



# FCC RADIO TEST REPORT

Applicant : LITE-ON Technology Corp

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Address : Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City,  
23585, Taiwan

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Equipment : Indoor Wi-Fi 6E Access Point/Mesh router

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Model No. : WPXE8326 / WRXE8326 , WAP-2E

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Trade Name : LITEON, PoEWit

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FCC ID : PPQ-WPXE8326

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**I HEREBY CERTIFY THAT :**

The sample was received on Jan. 04, 2023 and the testing was completed on Feb. 08, 2023 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:

Vic Hsiao / Supervisor

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





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# 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)	. 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.

\*This EUT has been also tested and compiled with the requirement of FCC Part 15, Subpart B, recorded in a separate test report(22120269-TEFV01).



## 2. Test Configuration of Equipment under Test

### 2.1 Feature of Equipment under Test

Operation Frequency Range	BT / BLE: 2400-2483.5MHz WLAN:802.11b/g/n/ax: 2400-2483.5MHz 5GHz:802.11a/n/ac/ax: 5150-5250MHz, 5725-5850MHz 6GHz: 802.11ax: 5925MHz~6425MHz, 6425MHz~6525MHz 6525MHz~6875MHz, 6875MHz~7125MHz
Center Frequency Range	BT / BLE: 2402-2480MHz WLAN:802.11b/g/n/ax: 2412-2462MHz 5GHz :802.11a/n/ac/ax: 5180-5240MHz, 5745-5825MHz 6GHz: 802.11ax: 6115MHz~6415MHz, 6435MHz~6515MHz 6535MHz~6855MHz, 6875MHz~7115MHz
Modulation Type	BT: GFSK, $\pi/4$ -DQPSK, 8DPSK BLE: GFSK WLAN: 2.4GHz: 802.11b: CCK, DQPSK, DBPSK 802.11g/n: BPSK, QPSK, 16QAM, 64QAM, 256QAM(TurboQAM) 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 5GHz: 802.11n/a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM,1024QAM 6GHz: 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Modulation Technology	DSSS, OFDM, FHSS, DTS, OFDMA
Data Rate	BT: GFSK: 1Mbps, $\pi/4$ -DQPSK: 2Mbps, 8DPSK: 3Mbps BLE: GFSK: 1Mbps, 2Mbps 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 MCS0 – MCS9, VHT20/40(TurboQAM) 802.11ax: MCS0 – MCS11,HE20/40 5GHz: 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS15, HT20/40 802.11ac: MCS0 – MCS9, VHT20/40/80 802.11ax: MCS0 – MCS11, HE20/40/80 6GHz: 802.11ax: MCS0 – MCS11, HE20/40/80/160
Antenna Type	PCB Antenna
Antenna Gain	For BT / BLE: 2400-2500MHz:ANT 5:4.6dBi For WLAN: 2400-2500MHz: ANT 1: 2.80dBi, ANT 2: 3.10dBi 5150-5250MHz: ANT 1: 3.80dBi, ANT 2: 3.60dBi 5725-5850MHz: ANT 1: 2.90dBi, ANT 2: 3.70dBi 6115~6415MHz:ANT 3: 4.50dBi, ANT 4: 4.10dBi 6435~6515MHz: ANT 3: 4.10dBi, ANT 4: 4.50dBi 6535~6855MHz: ANT 3: 4.50dBi, ANT 4: 4.50dBi 6875~7115MHz: ANT 3: 4.00dBi, ANT 4: 3.70dBi



Note:

- 1. WLAN 2.4G 802.11n Support TurboQAM.
- 2. EUT support TPC Function.
- 3. EUT support AP/ bridge mode.
- 4. 802.11ax support beamforming Function.
- 5. EUT Indoor access point
- 6. For more details, please refer to the User’s manual of the EUT.

The differences between all model numbers as follow:

Model	Trade name	PoE
WPXE8326	LITEON	Yes
WRXE8326	LITEON	No
WAP-2E	PoEWit	Yes

Note: After engineering evaluation, WPXE8326 for worst case and for presentation of report data



### 2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT20, VHT20, 802.11ax HE20 (2412MHz-2462MHz)

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

802.11n HT40, VHT40, 802.11ax HE40 (2422MHz-2452MHz)

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

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





### 2.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- b. The complete test system included remote workstation and EUT for RF test. The remote workstation included Notebook.
- c. An executive program, " QSPR V 5.0-00202" under Windows OS system was executed to transmit and receive data via WLAN. (Non BeamForming)
- d. An executive program, " Command" under Windows OS system was executed to transmit and receive data via WLAN. (BeamForming)
- e. 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) , Power from Adapter, Non BeamForming
2	802.11g (6Mbps) , Power from Adapter ,Non BeamForming
3	802.11ax HE20 (7.3Mbps) , Power from Adapter ,Non BeamForming
4	802.11ax HE40 (14.6Mbps) , Power from Adapter ,Non BeamForming
5	802.11ax HE20 (7.3Mbps) , Power from Adapter , BeamForming
6	802.11ax HE40 (14.6Mbps) , Power from Adapter , BeamForming
7	802.11b (1Mbps) , Power from PoE, Non BeamForming
8	802.11g (6Mbps) , Power from PoE ,Non BeamForming
9	802.11ax HE20 (7.3Mbps) , Power from PoE ,Non BeamForming
10	802.11ax HE40 (14.6Mbps) , Power from PoE ,Non BeamForming
11	802.11ax HE20 (7.3Mbps) , Power from PoE , BeamForming
12	802.11ax HE40 (14.6Mbps) , Power from PoE , BeamForming
caused "Test Mode 3,6" generated the worst case, it was reported as the final data.	
Radiation Emissions (BELOW 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps) , Power from Adapter, Non BeamForming
2	802.11g (6Mbps) , Power from Adapter ,Non BeamForming
3	802.11ax HE20 (7.3Mbps) , Power from Adapter ,Non BeamForming
4	802.11ax HE40 (14.6Mbps) , Power from Adapter ,Non BeamForming
5	802.11ax HE20 (7.3Mbps) , Power from Adapter , BeamForming
6	802.11ax HE40 (14.6Mbps) , Power from Adapter , BeamForming
7	802.11b (1Mbps) , Power from PoE, Non BeamForming
8	802.11g (6Mbps) , Power from PoE ,Non BeamForming
9	802.11ax HE20 (7.3Mbps) , Power from PoE ,Non BeamForming
10	802.11ax HE40 (14.6Mbps) , Power from PoE ,Non BeamForming
11	802.11ax HE20 (7.3Mbps) , Power from PoE , BeamForming
12	802.11ax HE40 (14.6Mbps) , Power from PoE , BeamForming
caused "Test Mode 3,6" 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, Non BeamForming
2	802.11g (6Mbps) , Power from Adapter ,Non BeamForming
3	802.11ax HE20 (7.3Mbps) , Power from Adapter ,Non BeamForming
4	802.11ax HE40 (14.6Mbps) , Power from Adapter ,Non BeamForming
5	802.11ax HE20 (7.3Mbps) , Power from Adapter , BeamForming
6	802.11ax HE40 (14.6Mbps) , Power from Adapter , BeamForming
caused "Test Mode 1~6" generated the worst case, they were reported as the final data.	

Note:1. There are two kinds of test voltage: AC 120V / 60Hz and AC 240V / 60Hz.  
 For AC Power Line Conducted Emission,& Radiation Emissions (BELOW 1GHz)  
 & Radiated Spurious Emission(1GHz ~ 25GHz) , AC 120V / 60Hz is worst case.



The EUT incorporates a MIMO function

Modulation Type	TX CONFIGURATION
802.11b	2TX
802.11g	2TX
802.11n HT20	2TX
802.11n HT40	2TX
802.11n HT20(TurboQAM)	2TX
802.11n HT40(TurboQAM)	2TX
802.11ax HE20	2TX
802.11ax HE40	2TX



## 2.4 Description of Test System

### Non BeamForming

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	ASUS	P2430U	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	ASUS	P2430U	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
RJ45 Cable*2	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
POE	UBIQUITI	GP-V480-032G	N/A	0.6m / NS

### BeamForming

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
RJ45 Cable*3	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
POE	UBIQUITI	GP-V480-032G	N/A	0.6m / NS
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook*2	ASUS	P2430U	N/A	Adapter / 1.8m / NS
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
Notebook	Lenovo	S1GL2W	N/A	Adapter / 1.8m / NS
RJ45 Cable*3	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
Adaptor	APD	WA-24Q12FU	1.5m / NS	N/A
POE	UBIQUITI	GP-V480-032G	N/A	0.6m / NS

**2.5 General Information of Test**

Test Site	<b>CerpPASS Technology Corporation Test Laboratory</b> Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881	
	FCC	TW1439, TW1079
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication test C-4663 for Conducted emission test 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.	

**Non BeamForming**

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2023/01/09~2023/02/08	22~26.7°C / 45~64%	Leon Huang
Radiated Emissions	3M02-NK	2023/1/11~2023/1/27	15~23°C / 44~51%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2023/02/02	21°C / 57%	Leon Huang

**BeamForming**

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2023/01/28~2023/02/03	23.8~25.2°C / 49~50%	Leon Huang
Radiated Emissions	3M02-NK	2023/1/13~2023/1/31	15~23°C / 43~51%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2023/02/02	21°C / 57%	Leon Huang



## 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)	±3.28dB
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 (Non BeamForming)	Schwarzbeck	VULB9168	275	2022/11/18	2023/11/17
Bilog Antenna (BeamForming)	Schwarzbeck	VULB9168	369	2022/04/22	2023/04/21
Active Loop Antenna	EMCO	6507	40855	2022/05/25	2023/05/24
Horn Antenna	EMCO	3115	31601	2022/10/12	2023/10/11
Horn Antenna	EMCO	3116	31970	2022/03/18	2023/03/17
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2022/07/05	2023/07/04
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	101329	2022/07/20	2023/07/19
Preamplifier	Agilent	8449B	3008A01954	2022/03/17	2023/03/16
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2022/11/11	2023/11/10
Preamplifier	EM Electronics corp.	EM330	60660	2022/04/08	2023/04/07
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2022/09/06	2023/09/05
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1315	2022/03/21	2023/03/20
Cable-0.5m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	28420/2	2022/4/9	2023/04/08
Cable-3m(30M-40G)	HUBER SUHNER	SUCOFLEX 102	MY2608/2	2022/4/9	2023/04/08
Cable-0.5m(1G-40G)	Rapidtek	40GHZ 50CM	38MS-38MS50314	2022/4/9	2023/04/08
Cable-3m(1G-40G)	Rapidtek	40GHZ 300CM	38MS-38MS300314	2022/4/9	2023/04/08
Cable-8m(10M-26.5G)	HUBER SUHNER	SF126E	587398	2022/10/7	2023/10/06
Cable-3m(10M-26.5G)	HUBER SUHNER	SF126E	587399	2022/10/7	2023/10/06
Cable-1m(10M-40G)	HUBER SUHNER	SF102	804398/2	2022/10/11	2023/10/10
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	2022/11/29	2023/11/28
Attenuator	KEYSIGHT	8491B	MY39250703	2022/04/12	2023/04/11
Power Meter	Anritsu	ML2495A	1224005	2022/04/12	2023/04/11
Power Sensor	Anritsu	MA2411B	1207295	2022/04/12	2023/04/11



<b>Test Item</b>	AC Power Line Conducted Emission				
<b>Test Site</b>	CON02-NK				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Serial No</b>	<b>Calibration Date</b>	<b>Valid Date</b>
EMI Receiver	ROHDE & SCHWARZ	ESCI	100821	2022/12/09	2023/12/08
TWO-LINE V-NETWORK	ROHDE & SCHWARZ	ENV216	102185	2022/08/24	2022/08/17
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101933	2022/09/29	2023/09/28
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130605	2022/09/06	2023/09/05
E3	AUDIX	v8.2014-8-6	RK-000536	NA	NA



### 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	PCB Antenna
Antenna Gain	2400-2500MHz: ANT 1: 2.80dBi, ANT 2: 3.10dBi

##### (Non-Beamforming)

For Power directional gain=  $G_{ant}= 3.10\text{dBi}$

For PSD directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.96 \text{ dBi}$

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

##### (Beamforming)

For Power directional gain=  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]=5.96 \text{ dBi}$

For PSD directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 5.96 \text{ dBi}$





## 5. Test of AC Power Line Conducted Emission

### 5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.10-2013. 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 $\mu$ V)	Average (dB $\mu$ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

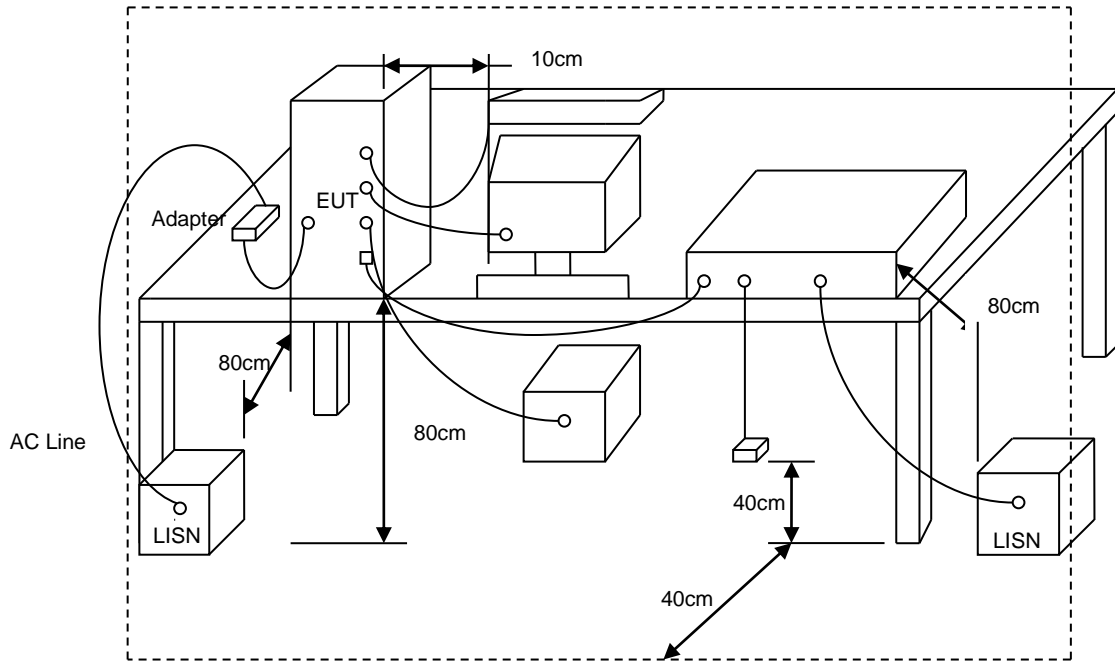
\*Decreases with the logarithm of the frequency.

### 5.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



### 5.3 Typical Test Setup

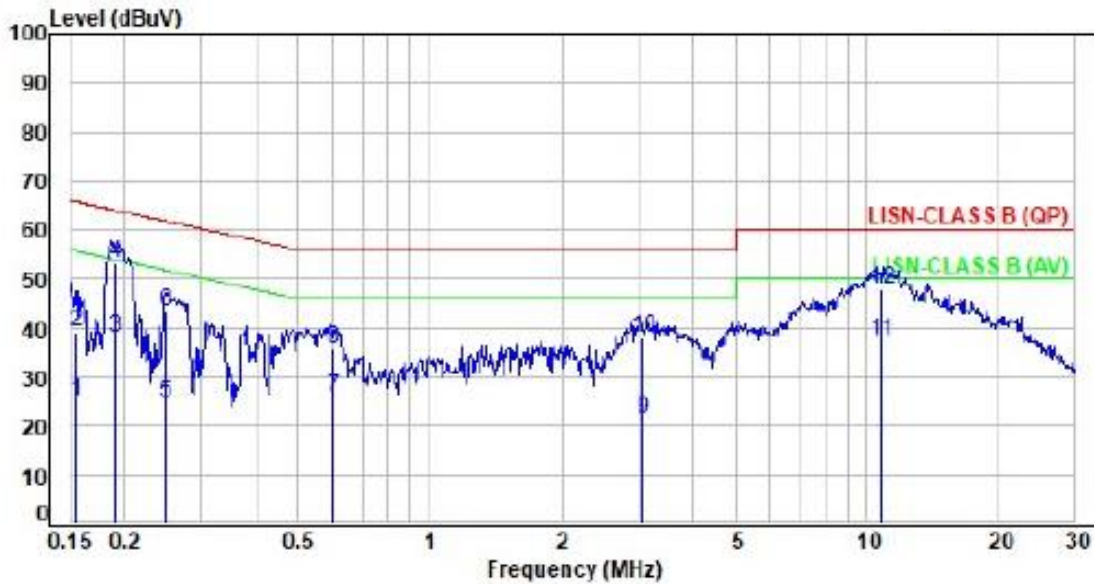




### 5.4 Test Result and Data

Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: LINE
Test Mode	: Mode 3		:



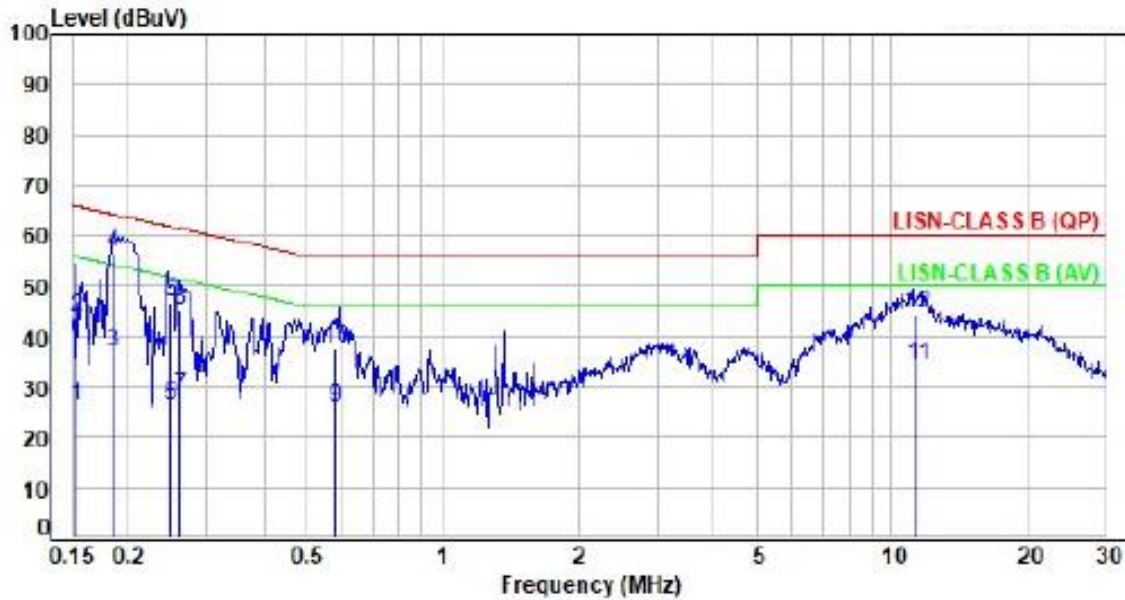
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	19.51	5.63	25.14	55.74	-30.60	Average	P
2	0.15	19.51	19.56	39.09	65.74	-26.65	QP	P
3	0.19	19.49	18.54	38.03	53.99	-15.96	Average	P
4	0.19	19.49	33.90	53.39	63.99	-10.60	QP	P
5	0.25	19.49	5.30	24.79	51.82	-27.03	Average	P
6	0.25	19.49	23.85	43.34	61.82	-18.48	QP	P
7	0.60	19.52	6.17	25.69	46.00	-20.31	Average	P
8	0.60	19.52	16.29	35.81	56.00	-20.19	QP	P
9	3.00	19.65	1.57	21.22	46.00	-24.78	Average	P
10	3.00	19.65	18.19	37.84	56.00	-18.16	QP	P
11	10.77	19.84	17.53	37.37	50.00	-12.63	Average	P
12	10.77	19.84	28.14	47.98	60.00	-12.02	QP	P

Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: NEUTRAL
Test Mode	: Mode 3		:



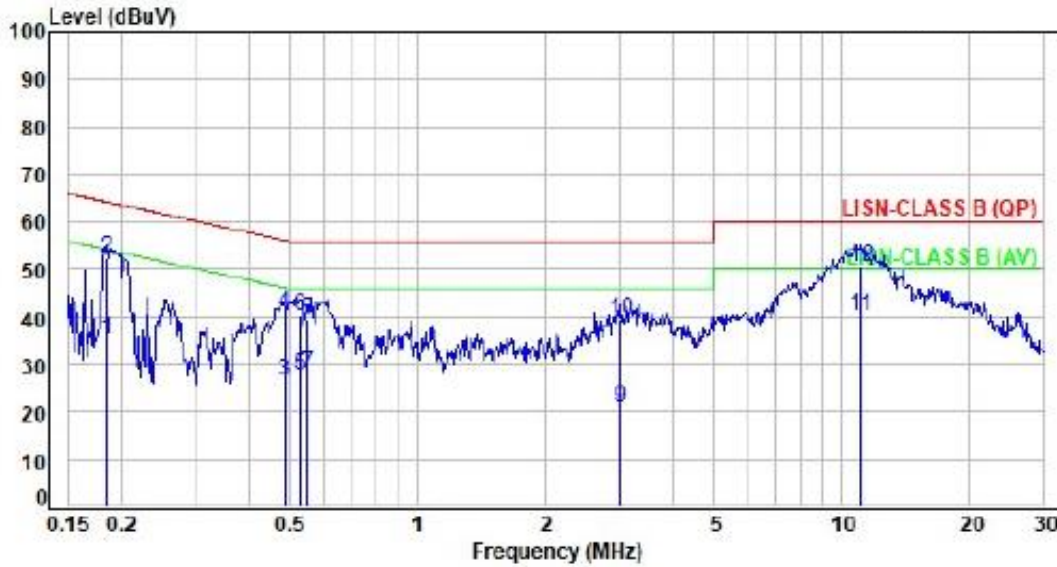
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.15	19.51	6.90	26.41	55.81	-29.40	Average	P
2	0.15	19.51	24.38	43.89	65.81	-21.92	QP	P
3	0.19	19.50	17.53	37.03	54.23	-17.20	Average	P
4	0.19	19.50	37.20	56.70	64.23	-7.53	QP	P
5	0.25	19.50	6.61	26.11	51.84	-25.73	Average	P
6	0.25	19.50	27.35	46.85	61.84	-14.99	QP	P
7	0.26	19.50	8.60	28.10	51.45	-23.26	Average	P
8	0.26	19.50	25.93	45.43	61.45	-16.02	QP	P
9	0.58	19.51	6.20	25.71	46.00	-20.29	Average	P
10	0.58	19.51	18.24	37.75	56.00	-18.25	QP	P
11	11.37	19.83	14.32	34.15	50.00	-15.85	Average	P
12	11.37	19.83	24.81	44.64	60.00	-15.36	QP	P

Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: LINE
Test Mode	: Mode 6		:



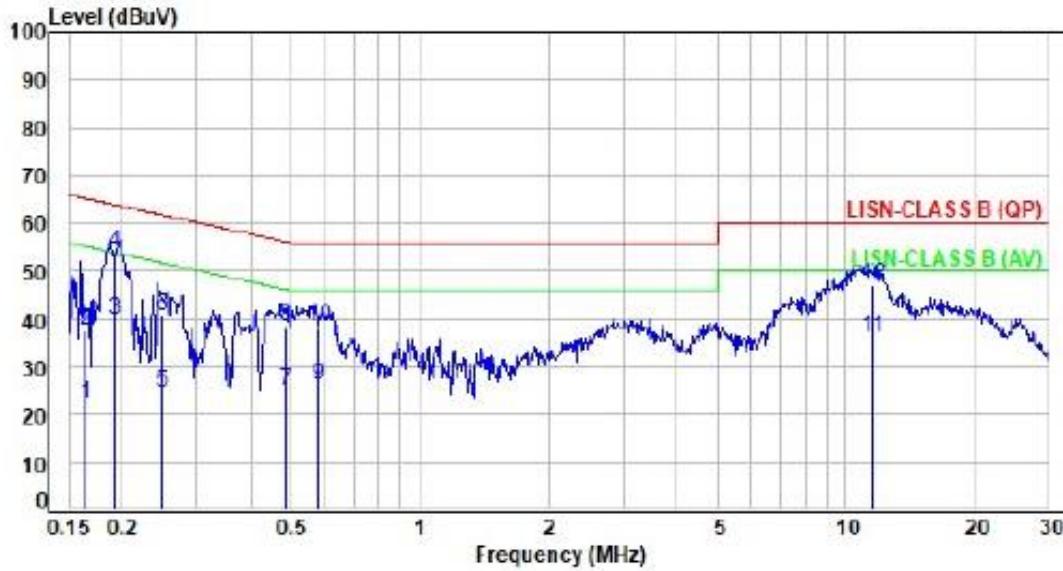
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.18	19.50	15.85	35.35	54.28	-18.93	Average	P
2	0.18	19.50	33.01	52.51	64.28	-11.77	QP	P
3	0.49	19.51	7.18	26.69	46.23	-19.54	Average	P
4	0.49	19.51	21.26	40.77	56.23	-15.46	QP	P
5	0.53	19.51	8.30	27.81	46.00	-18.19	Average	P
6	0.53	19.51	20.86	40.37	56.00	-15.63	QP	P
7	0.55	19.51	8.57	28.08	46.00	-17.92	Average	P
8	0.55	19.51	20.05	39.56	56.00	-16.44	QP	P
9	3.02	19.65	1.34	20.99	46.00	-25.01	Average	P
10	3.02	19.65	19.90	39.55	56.00	-16.45	QP	P
11	11.08	19.84	20.28	40.12	50.00	-9.88	Average	P
12	11.08	19.84	30.81	50.65	60.00	-9.35	QP	P

Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: NEUTRAL
Test Mode	: Mode 6		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.16	19.51	2.96	22.47	55.27	-32.80	Average	P
2	0.16	19.51	18.11	37.62	65.27	-27.65	QP	P
3	0.19	19.50	20.35	39.85	53.92	-14.07	Average	P
4	0.19	19.50	34.34	53.84	63.92	-10.08	QP	P
5	0.25	19.50	5.40	24.90	51.85	-26.95	Average	P
6	0.25	19.50	21.33	40.83	61.85	-21.02	QP	P
7	0.48	19.51	5.61	25.12	46.25	-21.13	Average	P
8	0.48	19.51	19.03	38.54	56.25	-17.71	QP	P
9	0.58	19.51	6.62	26.13	46.00	-19.87	Average	P
10	0.58	19.51	18.87	38.38	56.00	-17.62	QP	P
11	11.53	19.83	16.20	36.03	50.00	-13.97	Average	P
12	11.53	19.83	27.36	47.19	60.00	-12.81	QP	P

Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



## 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:

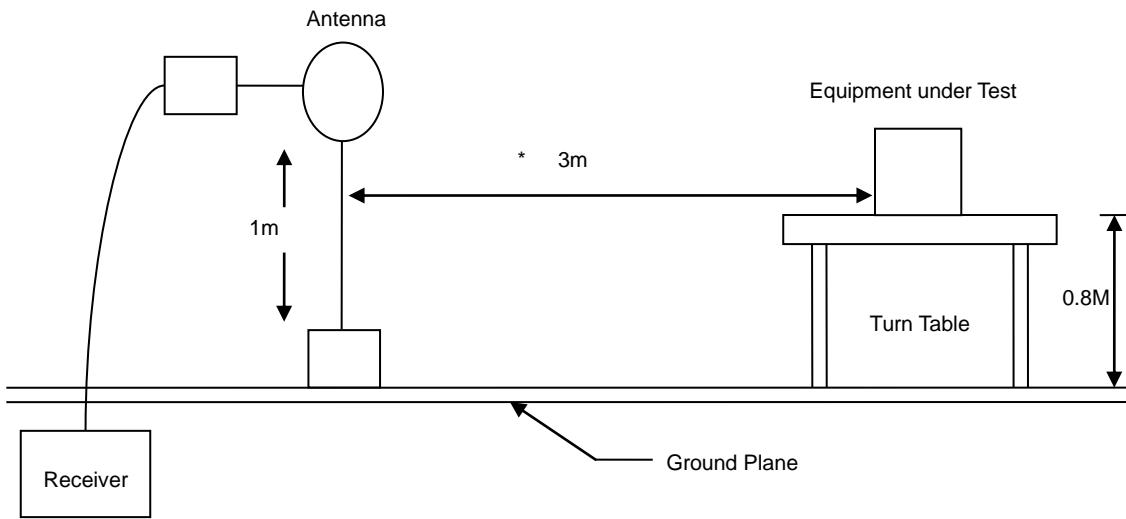
- 1.The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions such that emissions from the EUT are maximized.  
(Z-AXIS is the worst.)
- 2.Due to the test software function limit the operation band setting(200dBuV/m).  
There's no corresponding limitation in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



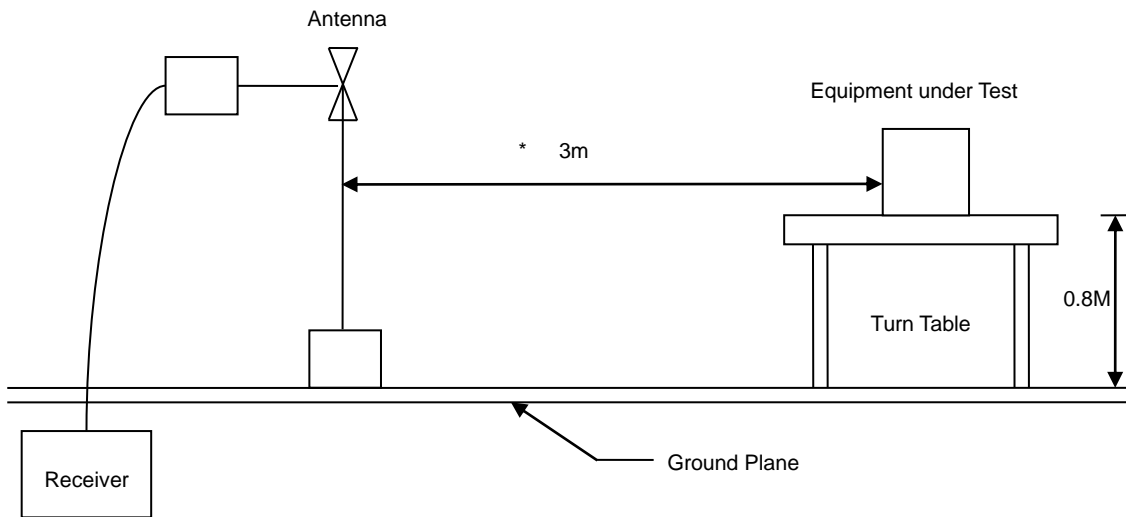


### 6.3 Typical Test Setup

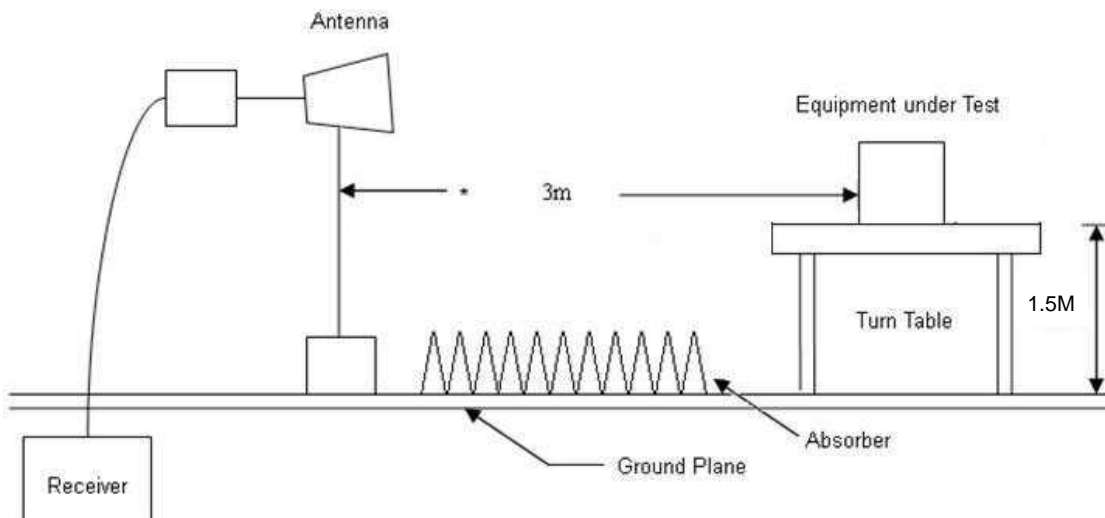
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup





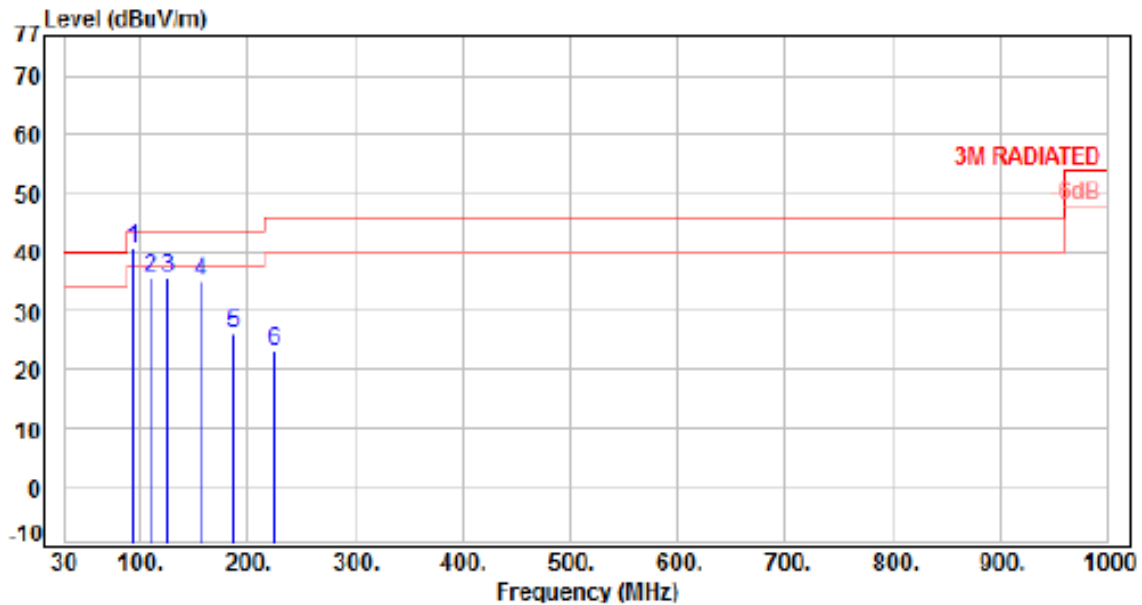
### 6.4 Test Result and Data (9KHz ~ 30MHz)

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

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

Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: LINE
Test Mode	: Mode 3		:



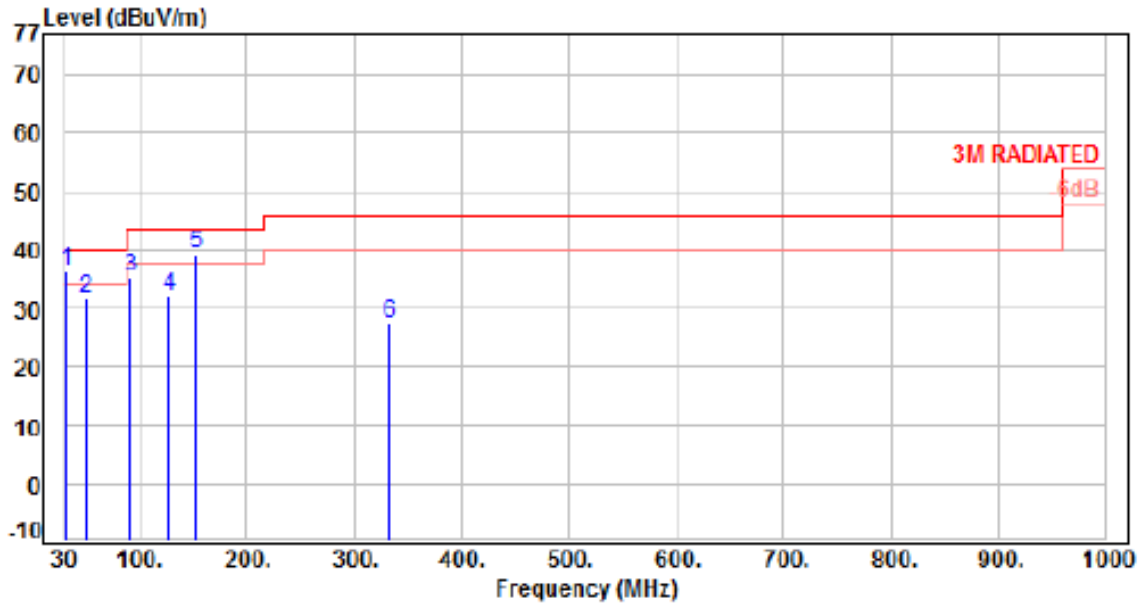
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	94.02	-15.41	55.86	40.45	43.50	-3.05	Peak	100	360	P
2	109.54	-13.18	48.91	35.73	43.50	-7.77	Peak	100	360	P
3	125.06	-12.22	47.86	35.64	43.50	-7.86	Peak	100	360	P
4	155.10	-9.99	44.99	35.00	43.50	-8.50	Peak	100	360	P
5	187.14	-12.34	38.35	26.01	43.50	-17.49	Peak	100	360	P
6	224.00	-12.80	35.83	23.03	46.00	-22.97	Peak	100	360	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: NEUTRAL
Test Mode	: Mode 3		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	31.94	-11.21	47.48	36.27	40.00	-3.73	Peak	100	360	P
2	49.40	-10.00	41.60	31.60	40.00	-8.40	Peak	100	360	P
3	92.08	-15.71	51.19	35.48	43.50	-8.02	Peak	100	360	P
4	127.97	-11.82	43.95	32.13	43.50	-11.37	Peak	100	360	P
5	152.22	-9.93	49.22	39.29	43.50	-4.21	Peak	100	360	P
6	332.64	-8.10	35.44	27.34	46.00	-18.66	Peak	100	360	P

Note: Level=Reading+Factor

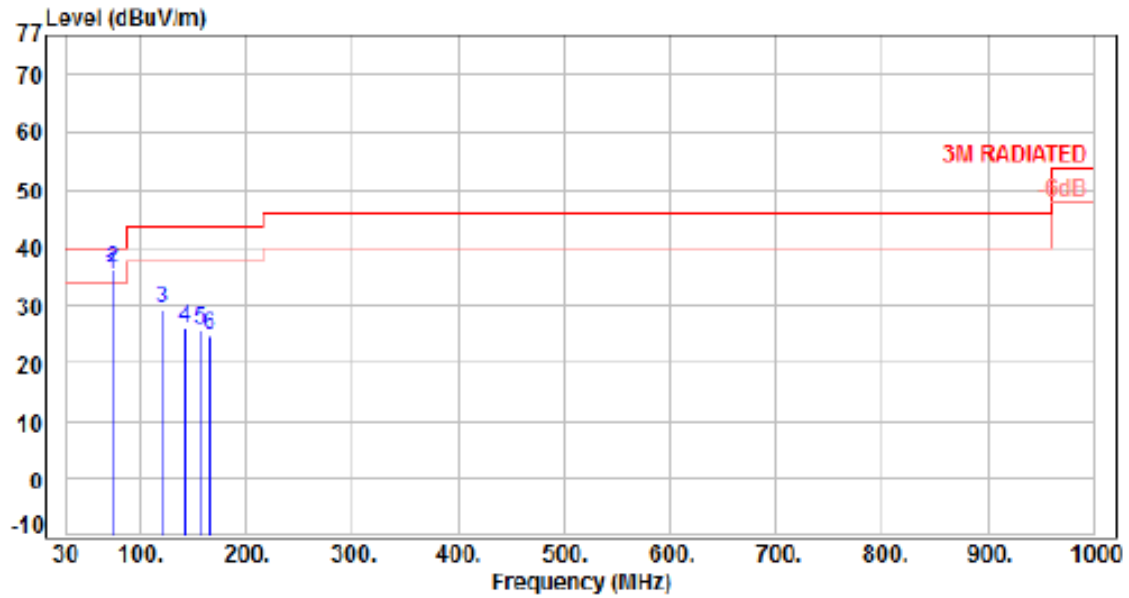
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: LINE
Test Mode	: Mode 6		:



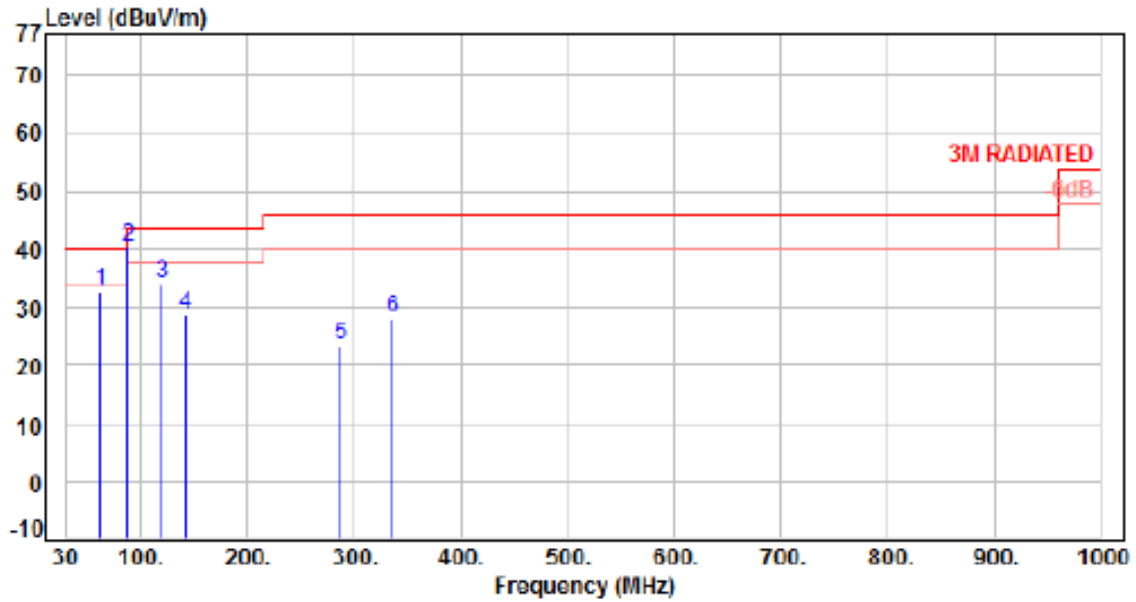
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	72.68	-12.68	48.13	35.45	40.00	-4.55	Peak	100	360	P
2	73.65	-12.98	49.33	36.35	40.00	-3.65	Peak	100	360	P
3	121.18	-12.61	41.93	29.32	43.50	-14.18	Peak	100	360	P
4	142.52	-10.43	36.39	25.96	43.50	-17.54	Peak	100	360	P
5	156.10	-9.99	35.58	25.59	43.50	-17.91	Peak	100	360	P
6	165.80	-10.14	35.02	24.88	43.50	-18.62	Peak	100	360	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: NEUTRAL
Test Mode	: Mode 6		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	62.98	-11.12	43.80	32.68	40.00	-7.32	Peak	100	0	P
2	88.20	-15.66	56.10	40.44	43.50	-3.06	Peak	100	0	P
3	121.18	-12.61	46.50	33.89	43.50	-9.61	Peak	100	0	P
4	142.52	-10.43	39.12	28.69	43.50	-14.81	Peak	100	0	P
5	288.02	-9.40	32.76	23.36	46.00	-22.64	Peak	100	0	P
6	336.52	-8.06	36.12	28.06	46.00	-17.94	Peak	100	0	P

Note: Level=Reading+Factor

Margin=Level-Limit

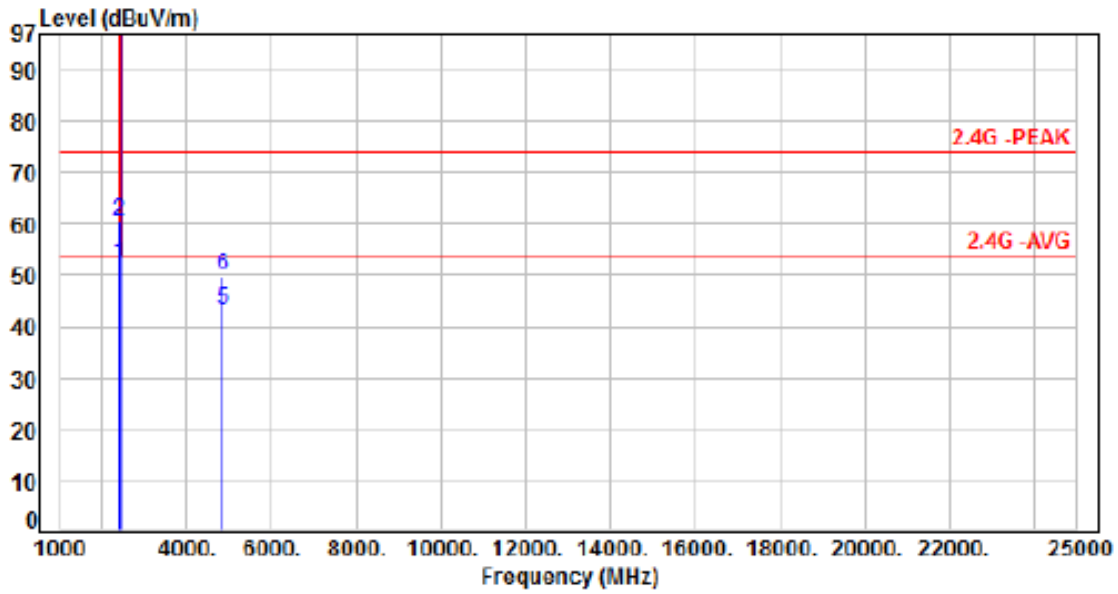
Factor=Antenna Factor + cable loss - Amplifier Factor



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

Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH01		:



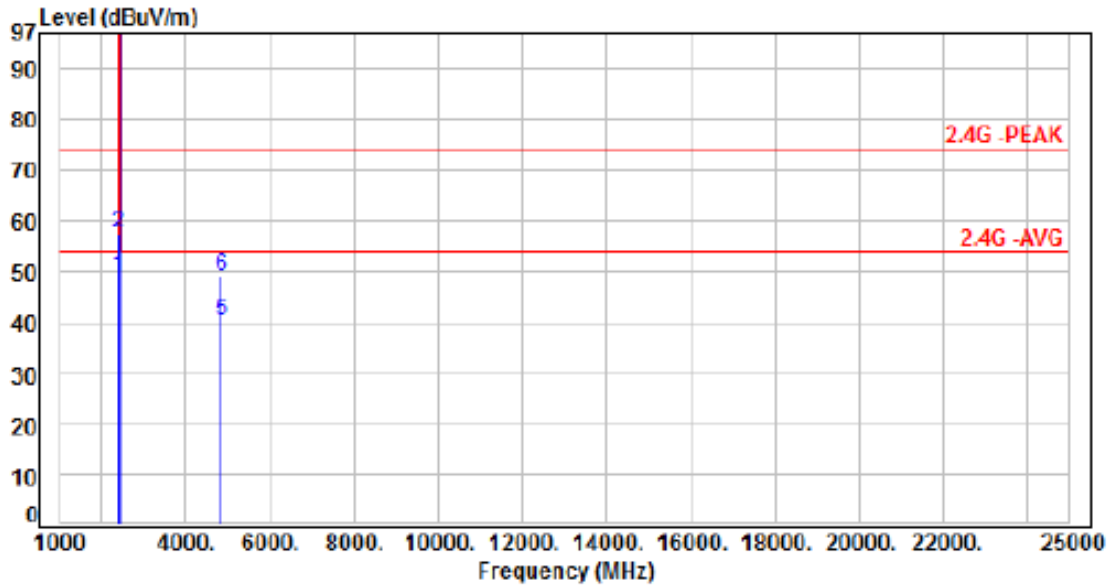
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	55.59	52.02	54.00	-1.98	Average	302	255	P
2	2390.00	-3.57	64.05	60.49	74.00	-13.51	Peak	302	255	P
3	2412.00	-3.53	118.73	115.20	200.00	-84.80	Average	302	255	P
4	2412.00	-3.53	120.88	117.35	200.00	-82.65	Peak	302	255	P
5	4824.00	4.84	38.17	43.01	54.00	-10.99	Average	306	124	P
6	4824.00	4.84	44.95	49.80	74.00	-24.20	Peak	306	124	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH01		:



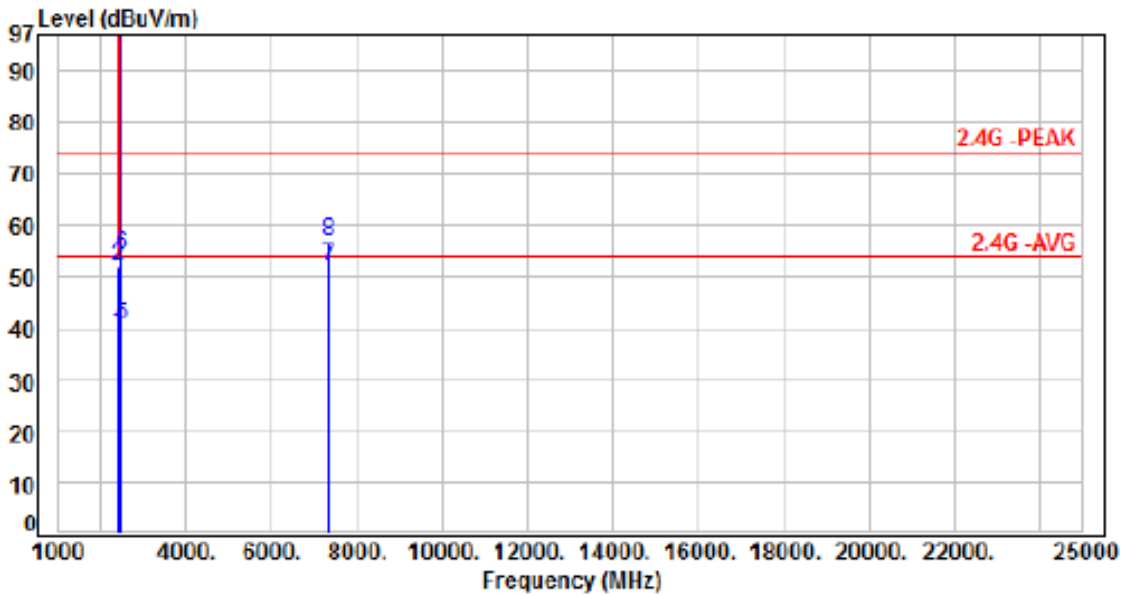
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	52.46	48.89	54.00	-5.11	Average	223	91	P
2	2390.00	-3.57	61.23	57.66	74.00	-16.34	Peak	223	91	P
3	2412.00	-3.53	117.13	113.60	200.00	-86.40	Average	223	91	P
4	2412.00	-3.53	119.08	115.55	200.00	-84.45	Peak	223	91	P
5	4824.00	4.84	35.23	40.07	54.00	-13.93	Average	272	338	P
6	4824.00	4.84	44.15	48.99	74.00	-25.01	Peak	272	338	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH06		:



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	-3.57	42.57	39.00	54.00	-15.00	Average	294	270	P
2	2390.00	-3.57	55.69	52.12	74.00	-21.88	Peak	294	270	P
3	2437.00	-3.06	116.27	113.21	200.00	-86.79	Average	294	270	P
4	2437.00	-3.06	118.81	115.75	200.00	-84.25	Peak	294	270	P
5	2483.50	-2.71	43.41	40.70	54.00	-13.30	Average	294	270	P
6	2483.50	-2.71	56.98	54.27	74.00	-19.73	Peak	294	270	P
7	7311.00	9.87	42.14	52.01	54.00	-1.99	Average	388	244	P
8	7311.00	9.87	47.01	56.88	74.00	-17.12	Peak	388	244	P

