



FCC RADIO TEST REPORT

Applicant : Ubiquiti Inc.
Address : 685 Third Avenue, New York, New York 10017, USA
Equipment : Magic PoE
Model No. : UACC-M-PoE
Trade Name : UBIQUITI
FCC ID. : SWX-UAMP

I HEREBY CERTIFY THAT:

The sample was received on Jun. 17, 2022 and the testing was completed on Jul. 28, 2022 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





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History of this test report

Report No.	Issued Date	Description
22060120-TRFCC02	Aug. 02, 2022	Original



1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10:2013

FCC Rules and Regulations Part 15 Subpart C §15.247

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

*The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement.



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment

Operation Frequency Range	BLE: 2400-2483.5MHz 802.11b/g/n: 2400-2483.5MHz 802.11a/n/ac: 5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5725-5875MHz
Center Frequency Range	BLE: 2402MHz-2480MHz 802.11b/g/n: 2412MHz-2462MHz 802.11a/n/ac: 5180-5240MHz, 5260-5320MHz, 5500-5700MHz, 5745-5825MHz
Modulation Type	BLE: GFSK WLAN: 2.4GHz: 802.11b: CCK, DQPSK, DBPSK 802.11g/n: BPSK, QPSK, 16QAM, 64QAM 5GHz: 802.11a/n: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM
Modulation Technology	DSSS, OFDM, DTS
Data Rate	BLE: GFSK: 1Mbps WLAN: 2.4GHz: 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40 5GHz: 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40 802.11ac: MCS0 – MCS9, VHT20/40/80
Antenna Type	For BLE: PIFA Antenna For WLAN: Dipole Antenna
Antenna Gain	For BLE: 2400-2483.5MHz: ANT C: -1.00dBi For WLAN: 2400-2483.5MHz: ANT A: 3.50dBi, ANT B: 3.50dBi 5150-5850MHz: ANT A: 5.00dBi, ANT B: 5.00dBi
Power Cord	Brand: SHEN ZHEN GOSPELL DIGITAL TECHNOLOGY CO.,LTD Model: CH-331C+CH-706

Note:

1. EUT support TPC Function.
2. WLAN 2.4G and WLAN 5G can simultaneously transmission.
3. EUT support Client Mode without radar detection.
4. For more details, please refer to the User's manual of the EUT.



2.2 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.



2.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- b. An executive program, "QRCT ver. 4.0.00193.0" under Windows 10 system was executed to transmit and receive data via Bluetooth.
- c. The following test mode was performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode 1	Normal Mode (120V/60 Hz)
Test Mode 2	Normal Mode (240V/60 Hz)
caused "Test Mode 2" generated the worst case, it was reported as the final data.	
Radiated Emissions (Below 1GHz)	
Test Mode 1	Normal Mode (120V/60 Hz)
Test Mode 2	Normal Mode (240V/60 Hz)
caused "Test Mode 1" generated the worst case, it was reported as the final data.	
Radiated Emissions (1GHz ~ 25GHz)	
Test Mode 1	802.11b (1Mbps)
Test Mode 2	802.11g (6Mbps)
Test Mode 3	802.11n HT20 (6.5Mbps)
Test Mode 4	802.11n HT40 (13.5Mbps)
caused "Test Mode 1" generated the worst case, it was reported as the final data.	

The EUT incorporates a MIMO function

Modulation Type	TX CONFIGURATION
802.11b	2TX
802.11g	2TX
802.11n HT20	2TX
802.11n HT40	2TX



2.4 Description of Test System

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/ Length/Type
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
RJ45 Cable	N/A	N/A	15m / NS	N/A

Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/ Length/Type
Notebook	lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A

AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/ Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
UDM Pro SE	UBIQUITI	UDM Pro SE	N/A	N/A
U6 Pro	UBIQUITI	U6 Pro	N/A	N/A
RJ45 Cable*3	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
Mobile Phone	MI	M1906G7G	N/A	N/A
Camera	UBIQUITI	G3 FLEX	N/A	N/A



2.5 General Information of Test

Test Site	CerpPASS Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel: +886-3-3226-888 Fax: +886-3-3226-881	
	FCC	TW1439, TW1079
	IC	4934E-1, 4934E-2
	VCCI	T-12205 for Telecommunication test C-14663 for Conducted emission test R-14218 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.	

Test Item	Test Site	Test Period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2022/06/25~ 2022/7/28	24.9~26.1 °C / 46~56%	Dian Chen
Radiated Emissions	3M02-NK	2022/06/22~ 2022/07/26	21~26 °C / 35~46%	Dian Chen
AC Power Line Conducted Emission	CON01-NK	2022/07/06	24 °C / 61%	Dian Chen

2.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±3.12dB
Radiated Spurious Emission(9KHz~30MHz)	±3.4dB
Radiated Spurious Emission(30MHz~1GHz)	±5.7dB
Radiated Spurious Emission(1GHz~25GHz)	±6.8dB
Conducted Spurious Emission	±1.8dB
6dB Bandwidth	±4.4%
20dB Bandwidth	±4.4%
Occupied Bandwidth	±4.4%
Peak Output Power(Conducted Power Meter)	±1.1dB
Dwell Time / Deactivation Time	±1.2%
Power Spectral Density	±1.8dB
Duty Cycle	±1.2%



3. Test Equipment and Ancillaries Used for Tests

Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Schwarzbeck	VULB9168	275	2021/11/05	2022/11/04
Horn Antenna	EMCO	3115	31601	2021/10/14	2022/10/13
Horn Antenna	EMCO	3116	31974	2021/10/04	2022/10/03
Active Loop Antenna	EMCO	6507	40855	2022/05/25	2023/05/24
EMI Receiver	ROHDE & SCHWARZ	ESCI	100821	2021/11/16	2022/11/15
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	102151	2021/08/06	2022/08/05
Preamplifier	Agilent	8449B	3008A01954	2022/03/17	2023/03/16
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2021/11/16	2022/11/15
Preamplifier	EM Electronics corp.	EM330	60658	2021/10/13	2022/10/12
Cable-6m(9k~300M)	NA	EMC5D-BM-B M-6	130605	2021/09/22	2022/09/21
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1315	2022/03/21	2023/03/20
Cable-0.5m(1G-40G)	HUBER SUHNER	SUCOFLEX 102	MY4569/2	2021/09/03	2022/09/02
Cable-1m(1G-40G)	HUBER SUHNER	SUCOFLEX 102	MY5739/2	2021/09/03	2022/09/02
Cable-6m(1G-40G)	HUBER SUHNER	SUCOFLEX 102	MY5740/2	2021/09/03	2022/09/02
Cable-0.5m(1G-40G)	HUBER SUHNER	SUCOFLEX 104	805443/4	2022/01/11	2023/01/10
Cable-3m(1G-40G)	HUBER SUHNER	SUCOFLEX 104	805796/4	2022/01/11	2023/01/10
Cable-8m(1G-26.5G)	WOKEN	WCBA-WCA20 3SM	CCE1374	2022/04/25	2023/04/24
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
CAX Signal Analyzer	KEYSIGHT	N9000B	MY57100339	2022/01/10	2023/01/09
Power Meter	Anritsu	ML2495A	1224005	2022/04/12	2023/04/11
Power Sensor	Anritsu	MA2411B	1207295	2022/04/12	2023/04/11
Attenuator	KEYSIGHT	8491B	MY39250705	2021/08/19	2022/09/26



Test Item	AC Power Line Conducted Emission				
Test Site	CON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESCI	101200	2021/08/30	2022/08/29
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-516	2021/10/05	2022/10/04
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101933	2021/09/15	2022/09/14
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2021/09/22	2022/09/21
E3	AUDIX	v8.2014-8-6	RK-000531	NA	NA



4. Antenna Requirements

4.1 Antenna Construction and Directional Gain

Antenna Type	PIFA Antenna
Antenna Gain	ANT A: 3.5dBi, ANT B: 3.5dBi

2400-2483.5MHz

For Power directional gain= $G_{ant}= 3.5$ dBi

For PSD directional gain = $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2 / N_{ANT}]$
= 6.51 (dBi)

*MIMO type: Cyclic Delay Diversity (CDD) mode.



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 C63.10-2013. 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

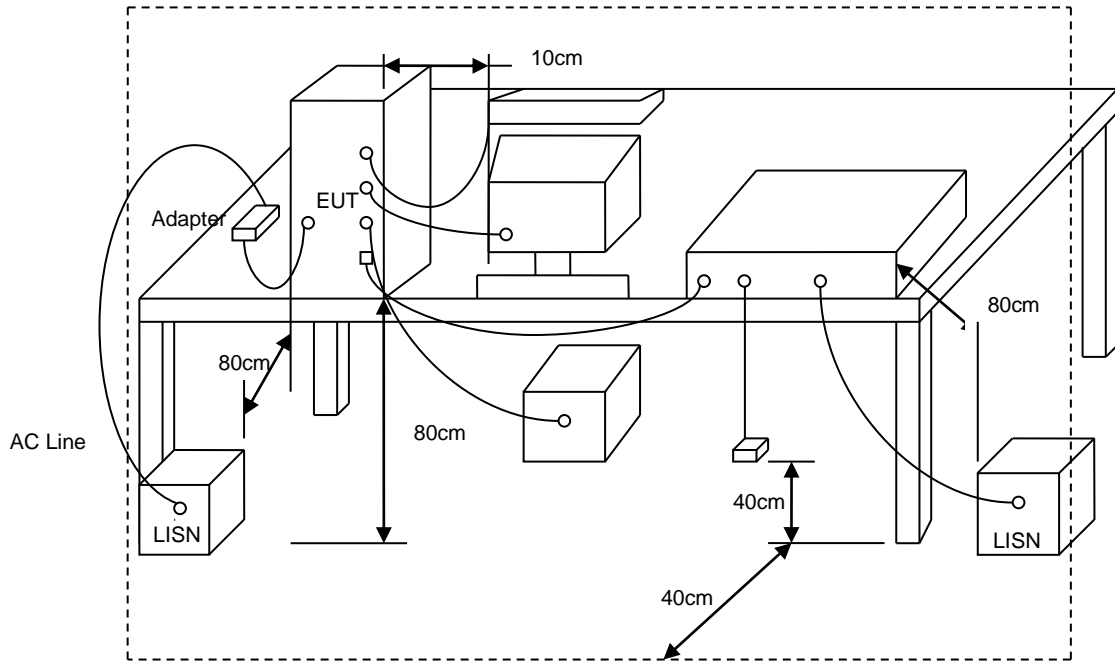
*Decreases with the logarithm of the frequency.

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.

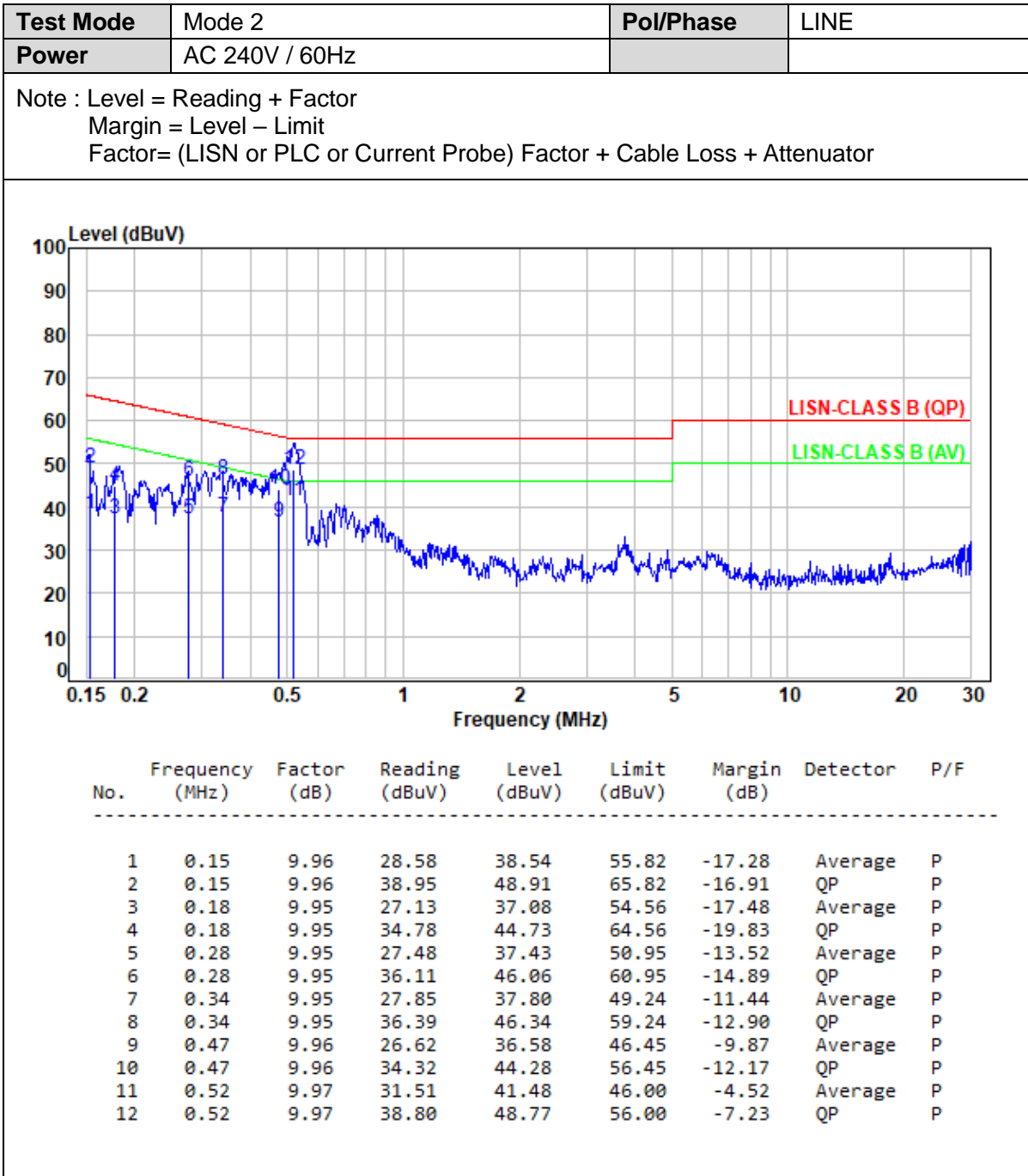


5.3 Typical Test Setup





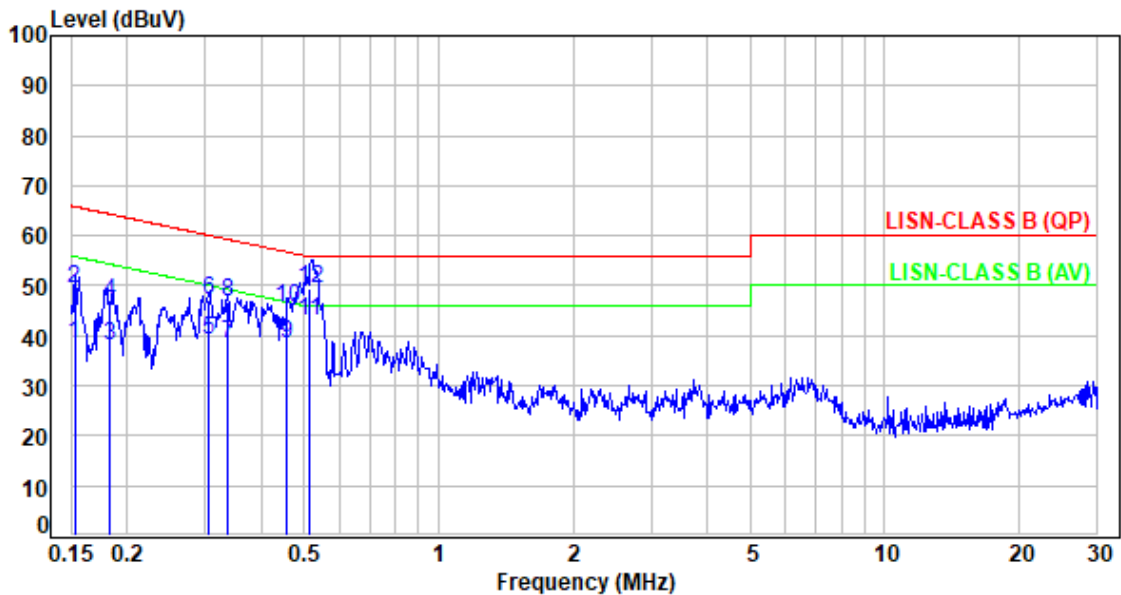
5.4 Test Result and Data





Test Mode	Mode 2	Pol/Phase	NEUTRAL
Power	AC 240V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor= (LISN or PLC or Current Probe) Factor + Cable Loss + Attenuator



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	9.94	28.58	38.52	55.86	-17.34	Average	P
2	0.15	9.94	39.66	49.60	65.86	-16.26	QP	P
3	0.18	9.93	28.05	37.98	54.34	-16.36	Average	P
4	0.18	9.93	36.68	46.61	64.34	-17.73	QP	P
5	0.30	9.93	29.10	39.03	50.11	-11.08	Average	P
6	0.30	9.93	37.03	46.96	60.11	-13.15	QP	P
7	0.34	9.93	28.64	38.57	49.26	-10.69	Average	P
8	0.34	9.93	36.96	46.89	59.26	-12.37	QP	P
9	0.46	9.94	28.37	38.31	46.74	-8.43	Average	P
10	0.46	9.94	35.75	45.69	56.74	-11.05	QP	P
11	0.51	9.94	32.93	42.87	46.00	-3.13	Average	P
12	0.51	9.94	39.45	49.39	56.00	-6.61	QP	P



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.

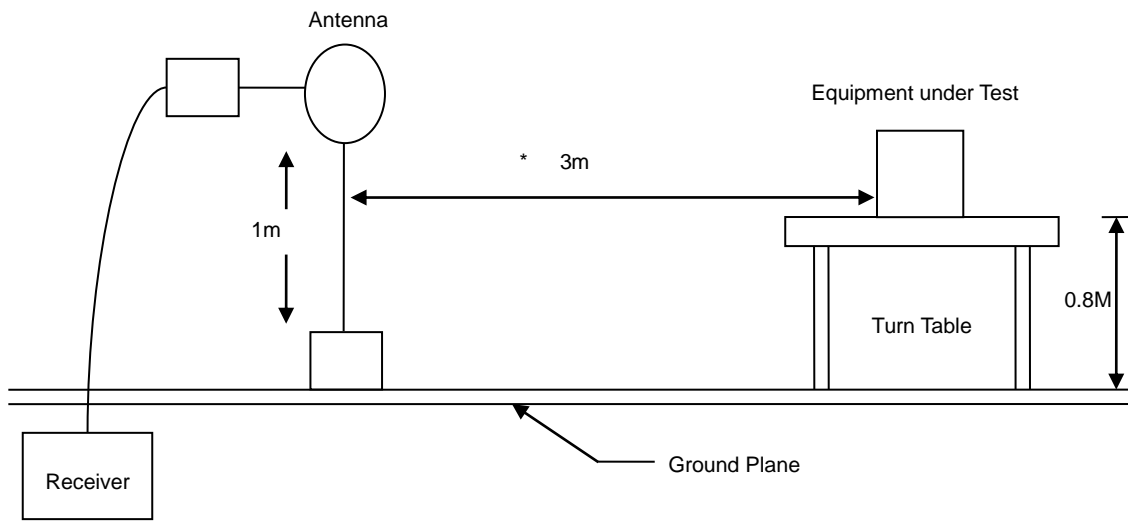
Note:

- 1.The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions such that emissions from the EUT are maximized.
(X-AXIS is the worst.)
- 2.Due to the test software function limit the operation band setting(200dBuV/m).
There's no corresponding limitation in the actual test item.

