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. 18, 2017 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Assistant Manager

Tested by:

Spree Yei / Engineer

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory

Contents

History of this test report

Report No.	Issue Date	Description
TEFI1712100	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 C §15.247

KDB558074

KDB662911

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

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

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

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

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

802.11n HT40 (2422MHz~2452MHz)

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

Note: Channels remarked * are selected to perform test.

2.4 Test Mode and Test Software

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,"Art2 Command" 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	802.11b (1Mbps)
2	802.11g (6Mbps)
3	802.11n HT20 (6.5Mbps)
4	802.11n HT40 (13.5Mbps)
caused "Test Mode 2" generated the worst case, it was reported as the final data.	
Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps), Power from Adapter
2	802.11g (6Mbps), Power from Adapter
3	802.11n HT20 (6.5Mbps), Power from Adapter
4	802.11n HT40 (13.5Mbps), Power from Adapter
5	802.11b (1Mbps), Power from PoE
6	802.11g (6Mbps), Power from PoE
7	802.11n HT20 (6.5Mbps), Power from PoE
8	802.11n HT40 (13.5Mbps), Power from PoE
caused "Test Mode 2,6" generated the worst case, they were reported as the final data.	
Radiation Emissions (1GHz ~ 25GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps), Power from Adapter
2	802.11g (6Mbps), Power from Adapter
3	802.11n HT20 (6.5Mbps), Power from Adapter
4	802.11n HT40 (13.5Mbps), Power from Adapter
caused "Test Mode 1~4" generated the worst case, they were reported as the final data.	

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-10812, G-10813 for radiated disturbance above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 25,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

2.7 Measurement Uncertainty

Measurement Item	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 15.247 (b), 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.

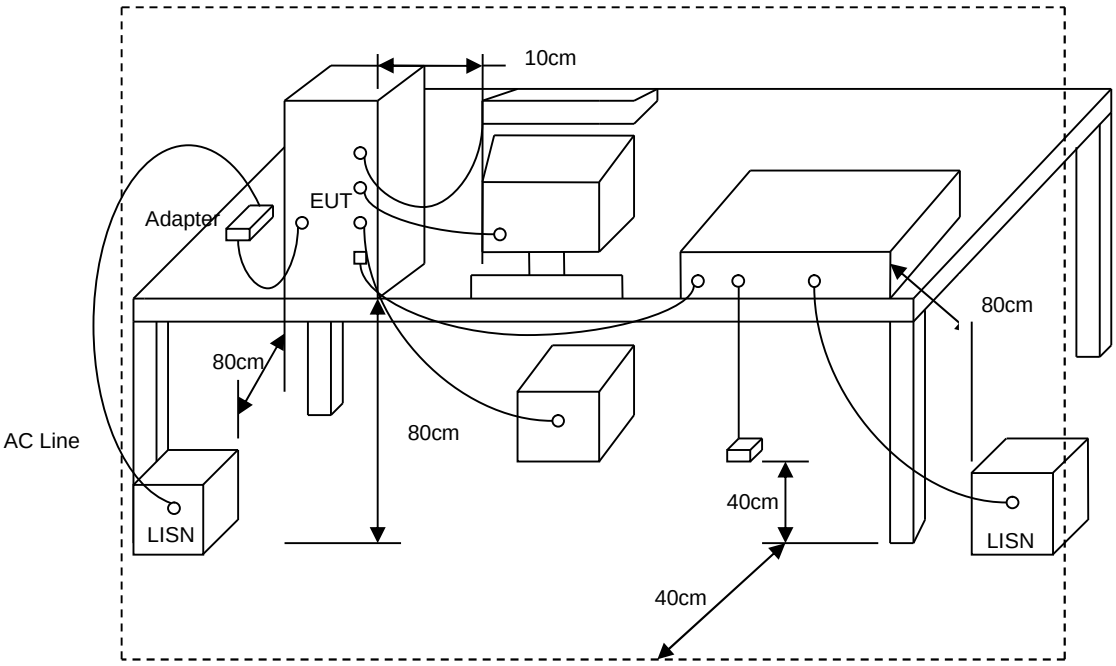
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2 Test Procedures

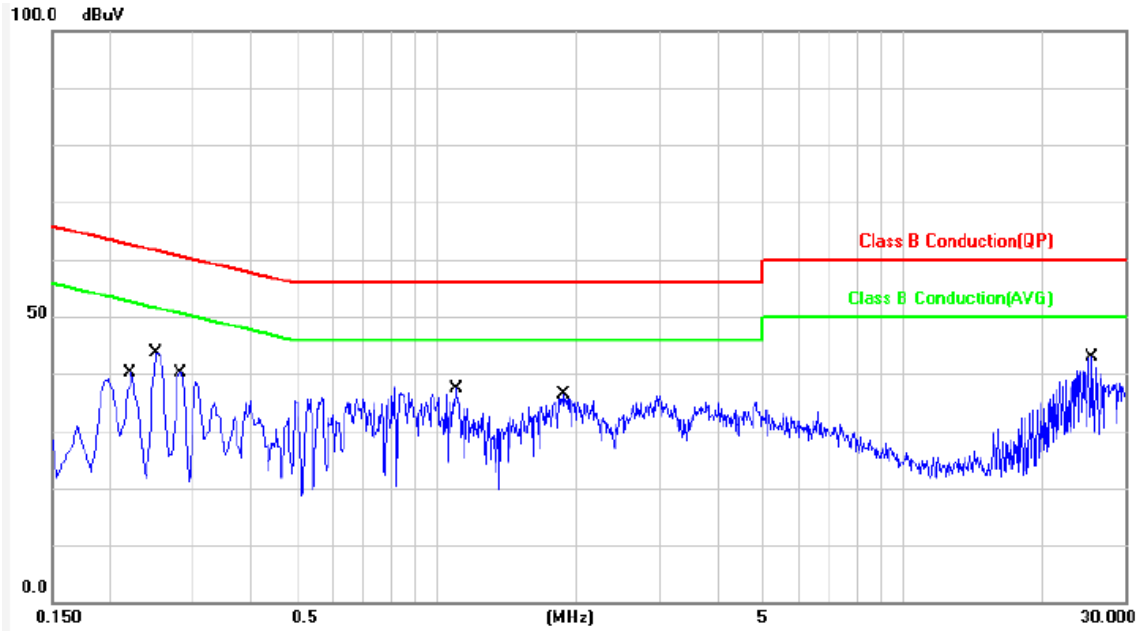
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.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

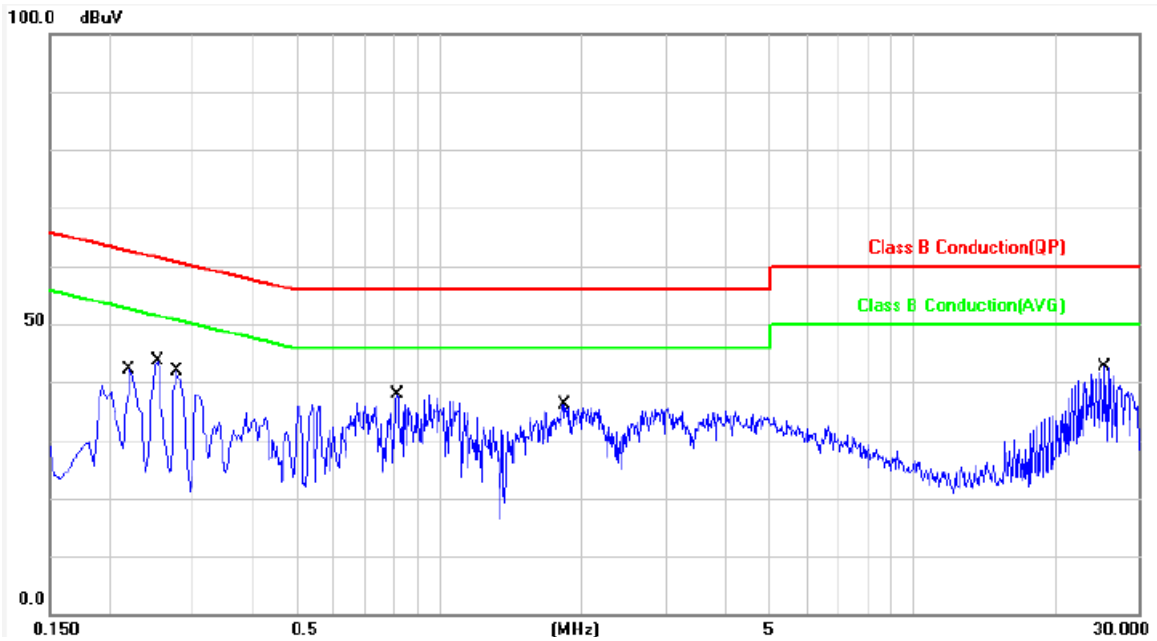
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	Mode 2	Temperature	:	24 °C
Test Date	:	Jan. 10, 2018	Humidity	:	62 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2220	9.91	29.88	39.79	62.74	-22.95	QP	P
2	0.2220	9.91	26.31	36.22	52.74	-16.52	AVG	P
3	0.2500	9.91	32.58	42.49	61.75	-19.26	QP	P
4	0.2500	9.91	30.63	40.54	51.75	-11.21	AVG	P
5	0.2819	9.91	29.56	39.47	60.76	-21.29	QP	P
6	0.2819	9.91	26.79	36.70	50.76	-14.06	AVG	P
7	1.1060	9.96	24.11	34.07	56.00	-21.93	QP	P
8	1.1060	9.96	15.61	25.57	46.00	-20.43	AVG	P
9	1.8860	10.02	23.84	33.86	56.00	-22.14	QP	P
10	1.8860	10.02	15.31	25.33	46.00	-20.67	AVG	P
11	25.5260	10.54	29.42	39.96	60.00	-20.04	QP	P
12	25.5260	10.54	21.93	32.47	50.00	-17.53	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 2	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	0.2220	9.91	29.93	39.84	62.74	-22.90	QP	P
2	0.2220	9.91	26.96	36.87	52.74	-15.87	AVG	P
3	0.2540	9.91	32.68	42.59	61.62	-19.03	QP	P
4	0.2540	9.91	30.90	40.81	51.62	-10.81	AVG	P
5	0.2779	9.91	30.30	40.21	60.88	-20.67	QP	P
6	0.2779	9.91	25.89	35.80	50.88	-15.08	AVG	P
7	0.8139	9.95	26.17	36.12	56.00	-19.88	QP	P
8	0.8139	9.95	18.73	28.68	46.00	-17.32	AVG	P
9	1.8380	10.01	23.13	33.14	56.00	-22.86	QP	P
10	1.8380	10.01	16.07	26.08	46.00	-19.92	AVG	P
11	25.5260	10.54	30.50	41.04	60.00	-18.96	QP	P
12	25.5260	10.54	24.80	35.34	50.00	-14.66	AVG	P

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

6. Test of Radiated Spurious Emission

6.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

6.2 Test Procedures

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.

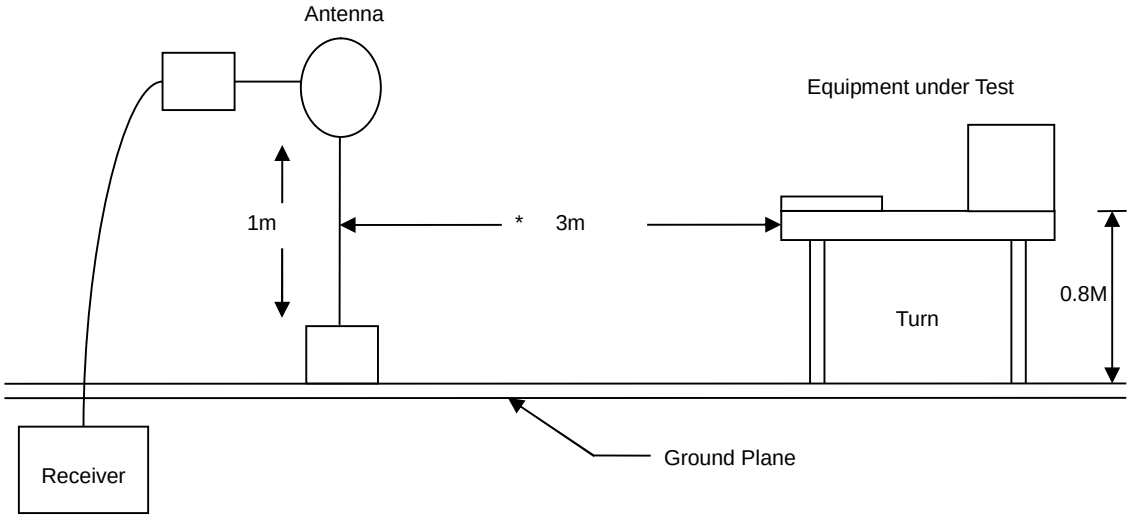
g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

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.

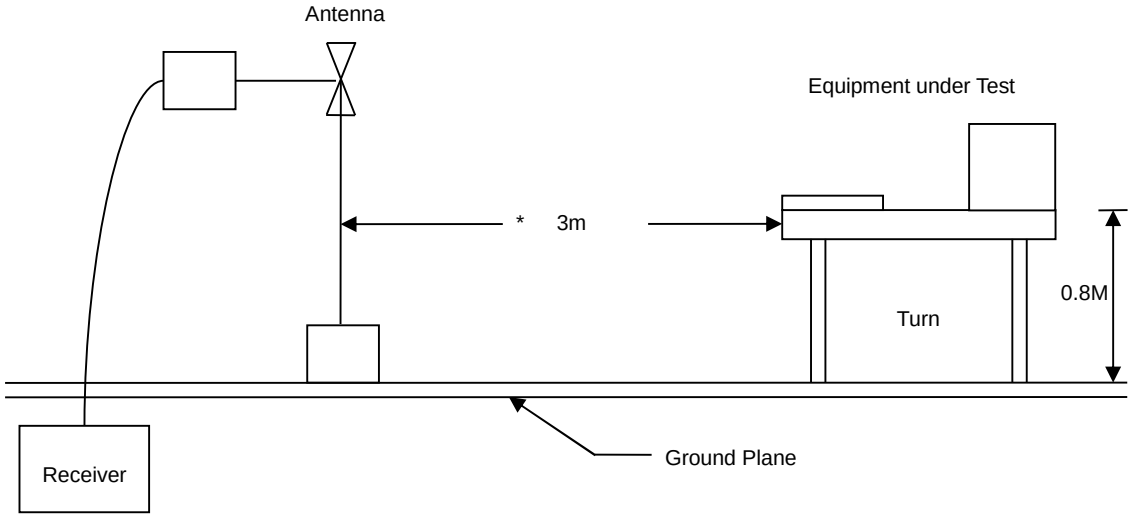
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

6.3 Typical Test Setup

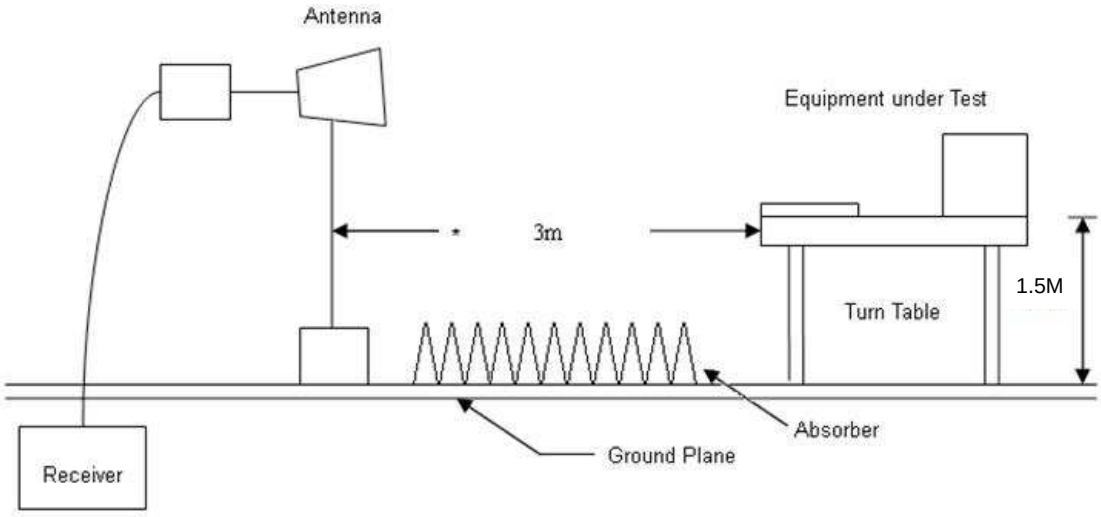
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

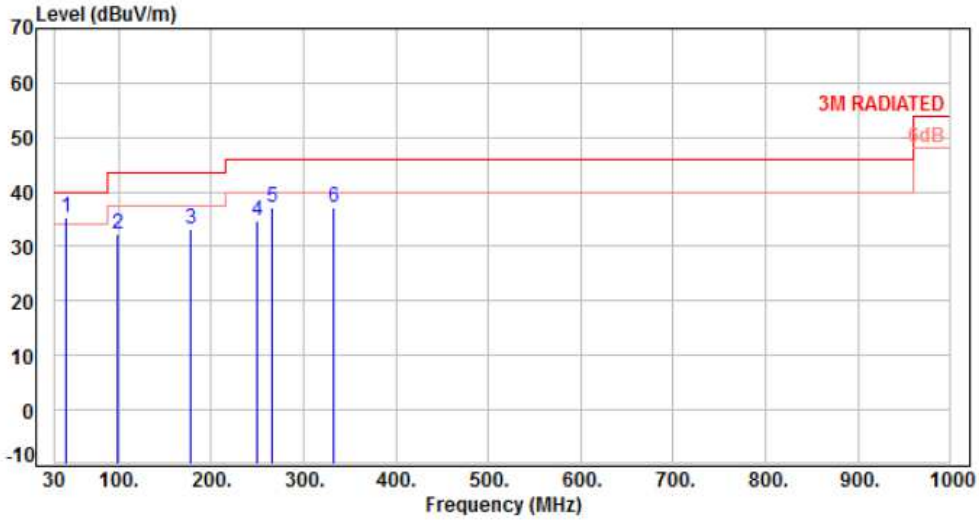


6.4 Test Result and Data (9KHz ~ 30MHz)

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

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

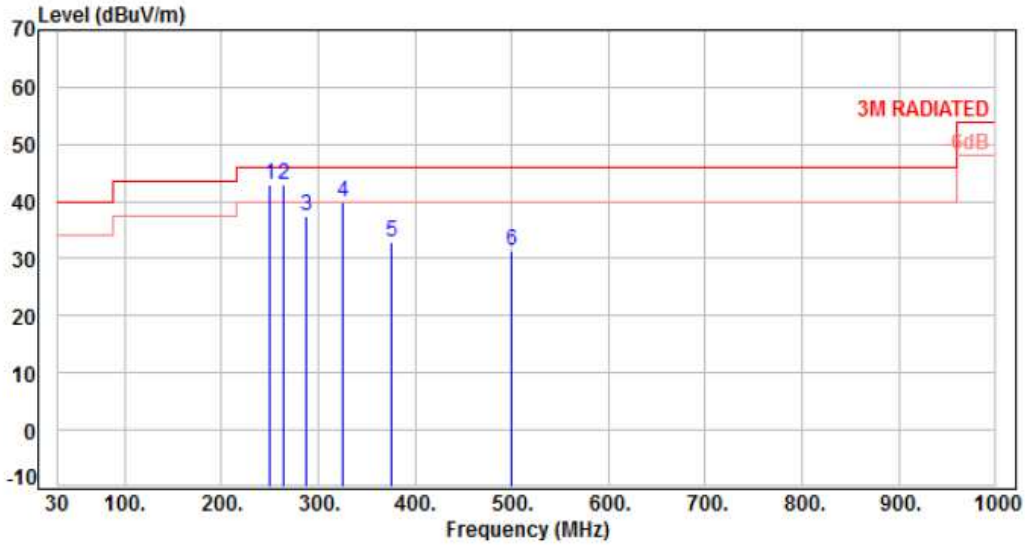
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



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	45.33	35.30	40.00	-4.70	Peak	400	0	P
2	98.87	-15.12	47.48	32.36	43.50	-11.14	Peak	400	0	P
3	177.44	-10.87	43.98	33.11	43.50	-10.39	Peak	400	0	P
4	250.19	-10.63	45.42	34.79	46.00	-11.21	Peak	400	0	P
5	265.71	-10.01	47.04	37.03	46.00	-8.97	Peak	400	0	P
6	332.64	-7.95	44.97	37.02	46.00	-8.98	Peak	400	0	P

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

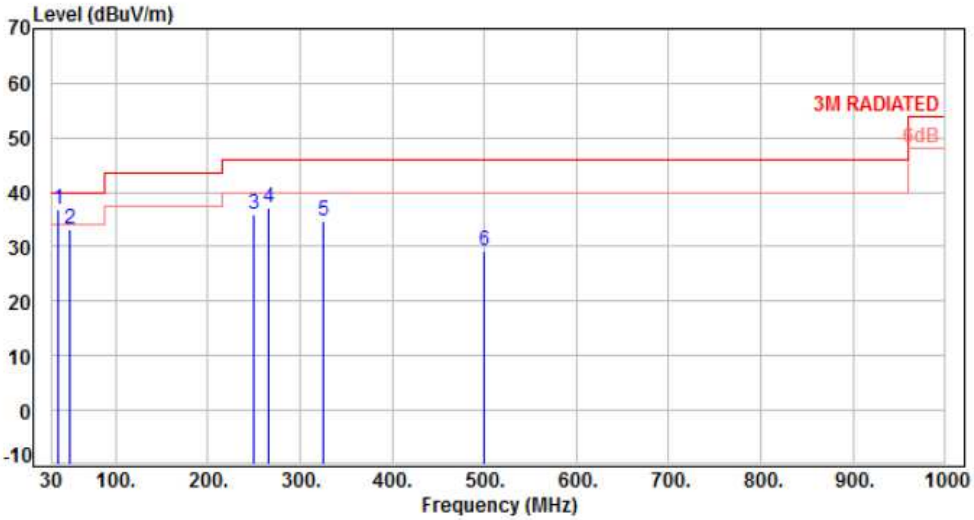
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	250.19	-10.63	53.60	42.97	46.00	-3.03	QP	100	43	P
2	264.74	-10.08	53.00	42.92	46.00	-3.08	QP	100	355	P
3	288.02	-9.19	46.63	37.44	46.00	-8.56	Peak	100	0	P
4	325.85	-8.12	47.90	39.78	46.00	-6.22	Peak	100	0	P
5	375.32	-6.73	39.67	32.94	46.00	-13.06	Peak	100	0	P
6	500.45	-3.91	35.38	31.47	46.00	-14.53	Peak	100	0	P

