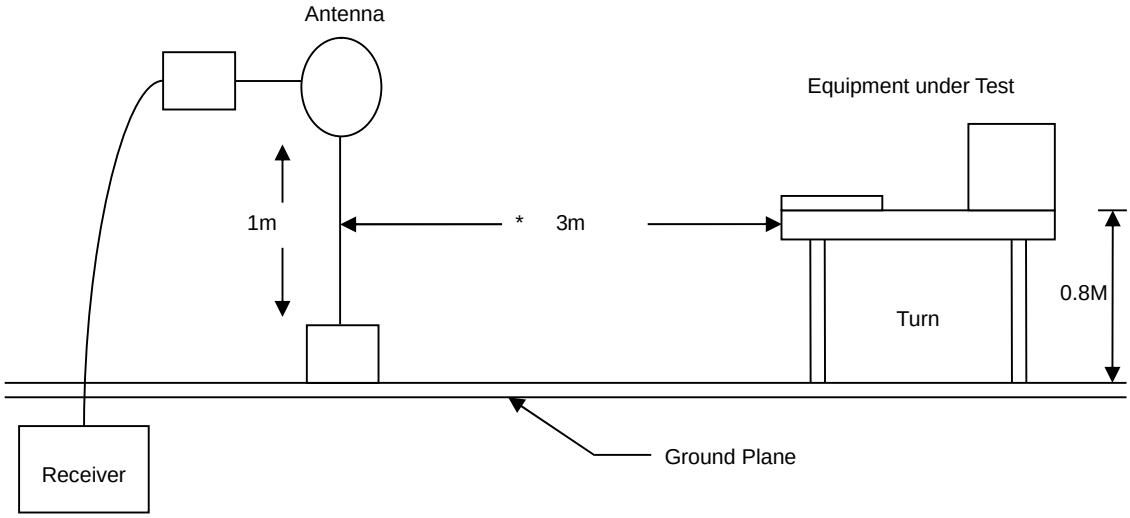
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.2. Test Procedures

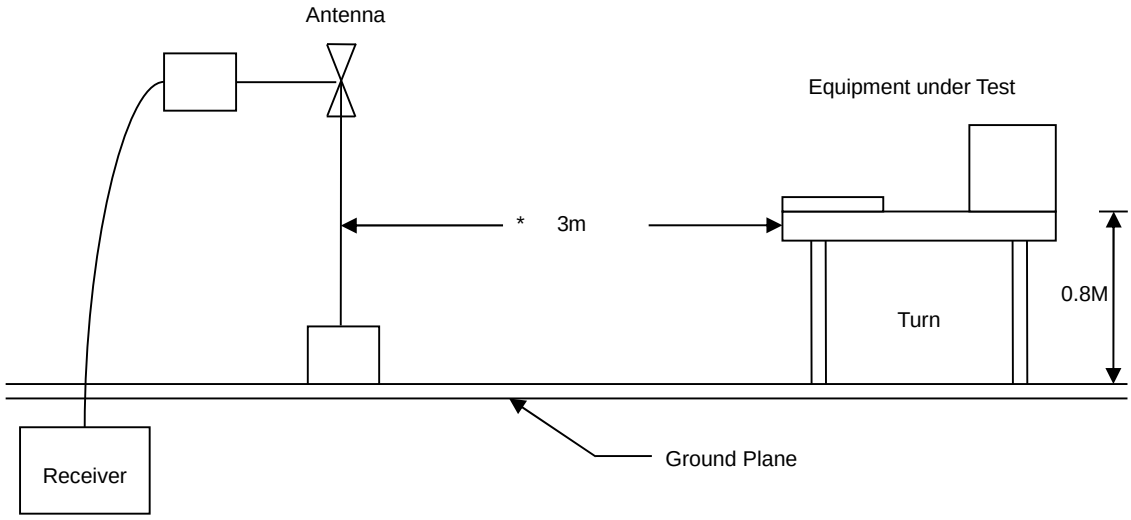
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna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

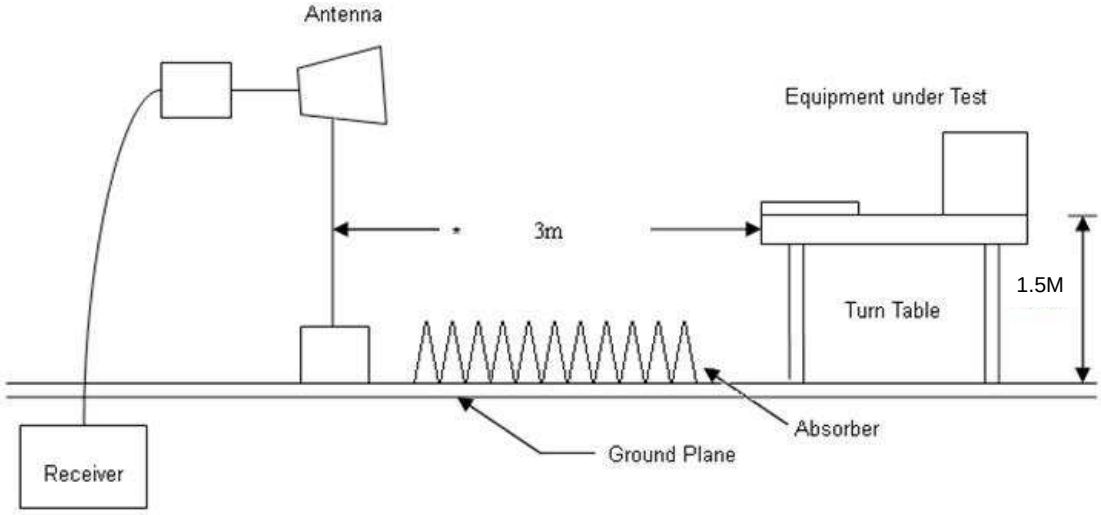
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

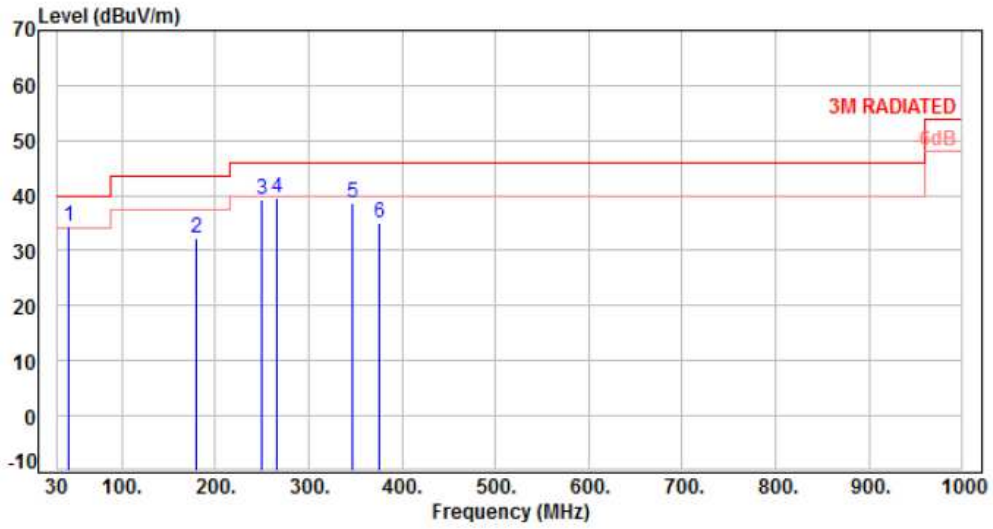


6.4. Test Result and Data (9kHz ~ 30MHz)

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

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

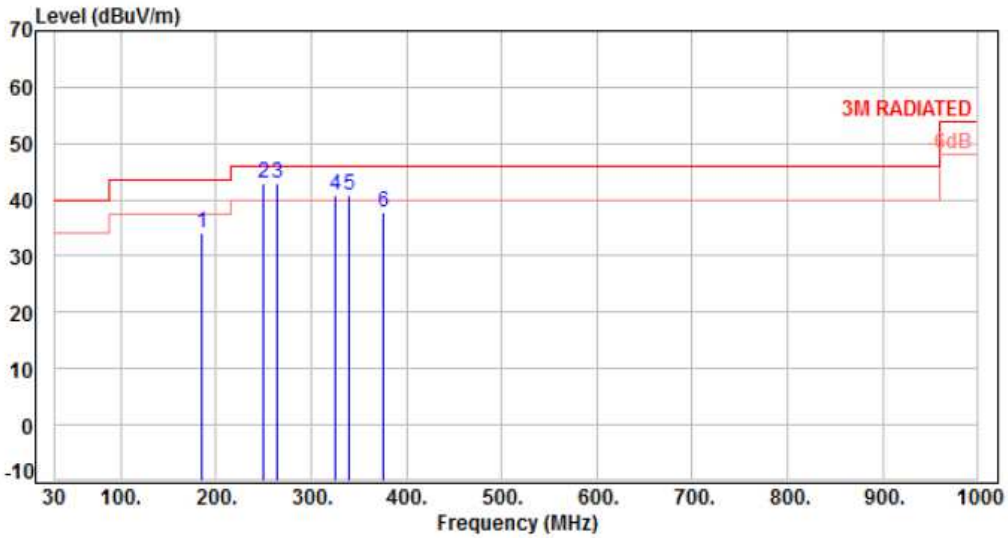
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	43.58	-10.03	44.36	34.33	40.00	-5.67	Peak	400	0	P
2	179.38	-11.06	43.23	32.17	43.50	-11.33	Peak	400	0	P
3	250.19	-10.63	49.86	39.23	46.00	-6.77	Peak	400	0	P
4	265.71	-10.01	49.57	39.56	46.00	-6.44	Peak	400	0	P
5	346.22	-7.58	46.22	38.64	46.00	-7.36	Peak	400	0	P
6	375.32	-6.73	41.71	34.98	46.00	-11.02	Peak	400	0	P

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

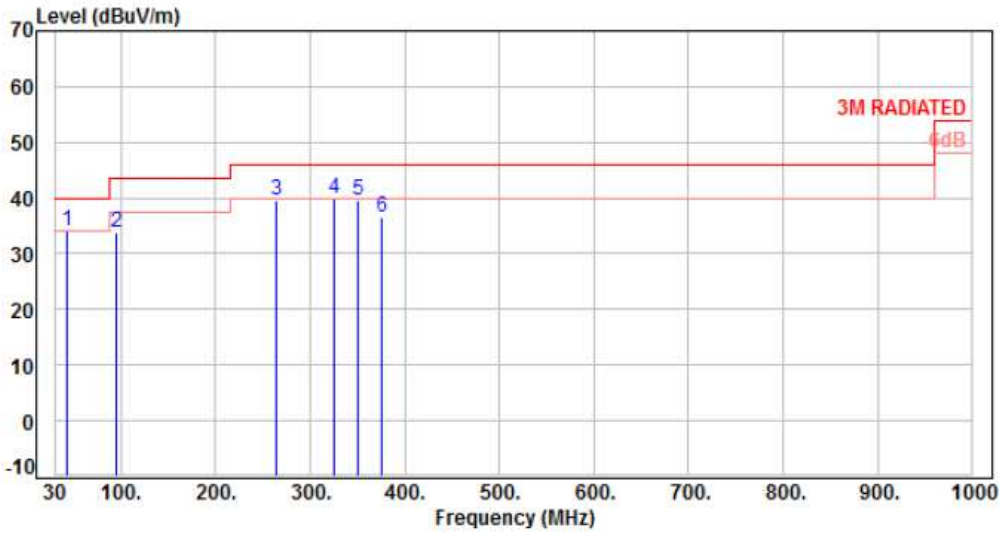
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	184.23	-11.45	45.56	34.11	43.50	-9.39	Peak	100	0	P
2	250.19	-10.63	53.56	42.93	46.00	-3.07	QP	103	55	P
3	264.74	-10.08	53.02	42.94	46.00	-3.06	QP	105	337	P
4	325.85	-8.12	48.89	40.77	46.00	-5.23	Peak	100	0	P
5	340.40	-7.74	48.55	40.81	46.00	-5.19	Peak	100	0	P
6	375.32	-6.73	44.43	37.70	46.00	-8.30	Peak	100	0	P

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

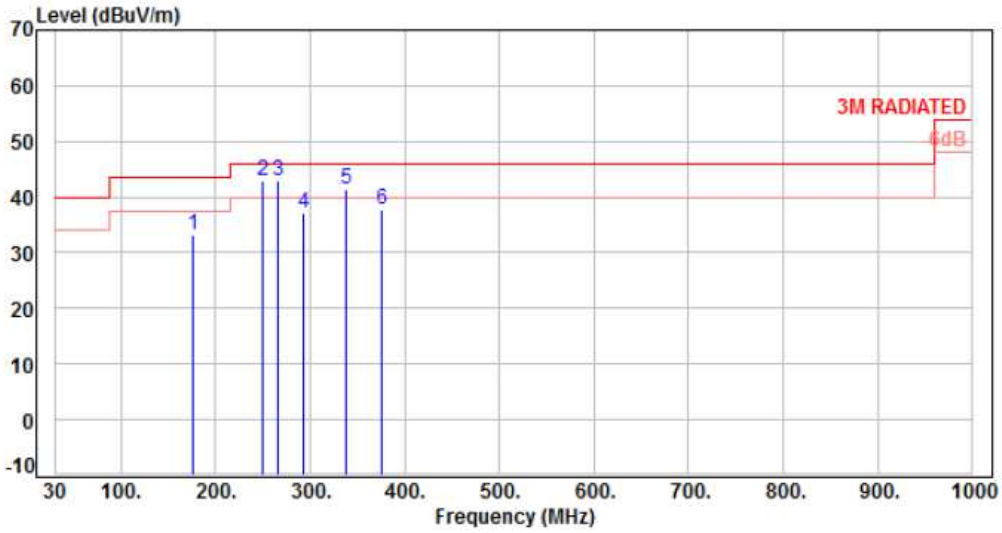
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	42.61	-10.12	44.36	34.24	40.00	-5.76	Peak	400	0	P
2	94.99	-15.42	49.25	33.83	43.50	-9.67	Peak	400	0	P
3	264.74	-10.08	49.75	39.67	46.00	-6.33	Peak	400	0	P
4	324.88	-8.15	48.00	39.85	46.00	-6.15	Peak	400	0	P
5	351.07	-7.46	47.04	39.58	46.00	-6.42	Peak	400	0	P
6	375.32	-6.73	43.24	36.51	46.00	-9.49	Peak	400	0	P

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

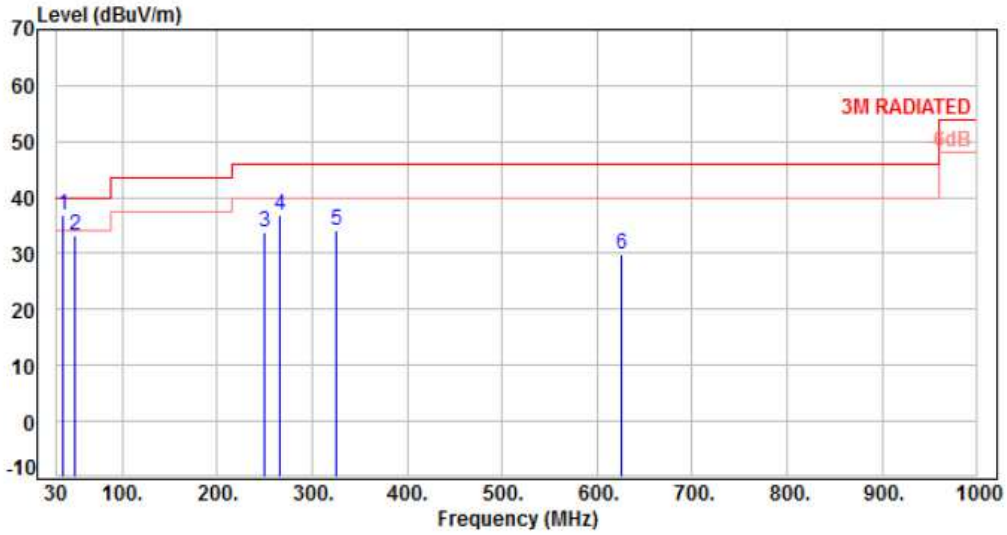
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	175.50	-10.67	43.81	33.14	43.50	-10.36	Peak	100	0	P
2	250.19	-10.63	53.51	42.88	46.00	-3.12	QP	100	25	P
3	265.71	-10.01	52.94	42.93	46.00	-3.07	QP	110	349	P
4	292.87	-9.03	46.15	37.12	46.00	-8.88	Peak	100	0	P
5	338.46	-7.79	49.23	41.44	46.00	-4.56	Peak	100	0	P
6	375.32	-6.73	44.33	37.60	46.00	-8.40	Peak	100	0	P

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

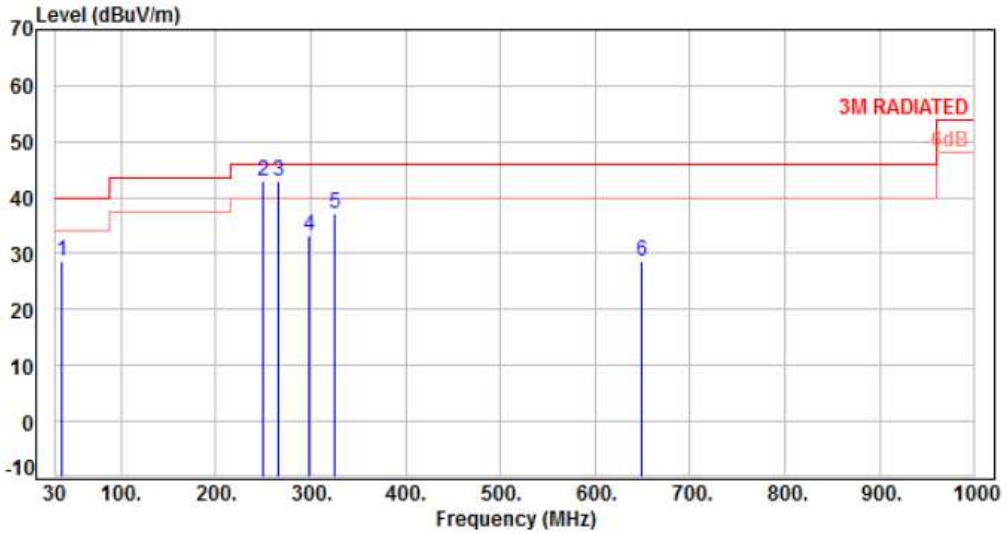
Power	:	PoE	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	36.79	-10.70	47.68	36.98	40.00	-3.02	QP	102	79	P
2	50.37	-9.71	42.93	33.22	40.00	-6.78	Peak	400	0	P
3	250.19	-10.63	44.41	33.78	46.00	-12.22	Peak	400	0	P
4	265.71	-10.01	46.88	36.87	46.00	-9.13	Peak	400	0	P
5	324.88	-8.15	42.11	33.96	46.00	-12.04	Peak	400	0	P
6	625.58	-1.38	31.20	29.82	46.00	-16.18	Peak	400	0	P

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

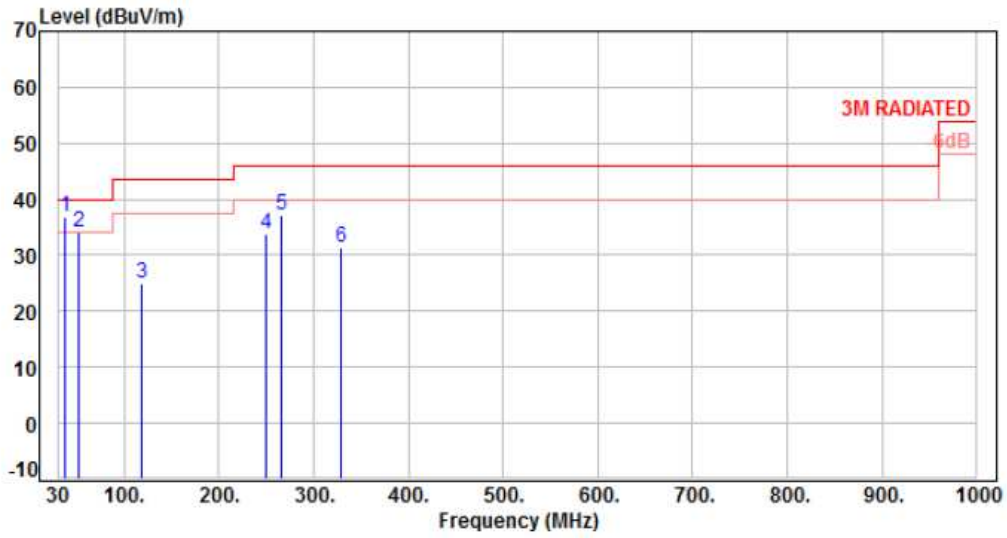
Power	:	PoE	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 5, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	36.79	-10.70	39.42	28.72	40.00	-11.28	Peak	100	0	P
2	250.19	-10.63	53.62	42.99	46.00	-3.01	QP	100	37	P
3	265.71	-10.01	52.97	42.96	46.00	-3.04	QP	109	341	P
4	297.72	-8.87	41.96	33.09	46.00	-12.91	Peak	100	0	P
5	324.88	-8.15	45.31	37.16	46.00	-8.84	Peak	100	0	P
6	649.83	-1.10	29.68	28.58	46.00	-17.42	Peak	100	0	P

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

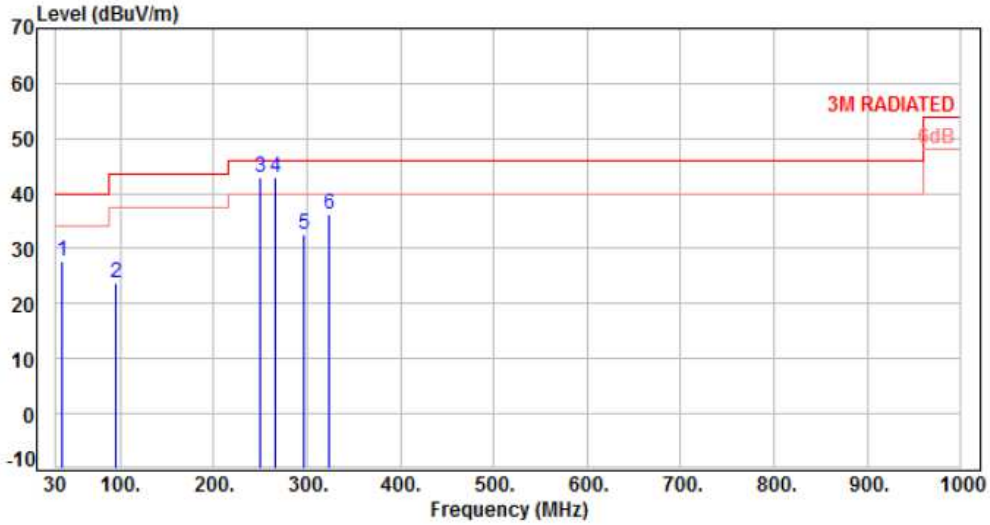
Power	:	PoE	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 5, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	36.79	-10.70	47.54	36.84	40.00	-3.16	QP	100	77	P
2	51.34	-9.76	43.90	34.14	40.00	-5.86	Peak	400	0	P
3	119.24	-12.49	37.34	24.85	43.50	-18.65	Peak	400	0	P
4	250.19	-10.63	44.55	33.92	46.00	-12.08	Peak	400	0	P
5	265.71	-10.01	47.06	37.05	46.00	-8.95	Peak	400	0	P
6	328.76	-8.05	39.44	31.39	46.00	-14.61	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 5, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %

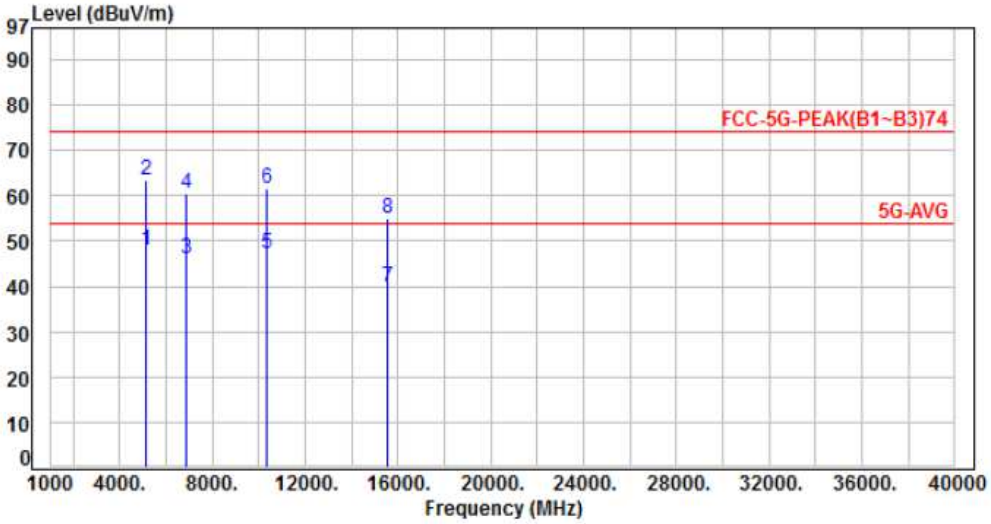


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	36.79	-10.70	38.37	27.67	40.00	-12.33	Peak	100	0	P
2	95.96	-15.33	39.04	23.71	43.50	-19.79	Peak	100	0	P
3	250.19	-10.63	53.61	42.98	46.00	-3.02	QP	107	59	P
4	266.68	-9.95	52.80	42.85	46.00	-3.15	QP	100	337	P
5	296.75	-8.92	41.62	32.70	46.00	-13.30	Peak	100	0	P
6	323.91	-8.17	44.38	36.21	46.00	-9.79	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)

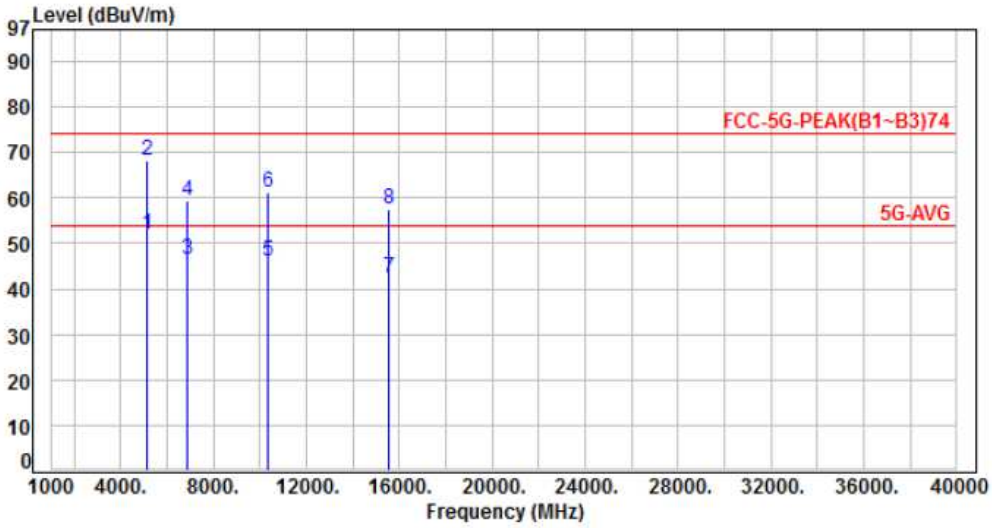
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH36, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	60.60	48.00	54.00	-6.00	Average	223	284	P
2	5150.00	-12.60	76.10	63.50	74.00	-10.50	Peak	223	284	P
3	6906.68	-11.14	57.10	45.96	54.00	-8.04	Average	103	323	P
4	6906.68	-11.14	71.70	60.56	74.00	-13.44	Peak	103	323	P
5	10360.00	-7.50	54.58	47.08	54.00	-6.92	Average	100	340	P
6	10360.00	-7.50	69.20	61.70	74.00	-12.30	Peak	100	340	P
7	15540.00	-3.76	43.70	39.94	54.00	-14.06	Average	100	296	P
8	15540.00	-3.76	58.90	55.14	74.00	-18.86	Peak	100	296	P

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

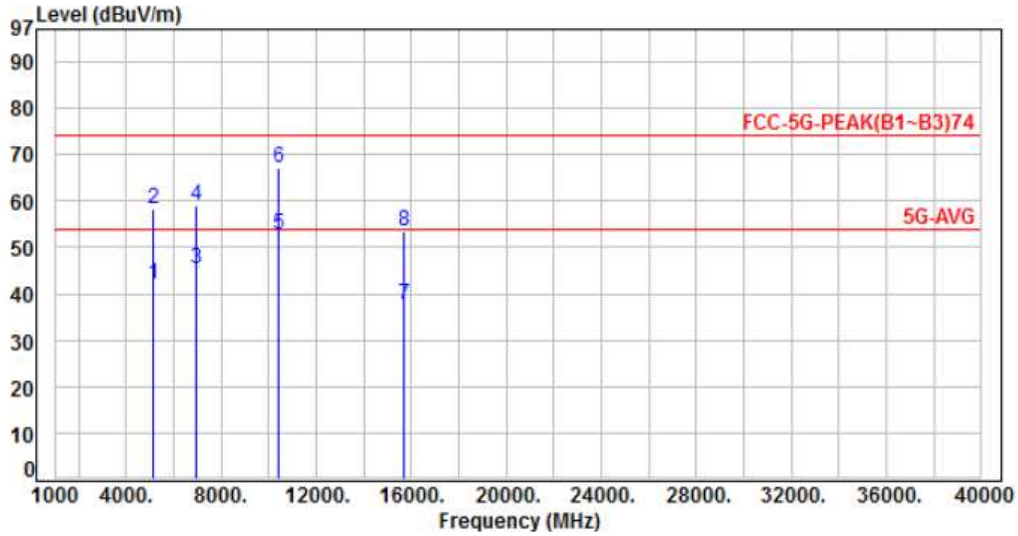
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH36, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	64.70	52.10	54.00	-1.90	Average	380	287	P
2	5150.00	-12.60	81.00	68.40	74.00	-5.60	Peak	380	287	P
3	6906.68	-11.14	57.70	46.56	54.00	-7.44	Average	109	100	P
4	6906.68	-11.14	70.60	59.46	74.00	-14.54	Peak	109	100	P
5	10360.00	-7.50	53.50	46.00	54.00	-8.00	Average	100	336	P
6	10360.00	-7.50	68.80	61.30	74.00	-12.70	Peak	100	336	P
7	15540.00	-3.76	46.10	42.34	54.00	-11.66	Average	128	44	P
8	15540.00	-3.76	61.40	57.64	74.00	-16.36	Peak	128	44	P