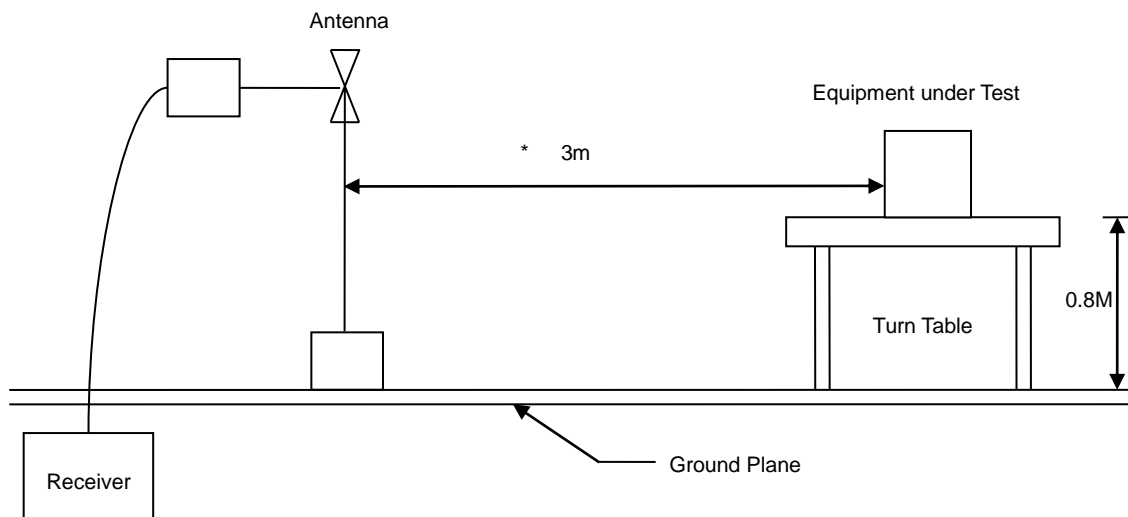


6.3 Typical Test Setup

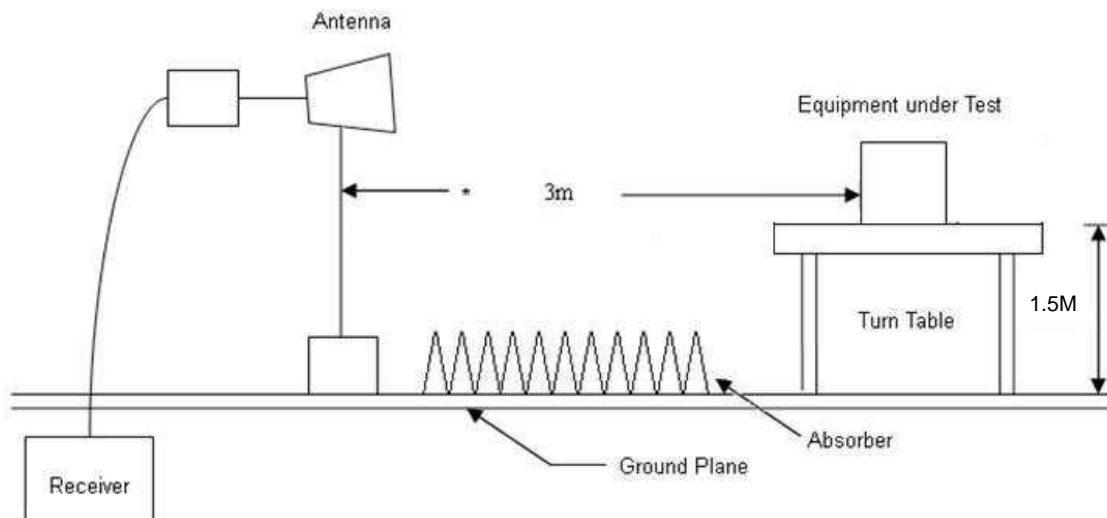
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup

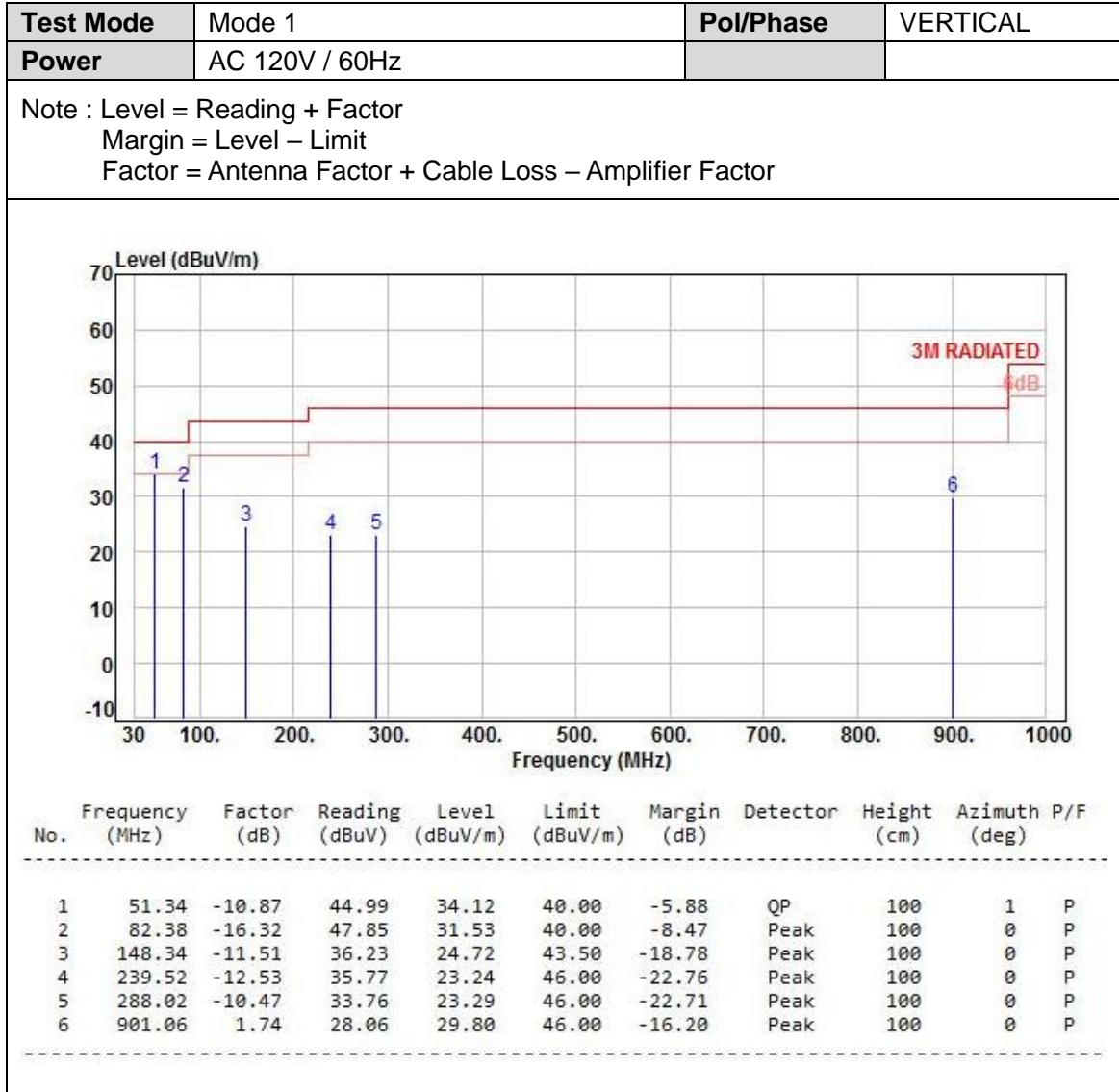




6.4 Test Result and Data (9KHz ~ 30MHz)

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

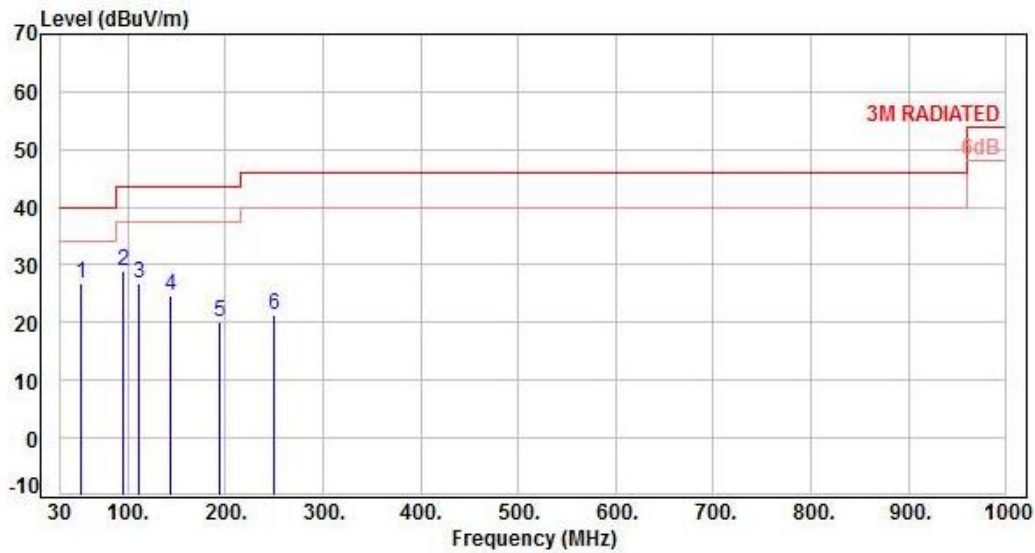
6.5 Test Result and Data (30MHz ~ 1GHz)





Test Mode	Mode 1	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

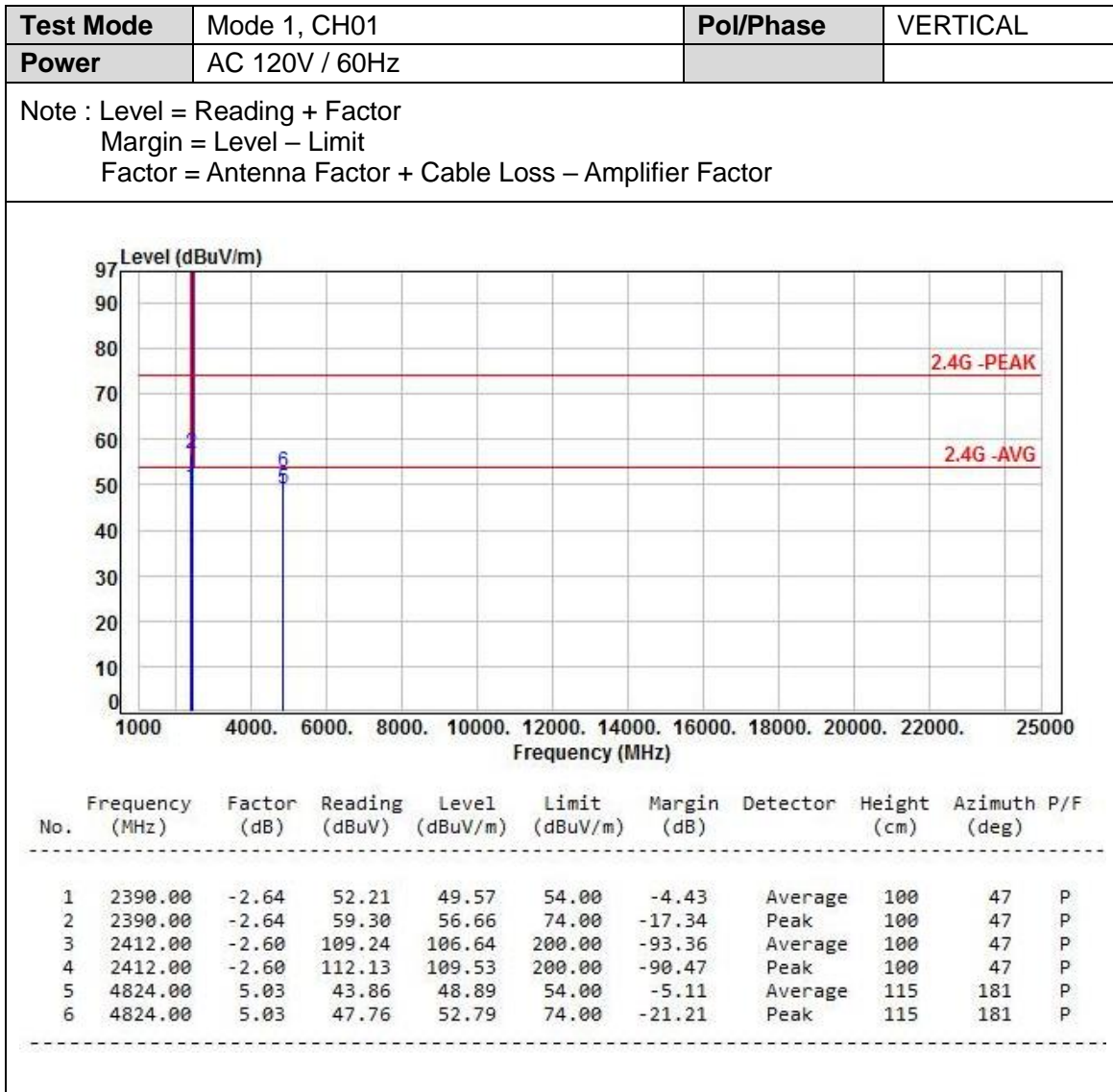
Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	51.34	-10.87	37.73	26.86	40.00	-13.14	Peak	100	360	P
2	95.96	-16.10	45.10	29.00	43.50	-14.50	Peak	100	360	P
3	111.48	-14.46	41.34	26.88	43.50	-16.62	Peak	100	360	P
4	144.46	-11.76	36.38	24.62	43.50	-18.88	Peak	100	360	P
5	194.90	-13.09	33.34	20.25	43.50	-23.25	Peak	100	360	P
6	249.22	-12.08	33.37	21.29	46.00	-24.71	Peak	100	360	P



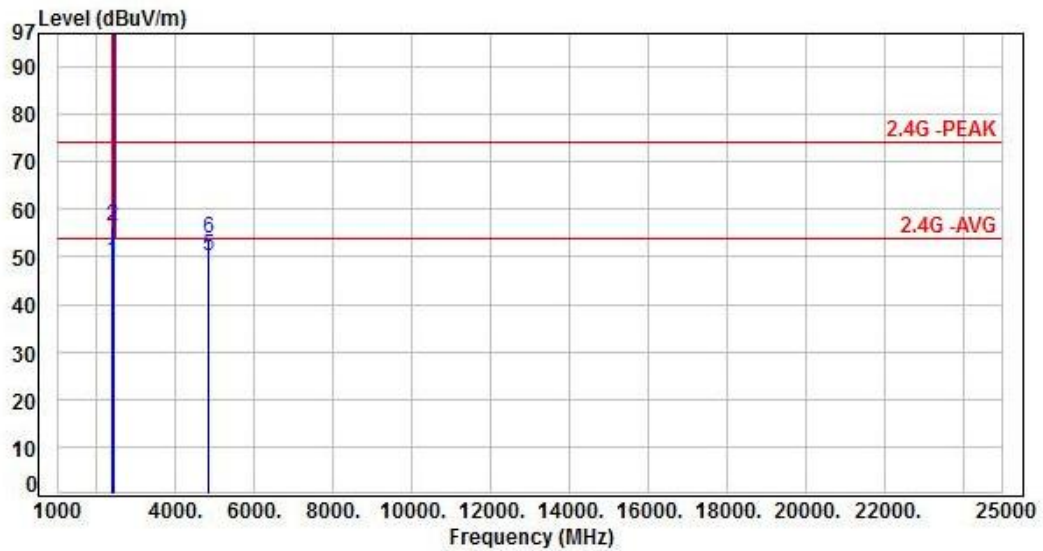
6.6 Test Result and Data (1GHz ~ 25GHz)





Test Mode	Mode 1, CH01	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

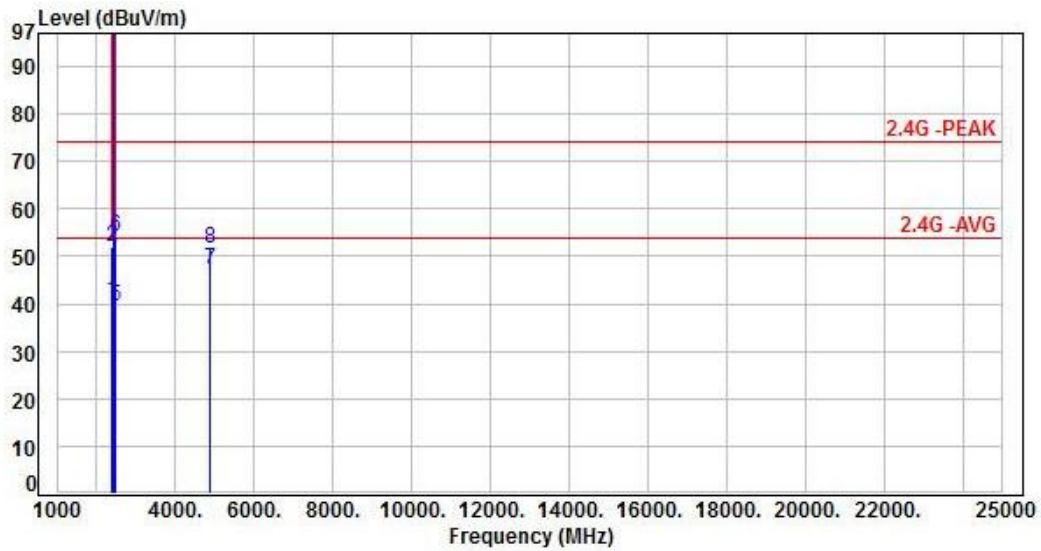


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	51.64	49.00	54.00	-5.00	Average	225	18	P
2	2390.00	-2.64	59.06	56.42	74.00	-17.58	Peak	225	18	P
3	2412.00	-2.60	107.38	104.78	200.00	-95.22	Average	225	18	P
4	2412.00	-2.60	110.36	107.76	200.00	-92.24	Peak	225	18	P
5	4824.00	5.03	45.18	50.21	54.00	-3.79	Average	109	289	P
6	4824.00	5.03	48.86	53.89	74.00	-20.11	Peak	109	289	P