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

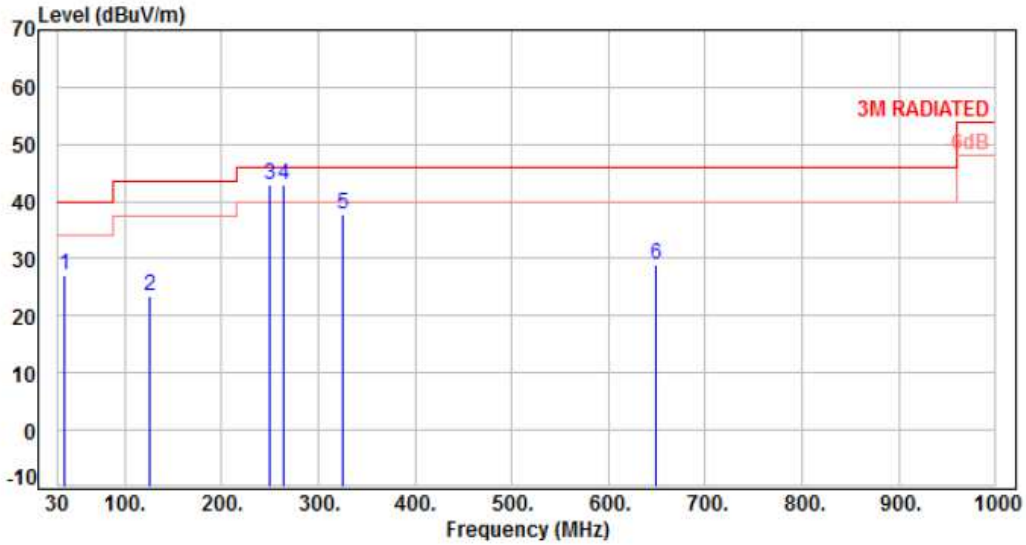
Power	:	PoE	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 6	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %



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	47.69	36.99	40.00	-3.01	QP	100	72	P
2	50.37	-9.71	42.85	33.14	40.00	-6.86	Peak	400	0	P
3	250.19	-10.63	46.59	35.96	46.00	-10.04	Peak	400	0	P
4	265.71	-10.01	47.04	37.03	46.00	-8.97	Peak	400	0	P
5	324.88	-8.15	42.93	34.78	46.00	-11.22	Peak	400	0	P
6	500.45	-3.91	33.13	29.22	46.00	-16.78	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 6	Temperature	:	23 °C
Test Date	:	Nov. 27, 2017	Humidity	:	60 %

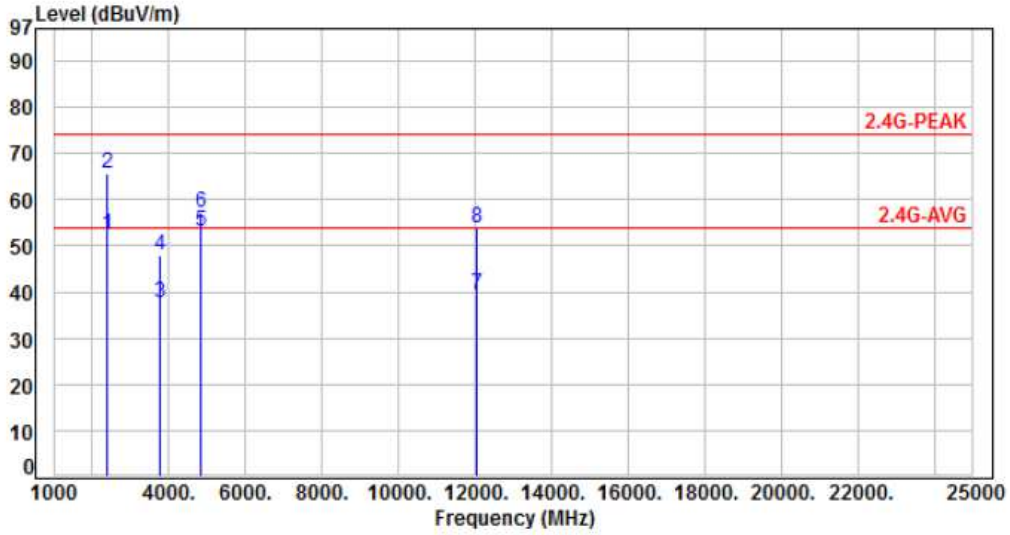


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	36.79	-10.70	37.73	27.03	40.00	-12.97	Peak	100	0	P
2	125.06	-11.93	35.38	23.45	43.50	-20.05	Peak	100	0	P
3	250.19	-10.63	53.60	42.97	46.00	-3.03	QP	122	347	P
4	264.74	-10.08	53.01	42.93	46.00	-3.07	QP	100	33	P
5	324.88	-8.15	45.81	37.66	46.00	-8.34	Peak	100	0	P
6	649.83	-1.10	29.99	28.89	46.00	-17.11	Peak	100	0	P

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

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

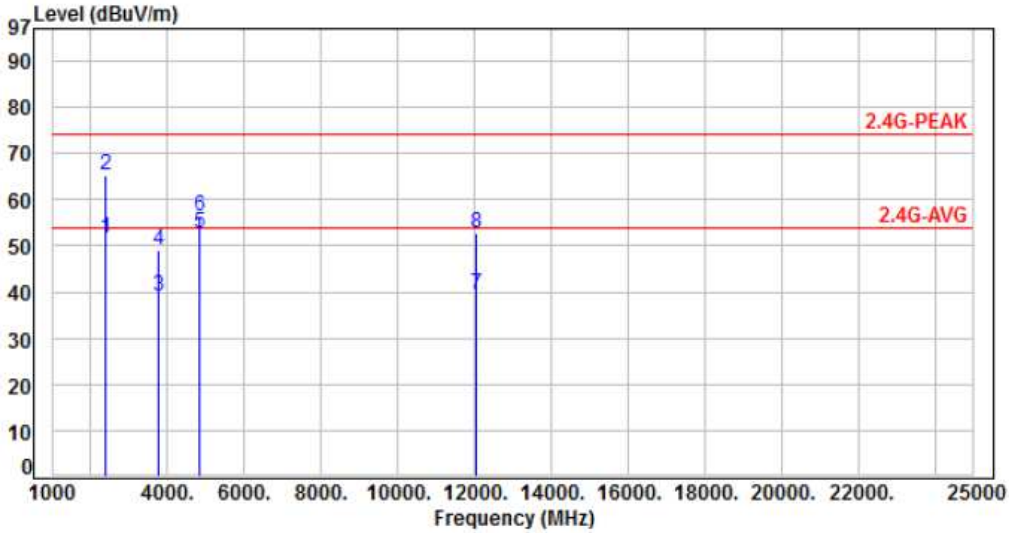
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2373.70	-18.99	71.50	52.51	54.00	-1.49	Average	378	342	P
2	2373.70	-18.99	84.60	65.61	74.00	-8.39	Peak	378	342	P
3	3750.00	-14.88	52.56	37.68	54.00	-16.32	Average	271	132	P
4	3750.00	-14.88	62.73	47.85	74.00	-26.15	Peak	271	132	P
5	4824.00	-13.23	66.20	52.97	54.00	-1.03	Average	270	336	P
6	4824.00	-13.23	70.50	57.27	74.00	-16.73	Peak	270	336	P
7	12060.00	-5.95	45.50	39.55	54.00	-14.45	Average	110	285	P
8	12060.00	-5.95	59.63	53.68	74.00	-20.32	Peak	110	285	P

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

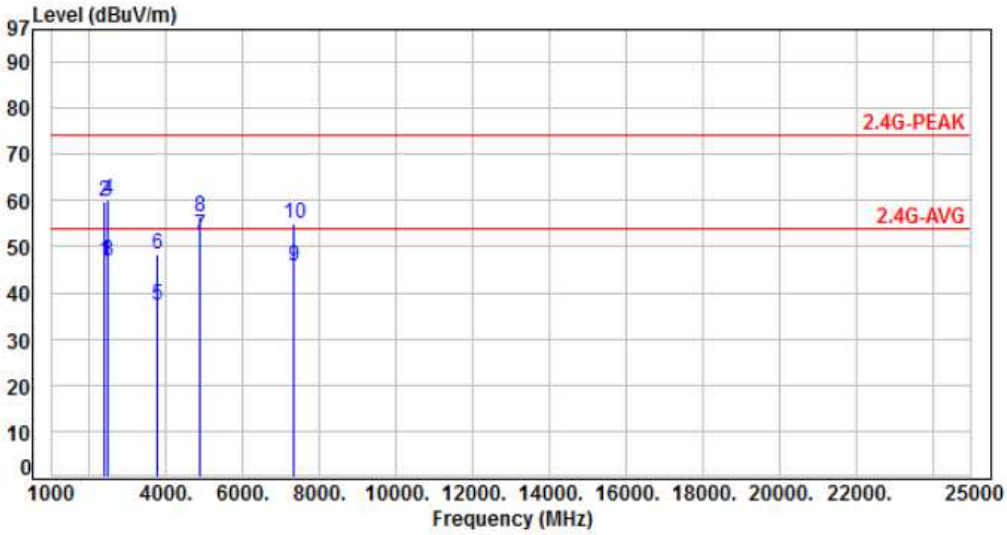
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2373.70	-18.99	70.53	51.54	54.00	-2.46	Average	305	84	P
2	2373.70	-18.99	84.10	65.11	74.00	-8.89	Peak	305	84	P
3	3750.00	-14.88	53.82	38.94	54.00	-15.06	Average	183	201	P
4	3750.00	-14.88	64.10	49.22	74.00	-24.78	Peak	183	201	P
5	4824.00	-13.23	65.90	52.67	54.00	-1.33	Average	144	332	P
6	4824.00	-13.23	69.78	56.55	74.00	-17.45	Peak	144	332	P
7	12060.00	-5.95	45.55	39.60	54.00	-14.40	Average	100	314	P
8	12060.00	-5.95	58.67	52.72	74.00	-21.28	Peak	100	314	P

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

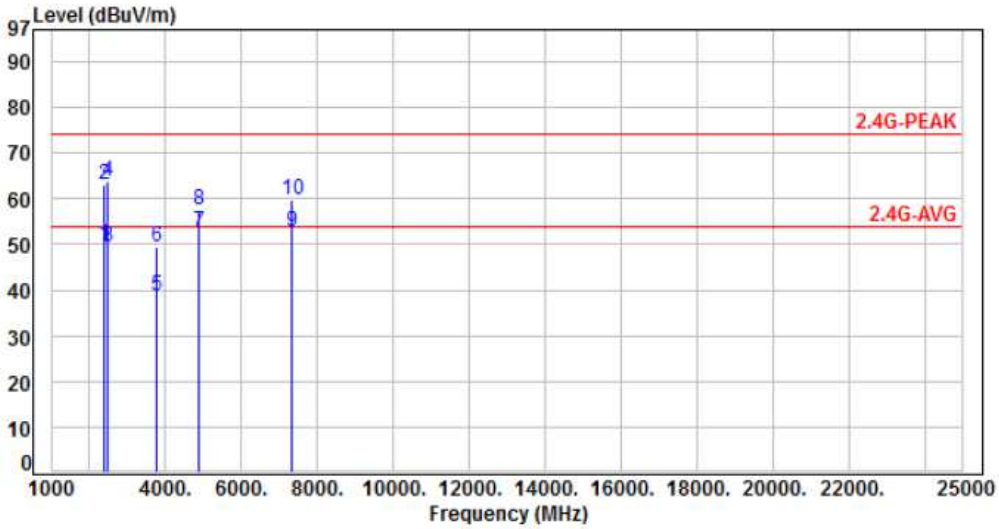
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	65.83	46.88	54.00	-7.12	Average	262	280	P
2	2390.00	-18.95	78.70	59.75	74.00	-14.25	Peak	262	280	P
3	2483.50	-18.71	65.60	46.89	54.00	-7.11	Average	262	280	P
4	2483.50	-18.71	79.00	60.29	74.00	-13.71	Peak	262	280	P
5	3750.00	-14.88	52.12	37.24	54.00	-16.76	Average	345	182	P
6	3750.00	-14.88	63.10	48.22	74.00	-25.78	Peak	345	182	P
7	4874.00	-13.11	65.46	52.35	54.00	-1.65	Average	100	342	P
8	4874.00	-13.11	69.50	56.39	74.00	-17.61	Peak	100	342	P
9	7311.00	-10.18	55.80	45.62	54.00	-8.38	Average	105	331	P
10	7311.00	-10.18	65.20	55.02	74.00	-18.98	Peak	105	331	P

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

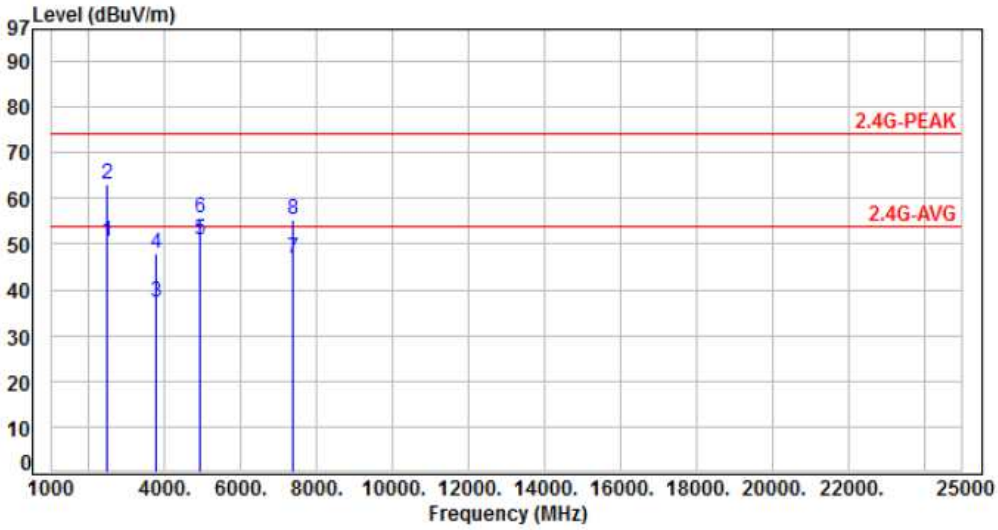
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	68.65	49.70	54.00	-4.30	Average	218	40	P
2	2390.00	-18.95	81.90	62.95	74.00	-11.05	Peak	218	40	P
3	2483.50	-18.71	68.20	49.49	54.00	-4.51	Average	218	40	P
4	2483.50	-18.71	82.70	63.99	74.00	-10.01	Peak	218	40	P
5	3750.00	-14.88	53.56	38.68	54.00	-15.32	Average	153	110	P
6	3750.00	-14.88	64.35	49.47	74.00	-24.53	Peak	153	110	P
7	4874.00	-13.11	66.00	52.89	54.00	-1.11	Average	161	339	P
8	4874.00	-13.11	70.50	57.39	74.00	-16.61	Peak	161	339	P
9	7311.00	-10.18	62.89	52.71	54.00	-1.29	Average	380	322	P
10	7311.00	-10.18	69.89	59.71	74.00	-14.29	Peak	380	322	P

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

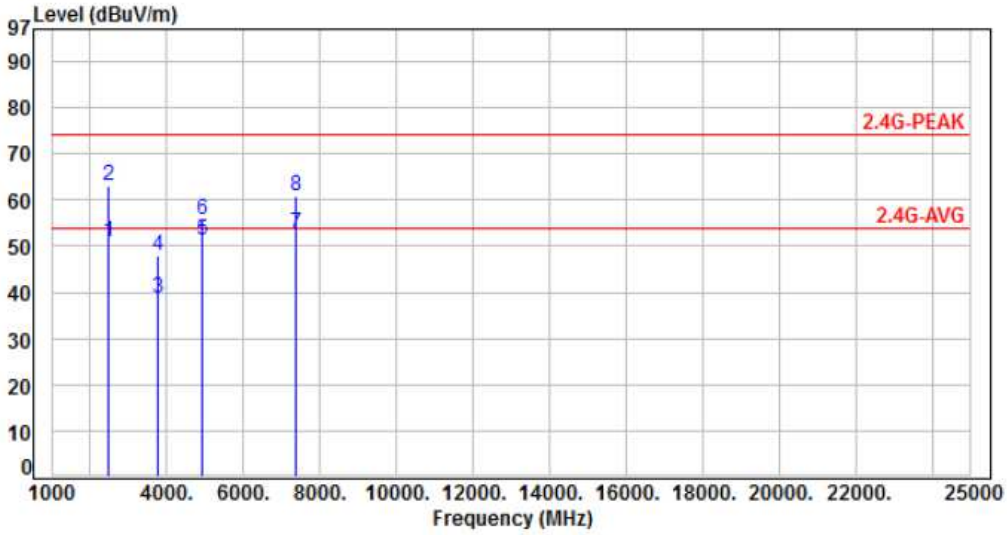
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 1, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	69.35	50.64	54.00	-3.36	Average	373	336	P
2	2483.50	-18.71	81.90	63.19	74.00	-10.81	Peak	373	336	P
3	3750.00	-14.88	52.16	37.28	54.00	-16.72	Average	386	170	P
4	3750.00	-14.88	62.77	47.89	74.00	-26.11	Peak	386	170	P
5	4924.00	-12.98	63.97	50.99	54.00	-3.01	Average	100	341	P
6	4924.00	-12.98	68.60	55.62	74.00	-18.38	Peak	100	341	P
7	7386.00	-10.00	56.89	46.89	54.00	-7.11	Average	106	334	P
8	7386.00	-10.00	65.39	55.39	74.00	-18.61	Peak	106	334	P

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

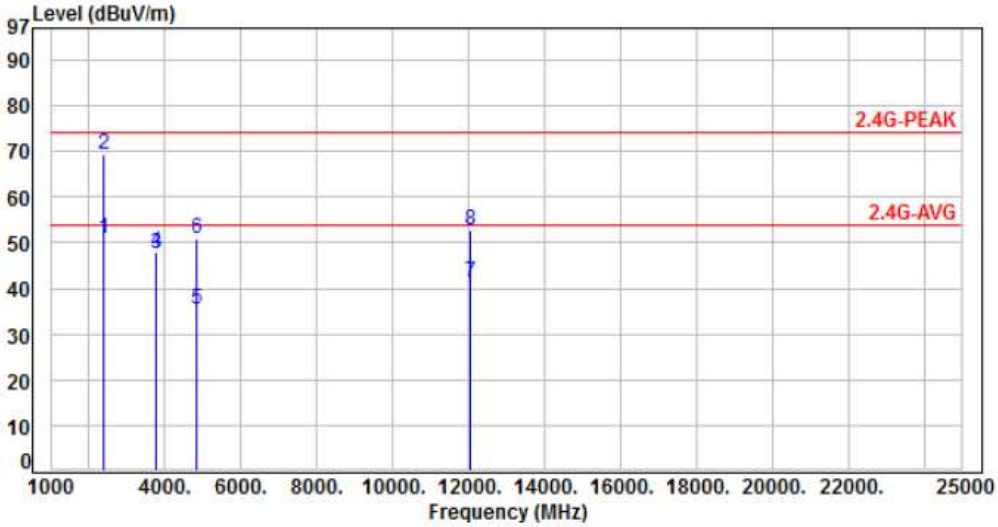
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 1, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	69.60	50.89	54.00	-3.11	Average	274	25	P
2	2483.50	-18.71	81.60	62.89	74.00	-11.11	Peak	274	25	P
3	3750.00	-14.88	53.52	38.64	54.00	-15.36	Average	152	100	P
4	3750.00	-14.88	62.93	48.05	74.00	-25.95	Peak	152	100	P
5	4924.00	-12.98	64.15	51.17	54.00	-2.83	Average	137	338	P
6	4924.00	-12.98	68.50	55.52	74.00	-18.48	Peak	137	338	P
7	7386.00	-10.00	62.89	52.89	54.00	-1.11	Average	316	308	P
8	7386.00	-10.00	70.79	60.79	74.00	-13.21	Peak	316	308	P

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

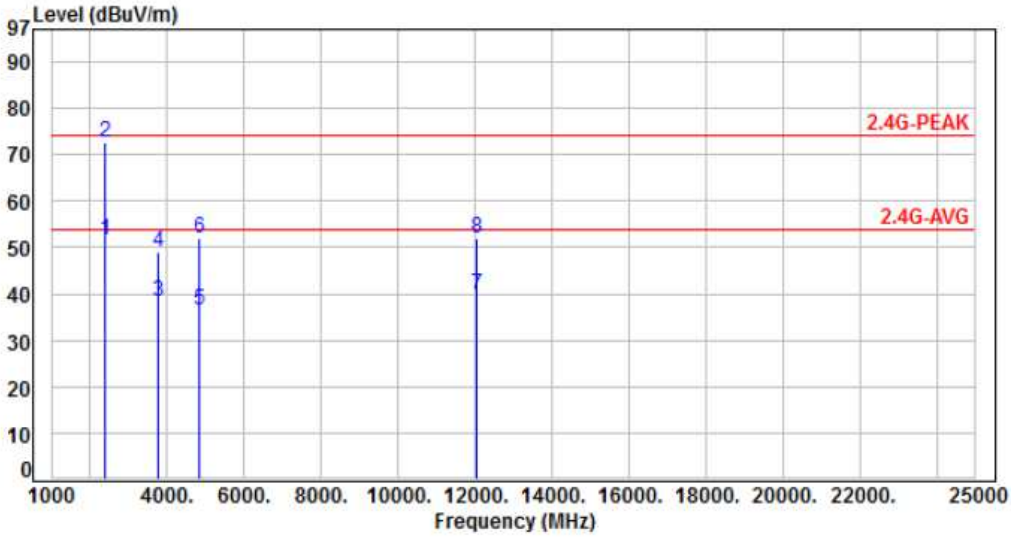
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	69.70	50.75	54.00	-3.25	Average	366	326	P
2	2390.00	-18.95	88.20	69.25	74.00	-4.75	Peak	366	326	P
3	3750.00	-14.88	62.64	47.76	54.00	-6.24	Average	392	166	P
4	3750.00	-14.88	62.76	47.88	74.00	-26.12	Peak	392	166	P
5	4824.00	-13.23	48.52	35.29	54.00	-18.71	Average	100	37	P
6	4824.00	-13.23	64.20	50.97	74.00	-23.03	Peak	100	37	P
7	12060.00	-5.95	47.36	41.41	54.00	-12.59	Average	100	118	P
8	12060.00	-5.95	58.66	52.71	74.00	-21.29	Peak	100	118	P

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

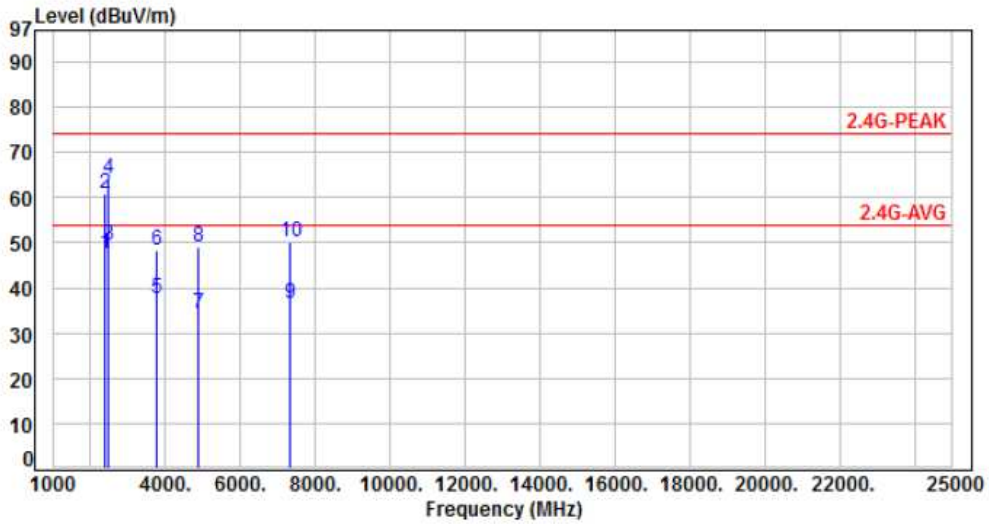
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	70.70	51.75	54.00	-2.25	Average	226	40	P
2	2390.00	-18.95	91.70	72.75	74.00	-1.25	Peak	226	40	P
3	3750.00	-14.88	53.11	38.23	54.00	-15.77	Average	144	203	P
4	3750.00	-14.88	63.78	48.90	74.00	-25.10	Peak	144	203	P
5	4824.00	-13.23	49.80	36.57	54.00	-17.43	Average	335	342	P
6	4824.00	-13.23	65.40	52.17	74.00	-21.83	Peak	335	342	P
7	12060.00	-5.95	45.85	39.90	54.00	-14.10	Average	107	259	P
8	12060.00	-5.95	58.02	52.07	74.00	-21.93	Peak	107	259	P