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

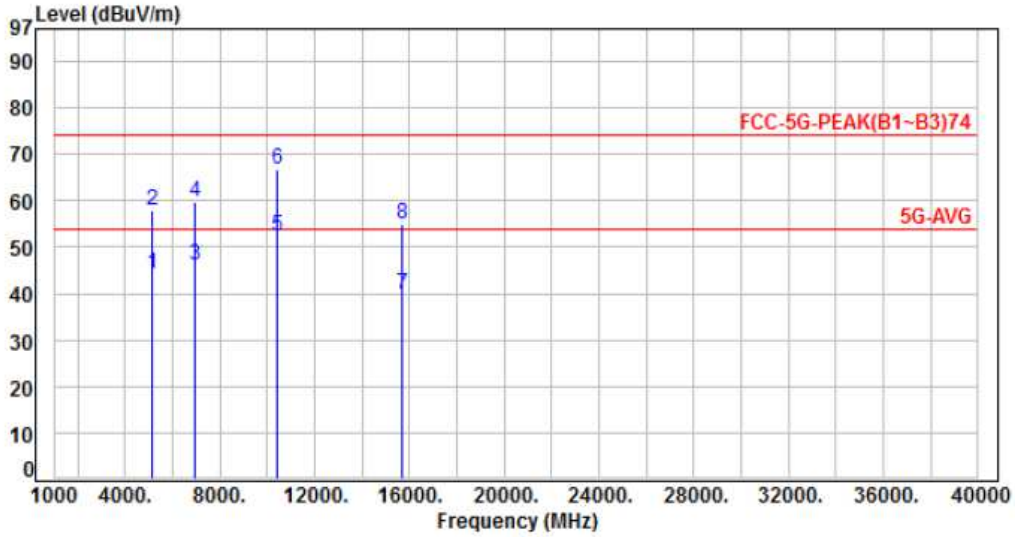
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH44, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	54.50	41.90	54.00	-12.10	Average	233	280	P
2	5150.00	-12.60	70.91	58.31	74.00	-15.69	Peak	233	280	P
3	6960.00	-11.03	56.50	45.47	54.00	-8.53	Average	100	313	P
4	6960.00	-11.03	70.20	59.17	74.00	-14.83	Peak	100	313	P
5	10440.00	-7.45	60.34	52.89	54.00	-1.11	Average	100	332	P
6	10440.00	-7.45	74.44	66.99	74.00	-7.01	Peak	100	332	P
7	15660.00	-3.74	41.20	37.46	54.00	-16.54	Average	100	296	P
8	15660.00	-3.74	57.30	53.56	74.00	-20.44	Peak	100	296	P

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

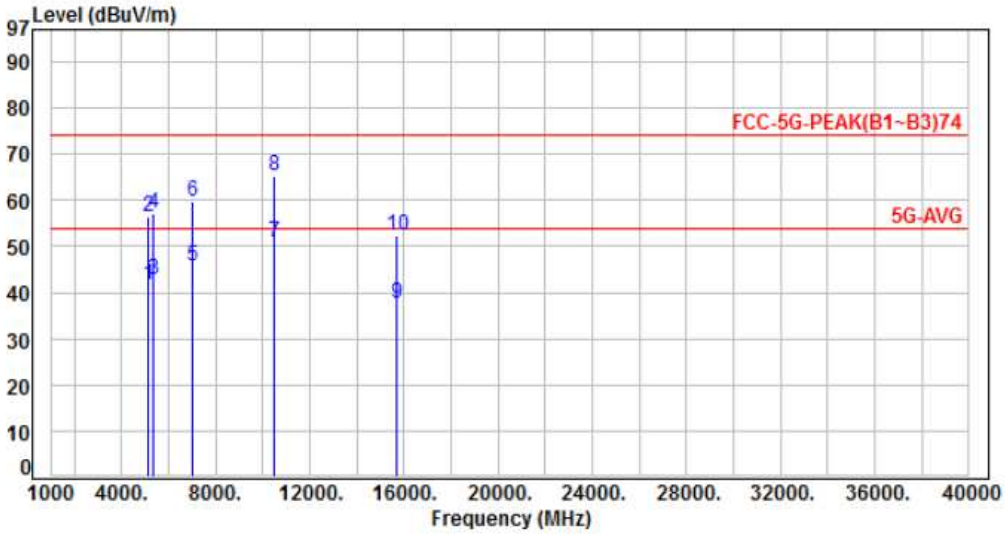
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH44, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.72	44.12	54.00	-9.88	Average	395	285	P
2	5150.00	-12.60	70.50	57.90	74.00	-16.10	Peak	395	285	P
3	6960.00	-11.03	57.06	46.03	54.00	-7.97	Average	109	122	P
4	6960.00	-11.03	70.66	59.63	74.00	-14.37	Peak	109	122	P
5	10440.00	-7.45	59.80	52.35	54.00	-1.65	Average	100	330	P
6	10440.00	-7.45	74.10	66.65	74.00	-7.35	Peak	100	330	P
7	15660.00	-3.74	43.60	39.86	54.00	-14.14	Average	100	48	P
8	15660.00	-3.74	58.70	54.96	74.00	-19.04	Peak	100	48	P

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

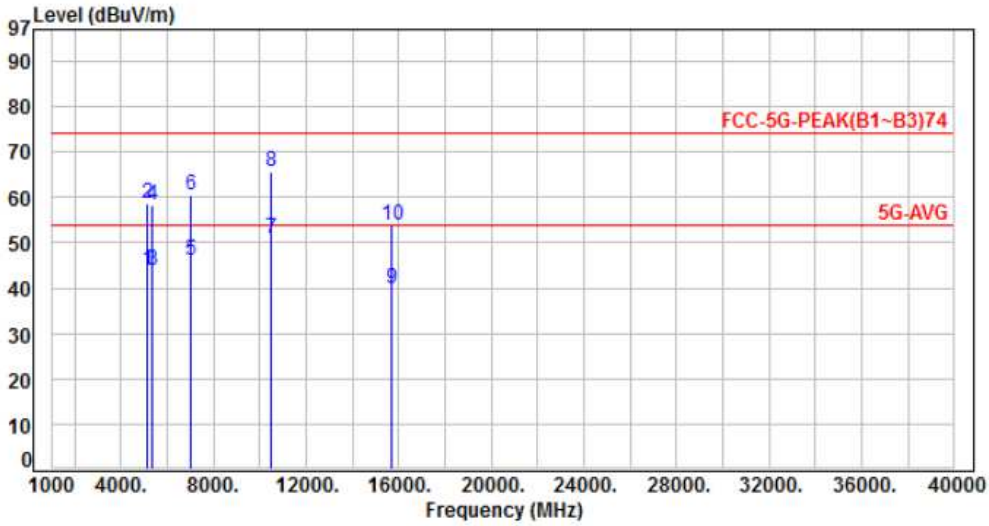
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH48, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	54.41	41.81	54.00	-12.19	Average	322	289	P
2	5150.00	-12.60	68.91	56.31	74.00	-17.69	Peak	322	289	P
3	5350.00	-12.33	55.19	42.86	54.00	-11.14	Average	322	289	P
4	5350.00	-12.33	69.50	57.17	74.00	-16.83	Peak	322	289	P
5	6986.70	-10.98	56.55	45.57	54.00	-8.43	Average	100	330	P
6	6986.70	-10.98	70.65	59.67	74.00	-14.33	Peak	100	330	P
7	10480.00	-7.43	58.20	50.77	54.00	-3.23	Average	106	339	P
8	10480.00	-7.43	72.70	65.27	74.00	-8.73	Peak	106	339	P
9	15720.00	-3.73	41.40	37.67	54.00	-16.33	Average	100	46	P
10	15720.00	-3.73	56.00	52.27	74.00	-21.73	Peak	100	46	P

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

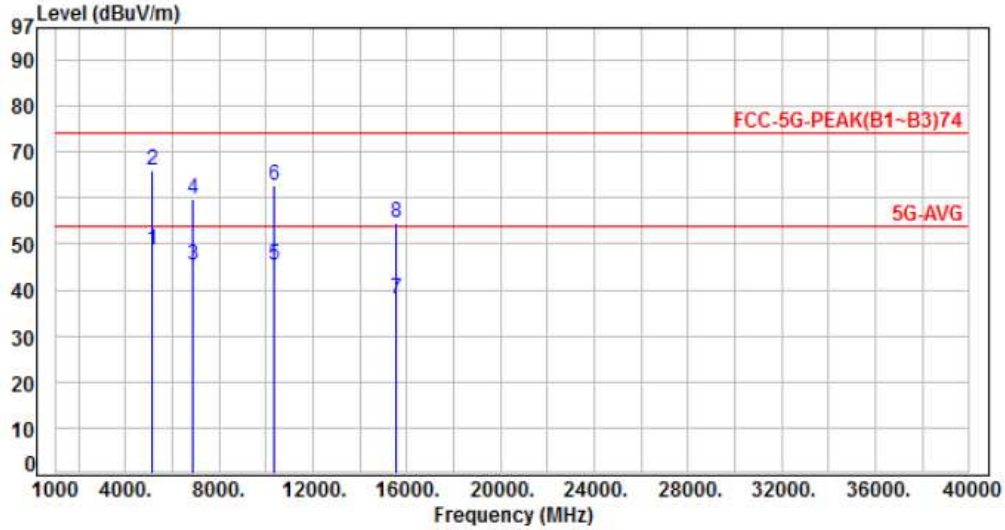
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH48, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.60	44.00	54.00	-10.00	Average	192	280	P
2	5150.00	-12.60	71.20	58.60	74.00	-15.40	Peak	192	280	P
3	5350.00	-12.33	56.19	43.86	54.00	-10.14	Average	192	280	P
4	5350.00	-12.33	70.50	58.17	74.00	-15.83	Peak	192	280	P
5	6986.70	-10.98	57.21	46.23	54.00	-7.77	Average	111	347	P
6	6986.70	-10.98	71.45	60.47	74.00	-13.53	Peak	111	347	P
7	10480.00	-7.43	58.30	50.87	54.00	-3.13	Average	104	339	P
8	10480.00	-7.43	73.10	65.67	74.00	-8.33	Peak	104	339	P
9	15720.00	-3.73	43.50	39.77	54.00	-14.23	Average	100	295	P
10	15720.00	-3.73	57.50	53.77	74.00	-20.23	Peak	100	295	P

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

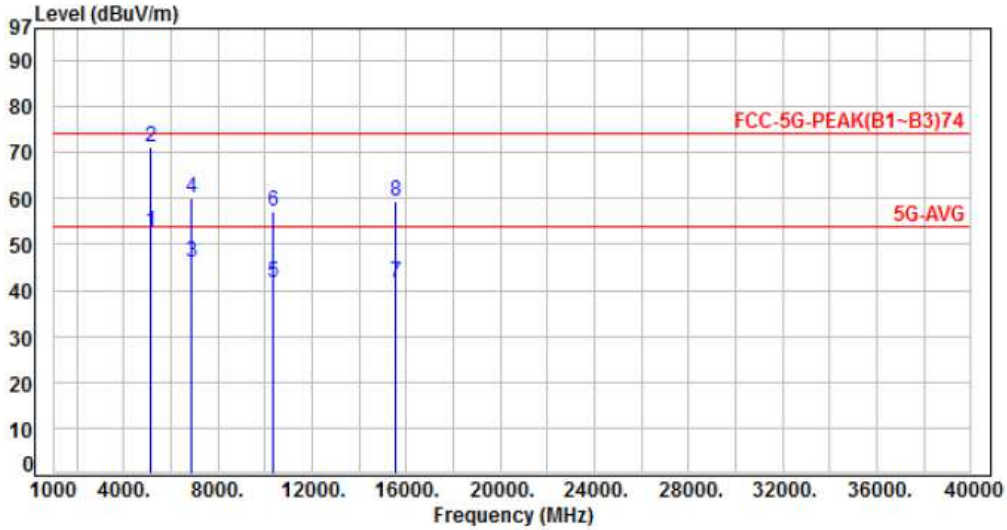
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH36, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	61.30	48.70	54.00	-5.30	Average	220	287	P
2	5150.00	-12.60	78.60	66.00	74.00	-8.00	Peak	220	287	P
3	6906.70	-11.14	56.48	45.34	54.00	-8.66	Average	100	326	P
4	6906.70	-11.14	70.88	59.74	74.00	-14.26	Peak	100	326	P
5	10360.00	-7.50	52.80	45.30	54.00	-8.70	Average	100	334	P
6	10360.00	-7.50	70.20	62.70	74.00	-11.30	Peak	100	334	P
7	15540.00	-3.76	41.90	38.14	54.00	-15.86	Average	110	297	P
8	15540.00	-3.76	58.20	54.44	74.00	-19.56	Peak	110	297	P

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

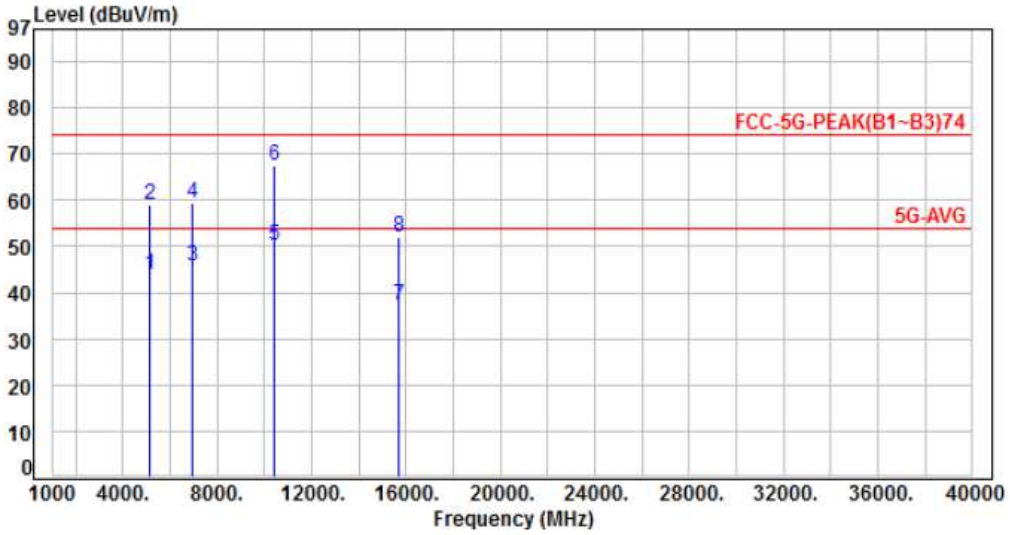
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH36, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	65.20	52.60	54.00	-1.40	Average	373	293	P
2	5150.00	-12.60	83.60	71.00	74.00	-3.00	Peak	373	293	P
3	6906.70	-11.14	57.33	46.19	54.00	-7.81	Average	115	147	P
4	6906.70	-11.14	71.36	60.22	74.00	-13.78	Peak	115	147	P
5	10360.00	-7.50	49.30	41.80	54.00	-12.20	Average	100	334	P
6	10360.00	-7.50	64.60	57.10	74.00	-16.90	Peak	100	334	P
7	15540.00	-3.76	45.50	41.74	54.00	-12.26	Average	100	44	P
8	15540.00	-3.76	63.20	59.44	74.00	-14.56	Peak	100	44	P

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

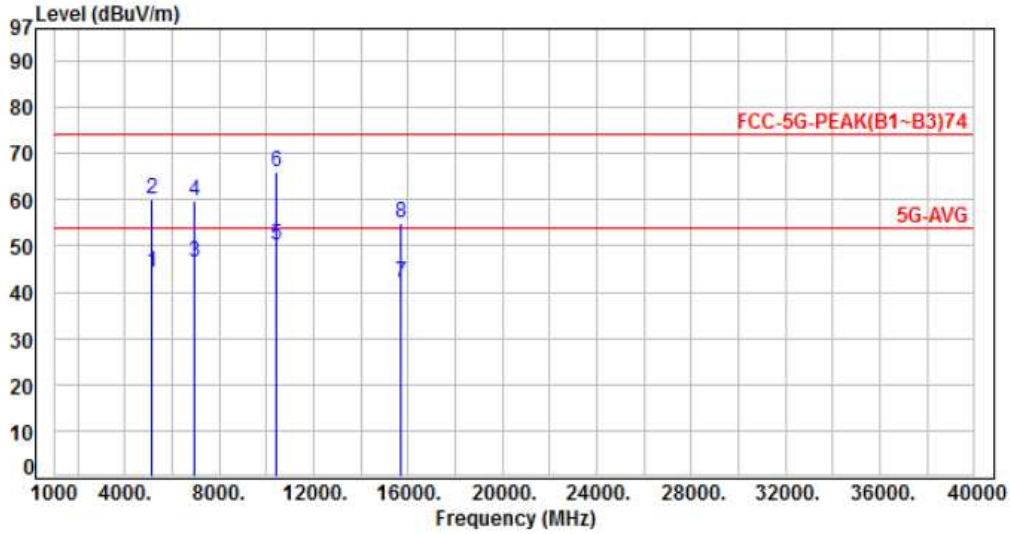
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH44, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.50	43.90	54.00	-10.10	Average	211	316	P
2	5150.00	-12.60	71.50	58.90	74.00	-15.10	Peak	211	316	P
3	6959.80	-11.03	56.77	45.74	54.00	-8.26	Average	105	333	P
4	6959.80	-11.03	70.48	59.45	74.00	-14.55	Peak	105	333	P
5	10440.00	-7.45	57.50	50.05	54.00	-3.95	Average	100	333	P
6	10440.00	-7.45	75.00	67.55	74.00	-6.45	Peak	100	333	P
7	15660.00	-3.74	41.00	37.26	54.00	-16.74	Average	247	295	P
8	15660.00	-3.74	55.60	51.86	74.00	-22.14	Peak	247	295	P

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

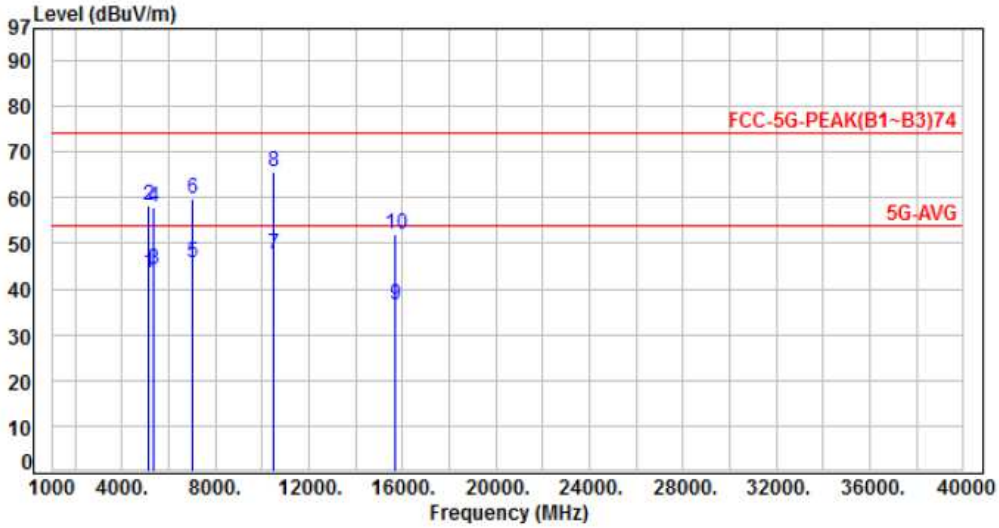
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH44, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.91	44.31	54.00	-9.69	Average	196	281	P
2	5150.00	-12.60	72.60	60.00	74.00	-14.00	Peak	196	281	P
3	6959.80	-11.03	57.53	46.50	54.00	-7.50	Average	106	112	P
4	6959.80	-11.03	70.85	59.82	74.00	-14.18	Peak	106	112	P
5	10440.00	-7.45	57.70	50.25	54.00	-3.75	Average	100	330	P
6	10440.00	-7.45	73.60	66.15	74.00	-7.85	Peak	100	330	P
7	15660.00	-3.74	45.80	42.06	54.00	-11.94	Average	107	286	P
8	15660.00	-3.74	58.80	55.06	74.00	-18.94	Peak	107	286	P

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

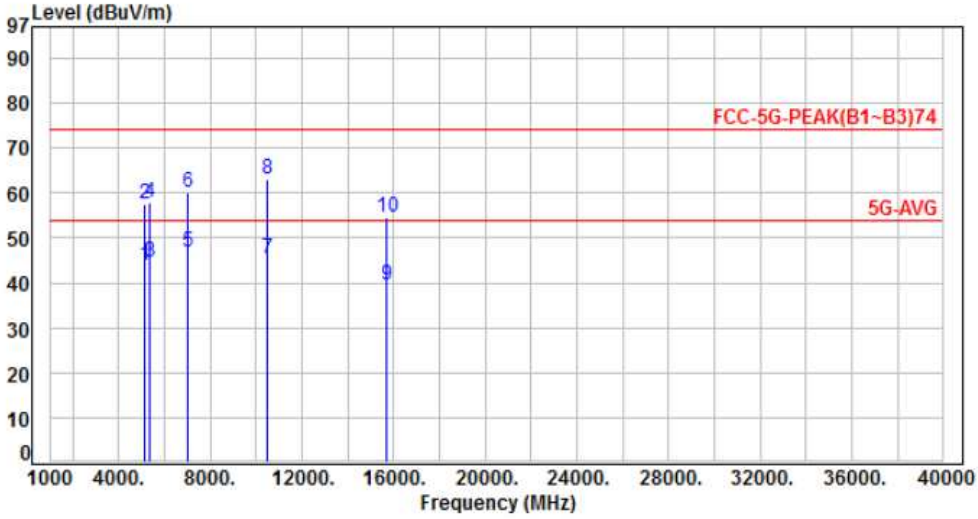
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH48, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.30	43.70	54.00	-10.30	Average	378	345	P
2	5150.00	-12.60	70.70	58.10	74.00	-15.90	Peak	378	345	P
3	5350.00	-12.33	56.50	44.17	54.00	-9.83	Average	378	345	P
4	5350.00	-12.33	70.19	57.86	74.00	-16.14	Peak	378	345	P
5	6986.60	-10.98	56.63	45.65	54.00	-8.35	Average	100	323	P
6	6986.60	-10.98	70.58	59.60	74.00	-14.40	Peak	100	323	P
7	10480.00	-7.43	54.90	47.47	54.00	-6.53	Average	102	333	P
8	10480.00	-7.43	72.92	65.49	74.00	-8.51	Peak	102	333	P
9	15720.00	-3.73	40.10	36.37	54.00	-17.63	Average	112	294	P
10	15720.00	-3.73	55.60	51.87	74.00	-22.13	Peak	112	294	P

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

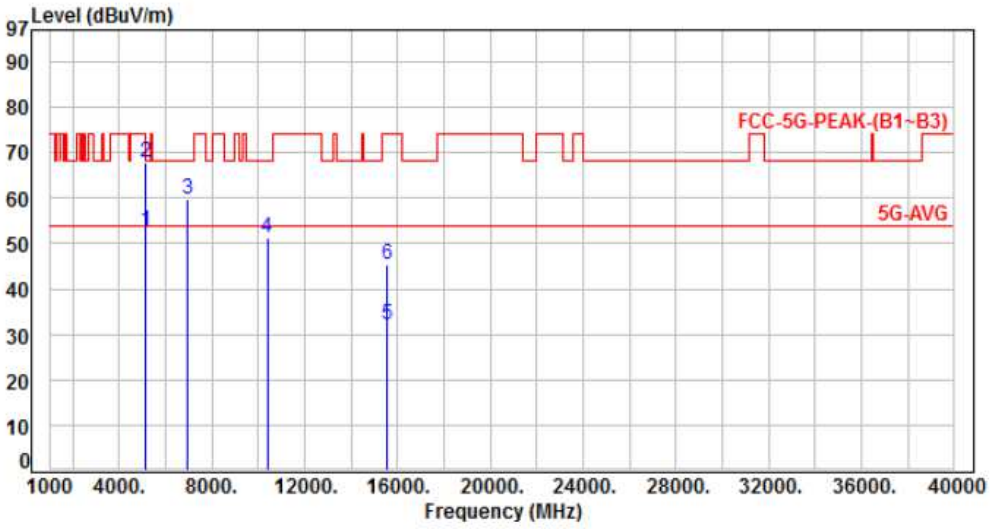
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH48, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	56.50	43.90	54.00	-10.10	Average	400	299	P
2	5150.00	-12.60	70.10	57.50	74.00	-16.50	Peak	400	299	P
3	5350.00	-12.33	56.80	44.47	54.00	-9.53	Average	400	299	P
4	5350.00	-12.33	70.30	57.97	74.00	-16.03	Peak	400	299	P
5	6986.60	-10.98	57.66	46.68	54.00	-7.32	Average	100	105	P
6	6986.60	-10.98	71.03	60.05	74.00	-13.95	Peak	100	105	P
7	10480.00	-7.43	52.80	45.37	54.00	-8.63	Average	100	330	P
8	10480.00	-7.43	70.60	63.17	74.00	-10.83	Peak	100	330	P
9	15720.00	-3.73	43.20	39.47	54.00	-14.53	Average	155	46	P
10	15720.00	-3.73	58.30	54.57	74.00	-19.43	Peak	155	46	P

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

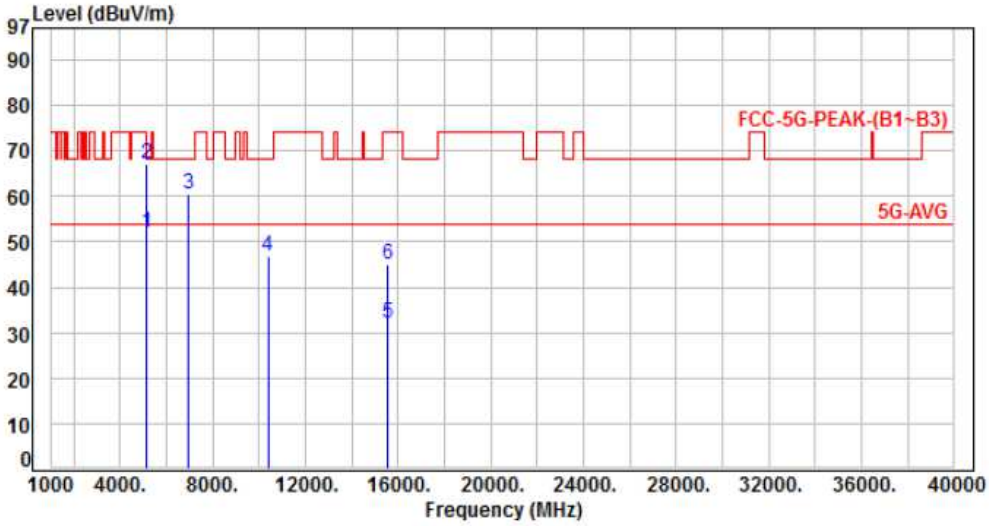
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH38, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	65.50	52.90	54.00	-1.10	Average	247	285	P
2	5150.00	-12.60	80.31	67.71	74.00	-6.29	Peak	247	285	P
3	6920.00	-11.11	70.85	59.74	68.20	-8.46	Peak	100	302	P
4	10380.00	-7.48	58.59	51.11	68.20	-17.09	Peak	100	335	P
5	15570.00	-3.76	35.68	31.92	54.00	-22.08	Average	108	295	P
6	15570.00	-3.76	49.22	45.46	74.00	-28.54	Peak	108	295	P