Test Mode	Mode 1, CH06	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

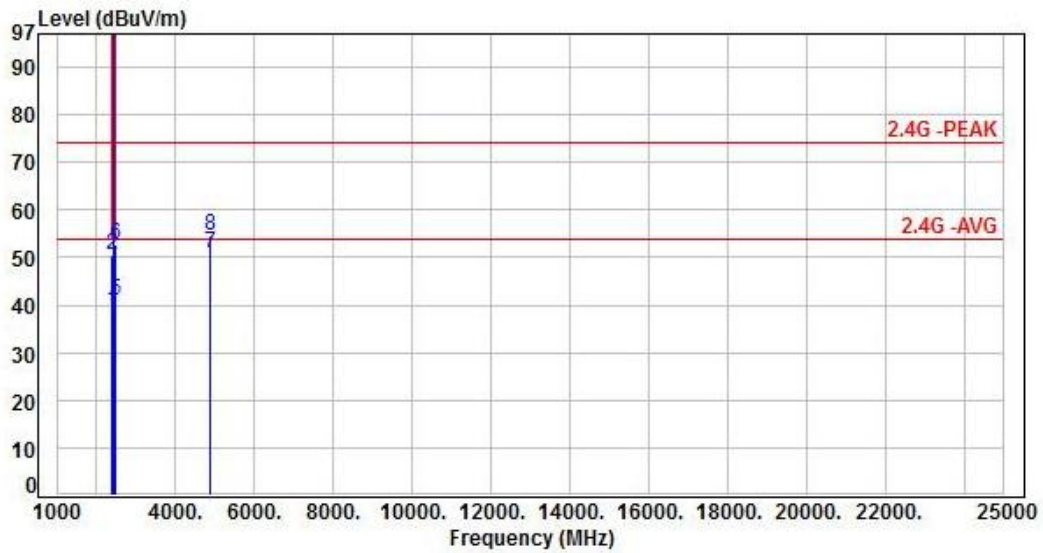


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	43.24	40.60	54.00	-13.40	Average	100	48	P
2	2390.00	-2.64	54.57	51.93	74.00	-22.07	Peak	100	48	P
3	2437.00	-2.57	107.75	105.18	200.00	-94.82	Average	100	48	P
4	2437.00	-2.57	110.74	108.17	200.00	-91.83	Peak	100	48	P
5	2483.50	-2.39	41.92	39.53	54.00	-14.47	Average	100	48	P
6	2483.50	-2.39	56.44	54.05	74.00	-19.95	Peak	100	48	P
7	4874.00	5.18	41.87	47.05	54.00	-6.95	Average	151	313	P
8	4874.00	5.18	46.43	51.61	74.00	-22.39	Peak	151	313	P



Test Mode	Mode 1, CH06	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

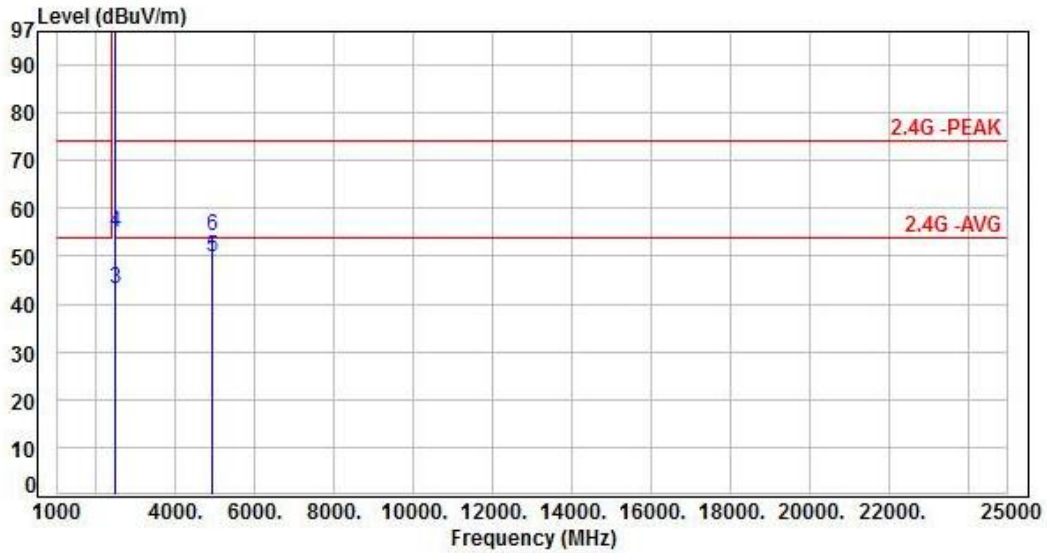


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	41.40	38.76	54.00	-15.24	Average	348	145	P
2	2390.00	-2.64	53.32	50.68	74.00	-23.32	Peak	348	145	P
3	2437.00	-2.57	109.35	106.78	200.00	-93.22	Average	348	145	P
4	2437.00	-2.57	112.35	109.78	200.00	-90.22	Peak	348	145	P
5	2483.50	-2.39	43.23	40.84	54.00	-13.16	Average	348	145	P
6	2483.50	-2.39	55.28	52.89	74.00	-21.11	Peak	348	145	P
7	4874.00	5.18	45.70	50.88	54.00	-3.12	Average	100	288	P
8	4874.00	5.18	49.32	54.50	74.00	-19.50	Peak	100	288	P



Test Mode	Mode 1, CH11	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

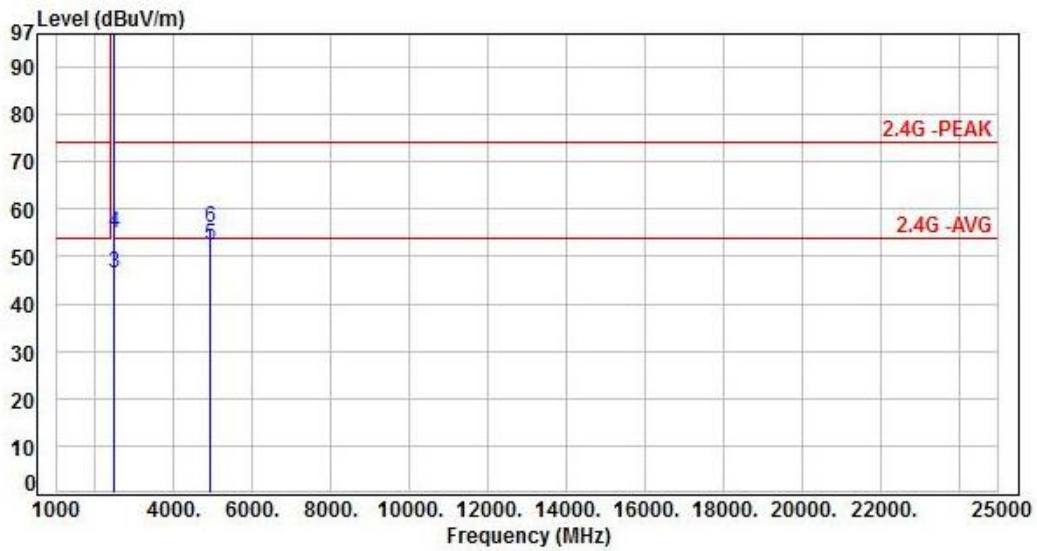


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	106.40	103.91	200.00	-96.09	Average	111	49	P
2	2462.00	-2.49	109.52	107.03	200.00	-92.97	Peak	111	49	P
3	2483.50	-2.39	45.61	43.22	54.00	-10.78	Average	111	49	P
4	2483.50	-2.39	57.36	54.97	74.00	-19.03	Peak	111	49	P
5	4924.00	5.39	44.52	49.91	54.00	-4.09	Average	175	317	P
6	4924.00	5.39	48.66	54.05	74.00	-19.95	Peak	175	317	P

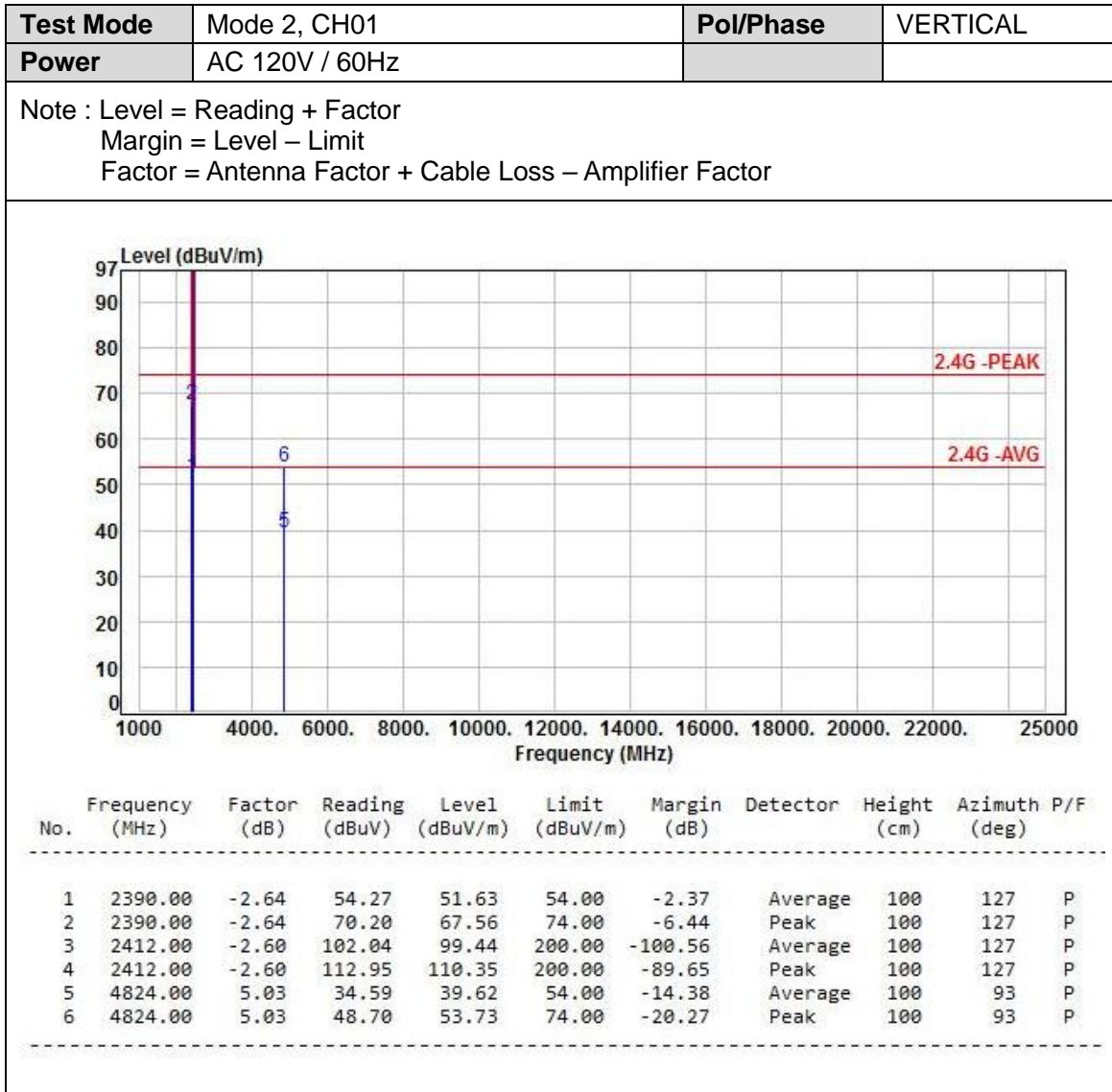


Test Mode	Mode 1, CH11	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor



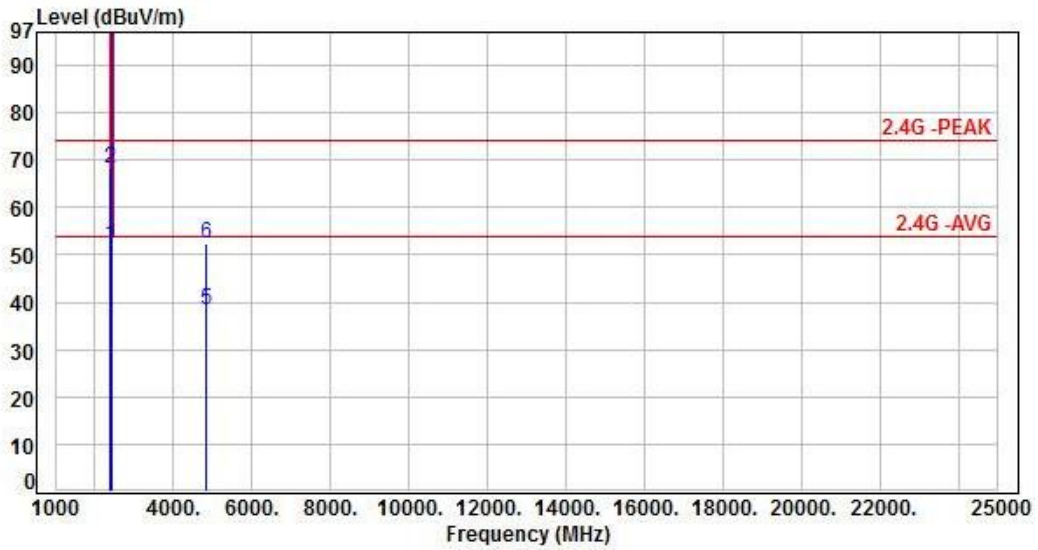
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	109.42	106.93	200.00	-93.07	Average	106	151	P
2	2462.00	-2.49	112.44	109.95	200.00	-90.05	Peak	106	151	P
3	2483.50	-2.39	48.92	46.53	54.00	-7.47	Average	106	151	P
4	2483.50	-2.39	57.19	54.80	74.00	-19.20	Peak	106	151	P
5	4924.00	5.39	47.05	52.44	54.00	-1.56	Average	100	291	P
6	4924.00	5.39	50.52	55.91	74.00	-18.09	Peak	100	291	P





Test Mode	Mode 2, CH01	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

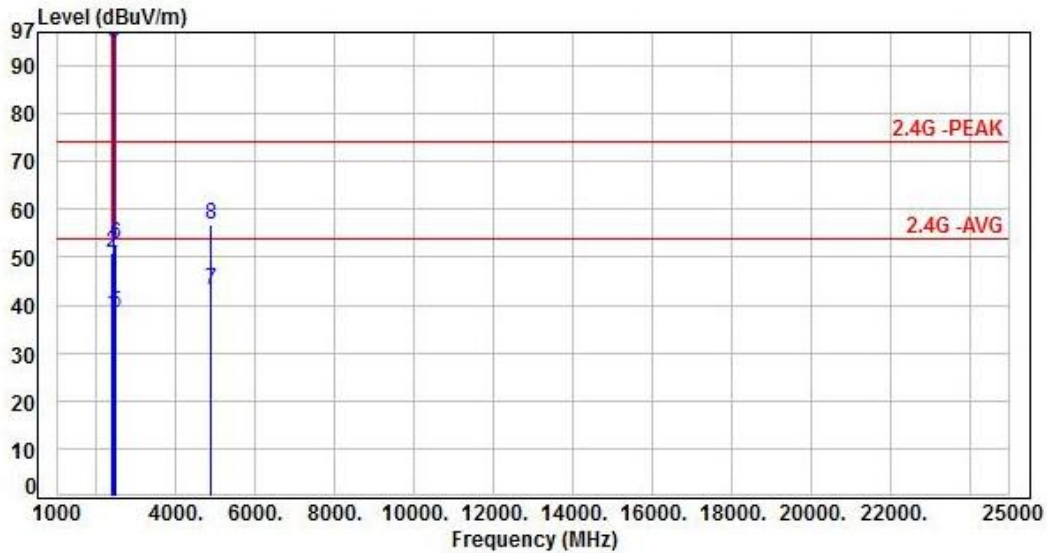


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	54.68	52.04	54.00	-1.96	Average	179	29	P
2	2390.00	-2.64	70.89	68.25	74.00	-5.75	Peak	179	29	P
3	2412.00	-2.60	101.12	98.52	200.00	-101.48	Average	179	29	P
4	2412.00	-2.60	111.73	109.13	200.00	-90.87	Peak	179	29	P
5	4824.00	5.03	33.29	38.32	54.00	-15.68	Average	230	108	P
6	4824.00	5.03	47.23	52.26	74.00	-21.74	Peak	230	108	P



Test Mode	Mode 2, CH06	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

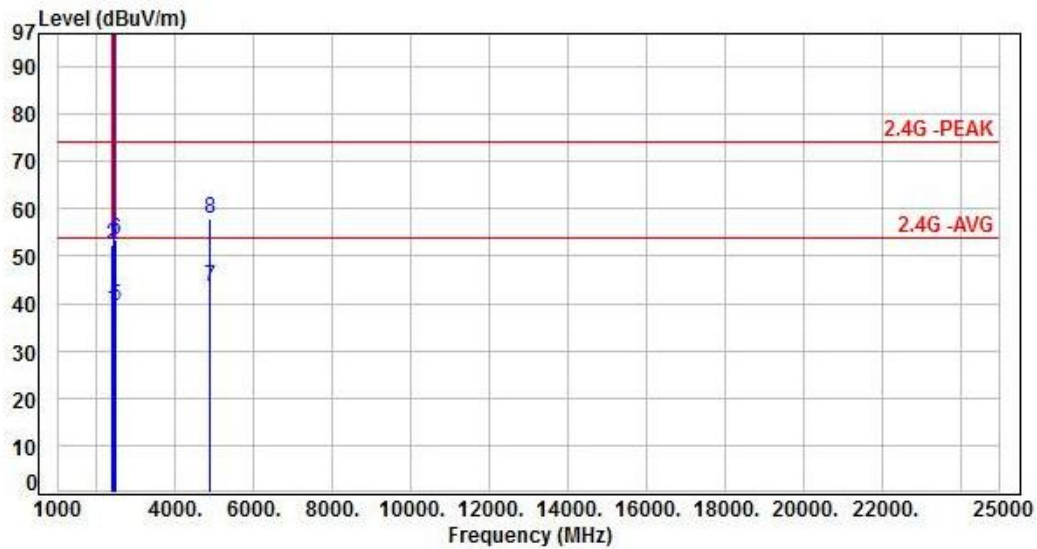


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	40.63	37.99	54.00	-16.01	Average	335	55	P
2	2390.00	-2.64	53.42	50.78	74.00	-23.22	Peak	335	55	P
3	2437.00	-2.57	97.33	94.76	200.00	-105.24	Average	335	55	P
4	2437.00	-2.57	107.80	105.23	200.00	-94.77	Peak	335	55	P
5	2483.50	-2.39	40.65	38.26	54.00	-15.74	Average	335	55	P
6	2483.50	-2.39	55.27	52.88	74.00	-21.12	Peak	335	55	P
7	4874.00	5.18	37.92	43.10	54.00	-10.90	Average	100	136	P
8	4874.00	5.18	51.74	56.92	74.00	-17.08	Peak	100	136	P