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

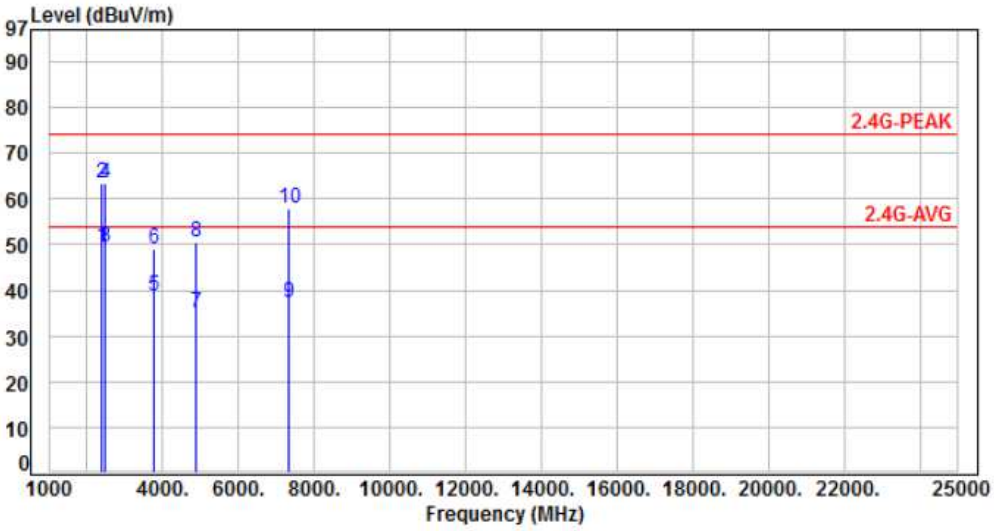
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	66.54	47.59	54.00	-6.41	Average	393	332	P
2	2390.00	-18.95	79.80	60.85	74.00	-13.15	Peak	393	332	P
3	2483.50	-18.71	68.10	49.39	54.00	-4.61	Average	393	332	P
4	2483.50	-18.71	82.93	64.22	74.00	-9.78	Peak	393	332	P
5	3750.00	-14.88	52.49	37.61	54.00	-16.39	Average	321	188	P
6	3750.00	-14.88	63.02	48.14	74.00	-25.86	Peak	321	188	P
7	4874.00	-13.11	47.30	34.19	54.00	-19.81	Average	114	44	P
8	4874.00	-13.11	62.10	48.99	74.00	-25.01	Peak	114	44	P
9	7311.00	-10.18	46.57	36.39	54.00	-17.61	Average	105	334	P
10	7311.00	-10.18	60.21	50.03	74.00	-23.97	Peak	105	334	P

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

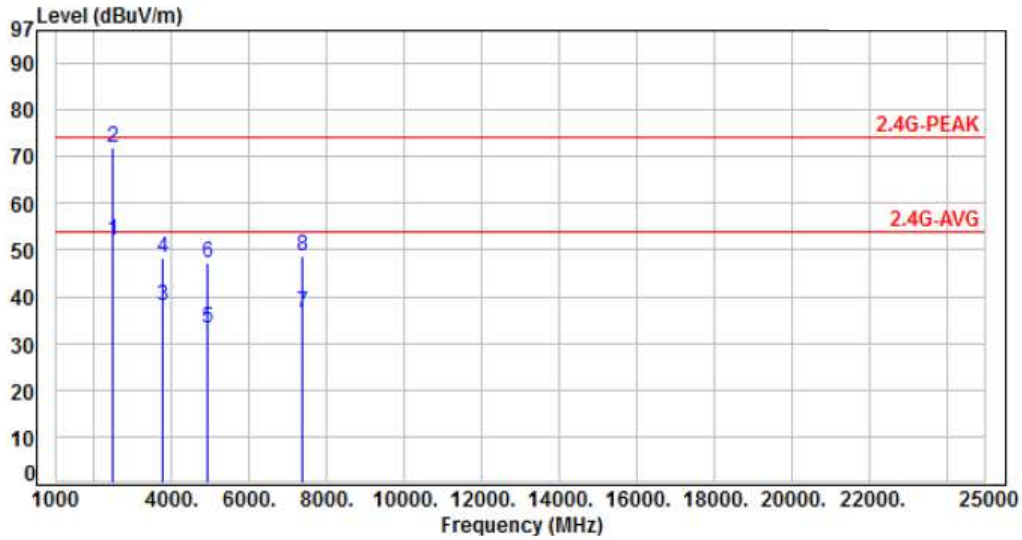
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	68.22	49.27	54.00	-4.73	Average	225	43	P
2	2390.00	-18.95	82.40	63.45	74.00	-10.55	Peak	225	43	P
3	2483.50	-18.71	68.10	49.39	54.00	-4.61	Average	225	43	P
4	2483.50	-18.71	82.10	63.39	74.00	-10.61	Peak	225	43	P
5	3750.00	-14.88	53.61	38.73	54.00	-15.27	Average	177	163	P
6	3750.00	-14.88	64.11	49.23	74.00	-24.77	Peak	177	163	P
7	4874.00	-13.11	48.10	34.99	54.00	-19.01	Average	197	339	P
8	4874.00	-13.11	63.80	50.69	74.00	-23.31	Peak	197	339	P
9	7311.00	-10.18	47.56	37.38	54.00	-16.62	Average	210	201	P
10	7311.00	-10.18	68.20	58.02	74.00	-15.98	Peak	210	201	P

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

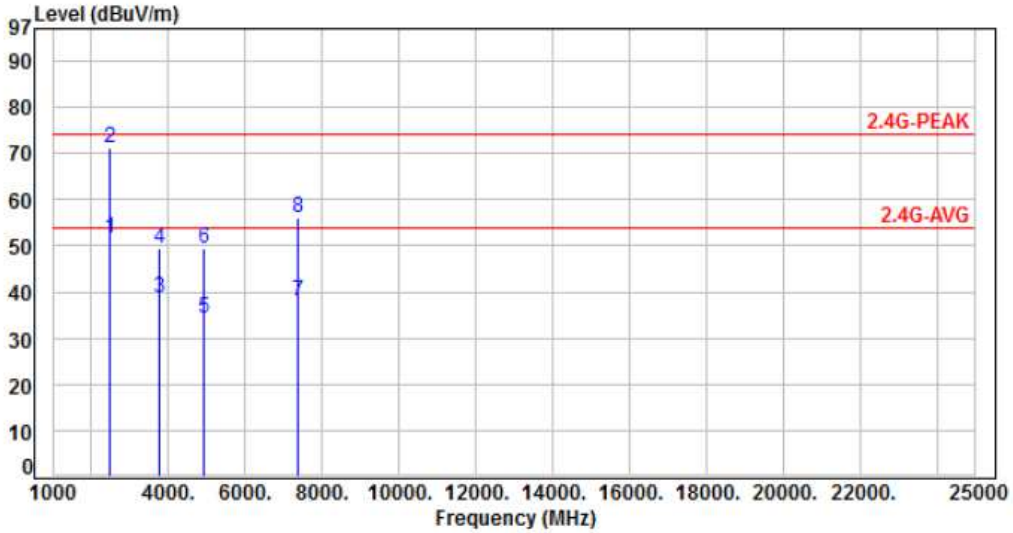
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 2, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	70.90	52.19	54.00	-1.81	Average	347	337	P
2	2483.50	-18.71	90.50	71.79	74.00	-2.21	Peak	347	337	P
3	3750.00	-14.88	52.74	37.86	54.00	-16.14	Average	300	210	P
4	3750.00	-14.88	63.22	48.34	74.00	-25.66	Peak	300	210	P
5	4924.00	-12.98	46.23	33.25	54.00	-20.75	Average	100	341	P
6	4924.00	-12.98	60.10	47.12	74.00	-26.88	Peak	100	341	P
7	7386.00	-10.00	46.50	36.50	54.00	-17.50	Average	124	66	P
8	7386.00	-10.00	58.65	48.65	74.00	-25.35	Peak	124	66	P

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

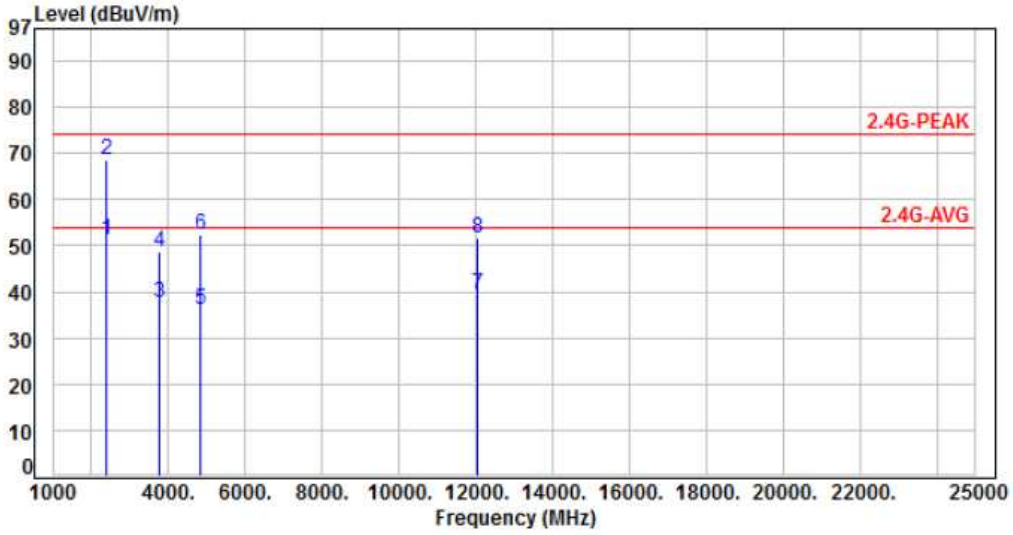
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 2, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	70.50	51.79	54.00	-2.21	Average	247	40	P
2	2483.50	-18.71	89.83	71.12	74.00	-2.88	Peak	247	40	P
3	3750.00	-14.88	53.51	38.63	54.00	-15.37	Average	195	152	P
4	3750.00	-14.88	64.22	49.34	74.00	-24.66	Peak	195	152	P
5	4924.00	-12.98	47.30	34.32	54.00	-19.68	Average	172	339	P
6	4924.00	-12.98	62.50	49.52	74.00	-24.48	Peak	172	339	P
7	7386.00	-10.00	47.85	37.85	54.00	-16.15	Average	321	85	P
8	7386.00	-10.00	65.94	55.94	74.00	-18.06	Peak	321	85	P

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

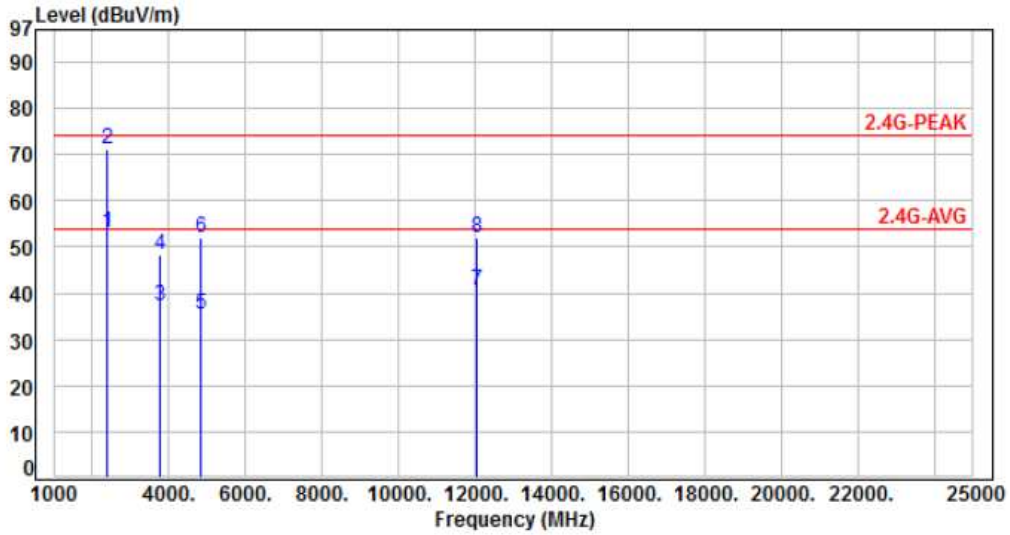
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	70.17	51.22	54.00	-2.78	Average	372	330	P
2	2390.00	-18.95	87.50	68.55	74.00	-5.45	Peak	372	330	P
3	3750.00	-14.88	52.56	37.68	54.00	-16.32	Average	315	169	P
4	3750.00	-14.88	63.51	48.63	74.00	-25.37	Peak	315	169	P
5	4824.00	-13.23	49.20	35.97	54.00	-18.03	Average	102	30	P
6	4824.00	-13.23	65.70	52.47	74.00	-21.53	Peak	102	30	P
7	12060.00	-5.95	45.32	39.37	54.00	-14.63	Average	100	51	P
8	12060.00	-5.95	57.51	51.56	74.00	-22.44	Peak	100	51	P

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

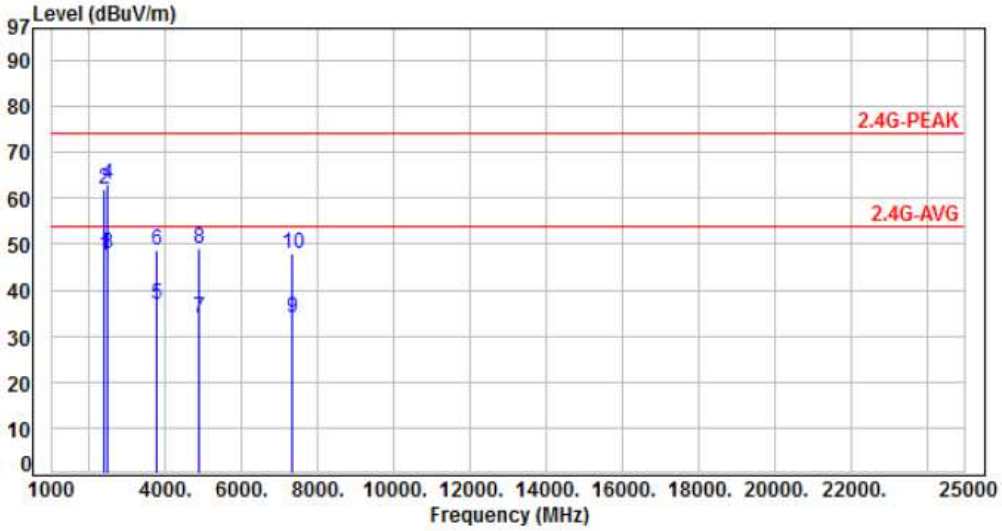
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH01	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	71.91	52.96	54.00	-1.04	Average	211	43	P
2	2390.00	-18.95	90.10	71.15	74.00	-2.85	Peak	211	43	P
3	3750.00	-14.88	51.96	37.08	54.00	-16.92	Average	182	100	P
4	3750.00	-14.88	63.22	48.34	74.00	-25.66	Peak	182	100	P
5	4824.00	-13.23	48.80	35.57	54.00	-18.43	Average	100	343	P
6	4824.00	-13.23	65.20	51.97	74.00	-22.03	Peak	100	343	P
7	12060.00	-5.95	46.51	40.56	54.00	-13.44	Average	100	336	P
8	12060.00	-5.95	58.11	52.16	74.00	-21.84	Peak	100	336	P

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

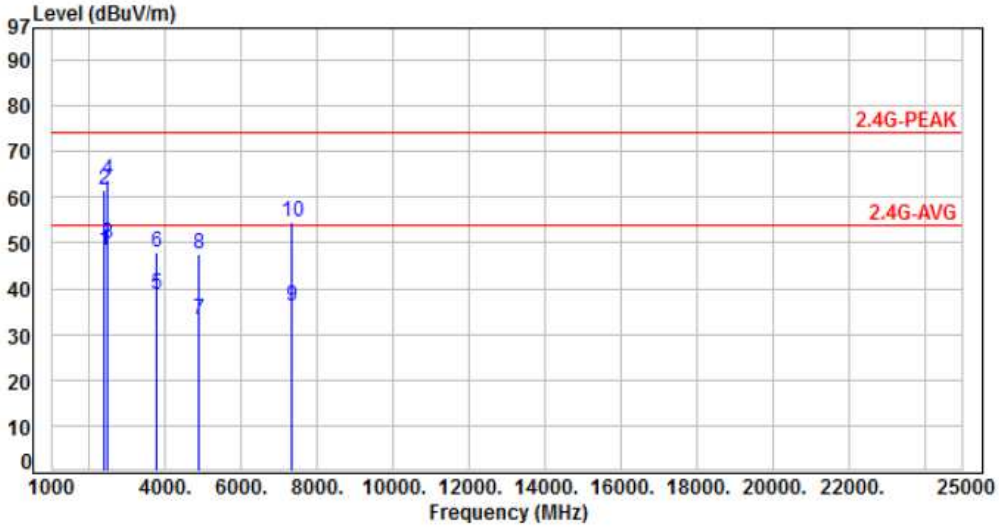
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	66.70	47.75	54.00	-6.25	Average	393	327	P
2	2390.00	-18.95	81.00	62.05	74.00	-11.95	Peak	393	327	P
3	2483.50	-18.71	66.56	47.85	54.00	-6.15	Average	393	327	P
4	2483.50	-18.71	81.67	62.96	74.00	-11.04	Peak	393	327	P
5	3750.00	-14.88	51.88	37.00	54.00	-17.00	Average	356	152	P
6	3750.00	-14.88	63.41	48.53	74.00	-25.47	Peak	356	152	P
7	4874.00	-13.11	46.90	33.79	54.00	-20.21	Average	100	49	P
8	4874.00	-13.11	62.30	49.19	74.00	-24.81	Peak	100	49	P
9	7311.00	-10.18	44.24	34.06	54.00	-19.94	Average	100	314	P
10	7311.00	-10.18	58.20	48.02	74.00	-25.98	Peak	100	314	P

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

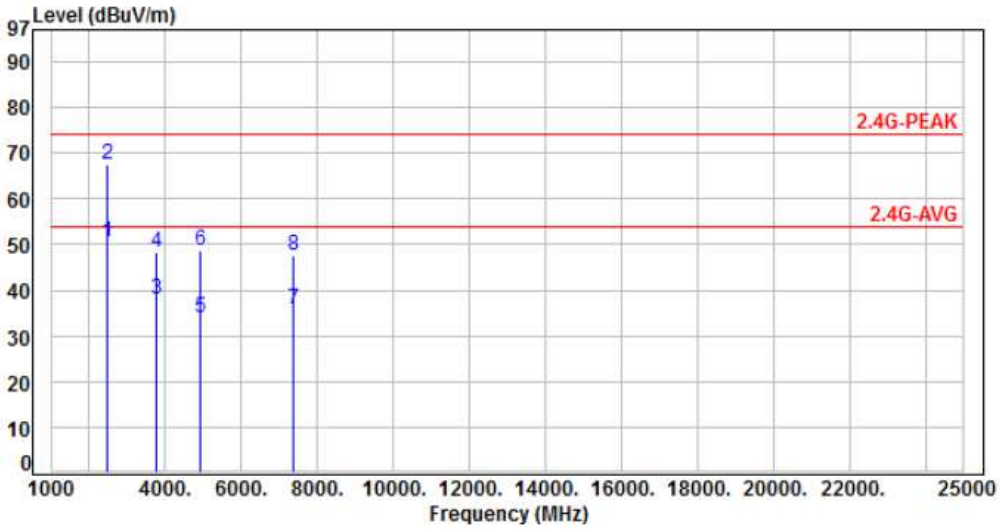
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	67.20	48.25	54.00	-5.75	Average	222	50	P
2	2390.00	-18.95	80.70	61.75	74.00	-12.25	Peak	222	50	P
3	2483.50	-18.71	68.45	49.74	54.00	-4.26	Average	222	50	P
4	2483.50	-18.71	82.60	63.89	74.00	-10.11	Peak	222	50	P
5	3750.00	-14.88	53.47	38.59	54.00	-15.41	Average	293	114	P
6	3750.00	-14.88	62.86	47.98	74.00	-26.02	Peak	293	114	P
7	4874.00	-13.11	46.45	33.34	54.00	-20.66	Average	100	335	P
8	4874.00	-13.11	60.80	47.69	74.00	-26.31	Peak	100	335	P
9	7311.00	-10.18	46.51	36.33	54.00	-17.67	Average	352	311	P
10	7311.00	-10.18	64.87	54.69	74.00	-19.31	Peak	352	311	P

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

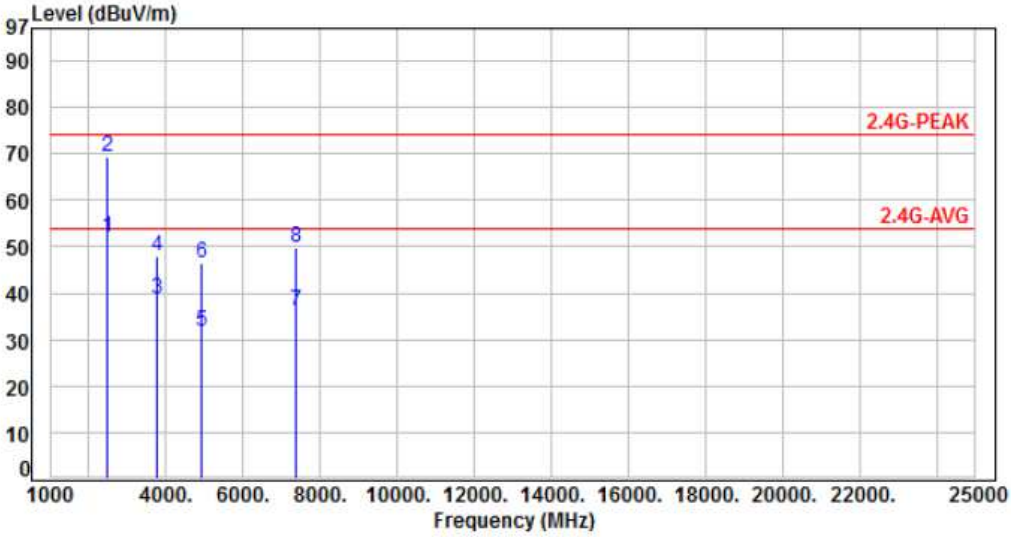
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 3, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	69.40	50.69	54.00	-3.31	Average	373	341	P
2	2483.50	-18.71	86.20	67.49	74.00	-6.51	Peak	373	341	P
3	3750.00	-14.88	52.77	37.89	54.00	-16.11	Average	362	168	P
4	3750.00	-14.88	63.21	48.33	74.00	-25.67	Peak	362	168	P
5	4924.00	-12.98	46.83	33.85	54.00	-20.15	Average	100	347	P
6	4924.00	-12.98	61.50	48.52	74.00	-25.48	Peak	100	347	P
7	7386.00	-10.00	45.94	35.94	54.00	-18.06	Average	103	241	P
8	7386.00	-10.00	57.67	47.67	74.00	-26.33	Peak	103	241	P