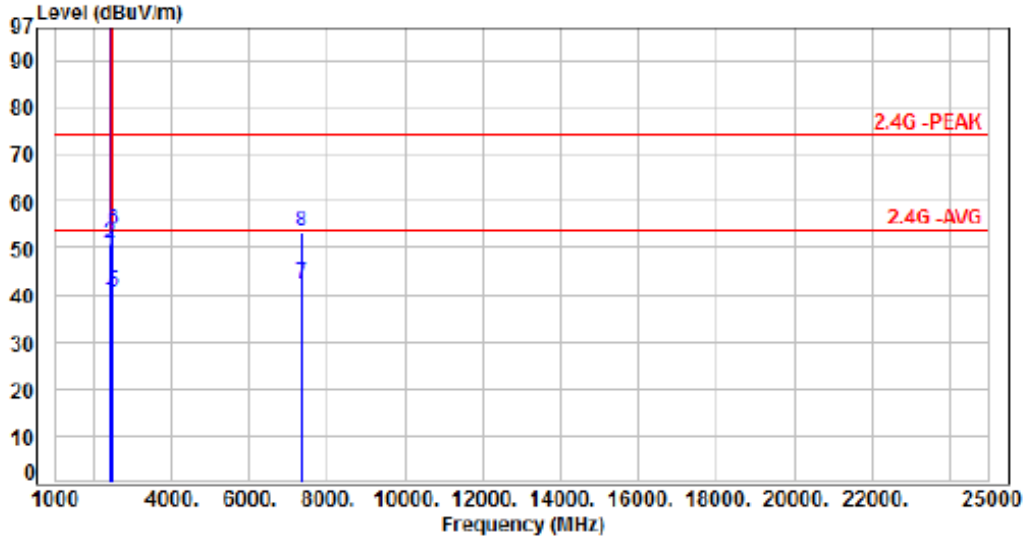
Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=Antenna Factor + cable loss - Amplifier Factor





Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH06		:



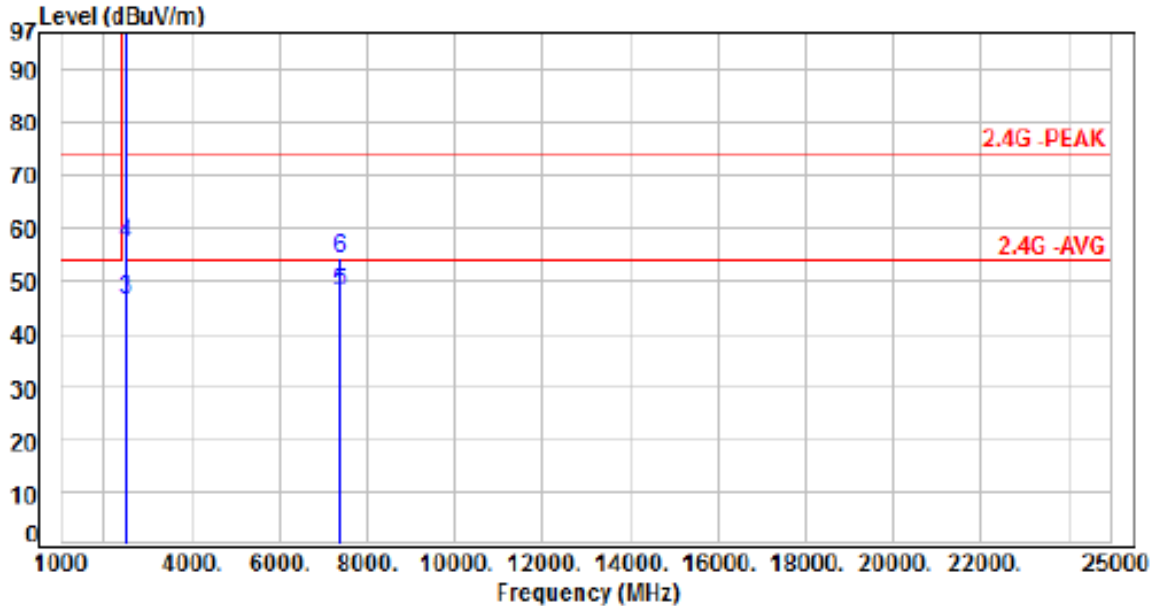
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	42.24	38.67	54.00	-15.33	Average	284	92	P
2	2390.00	-3.57	54.29	50.72	74.00	-23.28	Peak	284	92	P
3	2437.00	-3.06	116.11	113.05	200.00	-86.95	Average	284	92	P
4	2437.00	-3.06	118.61	115.55	200.00	-84.45	Peak	284	92	P
5	2483.50	-2.71	43.24	40.53	54.00	-13.47	Average	284	92	P
6	2483.50	-2.71	56.61	53.90	74.00	-20.10	Peak	284	92	P
7	7311.00	9.87	32.43	42.30	54.00	-11.70	Average	100	152	P
8	7311.00	9.87	43.46	53.33	74.00	-20.67	Peak	100	152	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH11		:



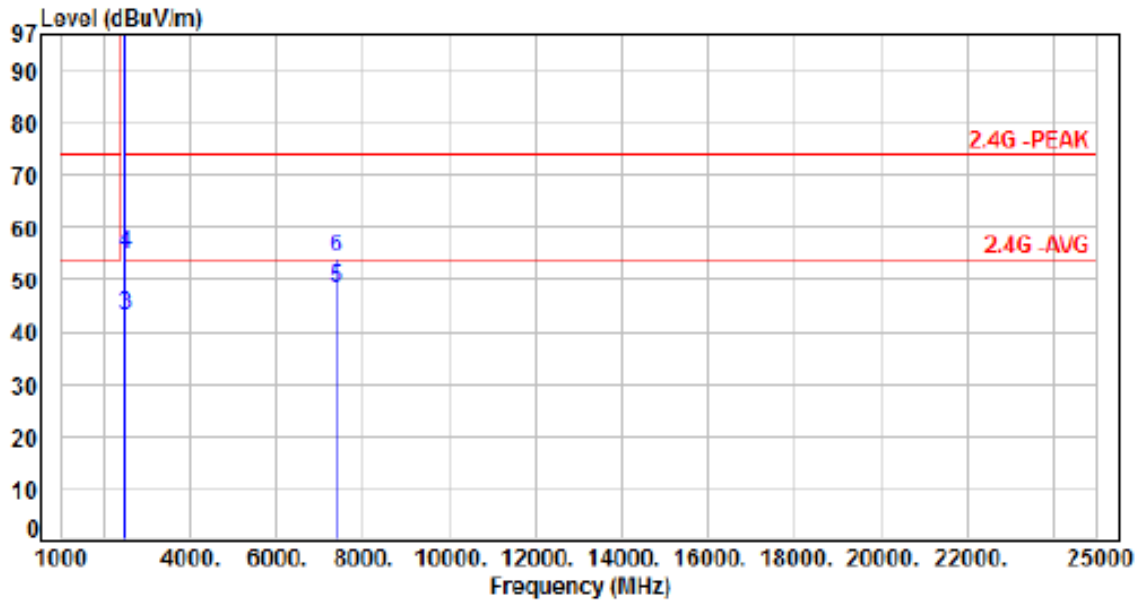
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.78	118.29	115.51	200.00	-84.49	Average	215	141	P
2	2462.00	-2.78	120.59	117.81	200.00	-82.19	Peak	215	141	P
3	2483.50	-2.71	49.11	46.40	54.00	-7.60	Average	215	141	P
4	2483.50	-2.71	59.95	57.24	74.00	-16.76	Peak	215	141	P
5	7386.00	10.06	37.78	47.84	54.00	-6.16	Average	230	329	P
6	7386.00	10.06	44.03	54.09	74.00	-19.91	Peak	230	329	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH11		:



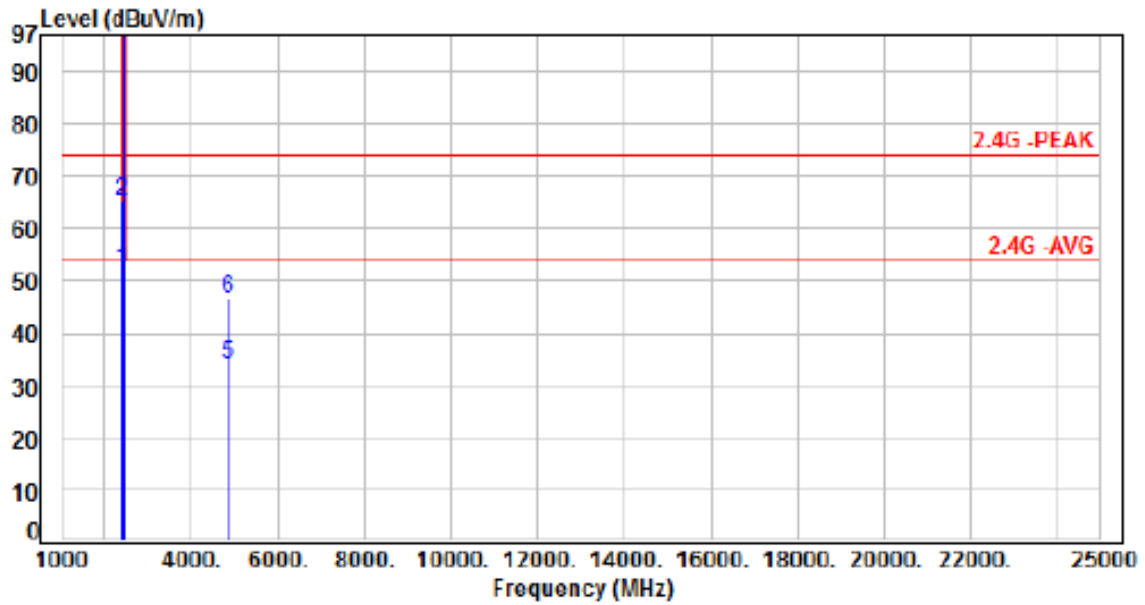
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2452.00	-2.78	116.90	114.12	200.00	-85.88	Average	115	129	P
2	2452.00	-2.78	119.10	116.32	200.00	-83.68	Peak	115	129	P
3	2483.50	-2.71	45.95	43.24	54.00	-10.76	Average	115	129	P
4	2483.50	-2.71	57.81	55.10	74.00	-18.90	Peak	115	129	P
5	7386.00	10.06	38.30	48.36	54.00	-5.64	Average	271	303	P
6	7386.00	10.06	44.32	54.38	74.00	-19.62	Peak	271	303	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH01		



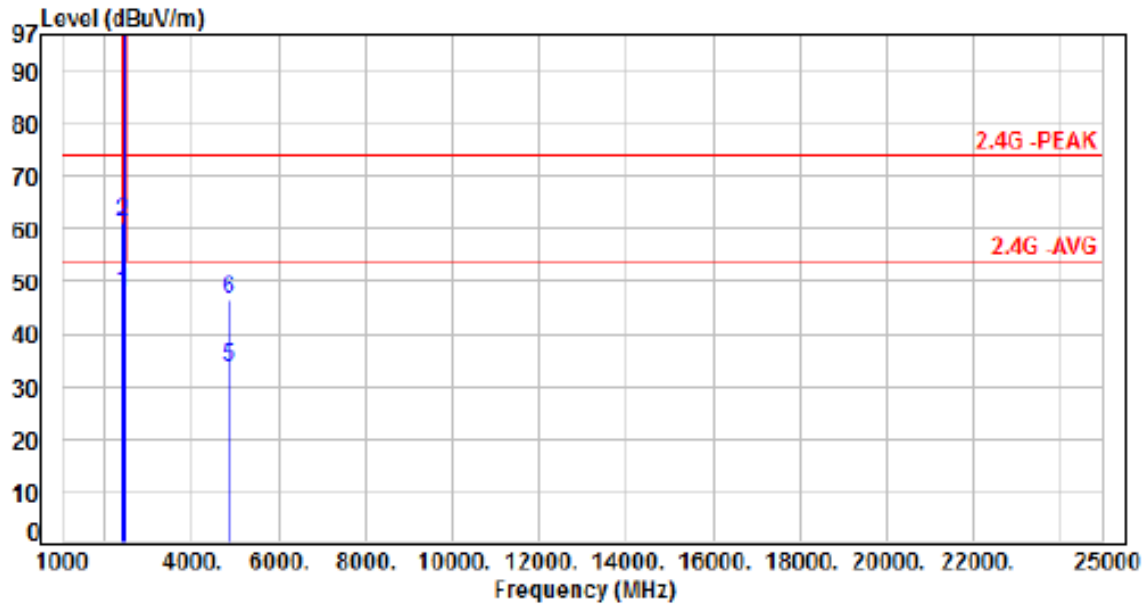
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	55.74	52.17	54.00	-1.83	Average	309	254	P
2	2390.00	-3.57	68.91	65.34	74.00	-8.66	Peak	309	254	P
3	2412.00	-3.53	113.11	109.58	200.00	-90.42	Average	309	254	P
4	2412.00	-3.53	122.58	119.05	200.00	-80.95	Peak	309	254	P
5	4824.00	4.84	29.13	33.97	54.00	-20.03	Average	100	126	P
6	4824.00	4.84	41.55	46.39	74.00	-27.61	Peak	100	126	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH01		:



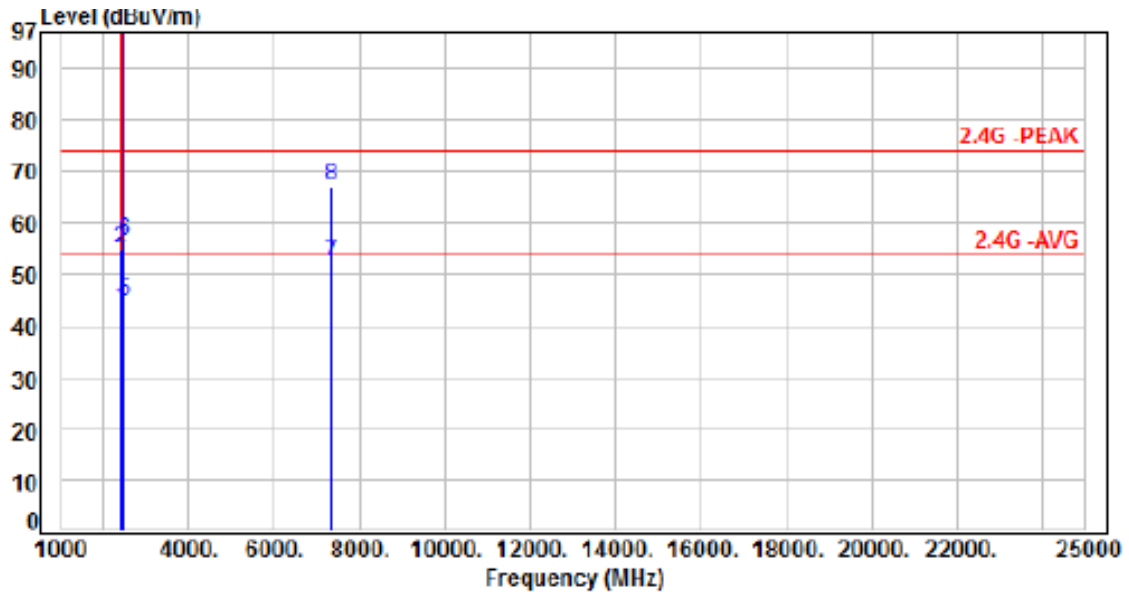
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	51.48	47.91	54.00	-6.09	Average	302	89	P
2	2390.00	-3.57	64.86	61.29	74.00	-12.71	Peak	302	89	P
3	2412.00	-3.53	110.90	107.37	200.00	-92.63	Average	302	89	P
4	2412.00	-3.53	120.23	116.70	200.00	-83.30	Peak	302	89	P
5	4824.00	4.84	28.57	33.41	54.00	-20.59	Average	100	334	P
6	4824.00	4.84	41.64	46.48	74.00	-27.52	Peak	100	334	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH06		:



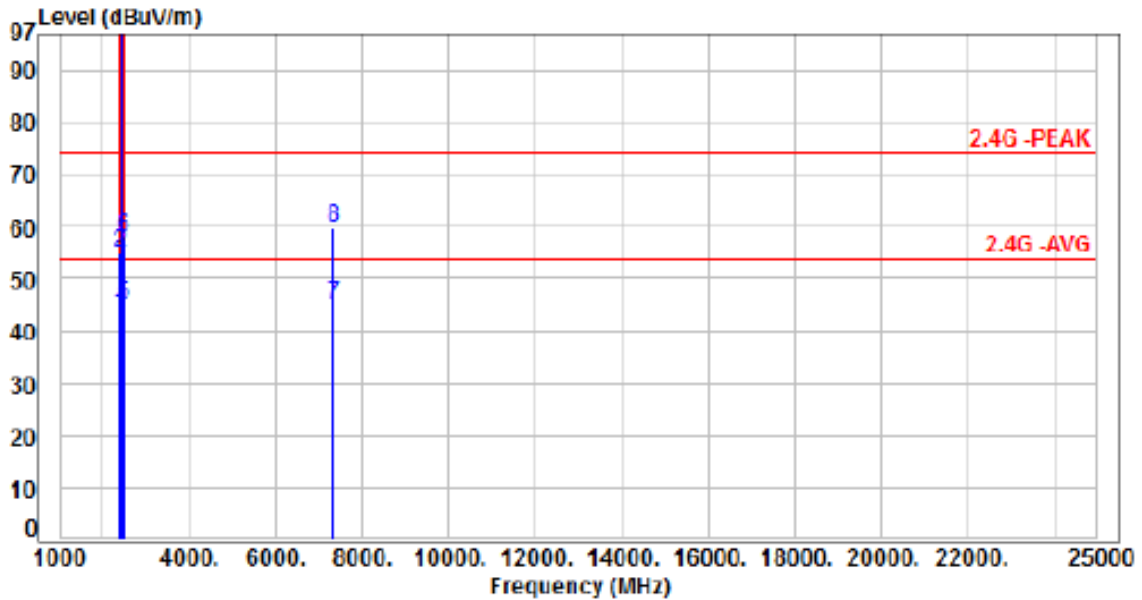
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	46.72	43.15	54.00	-10.85	Average	292	270	P
2	2390.00	-3.57	58.37	54.80	74.00	-19.20	Peak	292	270	P
3	2437.00	-3.06	114.53	111.47	200.00	-88.53	Average	292	270	P
4	2437.00	-3.06	123.69	120.63	200.00	-79.37	Peak	292	270	P
5	2483.50	-2.71	47.41	44.70	54.00	-9.30	Average	292	270	P
6	2483.50	-2.71	59.28	56.57	74.00	-17.43	Peak	292	270	P
7	7311.00	9.87	42.37	52.24	54.00	-1.76	Average	371	243	P
8	7311.00	9.87	57.44	67.31	74.00	-6.69	Peak	371	243	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH06		:



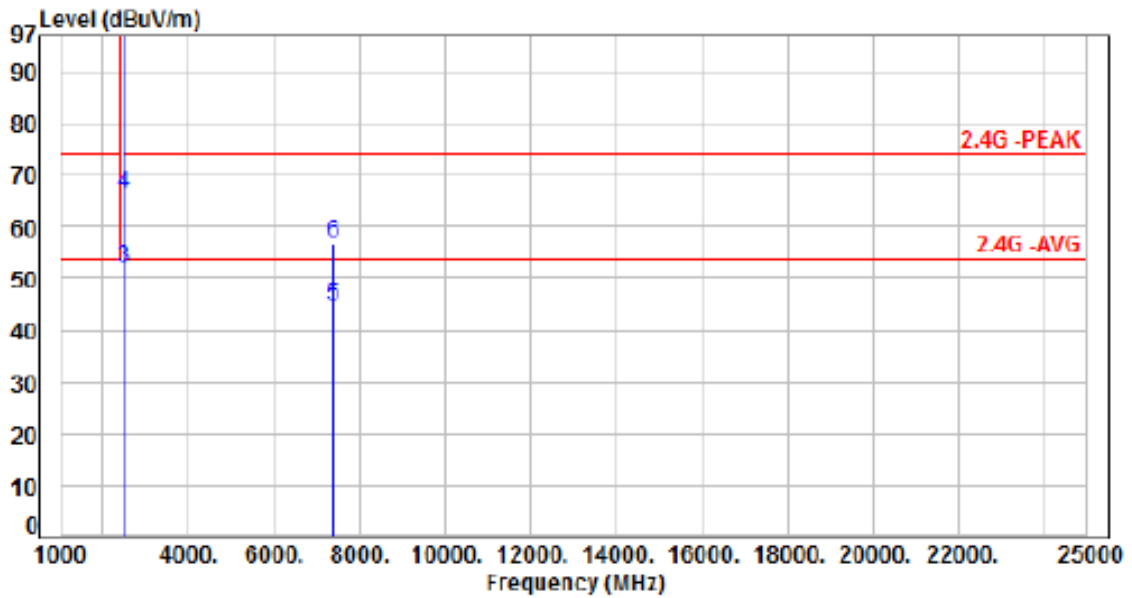
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	46.73	43.16	54.00	-10.84	Average	284	90	P
2	2390.00	-3.57	58.51	54.94	74.00	-19.06	Peak	284	90	P
3	2437.00	-3.06	114.68	111.62	200.00	-88.38	Average	284	90	P
4	2437.00	-3.06	123.55	120.49	200.00	-79.51	Peak	284	90	P
5	2483.50	-2.71	47.60	44.89	54.00	-9.11	Average	284	90	P
6	2483.50	-2.71	60.46	57.75	74.00	-16.25	Peak	284	90	P
7	7311.00	9.87	34.97	44.84	54.00	-9.16	Average	217	152	P
8	7311.00	9.87	49.73	59.60	74.00	-14.40	Peak	217	152	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH11		:



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	-2.78	112.89	110.11	200.00	-89.89	Average	378	139	P
2	2462.00	-2.78	122.28	119.50	200.00	-80.50	Peak	378	139	P
3	2483.50	-2.71	54.60	51.89	54.00	-2.11	Average	378	139	P
4	2483.50	-2.71	69.01	66.30	74.00	-7.70	Peak	378	139	P
5	7386.00	10.06	34.45	44.51	54.00	-9.49	Average	280	55	P
6	7386.00	10.06	46.73	56.79	74.00	-17.21	Peak	280	55	P

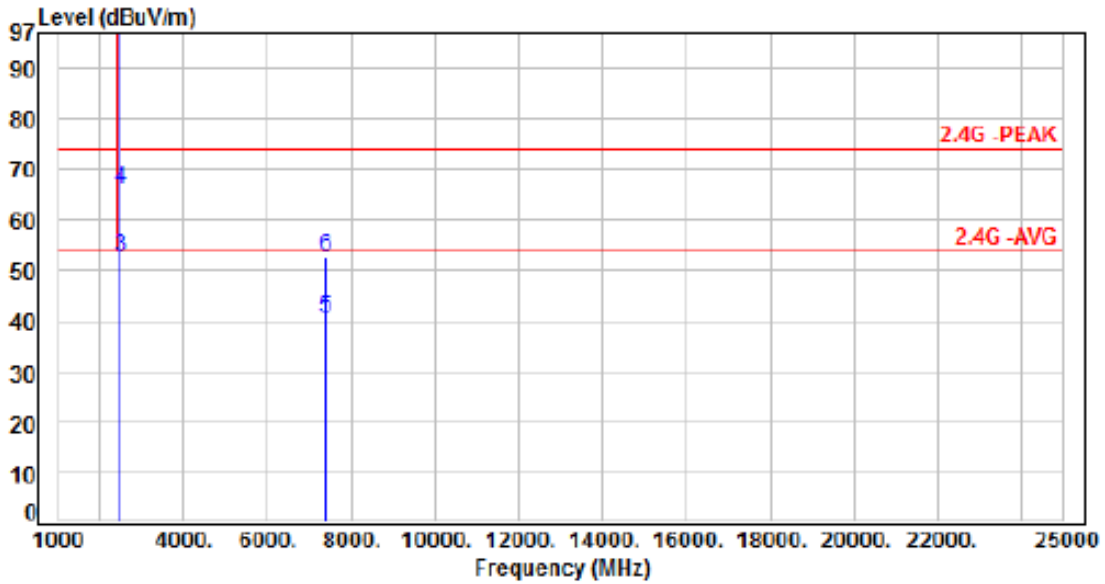
Note: Level=Reading+Factor  
 Margin=Level-Limit  
 Factor=Antenna Factor + cable loss - Amplifier Factor





Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH11		:



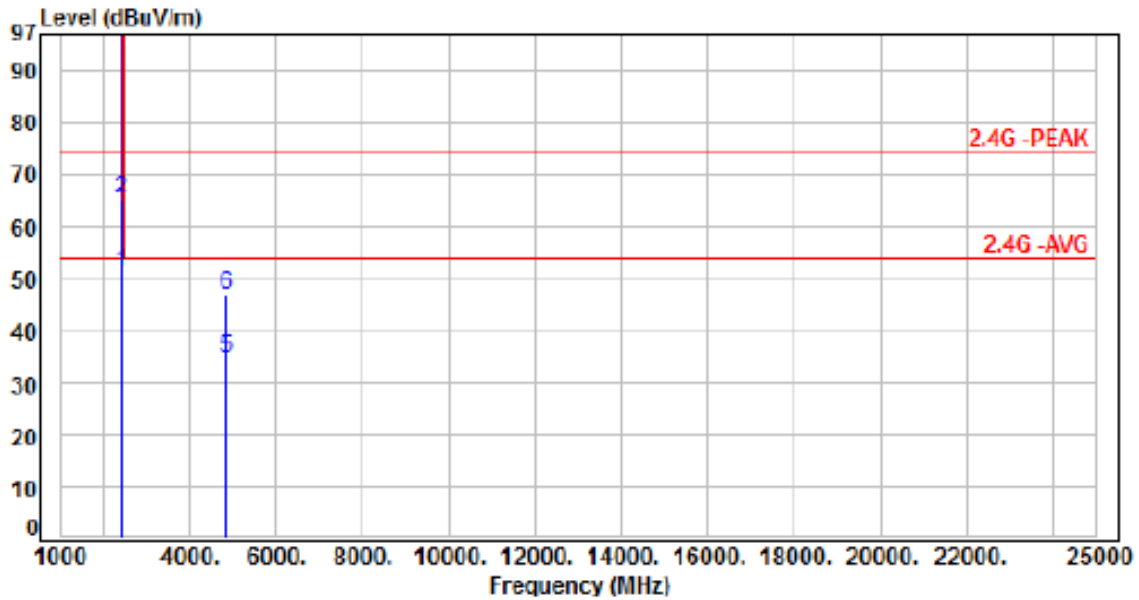
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.78	112.40	109.62	200.00	-90.38	Average	250	90	P
2	2462.00	-2.78	121.32	118.54	200.00	-81.46	Peak	250	90	P
3	2483.50	-2.71	55.52	52.81	54.00	-1.19	Average	250	90	P
4	2483.50	-2.71	68.73	66.02	74.00	-7.98	Peak	250	90	P
5	7386.00	10.06	30.56	40.62	54.00	-13.38	Average	100	149	P
6	7386.00	10.06	42.52	52.58	74.00	-21.42	Peak	100	149	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH01		:



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	-3.57	54.99	51.42	54.00	-2.58	Average	261	254	P
2	2390.00	-3.57	68.76	65.19	74.00	-8.81	Peak	261	254	P
3	2412.00	-3.53	111.07	107.54	200.00	-92.46	Average	261	254	P
4	2412.00	-3.53	124.52	120.99	200.00	-79.01	Peak	261	254	P
5	4824.00	4.84	29.83	34.67	54.00	-19.33	Average	100	122	P
6	4824.00	4.84	41.94	46.78	74.00	-27.22	Peak	100	122	P

Note: Level=Reading+Factor

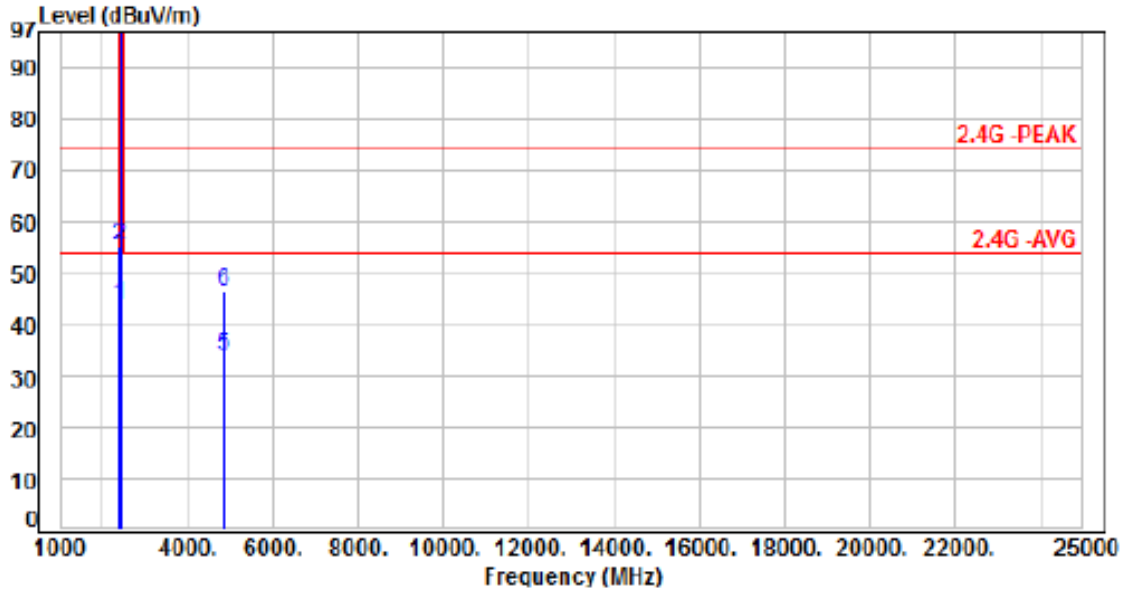
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH01		:



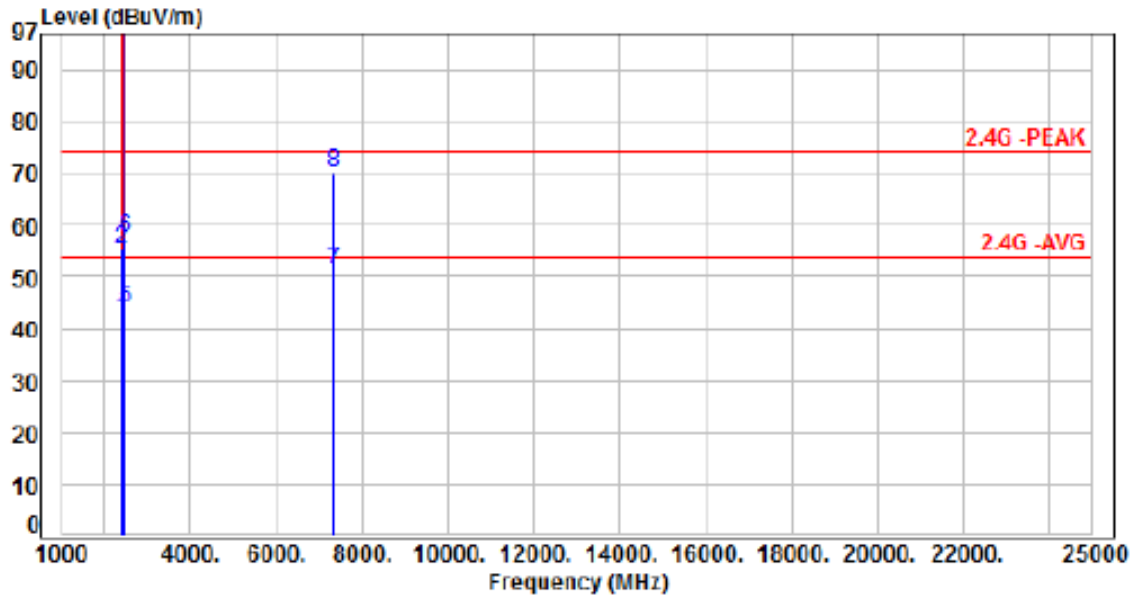
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	47.51	43.94	54.00	-10.06	Average	303	90	P
2	2390.00	-3.57	58.86	55.29	74.00	-18.71	Peak	303	90	P
3	2412.00	-3.53	107.96	104.43	200.00	-95.57	Average	303	90	P
4	2412.00	-3.53	120.86	117.33	200.00	-82.67	Peak	303	90	P
5	4824.00	4.84	28.92	33.76	54.00	-20.24	Average	100	336	P
6	4824.00	4.84	41.67	46.51	74.00	-27.49	Peak	100	336	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH06		:



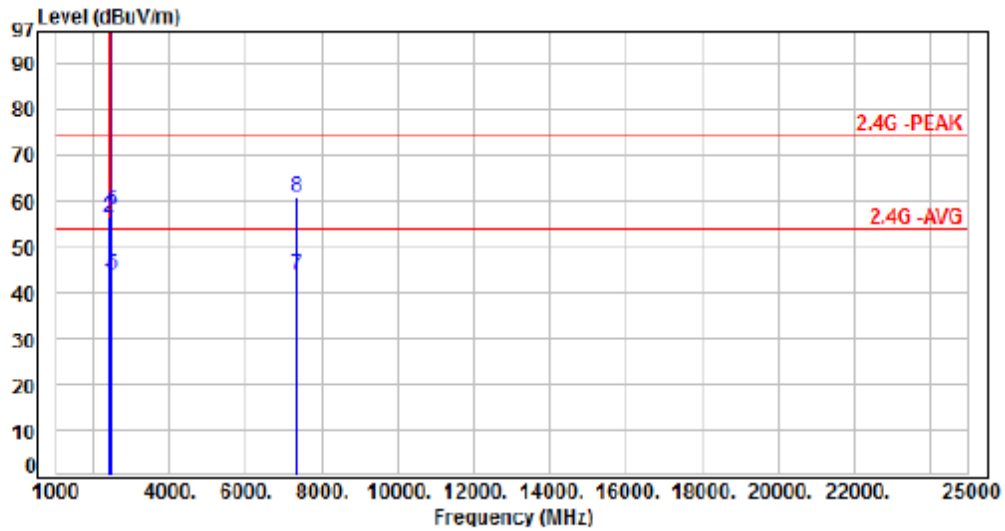
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	45.74	42.17	54.00	-11.83	Average	100	270	P
2	2390.00	-3.57	58.78	55.21	74.00	-18.79	Peak	100	270	P
3	2437.00	-3.06	112.76	109.70	200.00	-90.30	Average	100	270	P
4	2437.00	-3.06	126.71	123.65	200.00	-76.35	Peak	100	270	P
5	2483.50	-2.71	46.52	43.81	54.00	-10.19	Average	100	270	P
6	2483.50	-2.71	60.07	57.36	74.00	-16.64	Peak	100	270	P
7	7311.00	9.87	41.50	51.37	54.00	-2.63	Average	349	122	P
8	7311.00	9.87	60.07	69.94	74.00	-4.06	Peak	349	122	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH06		:



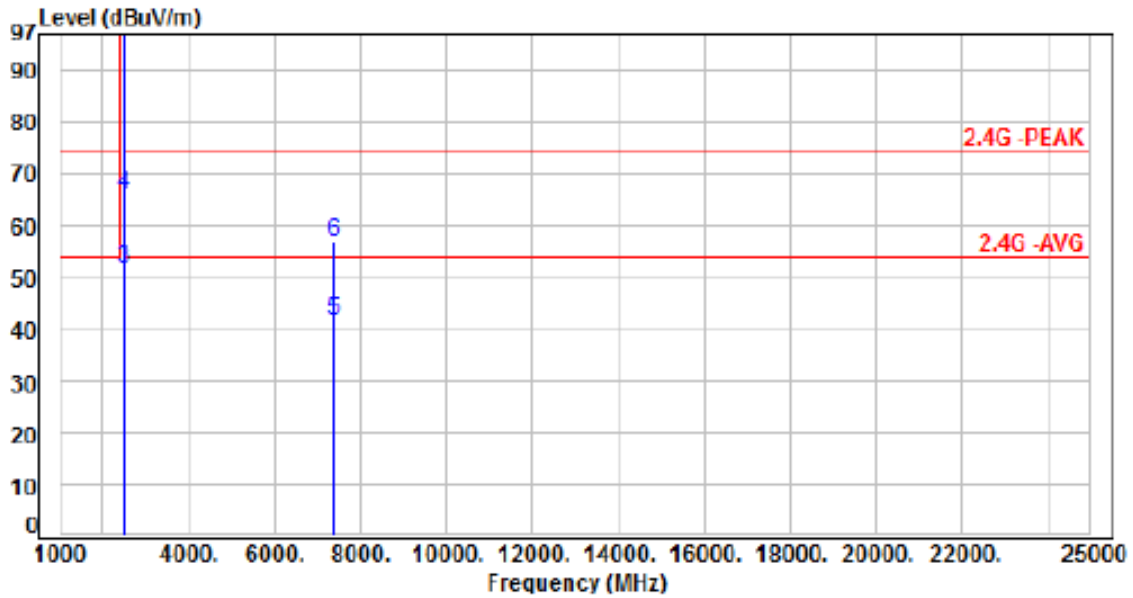
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	45.88	42.31	54.00	-11.69	Average	220	90	P
2	2390.00	-3.57	59.87	56.30	74.00	-17.70	Peak	220	90	P
3	2437.00	-3.06	112.73	109.67	200.00	-90.33	Average	220	90	P
4	2437.00	-3.06	125.30	122.24	200.00	-77.76	Peak	220	90	P
5	2483.50	-2.71	46.74	44.03	54.00	-9.97	Average	220	90	P
6	2483.50	-2.71	60.71	58.00	74.00	-16.00	Peak	220	90	P
7	7311.00	9.87	33.91	43.78	54.00	-10.22	Average	225	152	P
8	7311.00	9.87	51.14	61.01	74.00	-12.99	Peak	225	152	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH11		:



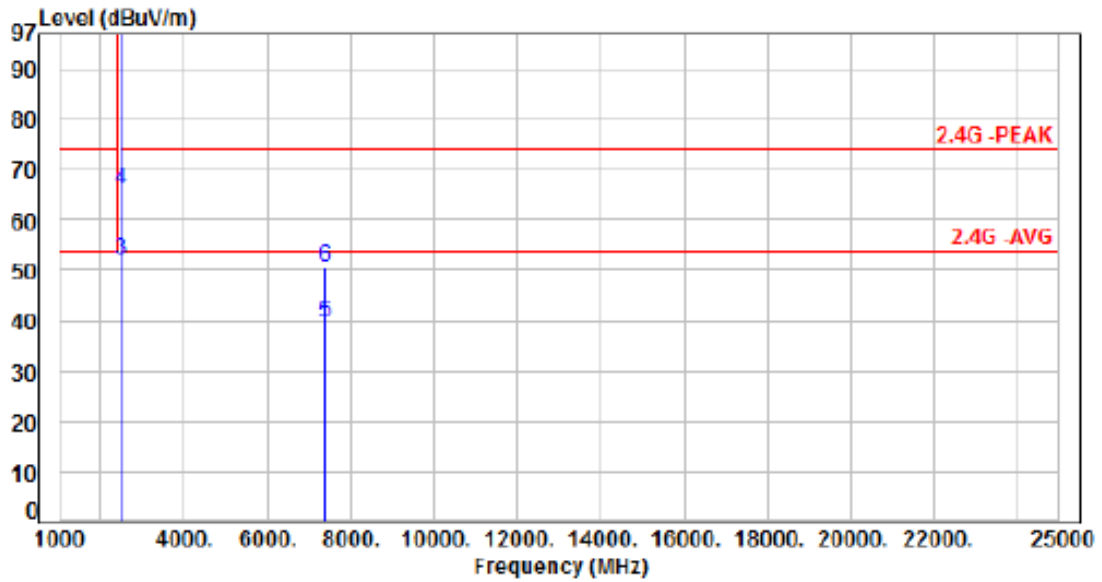
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.78	109.92	107.14	200.00	-92.86	Average	212	159	P
2	2462.00	-2.78	123.69	120.91	200.00	-79.09	Peak	212	159	P
3	2483.50	-2.71	54.42	51.71	54.00	-2.29	Average	212	159	P
4	2483.50	-2.71	68.56	65.85	74.00	-8.15	Peak	212	159	P
5	7386.00	10.06	31.45	41.51	54.00	-12.49	Average	261	51	P
6	7386.00	10.06	46.65	56.71	74.00	-17.29	Peak	261	51	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH11		:



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	-2.78	109.39	106.61	200.00	-93.39	Average	212	90	P
2	2462.00	-2.78	123.13	120.35	200.00	-79.65	Peak	212	90	P
3	2483.50	-2.71	54.72	52.01	54.00	-1.99	Average	212	90	P
4	2483.50	-2.71	68.59	65.88	74.00	-8.12	Peak	212	90	P
5	7386.00	10.06	29.48	39.54	54.00	-14.46	Average	100	156	P
6	7386.00	10.06	40.53	50.59	74.00	-23.41	Peak	100	156	P

Note: Level=Reading+Factor

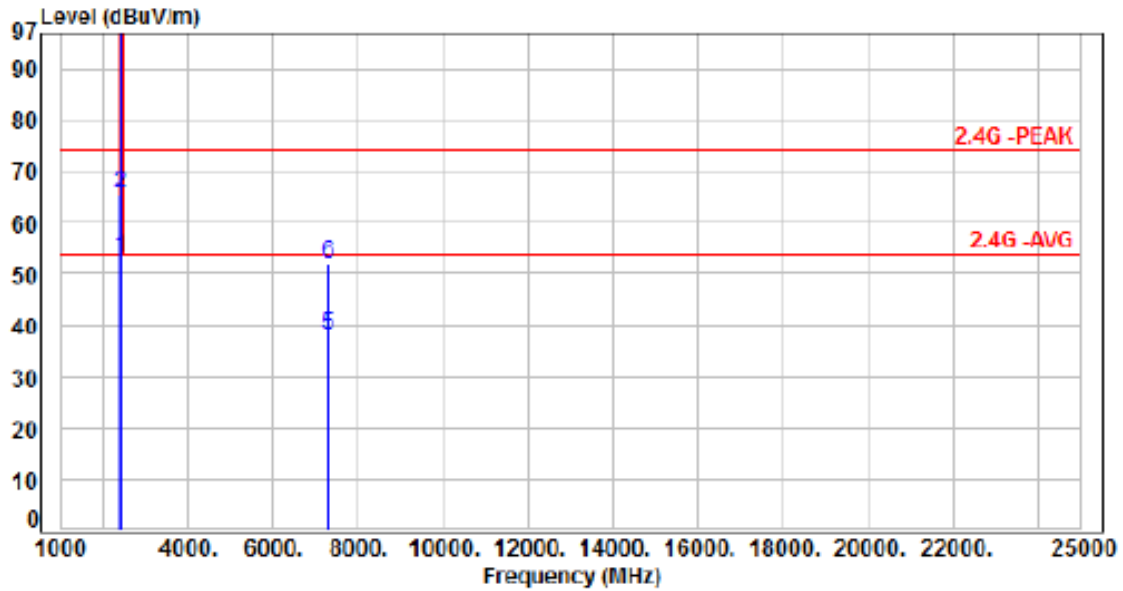
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH03		:



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	-3.57	56.54	52.97	54.00	-1.03	Average	334	329	P
2	2390.00	-3.57	69.10	65.53	74.00	-8.47	Peak	334	329	P
3	2422.00	-3.34	106.70	103.36	200.00	-96.64	Average	334	329	P
4	2422.00	-3.34	119.54	116.20	200.00	-83.80	Peak	334	329	P
5	7266.00	9.76	28.21	37.97	54.00	-16.03	Average	100	192	P
6	7266.00	9.76	42.27	52.03	74.00	-21.97	Peak	100	192	P

Note: Level=Reading+Factor

Margin=Level-Limit

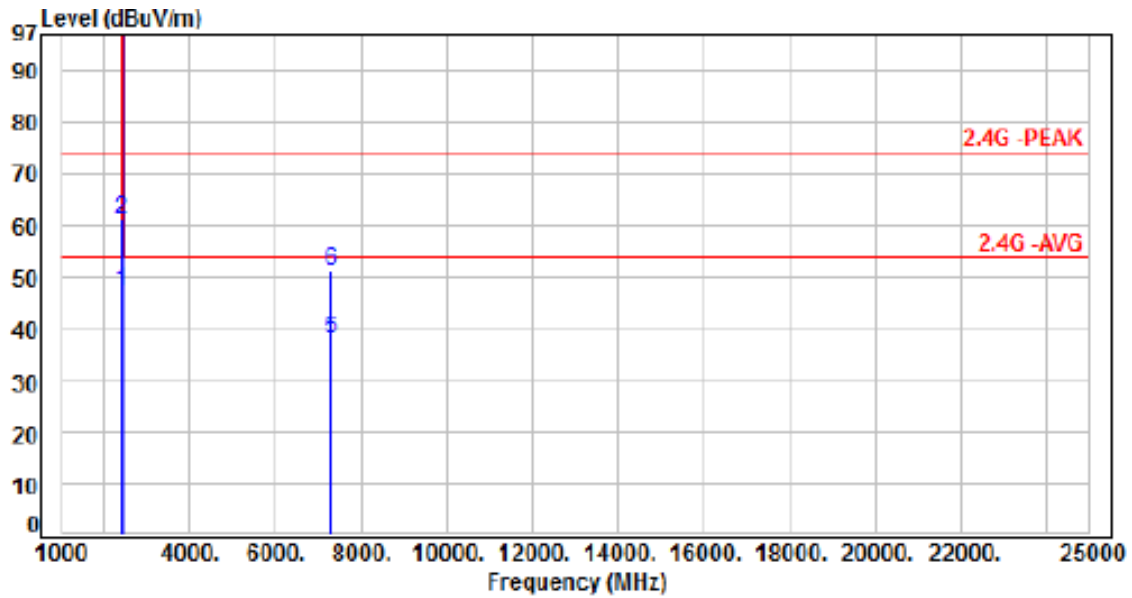
Factor=Antenna Factor + cable loss - Amplifier Factor





Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH03		:



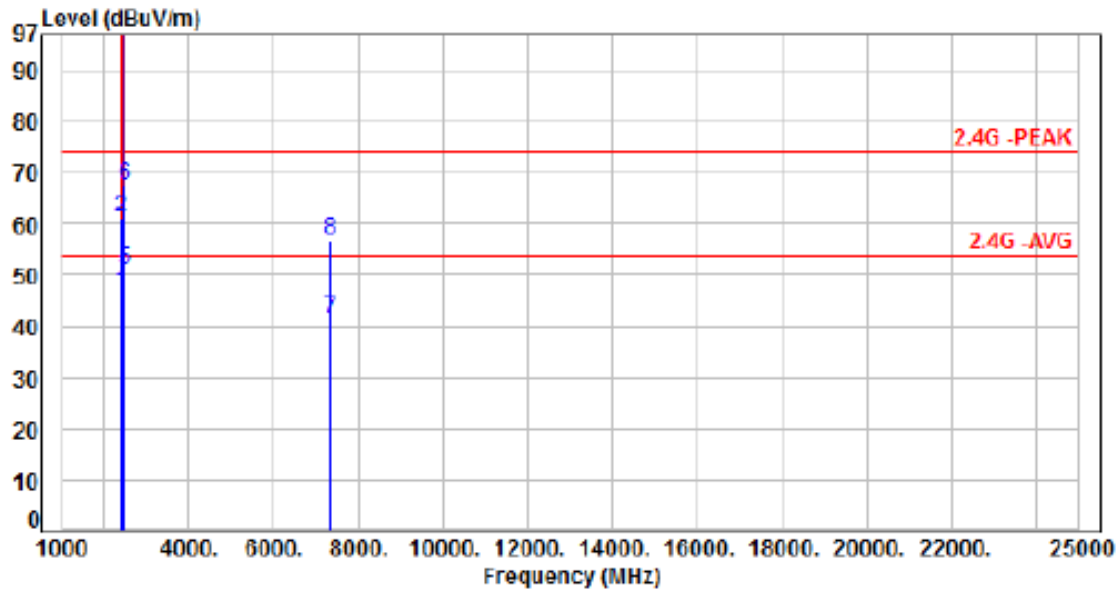
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	50.72	47.15	54.00	-6.85	Average	295	89	P
2	2390.00	-3.57	64.92	61.35	74.00	-12.65	Peak	295	89	P
3	2422.00	-3.34	105.35	102.01	200.00	-97.99	Average	295	89	P
4	2422.00	-3.34	117.93	114.59	200.00	-85.41	Peak	295	89	P
5	7266.00	9.76	28.30	38.06	54.00	-15.94	Average	100	54	P
6	7266.00	9.76	41.68	51.44	74.00	-22.56	Peak	100	54	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH06		:



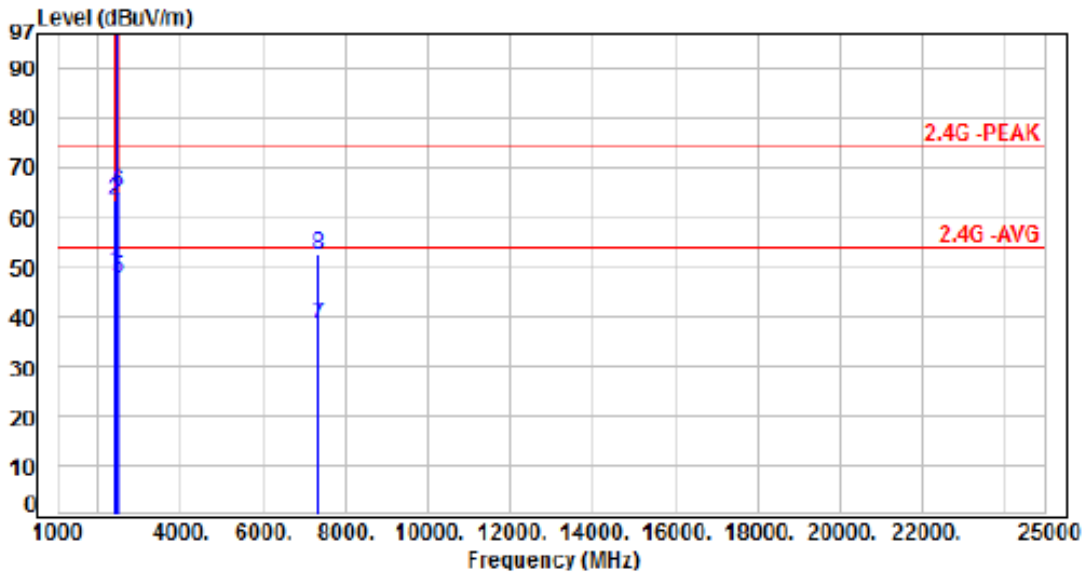
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	50.01	46.44	54.00	-7.56	Average	333	246	P
2	2390.00	-3.57	64.83	61.26	74.00	-12.74	Peak	333	246	P
3	2437.00	-3.06	111.57	108.51	200.00	-91.49	Average	333	246	P
4	2437.00	-3.06	125.69	122.63	200.00	-77.37	Peak	333	246	P
5	2483.50	-2.71	53.79	51.08	54.00	-2.92	Average	333	246	P
6	2483.50	-2.71	70.18	67.47	74.00	-6.53	Peak	333	246	P
7	7311.00	9.87	31.44	41.31	54.00	-12.69	Average	261	55	P
8	7311.00	9.87	46.88	56.75	74.00	-17.25	Peak	261	55	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH06		:



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	-3.57	52.62	49.05	54.00	-4.95	Average	216	89	P
2	2390.00	-3.57	67.11	63.54	74.00	-10.46	Peak	216	89	P
3	2437.00	-3.06	109.08	106.02	200.00	-93.98	Average	216	89	P
4	2437.00	-3.06	121.30	118.24	200.00	-81.76	Peak	216	89	P
5	2483.50	-2.71	50.46	47.75	54.00	-6.25	Average	216	89	P
6	2483.50	-2.71	67.48	64.77	74.00	-9.23	Peak	216	89	P
7	7311.00	9.87	28.53	38.40	54.00	-15.60	Average	100	58	P
8	7311.00	9.87	42.44	52.31	74.00	-21.69	Peak	100	58	P

Note: Level=Reading+Factor

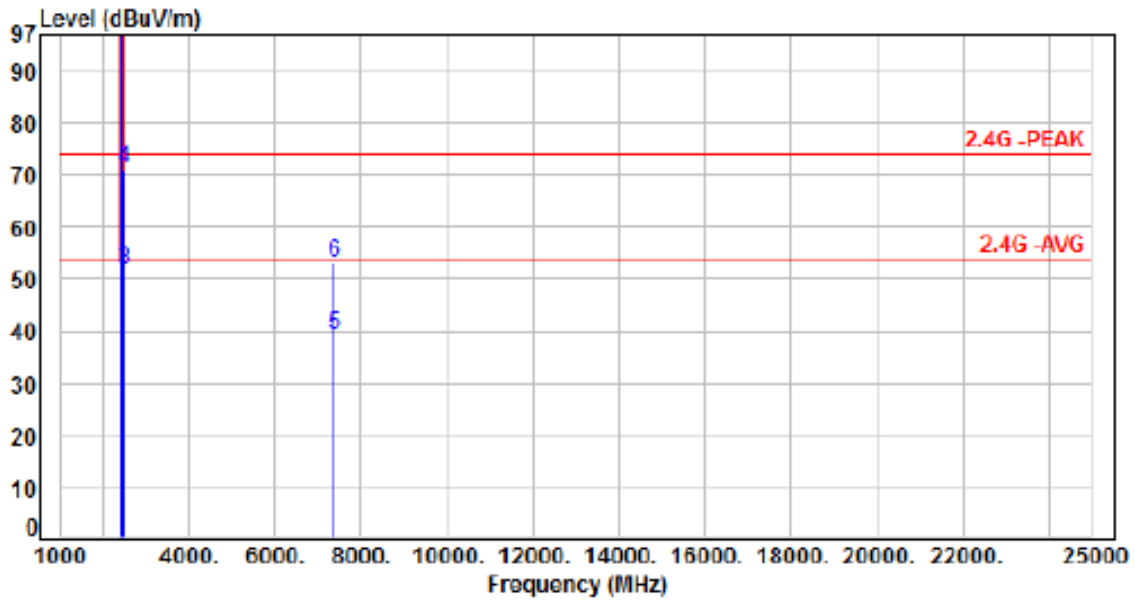
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH09		:



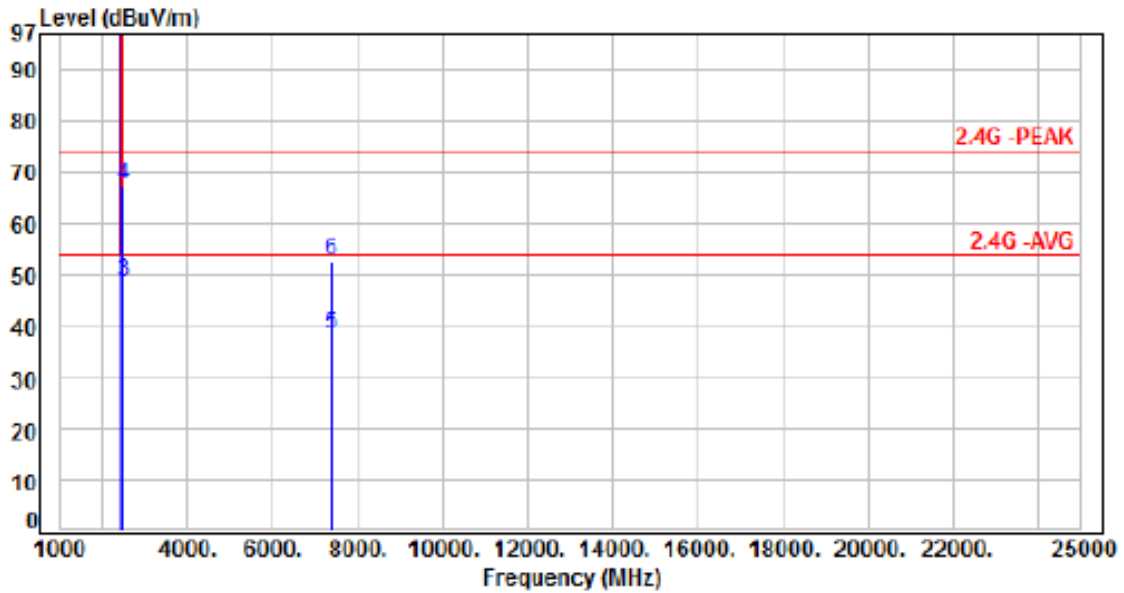
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2452.00	-2.81	108.35	105.54	200.00	-94.46	Average	372	190	P
2	2452.00	-2.81	121.29	118.48	200.00	-81.52	Peak	372	190	P
3	2483.50	-2.71	54.39	51.68	54.00	-2.32	Average	372	190	P
4	2483.50	-2.71	74.01	71.30	74.00	-2.70	Peak	372	190	P
5	7356.00	9.99	29.09	39.08	54.00	-14.92	Average	100	185	P
6	7356.00	9.99	43.21	53.20	74.00	-20.80	Peak	100	185	P

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



Non BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH09		:



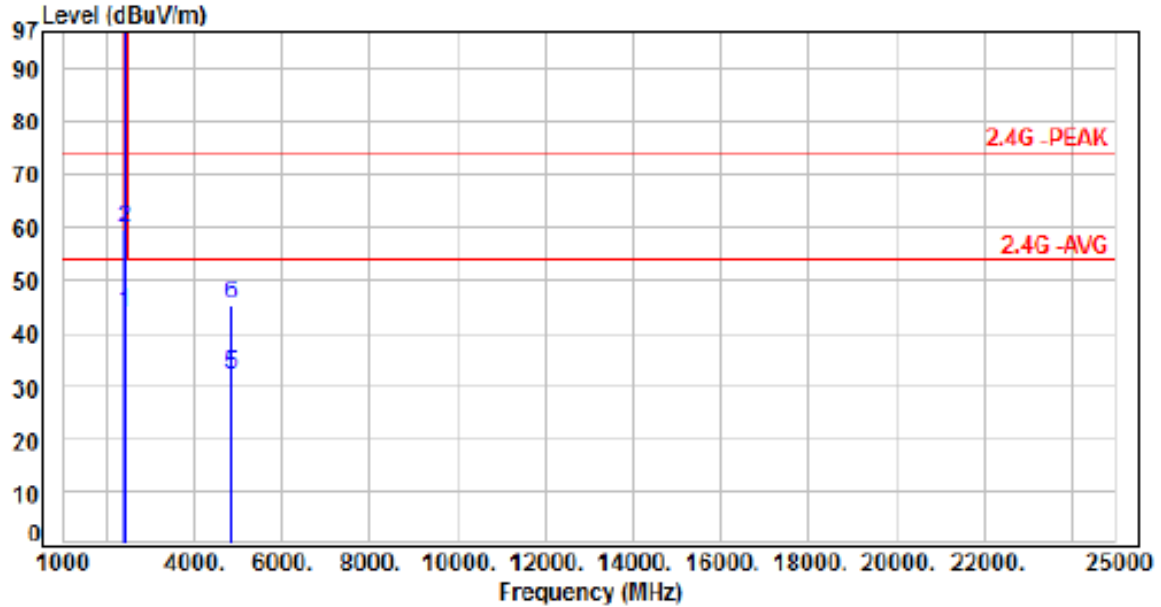
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2452.00	-2.81	106.29	103.48	200.00	-96.52	Average	105	130	P
2	2452.00	-2.81	118.25	115.44	200.00	-84.56	Peak	105	130	P
3	2483.50	-2.71	51.55	48.84	54.00	-5.16	Average	105	130	P
4	2483.50	-2.71	70.22	67.51	74.00	-6.49	Peak	105	130	P
5	7356.00	9.99	28.37	38.36	54.00	-15.64	Average	100	52	P
6	7356.00	9.99	42.62	52.61	74.00	-21.39	Peak	100	52	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH01		:



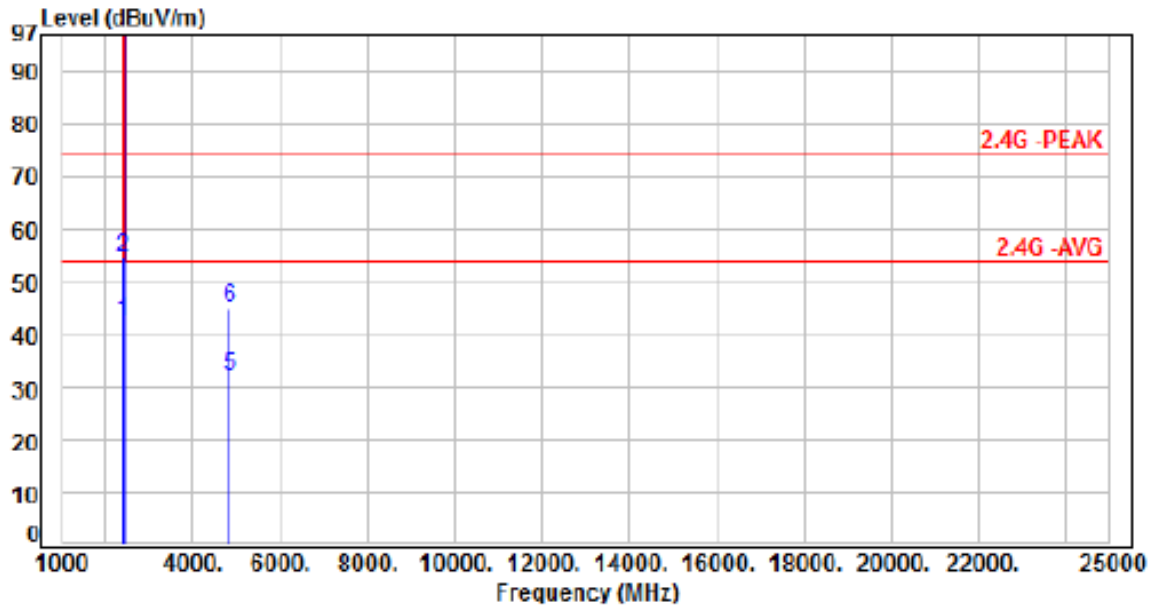
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	47.50	43.93	54.00	-10.07	Average	256	218	P
2	2390.00	-3.57	63.44	59.87	74.00	-14.13	Peak	256	218	P
3	2412.00	-3.53	111.86	108.33	200.00	-91.67	Average	256	218	P
4	2412.00	-3.53	119.86	116.33	200.00	-83.67	Peak	256	218	P
5	4824.00	4.84	27.41	32.25	54.00	-21.75	Average	100	299	P
6	4824.00	4.84	40.46	45.30	74.00	-28.70	Peak	100	299	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH01		:



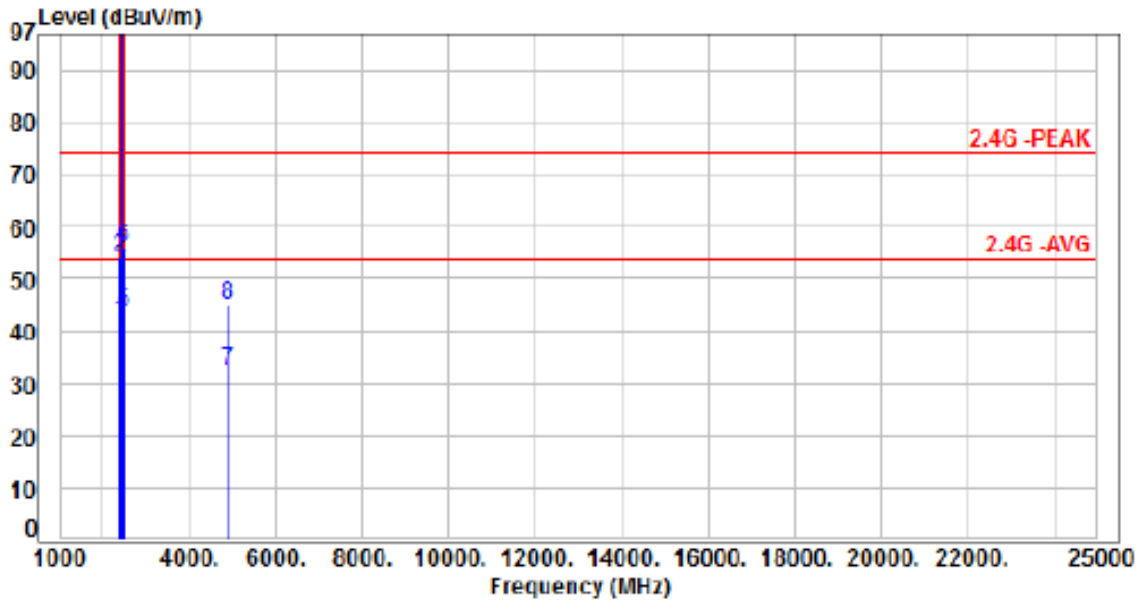
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	45.81	42.24	54.00	-11.76	Average	100	14	P
2	2390.00	-3.57	58.25	54.68	74.00	-19.32	Peak	100	14	P
3	2412.00	-3.53	107.44	103.91	200.00	-96.09	Average	100	14	P
4	2412.00	-3.53	116.44	112.91	200.00	-87.09	Peak	100	14	P
5	4824.00	4.84	27.37	32.21	54.00	-21.79	Average	100	52	P
6	4824.00	4.84	40.07	44.91	74.00	-29.09	Peak	100	52	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH06		:



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	-3.57	45.23	41.66	54.00	-12.34	Average	207	227	P
2	2390.00	-3.57	57.79	54.22	74.00	-19.78	Peak	207	227	P
3	2437.00	-3.06	111.50	108.44	200.00	-91.56	Average	207	227	P
4	2437.00	-3.06	119.57	116.51	200.00	-83.49	Peak	207	227	P
5	2483.50	-2.71	46.23	43.52	54.00	-10.48	Average	207	227	P
6	2483.50	-2.71	58.81	56.10	74.00	-17.90	Peak	207	227	P
7	4874.00	5.03	27.34	32.37	54.00	-21.63	Average	100	198	P
8	4874.00	5.03	40.07	45.10	74.00	-28.90	Peak	100	198	P

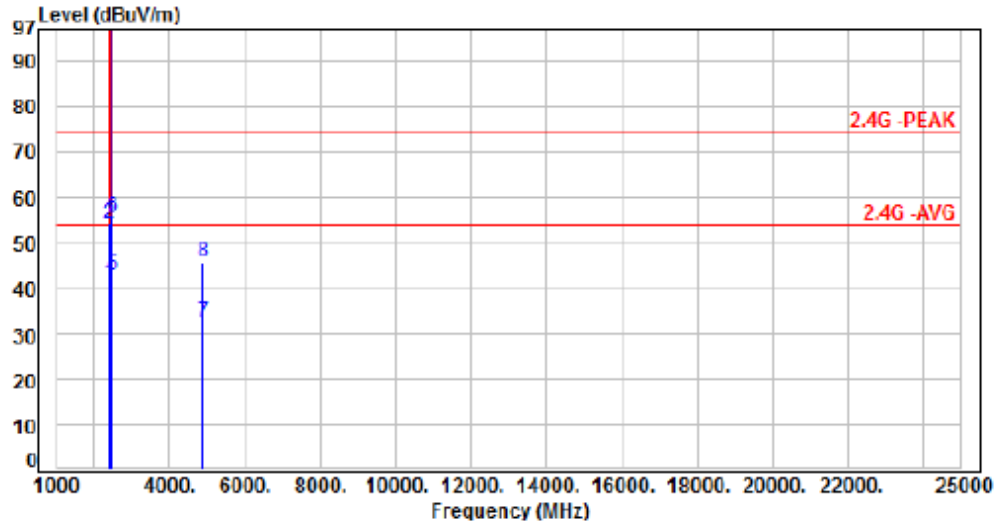
Note: Level=Reading+Factor  
Margin=Level-Limit  
Factor=Antenna Factor + cable loss - Amplifier Factor





BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH06		:



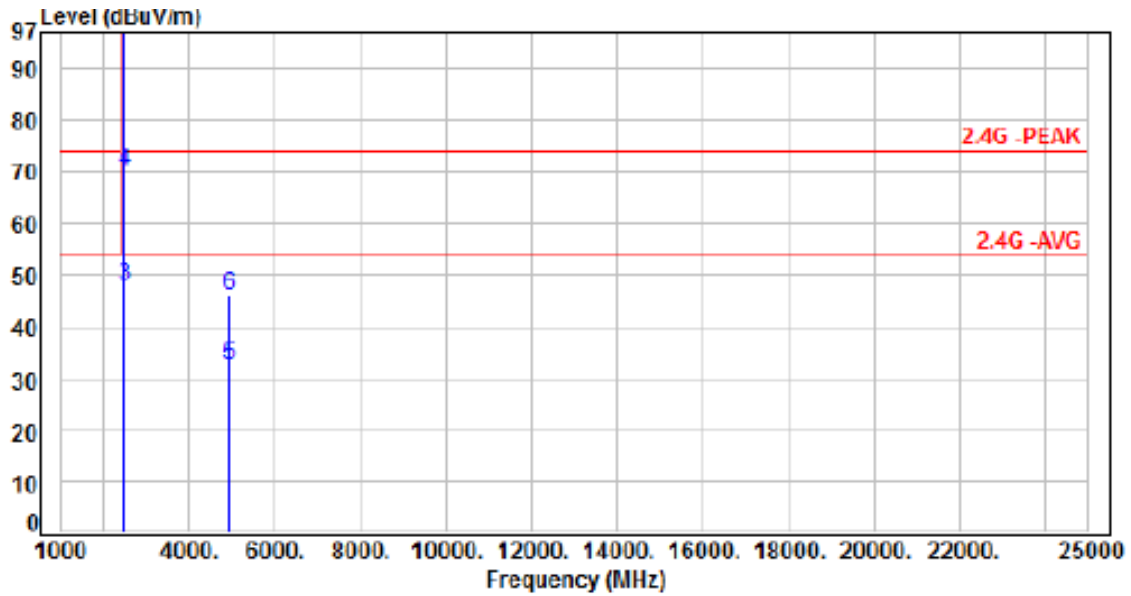
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	44.91	41.34	54.00	-12.66	Average	100	15	P
2	2390.00	-3.57	57.62	54.05	74.00	-19.95	Peak	100	15	P
3	2437.00	-3.06	107.59	104.53	200.00	-95.47	Average	100	15	P
4	2437.00	-3.06	116.19	113.13	200.00	-86.87	Peak	100	15	P
5	2483.50	-2.71	45.40	42.69	54.00	-11.31	Average	100	15	P
6	2483.50	-2.71	58.22	55.51	74.00	-18.49	Peak	100	15	P
7	4874.00	5.03	27.33	32.36	54.00	-21.64	Average	100	65	P
8	4874.00	5.03	40.78	45.81	74.00	-28.19	Peak	100	65	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 5, CH11		:



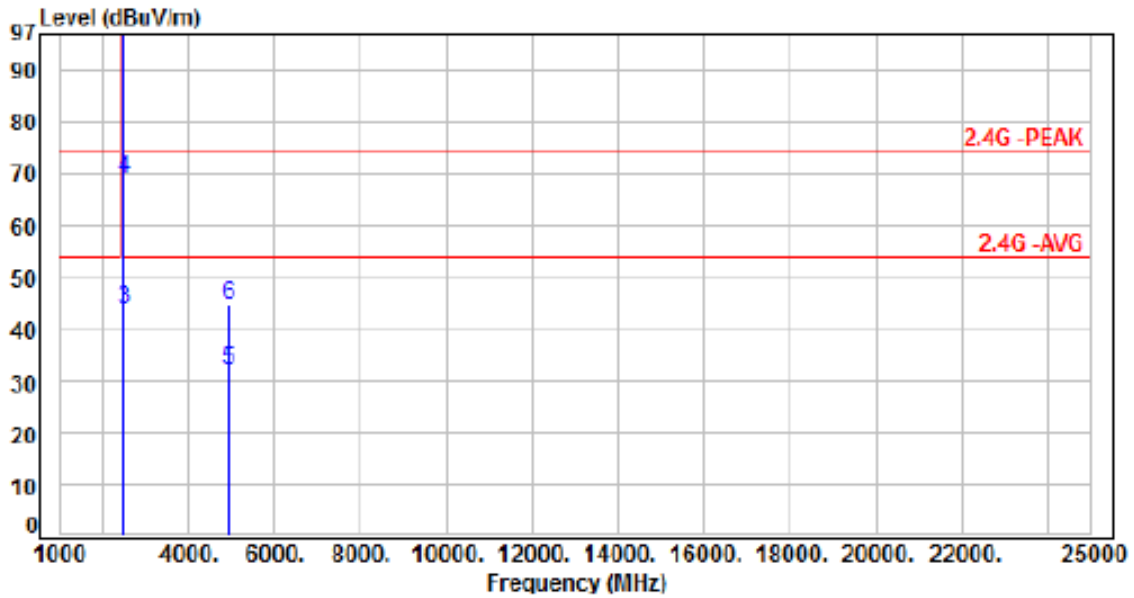
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.78	111.21	108.43	200.00	-91.57	Average	246	227	P
2	2462.00	-2.78	120.14	117.36	200.00	-82.64	Peak	246	227	P
3	2483.50	-2.71	50.51	47.80	54.00	-6.20	Average	246	227	P
4	2483.50	-2.71	72.97	70.26	74.00	-3.74	Peak	246	227	P
5	4924.00	5.14	27.15	32.29	54.00	-21.71	Average	100	215	P
6	4924.00	5.14	40.97	46.11	74.00	-27.89	Peak	100	215	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 5, CH11		:



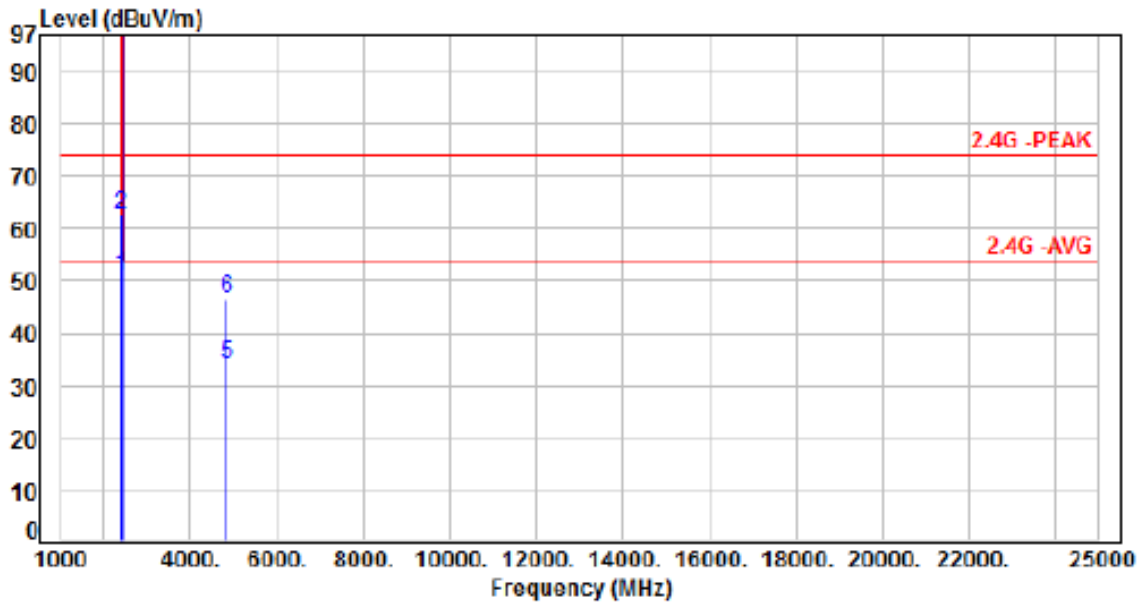
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2462.00	-2.78	109.07	106.29	200.00	-93.71	Average	352	340	P
2	2462.00	-2.78	116.30	113.52	200.00	-86.48	Peak	352	340	P
3	2483.50	-2.71	46.54	43.83	54.00	-10.17	Average	352	340	P
4	2483.50	-2.71	71.50	68.79	74.00	-5.21	Peak	352	340	P
5	4924.00	5.14	27.01	32.15	54.00	-21.85	Average	100	97	P
6	4924.00	5.14	39.55	44.69	74.00	-29.31	Peak	100	97	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH03		:



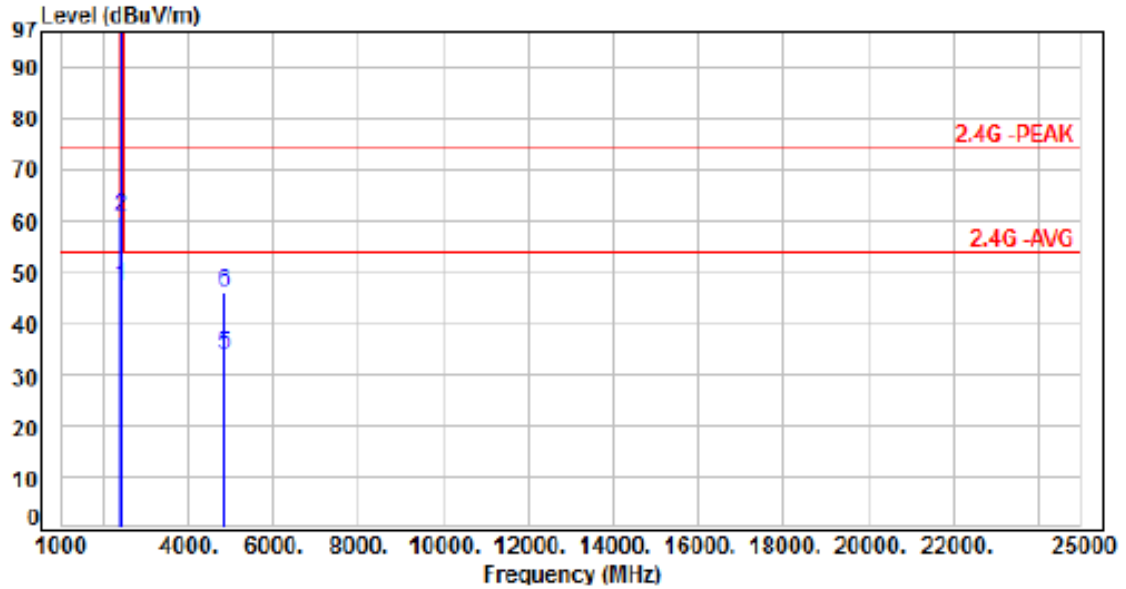
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	54.62	51.05	54.00	-2.95	Average	265	112	P
2	2390.00	-3.57	66.37	62.80	74.00	-11.20	Peak	265	112	P
3	2422.00	-3.34	110.42	107.08	200.00	-92.92	Average	265	112	P
4	2422.00	-3.34	116.98	113.64	200.00	-86.36	Peak	265	112	P
5	4844.00	4.93	29.12	34.05	54.00	-19.95	Average	100	58	P
6	4844.00	4.93	41.52	46.45	74.00	-27.55	Peak	100	58	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH03		:



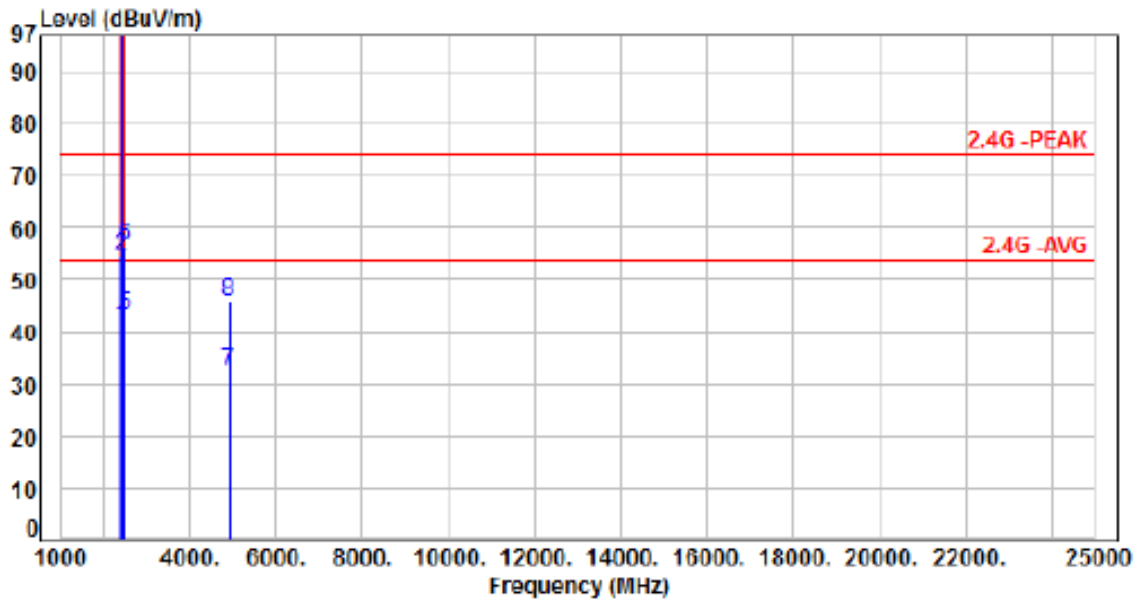
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	50.86	47.29	54.00	-6.71	Average	211	95	P
2	2390.00	-3.57	64.36	60.79	74.00	-13.21	Peak	211	95	P
3	2422.00	-3.34	108.36	105.02	200.00	-94.98	Average	211	95	P
4	2422.00	-3.34	114.10	110.76	200.00	-89.24	Peak	211	95	P
5	4844.00	4.93	28.91	33.84	54.00	-20.16	Average	100	152	P
6	4844.00	4.93	41.01	45.94	74.00	-28.06	Peak	100	152	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH06		:



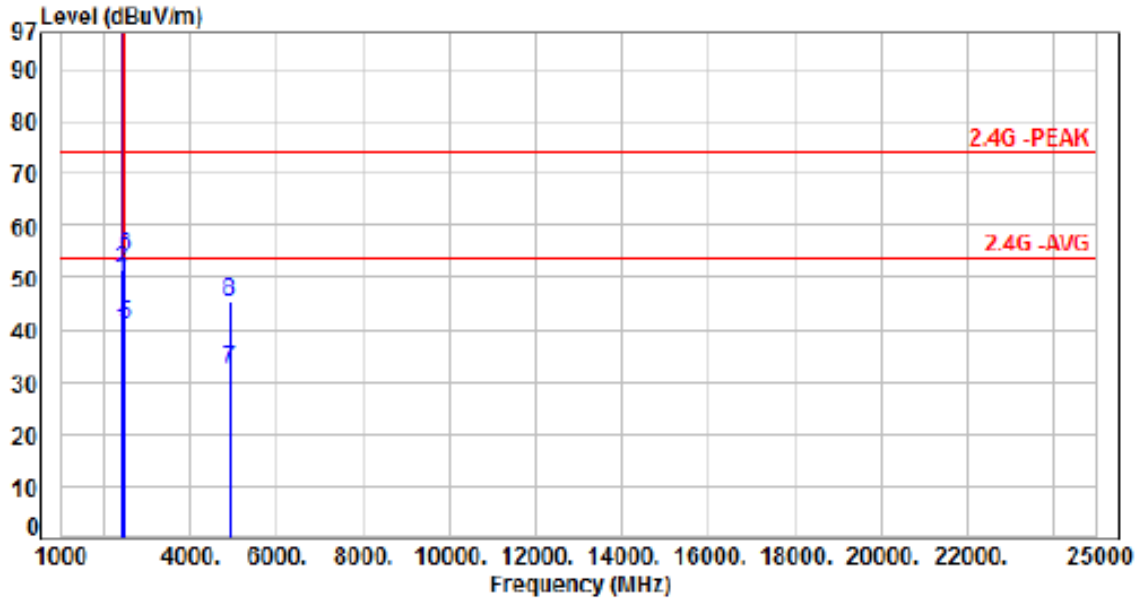
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	44.59	41.02	54.00	-12.98	Average	395	198	P
2	2390.00	-3.57	58.02	54.45	74.00	-19.55	Peak	395	198	P
3	2437.00	-3.06	112.09	109.03	200.00	-90.97	Average	395	198	P
4	2437.00	-3.06	117.96	114.90	200.00	-85.10	Peak	395	198	P
5	2483.50	-2.71	45.77	43.06	54.00	-10.94	Average	395	198	P
6	2483.50	-2.71	59.28	56.57	74.00	-17.43	Peak	395	198	P
7	4904.00	5.13	27.23	32.36	54.00	-21.64	Average	100	154	P
8	4904.00	5.13	40.56	45.69	74.00	-28.31	Peak	100	154	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH06		:



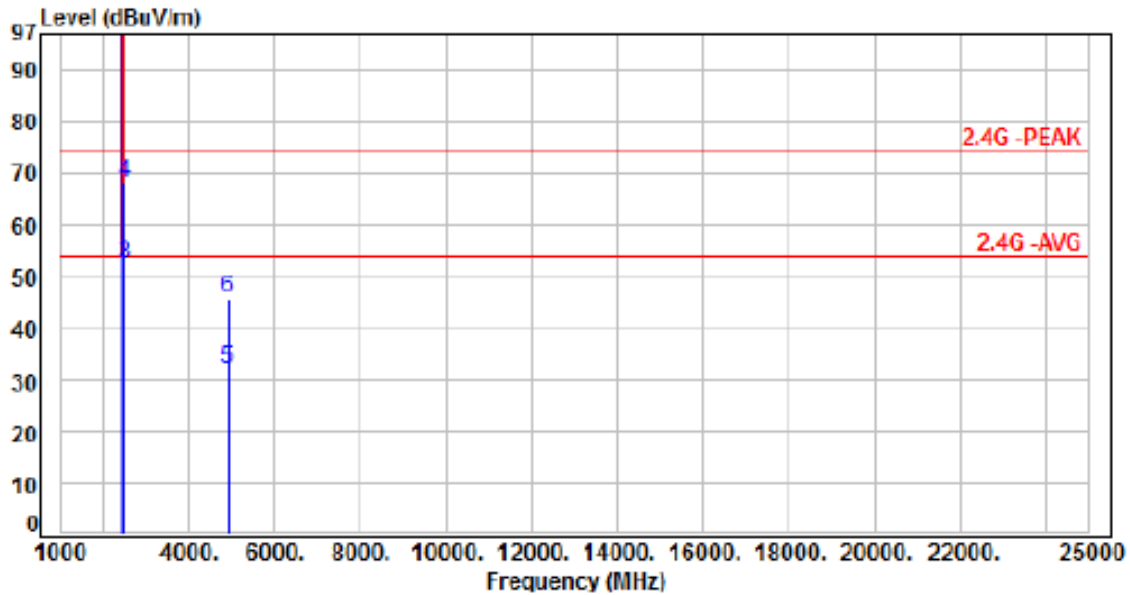
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-3.57	43.61	40.04	54.00	-13.96	Average	100	216	P
2	2390.00	-3.57	55.19	51.62	74.00	-22.38	Peak	100	216	P
3	2422.00	-3.34	109.32	105.98	200.00	-94.02	Average	100	216	P
4	2422.00	-3.34	116.03	112.69	200.00	-87.31	Peak	100	216	P
5	2483.50	-2.71	43.03	41.12	54.00	-12.88	Average	100	216	P
6	2483.50	-2.71	57.07	54.36	74.00	-19.64	Peak	100	216	P
7	4904.00	5.13	27.30	32.43	54.00	-21.57	Average	100	243	P
8	4984.00	5.13	40.07	45.20	74.00	-28.80	Peak	100	243	P

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



BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: VERTICAL
Test Mode	: Mode 6, CH09		



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	-2.81	112.69	109.88	200.00	-90.12	Average	318	254	P
2	2452.00	-2.81	116.79	113.98	200.00	-86.02	Peak	318	254	P
3	2483.50	-2.71	55.26	52.55	54.00	-1.45	Average	318	254	P
4	2483.50	-2.71	70.88	68.17	74.00	-5.83	Peak	318	254	P
5	4904.00	5.13	27.07	32.20	54.00	-21.80	Average	100	298	P
6	4904.00	5.13	40.64	45.77	74.00	-28.23	Peak	100	298	P

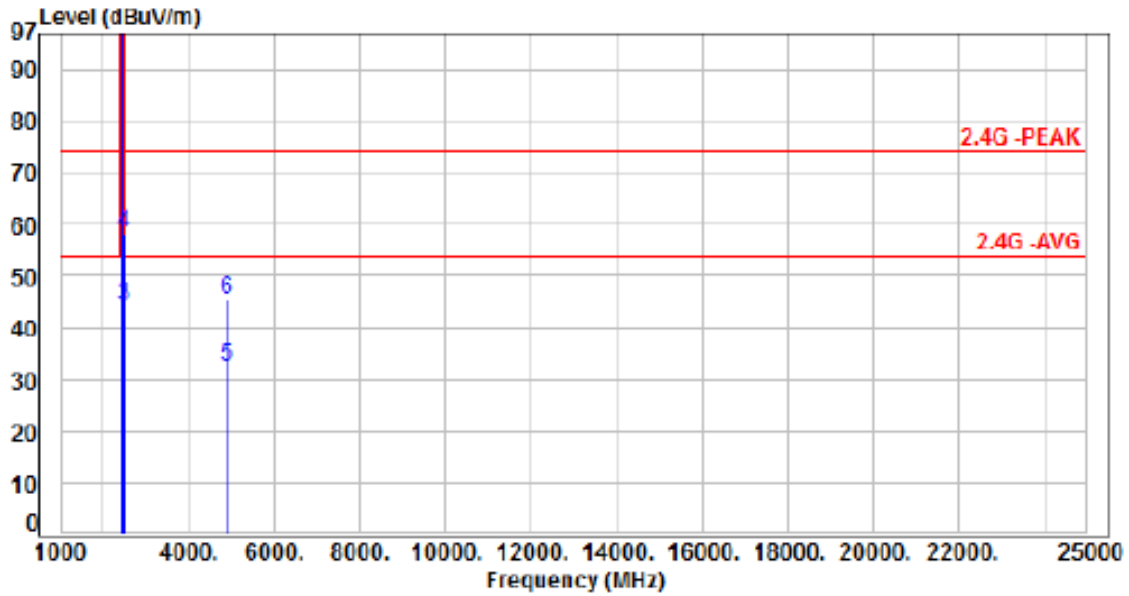
Note: Level=Reading+Factor  
Margin=Level-Limit  
Factor=Antenna Factor + cable loss - Amplifier Factor





BeamForming

Power	: DC 12V From adapter (120V/60Hz)	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 6, CH09		:



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	-2.81	109.30	106.49	200.00	-93.51	Average	378	184	P
2	2452.00	-2.81	113.46	110.65	200.00	-89.35	Peak	378	184	P
3	2483.50	-2.71	47.05	44.34	54.00	-9.66	Average	378	184	P
4	2483.50	-2.71	61.03	58.32	74.00	-15.68	Peak	378	184	P
5	4904.00	5.13	27.45	32.58	54.00	-21.42	Average	100	127	P
6	4904.00	5.13	40.30	45.43	74.00	-28.57	Peak	100	127	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

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

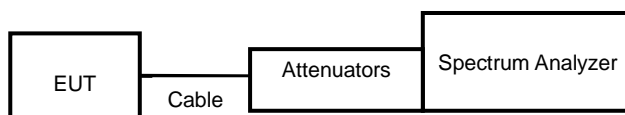
Below -30dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

### 7.2 Test Procedure

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

- a. The transmitter output was connected to the spectrum analyzer via a low loss 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 30dB 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

Note: Test plots refers to the following pages.

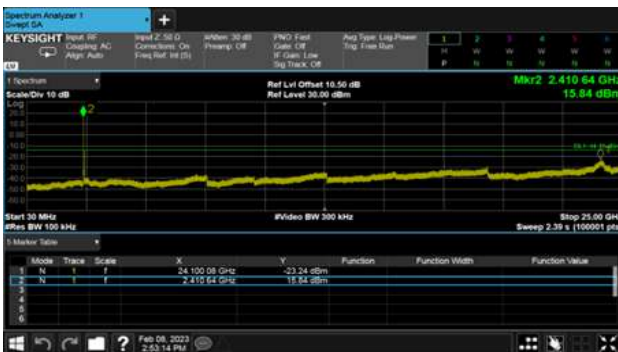
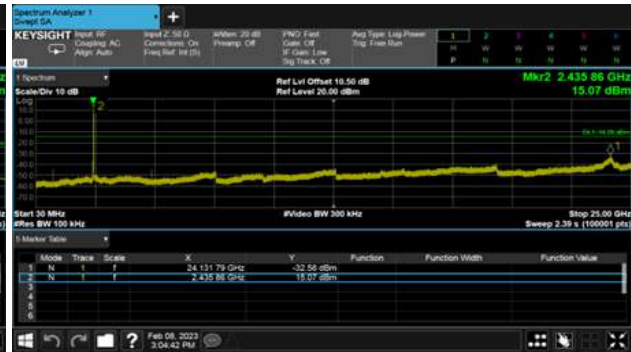
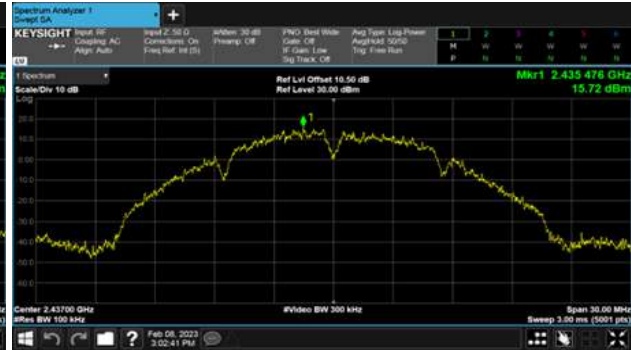
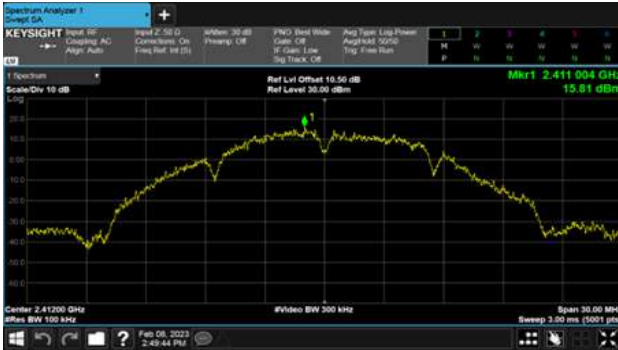


Non BeamForming

ANT 1

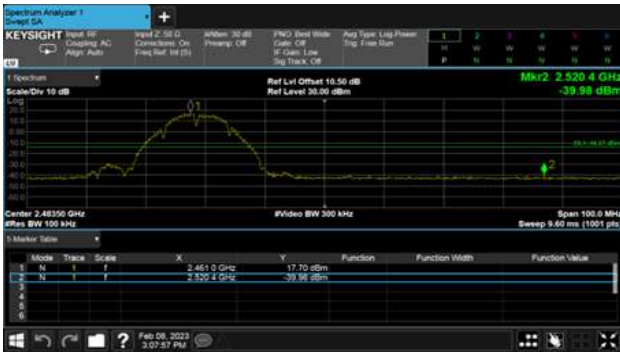
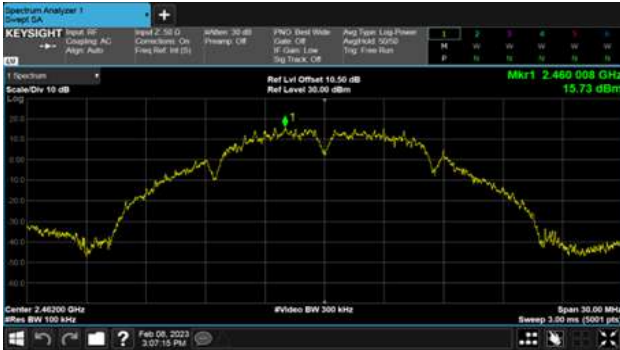
Modulation Type: 802.11b, CH 01

Modulation Type: 802.11b, CH 06





Non BeamForming  
ANT 1  
Modulation Type: 802.11b, CH 11



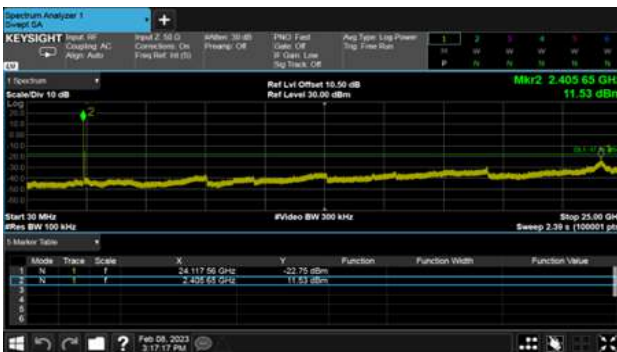
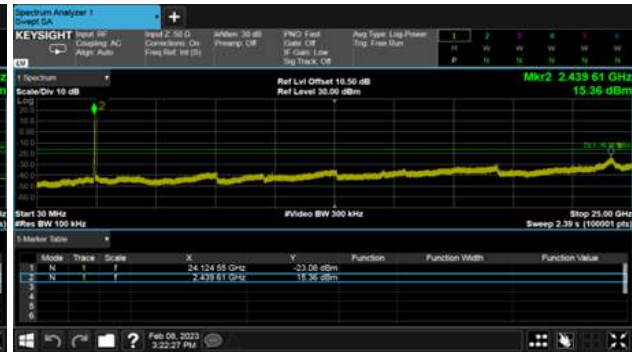
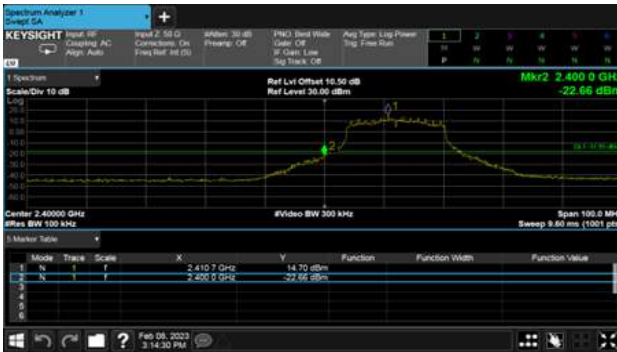
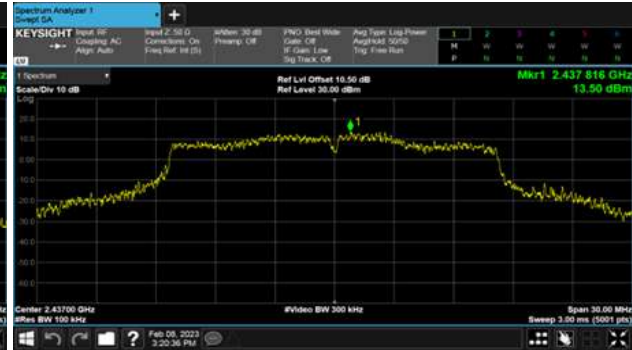
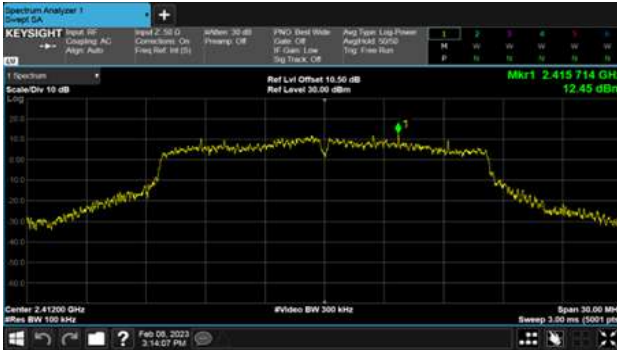


Non BeamForming

ANT 1

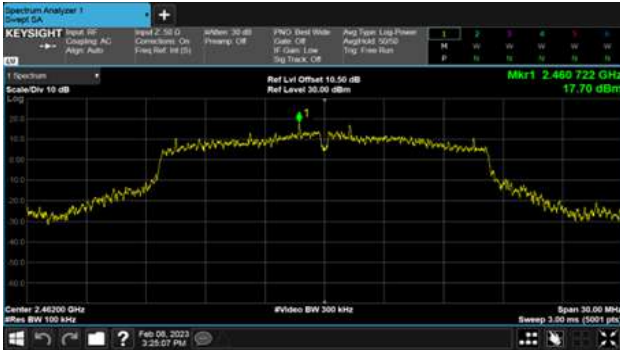
Modulation Type: 802.11g, CH 01

Modulation Type: 802.11g, CH 06





Non BeamForming  
ANT 1  
Modulation Type: 802.11g, CH 11



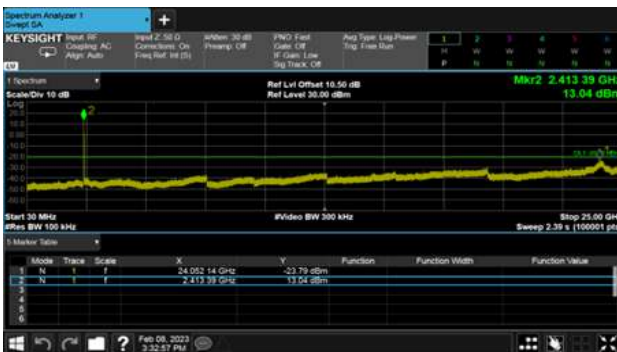
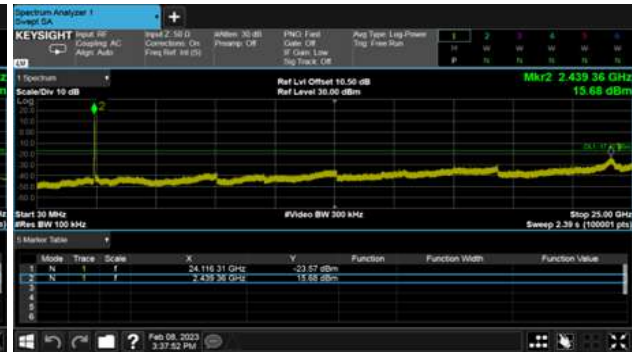
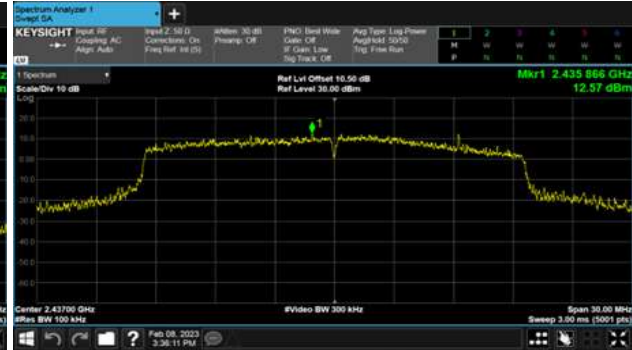
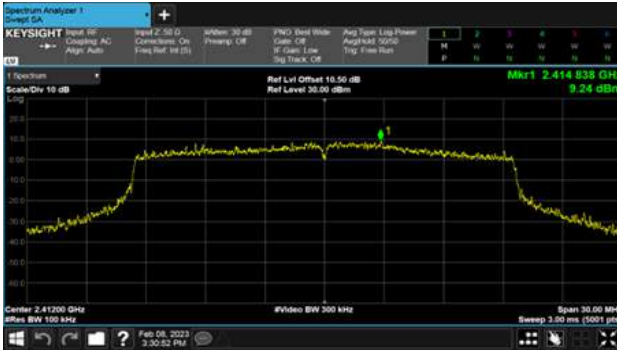