Test Mode	Mode 2, CH06	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

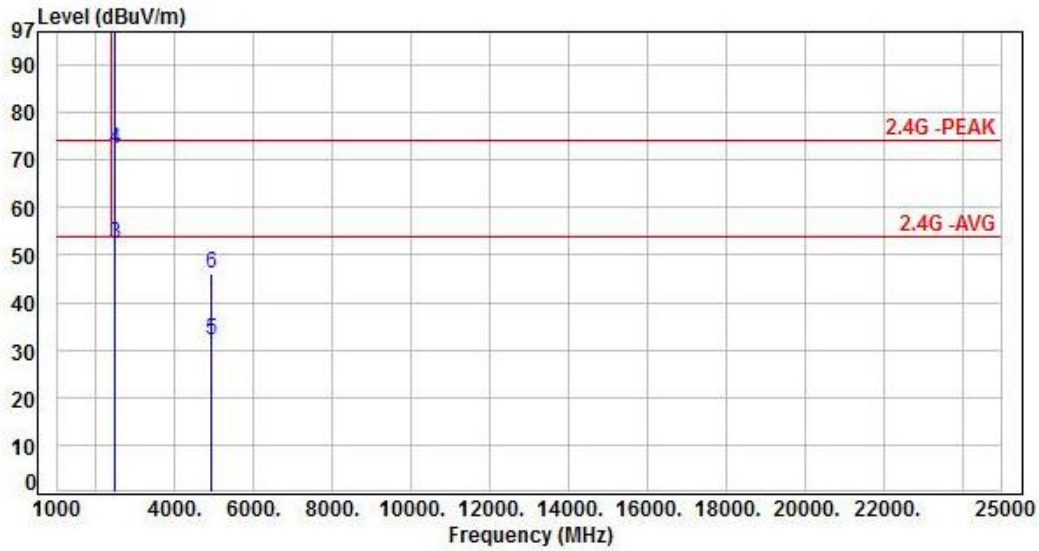


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	41.23	38.59	54.00	-15.41	Average	169	28	P
2	2390.00	-2.64	54.91	52.27	74.00	-21.73	Peak	169	28	P
3	2437.00	-2.57	99.54	96.97	200.00	-103.03	Average	169	28	P
4	2437.00	-2.57	110.19	107.62	200.00	-92.38	Peak	169	28	P
5	2483.50	-2.39	41.77	39.38	54.00	-14.62	Average	169	28	P
6	2483.50	-2.39	55.88	53.49	74.00	-20.51	Peak	169	28	P
7	4874.00	5.18	38.31	43.49	54.00	-10.51	Average	310	105	P
8	4874.00	5.18	52.55	57.73	74.00	-16.27	Peak	310	105	P



Test Mode	Mode 2, CH11	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

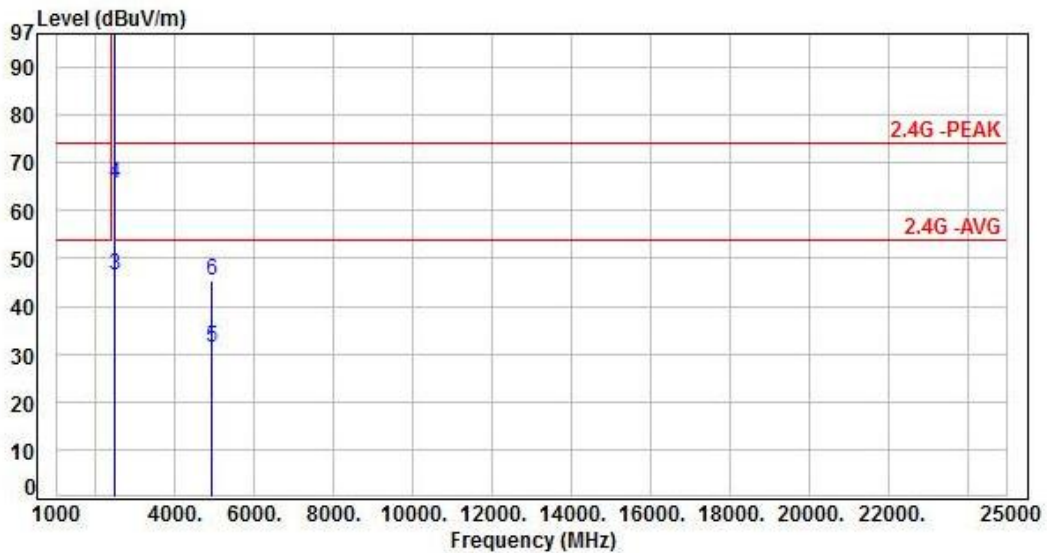


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	100.80	98.31	200.00	-101.69	Average	109	123	P
2	2462.00	-2.49	111.60	109.11	200.00	-90.89	Peak	109	123	P
3	2483.50	-2.39	54.75	52.36	54.00	-1.64	Average	109	123	P
4	2483.50	-2.39	74.79	72.40	74.00	-1.60	Peak	109	123	P
5	4924.00	5.39	26.70	32.09	54.00	-21.91	Average	100	287	P
6	4924.00	5.39	40.54	45.93	74.00	-28.07	Peak	100	287	P

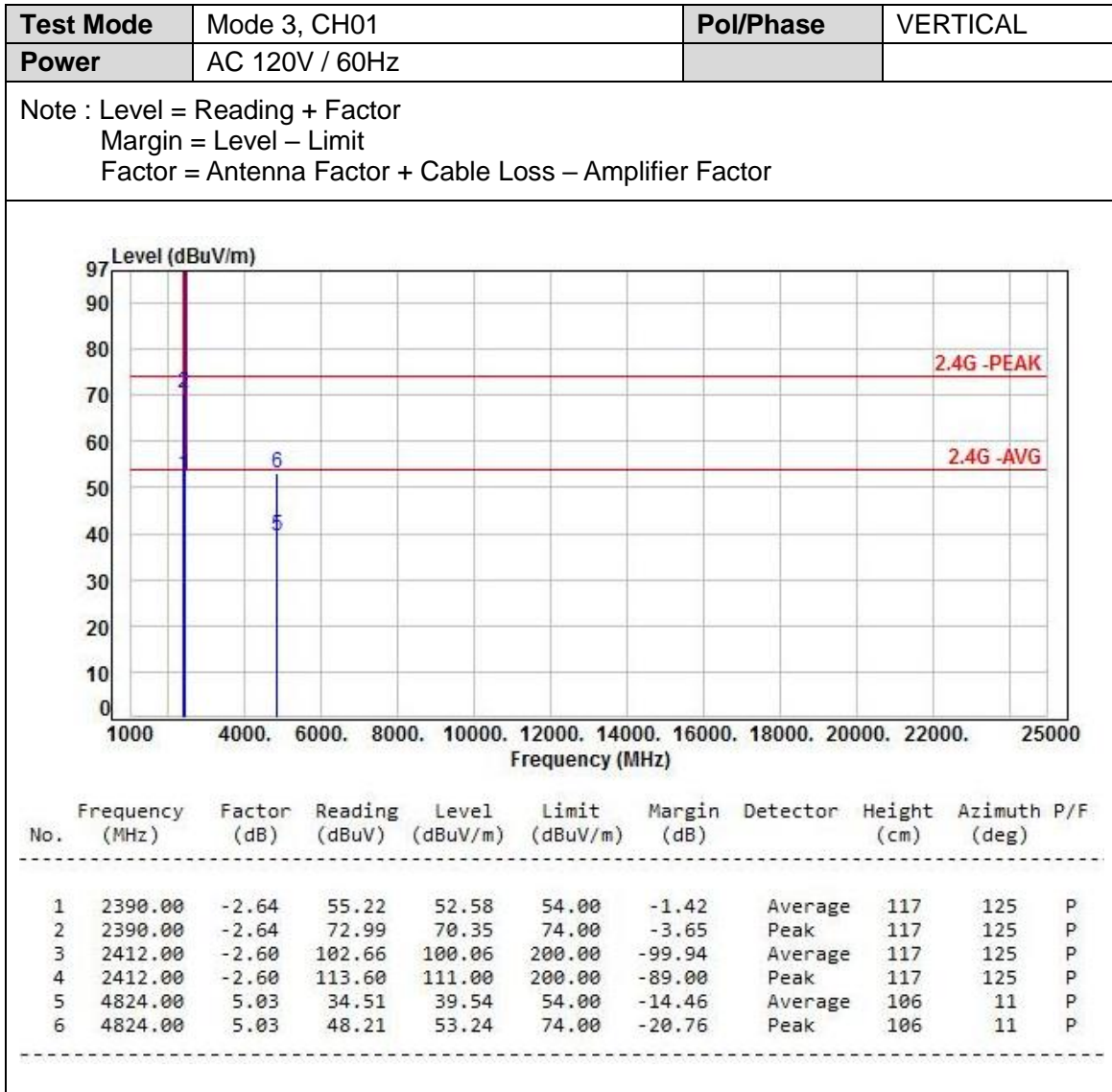


Test Mode	Mode 2, CH11	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor



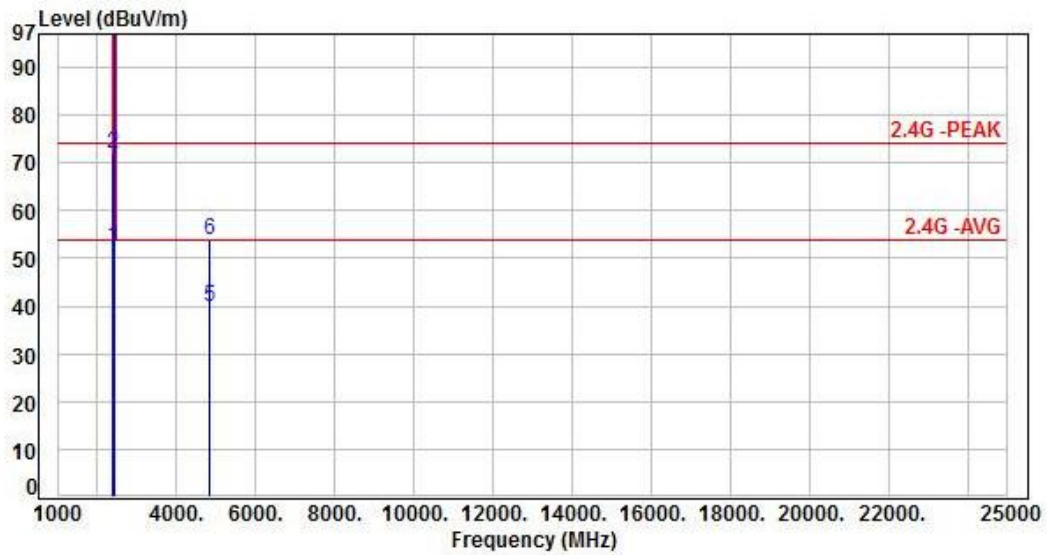
No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	100.56	98.07	200.00	-101.93	Average	142	36	P
2	2462.00	-2.49	111.12	108.63	200.00	-91.37	Peak	142	36	P
3	2483.50	-2.39	48.93	46.54	54.00	-7.46	Average	142	36	P
4	2483.50	-2.39	67.99	65.60	74.00	-8.40	Peak	142	36	P
5	4924.00	5.39	26.10	31.49	54.00	-22.51	Average	100	229	P
6	4924.00	5.39	39.95	45.34	74.00	-28.66	Peak	100	229	P





Test Mode	Mode 3, CH01	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

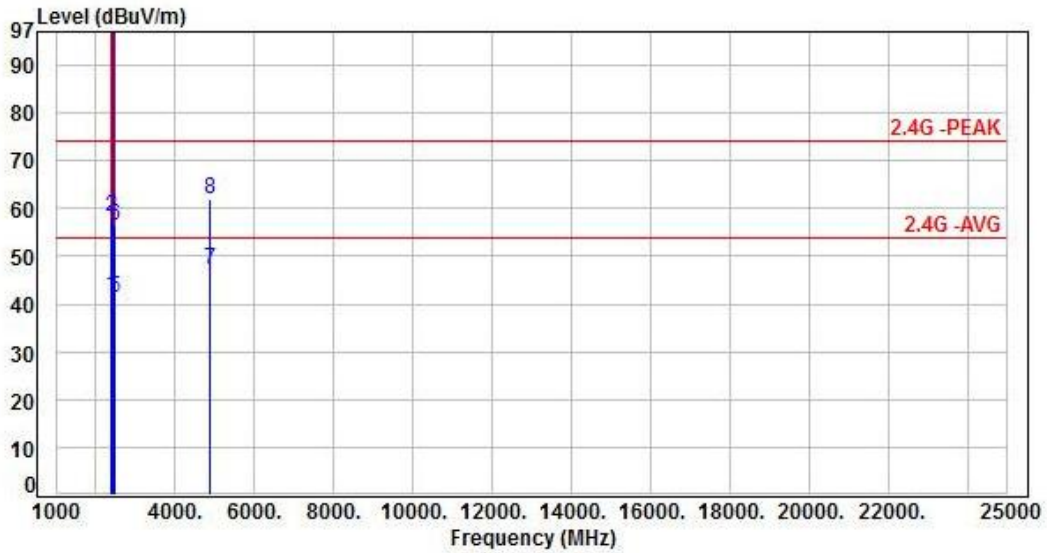


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	55.06	52.42	54.00	-1.58	Average	100	59	P
2	2390.00	-2.64	74.70	72.06	74.00	-1.94	Peak	100	59	P
3	2412.00	-2.60	99.91	97.31	200.00	-102.69	Average	100	59	P
4	2412.00	-2.60	110.62	108.02	200.00	-91.98	Peak	100	59	P
5	4824.00	5.03	34.75	39.78	54.00	-14.22	Average	102	51	P
6	4824.00	5.03	48.78	53.81	74.00	-20.19	Peak	102	51	P



Test Mode	Mode 3, CH06	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

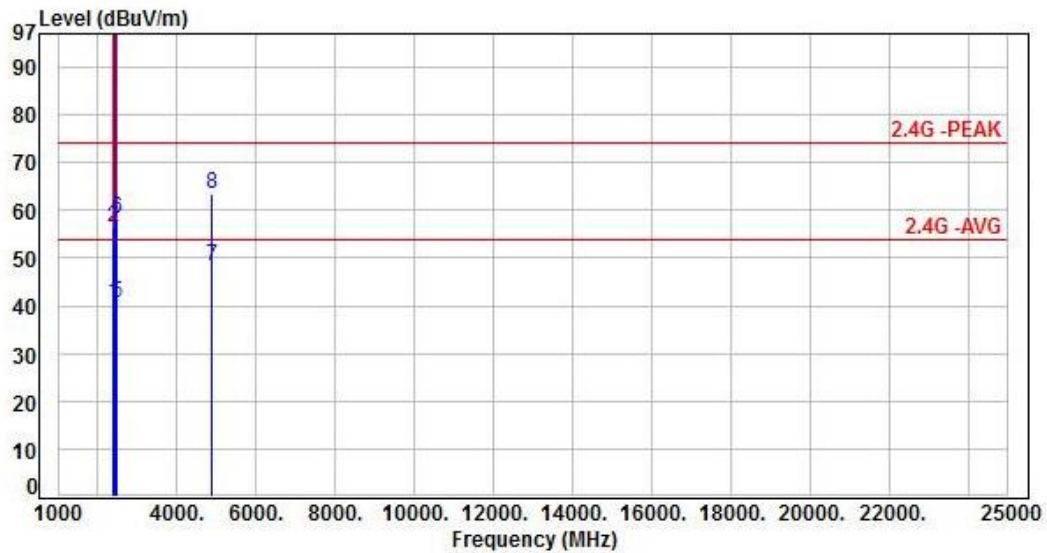


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	44.31	41.67	54.00	-12.33	Average	112	128	P
2	2390.00	-2.64	60.95	58.31	74.00	-15.69	Peak	112	128	P
3	2437.00	-2.57	104.67	102.10	200.00	-97.90	Average	112	128	P
4	2437.00	-2.57	115.48	112.91	200.00	-87.09	Peak	112	128	P
5	2483.50	-2.39	43.83	41.44	54.00	-12.56	Average	112	128	P
6	2483.50	-2.39	58.88	56.49	74.00	-17.51	Peak	112	128	P
7	4874.00	5.18	42.04	47.22	54.00	-6.78	Average	100	63	P
8	4874.00	5.18	56.95	62.13	74.00	-11.87	Peak	100	63	P



Test Mode	Mode 3, CH06	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

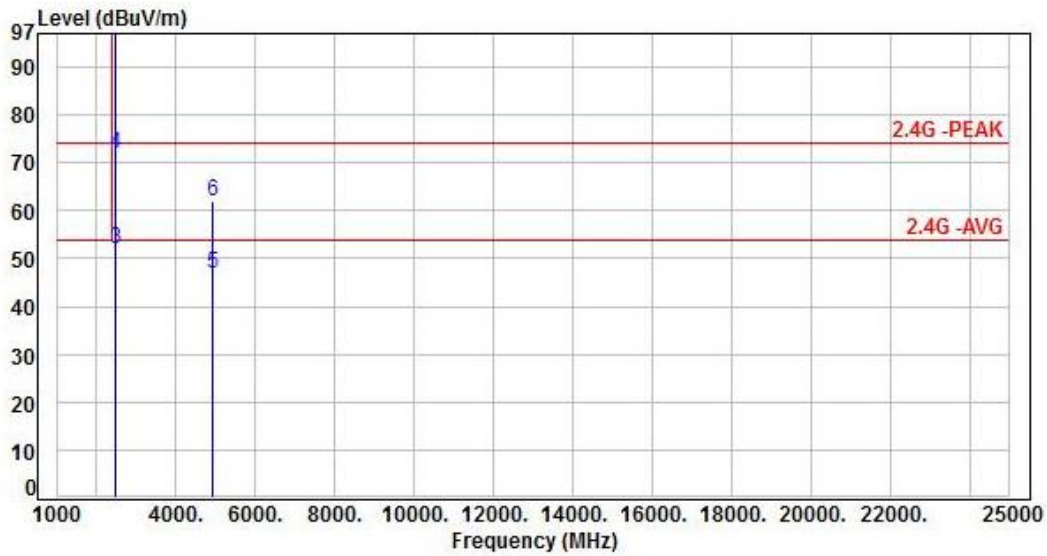


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	43.29	40.65	54.00	-13.35	Average	125	48	P
2	2390.00	-2.64	58.99	56.35	74.00	-17.65	Peak	125	48	P
3	2437.00	-2.57	104.12	101.55	200.00	-98.45	Average	125	48	P
4	2437.00	-2.57	114.94	112.37	200.00	-87.63	Peak	125	48	P
5	2483.50	-2.39	43.01	40.62	54.00	-13.38	Average	125	48	P
6	2483.50	-2.39	60.60	58.21	74.00	-15.79	Peak	125	48	P
7	4874.00	5.18	43.12	48.30	54.00	-5.70	Average	106	224	P
8	4874.00	5.18	58.14	63.32	74.00	-10.68	Peak	106	224	P