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

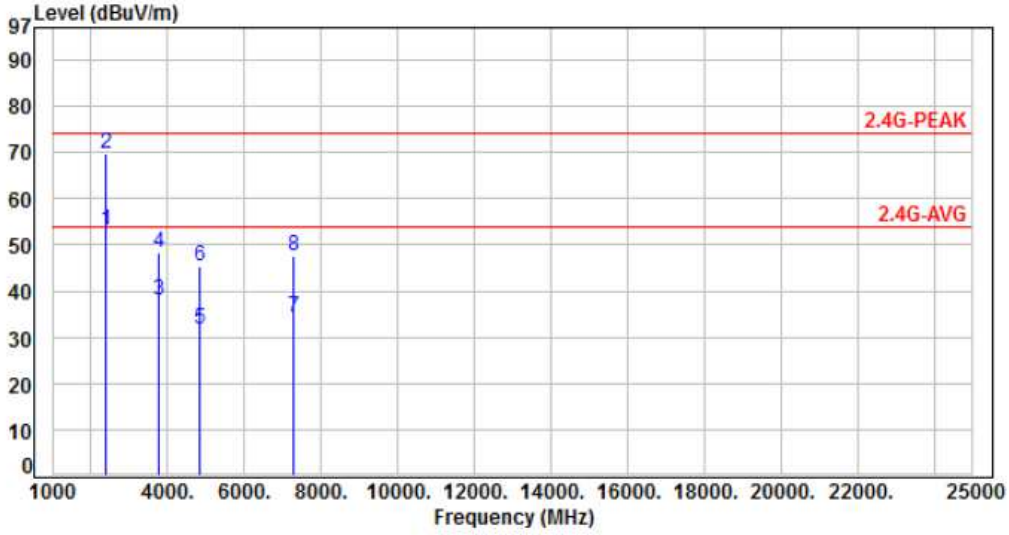
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 3, CH11	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	70.90	52.19	54.00	-1.81	Average	250	41	P
2	2483.50	-18.71	88.20	69.49	74.00	-4.51	Peak	250	41	P
3	3750.00	-14.88	53.45	38.57	54.00	-15.43	Average	155	182	P
4	3750.00	-14.88	62.86	47.98	74.00	-26.02	Peak	155	182	P
5	4924.00	-12.98	44.86	31.88	54.00	-22.12	Average	133	51	P
6	4924.00	-12.98	59.32	46.34	74.00	-27.66	Peak	133	51	P
7	7386.00	-10.00	46.09	36.09	54.00	-17.91	Average	100	302	P
8	7386.00	-10.00	59.64	49.64	74.00	-24.36	Peak	100	302	P

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

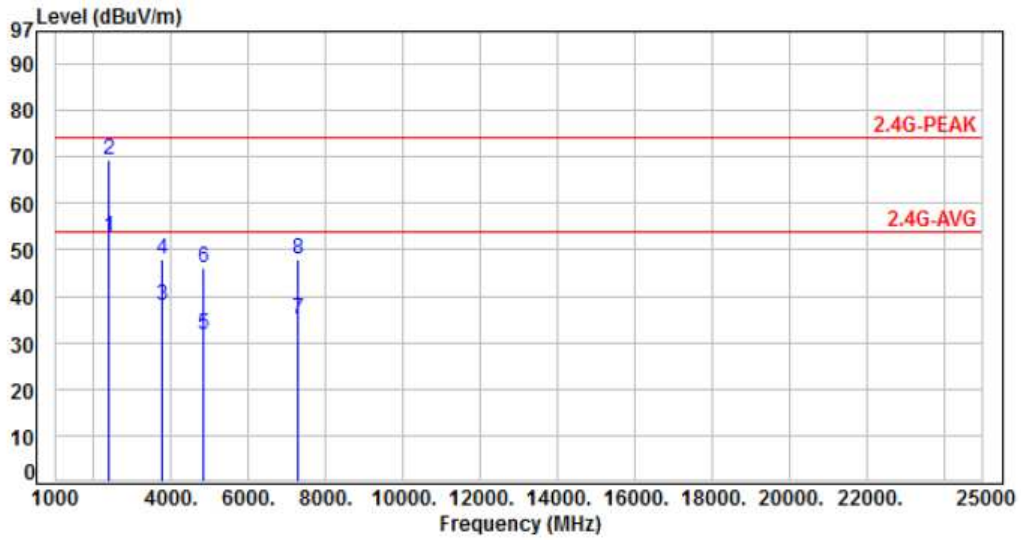
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, CH03	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	71.88	52.93	54.00	-1.07	Average	369	345	P
2	2390.00	-18.95	88.70	69.75	74.00	-4.25	Peak	369	345	P
3	3750.00	-14.88	52.85	37.97	54.00	-16.03	Average	296	187	P
4	3750.00	-14.88	63.11	48.23	74.00	-25.77	Peak	296	187	P
5	4844.00	-13.18	45.03	31.85	54.00	-22.15	Average	100	325	P
6	4844.00	-13.18	58.44	45.26	74.00	-28.74	Peak	100	325	P
7	7266.00	-10.30	44.63	34.33	54.00	-19.67	Average	241	100	P
8	7266.00	-10.30	57.89	47.59	74.00	-26.41	Peak	241	100	P

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

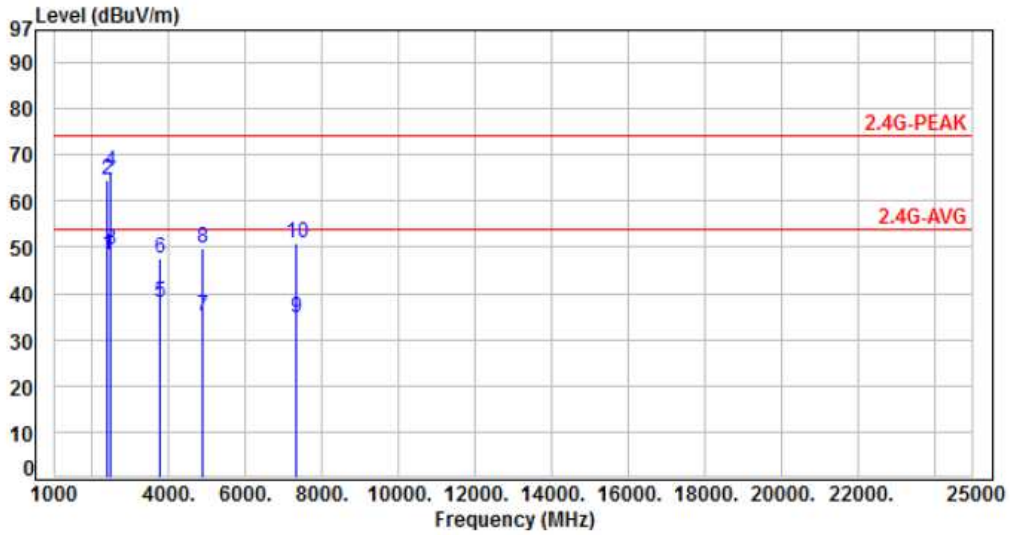
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 4, CH03	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	71.80	52.85	54.00	-1.15	Average	233	30	P
2	2390.00	-18.95	88.40	69.45	74.00	-4.55	Peak	233	30	P
3	3750.00	-14.88	53.02	38.14	54.00	-15.86	Average	145	188	P
4	3750.00	-14.88	62.85	47.97	74.00	-26.03	Peak	145	188	P
5	4844.00	-13.18	44.98	31.80	54.00	-22.20	Average	100	68	P
6	4844.00	-13.18	59.12	45.94	74.00	-28.06	Peak	100	68	P
7	7266.00	-10.30	45.33	35.03	54.00	-18.97	Average	105	299	P
8	7266.00	-10.30	58.34	48.04	74.00	-25.96	Peak	105	299	P

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

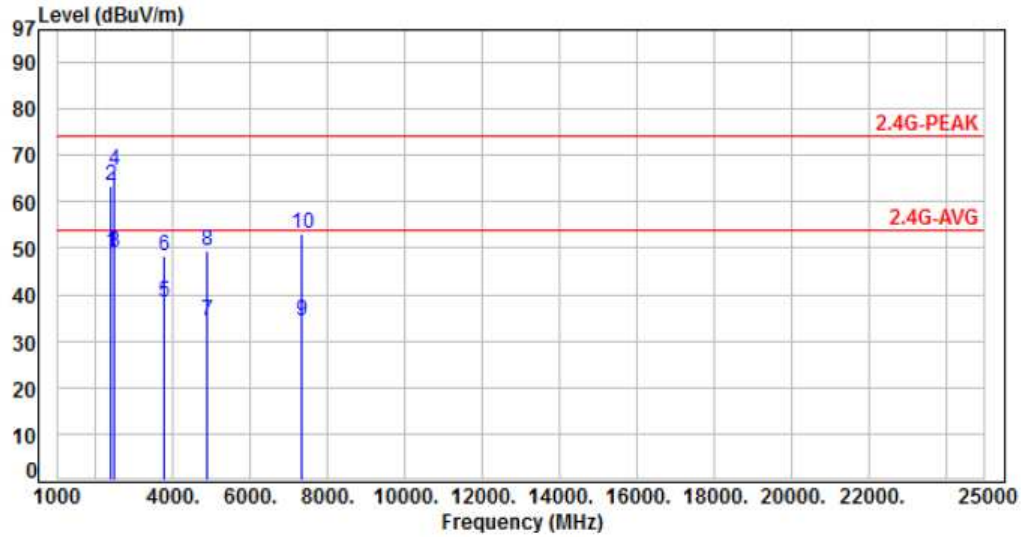
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	67.10	48.15	54.00	-5.85	Average	392	351	P
2	2390.00	-18.95	83.50	64.55	74.00	-9.45	Peak	392	351	P
3	2483.50	-18.71	68.30	49.59	54.00	-4.41	Average	392	351	P
4	2483.50	-18.71	85.20	66.49	74.00	-7.51	Peak	392	351	P
5	3750.00	-14.88	53.02	38.14	54.00	-15.86	Average	299	347	P
6	3750.00	-14.88	62.55	47.67	74.00	-26.33	Peak	299	347	P
7	4874.00	-13.11	48.30	35.19	54.00	-18.81	Average	100	337	P
8	4874.00	-13.11	63.00	49.89	74.00	-24.11	Peak	100	337	P
9	7311.00	-10.18	44.84	34.66	54.00	-19.34	Average	250	9	P
10	7311.00	-10.18	60.99	50.81	74.00	-23.19	Peak	250	9	P

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

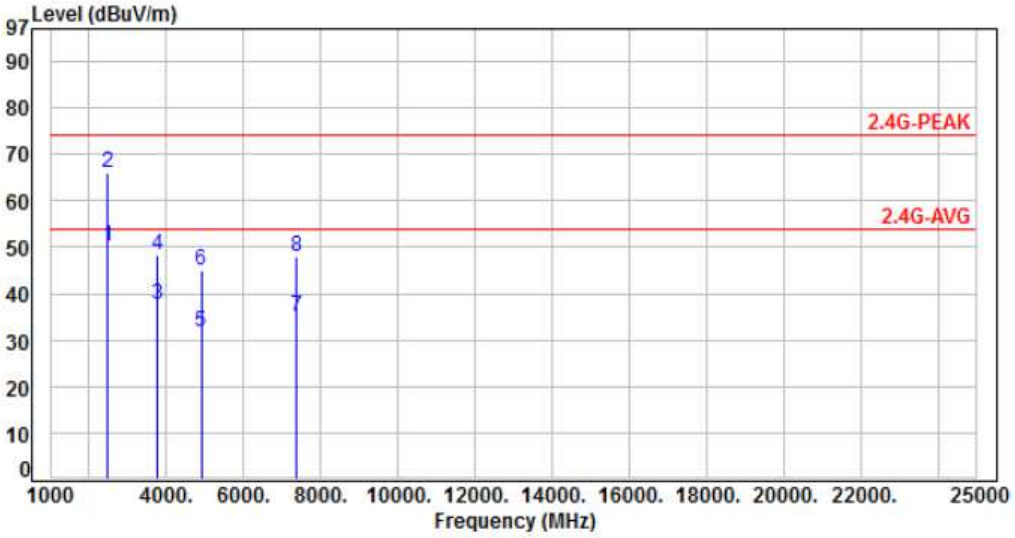
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	Mode 4, CH06	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.95	67.90	48.95	54.00	-5.05	Average	233	32	P
2	2390.00	-18.95	82.50	63.55	74.00	-10.45	Peak	233	32	P
3	2483.50	-18.71	67.90	49.19	54.00	-4.81	Average	233	32	P
4	2483.50	-18.71	85.40	66.69	74.00	-7.31	Peak	233	32	P
5	3750.00	-14.88	53.26	38.38	54.00	-15.62	Average	100	188	P
6	3750.00	-14.88	63.02	48.14	74.00	-25.86	Peak	100	188	P
7	4874.00	-13.11	47.50	34.39	54.00	-19.61	Average	164	333	P
8	4874.00	-13.11	62.60	49.49	74.00	-24.51	Peak	164	333	P
9	7311.00	-10.18	44.49	34.31	54.00	-19.69	Average	276	330	P
10	7311.00	-10.18	63.19	53.01	74.00	-20.99	Peak	276	330	P

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

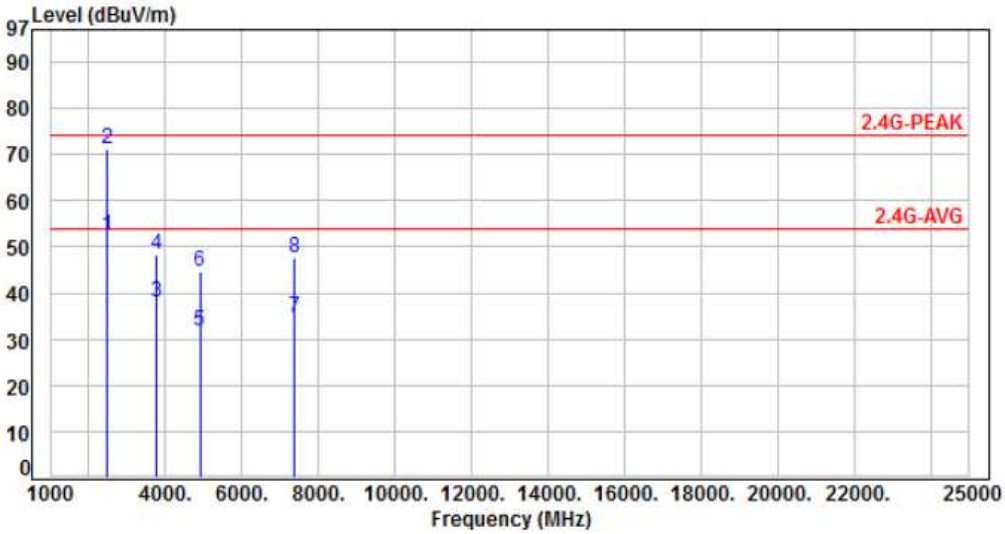
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	Mode 4, CH09	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	68.80	50.09	54.00	-3.91	Average	344	336	P
2	2483.50	-18.71	84.90	66.19	74.00	-7.81	Peak	344	336	P
3	3750.00	-14.88	52.55	37.67	54.00	-16.33	Average	326	182	P
4	3750.00	-14.88	63.11	48.23	74.00	-25.77	Peak	326	182	P
5	4904.00	-13.03	44.89	31.86	54.00	-22.14	Average	100	330	P
6	4904.00	-13.03	57.88	44.85	74.00	-29.15	Peak	100	330	P
7	7356.00	-10.08	45.21	35.13	54.00	-18.87	Average	152	55	P
8	7356.00	-10.08	57.93	47.85	74.00	-26.15	Peak	152	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 4, CH09	Temperature	:	23 °C
Test Date	:	Dec. 18, 2017	Humidity	:	60 %



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-18.71	71.20	52.49	54.00	-1.51	Average	250	48	P
2	2483.50	-18.71	89.85	71.14	74.00	-2.86	Peak	250	48	P
3	3750.00	-14.88	52.77	37.89	54.00	-16.11	Average	302	192	P
4	3750.00	-14.88	63.11	48.23	74.00	-25.77	Peak	302	192	P
5	4904.00	-13.03	44.86	31.83	54.00	-22.17	Average	100	118	P
6	4904.00	-13.03	57.69	44.66	74.00	-29.34	Peak	100	118	P
7	7356.00	-10.08	44.89	34.81	54.00	-19.19	Average	100	102	P
8	7356.00	-10.08	57.66	47.58	74.00	-26.42	Peak	100	102	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 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

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

7. Test of Conducted Spurious Emission

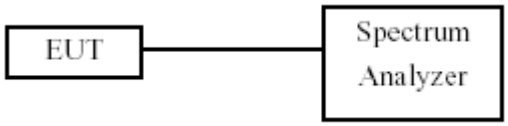
7.1 Test Limit

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

7.2 Test Procedure

a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
d. The band edges was measured and recorded.

7.3 Test Setup Layout



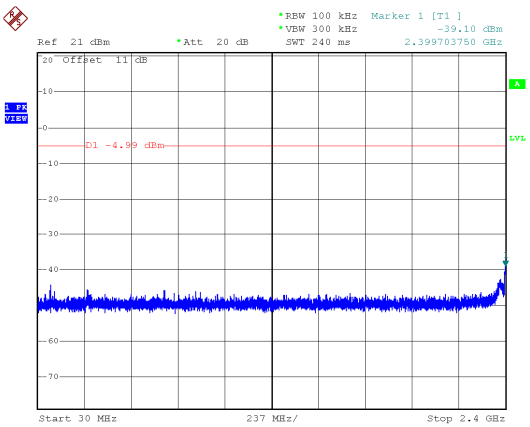
7.4 Test Result and Data

Test Result	:	PASS	Temperature	:	20°C
Test Date	:	Jan. 02, 2018	Humidity	:	63%

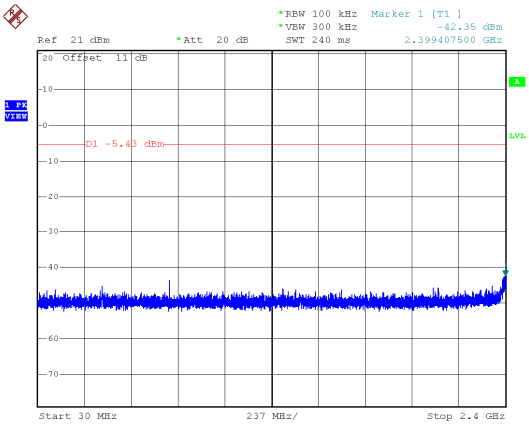
Note: Test plots refers to the following pages.