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

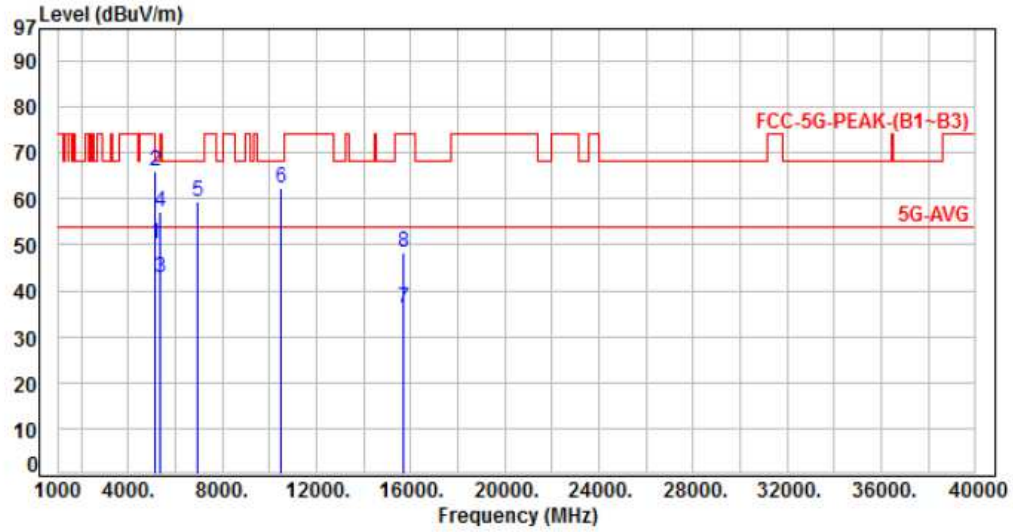
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH38, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	64.59	51.99	54.00	-2.01	Average	391	294	P
2	5150.00	-12.60	79.60	67.00	74.00	-7.00	Peak	391	294	P
3	6920.00	-11.11	71.48	60.37	68.20	-7.83	Peak	106	300	P
4	10380.00	-7.48	54.19	46.71	68.20	-21.49	Peak	110	8	P
5	15570.00	-3.76	35.80	32.04	54.00	-21.96	Average	100	51	P
6	15570.00	-3.76	48.60	44.84	74.00	-29.16	Peak	100	51	P

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

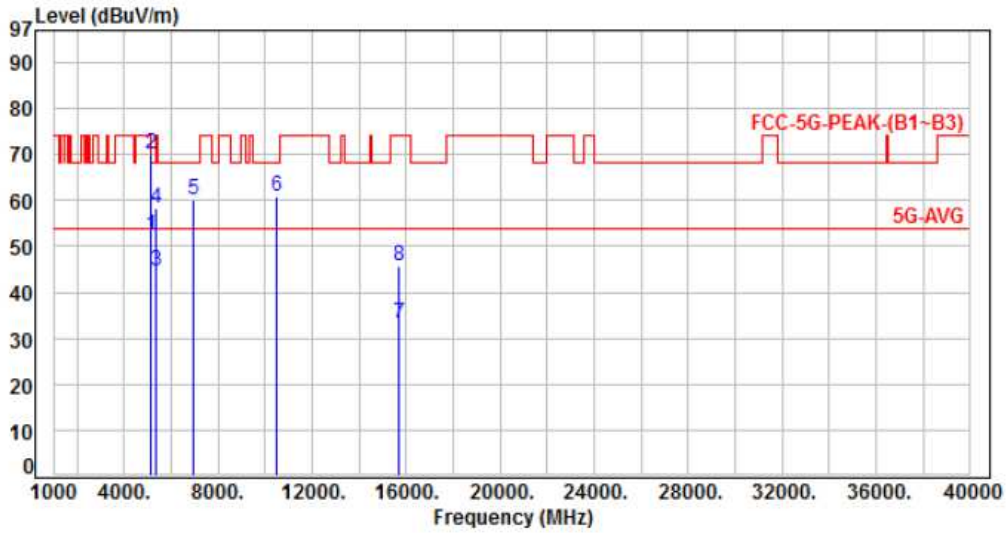
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH46, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	62.77	50.17	54.00	-3.83	Average	220	290	P
2	5150.00	-12.60	78.60	66.00	74.00	-8.00	Peak	220	290	P
3	5350.00	-12.33	55.09	42.76	54.00	-11.24	Average	220	290	P
4	5350.00	-12.33	69.50	57.17	74.00	-16.83	Peak	220	290	P
5	6973.26	-11.00	70.49	59.49	68.20	-8.71	Peak	100	288	P
6	10460.00	-7.44	69.60	62.16	68.20	-6.04	Peak	100	340	P
7	15690.00	-3.73	39.80	36.07	54.00	-17.93	Average	100	296	P
8	15690.00	-3.73	52.10	48.37	74.00	-25.63	Peak	100	296	P

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

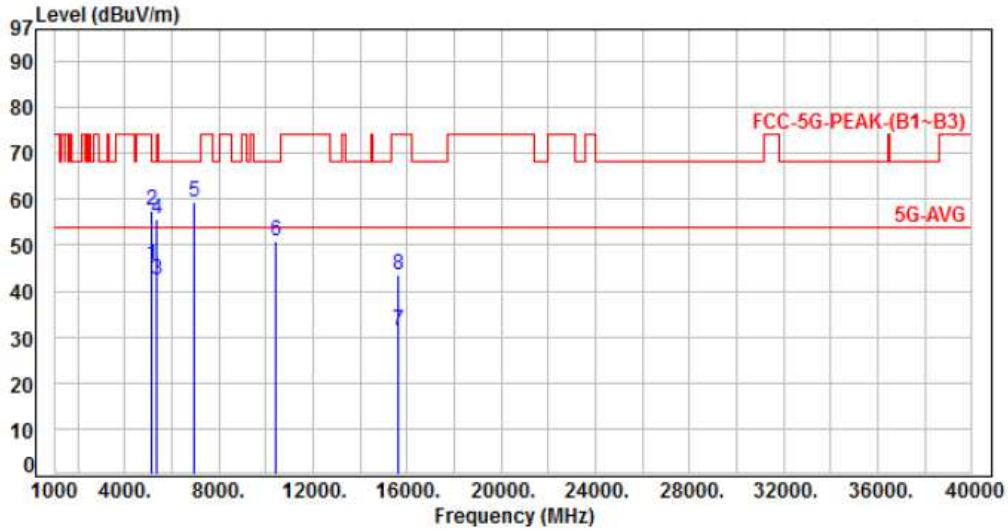
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH46, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	65.10	52.50	54.00	-1.50	Average	383	284	P
2	5150.00	-12.60	82.50	69.90	74.00	-4.10	Peak	383	284	P
3	5350.00	-12.33	56.80	44.47	54.00	-9.53	Average	383	284	P
4	5350.00	-12.33	70.69	58.36	74.00	-15.64	Peak	383	284	P
5	6973.26	-11.00	71.22	60.22	68.20	-7.98	Peak	107	122	P
6	10460.00	-7.44	68.20	60.76	68.20	-7.44	Peak	100	331	P
7	15690.00	-3.73	36.80	33.07	54.00	-20.93	Average	128	47	P
8	15690.00	-3.73	49.60	45.87	74.00	-28.13	Peak	128	47	P

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

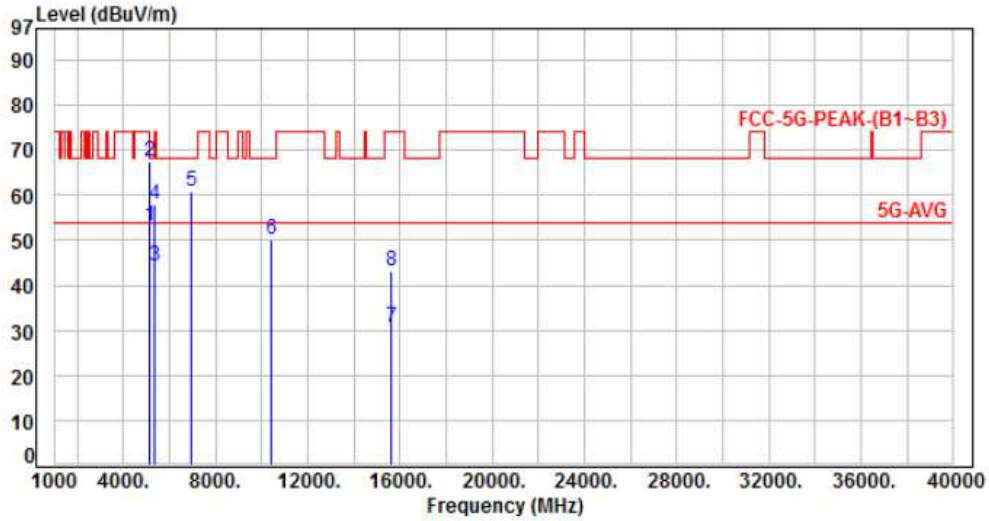
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, CH42, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	58.20	45.60	54.00	-8.40	Average	233	280	P
2	5150.00	-12.60	70.20	57.60	74.00	-16.40	Peak	233	280	P
3	5350.00	-12.33	54.69	42.36	54.00	-11.64	Average	233	280	P
4	5350.00	-12.33	67.89	55.56	74.00	-18.44	Peak	233	280	P
5	6946.70	-11.06	70.58	59.52	68.20	-8.68	Peak	102	320	P
6	10420.00	-7.47	58.51	51.04	68.20	-17.16	Peak	100	341	P
7	15630.00	-3.74	35.22	31.48	54.00	-22.52	Average	100	311	P
8	15630.00	-3.74	47.30	43.56	74.00	-30.44	Peak	100	311	P

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

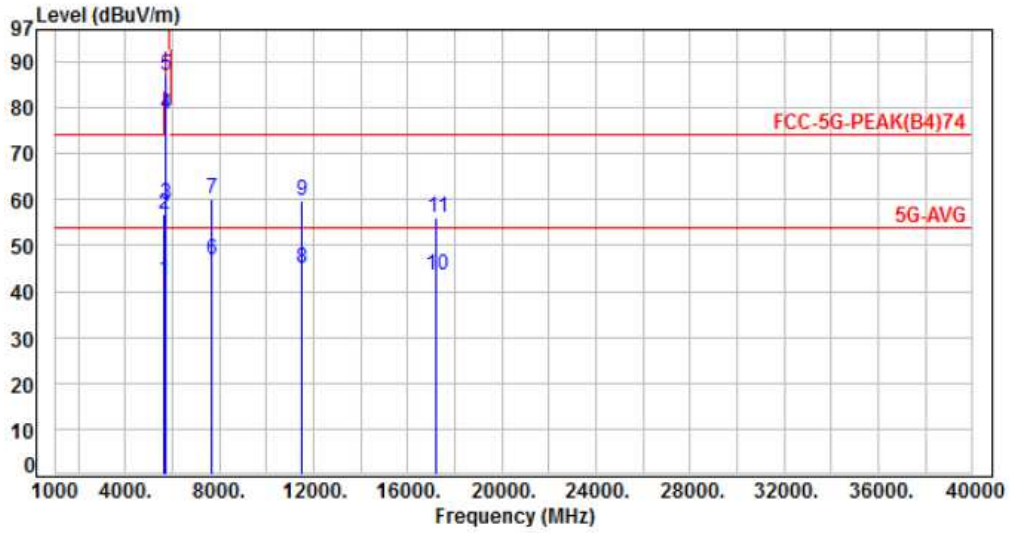
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 4, CH42, Band 1	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5150.00	-12.60	65.59	52.99	54.00	-1.01	Average	375	290	P
2	5150.00	-12.60	80.00	67.40	74.00	-6.60	Peak	375	290	P
3	5350.00	-12.33	56.69	44.36	54.00	-9.64	Average	375	290	P
4	5350.00	-12.33	70.09	57.76	74.00	-16.24	Peak	375	290	P
5	6946.70	-11.06	71.84	60.78	68.20	-7.42	Peak	112	309	P
6	10420.00	-7.47	57.81	50.34	68.20	-17.86	Peak	100	317	P
7	15630.00	-3.74	34.51	30.77	54.00	-23.23	Average	122	35	P
8	15630.00	-3.74	46.85	43.11	74.00	-30.89	Peak	122	35	P

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

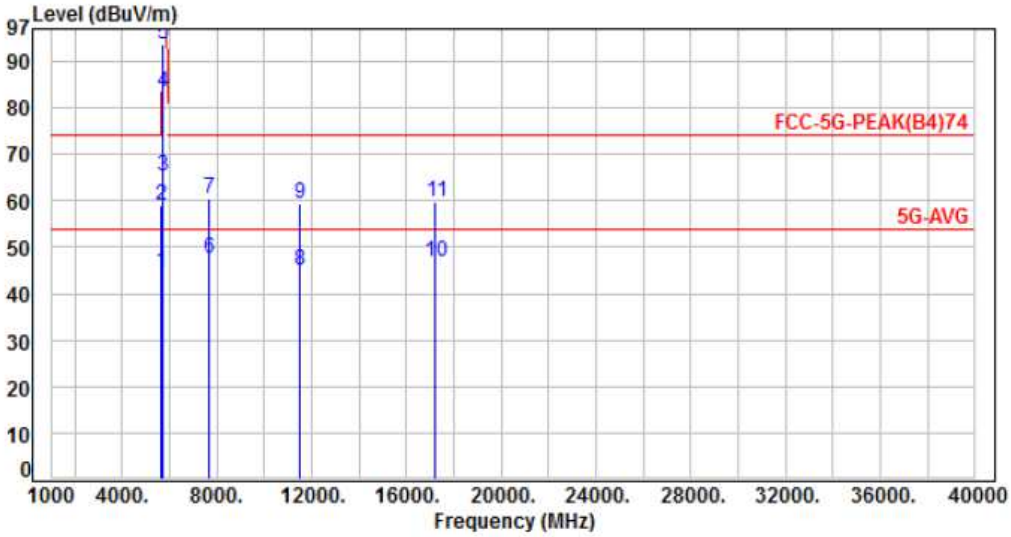
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH149, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	54.50	42.34	54.00	-11.66	Average	167	320	P
2	5650.00	-12.16	69.10	56.94	74.00	-17.06	Peak	167	320	P
3	5700.00	-12.17	71.30	59.13	105.20	-46.07	Peak	167	320	P
4	5720.00	-12.18	90.71	78.53	110.80	-32.27	Peak	167	320	P
5	5725.00	-12.18	99.21	87.03	122.20	-35.17	Peak	167	320	P
6	7659.20	-9.75	56.57	46.82	54.00	-7.18	Average	100	310	P
7	7659.20	-9.75	69.69	59.94	74.00	-14.06	Peak	100	310	P
8	11490.00	-6.17	51.09	44.92	54.00	-9.08	Average	100	318	P
9	11490.00	-6.17	65.99	59.82	74.00	-14.18	Peak	100	318	P
10	17235.00	1.38	42.21	43.59	54.00	-10.41	Average	100	343	P
11	17235.00	1.38	54.81	56.19	74.00	-17.81	Peak	100	343	P

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

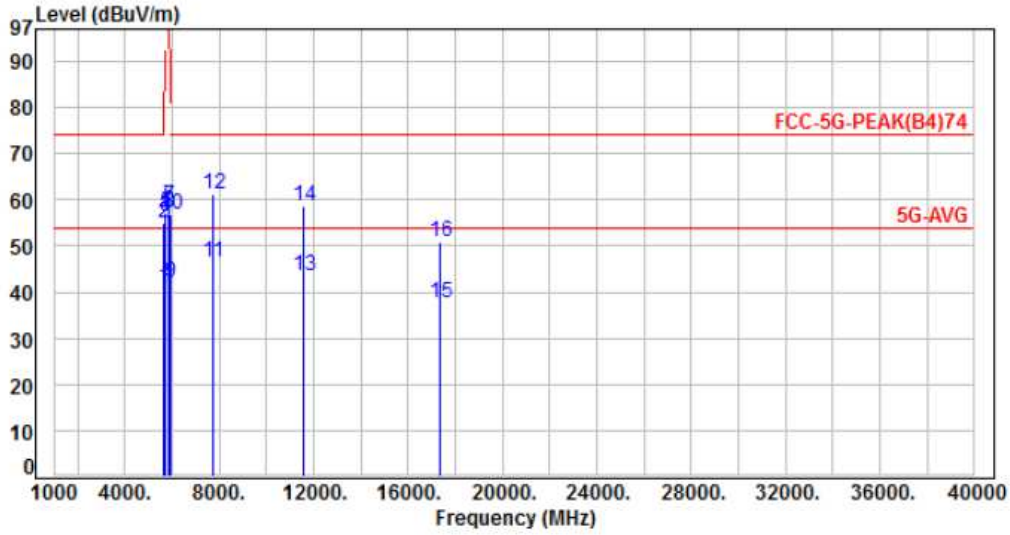
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH149, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	56.85	44.69	54.00	-9.31	Average	110	307	P
2	5650.00	-12.16	71.00	58.84	74.00	-15.16	Peak	110	307	P
3	5700.00	-12.17	77.30	65.13	105.20	-40.07	Peak	110	307	P
4	5720.00	-12.18	95.57	83.39	110.80	-27.41	Peak	110	307	P
5	5725.00	-12.18	105.91	93.73	122.20	-28.47	Peak	110	307	P
6	7659.80	-9.75	57.49	47.74	54.00	-6.26	Average	100	270	P
7	7659.80	-9.75	70.19	60.44	74.00	-13.56	Peak	100	270	P
8	11490.00	-6.17	51.21	45.04	54.00	-8.96	Average	100	316	P
9	11490.00	-6.17	65.59	59.42	74.00	-14.58	Peak	100	316	P
10	17235.00	1.38	45.61	46.99	54.00	-7.01	Average	105	302	P
11	17235.00	1.38	58.21	59.59	74.00	-14.41	Peak	105	302	P

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

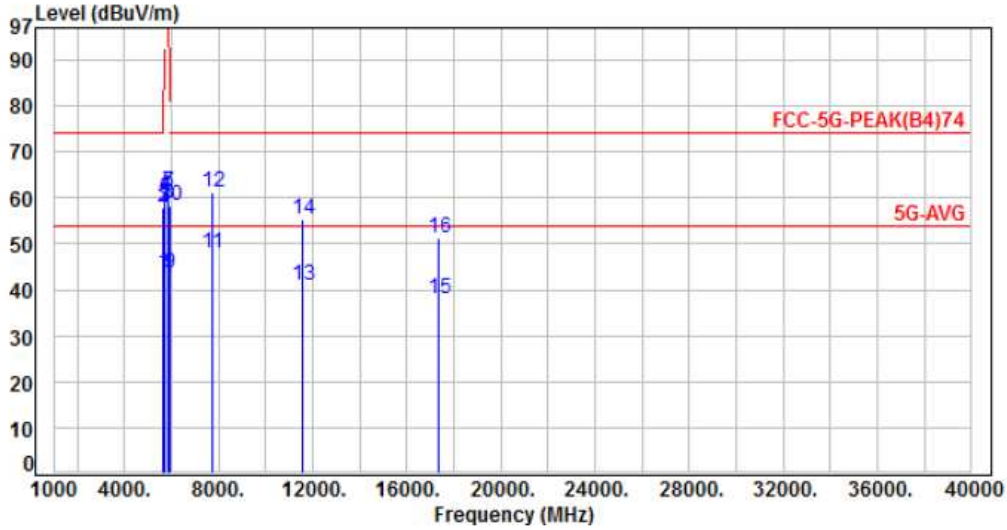
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH157, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	53.11	40.95	54.00	-13.05	Average	182	315	P
2	5650.00	-12.16	67.10	54.94	74.00	-19.06	Peak	182	315	P
3	5700.00	-12.17	68.51	56.34	105.20	-48.86	Peak	182	315	P
4	5720.00	-12.18	68.61	56.43	110.80	-54.37	Peak	182	315	P
5	5725.00	-12.18	69.31	57.13	122.20	-65.07	Peak	182	315	P
6	5850.00	-12.19	70.73	58.54	122.20	-63.66	Peak	182	315	P
7	5855.00	-12.19	70.78	58.59	110.80	-52.21	Peak	182	315	P
8	5875.00	-12.20	69.21	57.01	105.20	-48.19	Peak	182	315	P
9	5925.00	-12.20	54.20	42.00	54.00	-12.00	Average	182	315	P
10	5925.00	-12.20	69.00	56.80	74.00	-17.20	Peak	182	315	P
11	7713.36	-9.77	56.33	46.56	54.00	-7.44	Average	100	302	P
12	7713.36	-9.77	70.85	61.08	74.00	-12.92	Peak	100	302	P
13	11570.00	-6.13	49.70	43.57	54.00	-10.43	Average	100	314	P
14	11570.00	-6.13	64.90	58.77	74.00	-15.23	Peak	100	314	P
15	17355.00	2.01	35.66	37.67	54.00	-16.33	Average	104	333	P
16	17355.00	2.01	48.90	50.91	74.00	-23.09	Peak	104	333	P

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

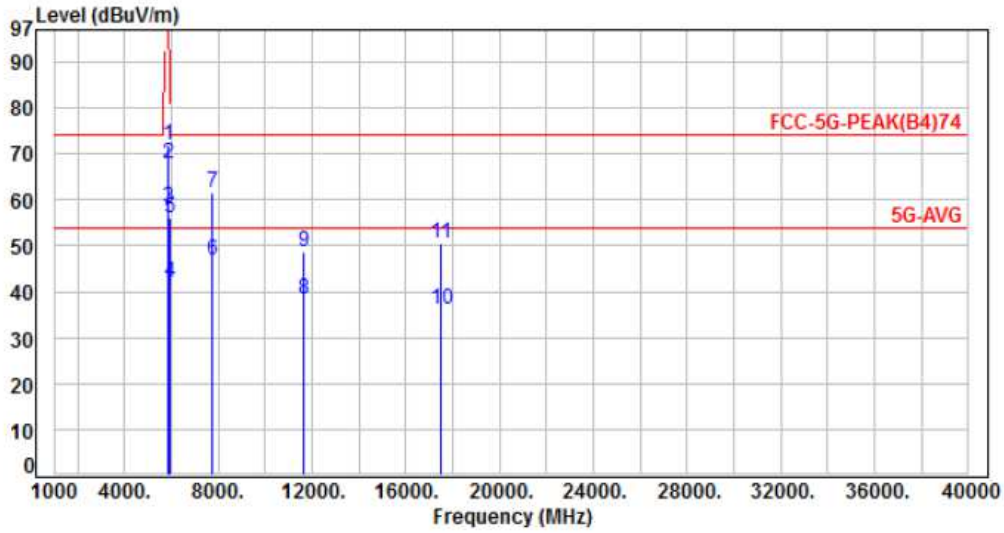
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH157, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	55.70	43.54	54.00	-10.46	Average	143	295	P
2	5650.00	-12.16	69.95	57.79	74.00	-16.21	Peak	143	295	P
3	5700.00	-12.17	70.30	58.13	105.20	-47.07	Peak	143	295	P
4	5720.00	-12.18	72.61	60.43	110.80	-50.37	Peak	143	295	P
5	5725.00	-12.18	72.11	59.93	122.20	-62.27	Peak	143	295	P
6	5850.00	-12.19	73.30	61.11	122.20	-61.09	Peak	143	295	P
7	5855.00	-12.19	73.40	61.21	110.80	-49.59	Peak	143	295	P
8	5875.00	-12.20	71.01	58.81	105.20	-46.39	Peak	143	295	P
9	5925.00	-12.20	55.90	43.70	54.00	-10.30	Average	143	295	P
10	5925.00	-12.20	70.30	58.10	74.00	-15.90	Peak	143	295	P
11	7713.36	-9.77	57.57	47.80	54.00	-6.20	Average	100	268	P
12	7713.36	-9.77	70.84	61.07	74.00	-12.93	Peak	100	268	P
13	11570.00	-6.13	46.90	40.77	54.00	-13.23	Average	100	343	P
14	11570.00	-6.13	61.50	55.37	74.00	-18.63	Peak	100	343	P
15	17355.00	2.01	35.80	37.81	54.00	-16.19	Average	102	302	P
16	17355.00	2.01	49.10	51.11	74.00	-22.89	Peak	102	302	P

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

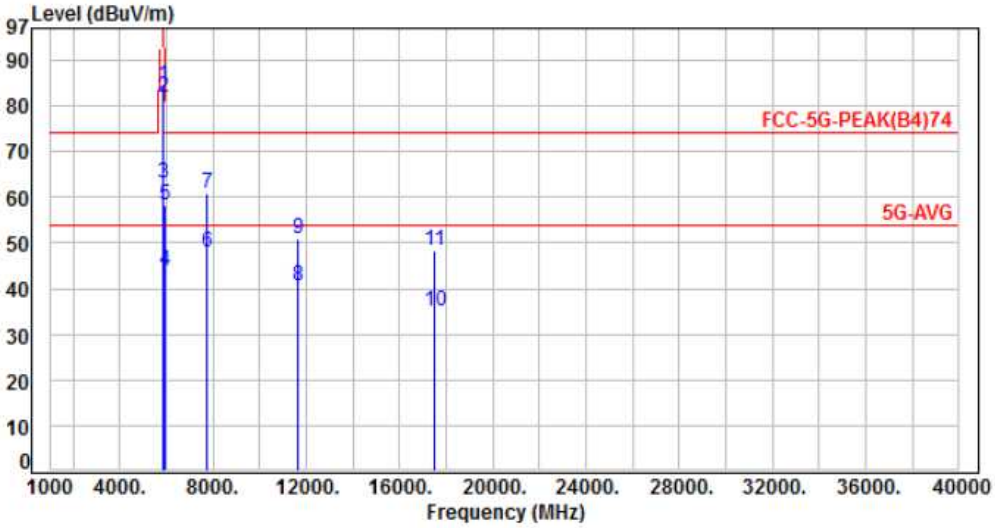
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH165, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-12.19	84.00	71.81	122.20	-50.39	Peak	110	306	P
2	5855.00	-12.19	80.10	67.91	110.80	-42.89	Peak	110	306	P
3	5875.00	-12.20	70.41	58.21	105.20	-46.99	Peak	110	306	P
4	5925.00	-12.20	54.30	42.10	54.00	-11.90	Average	110	306	P
5	5925.00	-12.20	68.40	56.20	74.00	-17.80	Peak	110	306	P
6	7766.54	-9.77	56.51	46.74	54.00	-7.26	Average	100	321	P
7	7766.54	-9.77	71.32	61.55	74.00	-12.45	Peak	100	321	P
8	11650.00	-6.11	44.50	38.39	54.00	-15.61	Average	100	332	P
9	11650.00	-6.11	54.80	48.69	74.00	-25.31	Peak	100	332	P
10	17475.00	2.63	33.54	36.17	54.00	-17.83	Average	100	335	P
11	17475.00	2.63	47.81	50.44	74.00	-23.56	Peak	100	335	P

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

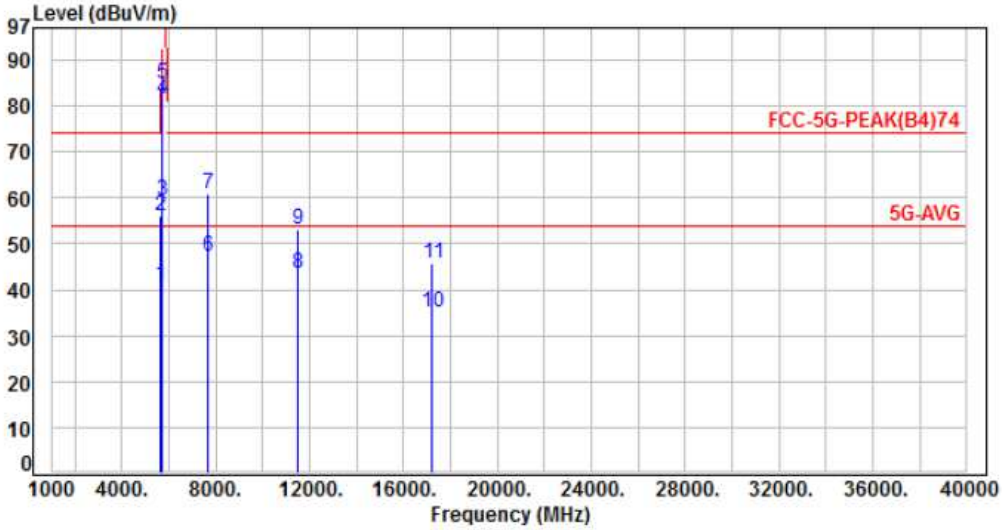
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH165, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-12.19	96.70	84.51	122.20	-37.69	Peak	100	296	P
2	5855.00	-12.19	93.90	81.71	110.80	-29.09	Peak	100	296	P
3	5875.00	-12.20	75.31	63.11	105.20	-42.09	Peak	100	296	P
4	5925.00	-12.20	56.00	43.80	54.00	-10.20	Average	100	296	P
5	5925.00	-12.20	70.50	58.30	74.00	-15.70	Peak	100	296	P
6	7766.54	-9.77	57.63	47.86	54.00	-6.14	Average	100	296	P
7	7766.54	-9.77	70.65	60.88	74.00	-13.12	Peak	100	296	P
8	11650.00	-6.11	46.70	40.59	54.00	-13.41	Average	100	333	P
9	11650.00	-6.11	56.90	50.79	74.00	-23.21	Peak	100	333	P
10	17475.00	2.63	32.54	35.17	54.00	-18.83	Average	104	306	P
11	17475.00	2.63	45.61	48.24	74.00	-25.76	Peak	104	306	P