Test Mode	Mode 3, CH11	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

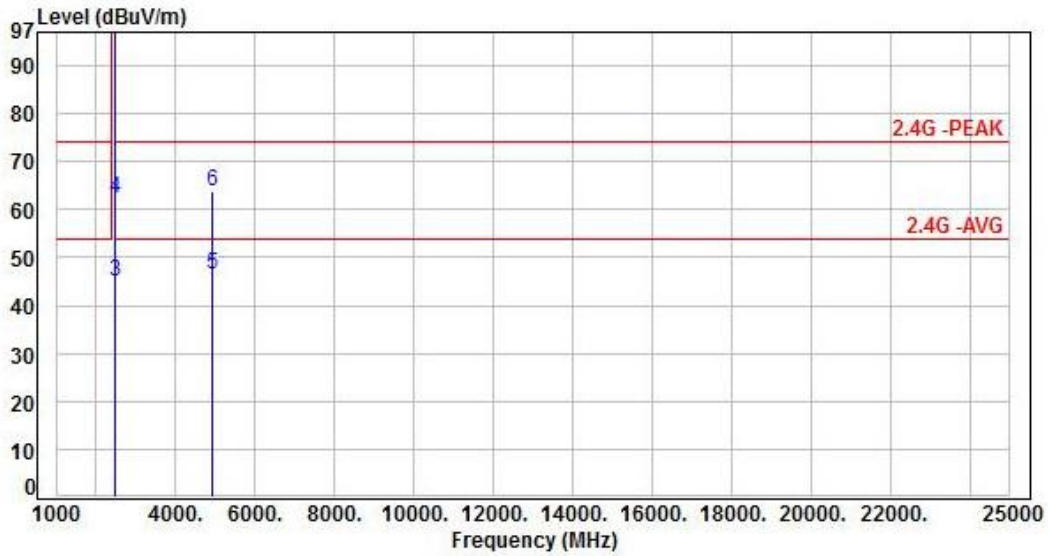


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	100.38	97.89	200.00	-102.11	Average	165	116	P
2	2462.00	-2.49	111.67	109.18	200.00	-90.82	Peak	165	116	P
3	2483.50	-2.39	54.58	52.19	54.00	-1.81	Average	165	116	P
4	2483.50	-2.39	74.45	72.06	74.00	-1.94	Peak	165	116	P
5	4924.00	5.39	41.27	46.66	54.00	-7.34	Average	338	204	P
6	4924.00	5.39	56.63	62.02	74.00	-11.98	Peak	338	204	P



Test Mode	Mode 3, CH11	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.49	100.24	97.75	200.00	-102.25	Average	200	44	P
2	2462.00	-2.49	111.12	108.63	200.00	-91.37	Peak	200	44	P
3	2483.50	-2.39	47.45	45.06	54.00	-8.94	Average	200	44	P
4	2483.50	-2.39	64.84	62.45	74.00	-11.55	Peak	200	44	P
5	4924.00	5.39	41.09	46.48	54.00	-7.52	Average	106	228	P
6	4924.00	5.39	58.51	63.90	74.00	-10.10	Peak	106	228	P

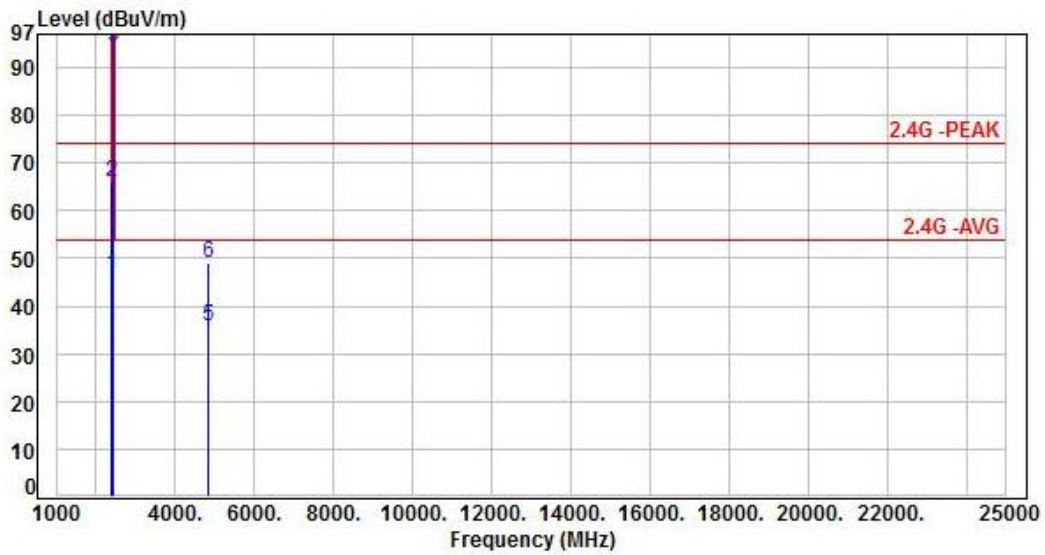


Test Mode	Mode 4, CH03	Pol/Phase	VERTICAL							
Power	AC 120V / 60Hz									
Note : Level = Reading + Factor Margin = Level – Limit Factor = Antenna Factor + Cable Loss – Amplifier Factor										
<p>The plot shows a spectrum with a peak at 2390 MHz and a smaller peak at 4844 MHz. Two horizontal red lines represent limits: 2.4G-PEAK at approximately 74 dBuV/m and 2.4G-AVG at approximately 54 dBuV/m. Vertical lines connect the peaks to the data table below.</p>										
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	54.68	52.04	54.00	-1.96	Average	114	124	P
2	2390.00	-2.64	74.93	72.29	74.00	-1.71	Peak	114	124	P
3	2422.00	-2.59	98.11	95.52	200.00	-104.48	Average	114	124	P
4	2422.00	-2.59	109.33	106.74	200.00	-93.26	Peak	114	124	P
5	4844.00	5.09	31.76	36.85	54.00	-17.15	Average	100	12	P
6	4844.00	5.09	45.31	50.40	74.00	-23.60	Peak	100	12	P



Test Mode	Mode 4, CH03	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

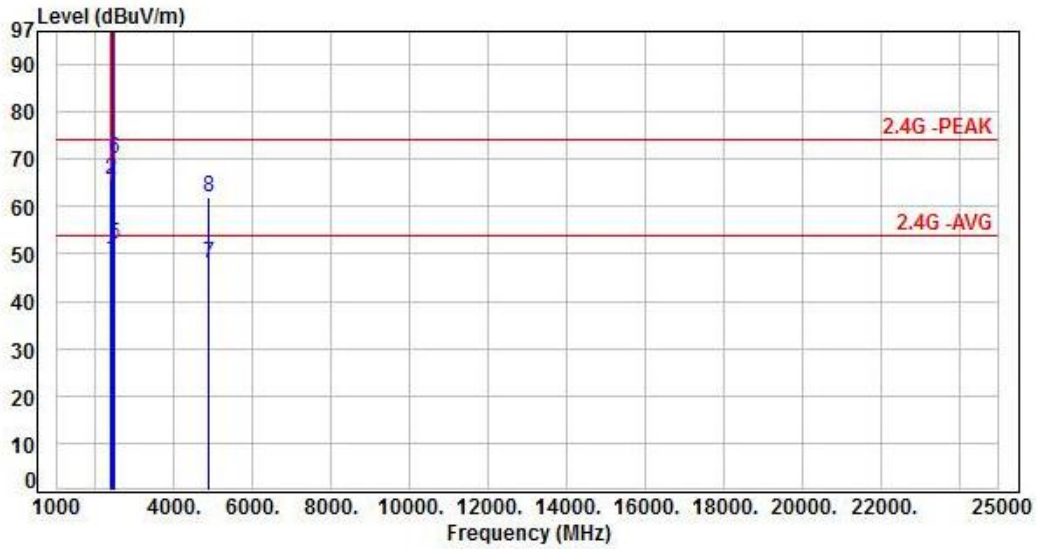


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	48.95	46.31	54.00	-7.69	Average	114	33	P
2	2390.00	-2.64	68.51	65.87	74.00	-8.13	Peak	114	33	P
3	2422.00	-2.59	96.82	94.23	200.00	-105.77	Average	114	33	P
4	2422.00	-2.59	107.49	104.90	200.00	-95.10	Peak	114	33	P
5	4844.00	5.09	30.79	35.88	54.00	-18.12	Average	100	52	P
6	4844.00	5.09	43.97	49.06	74.00	-24.94	Peak	100	52	P



Test Mode	Mode 4, CH06	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

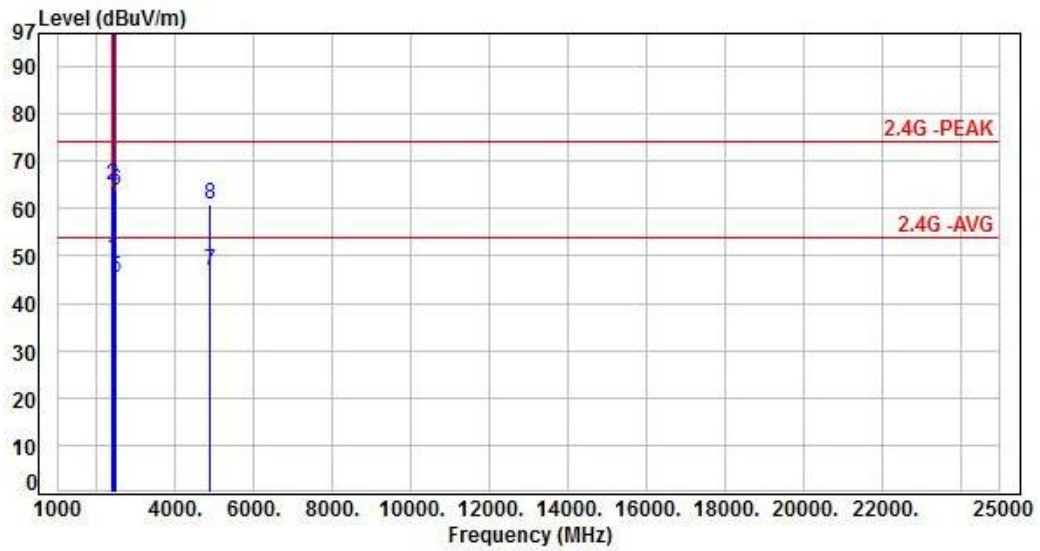


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	51.45	48.81	54.00	-5.19	Average	111	128	P
2	2390.00	-2.64	68.45	65.81	74.00	-8.19	Peak	111	128	P
3	2437.00	-2.57	99.76	97.19	200.00	-102.81	Average	111	128	P
4	2437.85	-2.57	110.87	108.30	200.00	-91.70	Peak	111	128	P
5	2483.50	-2.39	54.42	52.03	54.00	-1.97	Average	111	128	P
6	2483.50	-2.39	72.37	69.98	74.00	-4.02	Peak	111	128	P
7	4874.00	5.18	42.88	48.06	54.00	-5.94	Average	324	212	P
8	4874.00	5.18	56.70	61.88	74.00	-12.12	Peak	324	212	P



Test Mode	Mode 4, CH06	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

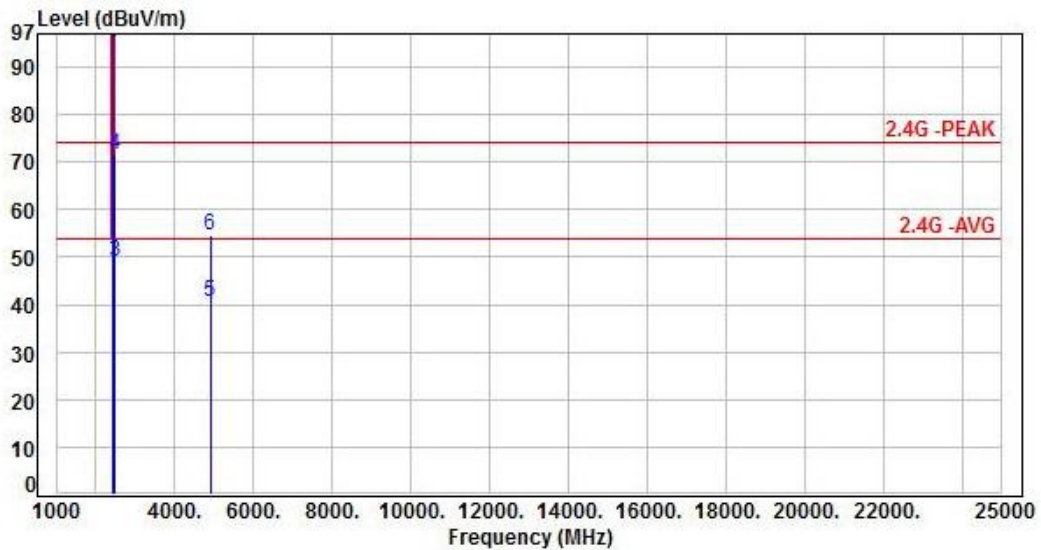


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.64	52.18	49.54	54.00	-4.46	Average	100	60	P
2	2390.00	-2.64	67.67	65.03	74.00	-8.97	Peak	100	60	P
3	2437.00	-2.57	98.73	96.16	200.00	-103.84	Average	100	60	P
4	2437.00	-2.57	109.87	107.30	200.00	-92.70	Peak	100	60	P
5	2483.50	-2.39	47.61	45.22	54.00	-8.78	Average	100	60	P
6	2483.50	-2.39	66.38	63.99	74.00	-10.01	Peak	100	60	P
7	4874.00	5.18	41.54	46.72	54.00	-7.28	Average	223	100	P
8	4874.00	5.18	55.72	60.90	74.00	-13.10	Peak	223	100	P



Test Mode	Mode 4, CH09	Pol/Phase	VERTICAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor

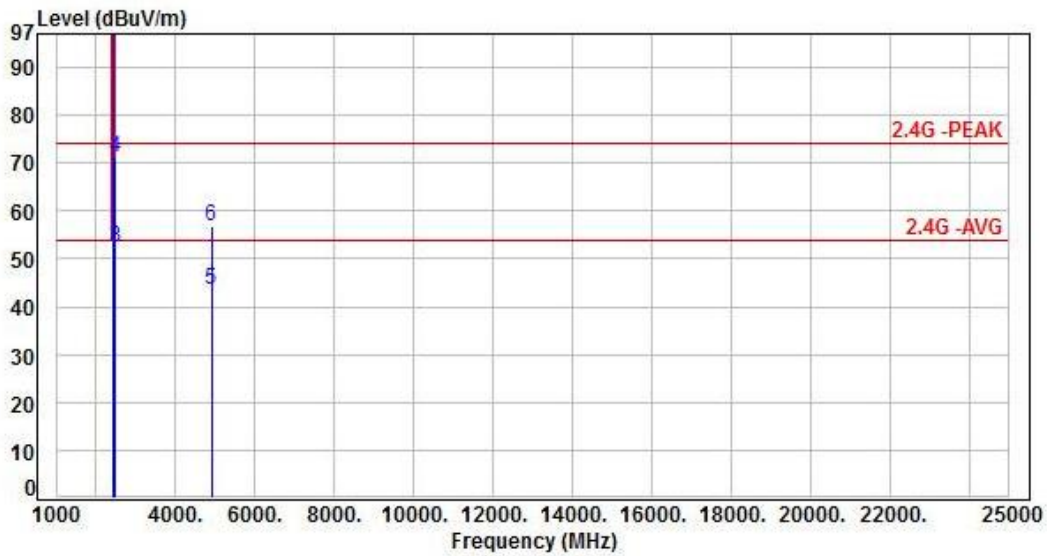


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2452.00	-2.54	97.79	95.25	200.00	-104.75	Average	173	118	P
2	2452.00	-2.54	109.00	106.46	200.00	-93.54	Peak	173	118	P
3	2483.50	-2.39	51.28	48.89	54.00	-5.11	Average	173	118	P
4	2483.50	-2.39	74.08	71.69	74.00	-2.31	Peak	173	118	P
5	4904.00	5.29	35.38	40.67	54.00	-13.33	Average	112	346	P
6	4904.00	5.29	49.39	54.68	74.00	-19.32	Peak	112	346	P



Test Mode	Mode 4, CH09	Pol/Phase	HORIZONTAL
Power	AC 120V / 60Hz		

Note : Level = Reading + Factor
 Margin = Level – Limit
 Factor = Antenna Factor + Cable Loss – Amplifier Factor



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2452.00	-2.54	98.23	95.69	200.00	-104.31	Average	201	36	P
2	2452.00	-2.54	109.43	106.89	200.00	-93.11	Peak	201	36	P
3	2483.50	-2.39	54.69	52.30	54.00	-1.70	Average	201	36	P
4	2483.50	-2.39	73.67	71.28	74.00	-2.72	Peak	201	36	P
5	4904.00	5.29	38.13	43.42	54.00	-10.58	Average	100	227	P
6	4904.00	5.29	51.56	56.85	74.00	-17.15	Peak	100	227	P



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

According to the methods defined in ANSI C63.10-2013 Section 11.11.1

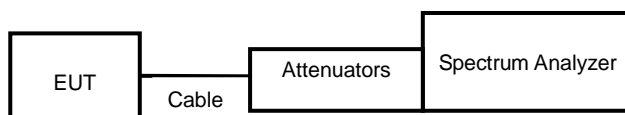
Below -20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

7.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.11.2 & 11.11.3

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 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.
- 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.
- The band edges was measured and recorded.

7.3 Test Setup Layout



7.4 Test Result and Data

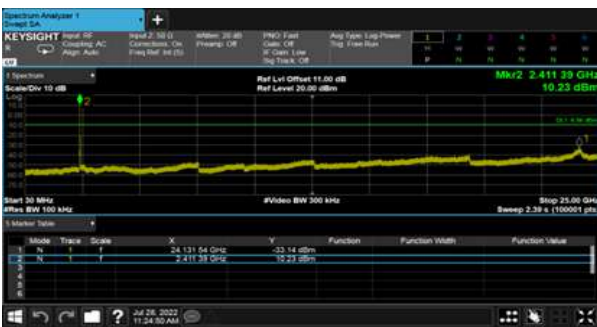
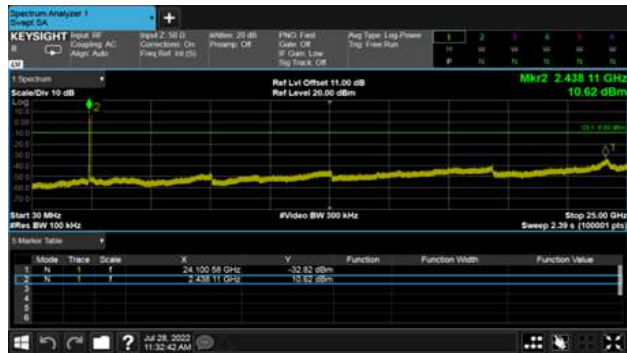
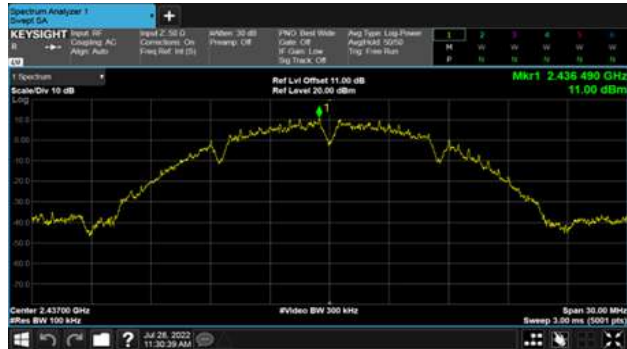
Note: Test plots refers to the following pages.