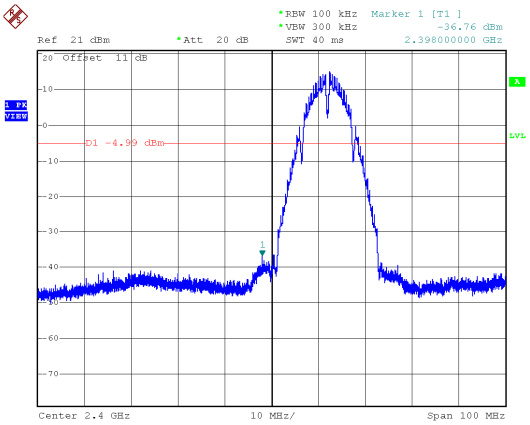
ANT A

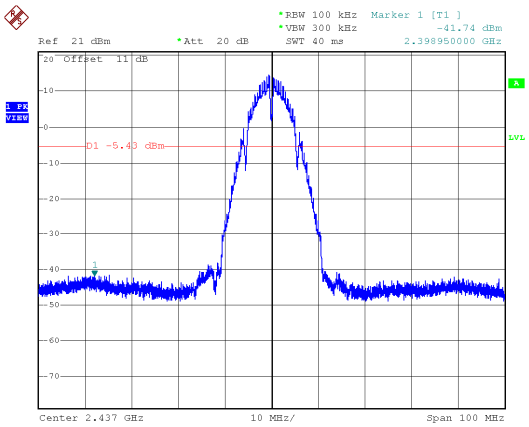
Modulation Type: 802.11b, CH 01

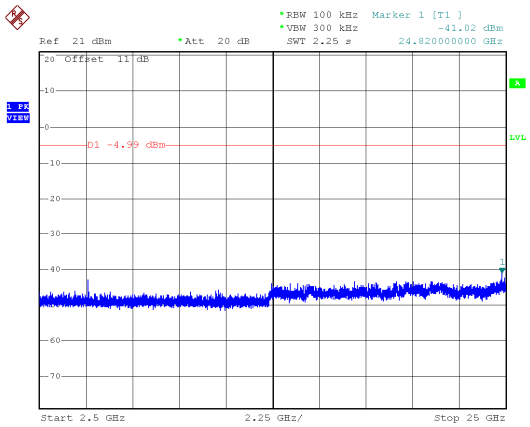


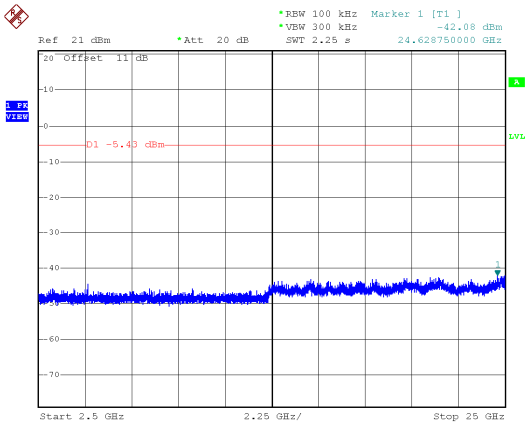
Modulation Type: 802.11b, CH 06



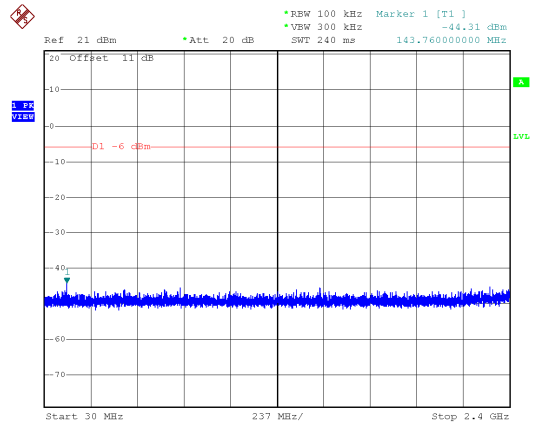


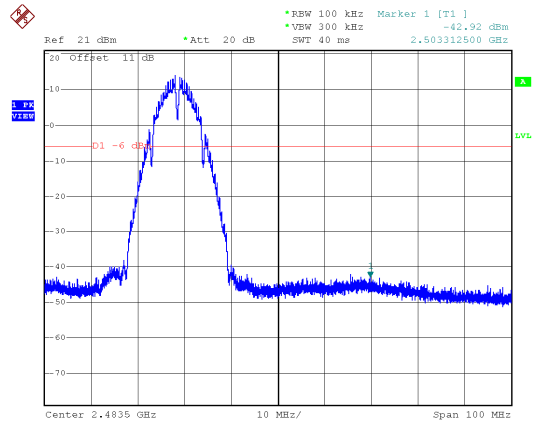


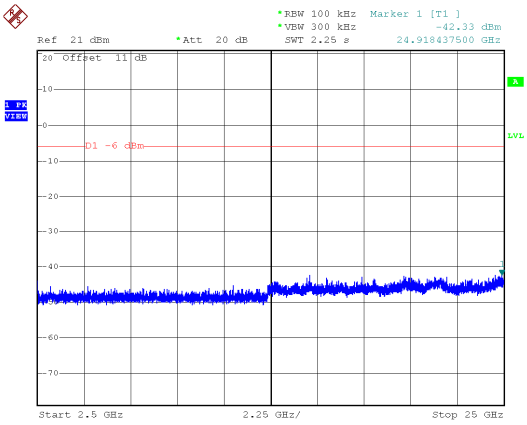




Modulation Type: 802.11b, CH 11

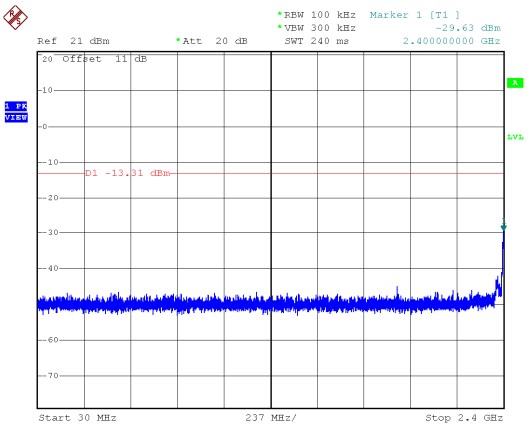




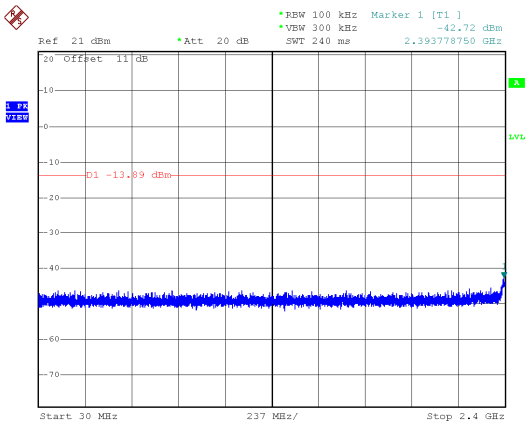


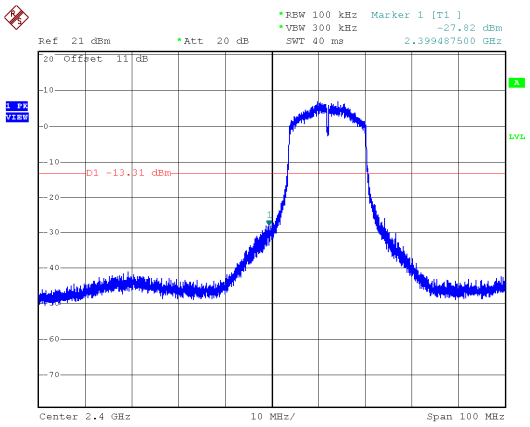
ANT A

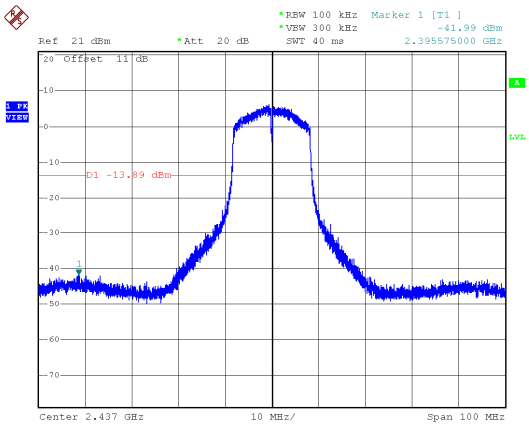
Modulation Type: 802.11g, CH 01

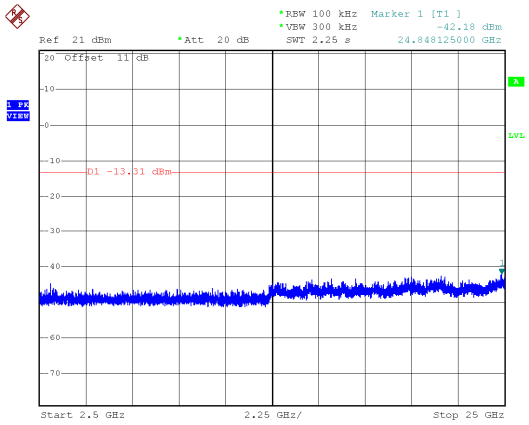


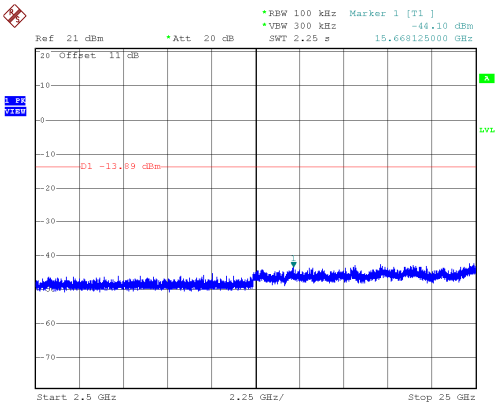
Modulation Type: 802.11g, CH 06



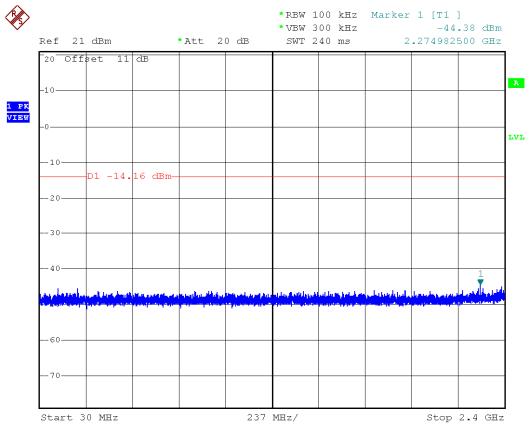


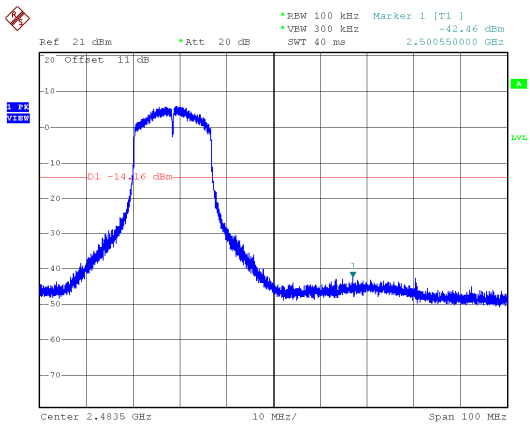


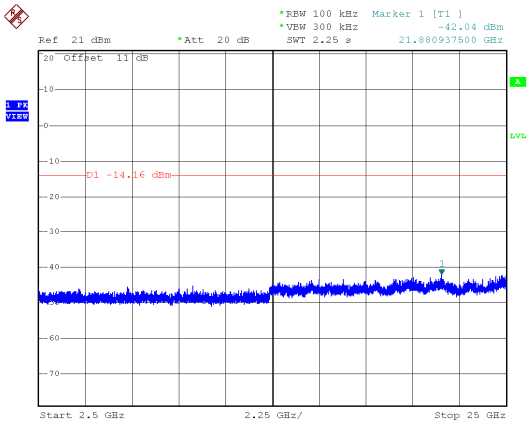




Modulation Type: 802.11g, CH 11

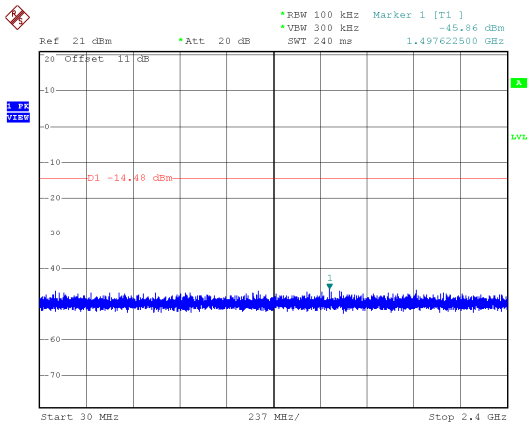




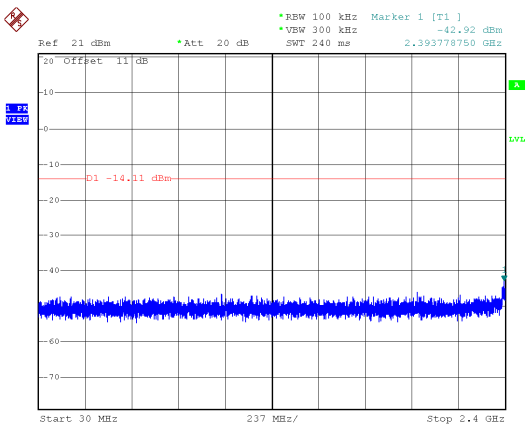


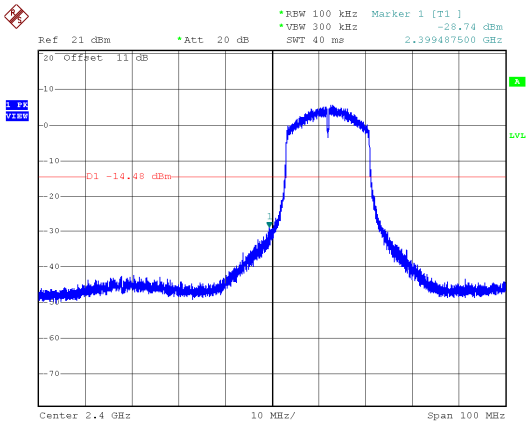
ANT A

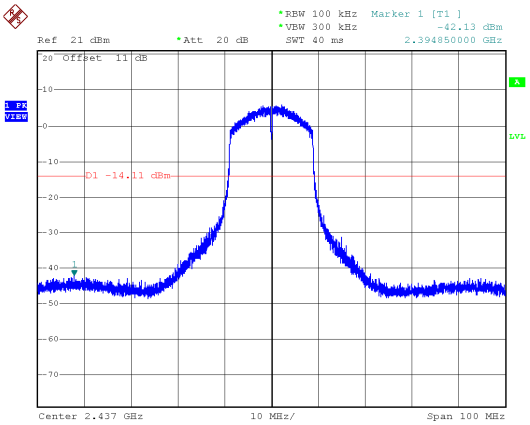
Modulation Type: 802.11n HT20, CH01

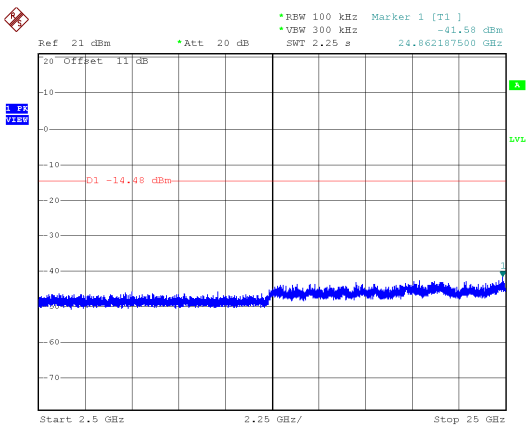


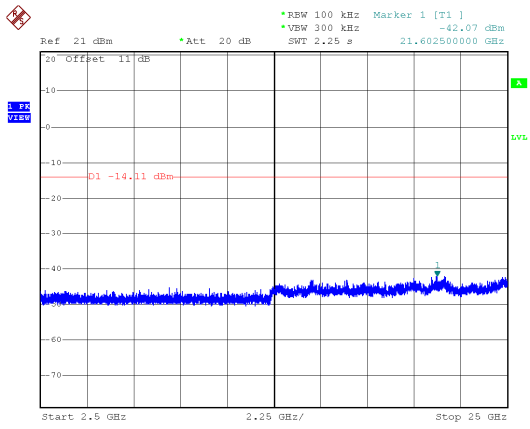
Modulation Type: 802.11n HT20, CH06



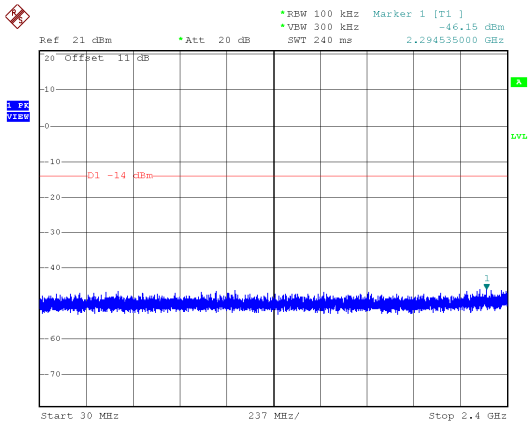


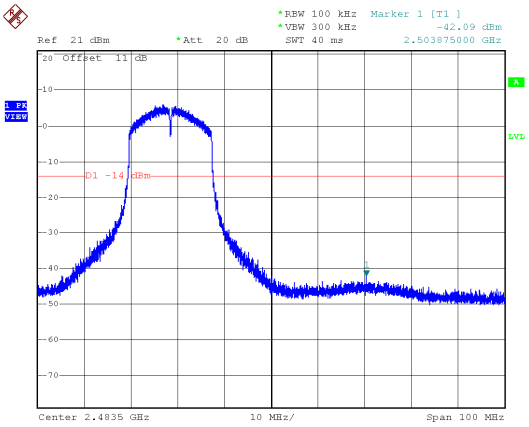


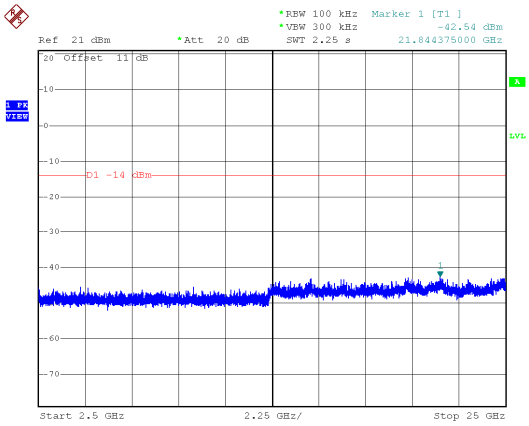




Modulation Type: 802.11n HT20, CH11

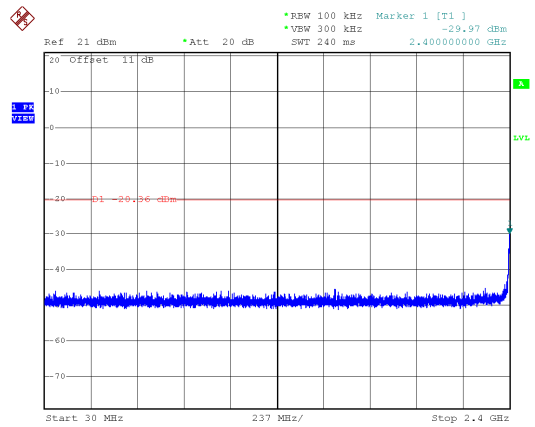




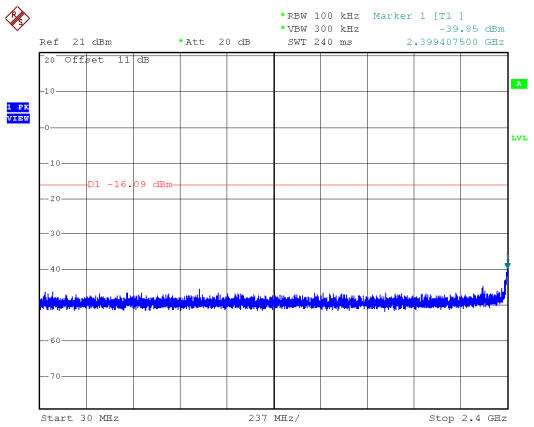


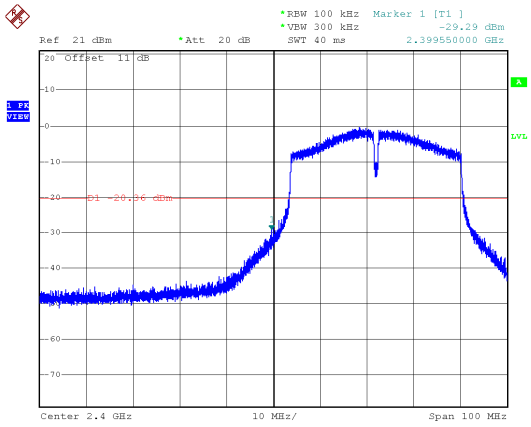
ANT A

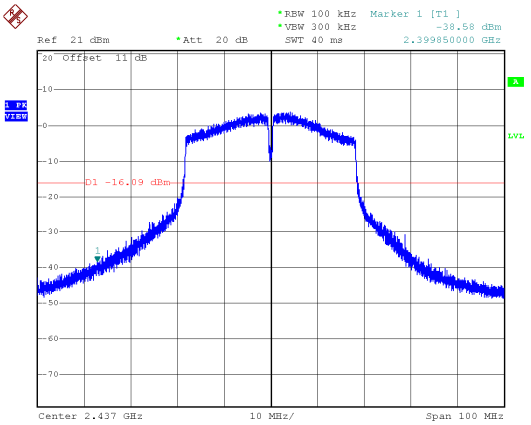
Modulation Type: 802.11n HT40, CH03

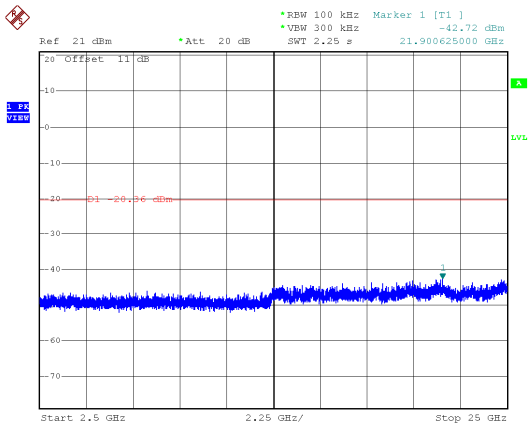


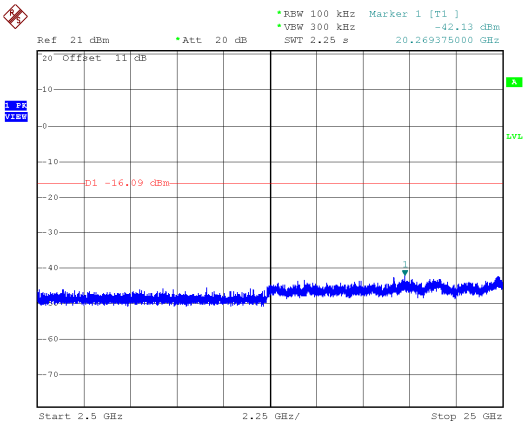
Modulation Type: 802.11n HT40, CH06



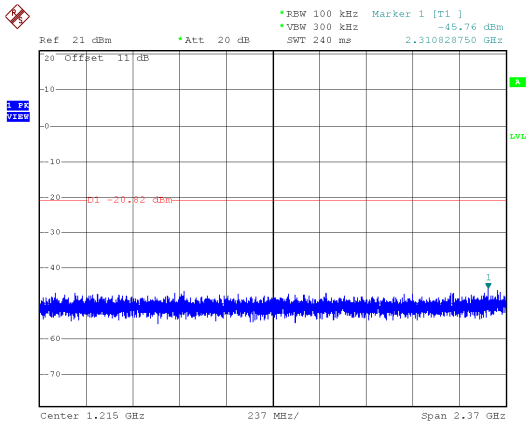


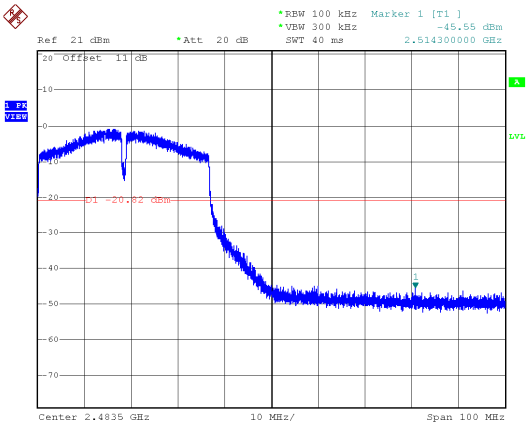


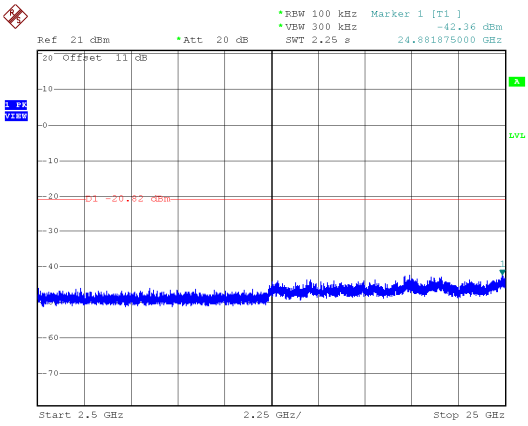




Modulation Type: 802.11n HT40, CH09

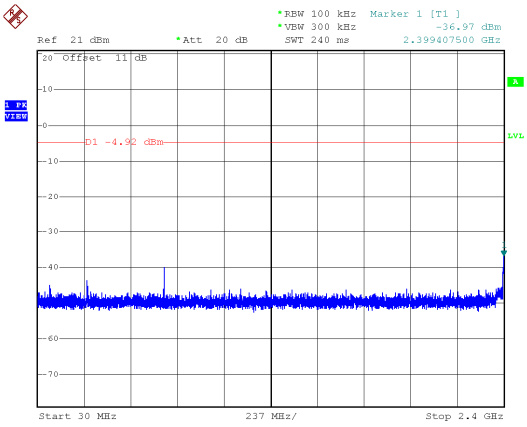




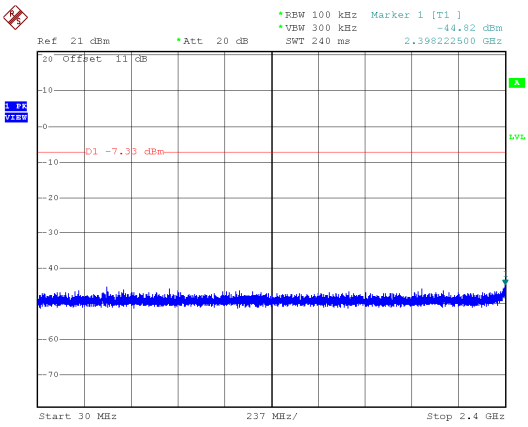


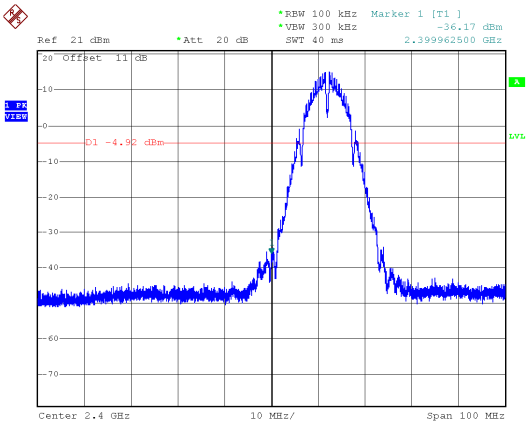