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

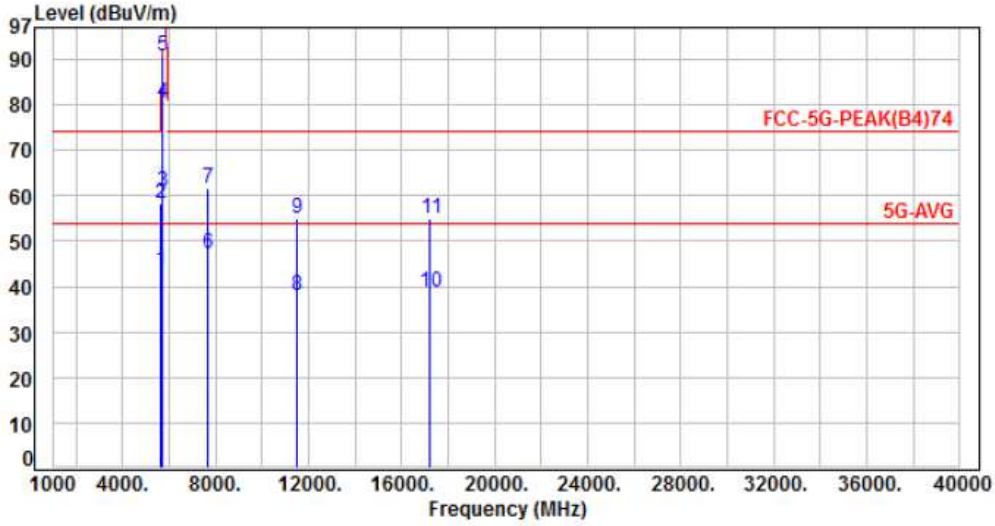
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH149, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	53.20	41.04	54.00	-12.96	Average	251	315	P
2	5650.00	-12.16	68.20	56.04	74.00	-17.96	Peak	251	315	P
3	5700.00	-12.17	71.40	59.23	105.20	-45.97	Peak	251	315	P
4	5720.00	-12.18	93.71	81.53	110.80	-29.27	Peak	251	315	P
5	5725.00	-12.18	97.11	84.93	122.20	-37.27	Peak	251	315	P
6	7660.00	-9.75	56.80	47.05	54.00	-6.95	Average	107	289	P
7	7660.00	-9.75	70.61	60.86	74.00	-13.14	Peak	107	289	P
8	11490.00	-6.17	49.59	43.42	54.00	-10.58	Average	128	332	P
9	11490.00	-6.17	59.19	53.02	74.00	-20.98	Peak	128	332	P
10	17235.00	1.38	33.66	35.04	54.00	-18.96	Average	100	301	P
11	17235.00	1.38	44.51	45.89	74.00	-28.11	Peak	100	301	P

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

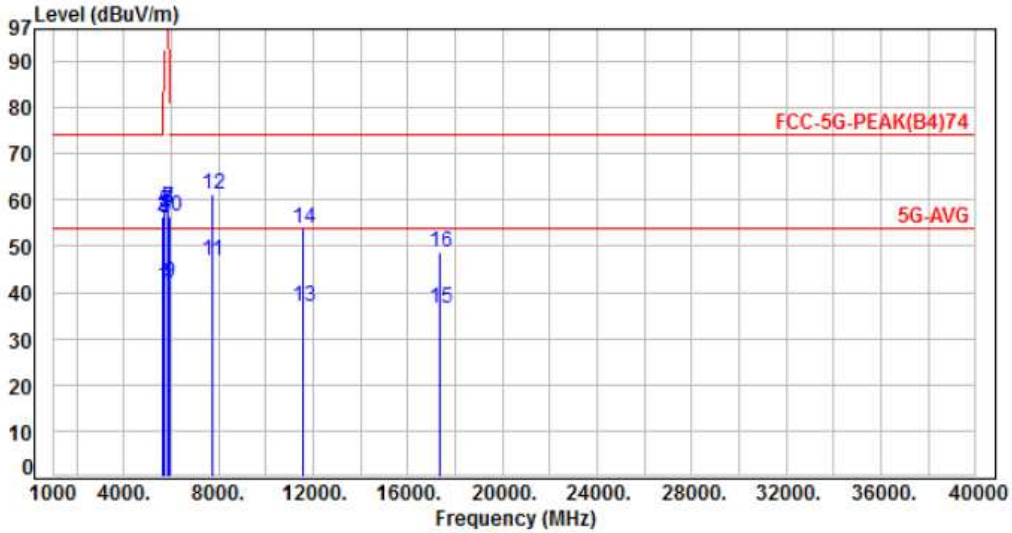
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH149, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	55.80	43.64	54.00	-10.36	Average	100	296	P
2	5650.00	-12.16	70.50	58.34	74.00	-15.66	Peak	100	296	P
3	5700.00	-12.17	73.20	61.03	105.20	-44.17	Peak	100	296	P
4	5720.00	-12.18	92.71	80.53	110.80	-30.27	Peak	100	296	P
5	5725.00	-12.18	103.01	90.83	122.20	-31.37	Peak	100	296	P
6	7660.00	-9.75	57.11	47.36	54.00	-6.64	Average	100	301	P
7	7660.00	-9.75	71.32	61.57	74.00	-12.43	Peak	100	301	P
8	11490.00	-6.17	44.19	38.02	54.00	-15.98	Average	137	344	P
9	11490.00	-6.17	61.19	55.02	74.00	-18.98	Peak	137	344	P
10	17235.00	1.38	37.21	38.59	54.00	-15.41	Average	113	299	P
11	17235.00	1.38	53.71	55.09	74.00	-18.91	Peak	113	299	P

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

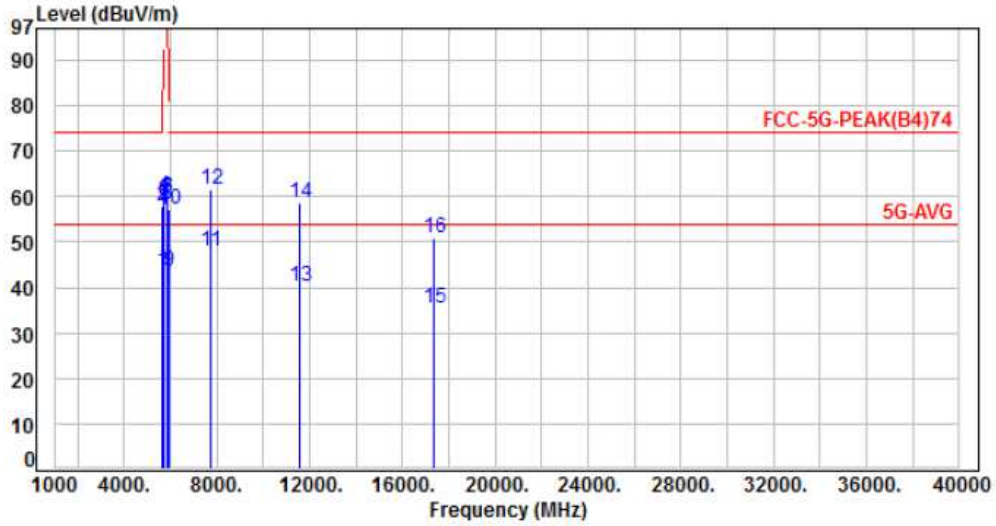
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH157, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	53.44	41.28	54.00	-12.72	Average	106	308	P
2	5650.00	-12.16	68.50	56.34	74.00	-17.66	Peak	106	308	P
3	5700.00	-12.17	68.20	56.03	105.20	-49.17	Peak	106	308	P
4	5720.00	-12.18	68.51	56.33	110.80	-54.47	Peak	106	308	P
5	5725.00	-12.18	69.81	57.63	122.20	-64.57	Peak	106	308	P
6	5850.00	-12.19	69.60	57.41	122.20	-64.79	Peak	106	308	P
7	5855.00	-12.19	70.30	58.11	110.80	-52.69	Peak	106	308	P
8	5875.00	-12.20	70.51	58.31	105.20	-46.89	Peak	106	308	P
9	5925.00	-12.20	54.30	42.10	54.00	-11.90	Average	106	308	P
10	5925.00	-12.20	68.50	56.30	74.00	-17.70	Peak	106	308	P
11	7713.60	-9.77	56.56	46.79	54.00	-7.21	Average	106	298	P
12	7713.60	-9.77	70.83	61.06	74.00	-12.94	Peak	106	298	P
13	11570.00	-6.13	43.20	37.07	54.00	-16.93	Average	100	340	P
14	11570.00	-6.13	59.90	53.77	74.00	-20.23	Peak	100	340	P
15	17355.00	2.01	34.62	36.63	54.00	-17.37	Average	107	55	P
16	17355.00	2.01	46.51	48.52	74.00	-25.48	Peak	107	55	P

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

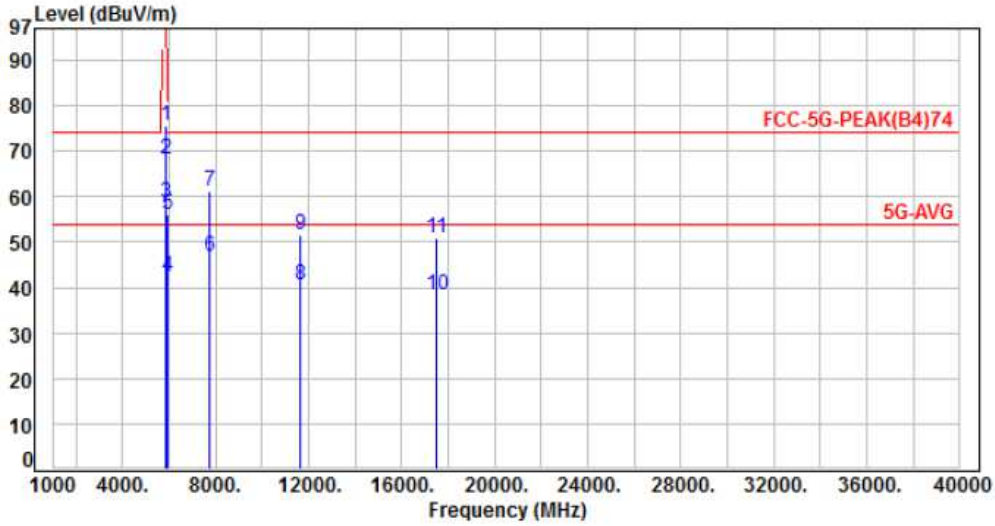
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH157, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	55.80	43.64	54.00	-10.36	Average	146	296	P
2	5650.00	-12.16	70.10	57.94	74.00	-16.06	Peak	146	296	P
3	5700.00	-12.17	71.20	59.03	105.20	-46.17	Peak	146	296	P
4	5720.00	-12.18	72.21	60.03	110.80	-50.77	Peak	146	296	P
5	5725.00	-12.18	70.61	58.43	122.20	-63.77	Peak	146	296	P
6	5850.00	-12.19	72.10	59.91	122.20	-62.29	Peak	146	296	P
7	5855.00	-12.19	71.50	59.31	110.80	-51.49	Peak	146	296	P
8	5875.00	-12.20	70.31	58.11	105.20	-47.09	Peak	146	296	P
9	5925.00	-12.20	55.90	43.70	54.00	-10.30	Average	146	296	P
10	5925.00	-12.20	69.40	57.20	74.00	-16.80	Peak	146	296	P
11	7713.60	-9.77	57.67	47.90	54.00	-6.10	Average	100	299	P
12	7713.60	-9.77	71.21	61.44	74.00	-12.56	Peak	100	299	P
13	11570.00	-6.13	46.30	40.17	54.00	-13.83	Average	100	309	P
14	11570.00	-6.13	64.90	58.77	74.00	-15.23	Peak	100	309	P
15	17355.00	2.01	33.50	35.51	54.00	-18.49	Average	110	299	P
16	17355.00	2.01	48.90	50.91	74.00	-23.09	Peak	110	299	P

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

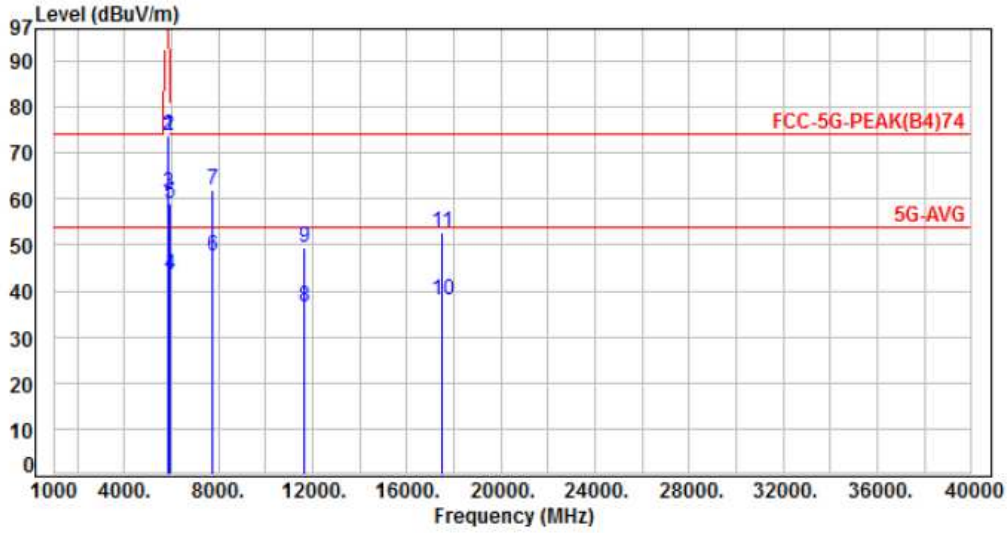
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH165, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-12.19	87.90	75.71	122.20	-46.49	Peak	135	312	P
2	5855.00	-12.19	80.60	68.41	110.80	-42.39	Peak	135	312	P
3	5875.00	-12.20	70.71	58.51	105.20	-46.69	Peak	135	312	P
4	5925.00	-12.20	54.50	42.30	54.00	-11.70	Average	135	312	P
5	5925.00	-12.20	68.30	56.10	74.00	-17.90	Peak	135	312	P
6	7766.59	-9.77	56.51	46.74	54.00	-7.26	Average	104	299	P
7	7766.59	-9.77	70.82	61.05	74.00	-12.95	Peak	104	299	P
8	11650.00	-6.11	46.50	40.39	54.00	-13.61	Average	100	330	P
9	11650.00	-6.11	57.80	51.69	74.00	-22.31	Peak	100	330	P
10	17475.00	2.63	35.66	38.29	54.00	-15.71	Average	100	331	P
11	17475.00	2.63	48.26	50.89	74.00	-23.11	Peak	100	331	P

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

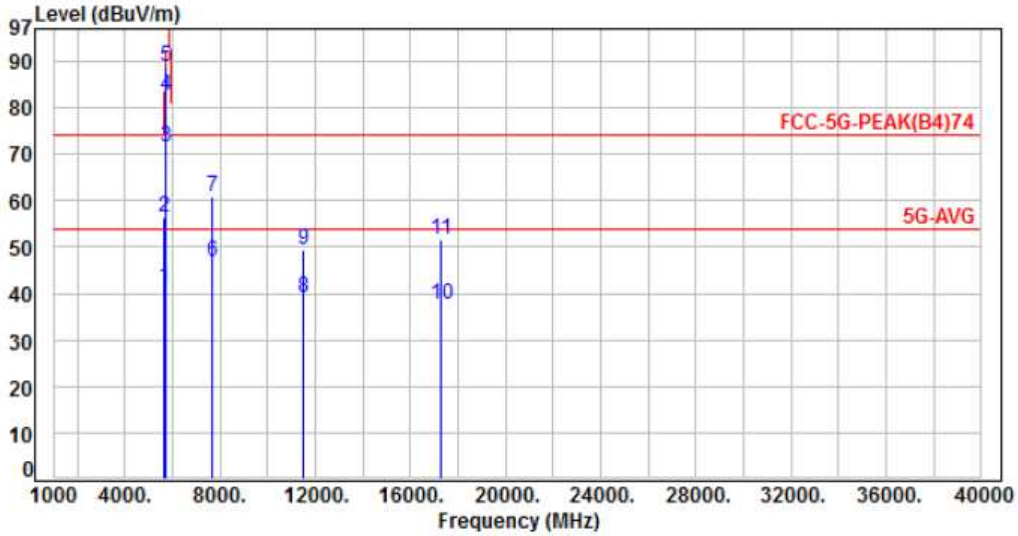
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH165, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5850.00	-12.19	85.80	73.61	122.20	-48.59	Peak	160	294	P
2	5855.00	-12.19	85.90	73.71	110.80	-37.09	Peak	160	294	P
3	5875.00	-12.20	73.31	61.11	105.20	-44.09	Peak	160	294	P
4	5925.00	-12.20	55.90	43.70	54.00	-10.30	Average	160	294	P
5	5925.00	-12.20	71.20	59.00	74.00	-15.00	Peak	160	294	P
6	7766.59	-9.77	57.30	47.53	54.00	-6.47	Average	100	305	P
7	7766.59	-9.77	71.66	61.89	74.00	-12.11	Peak	100	305	P
8	11650.00	-6.11	42.60	36.49	54.00	-17.51	Average	110	302	P
9	11650.00	-6.11	55.40	49.29	74.00	-24.71	Peak	110	302	P
10	17475.00	2.63	35.30	37.93	54.00	-16.07	Average	100	302	P
11	17475.00	2.63	50.10	52.73	74.00	-21.27	Peak	100	302	P

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

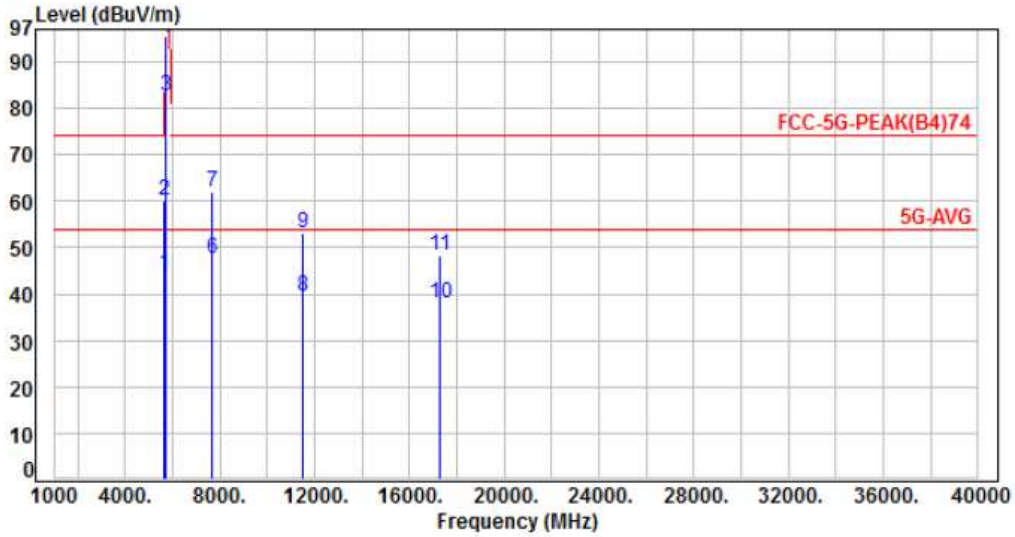
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH151, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	53.56	41.40	54.00	-12.60	Average	182	310	P
2	5650.00	-12.16	68.50	56.34	74.00	-17.66	Peak	182	310	P
3	5700.00	-12.17	83.80	71.63	105.20	-33.57	Peak	182	310	P
4	5720.00	-12.18	94.91	82.73	110.80	-28.07	Peak	182	310	P
5	5725.00	-12.18	101.21	89.03	122.20	-33.17	Peak	182	310	P
6	7673.30	-9.75	56.65	46.90	54.00	-7.10	Average	100	299	P
7	7673.30	-9.75	70.50	60.75	74.00	-13.25	Peak	100	299	P
8	11510.00	-6.16	45.10	38.94	54.00	-15.06	Average	100	333	P
9	11510.00	-6.16	55.60	49.44	74.00	-24.56	Peak	100	333	P
10	17265.00	1.54	36.20	37.74	54.00	-16.26	Average	105	327	P
11	17265.00	1.54	50.10	51.64	74.00	-22.36	Peak	105	327	P

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

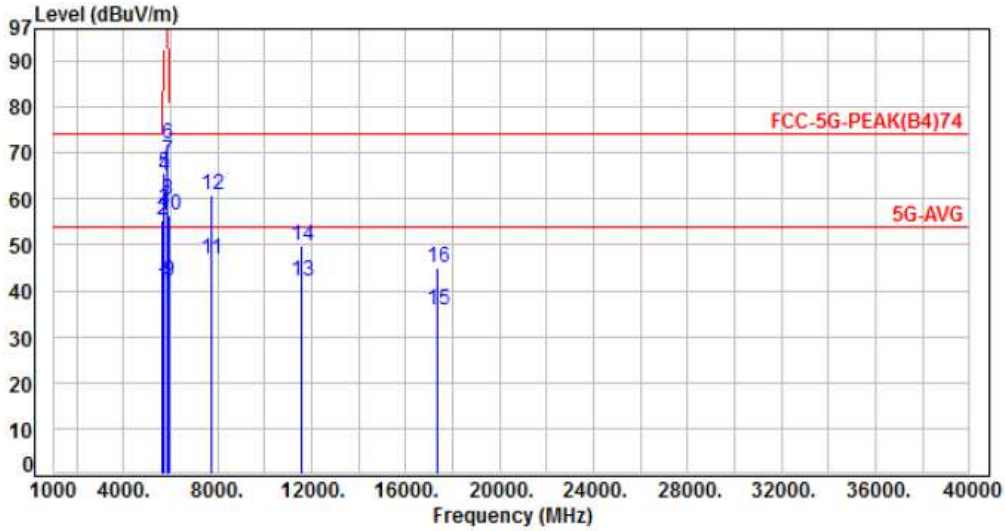
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH151, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	56.55	44.39	54.00	-9.61	Average	100	300	P
2	5650.00	-12.16	72.21	60.05	74.00	-13.95	Peak	100	300	P
3	5700.00	-12.17	94.80	82.63	105.20	-22.57	Peak	100	300	P
4	5720.00	-12.18	107.31	95.13	110.80	-15.67	Peak	100	300	P
5	5725.00	-12.18	107.81	95.63	122.20	-26.57	Peak	100	300	P
6	7673.30	-9.75	57.20	47.45	54.00	-6.55	Average	107	322	P
7	7673.30	-9.75	71.60	61.85	74.00	-12.15	Peak	107	322	P
8	11510.00	-6.16	45.60	39.44	54.00	-14.56	Average	100	342	P
9	11510.00	-6.16	59.30	53.14	74.00	-20.86	Peak	100	342	P
10	17265.00	1.54	36.51	38.05	54.00	-15.95	Average	112	298	P
11	17265.00	1.54	46.80	48.34	74.00	-25.66	Peak	112	298	P

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

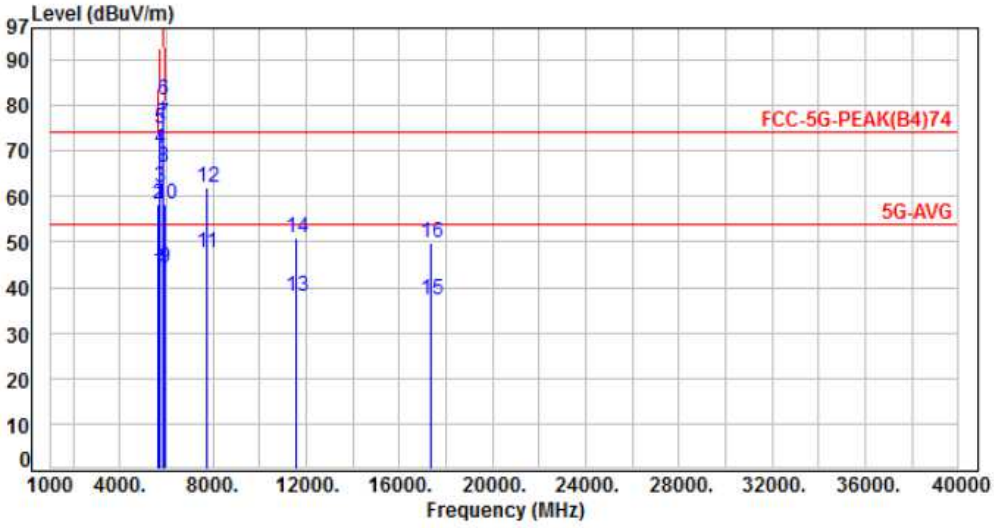
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH159, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	53.20	41.04	54.00	-12.96	Average	182	317	P
2	5650.00	-12.16	67.54	55.38	74.00	-18.62	Peak	182	317	P
3	5700.00	-12.17	69.70	57.53	105.20	-47.67	Peak	182	317	P
4	5720.00	-12.18	77.23	65.05	110.80	-45.75	Peak	182	317	P
5	5725.00	-12.18	77.81	65.63	122.20	-56.57	Peak	182	317	P
6	5850.00	-12.19	84.20	72.01	122.20	-50.19	Peak	182	317	P
7	5855.00	-12.19	80.60	68.41	110.80	-42.39	Peak	182	317	P
8	5875.00	-12.20	71.91	59.71	105.20	-45.49	Peak	182	317	P
9	5925.00	-12.20	54.20	42.00	54.00	-12.00	Average	182	317	P
10	5925.00	-12.20	68.70	56.50	74.00	-17.50	Peak	182	317	P
11	7726.70	-9.77	56.62	46.85	54.00	-7.15	Average	108	347	P
12	7726.70	-9.77	70.54	60.77	74.00	-13.23	Peak	108	347	P
13	11590.00	-6.13	48.20	42.07	54.00	-11.93	Average	105	332	P
14	11590.00	-6.13	55.80	49.67	74.00	-24.33	Peak	105	332	P
15	17385.00	2.16	33.65	35.81	54.00	-18.19	Average	100	293	P
16	17385.00	2.16	42.99	45.15	74.00	-28.85	Peak	100	293	P

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

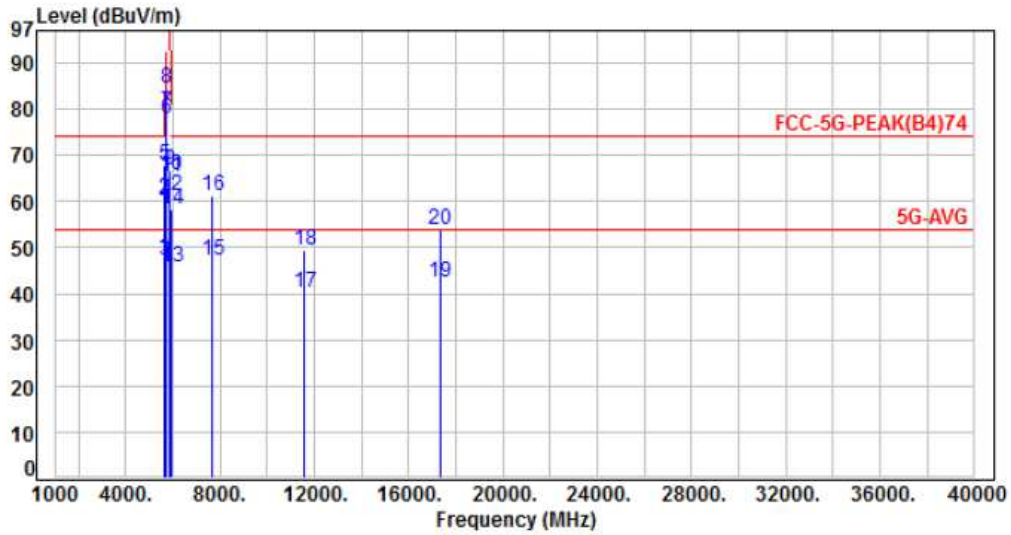
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH159, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5650.00	-12.16	55.60	43.44	54.00	-10.56	Average	130	300	P
2	5650.00	-12.16	70.50	58.34	74.00	-15.66	Peak	130	300	P
3	5700.00	-12.17	74.20	62.03	105.20	-43.17	Peak	130	300	P
4	5720.00	-12.18	82.81	70.63	110.80	-40.17	Peak	130	300	P
5	5725.00	-12.18	86.91	74.73	122.20	-47.47	Peak	130	300	P
6	5850.00	-12.19	93.50	81.31	122.20	-40.89	Peak	130	300	P
7	5855.00	-12.19	88.30	76.11	110.80	-34.69	Peak	130	300	P
8	5875.00	-12.20	78.71	66.51	105.20	-38.69	Peak	130	300	P
9	5925.00	-12.20	56.50	44.30	54.00	-9.70	Average	130	300	P
10	5925.00	-12.20	70.40	58.20	74.00	-15.80	Peak	130	300	P
11	7726.70	-9.77	57.32	47.55	54.00	-6.45	Average	100	351	P
12	7726.70	-9.77	71.85	62.08	74.00	-11.92	Peak	100	351	P
13	11590.00	-6.13	44.30	38.17	54.00	-15.83	Average	102	344	P
14	11590.00	-6.13	57.20	51.07	74.00	-22.93	Peak	102	344	P
15	17385.00	2.16	35.22	37.38	54.00	-16.62	Average	105	300	P
16	17385.00	2.16	47.65	49.81	74.00	-24.19	Peak	105	300	P