Non BeamForming

ANT 1

Modulation Type: 802.11ax HE20, CH01

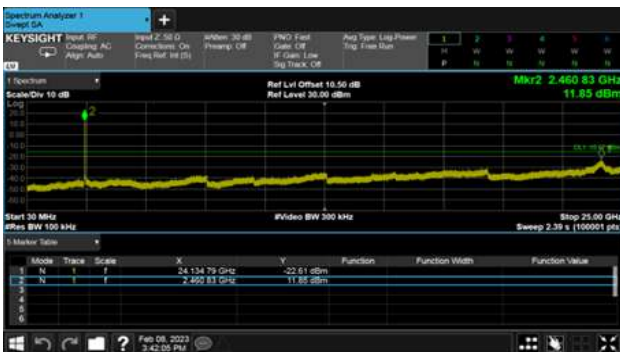
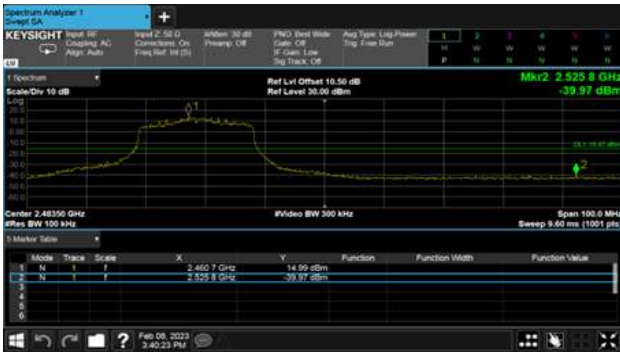
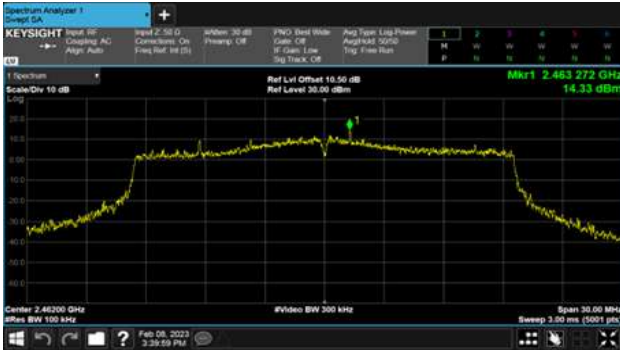
Modulation Type: 802.11ax HE20, CH06







Non BeamForming  
ANT 1  
Modulation Type: 802.11ax HE20, CH11



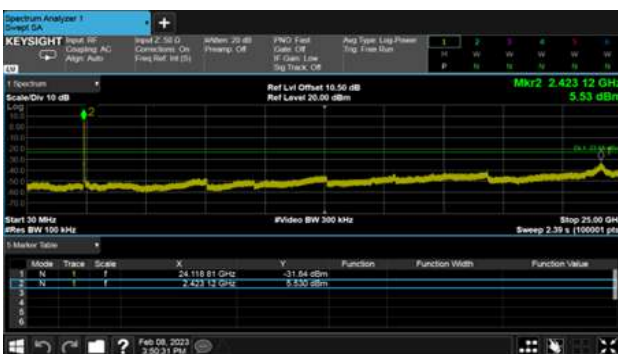
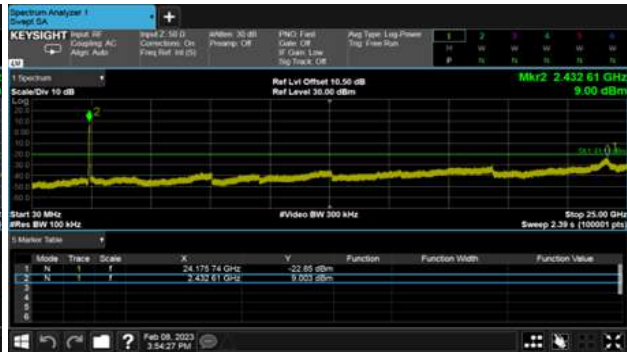
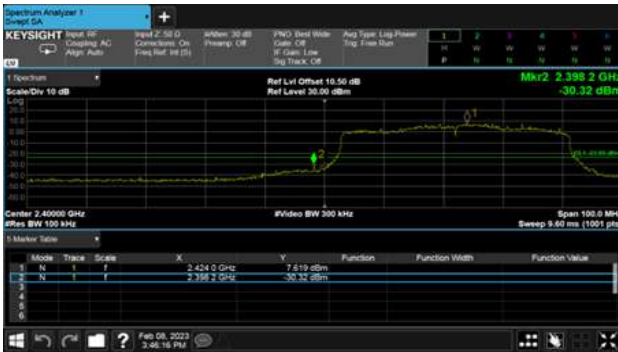
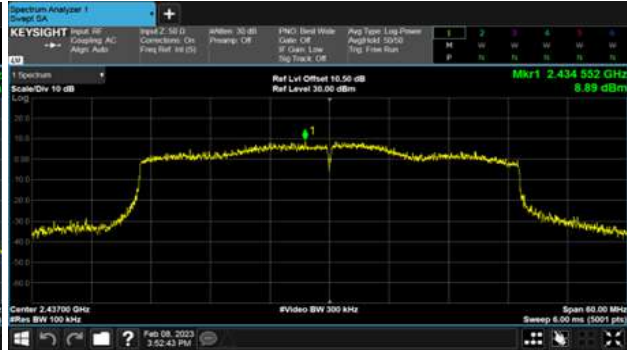
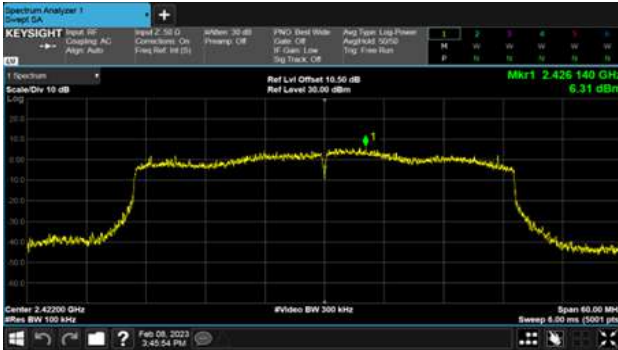


Non BeamForming

ANT 1

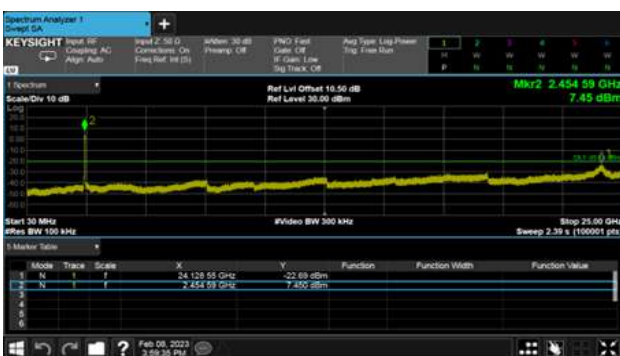
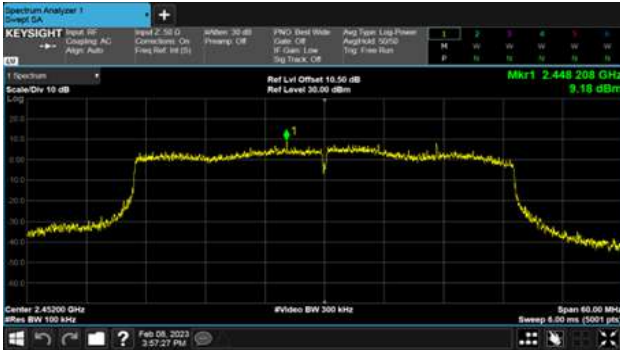
Modulation Type: 802.11ax HE40, CH03

Modulation Type: 802.11ax HE40, CH06





Non BeamForming  
ANT 1  
Modulation Type: 802.11ax HE40, CH09



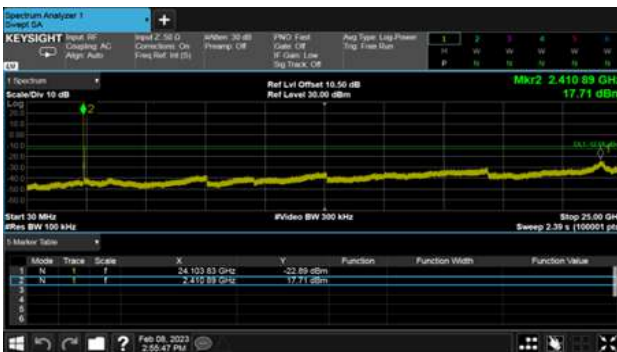
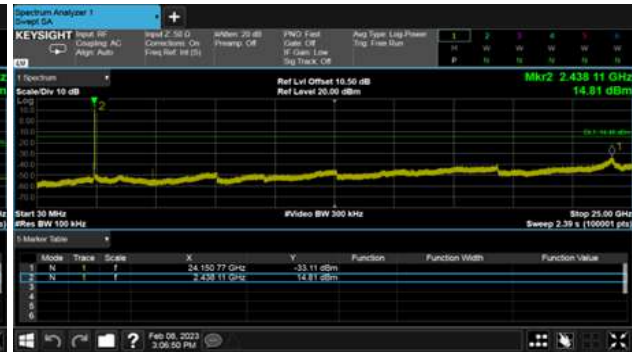
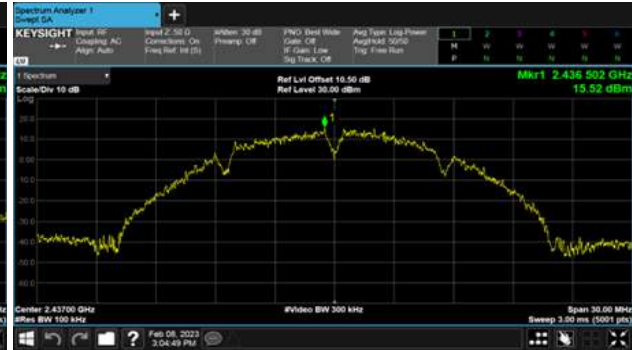
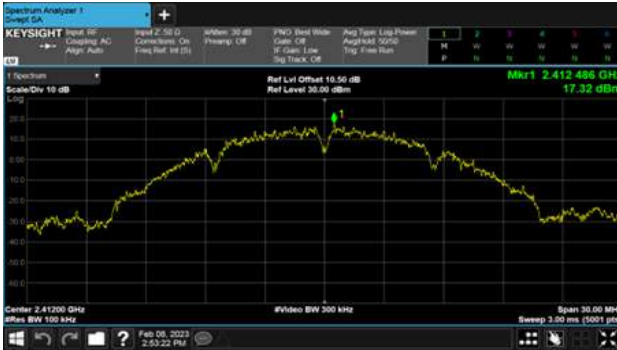


Non BeamForming

ANT 2

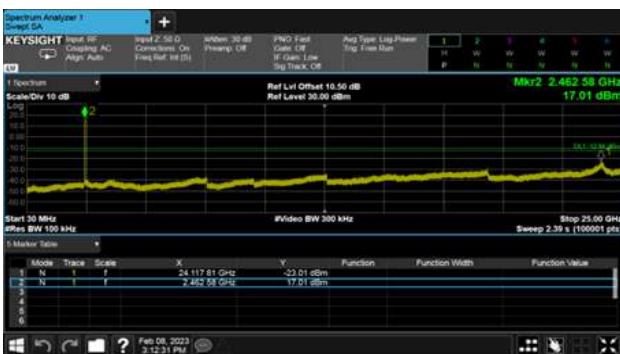
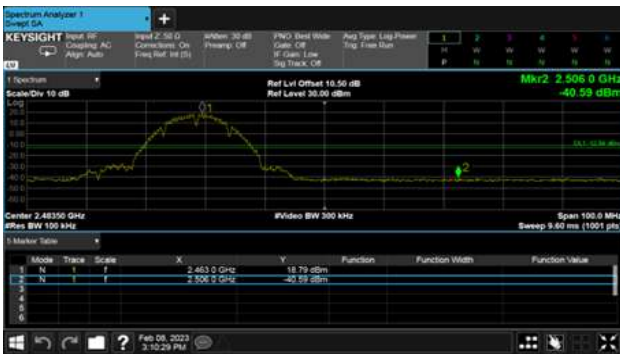
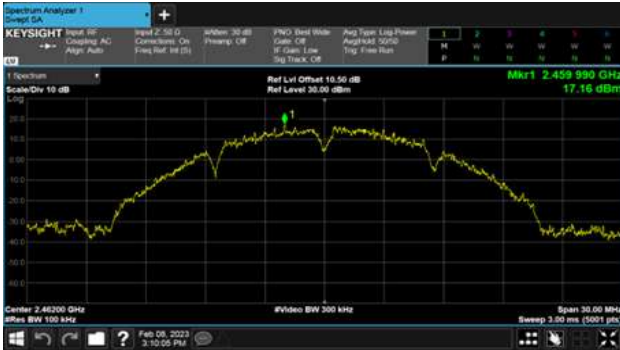
Modulation Type: 802.11b, CH 01

Modulation Type: 802.11b, CH 06





Non BeamForming  
ANT 2  
Modulation Type: 802.11b, CH 11



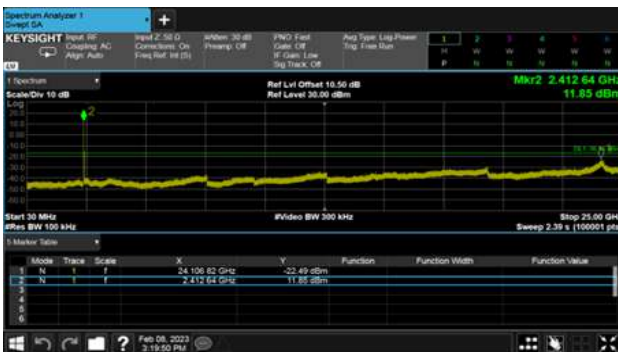
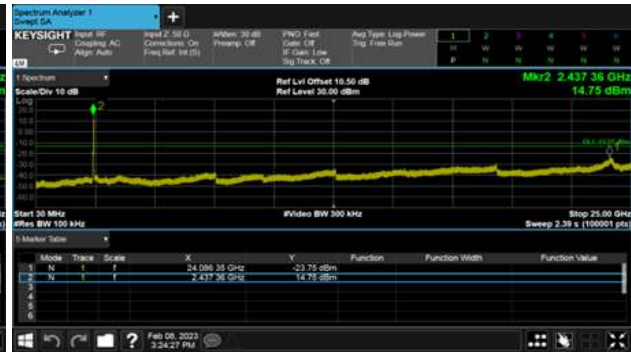
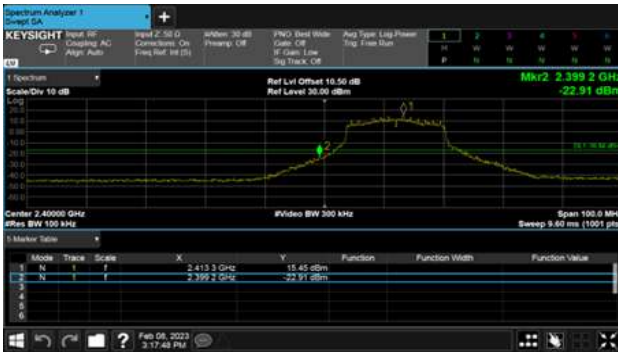
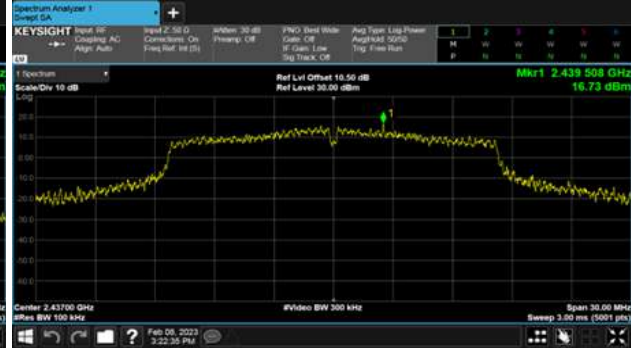
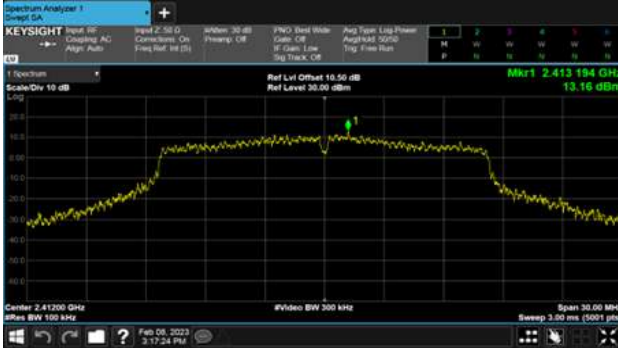


Non BeamForming

ANT 2

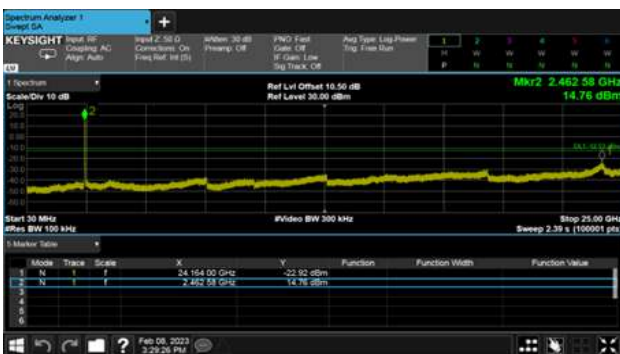
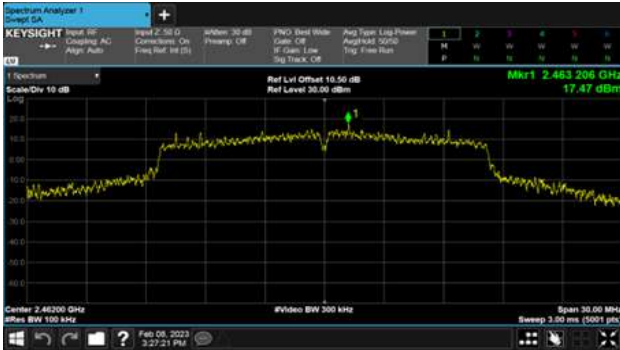
Modulation Type: 802.11g, CH 01

Modulation Type: 802.11g, CH 06





Non BeamForming  
ANT 2  
Modulation Type: 802.11g, CH 11



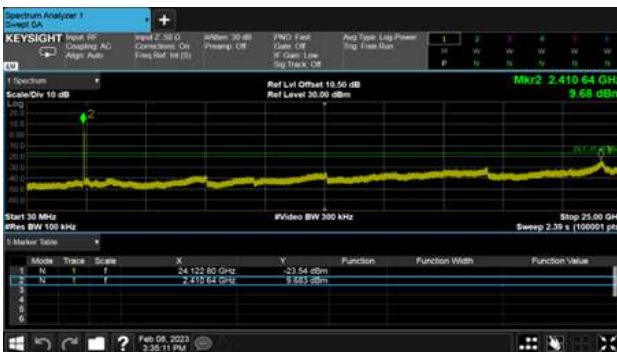
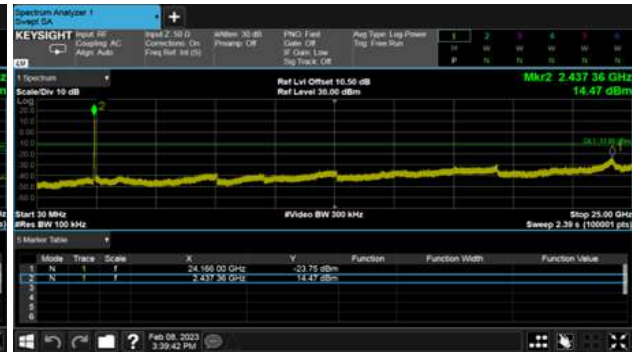
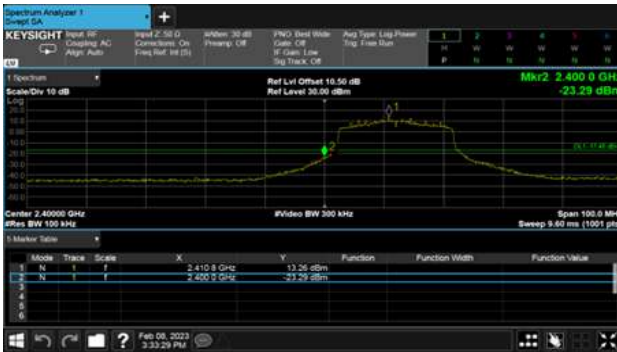
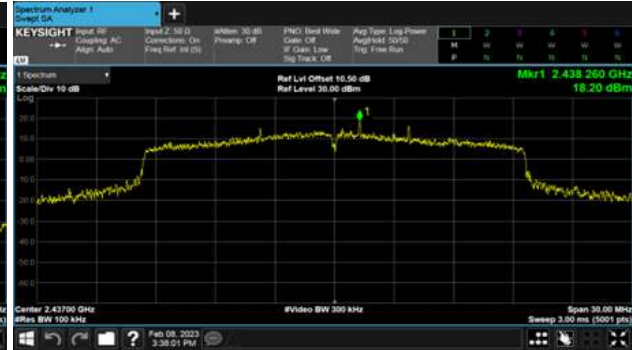
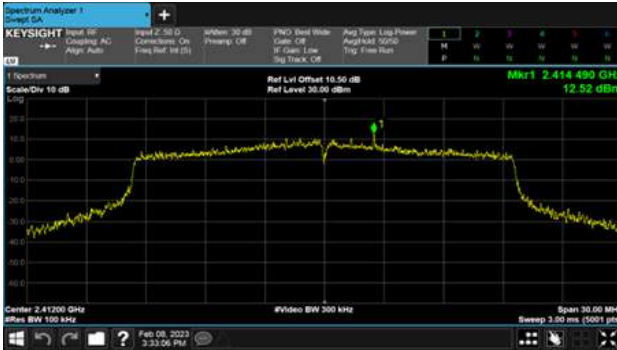


Non BeamForming

ANT 2

Modulation Type: 802.11ax HE20, CH01

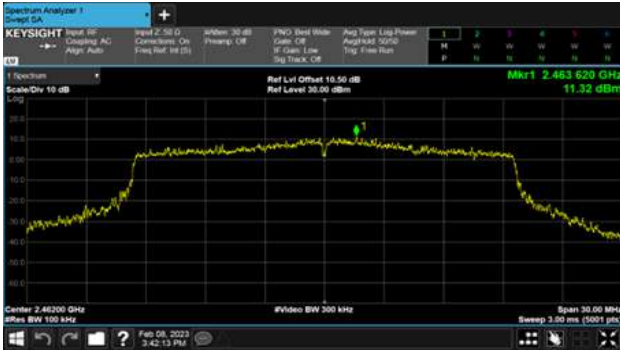
Modulation Type: 802.11ax HE20, CH06







Non BeamForming  
ANT 2  
Modulation Type: 802.11ax HE20, CH11



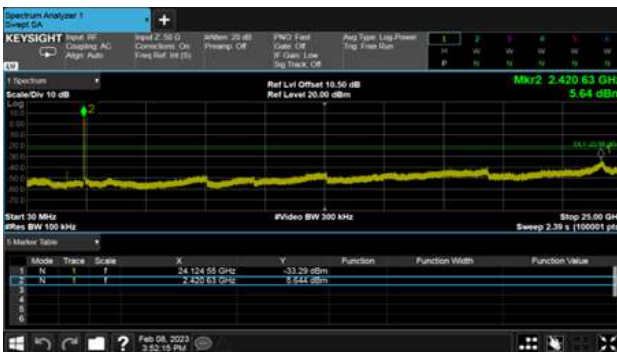
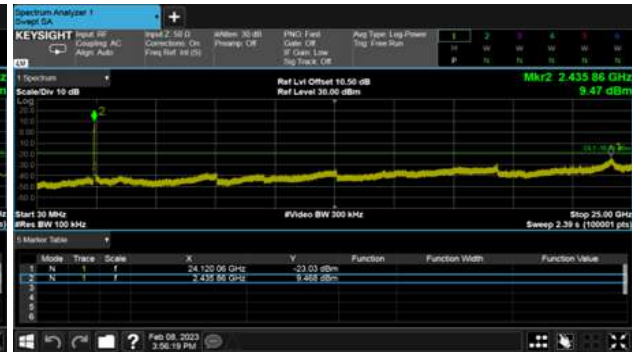
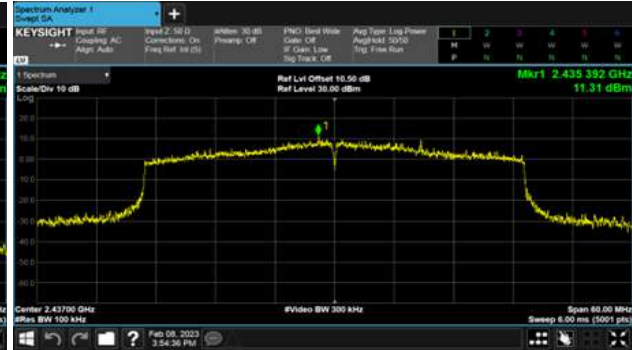
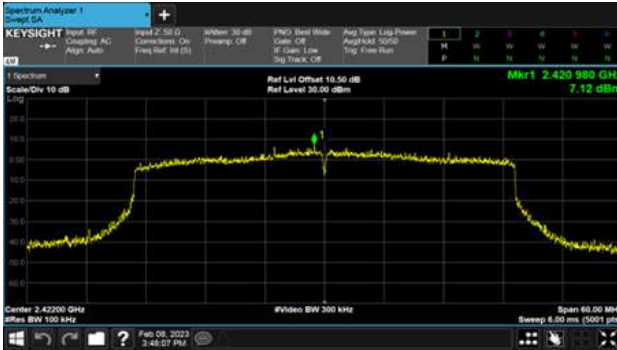