ANT B

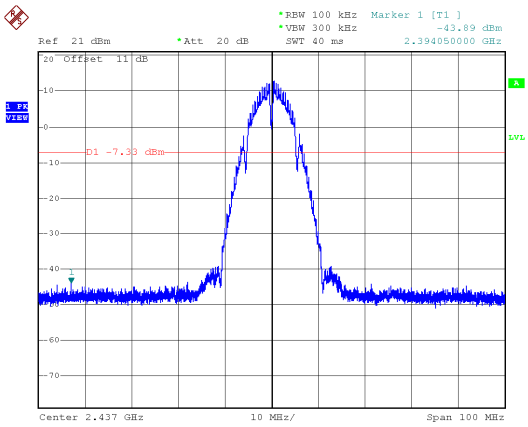
Modulation Type: 802.11b, CH 01

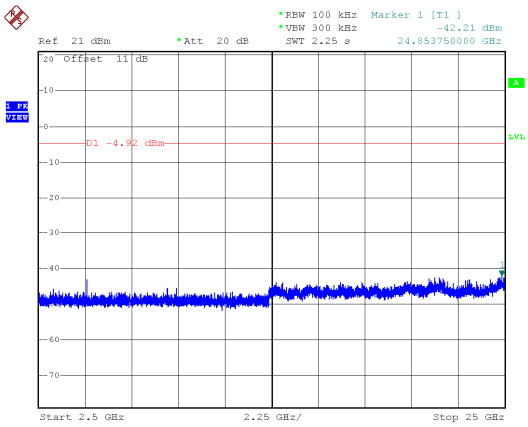


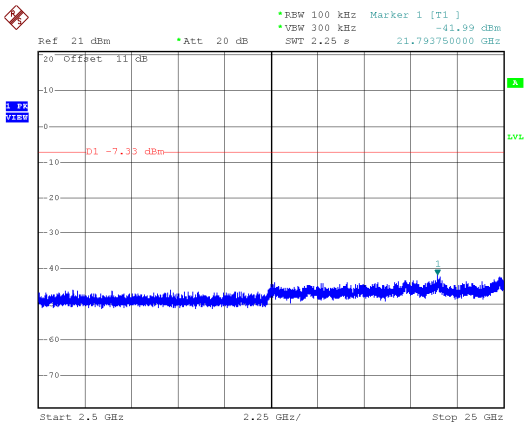
Modulation Type: 802.11b, CH 06



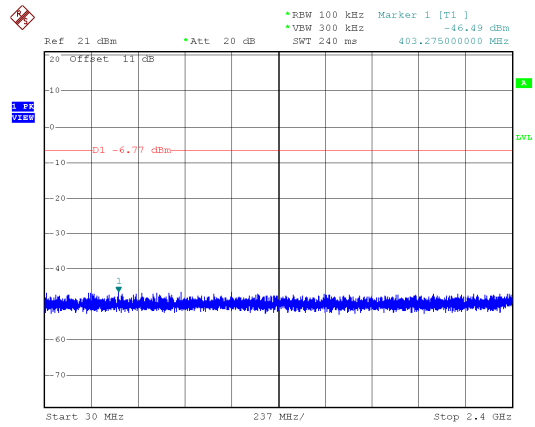


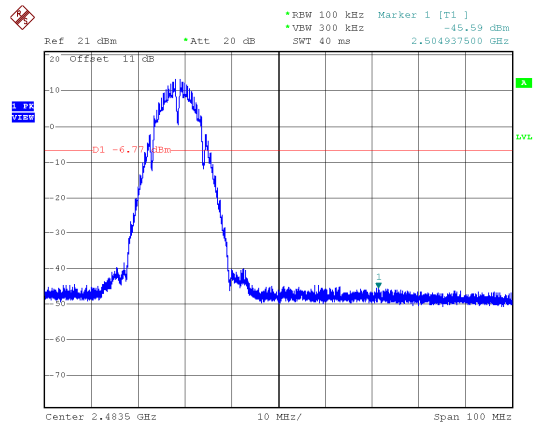


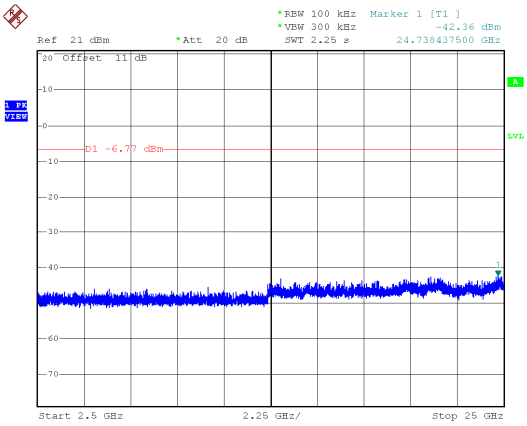




Modulation Type: 802.11b, CH 11

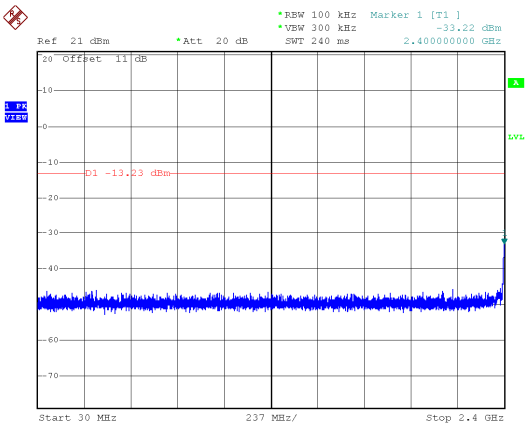




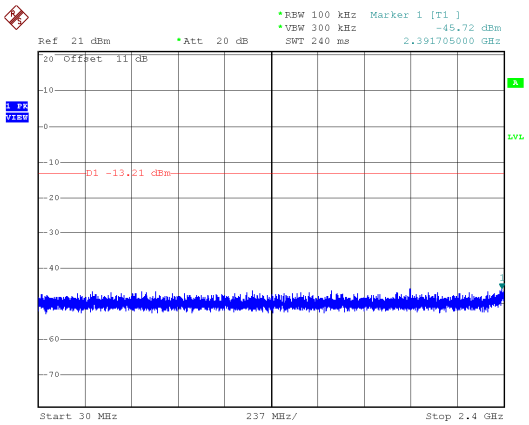


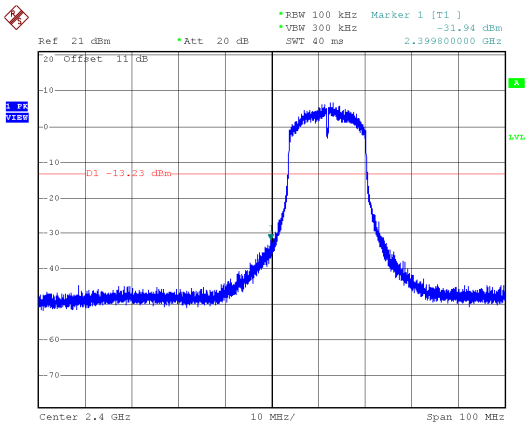
ANT B

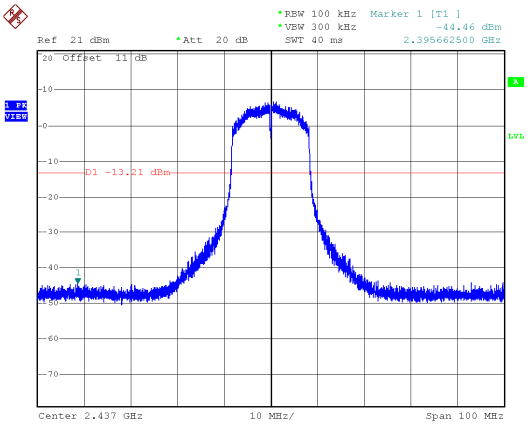
Modulation Type: 802.11g, CH 01

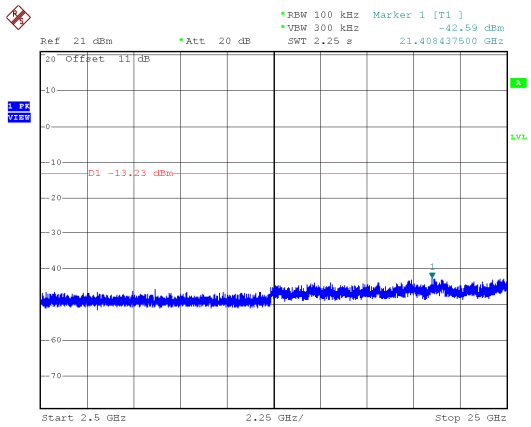


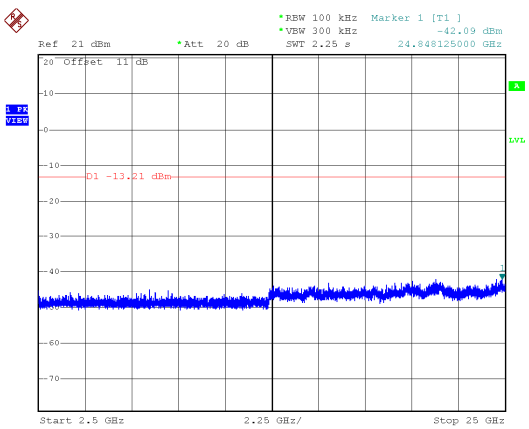
Modulation Type: 802.11g, CH 06



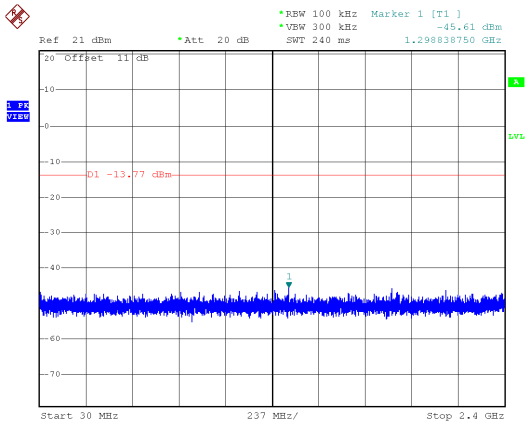


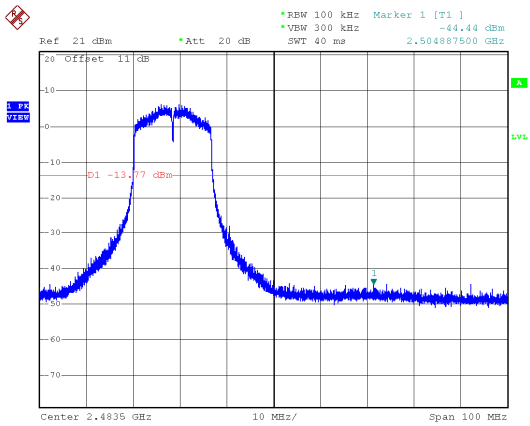


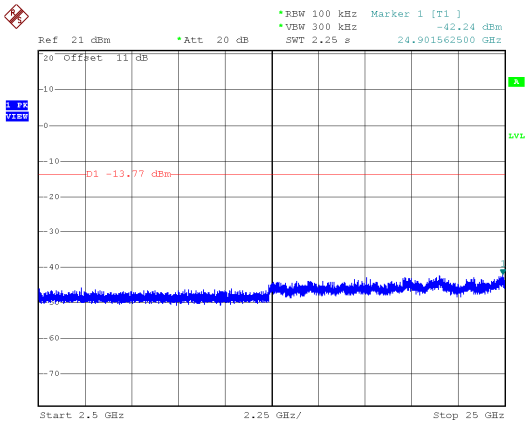




Modulation Type: 802.11g, CH 11

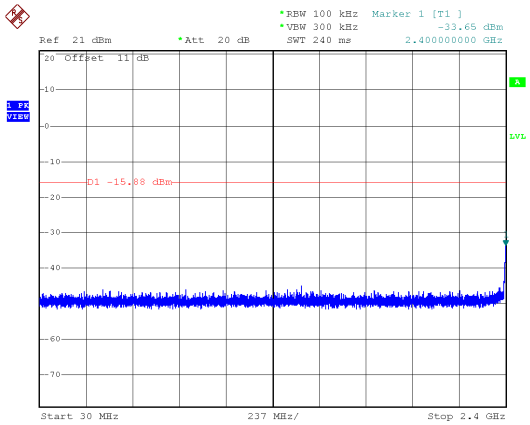


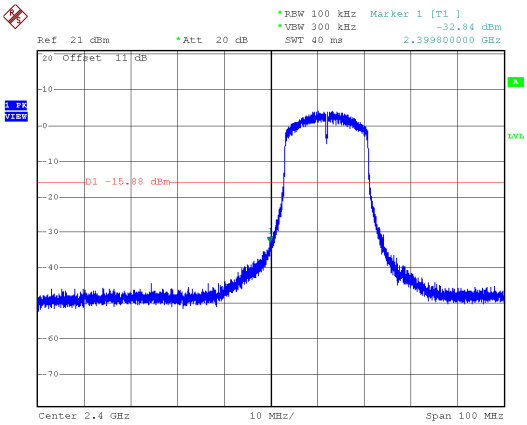


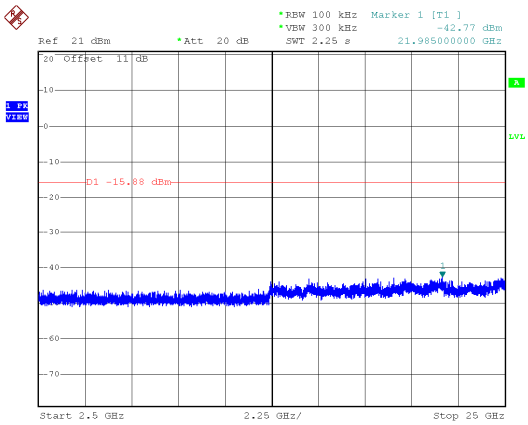


ANT B

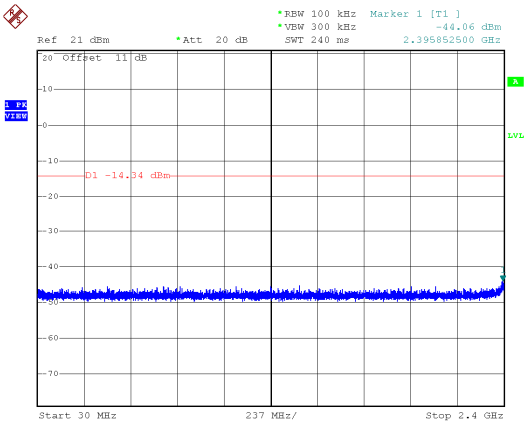
Modulation Type: 802.11n HT20, CH01

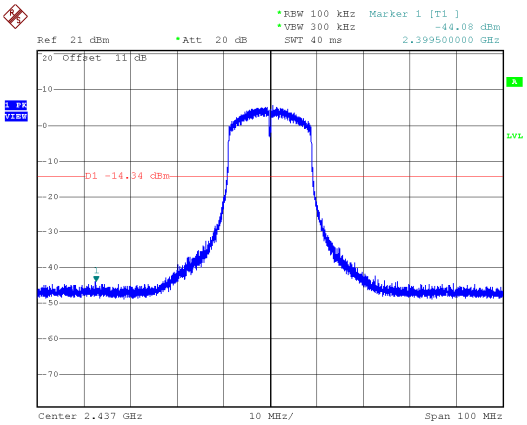


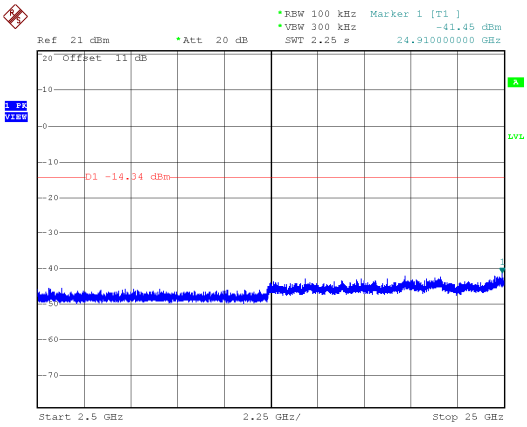




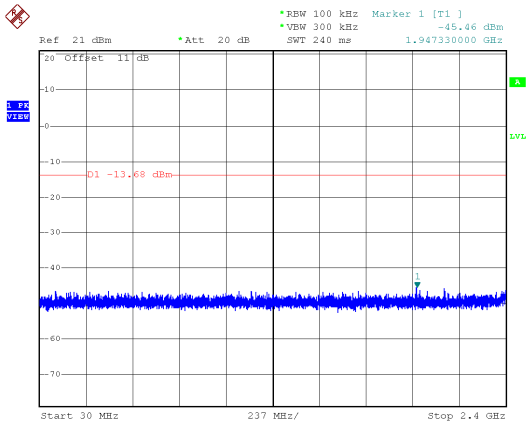
Modulation Type: 802.11n HT20, CH06

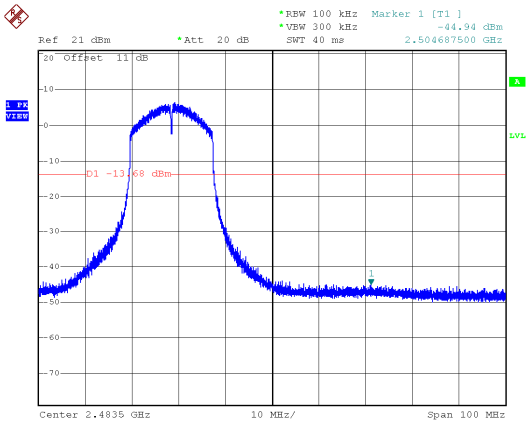


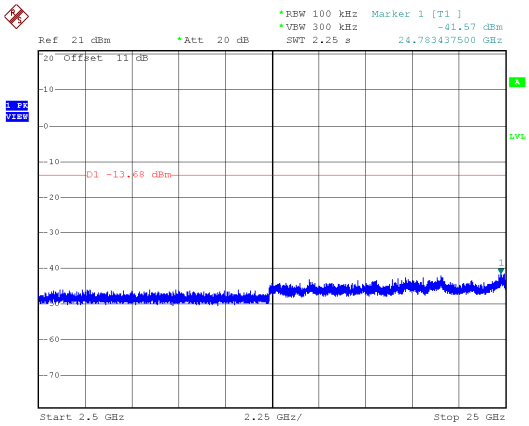




Modulation Type: 802.11n HT20, CH11

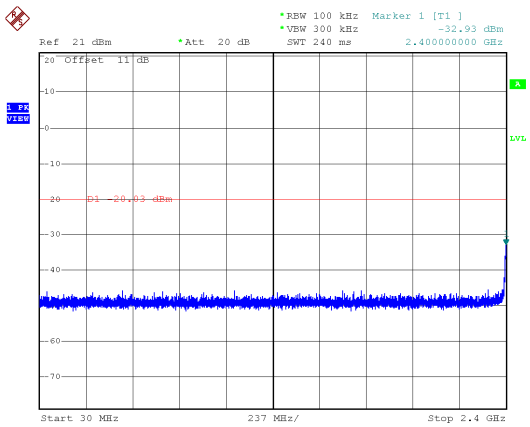




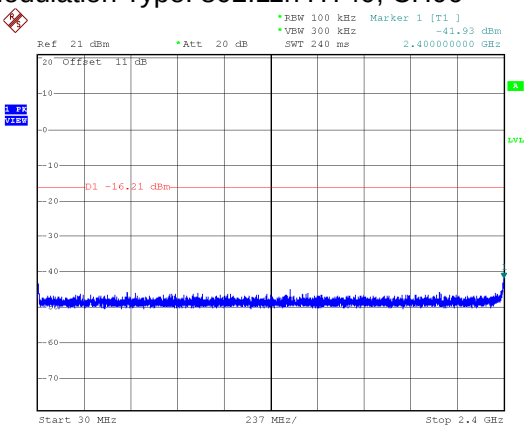


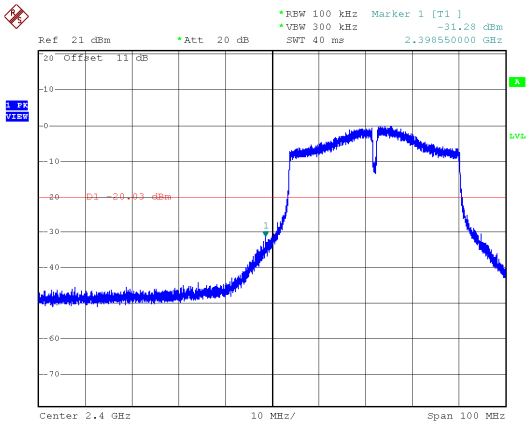
ANT B

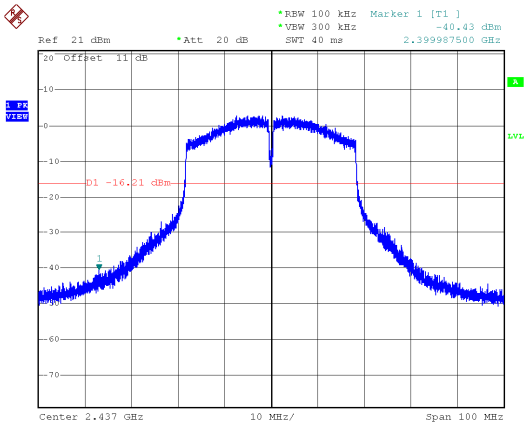
Modulation Type: 802.11n HT40, CH03

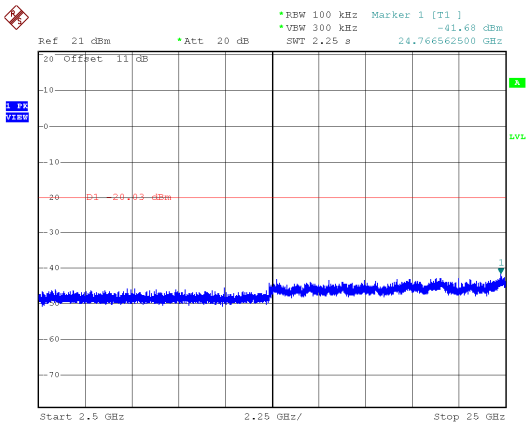


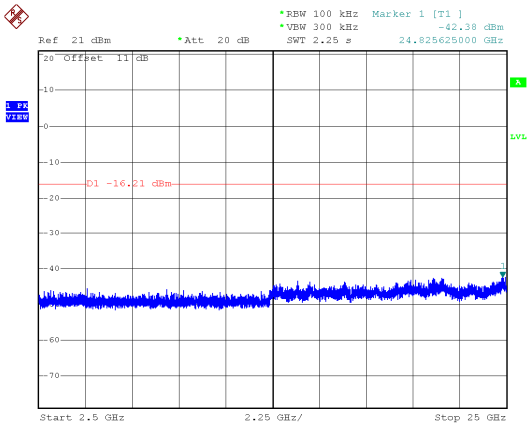
Modulation Type: 802.11n HT40, CH06



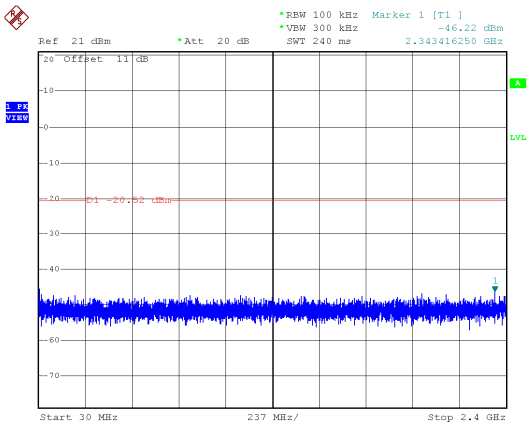


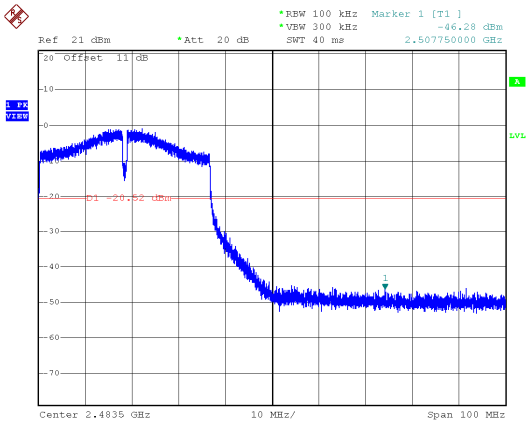


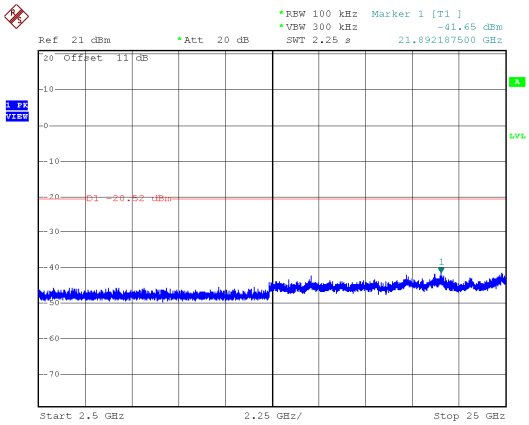




Modulation Type: 802.11n HT40, CH09







8. 6dB Bandwidth Measurement Data

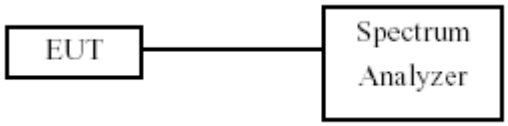
8.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