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

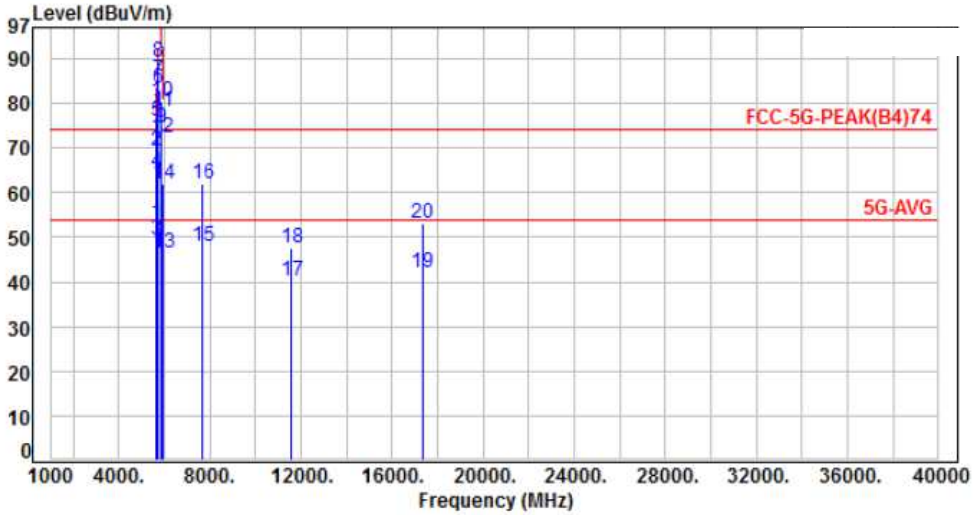
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, CH155, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5642.00	-12.15	59.81	47.66	54.00	-6.34	Average	106	310	P
2	5642.00	-12.15	72.79	60.64	74.00	-13.36	Peak	106	310	P
3	5650.00	-12.16	59.40	47.24	54.00	-6.76	Average	106	310	P
4	5650.00	-12.16	71.60	59.44	74.00	-14.56	Peak	106	310	P
5	5664.00	-12.16	80.10	67.94	82.74	-14.80	Peak	106	310	P
6	5682.40	-12.17	89.88	77.71	94.22	-16.51	Peak	106	310	P
7	5700.00	-12.17	91.50	79.33	105.20	-25.87	Peak	106	310	P
8	5720.00	-12.18	96.54	84.36	110.80	-26.44	Peak	106	310	P
9	5850.00	-12.19	78.90	66.71	122.20	-55.49	Peak	106	310	P
10	5855.00	-12.19	77.90	65.71	110.80	-45.09	Peak	106	310	P
11	5871.00	-12.20	77.31	65.11	106.32	-41.21	Peak	106	310	P
12	5875.00	-12.20	73.51	61.31	105.20	-43.89	Peak	106	310	P
13	5925.00	-12.20	58.10	45.90	54.00	-8.10	Average	106	310	P
14	5925.00	-12.20	70.30	58.10	74.00	-15.90	Peak	106	310	P
15	7700.00	-9.76	56.90	47.14	54.00	-6.86	Average	377	155	P
16	7700.00	-9.76	70.85	61.09	74.00	-12.91	Peak	377	155	P
17	11550.00	-6.14	46.30	40.16	54.00	-13.84	Average	100	352	P
18	11550.00	-6.14	55.50	49.36	74.00	-24.64	Peak	100	352	P
19	17325.00	1.85	40.60	42.45	54.00	-11.55	Average	100	354	P
20	17325.00	1.85	52.00	53.85	74.00	-20.15	Peak	100	354	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, CH155, Band 4	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	5642.00	-12.15	65.09	52.94	54.00	-1.06	Average	153	300	P
2	5642.00	-12.15	81.49	69.34	74.00	-4.66	Peak	153	300	P
3	5650.00	-12.16	61.44	49.28	54.00	-4.72	Average	153	300	P
4	5650.00	-12.16	76.80	64.64	74.00	-9.36	Peak	153	300	P
5	5664.00	-12.16	87.98	75.82	82.74	-6.92	Peak	153	300	P
6	5682.40	-12.17	95.55	83.38	94.22	-10.84	Peak	153	300	P
7	5700.00	-12.17	97.50	85.33	105.20	-19.87	Peak	153	300	P
8	5720.00	-12.18	101.31	89.13	110.80	-21.67	Peak	153	300	P
9	5850.00	-12.19	86.60	74.41	122.20	-47.79	Peak	153	300	P
10	5855.00	-12.19	92.60	80.41	110.80	-30.39	Peak	153	300	P
11	5871.00	-12.20	90.31	78.11	106.32	-28.21	Peak	153	300	P
12	5875.00	-12.20	84.33	72.13	105.20	-33.07	Peak	153	300	P
13	5925.00	-12.20	58.60	46.40	54.00	-7.60	Average	153	300	P
14	5925.00	-12.20	74.30	62.10	74.00	-11.90	Peak	153	300	P
15	7700.00	-9.76	57.70	47.94	54.00	-6.06	Average	192	163	P
16	7700.00	-9.76	71.63	61.87	74.00	-12.13	Peak	192	163	P
17	11550.00	-6.14	46.30	40.16	54.00	-13.84	Average	100	331	P
18	11550.00	-6.14	53.70	47.56	74.00	-26.44	Peak	100	331	P
19	17325.00	1.85	40.36	42.21	54.00	-11.79	Average	108	304	P
20	17325.00	1.85	51.20	53.05	74.00	-20.95	Peak	108	304	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

7. On Time, Duty Cycle and Measurement methods

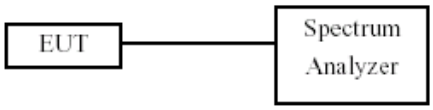
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



7.4. Test Result and Data

Temperature: 23°C Humidity: 60%

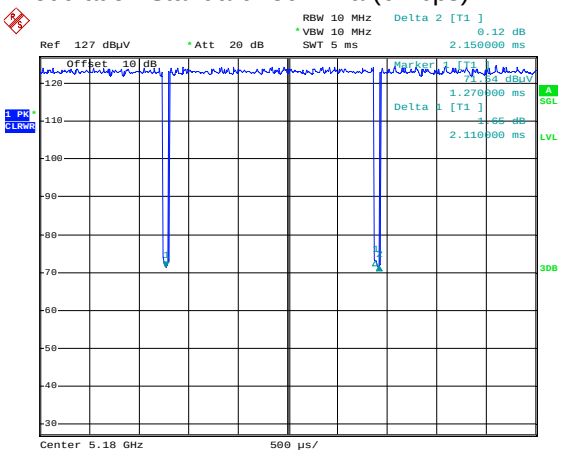
Test Date: Jan. 15, 2018

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)	1/T Minimum VBW(Hz)	Duty Cycle correction Factor (dB)
802.11a	2.11	2.15	98.14%	473.93	0.08
802.11ac VHT20	5.08	5.10	99.61%	196.85	0.02
802.11ac VHT40	2.47	2.51	98.41%	404.86	0.07
802.11ac VHT80	1.17	1.22	95.75%	853.24	0.19

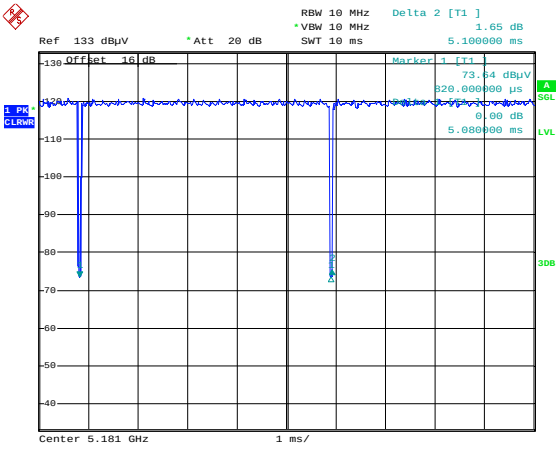
7.5. Measurement Methods

26 dB and 6dB Emission BW	KDB 789033 D02 v01, Section C
99% Occupied BW	KDB 789033 D02 v01, Section D
Conducted Output Power	KDB 789033 D02 v01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v01, Sections G and H

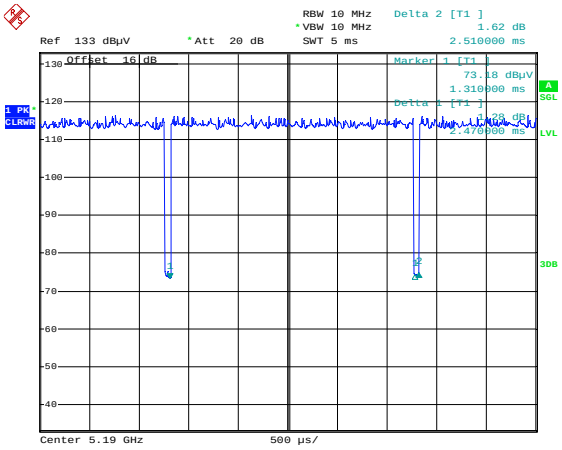
Modulation Standard: 802.11a (6Mbps)



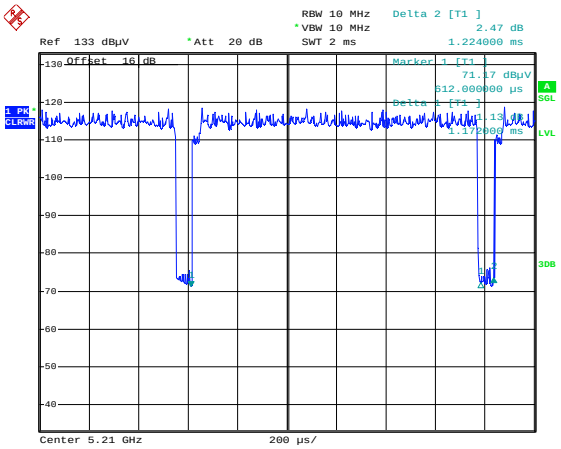
Modulation Standard: 802.11ac VHT20 (6.5Mbps)



Modulation Standard: 802.11ac VHT40 (13.5Mbps)



Modulation Standard: 802.11ac VHT80 (29.3Mbps)



8. 6dB Bandwidth & 99% Bandwidth

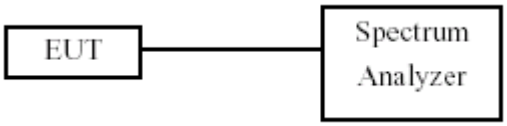
8.1. Test Limit

FCC §15.407
The minimum 6 dB bandwidth shall be at least 500 kHz.

8.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data (6dB Bandwidth)

Temperature: 23°C Humidity: 60%
Test Date: Jan. 15, 2018

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)
			ANT A	ANT B	
802.11a	149	5745	16.10	16.40	0.50
	157	5785	16.30	16.30	0.50
	165	5825	16.30	15.10	0.50
802.11ac VHT20	149	5745	17.50	17.50	0.50
	157	5785	17.50	17.60	0.50
	165	5825	17.60	15.10	0.50
802.11ac VHT40	155	5755	35.20	35.20	0.50
	159	5795	35.20	35.20	0.50
802.11ac VHT80	155	5775	75.52	75.52	0.50

8.5. Test Result and Data (99% Bandwidth)

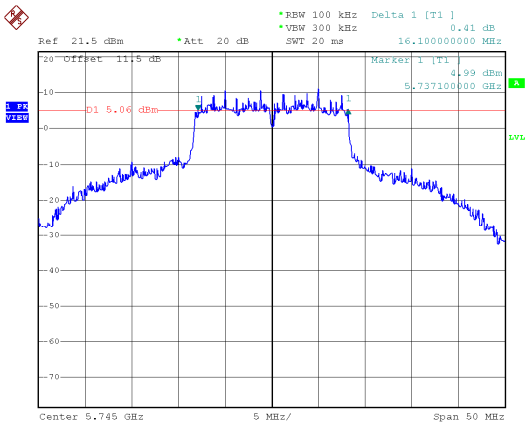
Temperature: 23°C Humidity: 60%

Test Date: Jan. 15, 2018

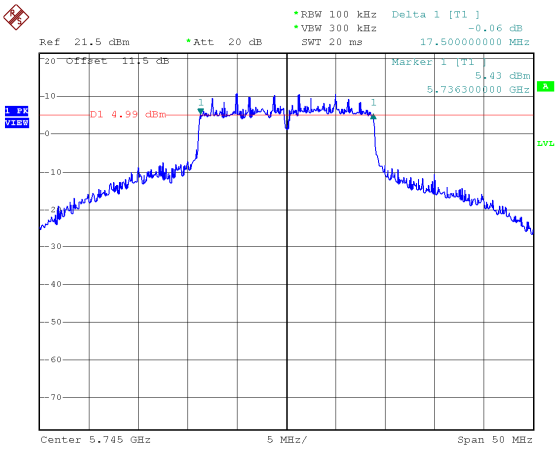
In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	149	5745	25.50	23.50
	157	5785	23.30	22.50
	165	5825	23.20	21.00
802.11ac VHT20	149	5745	21.70	20.90
	157	5785	23.00	21.30
	165	5825	23.00	22.70
802.11ac VHT40	155	5755	47.40	46.20
	159	5795	47.80	46.20
802.11ac VHT80	155	5775	77.12	76.80

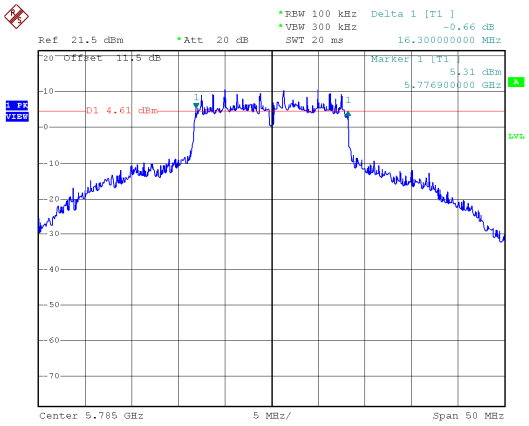
6dB Bandwidth
ANT A
Modulation Standard: 802.11a (6Mbps)
CH149



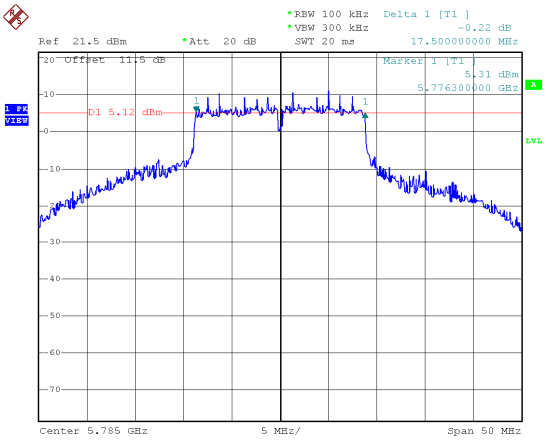
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



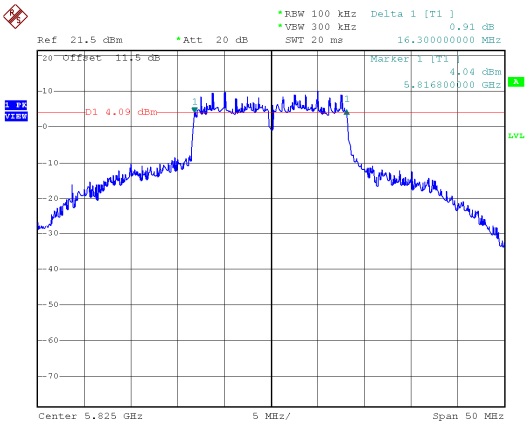
CH157



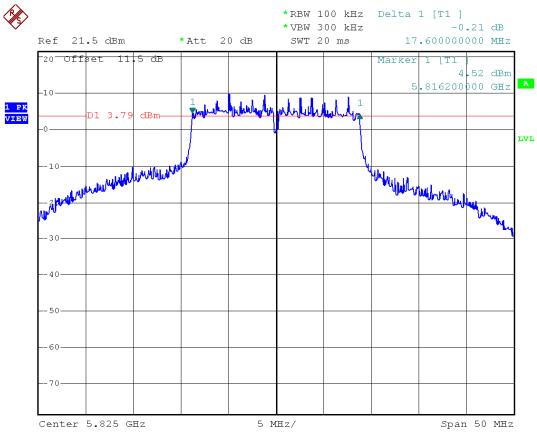
CH157



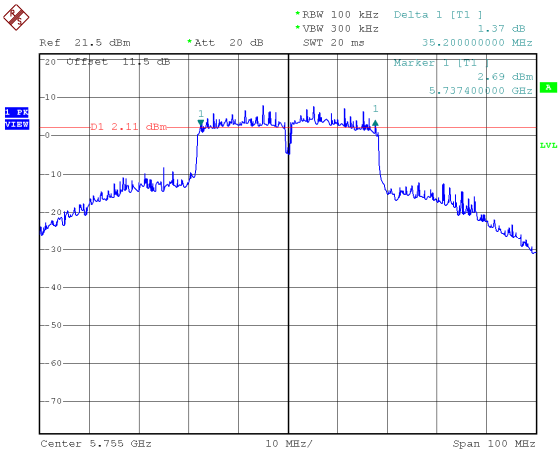
CH165



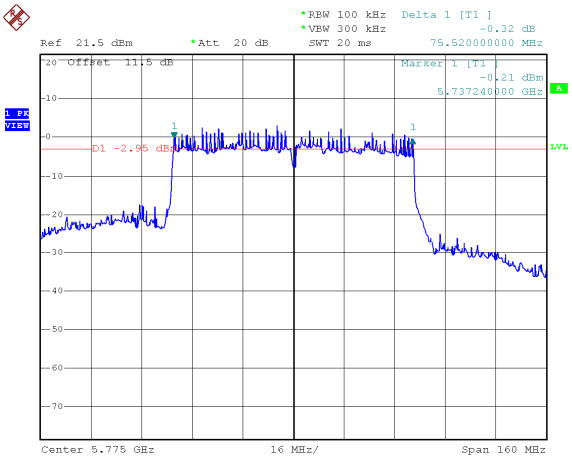
CH165



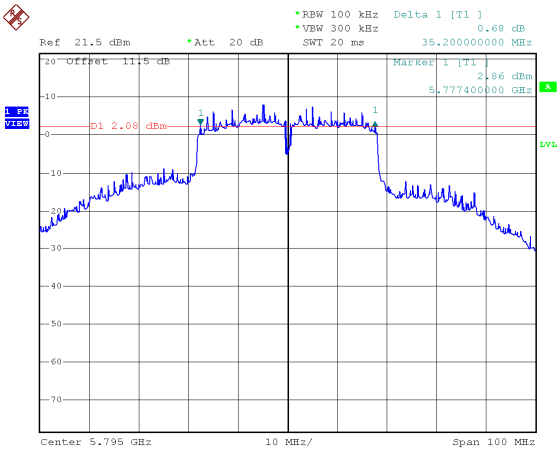
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



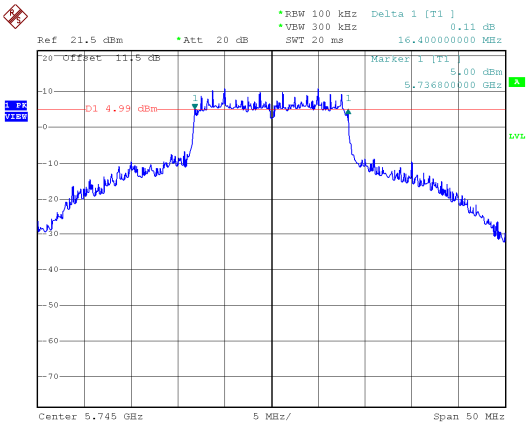
CH159



ANT B

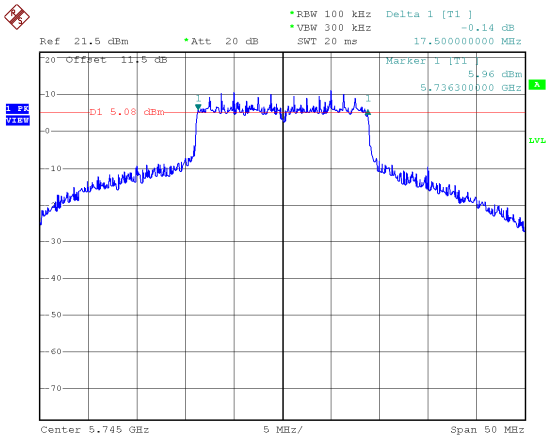
Modulation Standard: 802.11a (6Mbps)

CH149

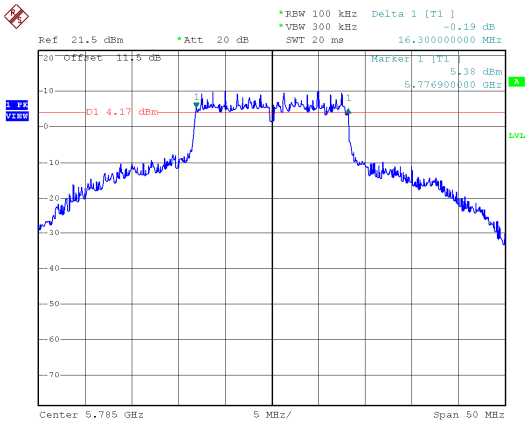


Modulation Standard: 802.11ac, VHT20 (6.5Mbps)

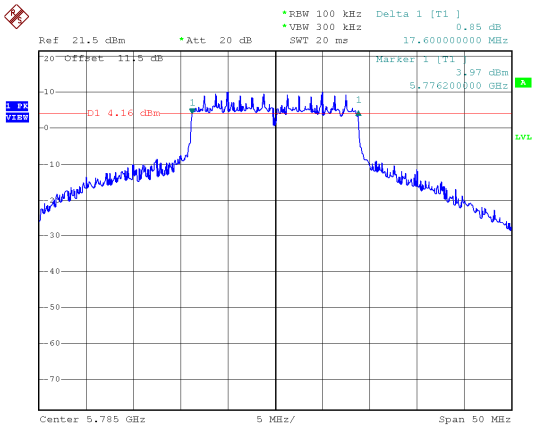
CH149



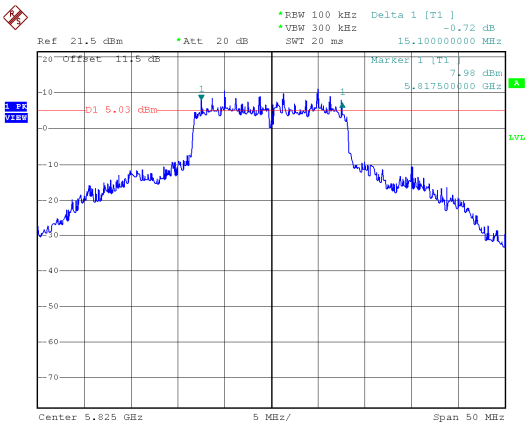
CH157



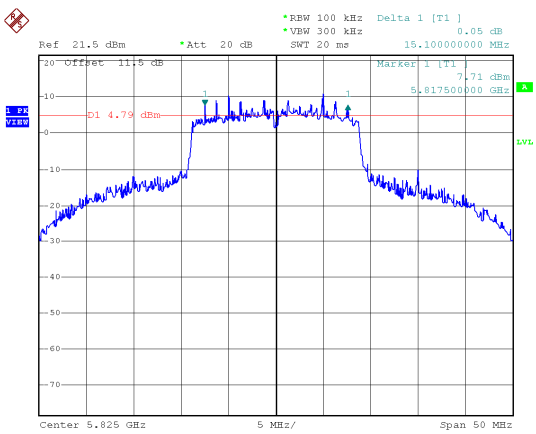
CH157



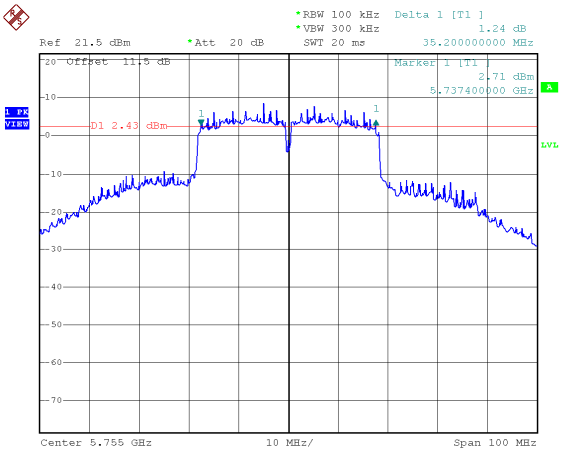
CH165



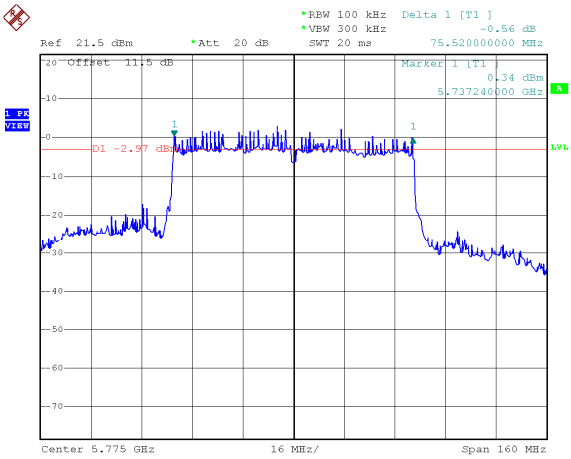
CH165



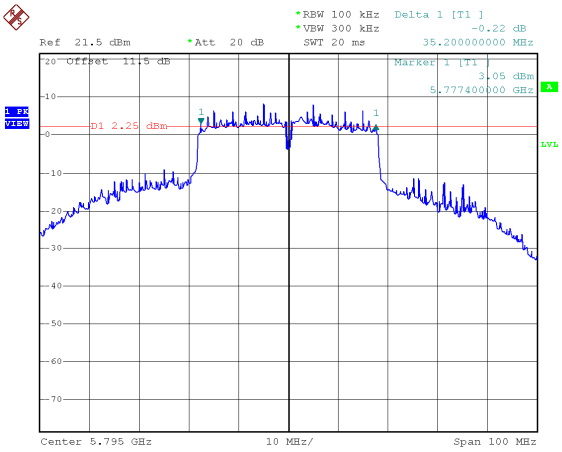
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155

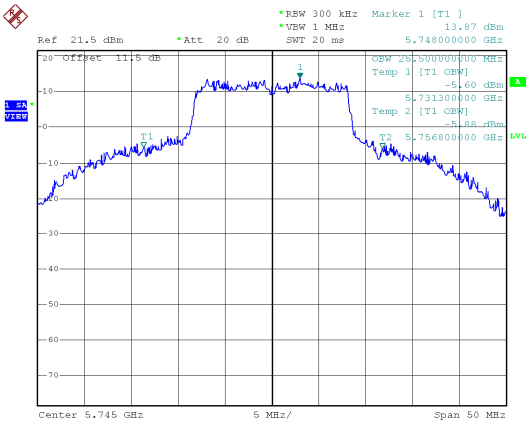


CH159

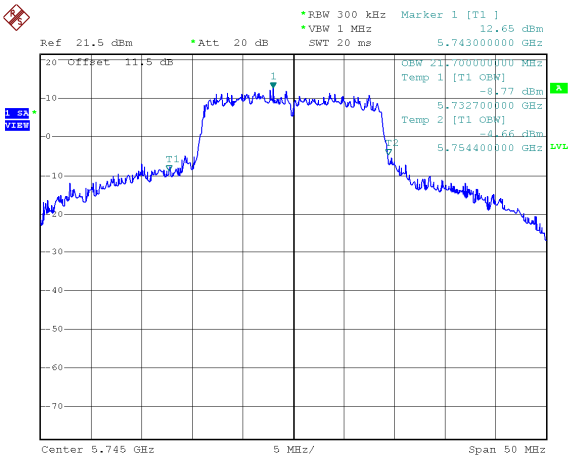


99% Bandwidth
ANT A

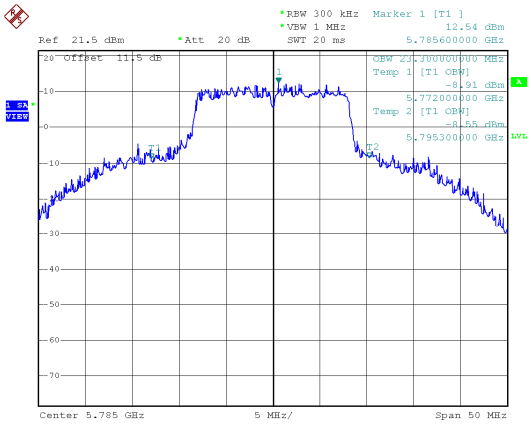
Modulation Standard: 802.11a (6Mbps)
CH149



Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



CH157



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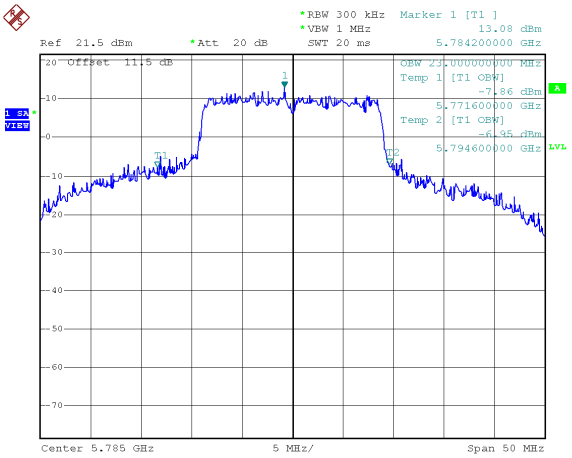