ANT A
Modulation Type: 802.11b, CH 01



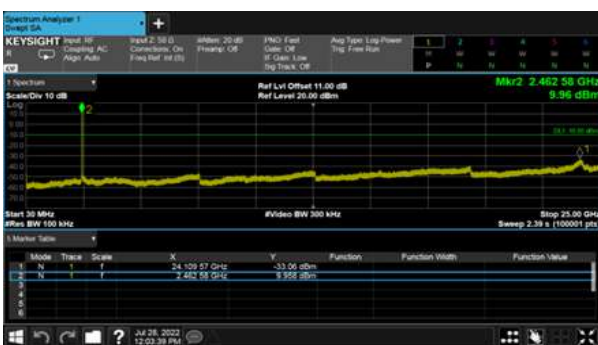
Modulation Type: 802.11b, CH 06





ANT A

Modulation Type: 802.11b, CH 11

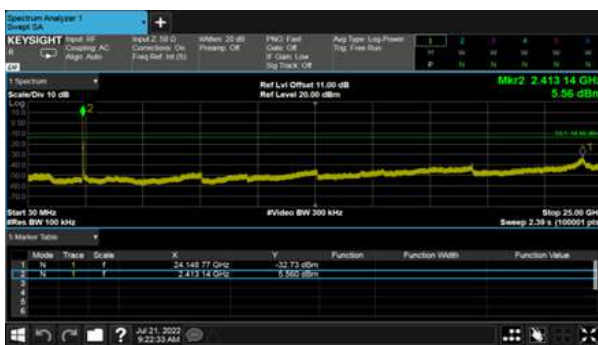
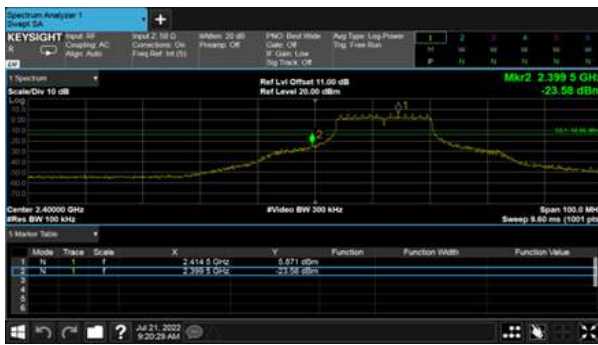
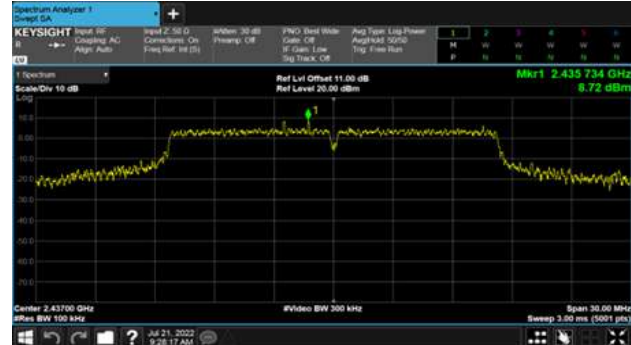
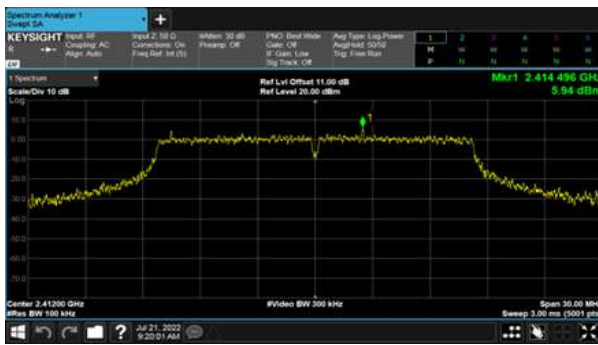




ANT A

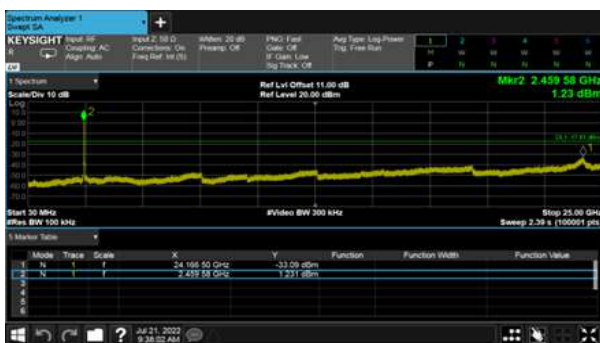
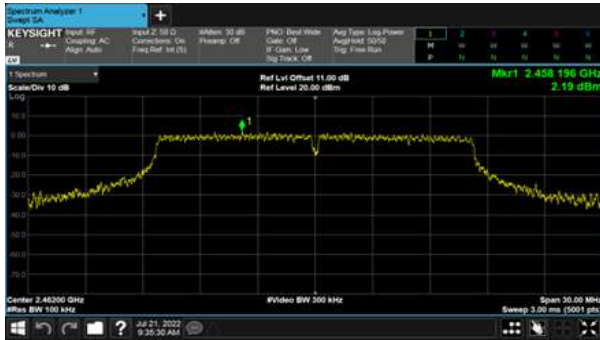
Modulation Type: 802.11g, CH01

Modulation Type: 802.11g, CH06





ANT A
Modulation Type: 802.11g, CH11

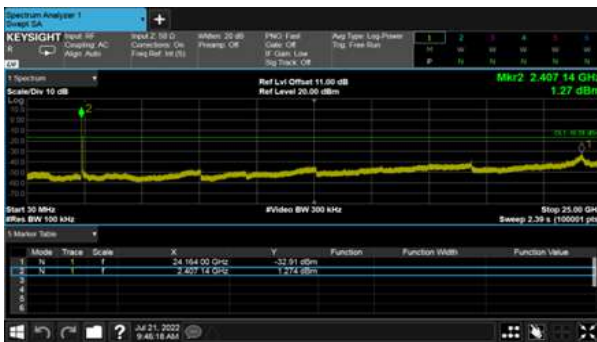
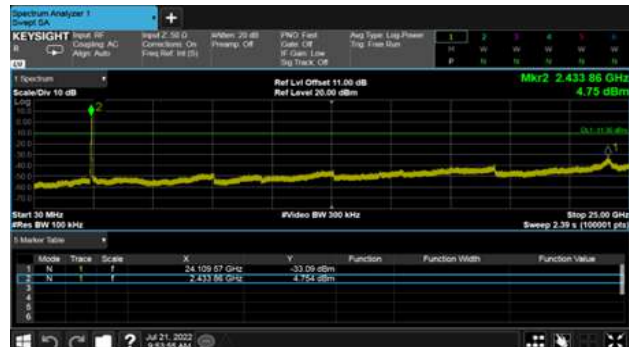
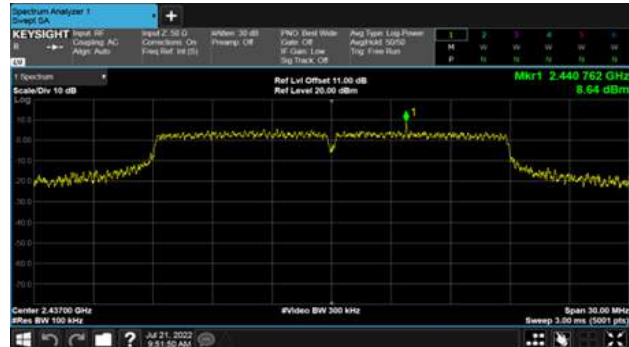
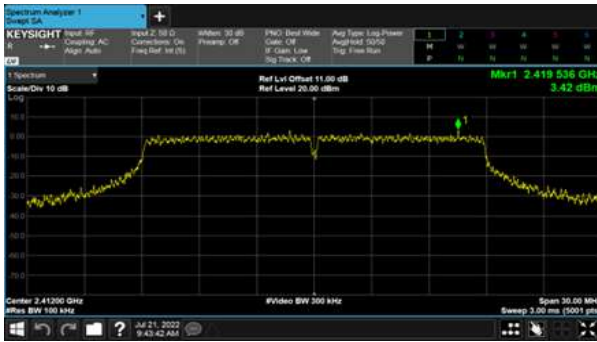




ANT A

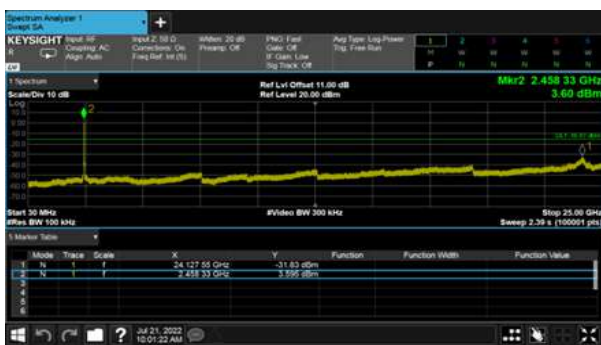
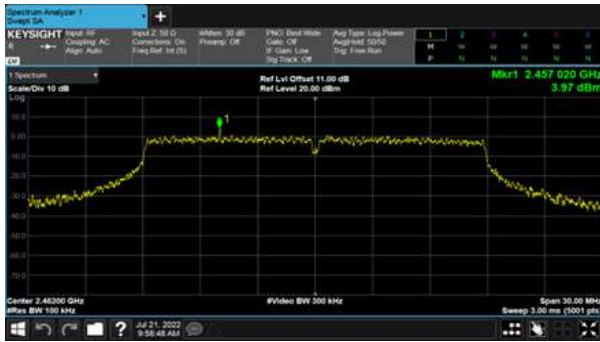
Modulation Type: 802.11n HT20, CH01

Modulation Type: 802.11n HT20, CH06





ANT A
Modulation Type: 802.11n HT20, CH11

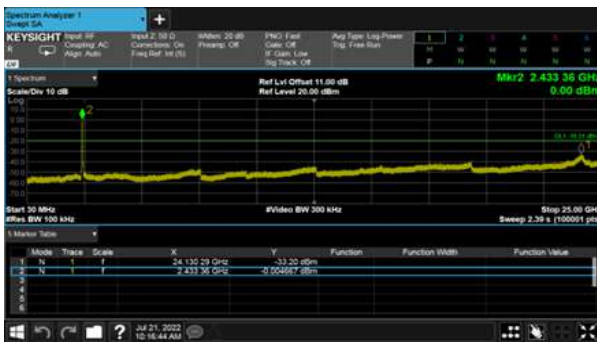
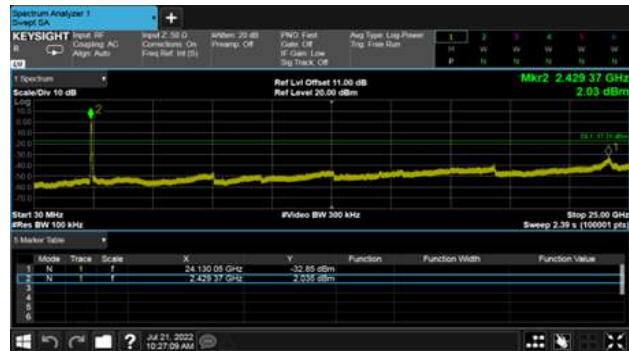
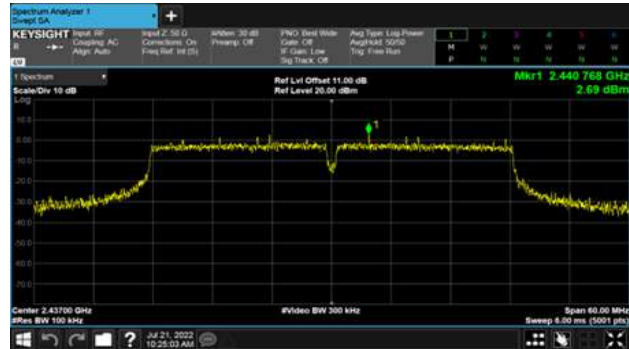
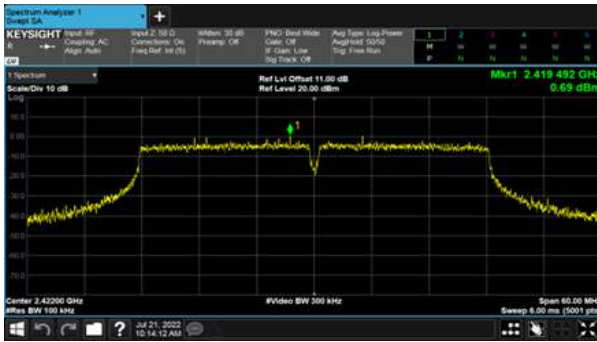




ANT A

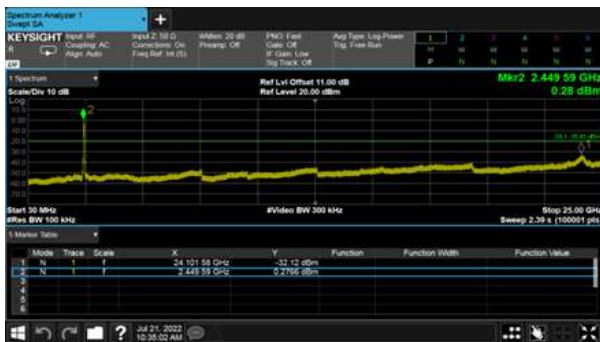
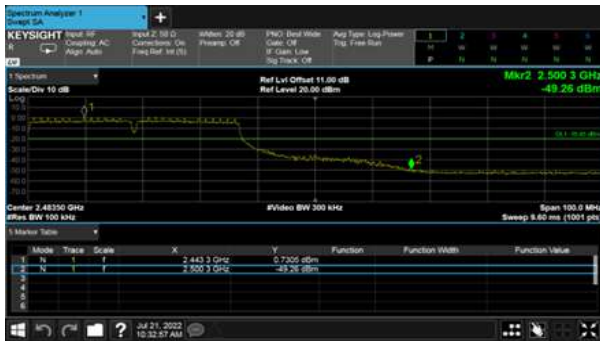
Modulation Type: 802.11n HT40, CH03

Modulation Type: 802.11n HT40, CH06





ANT A
Modulation Type: 802.11n HT40, CH09

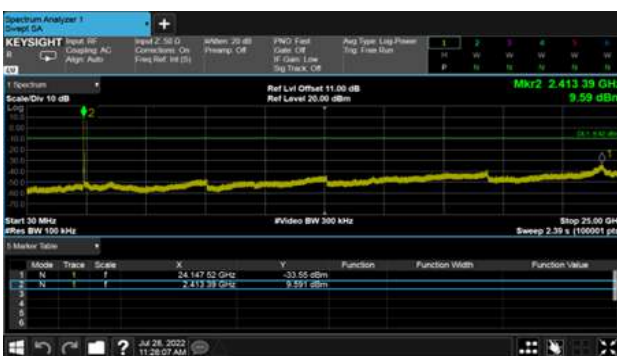
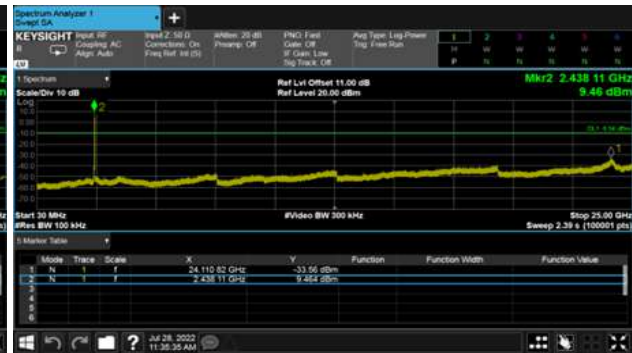
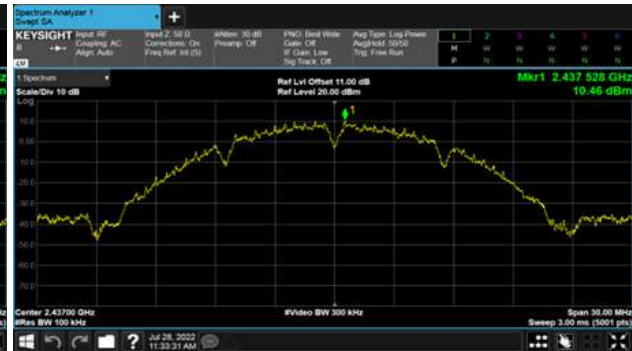




ANT B

Modulation Type: 802.11b, CH 01

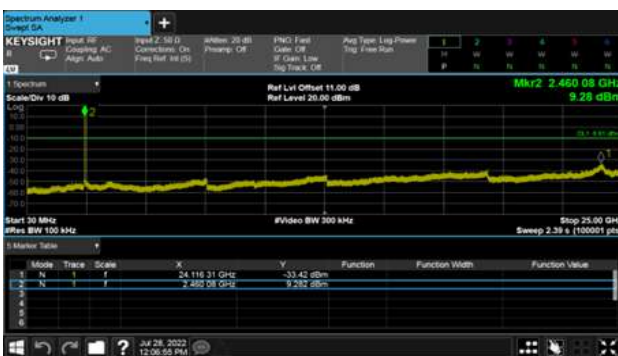
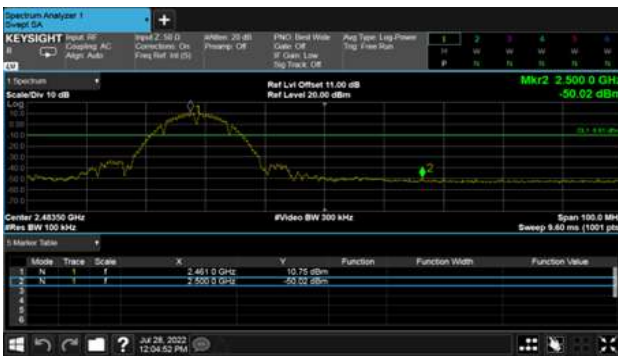
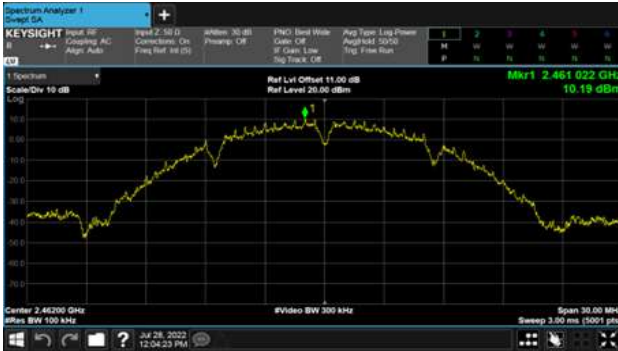
Modulation Type: 802.11b, CH 06