8.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 1~5% of the emission bandwidth and VBW ≥ 3x RBW.
c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
d. The 6dB Bandwidth was measured and recorded.

8.3 Test Setup Layout

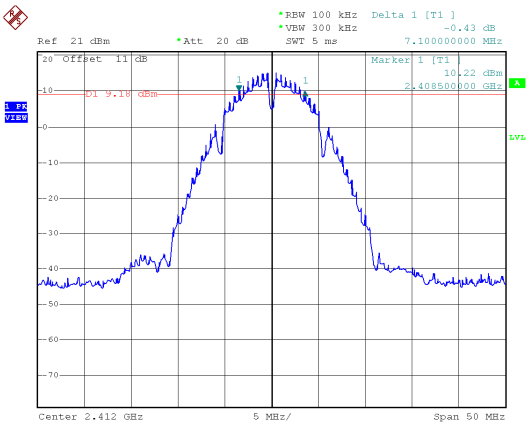


8.4 Test Result and Data

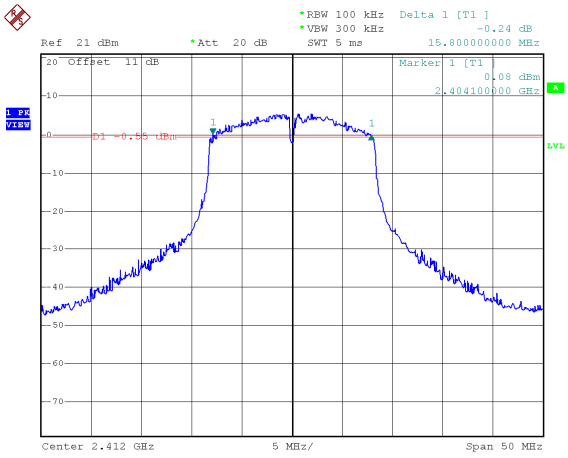
Temperature : 20°C Humidity : 63%
Test Date : Jan. 12, 2018

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT A	ANT B	
IEEE 802.11b (1Mbps)	01	2412	7.10	7.10	0.5
	06	2437	7.10	7.50	0.5
	11	2462	7.00	7.00	0.5
IEEE 802.11g (6Mbps)	01	2412	15.80	15.10	0.5
	06	2437	15.80	13.80	0.5
	11	2462	15.30	14.40	0.5
IEEE 802.11n HT20 (6.5Mbps)	01	2412	15.60	17.30	0.5
	06	2437	16.20	15.30	0.5
	11	2462	16.50	17.10	0.5
IEEE 802.11n HT40 (13.5Mbps)	03	2422	32.40	32.20	0.5
	06	2437	33.60	32.20	0.5
	09	2452	32.40	30.80	0.5

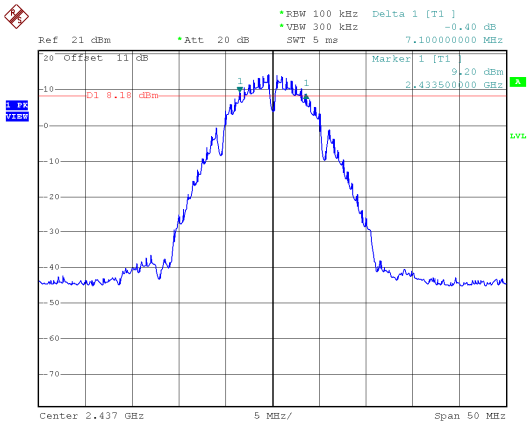
ANT A
Modulation Type: 802.11b
CH01



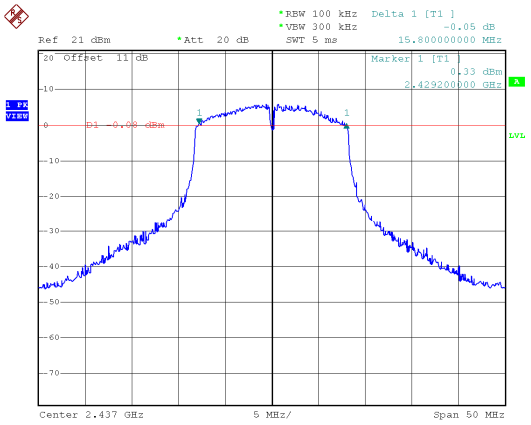
Modulation Type: 802.11g
CH01



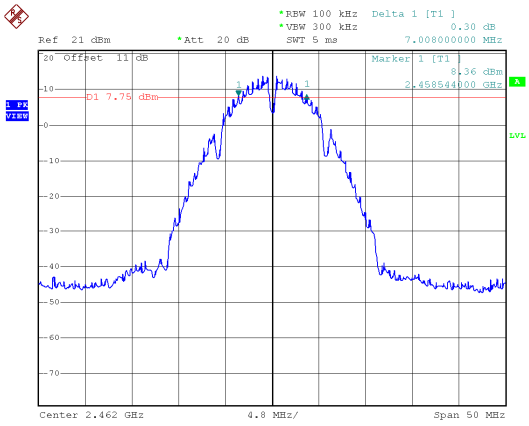
CH06



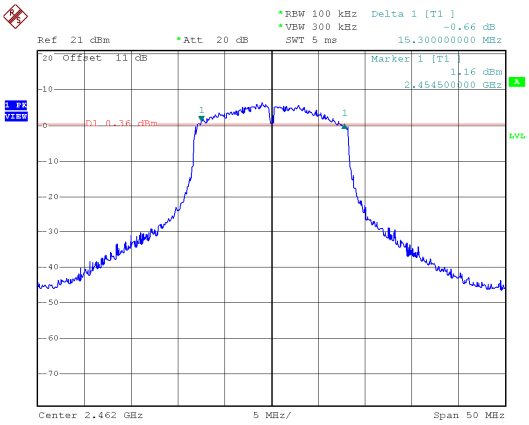
CH06



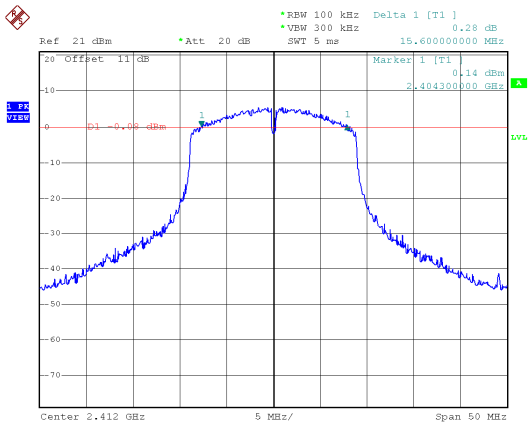
CH11



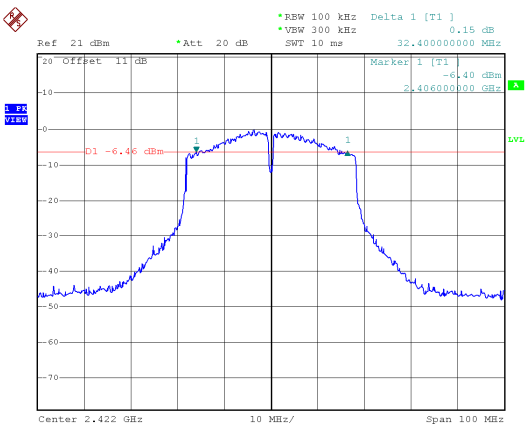
CH11



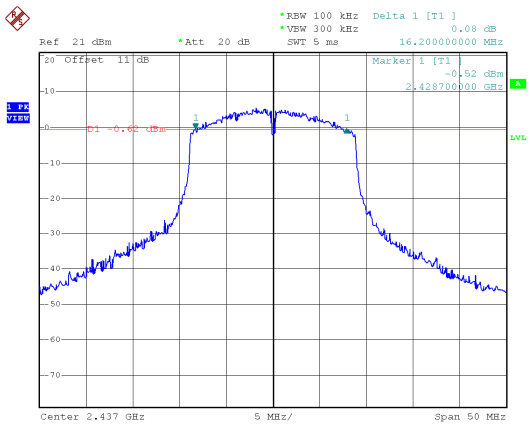
Modulation Type: 802.11n HT20
CH01



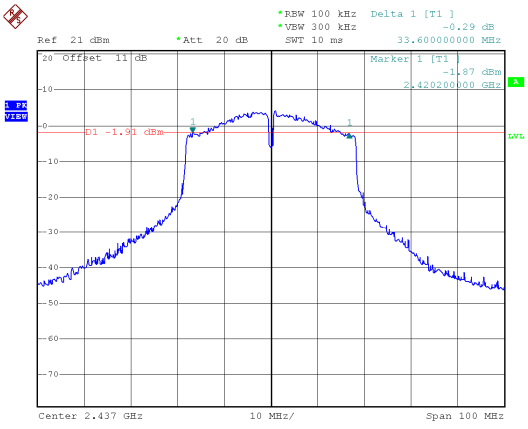
Modulation Type: 802.11n HT40
CH03



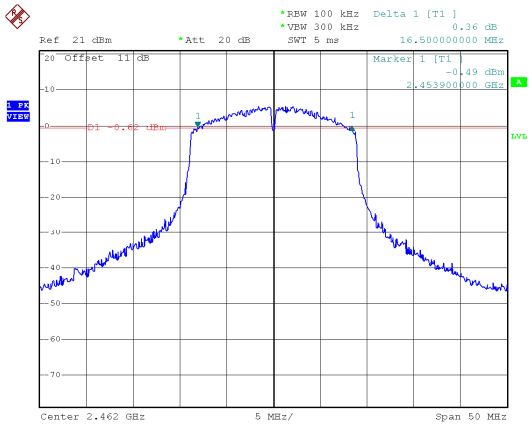
CH06



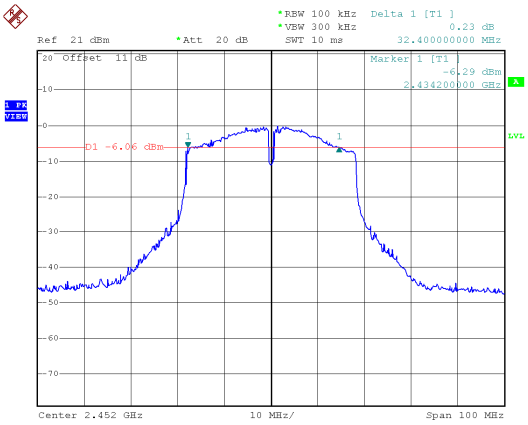
CH06



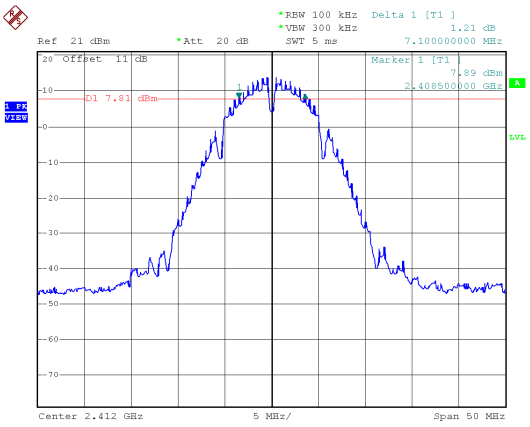
CH11



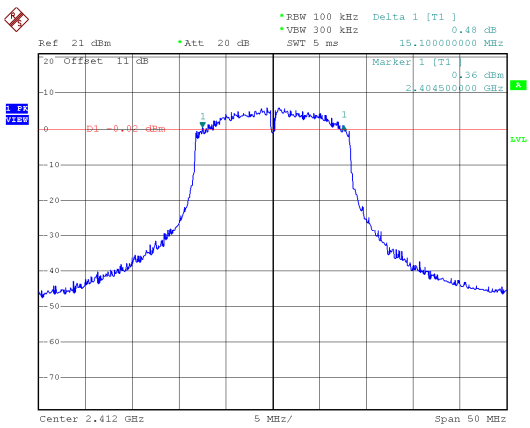
CH09



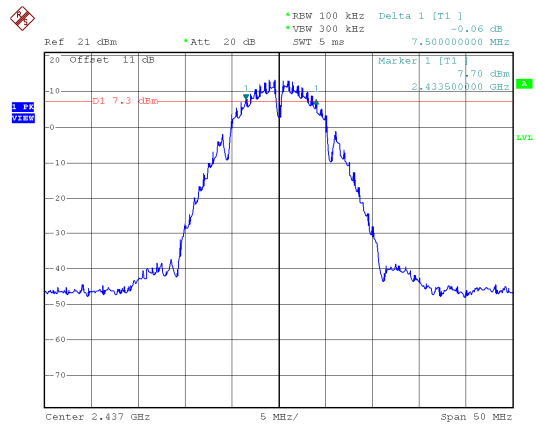
ANT B
Modulation Type: 802.11b
CH01



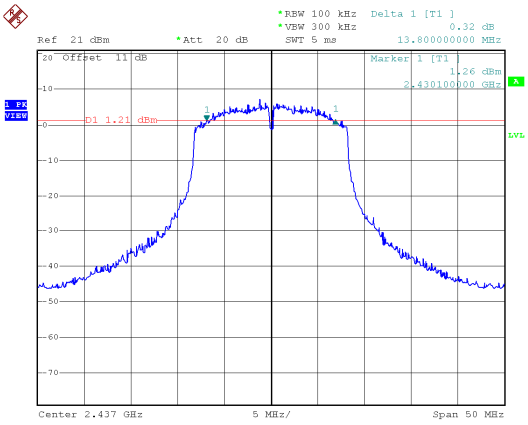
Modulation Type: 802.11g
CH01



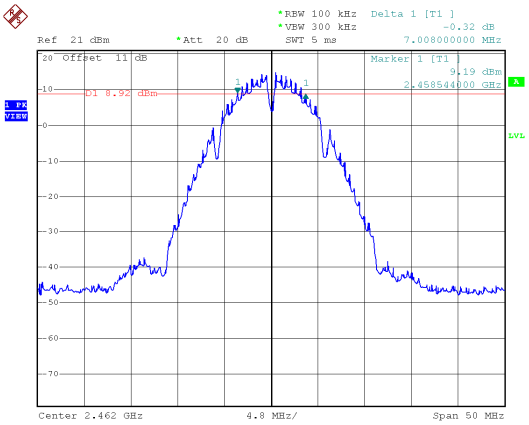
CH06



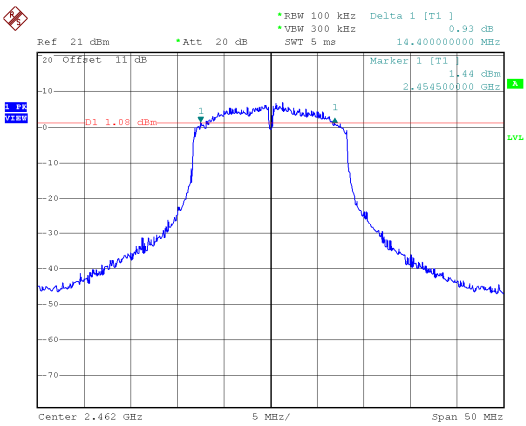
CH06



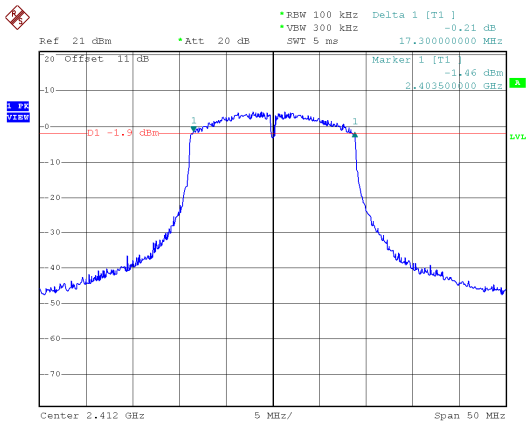
CH11



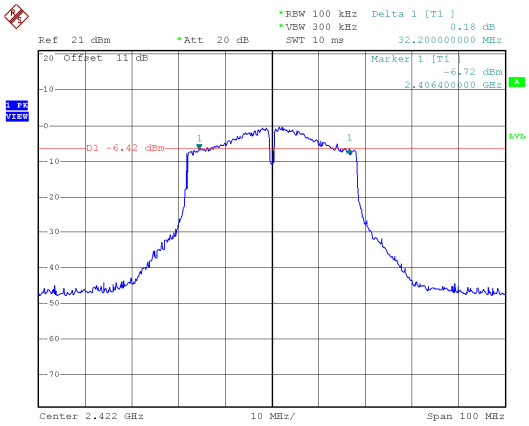
CH11



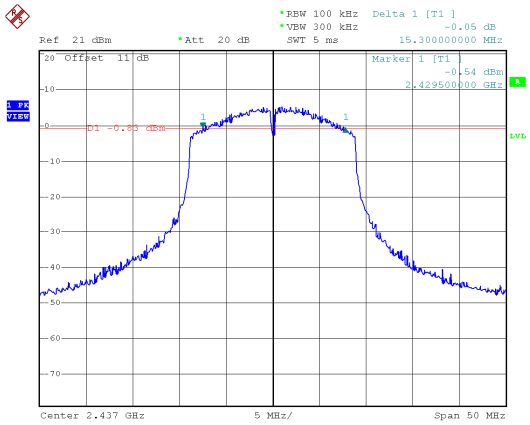
Modulation Type: 802.11n HT20
CH01



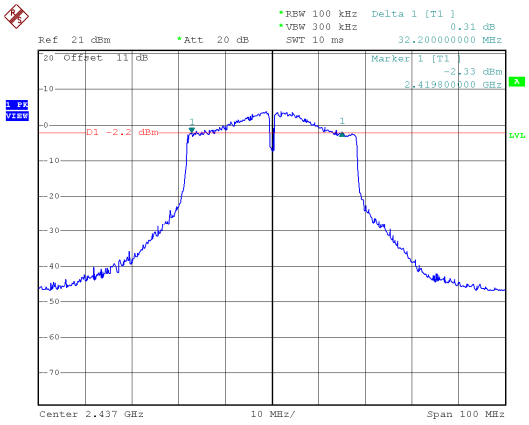
Modulation Type: 802.11n HT40
CH03



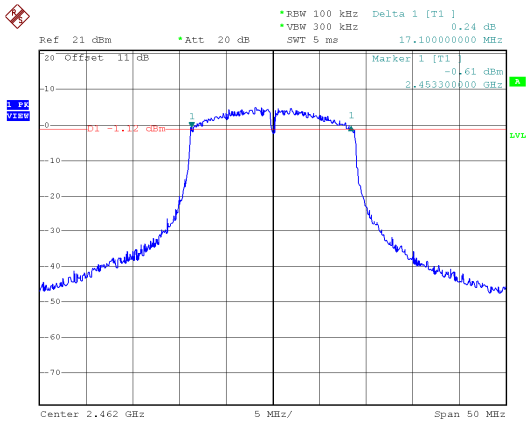
CH06



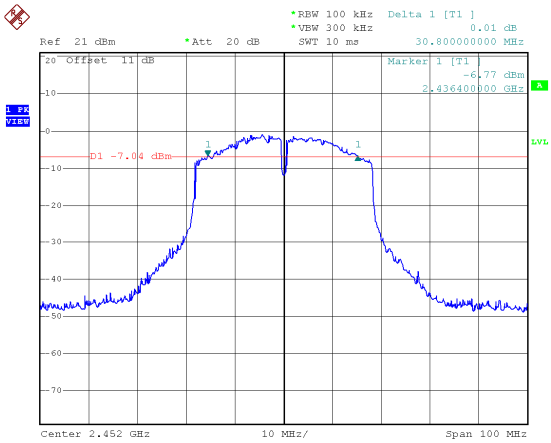
CH06



CH11



CH09



9. Maximum Peak and Average Output Power

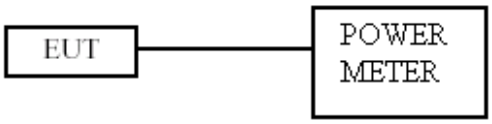
9.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.
If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

9.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

9.3 Test Setup Layout



9.4 Test Result and Data

Temperature : 20°C Humidity : 63%

Test Date : Jan. 12, 2018

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)
			ANT A	ANT B			
IEEE 802.11b (1Mbps)	01	2412	26.11	26.58	863.307	29.36	30.00
	06	2437	25.33	25.56	700.942	28.46	30.00
	11	2462	25.52	25.00	672.679	28.28	30.00
IEEE 802.11g (6Mbps)	01	2412	26.37	26.42	872.042	29.41	30.00
	06	2437	26.84	26.90	972.838	29.88	30.00
	11	2462	26.87	26.92	978.447	29.91	30.00
IEEE 802.11n HT20 (6.5Mbps)	01	2412	26.56	26.73	923.875	29.66	30.00
	06	2437	26.91	26.93	984.082	29.93	30.00
	11	2462	26.88	26.91	978.436	29.91	30.00
IEEE 802.11n HT40 (13.5Mbps)	03	2422	23.00	22.94	396.315	25.98	30.00
	06	2437	26.72	26.88	957.423	29.81	30.00
	09	2452	23.22	23.43	430.187	26.34	30.00

Modulation Type	Channel	Frequency (MHz)	Avg. Power Output (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)
			ANT A	ANT B			
IEEE 802.11b (1Mbps)	01	2412	22.87	22.91	389.076	25.90	N/A
	06	2437	22.13	22.45	339.098	25.30	N/A
	11	2462	22.46	22.23	343.307	25.36	N/A
IEEE 802.11g (6Mbps)	01	2412	18.57	18.42	141.447	21.51	N/A
	06	2437	19.04	18.89	157.614	21.98	N/A
	11	2462	18.88	18.91	155.072	21.91	N/A
IEEE 802.11n HT20 (6.5Mbps)	01	2412	18.48	18.34	138.703	21.42	N/A
	06	2437	18.91	18.83	154.187	21.88	N/A
	11	2462	18.79	18.88	152.951	21.85	N/A
IEEE 802.11n HT40 (13.5Mbps)	03	2422	15.33	15.11	66.553	18.23	N/A
	06	2437	19.53	19.40	176.839	22.48	N/A
	09	2452	15.21	15.62	69.665	18.43	N/A

Note: Average power is for reference only.