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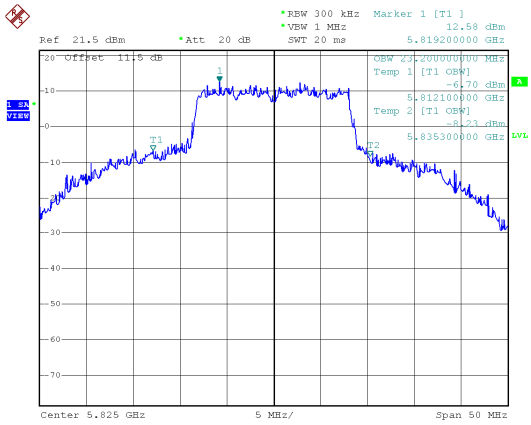
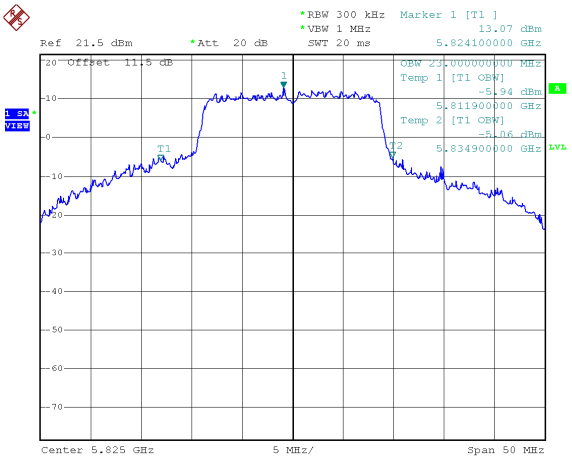
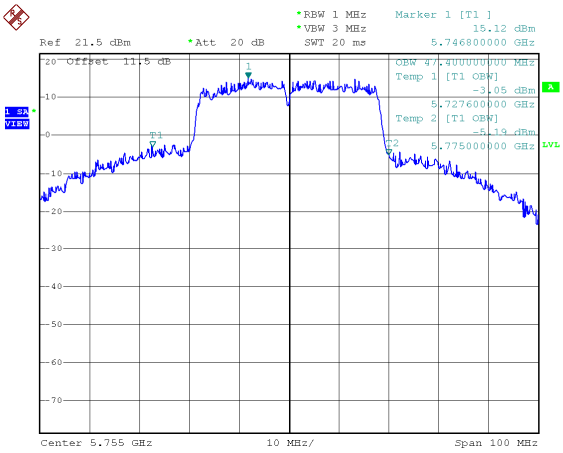


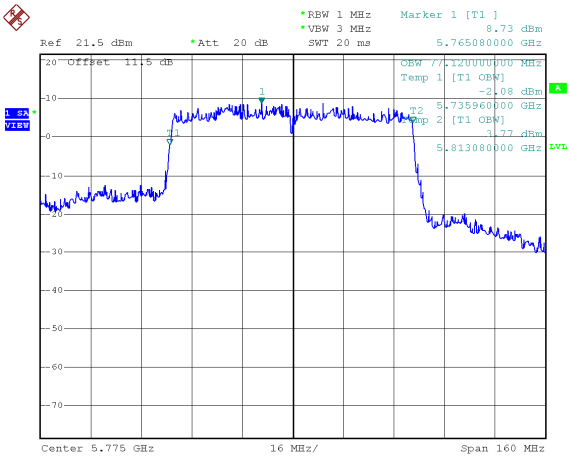
CH165



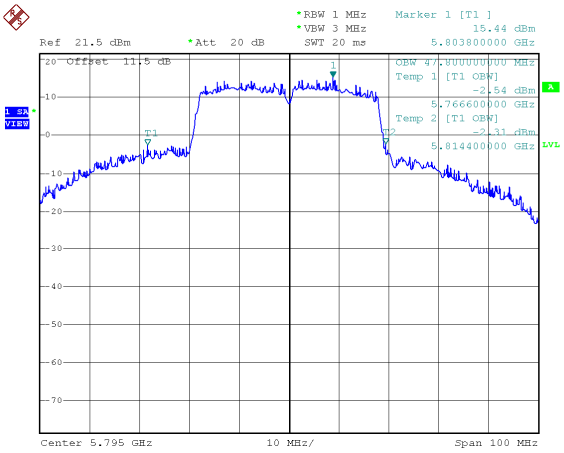
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



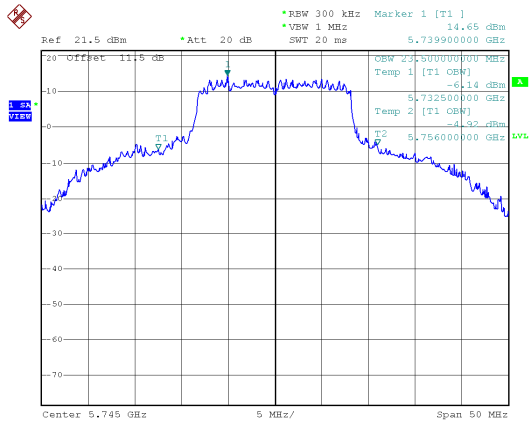
CH159



ANT B

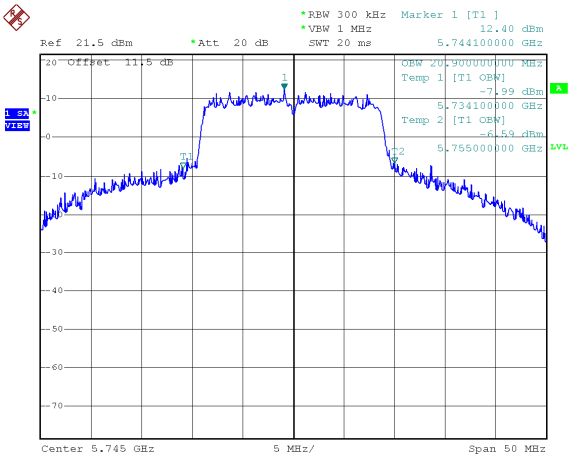
Modulation Standard: 802.11a (6Mbps)

CH149

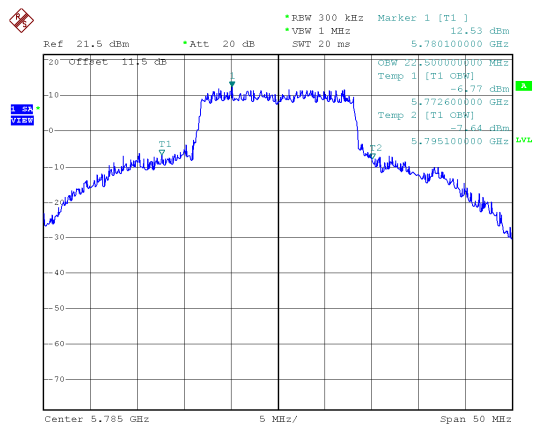


Modulation Standard: 802.11ac, VHT20 (6.5Mbps)

CH149



CH157



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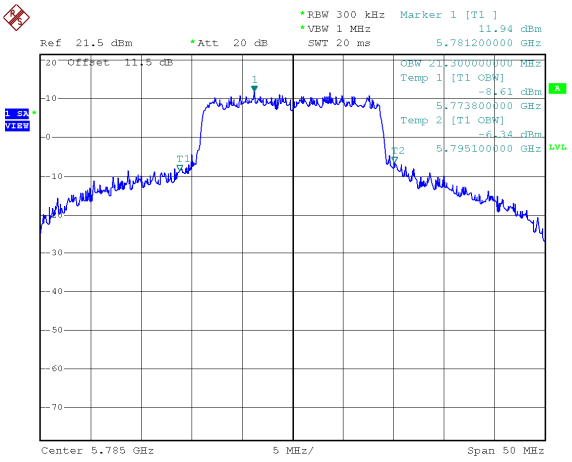
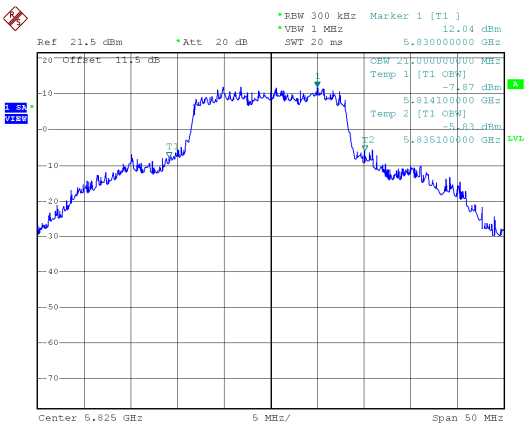
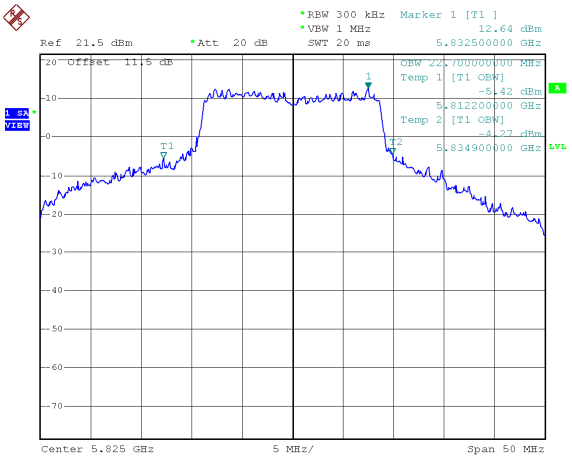


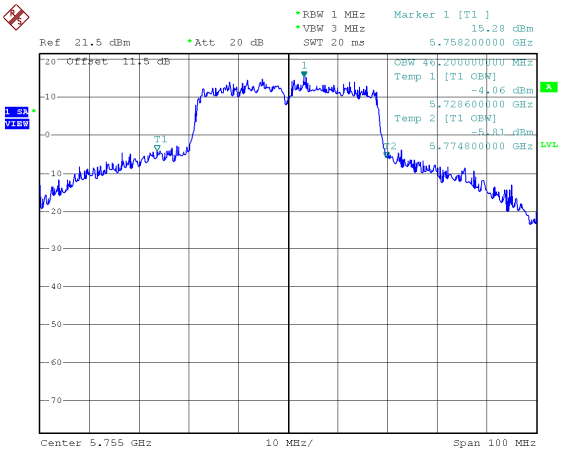
CH165



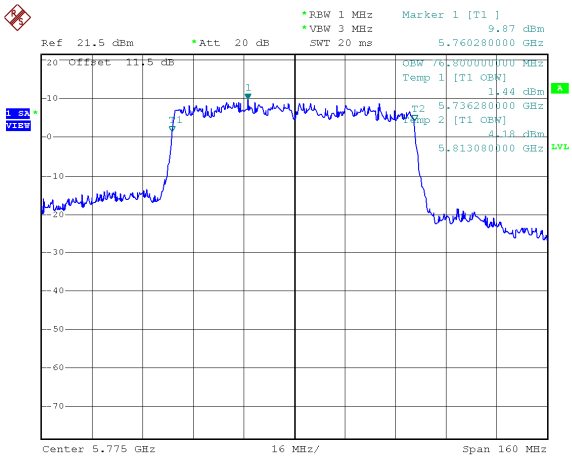
CH165



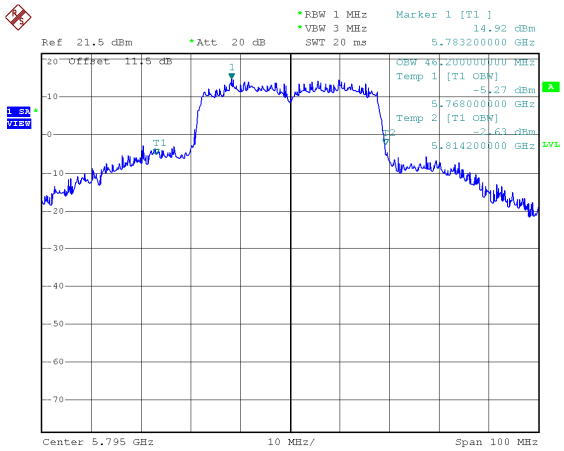
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



CH159



9. 26dB Bandwidth & 99% Bandwidth

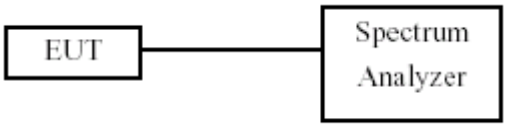
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW >= 3 x RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data (26dB Bandwidth)

Temperature: 23°C Humidity: 60%
Test Date: Jan. 15, 2018

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	23.60	22.80
	44	5220	36.40	35.00
	48	5240	36.20	34.90
802.11ac VHT20	36	5180	25.30	24.80
	44	5220	34.60	35.40
	48	5240	33.30	33.30
802.11ac VHT40	38	5190	41.20	41.20
	46	5230	79.20	79.00
802.11ac VHT80	42	5210	84.80	85.12

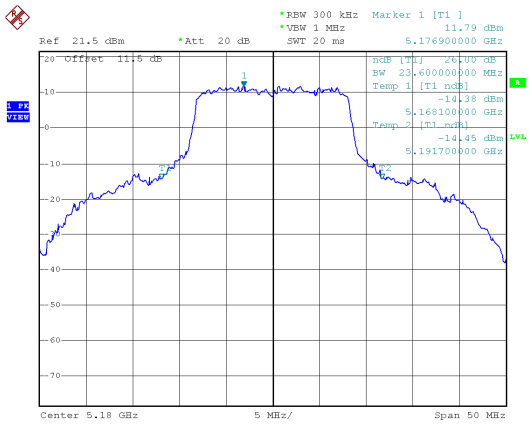
9.5. Test Result and Data (99% Bandwidth)

Temperature: 23°C Humidity: 60%
Test Date: Jan. 15, 2018

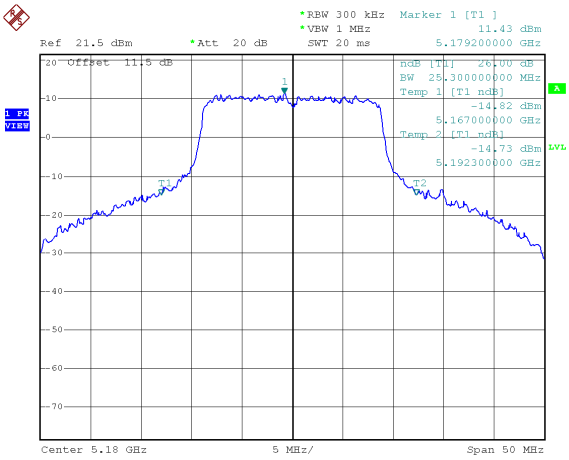
In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	16.90	16.80
	44	5220	19.50	19.70
	48	5240	18.50	18.60
802.11ac VHT20	36	5180	17.90	17.90
	44	5220	19.50	19.70
	48	5240	18.70	18.80
802.11ac VHT40	38	5190	36.20	36.20
	46	5230	39.20	38.40
802.11ac VHT80	42	5210	76.48	75.84

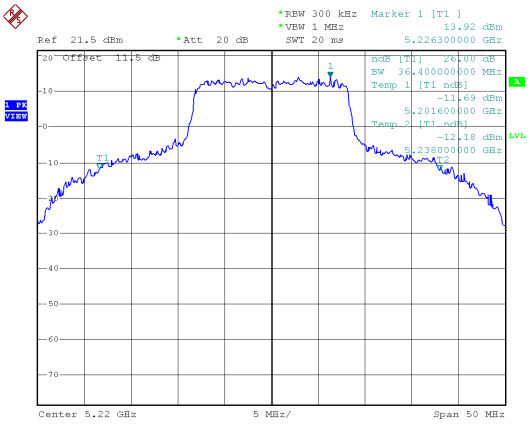
26dB Bandwidth
ANT A
Modulation Standard: 802.11a (6Mbps)
CH36



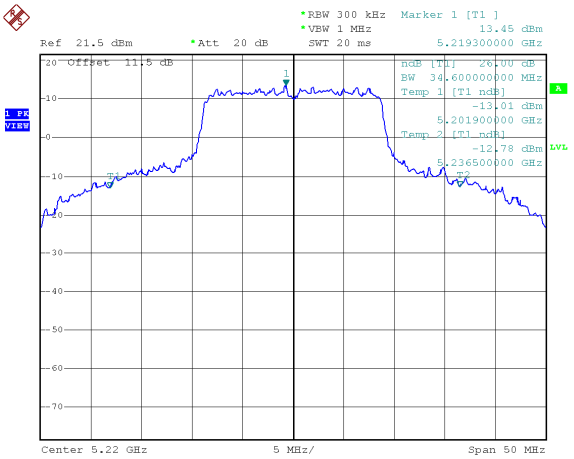
802.11ac VHT20 (6.5Mbps)
CH36



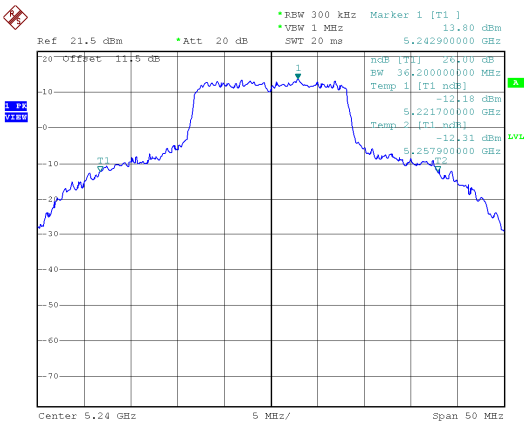
CH44



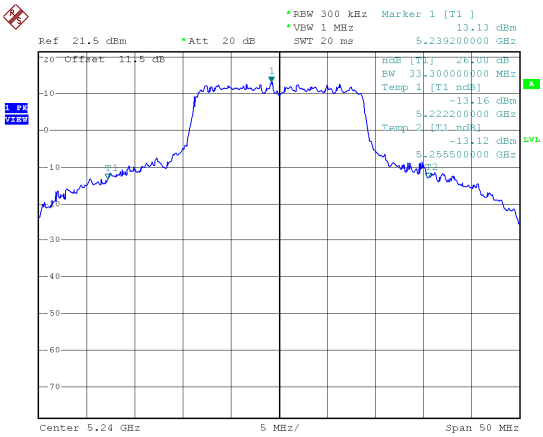
CH44



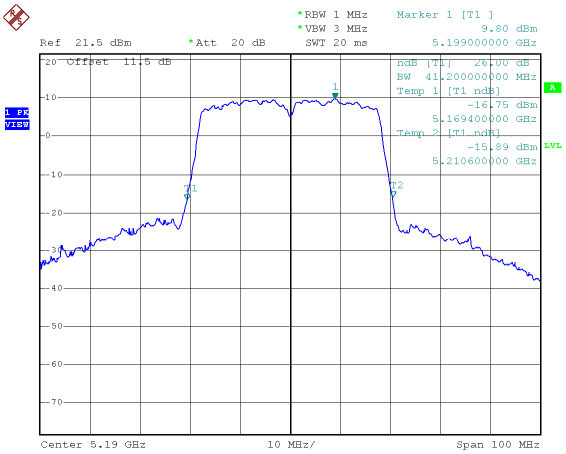
CH48



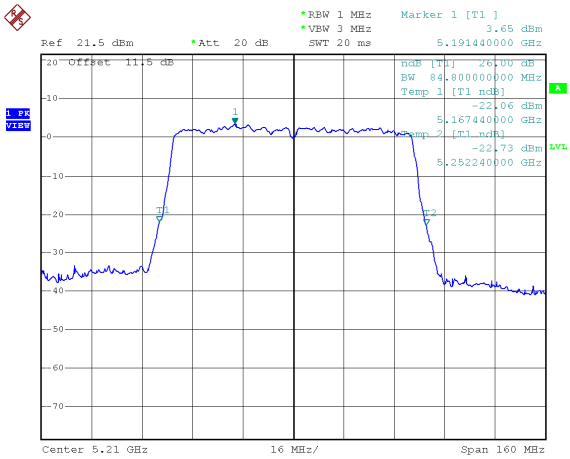
CH48



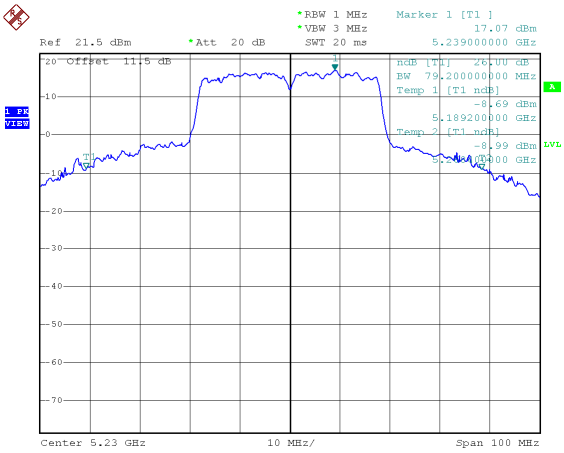
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



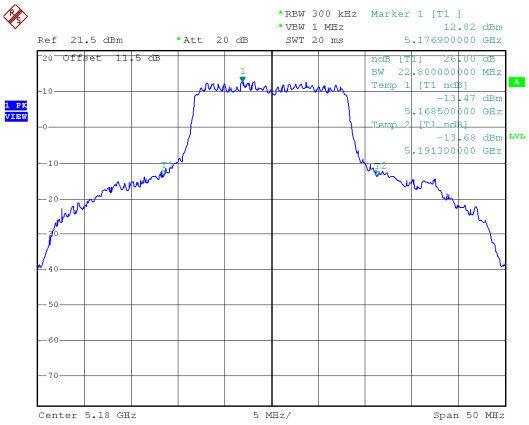
CH46



ANT B

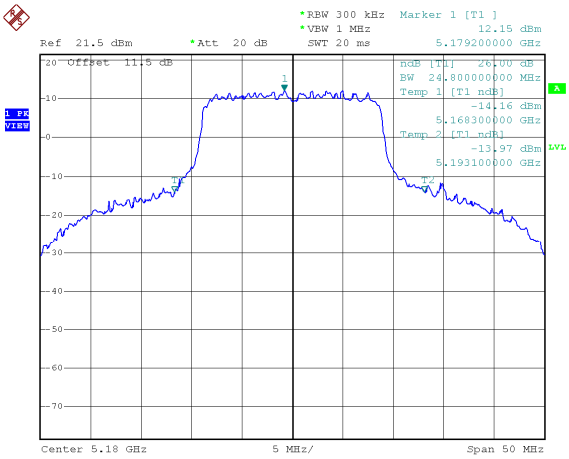
Modulation Standard: 802.11a (6Mbps)

CH36

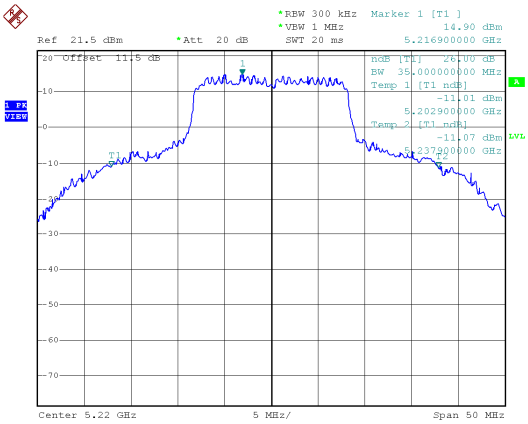


802.11ac VHT20 (6.5Mbps)

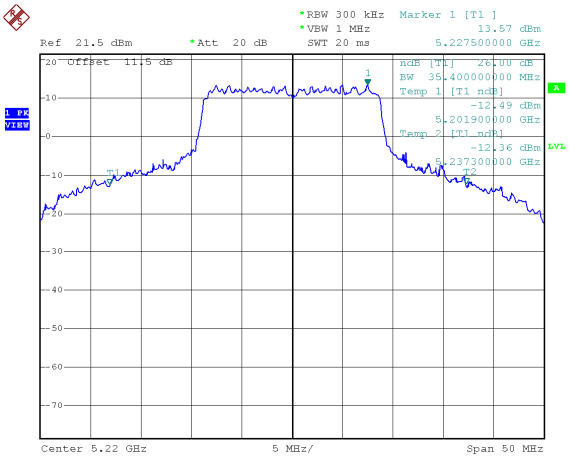
CH36



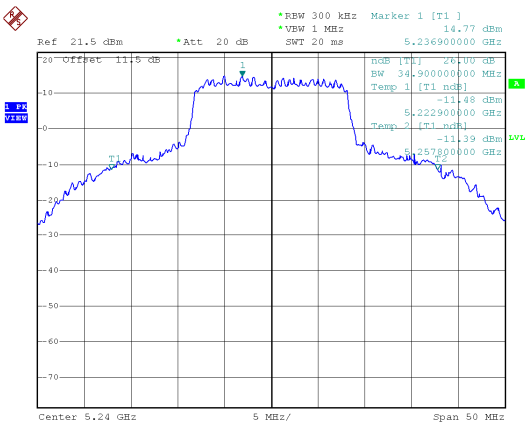
CH44



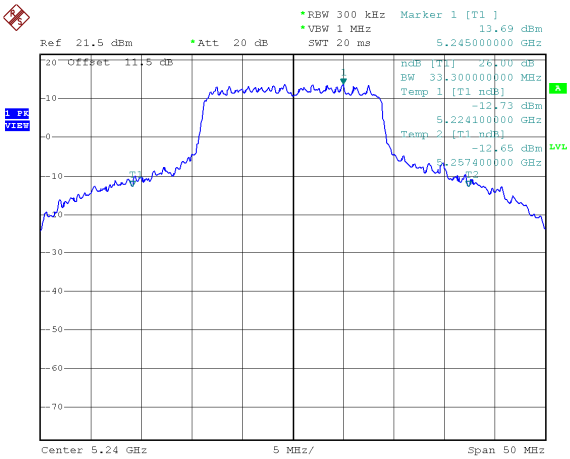
CH44



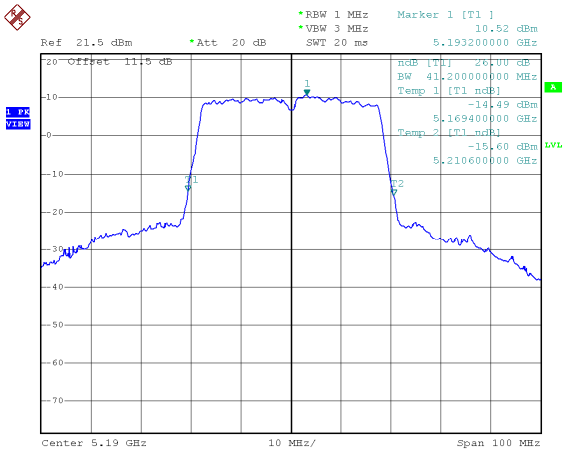
CH48



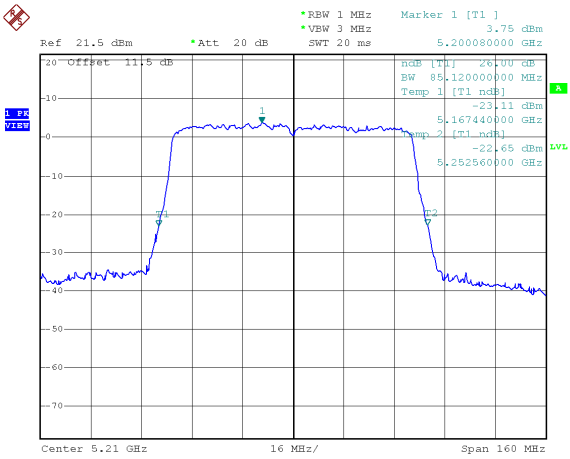
CH48



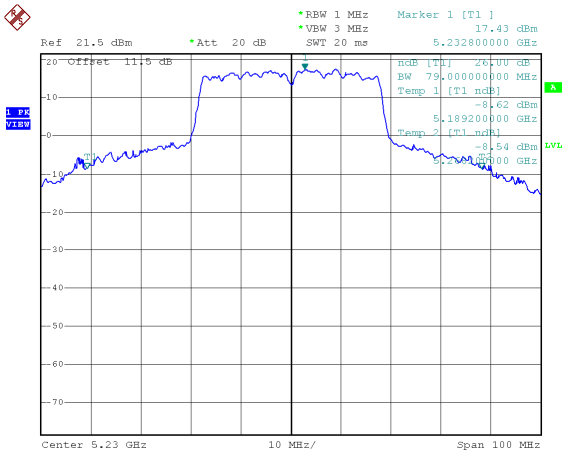
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



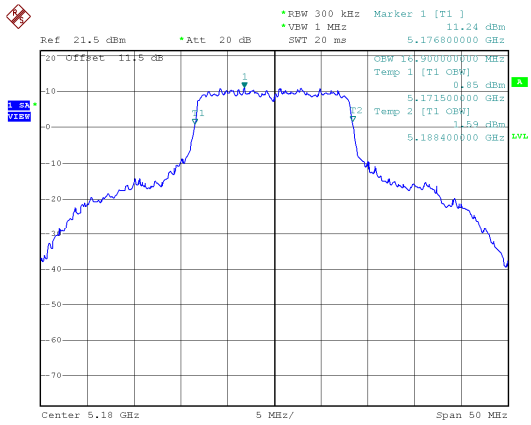
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



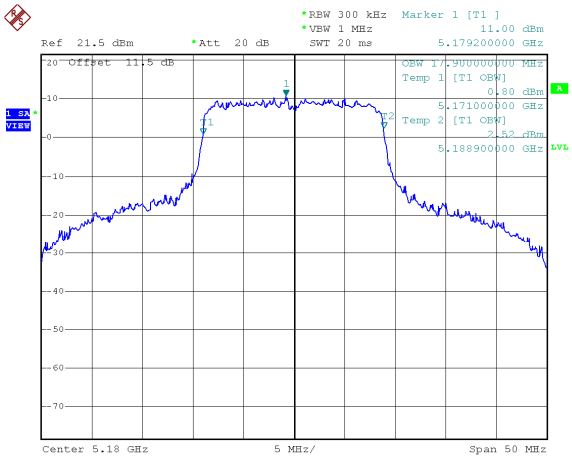
CH46



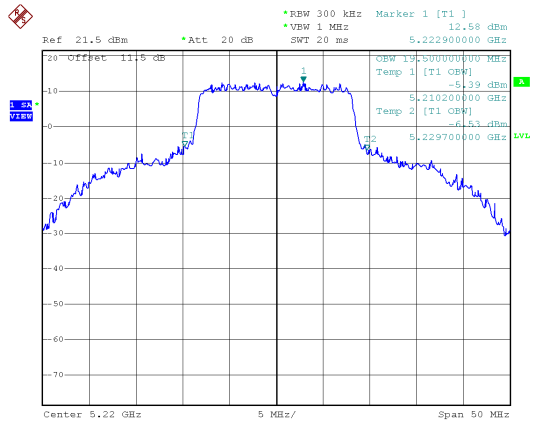
99% Bandwidth
ANT A
Modulation Standard: 802.11a (6Mbps)
CH36