ANT B

Modulation Type: 802.11b, CH 11

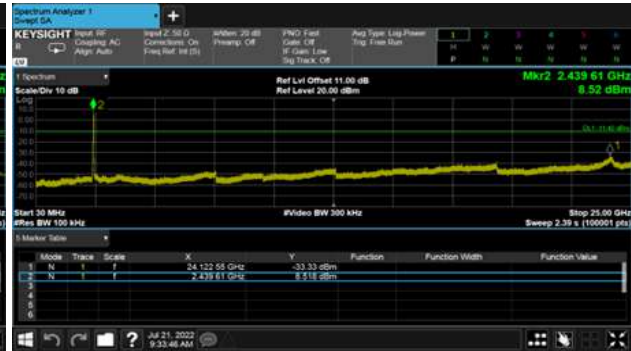
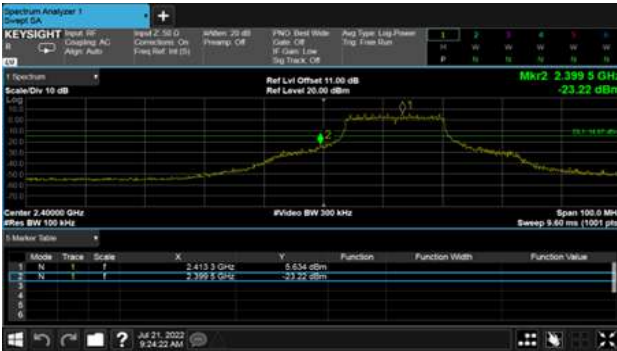
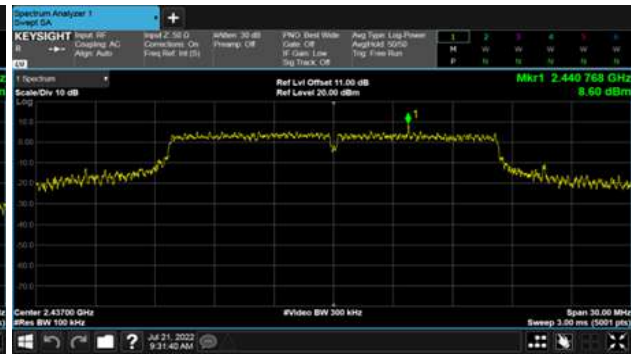
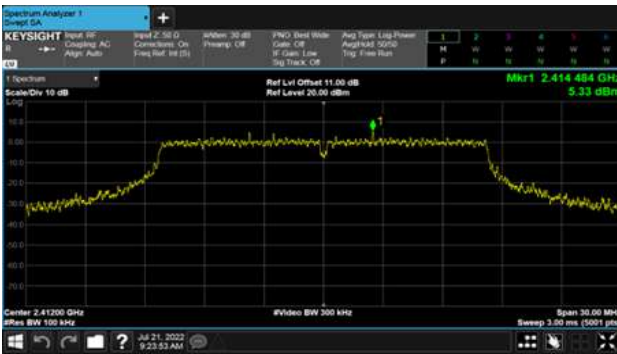




ANT B

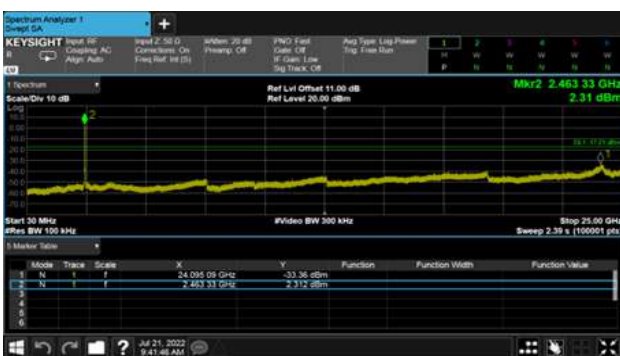
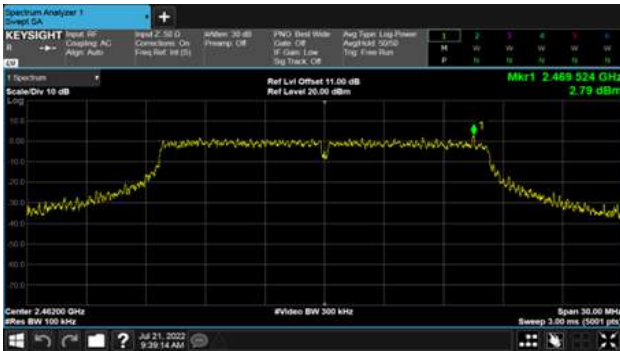
Modulation Type: 802.11g, CH01

Modulation Type: 802.11g, CH06





ANT B
Modulation Type: 802.11g, CH11

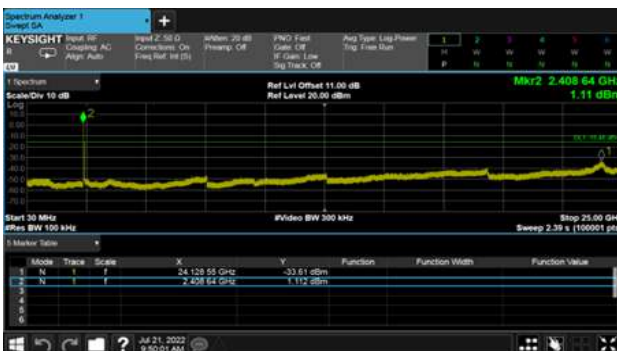
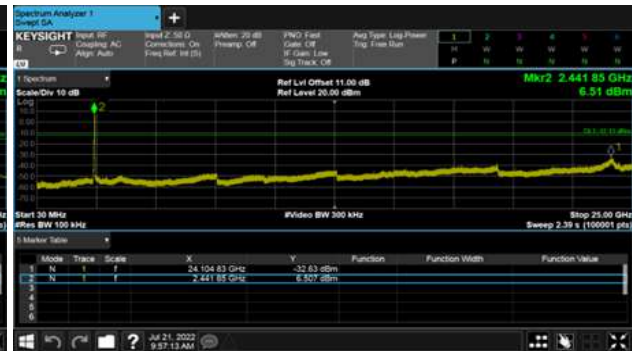
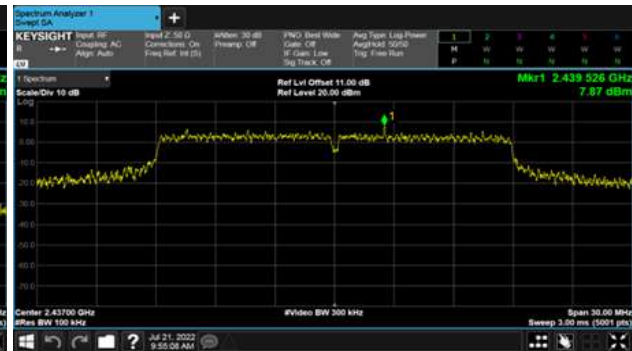
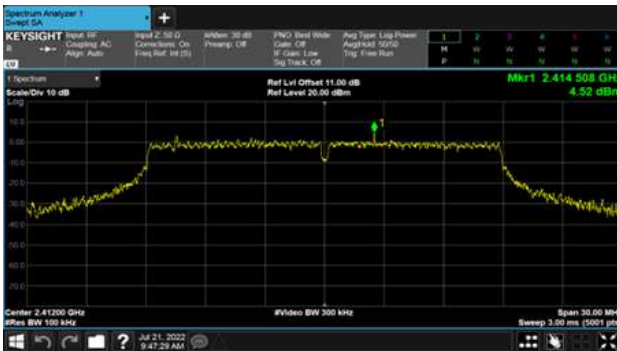




ANT B

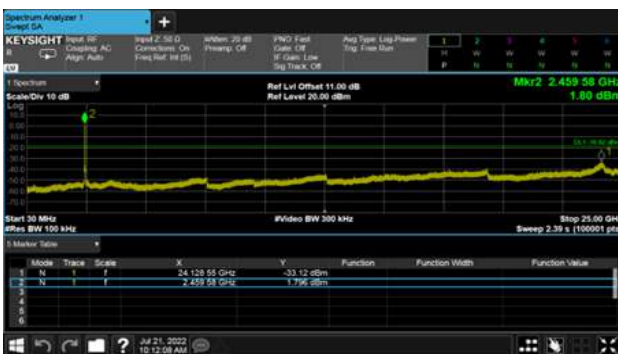
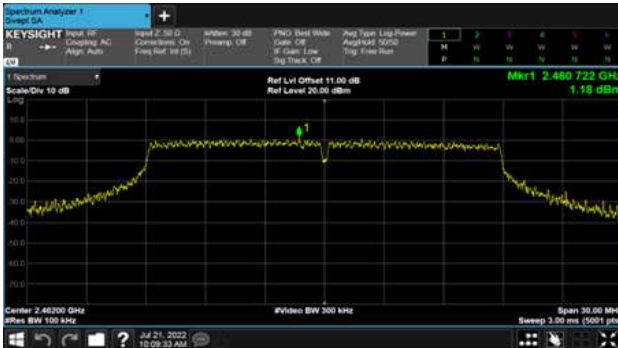
Modulation Type: 802.11n HT20, CH01

Modulation Type: 802.11n HT20, CH06





ANT B
Modulation Type: 802.11n HT20, CH11

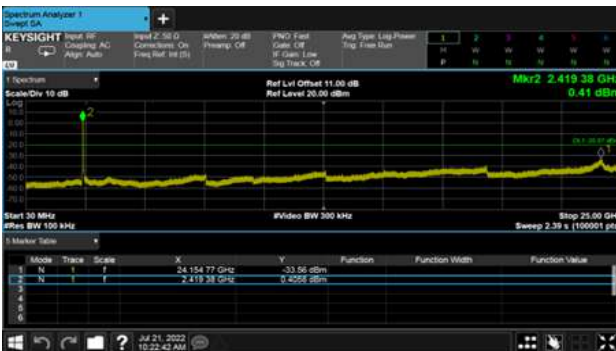
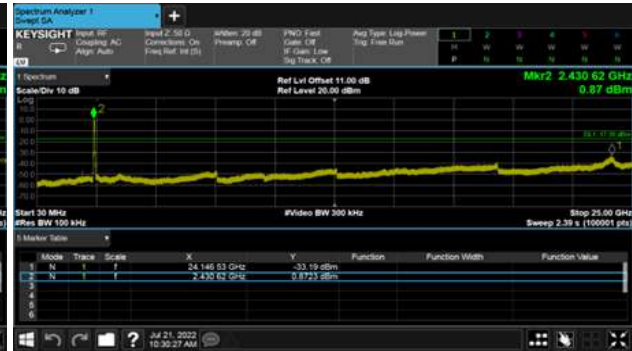
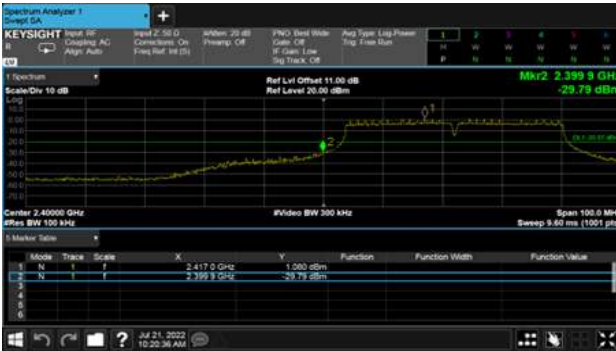
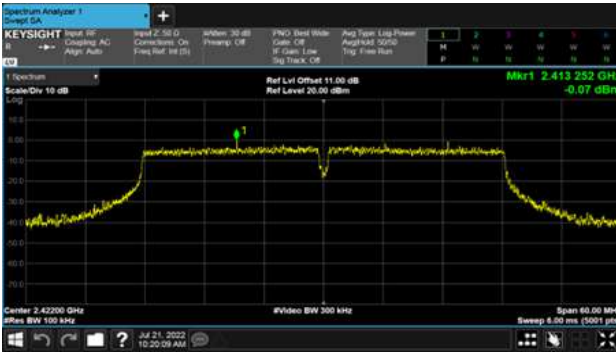




ANT B

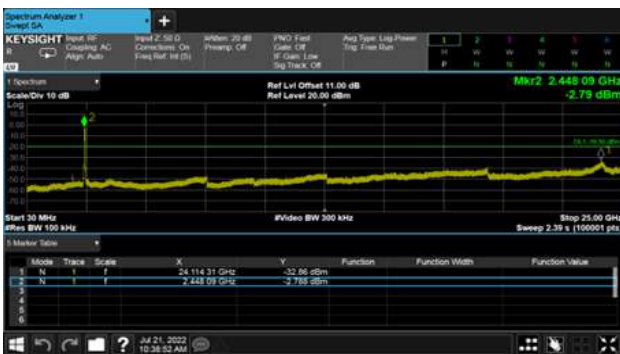
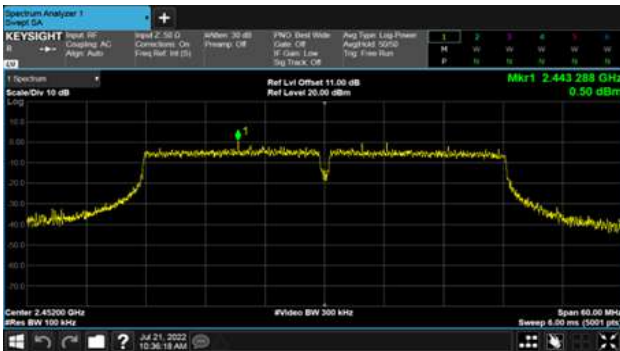
Modulation Type: 802.11n HT40, CH03

Modulation Type: 802.11n HT40, CH06





ANT B
Modulation Type: 802.11n HT40, CH09





8. On Time, Duty Cycle and Measurement methods

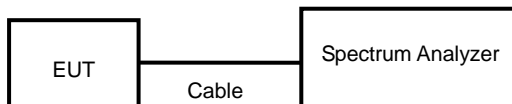
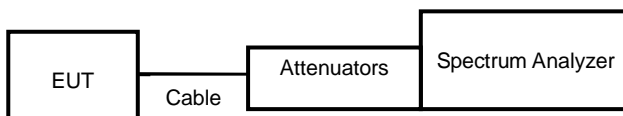
8.1 Test Limit

None; for reporting purposes only.

8.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.6
Zero-Span Spectrum Analyzer Method.

8.3 Test Setup Layout



8.4 Test Result and Data

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11b	12.46	12.51	99.60%
802.11g	2.07	2.15	96.01%
802.11n HT20	5.02	5.10	98.28%
802.11n HT40	2.44	2.53	96.25%



Modulation Type: 802.11b(1Mbps)



Modulation Type: 802.11n HT40(13.5Mbps)



Modulation Type: 802.11g(6Mbps)



Modulation Type: 802.11n HT20(6.5Mbps)





9. 6dB Bandwidth Measurement Data

9.1 Test Limit

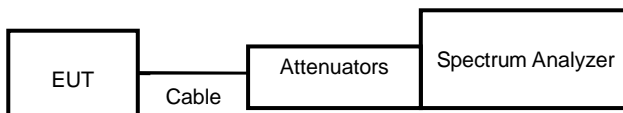
The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.8

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- 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.

9.3 Test Setup Layout



9.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT A	ANT B	
IEEE 802.11b (1Mbps)	01	2412	8.08	8.09	0.5
	06	2437	8.09	8.10	0.5
	11	2462	8.10	8.09	0.5
IEEE 802.11g (6Mbps)	01	2412	16.35	16.37	0.5
	06	2437	16.36	16.39	0.5
	11	2462	16.35	16.38	0.5
IEEE 802.11n HT20 (6.5Mbps)	01	2412	17.60	17.60	0.5
	06	2437	17.59	17.62	0.5
	11	2462	17.60	17.63	0.5
IEEE 802.11n HT40 (13.5Mbps)	03	2422	36.31	36.27	0.5
	06	2437	36.32	36.30	0.5
	09	2452	36.30	35.72	0.5



ANT A
Modulation Type: 802.11b
CH01



Modulation Type: 802.11g
CH01



CH06



CH06



CH11



CH11





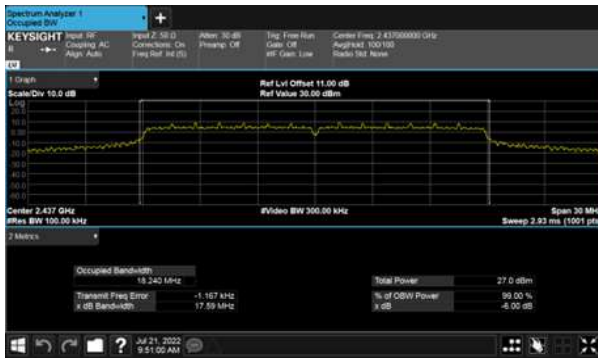
ANT A
Modulation Type: 802.11n HT20
CH01



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

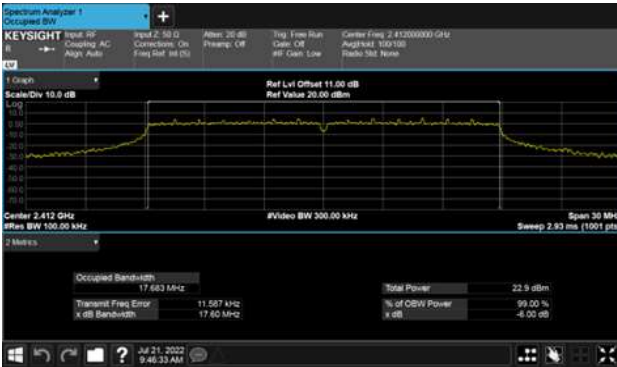


CH11





ANT B
Modulation Type: 802.11n HT20
CH01



Modulation Type: 802.11n HT40
CH03



CH06



CH06



CH11



CH09





10. Maximum Peak and Average Output Power

10.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

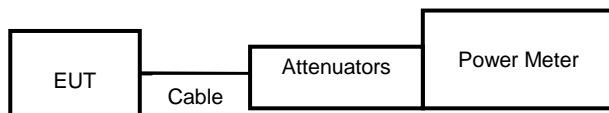
If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

10.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.9.2.3.2

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.