10. Power Spectral Density

10.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

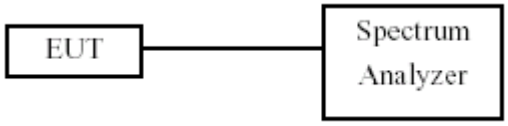
10.2 Test Procedures

a. The transmitter output was connected to spectrum analyzer.

b. The spectrum analyzer's resolution bandwidth were set at 3kHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.

c. The power spectral density was measured and recorded.

10.3 Test Setup Layout



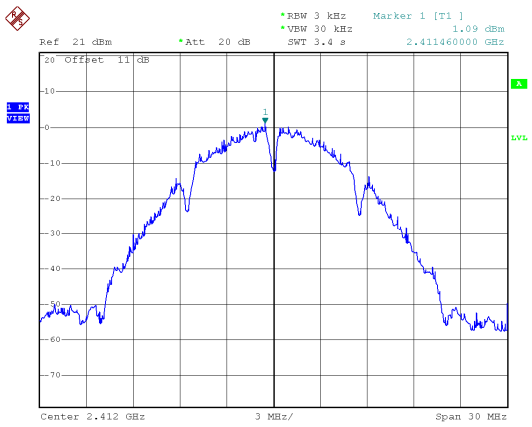
10.4 Test Result and Data

Temperature : 20°C Humidity : 63%

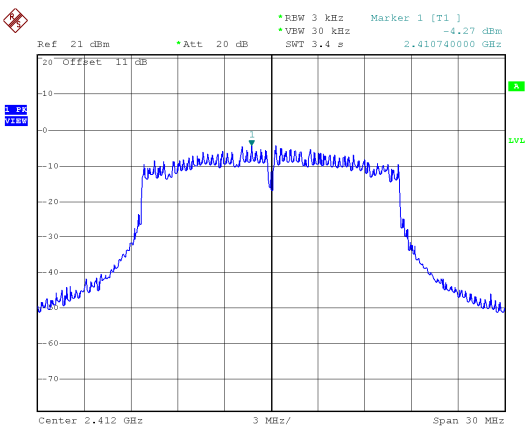
Test Date : Jan. 12, 2018

Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
IEEE 802.11b (1Mbps)	01	2412	1.09	-0.37	3.43	0.00	3.43	7.99
	06	2437	0.93	-0.07	3.47	0.00	3.47	7.99
	11	2462	0.78	-0.51	3.19	0.00	3.19	7.99
IEEE 802.11g (6Mbps)	01	2412	-4.27	-5.71	-1.92	0.00	-1.92	7.99
	06	2437	-4.01	-5.03	-1.48	0.00	-1.48	7.99
	11	2462	-6.03	-5.42	-2.70	0.00	-2.70	7.99
IEEE 802.11n HT20 (6.5Mbps)	01	2412	-5.08	-6.54	-2.74	0.00	-2.74	7.99
	06	2437	-5.77	-5.8	-2.77	0.00	-2.77	7.99
	11	2462	-5.42	-6.65	-2.98	0.00	-2.98	7.99
IEEE 802.11n HT20 (6.5Mbps)	03	2422	-11	-12.18	-8.54	0.00	-8.54	7.99
	06	2437	-7.16	-7.48	-4.31	0.00	-4.31	7.99
	09	2452	-11.58	-11.84	-8.70	0.00	-8.70	7.99

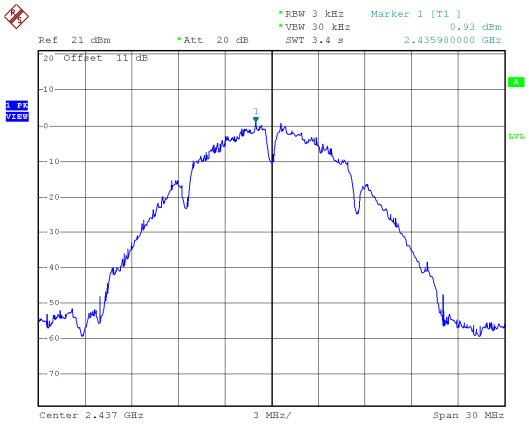
ANT A
Modulation Type: 802.11b
CH01



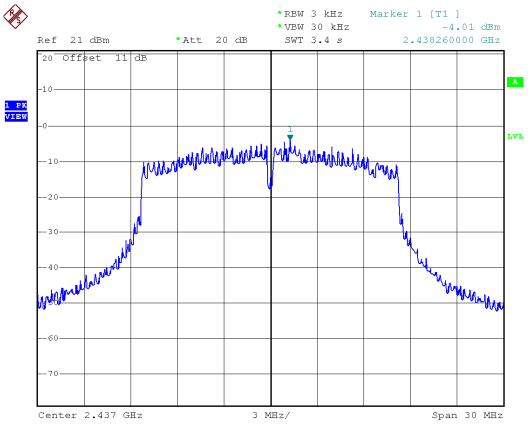
Modulation Type: 802.11g
CH01



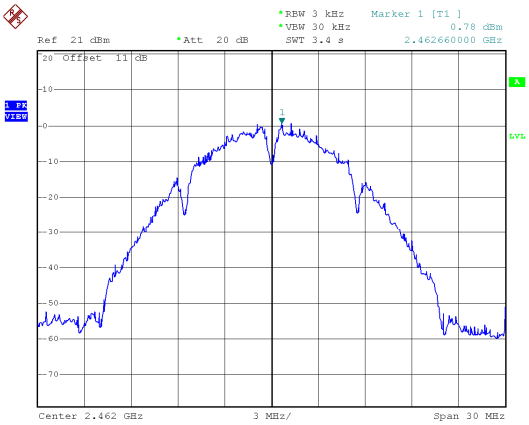
CH06



CH06



CH11



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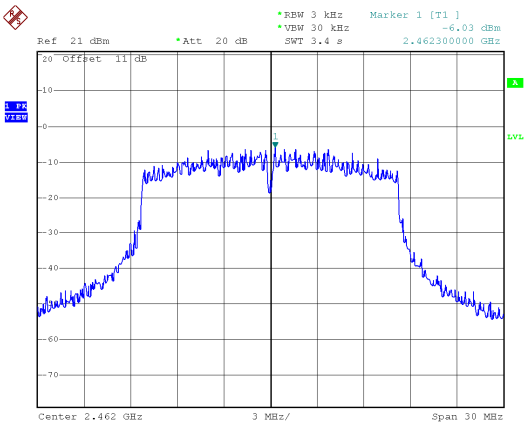
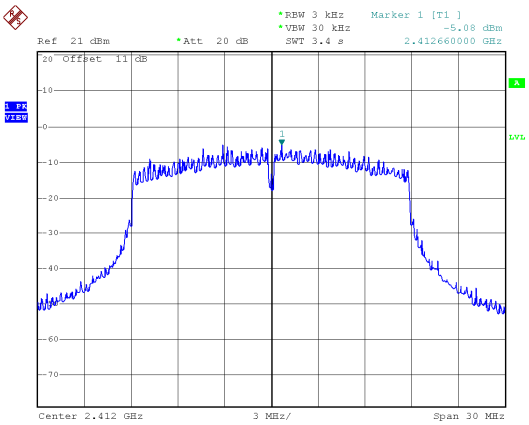
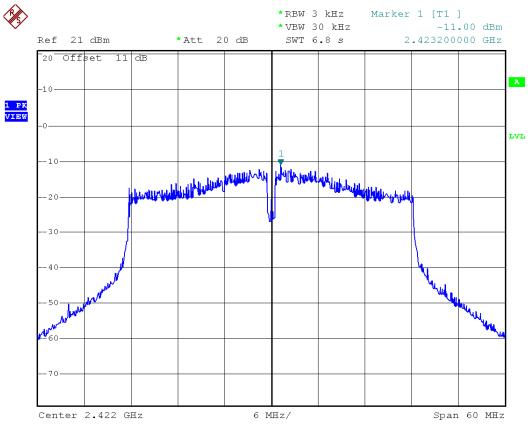


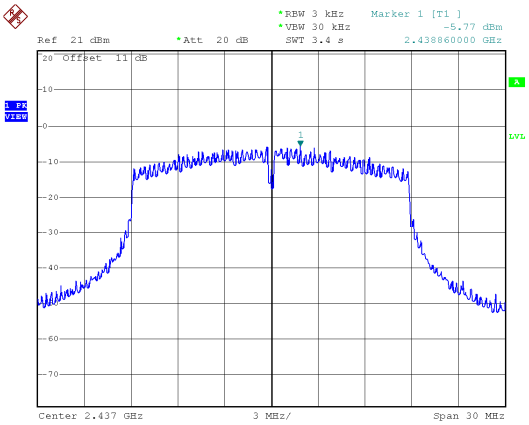
Modulation Type: 802.11n HT20
CH01



Modulation Type: 802.11n HT40
CH03



CH06



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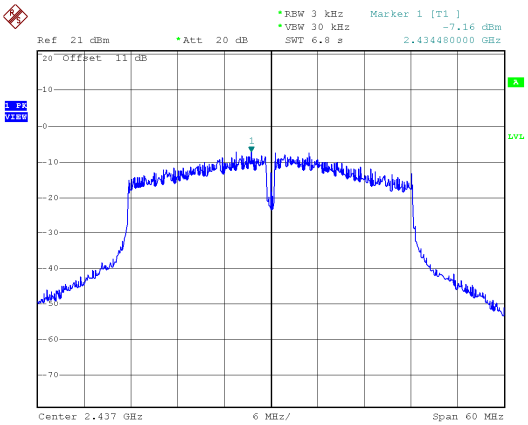

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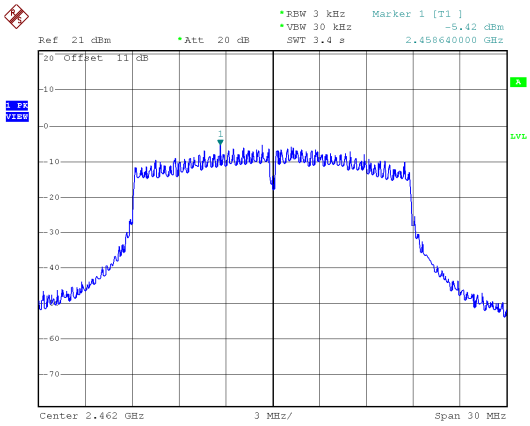
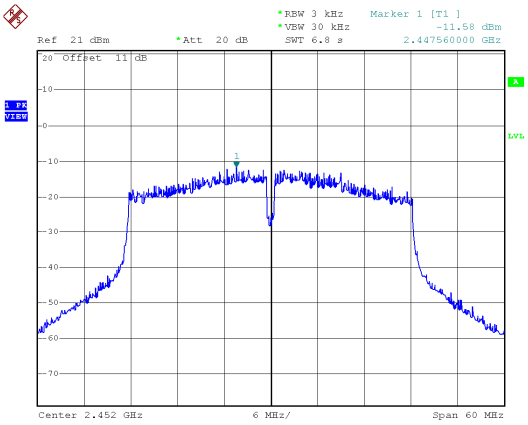
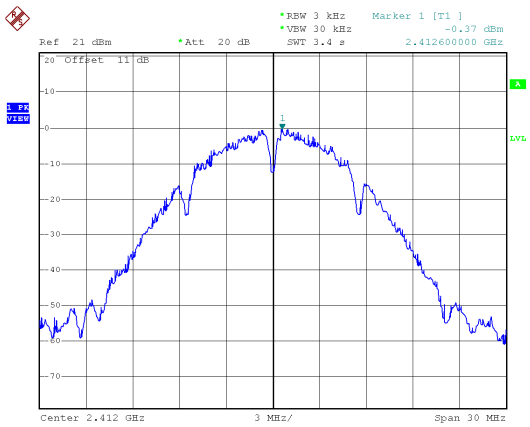


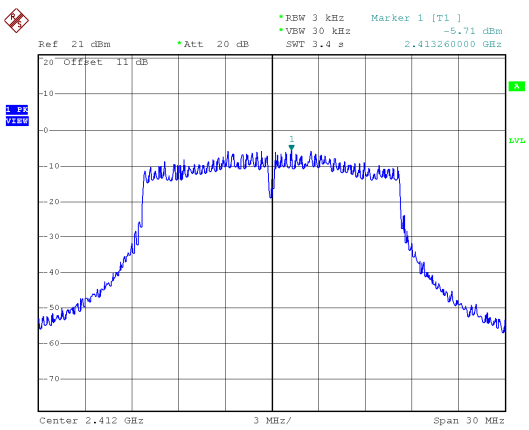
CH09



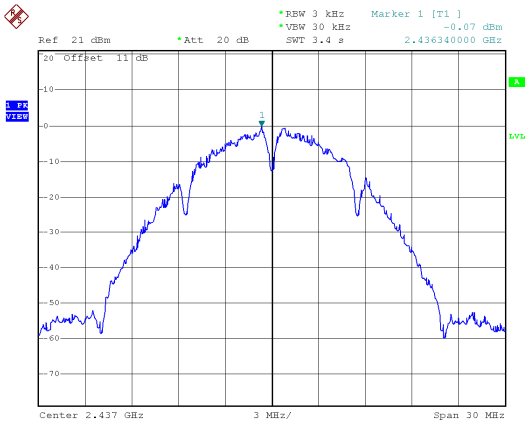
ANT B
Modulation Type: 802.11b
CH01



Modulation Type: 802.11g
CH01



CH06



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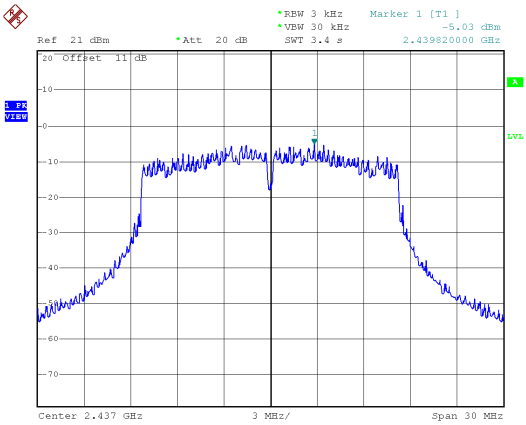
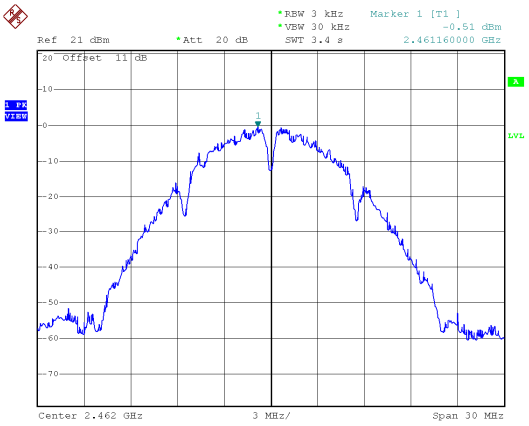
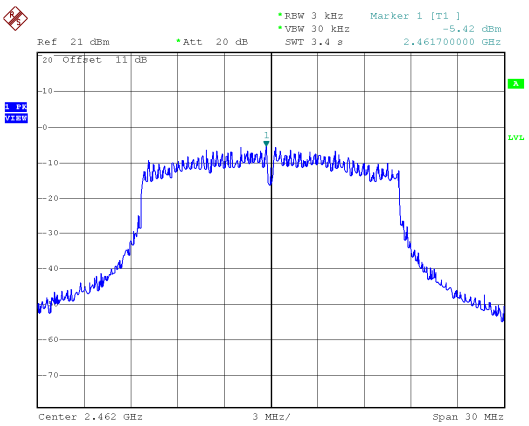


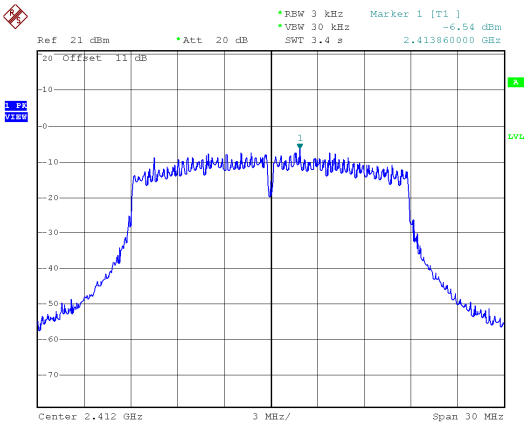
CH11



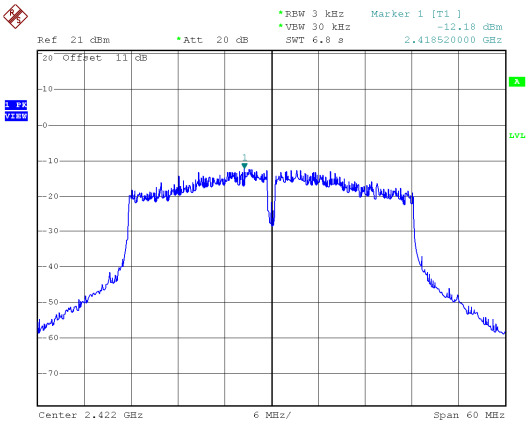
CH11



Modulation Type: 802.11n HT20
CH01



Modulation Type: 802.11n HT40
CH03



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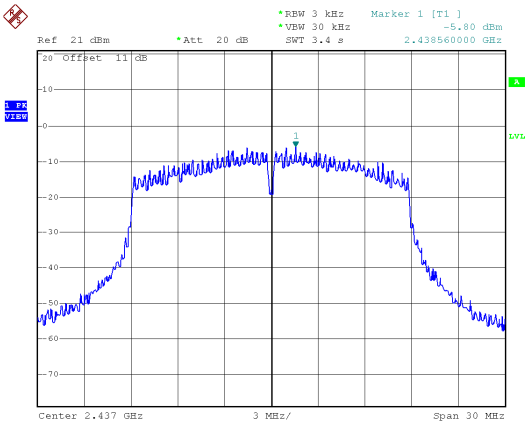
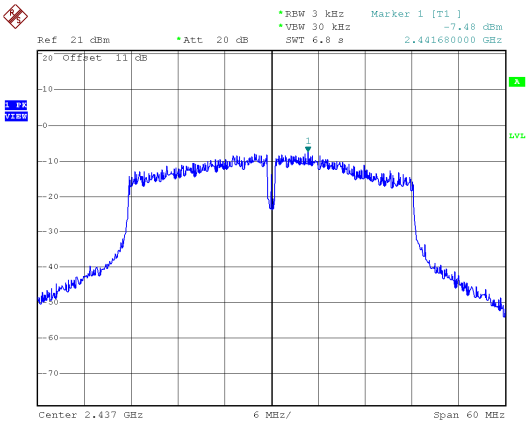
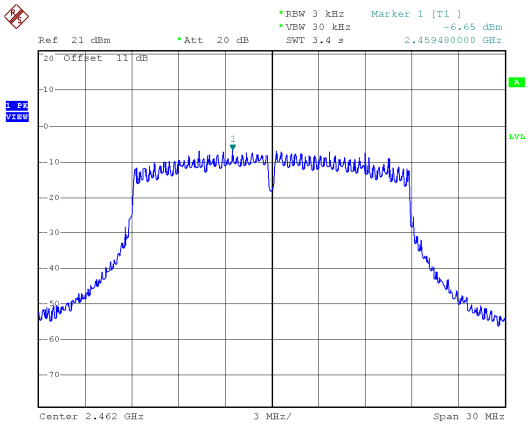


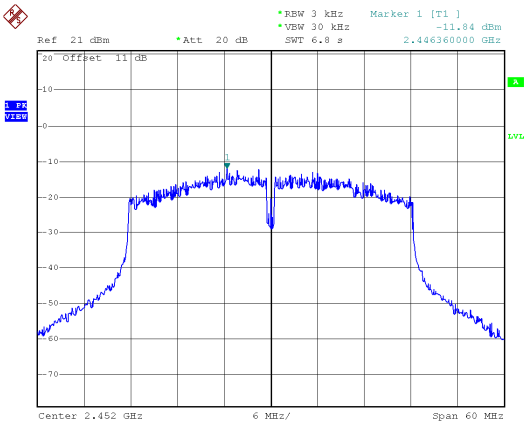
CH06



CH11



CH09



11. Radio Frequency Exposure

11.1 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

11.2 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 29.93dBm (984.082mW) at 2437MHz (with numeric 3.0 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.

11.3 Test Results

No non-compliance noted.

11.4 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

11.5 Maximum Permissible Exposure

Max. output power	802.11b: 29.36 dBm (863.307mW) 802.11g: 29.91 dBm (978.477mW) 802.11n HT20: 29.93dBm (984.082mW) 802.11n HT40: 29.81dBm (957.423mW)
Antenna gain (Max)	ANT A, B: 3.0 dBi

Maximum Permissible Exposure

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm2)	Limit (mW/cm2)
802.11b	2412-2462	29.36	3	20	0.3427	1
802.11g	2412-2462	29.91	3	20	0.3884	1
802.11n HT20	2412-2462	29.93	3	20	0.3906	1
802.11n HT40	2422-2452	29.81	3	20	0.3800	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