802.11ac VHT20 (6.5Mbps)
CH36



CH44



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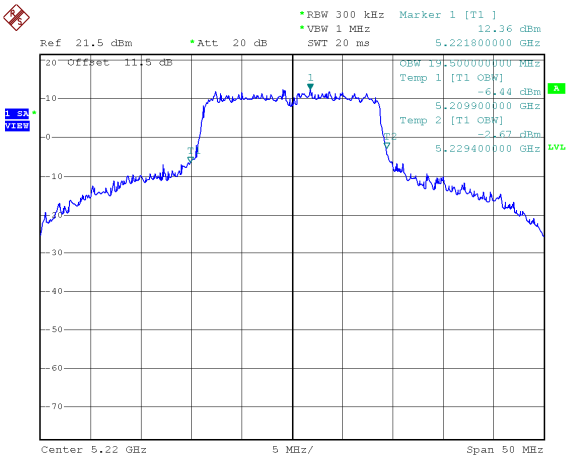
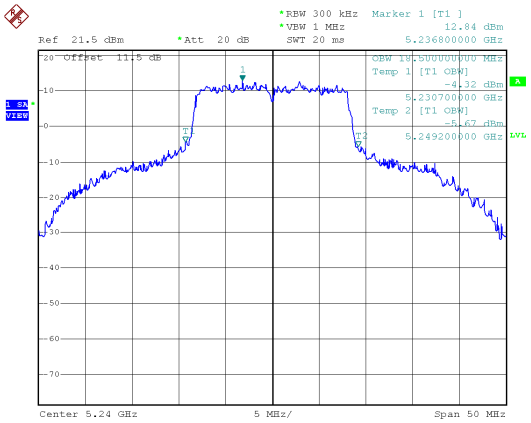


CH48



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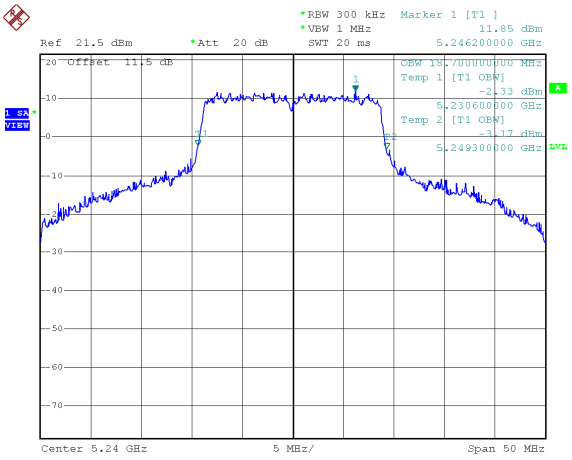
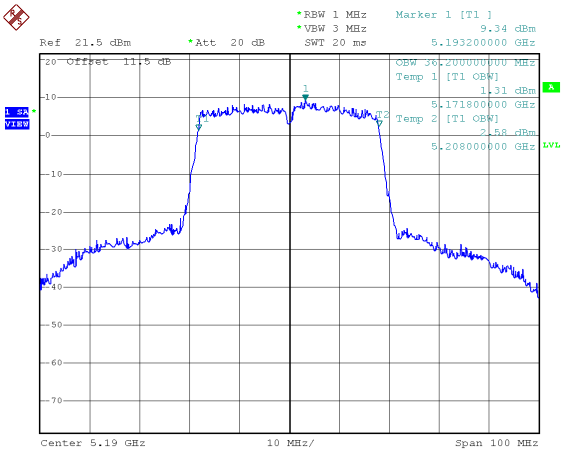
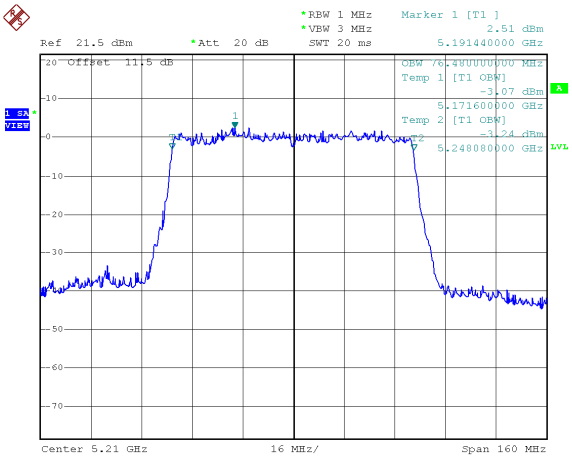


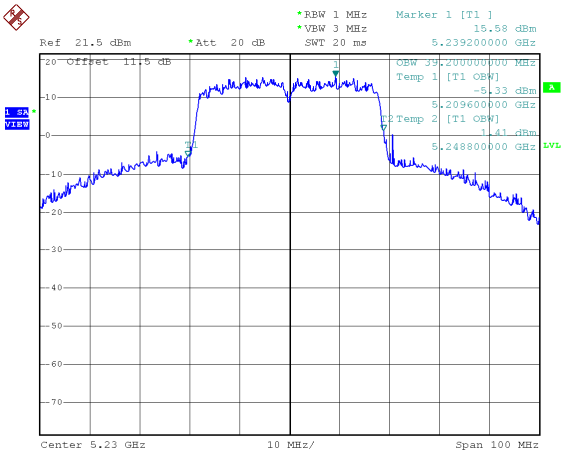
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



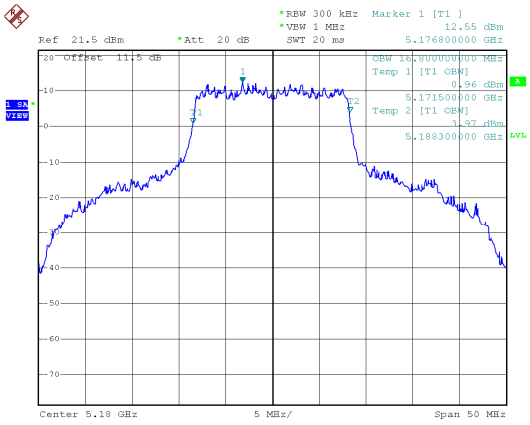
CH46



ANT B

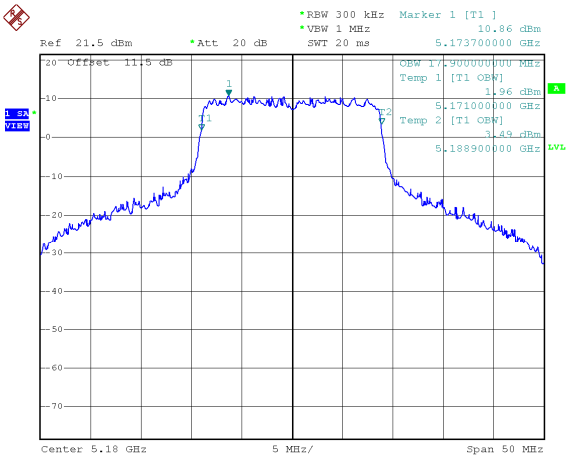
Modulation Standard: 802.11a (6Mbps)

CH36



802.11ac VHT20 (6.5Mbps)

CH36



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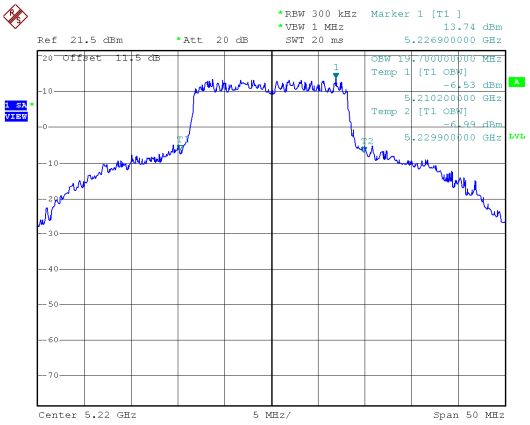

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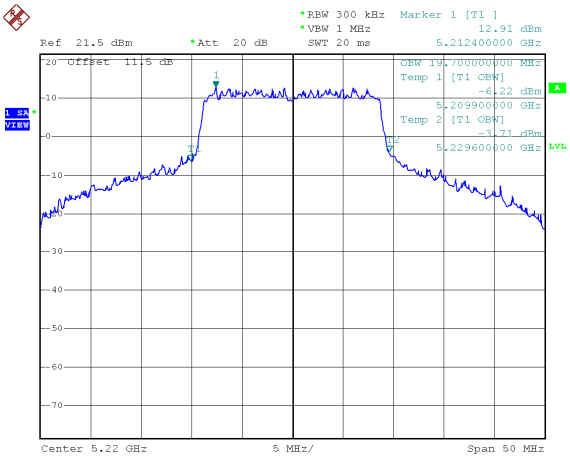
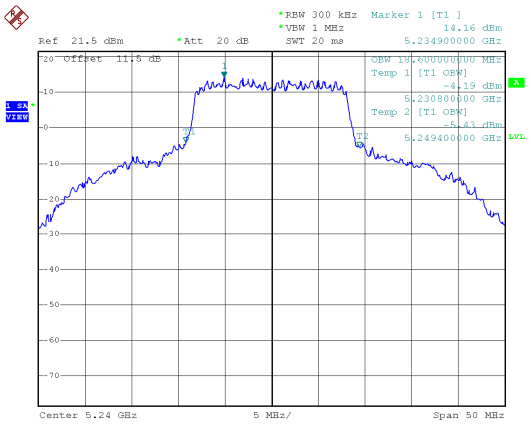


CH48



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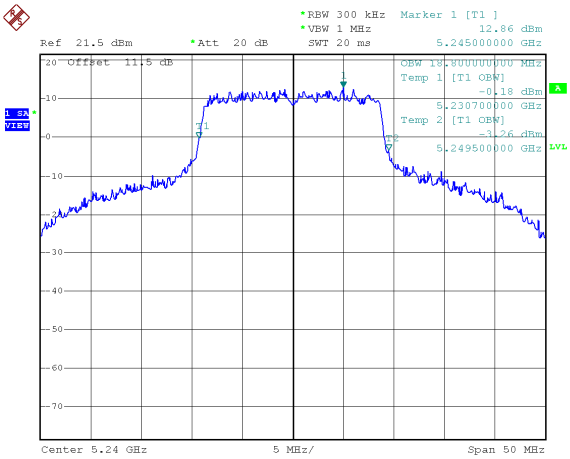
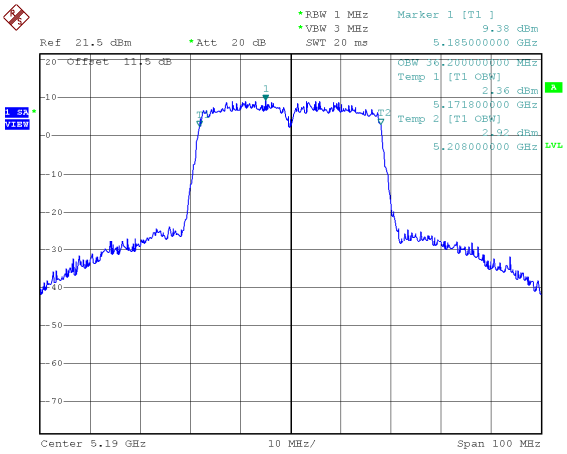
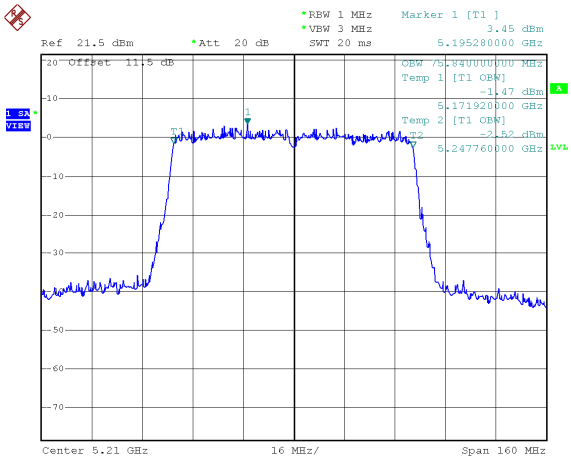


Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



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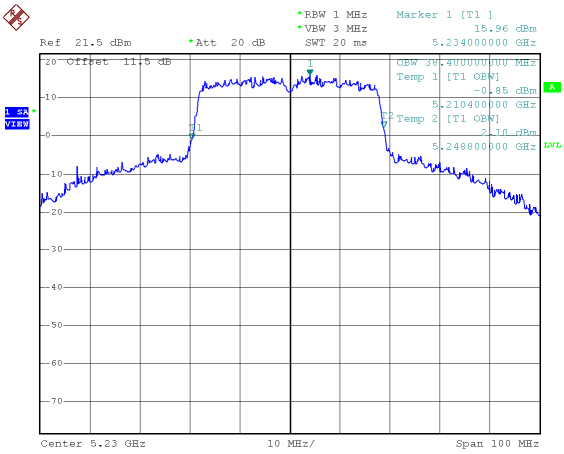


10. Average Power

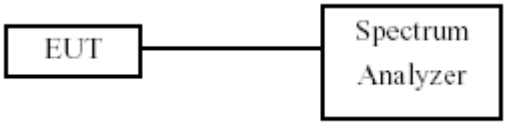
10.1. Test Limit

None; for reporting purposes only.

10.2. Test Procedure

The transmitter output is connected to a power meter.
The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3. Test Setup Layout



10.4.Test Result and Data

Temperature: 23°C
Test Date: Jan. 15, 2018

Humidity: 60%
Test Mode: Non-Beamforming

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	36	5180	19.50	19.60	22.56	180.326	30.00
	44	5220	21.20	21.67	24.45	278.718	30.00
	48	5240	21.00	21.59	24.32	270.104	30.00
802.11an HT20	36	5180	18.92	19.40	22.18	165.079	30.00
	44	5220	21.05	21.61	24.35	272.227	30.00
	48	5240	20.87	21.35	24.13	258.638	30.00
802.11an HT40	38	5190	14.75	15.14	17.96	62.513	30.00
	46	5230	21.16	21.57	24.38	274.166	30.00
802.11ac VHT20	36	5180	19.10	19.71	22.43	174.824	30.00
	44	5220	21.08	21.63	24.37	273.779	30.00
	48	5240	21.04	21.45	24.26	266.694	30.00
802.11ac VHT40	38	5190	15.02	15.48	18.27	67.087	30.00
	46	5230	21.23	21.78	24.52	283.400	30.00
802.11ac VHT80	42	5210	11.73	11.84	14.80	30.169	30.00

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	149	5745	21.00	21.05	24.04	253.243	30.00
	157	5785	21.03	21.07	24.06	254.703	30.00
	165	5825	20.97	20.90	23.95	248.053	30.00
802.11an HT20	149	5745	20.77	20.96	23.88	244.137	30.00
	157	5785	20.93	20.78	23.87	243.554	30.00
	165	5825	20.76	20.55	23.67	232.625	30.00
802.11an HT40	151	5755	21.01	21.18	24.11	257.403	30.00
	159	5795	21.12	21.06	24.10	257.063	30.00
802.11ac VHT20	149	5745	20.88	21.00	23.95	248.354	30.00
	157	5785	21.02	20.87	23.96	248.654	30.00
	165	5825	20.86	20.67	23.78	238.580	30.00
802.11ac VHT40	151	5755	21.05	21.24	24.16	260.396	30.00
	159	5795	21.33	21.15	24.25	266.148	30.00
802.11ac VHT80	155	5775	18.42	18.54	21.49	140.952	30.00

Temperature: 23°C Humidity: 60%
Test Date: Jan. 15, 2018 Test Mode: Beamforming

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11ac VHT20	36	5180	16.09	16.70	19.42	87.418	28.99
	44	5220	18.07	18.62	21.36	136.899	28.99
	48	5240	18.03	18.44	21.25	133.356	28.99
802.11ac VHT40	38	5190	12.01	12.47	15.26	33.546	28.99
	46	5230	18.22	18.77	21.51	141.710	28.99
802.11ac VHT80	42	5210	8.72	8.83	11.79	15.086	28.99

In the 5.8G Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11ac VHT20	149	5745	17.87	17.99	20.94	124.186	28.99
	157	5785	18.01	17.86	20.95	124.335	28.99
	165	5825	17.85	17.66	20.77	119.298	28.99
802.11ac VHT40	151	5755	18.04	18.23	21.15	130.207	28.99
	159	5795	18.32	18.14	21.24	133.083	28.99
802.11ac VHT80	155	5775	15.41	15.53	18.48	70.481	28.99

11. Output Power and PPSD

11.1. Test Limit

Output Power:

Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30degrees as measured from the horizon must not exceed125 mW (21 dBm).
	☒	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
	☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
	☐	Mobile and portable client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

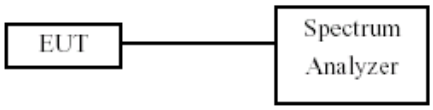
PSD:

Frequency Band			Limit
☒	5.15~5.25GHz		
	Operating Mode		
	☐	Outdoor access point	17 dBm/MHz
	☒	Indoor access point	17 dBm/MHz
	☐	Fixed point-to-point access points	17 dBm/MHz
	☐	Mobile and portable client devices	11 dBm/MHz
☐	5.725~5.85 GHz		11 dBm/MHz
☐	5.470-5.725 GHz		11 dBm/MHz
☒	5.725~5.85 GHz		30 dBm/500kHz

11.2.Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was Measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.
802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)
802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).
When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

11.3.Test Setup Layout



11.4. Test Result and Data

Temperature: 23°C Humidity: 60%

Test Date: Jan. 15, 2018

In the 5.2G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PPSD (dBm/MHz)	PPSD Limit (dBm/MHz)
			ANT A	ANT B				
802.11a	36	5180	7.24	7.77	10.52	0.00	10.52	15.99
	44	5220	9.04	9.68	12.38	0.00	12.38	15.99
	48	5240	8.86	9.43	12.16	0.00	12.16	15.99
802.11ac VHT20	36	5180	6.81	7.46	10.16	0.00	10.16	15.99
	44	5220	8.57	9.05	11.83	0.00	11.83	15.99
	48	5240	8.52	8.77	11.66	0.00	11.66	15.99
802.11ac VHT40	38	5190	-0.12	0.58	3.25	0.00	3.25	15.99
	46	5230	6.26	6.57	9.43	0.00	9.43	15.99
802.11ac VHT80	42	5210	-6.81	-6.22	-3.49	0.19	-3.30	15.99

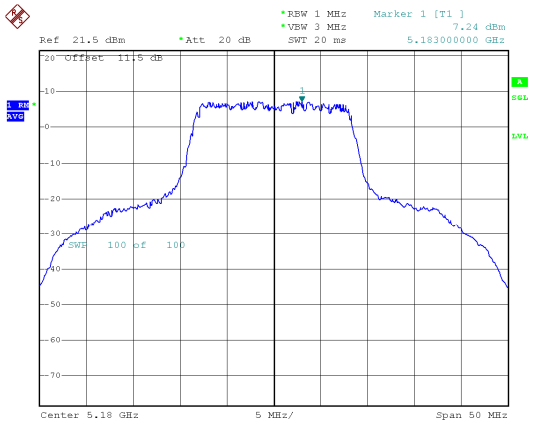
In the 5.8G Band

Modulation Type	CH	Freq. (MHz)	Meas PPSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500KHz/RBW) CF (dB)	Total Corr'd PPSD (dBm/500kHz)	PPSD Limit (dBm/500kHz)
			ANT A	ANT B					
802.11a	149	5745	9.55	9.51	12.54	0.00	-3.01	9.53	28.99
	157	5785	9.51	9.15	12.34	0.00	-3.01	9.33	28.99
	165	5825	8.80	8.94	11.88	0.00	-3.01	8.87	28.99
802.11ac VHT20	149	5745	9.18	8.73	11.97	0.00	-3.01	8.96	28.99
	157	5785	8.67	8.46	11.58	0.00	-3.01	8.57	28.99
	165	5825	8.52	8.31	11.43	0.00	-3.01	8.42	28.99
802.11ac VHT40	155	5755	5.98	6.53	9.27	0.00	-3.01	6.26	28.99
	159	5795	5.93	6.08	9.02	0.00	-3.01	6.01	28.99
802.11ac VHT80	155	5775	0.88	0.67	3.79	0.19	-3.01	0.97	28.99

5.2G Band 1, ANT A

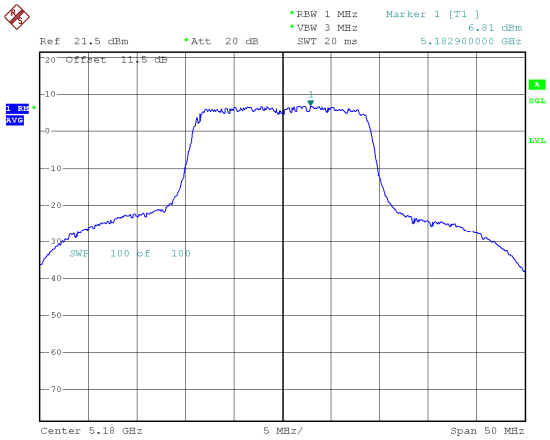
Modulation Standard: 802.11a (6Mbps)

CH36

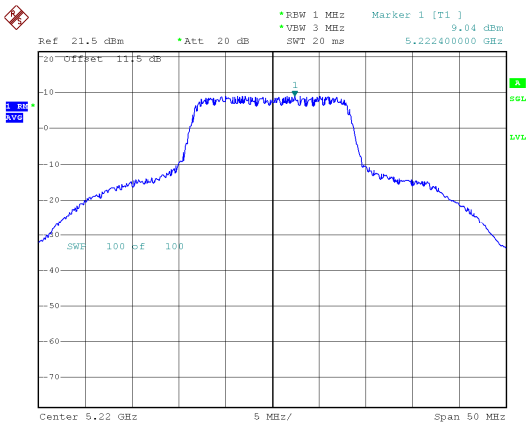


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH36



CH44



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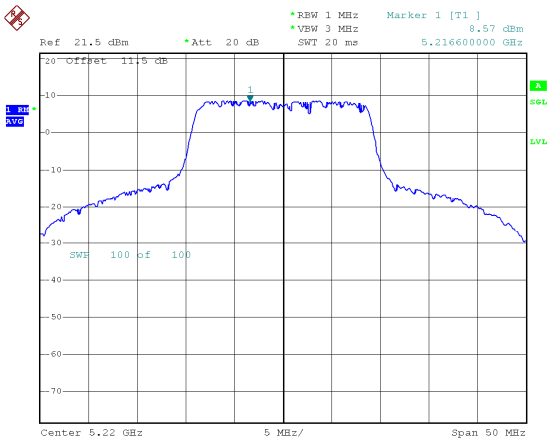
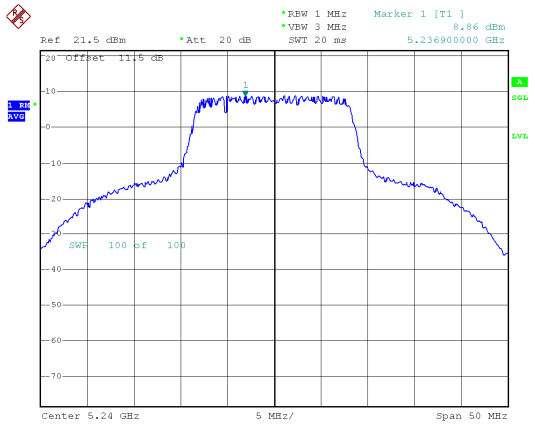
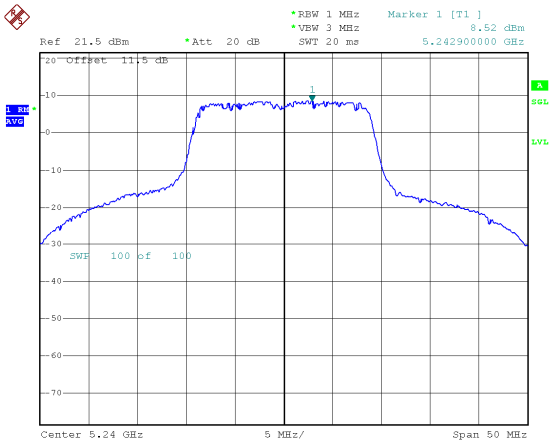


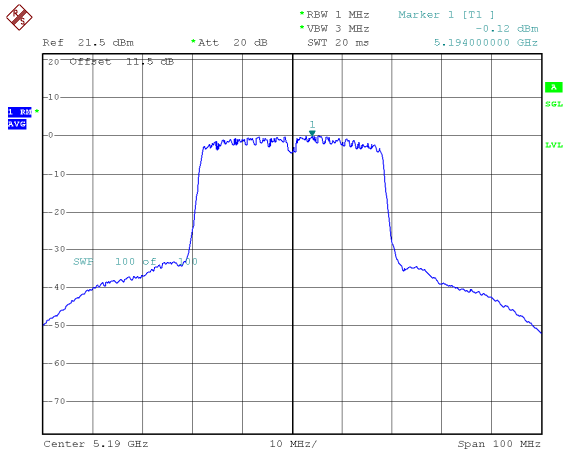
CH48



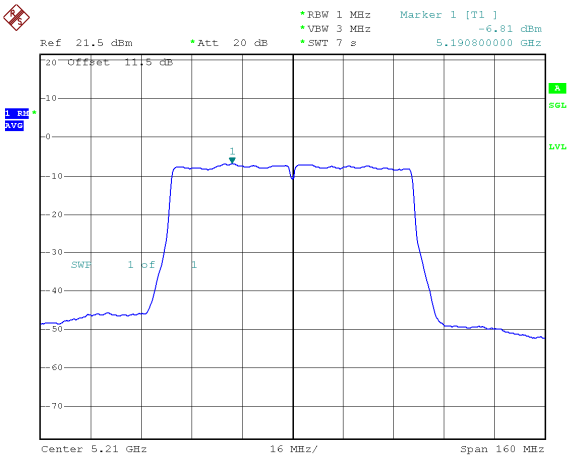
CH48



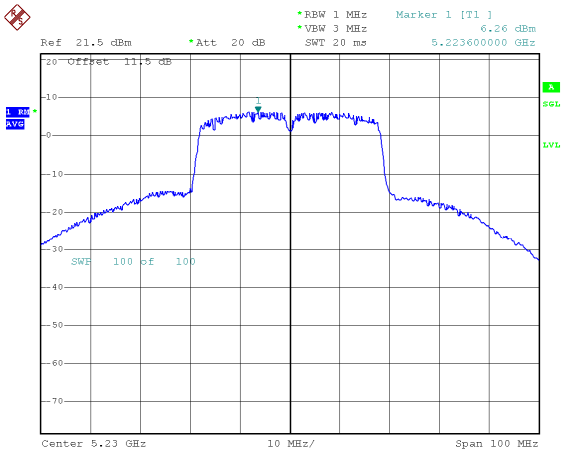
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



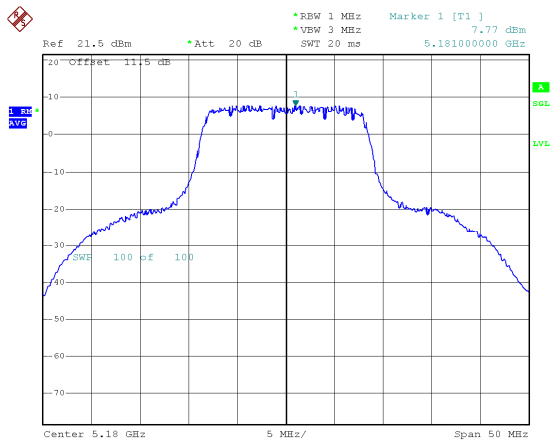
CH46



5.2G Band 1, ANT B

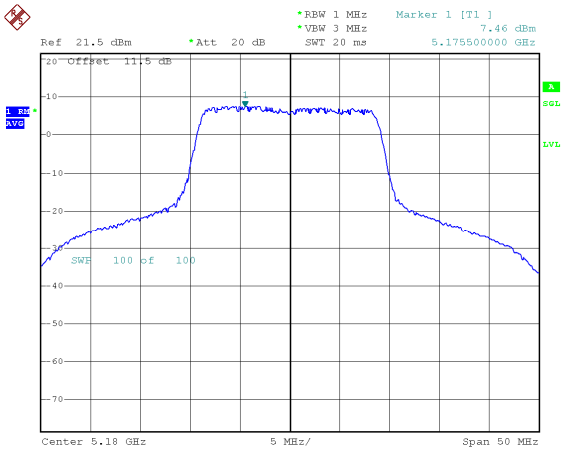
Modulation Standard: 802.11a (6Mbps)