10.3 Test Setup Layout





10.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)		Total PK Power (mW)	Total PK Power (dBm)	Limit (dBm)
			ANT A	ANT B			
IEEE 802.11b (1Mbps)	01	2412	22.16	21.74	24.97	313.717	30.00
	06	2437	21.99	21.61	24.81	303.002	30.00
	11	2462	21.33	21.42	24.39	274.507	30.00
IEEE 802.11g (6Mbps)	01	2412	23.87	23.78	26.84	482.562	30.00
	06	2437	24.33	24.05	27.20	525.116	30.00
	11	2462	22.93	22.94	25.95	393.125	30.00
IEEE 802.11n HT20 (6.5Mbps)	01	2412	22.82	22.66	25.75	375.927	30.00
	06	2437	23.95	23.84	26.91	490.416	30.00
	11	2462	22.09	21.93	25.02	317.763	30.00
IEEE 802.11n HT40 (13.5Mbps)	03	2422	22.63	22.62	25.64	366.041	30.00
	06	2437	23.56	23.33	26.46	442.265	30.00
	09	2452	22.37	22.31	25.35	342.800	30.00

Modulation Type	Channel	Frequency (MHz)	Avg. Power Output (dBm)		Total Avg. Power (mW)	Total Avg. Power (dBm)	Limit (dBm)
			ANT A	ANT B			
IEEE 802.11b (1Mbps)	01	2412	19.95	19.46	22.72	187.163	NA
	06	2437	19.79	19.50	22.66	184.405	NA
	11	2462	19.08	19.14	22.12	162.945	NA
IEEE 802.11g (6Mbps)	01	2412	17.16	16.91	20.05	101.090	NA
	06	2437	19.62	19.48	22.56	180.338	NA
	11	2462	15.89	15.74	18.83	76.312	NA
IEEE 802.11n HT20 (6.5Mbps)	01	2412	16.32	16.21	19.28	84.638	NA
	06	2437	19.49	19.46	22.49	177.228	NA
	11	2462	15.53	15.24	18.40	69.147	NA
IEEE 802.11n HT40 (13.5Mbps)	03	2422	15.15	15.06	18.12	64.797	NA
	06	2437	17.27	17.02	20.16	103.684	NA
	09	2452	15.01	14.89	17.96	62.528	NA

Note: Average power is for reference only.



11. Power Spectral Density

11.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

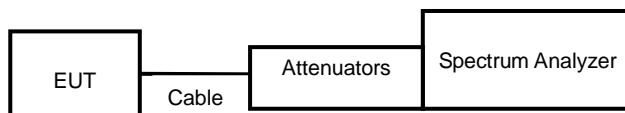
If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

11.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.10

- a. The transmitter output was connected to spectrum analyzer.
- b. The spectrum analyzer’s resolution bandwidth were set at 3kHz RBW and 10KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.
- c. The power spectral density was measured and recorded.

11.3 Test Setup Layout

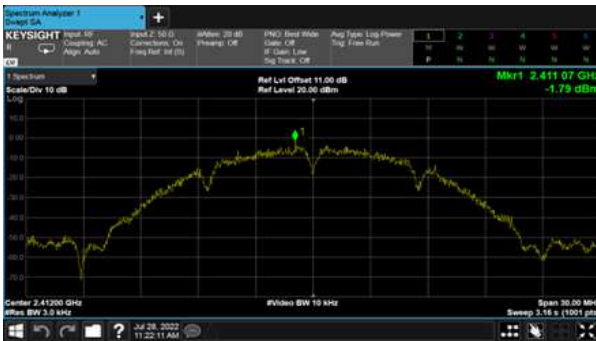


11.4 Test Result and Data

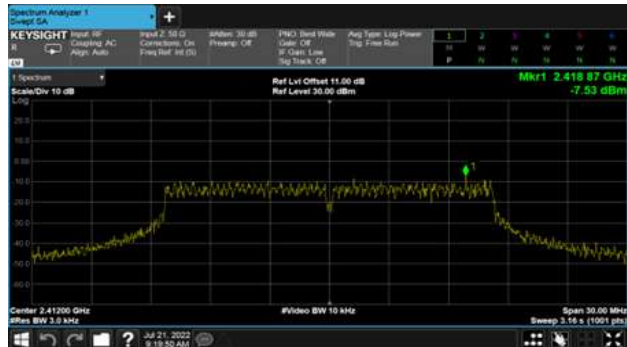
Modulation Type	CH	Freq. (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
IEEE 802.11b (1Mbps)	01	2412	-1.79	-3.55	0.43	0.00	0.43	7.49
	06	2437	-2.65	-2.46	0.46	0.00	0.46	7.49
	11	2462	-4.42	-2.77	-0.51	0.00	-0.51	7.49
IEEE 802.11g (6Mbps)	01	2412	-7.53	-8.07	-4.78	0.00	-4.78	7.49
	06	2437	-5.05	-5.14	-2.08	0.00	-2.08	7.49
	11	2462	-10.25	-9.54	-6.87	0.00	-6.87	7.49
IEEE 802.11n HT20 (6.5Mbps)	01	2412	-10.55	-9.18	-6.80	0.00	-6.80	7.49
	06	2437	-6.65	-7.28	-3.94	0.00	-3.94	7.49
	11	2462	-9.28	-10.37	-6.78	0.00	-6.78	7.49
IEEE 802.11n HT40 (13.5Mbps)	03	2422	-13.98	-13.36	-10.65	0.00	-10.65	7.49
	06	2437	-10.67	-11.6	-8.10	0.00	-8.10	7.49
	09	2452	-14.41	-13.36	-10.84	0.00	-10.84	7.49



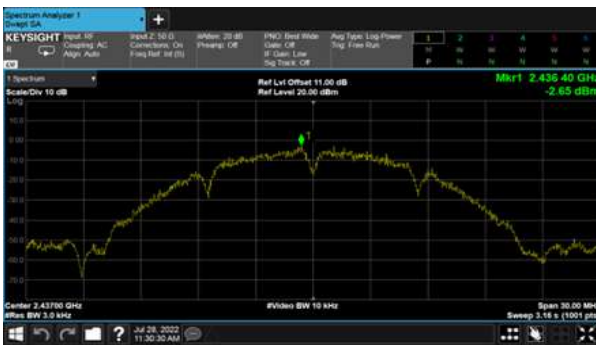
ANT A
Modulation Type: 802.11b
CH01



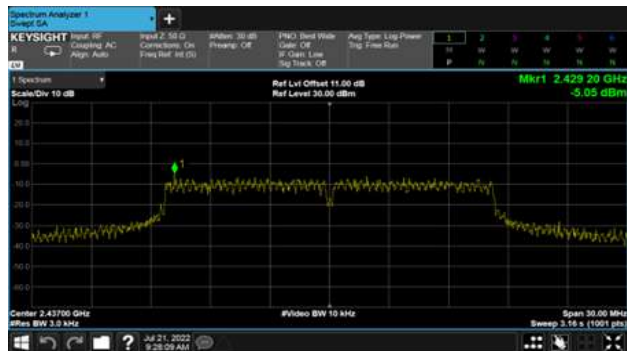
Modulation Type: 802.11g
CH01



CH06



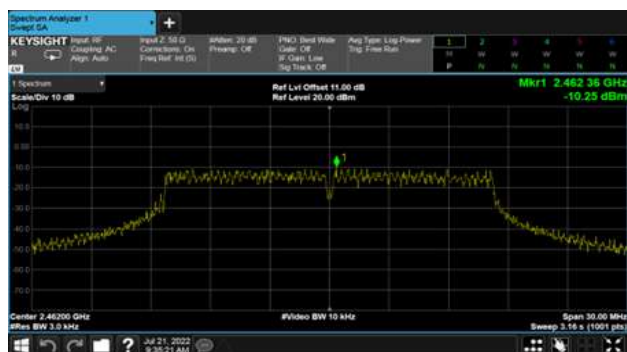
CH06



CH11

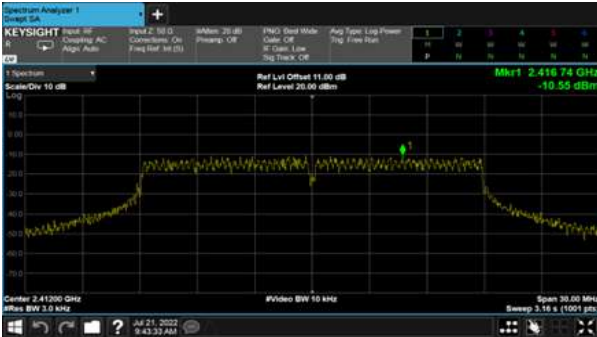


CH11

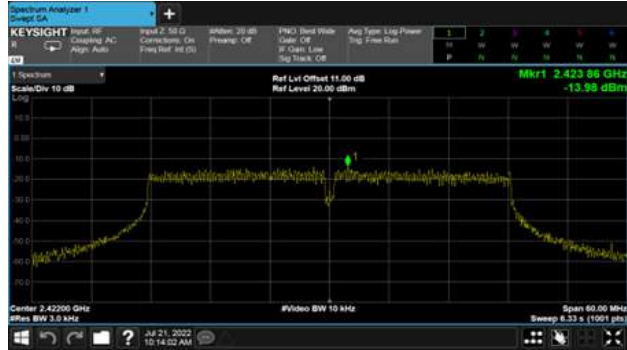




ANT A
Modulation Type: 802.11n HT20
CH01



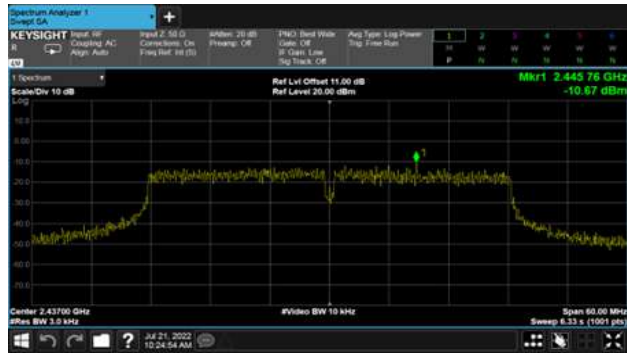
Modulation Type: 802.11n HT40
CH03



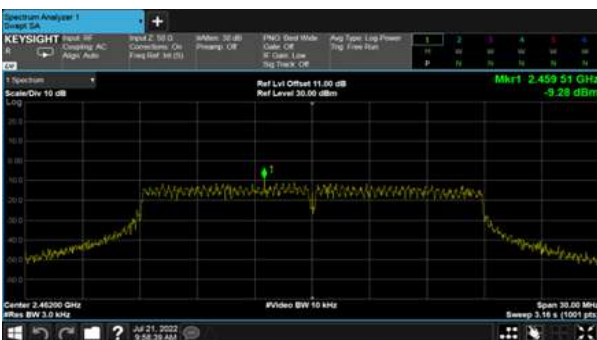
CH06



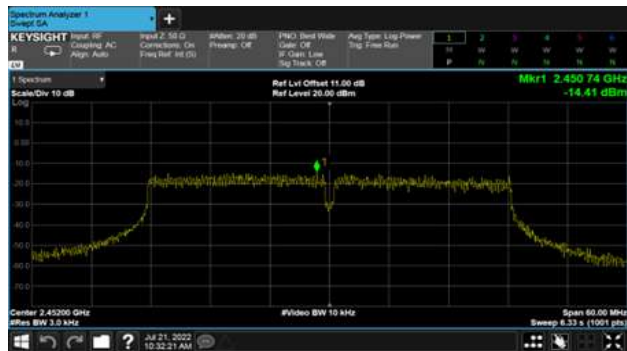
CH06



CH11



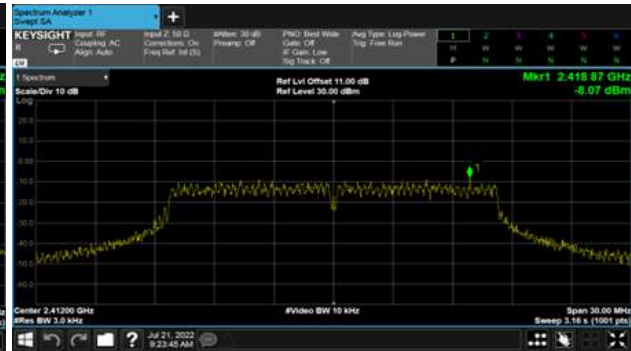
CH09





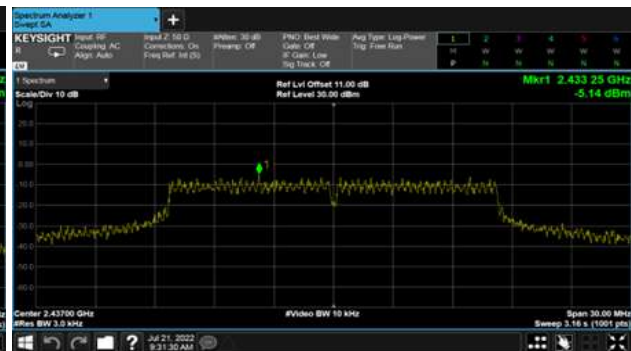
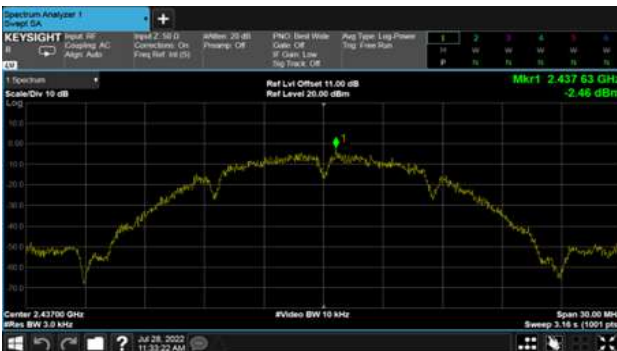
ANT B
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



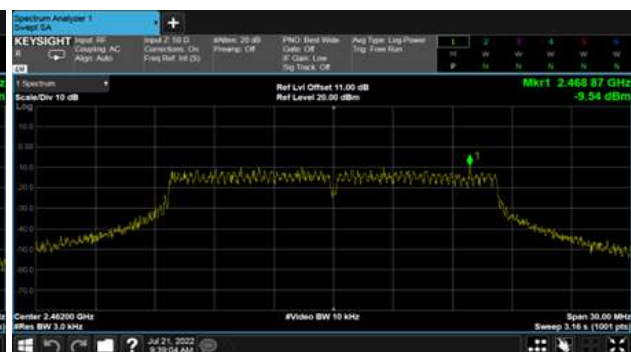
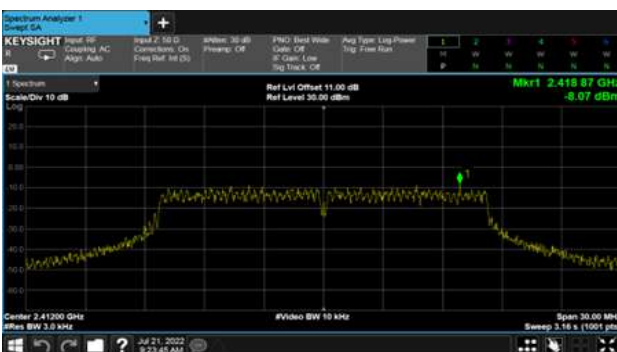
CH06

CH06



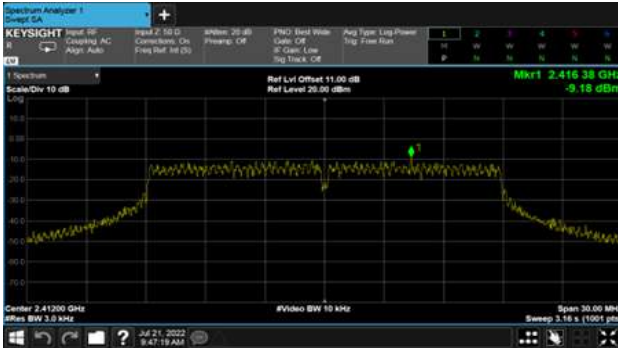
CH11

CH11

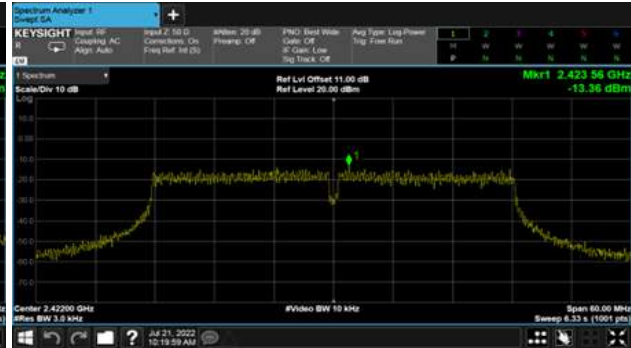




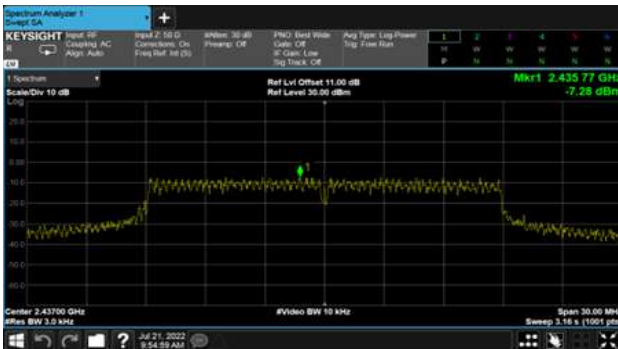
ANT B
Modulation Type: 802.11n HT20
CH01



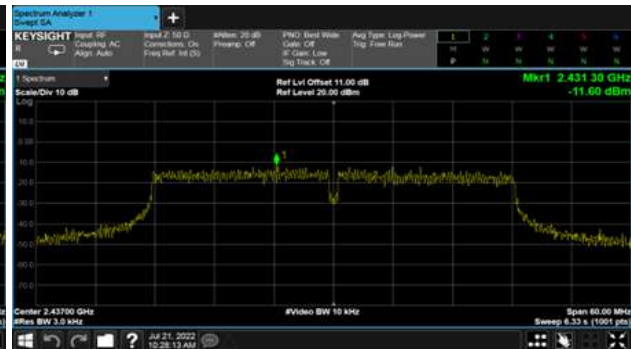
Modulation Type: 802.11n HT40
CH03



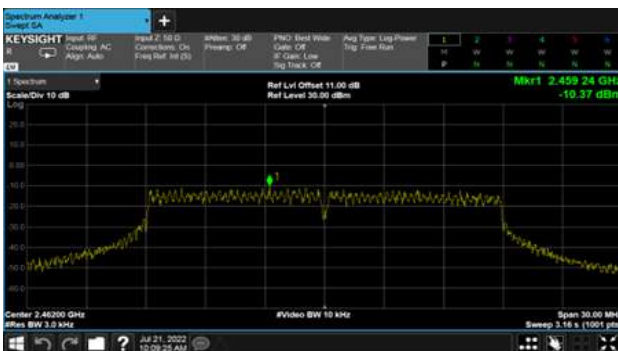
CH06



CH06



CH11



CH09