CH36



Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH36



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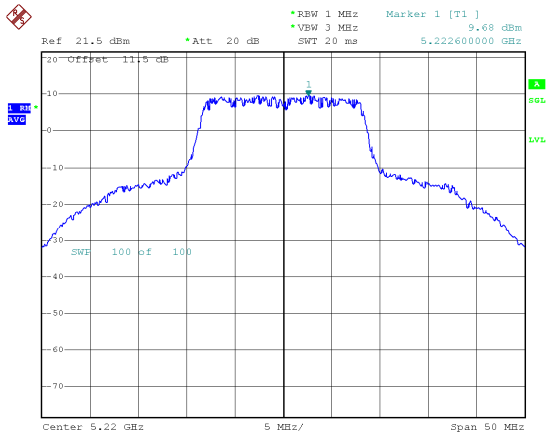

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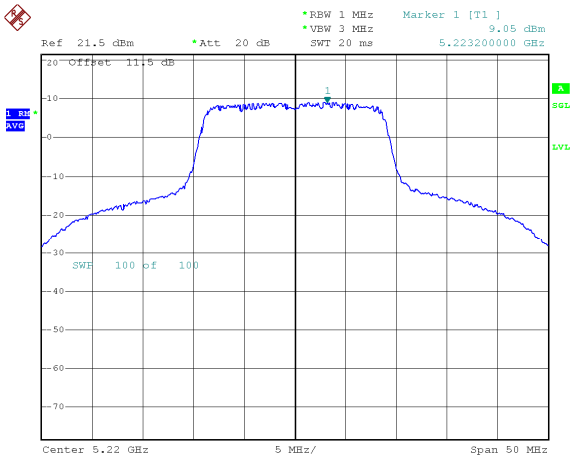
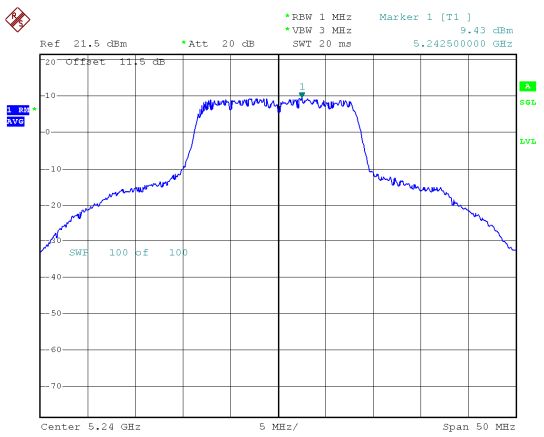


CH48



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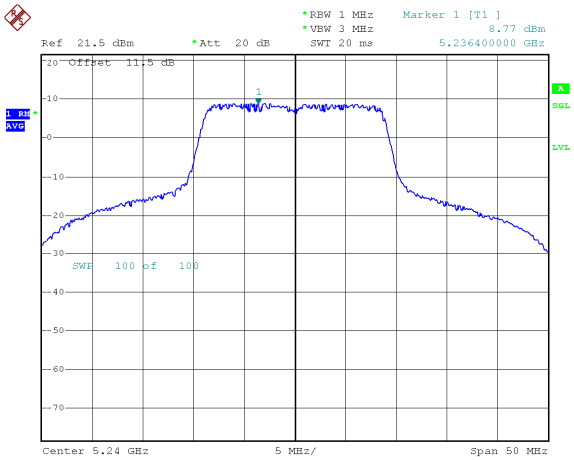
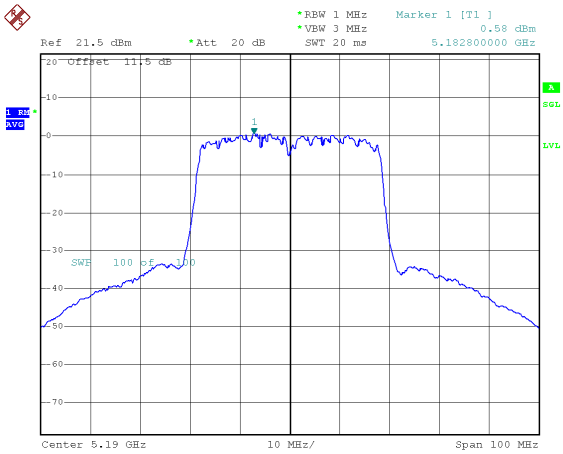
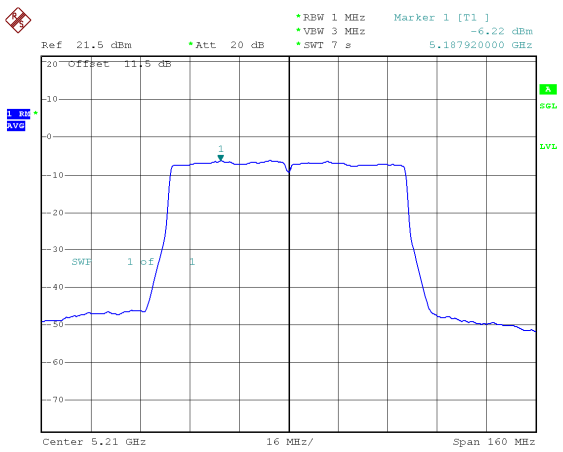


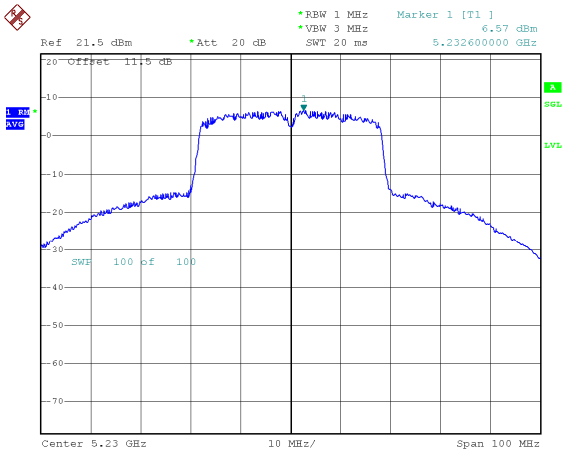
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



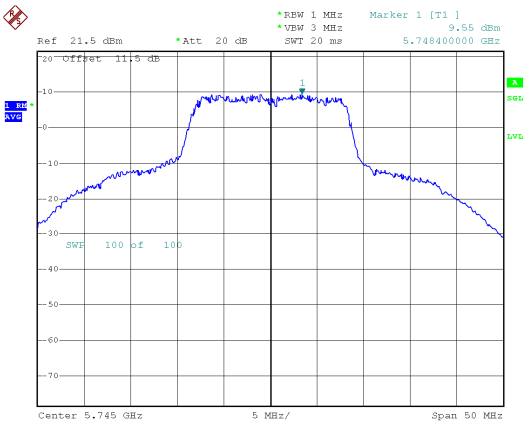
CH46



5.8G Band 4, ANT A

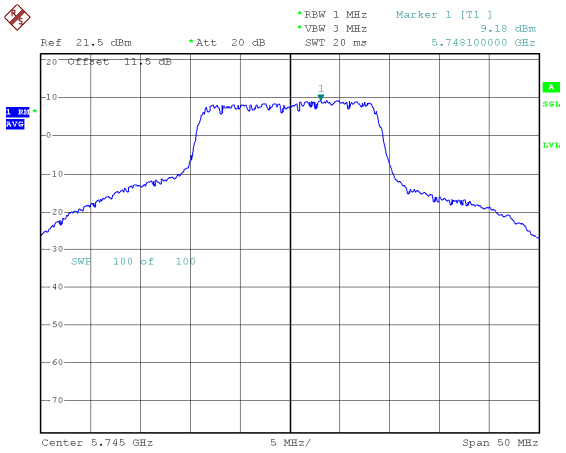
Modulation Standard: 802.11a (6Mbps)

CH149

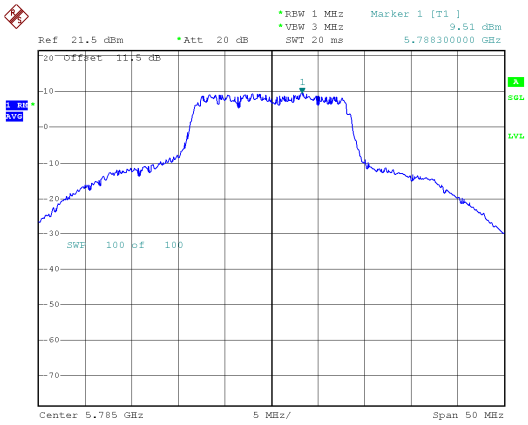


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH149



CH157



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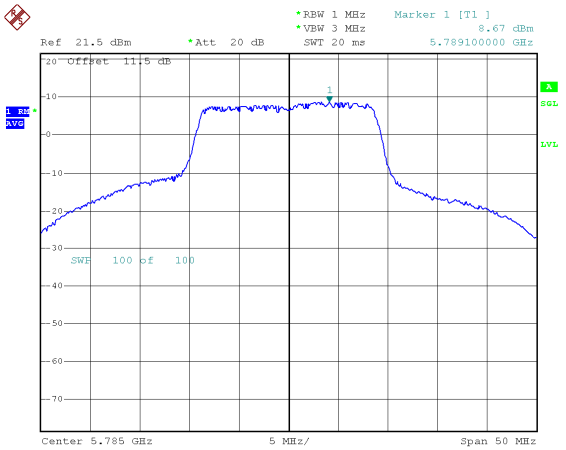
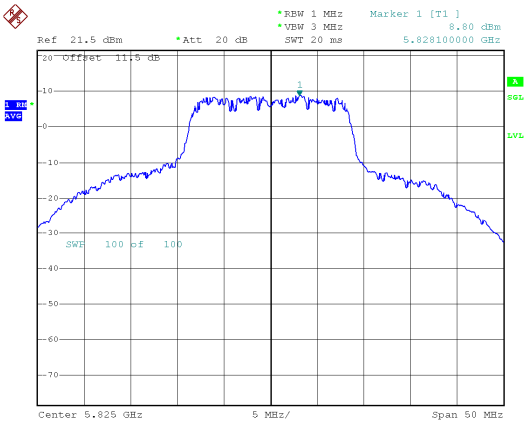


CH165



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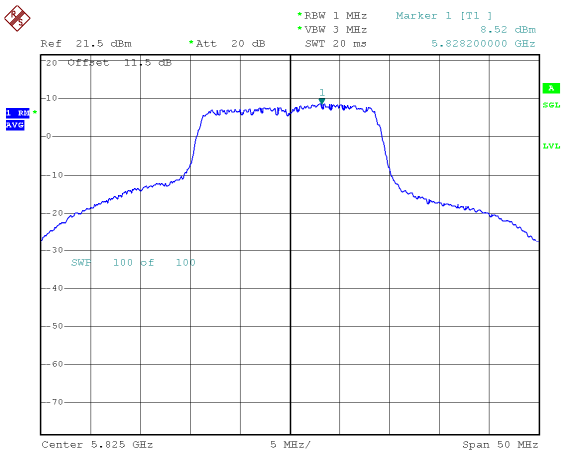
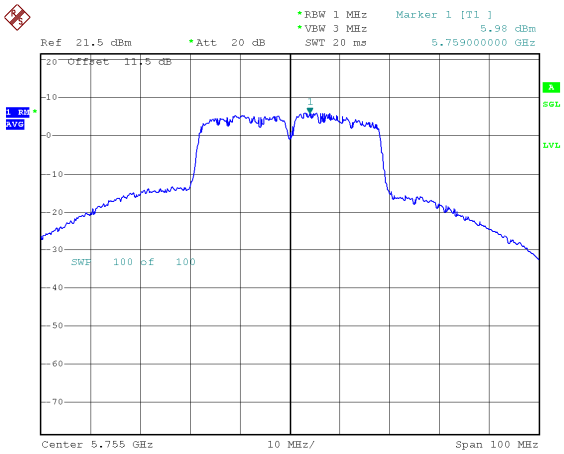
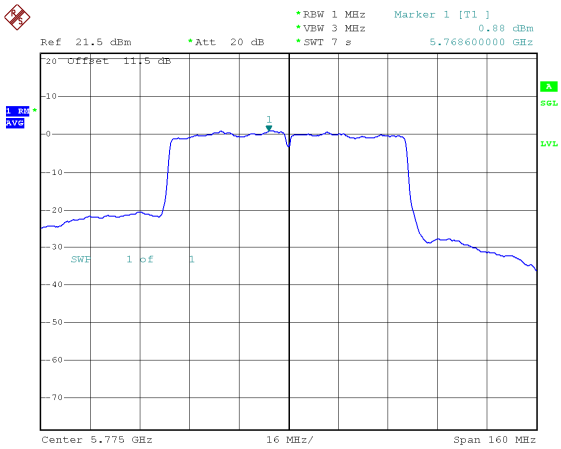


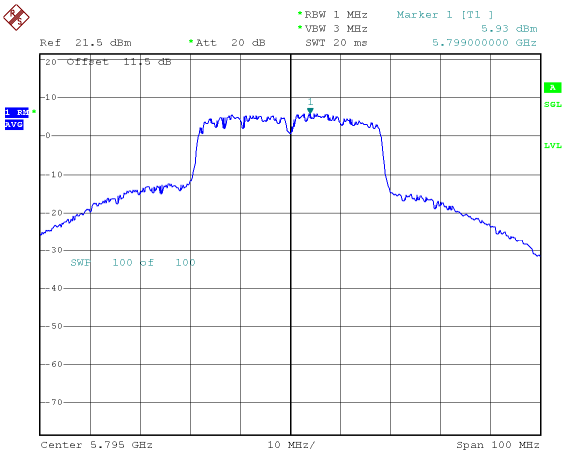
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH155



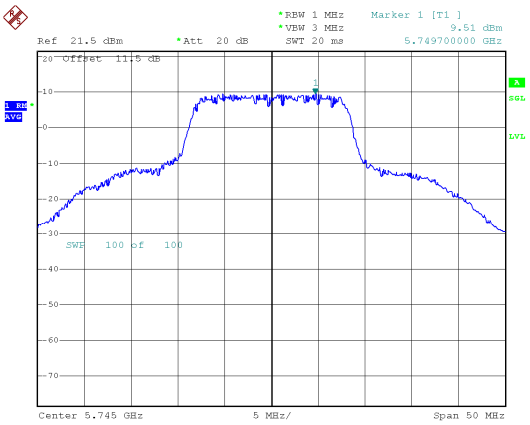
CH159



5.8G Band 4, ANT B

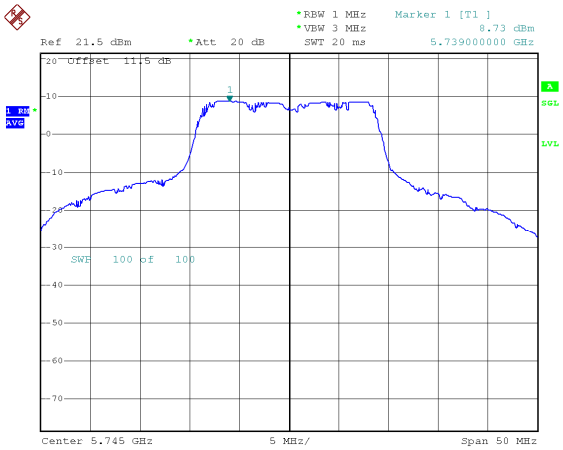
Modulation Standard: 802.11a (6Mbps)

CH149

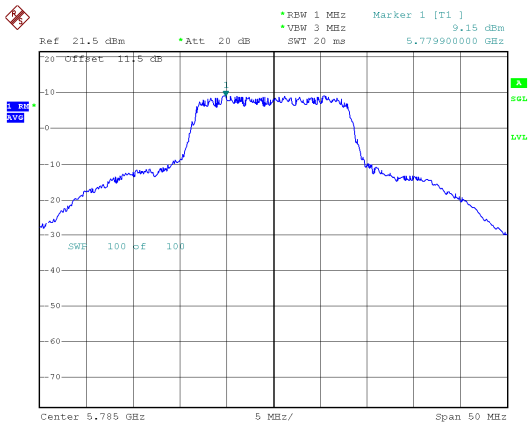


Modulation Standard: 802.11ac VHT20 (6.5Mbps)

CH149



CH157



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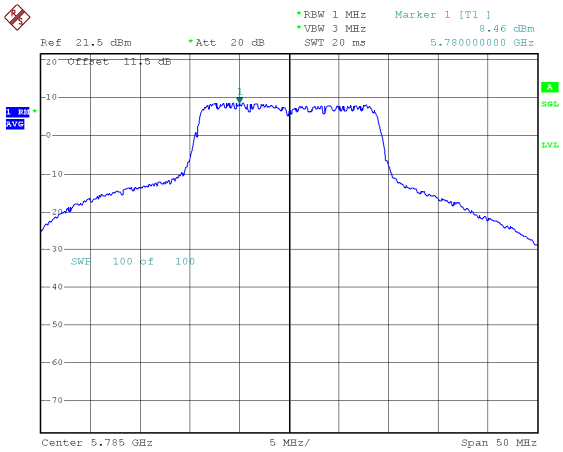

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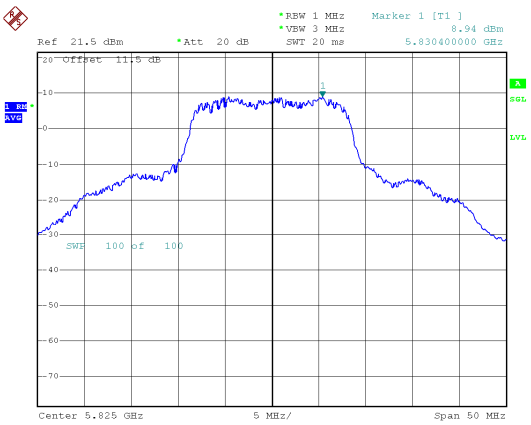

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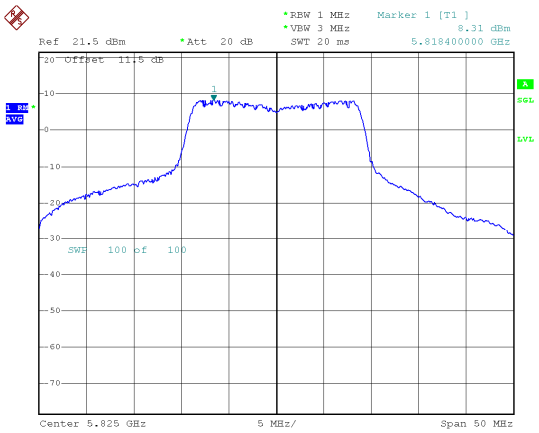
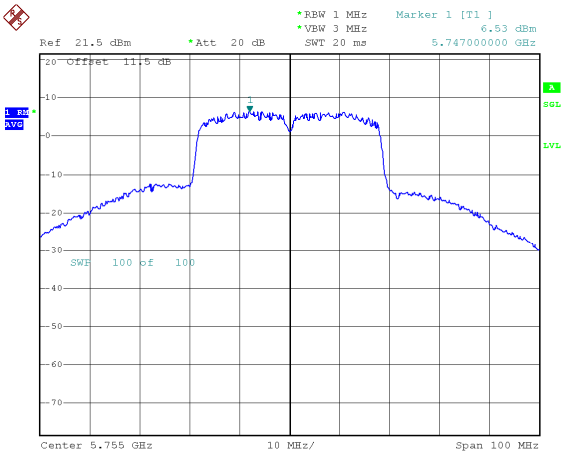
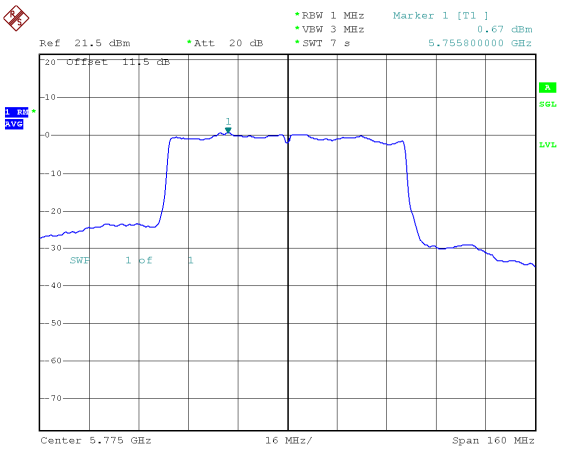


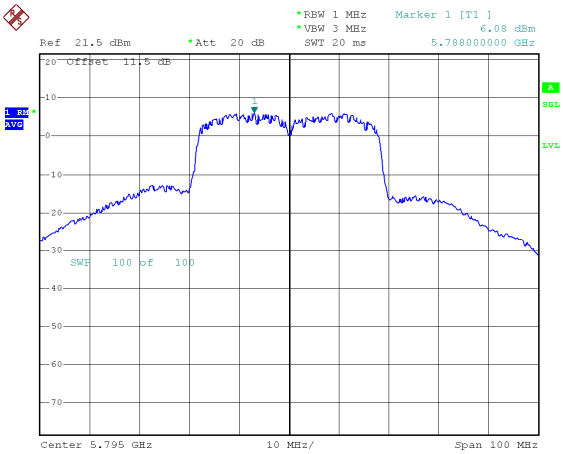
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH155



CH159

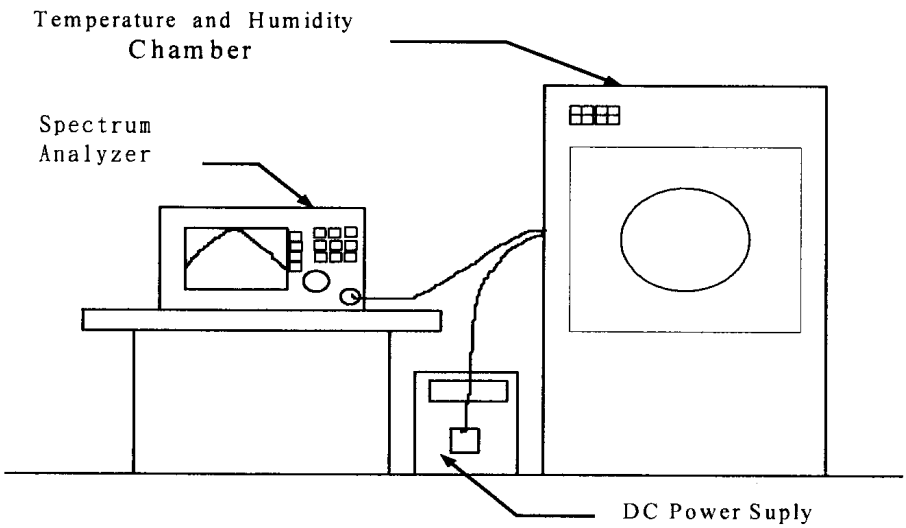


12. Frequency Stability

12.1.Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

12.2.Test Setup Layout



12.3.Test Result and Data

Temperature: 23°C Humidity: 60%

Test Date: Jan. 15, 2018

Operating frequency: 5180 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(℃)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5180.0785	0.001515	5180.0802	0.001549	5180.0922	0.001780
	120	5179.9153	-0.001636	5179.9493	-0.000979	5179.9802	-0.000382
	138	5179.9517	-0.000933	5179.9020	-0.001891	5179.9913	-0.000167
40	102	5179.9942	-0.000112	5180.0973	0.001879	5179.9293	-0.001365
	120	5180.0418	0.000808	5179.9630	-0.000715	5179.9228	-0.001491
	138	5180.0646	0.001247	5180.0818	0.001579	5180.0418	0.000808
30	102	5180.0883	0.001705	5180.0484	0.000935	5179.9798	-0.000390
	120	5180.0731	0.001411	5179.9584	-0.000803	5179.9299	-0.001354
	138	5179.9909	-0.000176	5179.9595	-0.000781	5180.0247	0.000477
20	102	5180.0601	0.001160	5179.9974	-0.000049	5179.9473	-0.001017
	120	5179.9366	-0.001224	5180.0214	0.000414	5180.0528	0.001019
	138	5180.0900	0.001737	5179.9254	-0.001440	5180.0257	0.000497
10	102	5180.0931	0.001796	5179.9788	-0.000409	5180.0300	0.000578
	120	5180.0001	0.000003	5180.0717	0.001383	5180.0376	0.000726
	138	5179.9480	-0.001003	5179.9303	-0.001346	5180.0056	0.000108
0	102	5179.9152	-0.001638	5179.9006	-0.001918	5180.0275	0.000530
	120	5180.0323	0.000624	5180.0283	0.000546	5180.0640	0.001236
	138	5179.9216	-0.001513	5180.0030	0.000058	5179.9669	-0.000639
-10	102	5179.9833	-0.000322	5180.0384	0.000741	5180.0302	0.000582
	120	5179.9483	-0.000997	5179.9703	-0.000574	5179.9974	-0.000051
	138	5179.9371	-0.001214	5180.0885	0.001709	5180.0777	0.001499
-20	102	5180.0135	0.000261	5179.9564	-0.000841	5179.9227	-0.001493
	120	5180.0706	0.001364	5180.0014	0.000026	5179.9570	-0.000830
	138	5179.9811	-0.000365	5179.9089	-0.001759	5180.0799	0.001542
-30	102	5179.9799	-0.000389	5179.9299	-0.001354	5179.9986	-0.000027
	120	5180.0307	0.000593	5180.0494	0.000953	5179.9417	-0.001126
	138	5180.0656	0.001266	5180.0834	0.001610	5180.0808	0.001559

Limit:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

13. Automatically Discontinue Transmission

13.1. Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

13.2. Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

14. Radio Frequency Exposure

14.1. Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in FCC Part 2 (Section 2.1091)

KDB 447498

14.2. EUT Specification

Frequency band (Operating)	☐ WLAN: 2412MHz ~ 2462MHz ☒ WLAN: 5150MHz ~ 5250MHz ☐ WLAN: 5250MHz ~ 5350MHz ☐ WLAN: 5470MHz ~ 5725MHz ☒ WLAN: 5725MHz ~ 5850MHz ☐ Bluetooth: 2402MHz ~ 2480MHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A
Remark: 1. The maximum output power is 24.45dBm (278.718mW) at 5220MHz (with numeric 3 antenna gain.) 2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance. 3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.	

14.3. Test Results

No non-compliance noted.

14.4.Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = Field strength in Volts / meter

P = Power in Watts
G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and
d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

14.5.Maximum Permissible Exposure

Max. output power	Non-Beamforming Band: 5150MHz ~ 5250MHz 802.11a: 24.45dBm (278.718mW) 802.11an HT20: 24.35dBm (272.227mW) 802.11an HT40: 24.38dBm (274.166mW) 802.11ac VHT20: 24.37dBm (273.779mW) 802.11ac VHT40: 24.52dBm (283.400mW) 802.11ac VHT80: 14.80dBm (30.169mW) Band: 5725MHz ~ 5850MHz 802.11a: 24.06dBm (254.703mW) 802.11an HT20: 23.88dBm (244.137mW) 802.11an HT40: 24.11dBm (257.403mW) 802.11ac VHT20: 23.96dBm (248.654mW) 802.11ac VHT40: 24.25dBm (266.148mW) 802.11ac VHT80: 21.49dBm (140.952mW) Beamforming Band: 5150MHz ~ 5250MHz 802.11ac VHT20: 21.36dBm (136.899mW) 802.11ac VHT40: 21.51dBm (141.710mW) 802.11ac VHT80: 11.79dBm (15.086mW) Band: 5725MHz ~ 5850MHz 802.11ac VHT20: 20.95dBm (124.335mW) 802.11ac VHT40: 21.24dBm (133.083mW) 802.11ac VHT80: 18.48dBm (70.481mW)
Antenna gain (Max)	ANT A, B: 4.0 dBi

Maximum Permissible Exposure (Non-Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
802.11a	5150-5250	24.45	4	20	0.1393	1
802.11a	5725-5850	24.06	4	20	0.1273	1
802.11an HT20	5150-5250	24.35	4	20	0.1360	1
802.11an HT20	5725-5850	23.88	4	20	0.1220	1
802.11an HT40	5150-5250	24.38	4	20	0.1370	1
802.11an HT40	5725-5850	24.11	4	20	0.1286	1
802.11ac VHT20	5150-5250	24.37	4	20	0.1368	1
802.11ac VHT20	5725-5850	23.96	4	20	0.1243	1
802.11ac VHT40	5150-5250	24.52	4	20	0.1416	1
802.11ac VHT40	5725-5850	24.25	4	20	0.1330	1
802.11ac VHT80	5150-5250	14.80	4	20	0.0151	1
802.11ac VHT80	5725-5850	21.49	4	20	0.0704	1

Maximum Permissible Exposure (Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm2)	Limit (mW/cm2)
802.11ac VHT20	5150-5250	21.36	7.01	20	0.1368	1
802.11ac VHT20	5725-5850	20.95	7.01	20	0.1243	1
802.11ac VHT40	5150-5250	21.51	7.01	20	0.1416	1
802.11ac VHT40	5725-5850	21.24	7.01	20	0.1330	1
802.11ac VHT80	5150-5250	11.79	7.01	20	0.0151	1
802.11ac VHT80	5725-5850	18.48	7.01	20	0.0704	1

Maximum Permissible Exposure (Co-location)

(Non Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm^2)
2.4G 11n HT20	2412-2462	29.93	3	20	0.3906
5G 11ac VHT40	5150-5250	24.52	4	20	0.1416
Co-location Total					0.5322
Maximum Permissible Exposure Limit					1

(Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm^2)
2.4G 11n HT20	2412-2462	29.93	3	20	0.3906
5G 11ac VHT40	5150-5250	21.51	7.01	20	0.1416
Co-location Total					0.5322
Maximum Permissible Exposure Limit					1