Non BeamForming

ANT 2

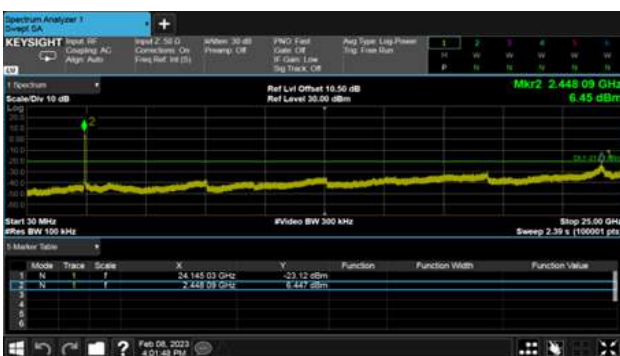
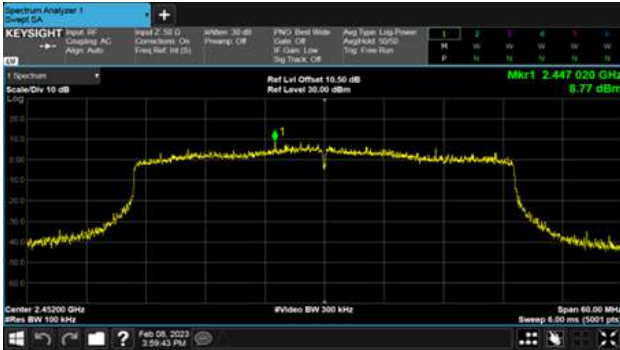
Modulation Type: 802.11ax HE40, CH03

Modulation Type: 802.11ax HE40, CH06





Non BeamForming  
ANT 2  
Modulation Type: 802.11ax HE40, CH09



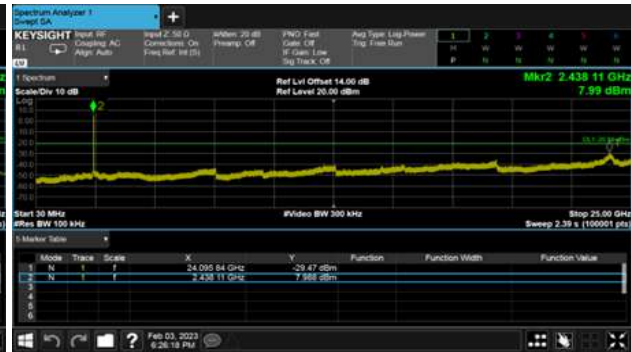
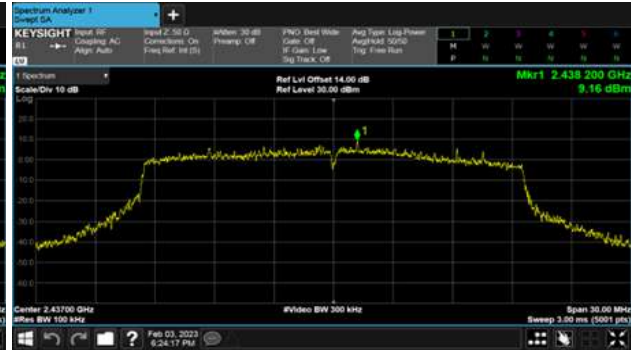
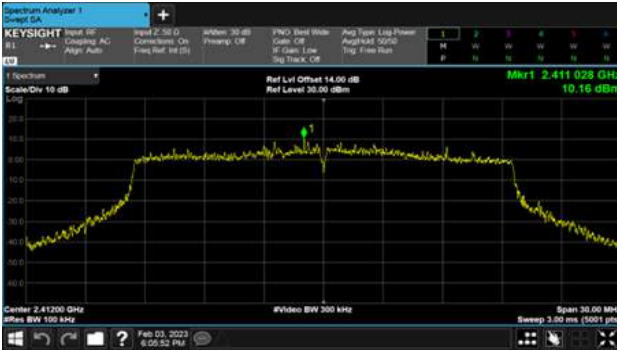


BeamForming

ANT 1

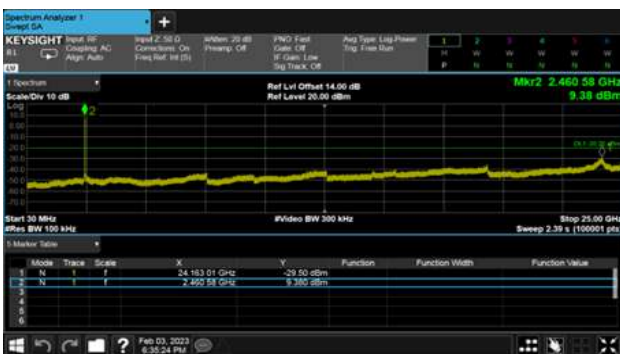
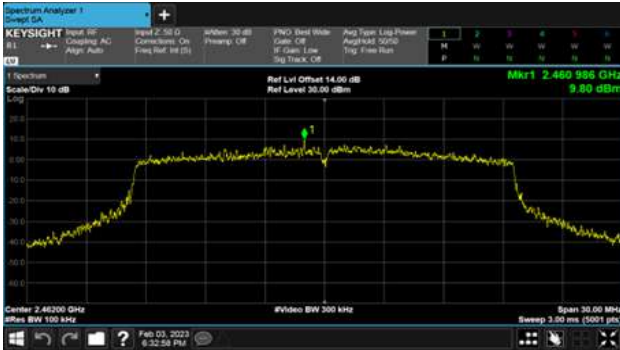
Modulation Type: 802.11ax HE20, CH01

Modulation Type: 802.11ax HE20, CH06





BeamForming  
ANT 1  
Modulation Type: 802.11ax HE20, CH11



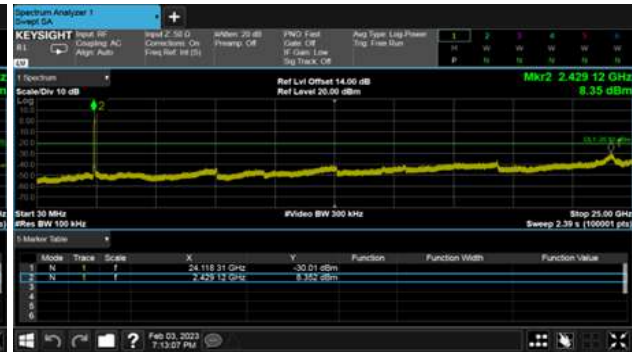
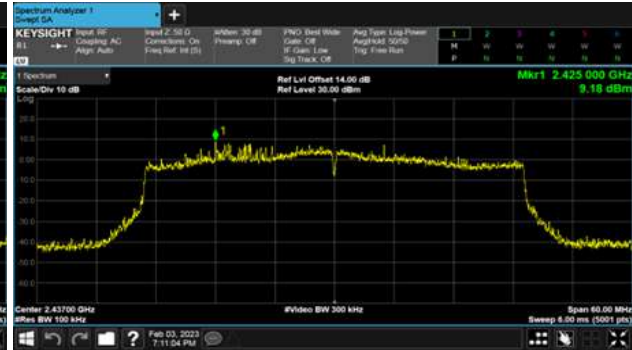
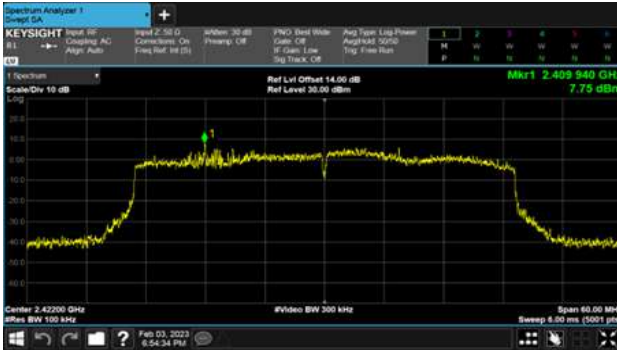


BeamForming

ANT 1

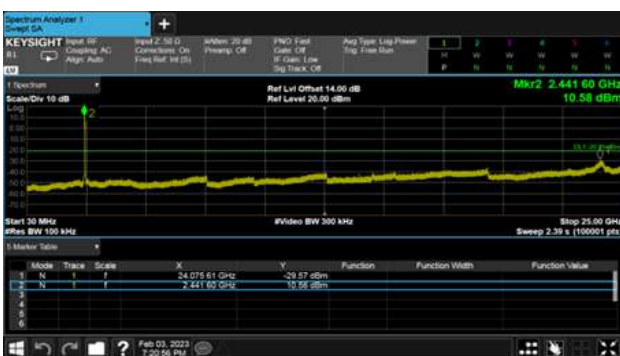
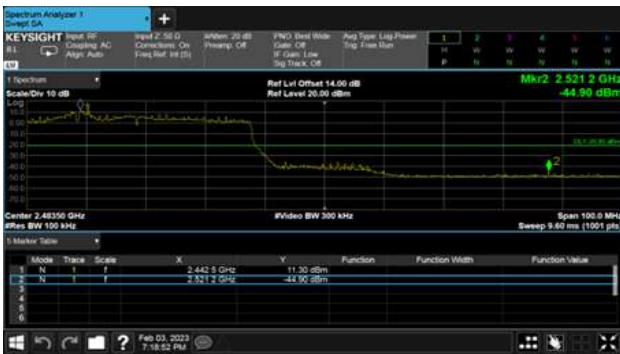
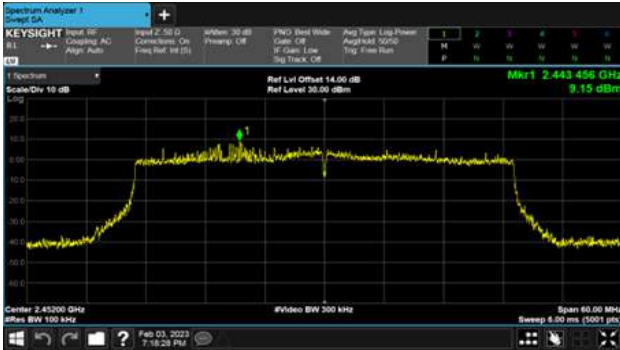
Modulation Type: 802.11ax HE40, CH03

Modulation Type: 802.11ax HE40, CH06





BeamForming  
ANT 1  
Modulation Type: 802.11ax HE40, CH09

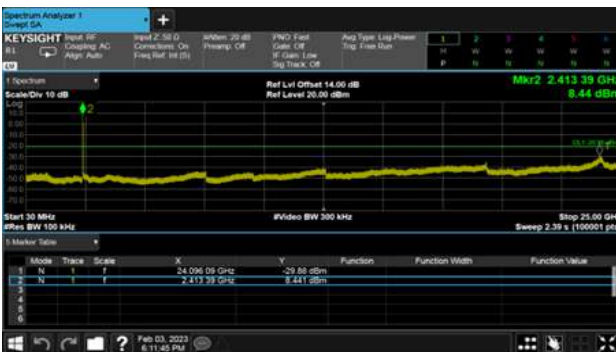
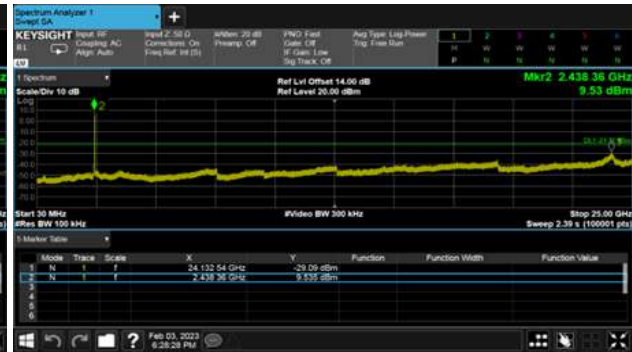
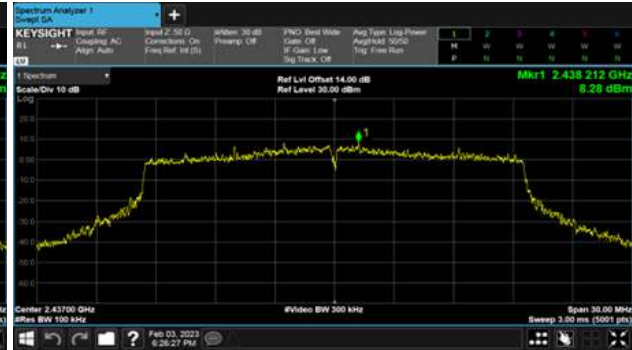
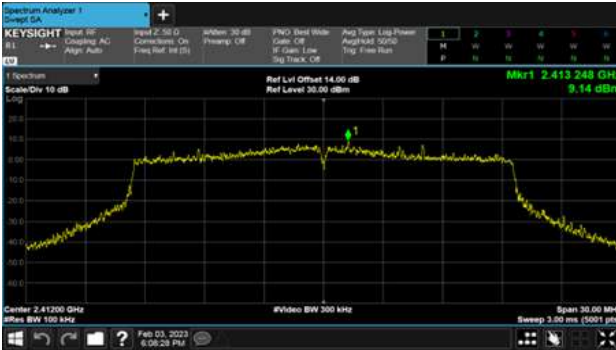




BeamForming  
ANT 2

Modulation Type: 802.11ax HE20, CH01

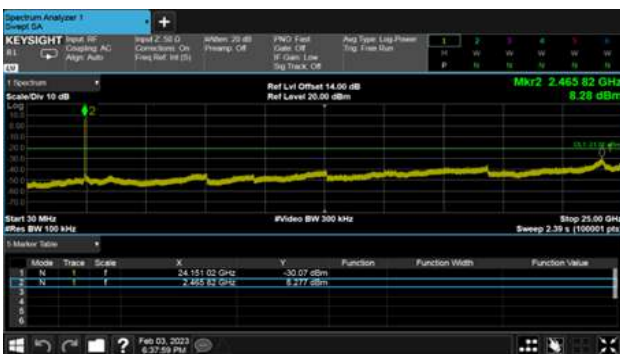
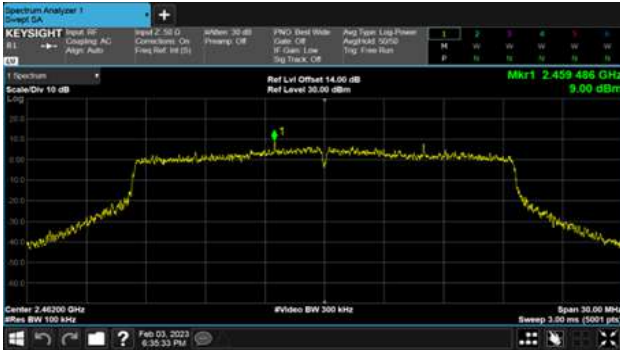
Modulation Type: 802.11ax HE20, CH06







BeamForming  
ANT 2  
Modulation Type: 802.11ax HE20, CH11

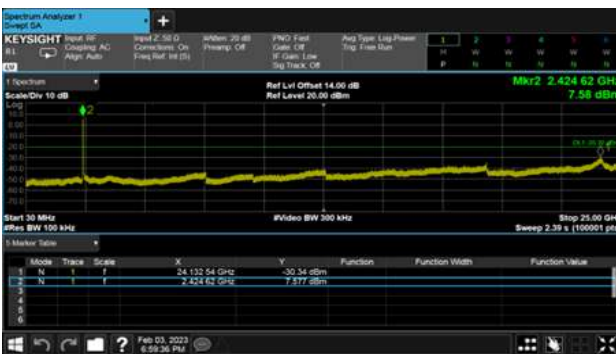
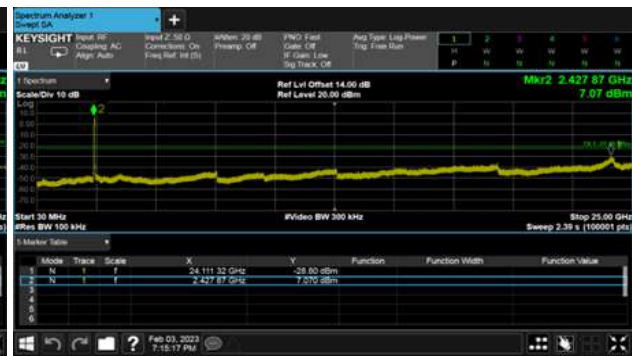
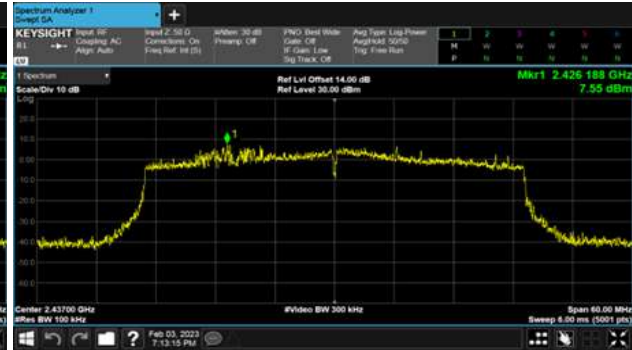
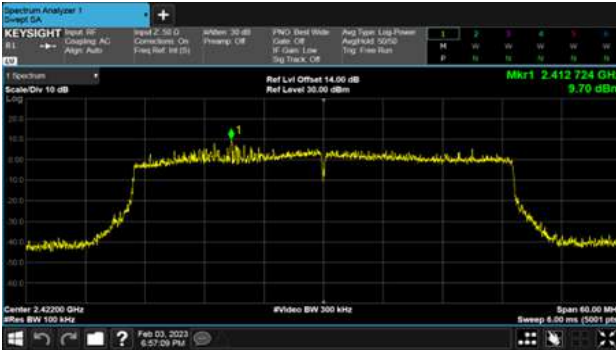




BeamForming  
ANT 2

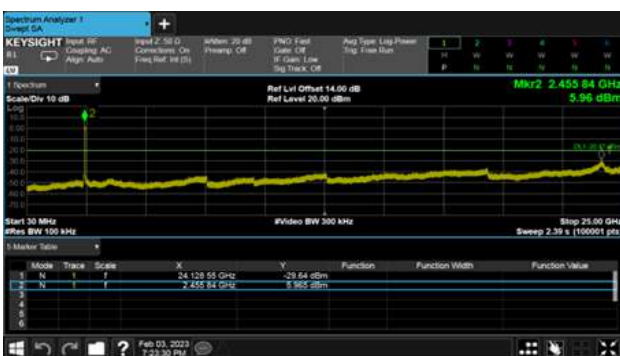
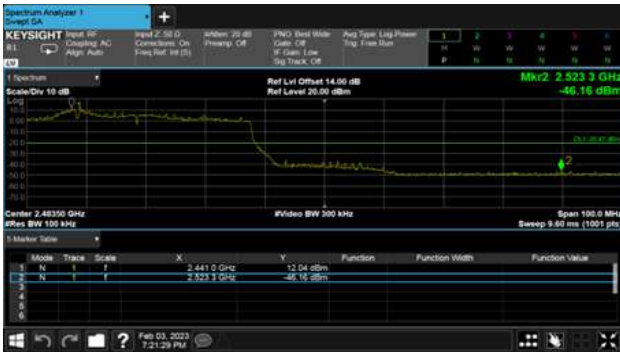
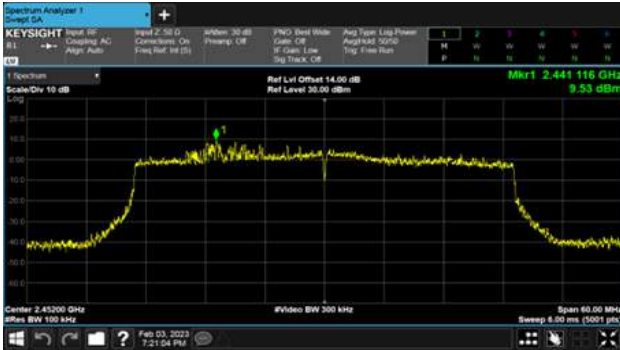
Modulation Type: 802.11ax HE40, CH03

Modulation Type: 802.11ax HE40, CH06





BeamForming  
ANT 2  
Modulation Type: 802.11ax HE40, CH09





## 8. On Time, Duty Cycle and Measurement methods

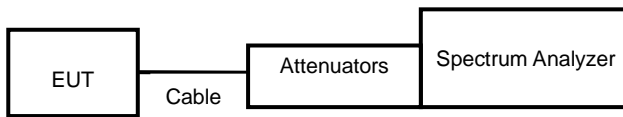
### 8.1 Test Limit

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



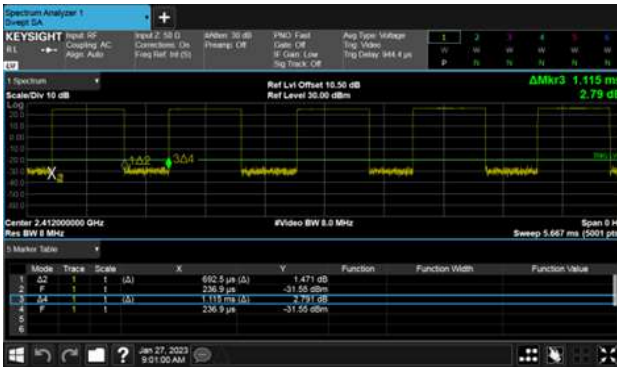
### 8.4 Test Result and Data

Non BeamForming			
Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)
11b,1M	0.69	1.12	62.11%
11g,6M	1.98	2.08	95.20%
11ax HE20	5.47	6.01	91.01%
11ax HE40	5.46	5.99	91.09%

BeamForming			
Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)
11ax HE20	1.77	2.05	86.31%
11ax HE40	4.46	4.92	90.65%



Non BeamForming  
Modulation Type: 802.11b(1Mbps)



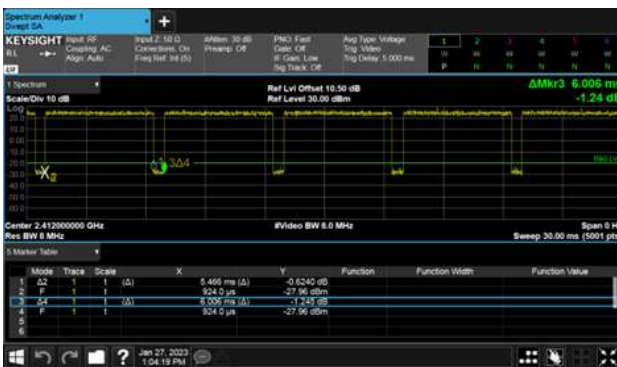
Modulation Type: 802.11ax HE40(14.6Mbps)



Modulation Type: 802.11g(6Mbps)



Modulation Type: 802.11ax HE20(7.3Mbps)

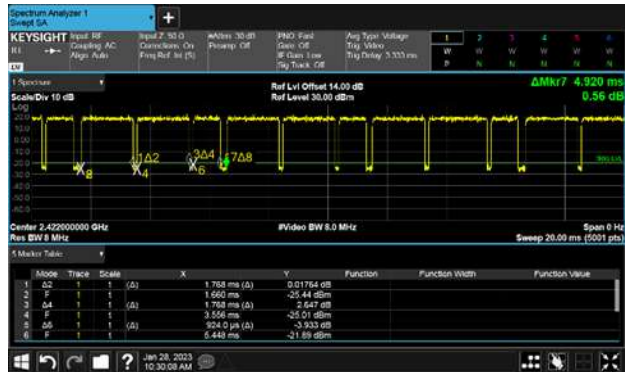




BeamForming  
Modulation Type: 802.11ax HE20(7.3Mbps)



Modulation Type: 802.11ax HE40(14.6Mbps)





## 9. 6dB Bandwidth Measurement Data

### 9.1 Test Limit

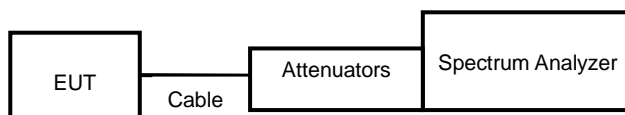
The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

### 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

#### Non BeamForming

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT 1	ANT 2	
11b	1	2412	8.54	8.07	0.5
	6	2437	7.09	7.59	0.5
	11	2462	6.59	8.04	0.5
11g	1	2412	15.06	15.08	0.5
	6	2437	13.83	15.05	0.5
	11	2462	15.05	15.08	0.5
11ax HE20	1	2412	12.52	13.79	0.5
	6	2437	13.79	14.99	0.5
	11	2462	11.48	15.04	0.5
11ax HE40	3	2422	31.34	35.05	0.5
	6	2437	31.25	30.07	0.5
	9	2452	35.05	35.02	0.5

#### BeamForming

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT 1	ANT 2	
11ax HE20	1	2412	15.16	15.09	0.5
	6	2437	15.09	15.07	0.5
	11	2462	15.14	15.17	0.5
11ax HE40	3	2422	34.91	33.82	0.5
	6	2437	22.76	28.06	0.5
	9	2452	25.29	23.25	0.5





Non BeamForming  
ANT 1  
Modulation Type: 802.11b  
CH01

Modulation Type: 802.11g  
CH01



CH06

CH06



CH11

CH11





Non BeamForming

ANT 1

Modulation Type: 802.11ax HE20

CH01

Modulation Type: 802.11ax HE40

CH03



CH06



CH06



CH11



CH09





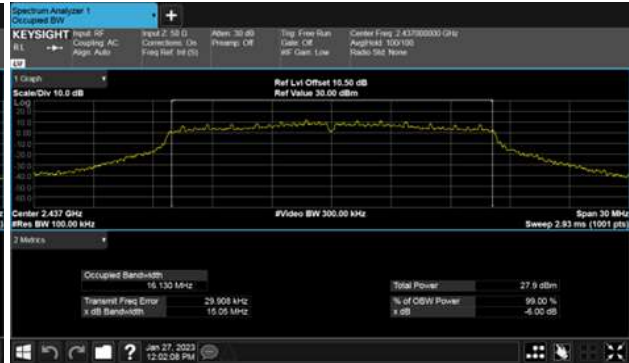
Non BeamForming  
ANT 2  
Modulation Type: 802.11b  
CH01

Modulation Type: 802.11g  
CH01



CH06

CH06



CH11

CH11





Non BeamForming  
ANT 2  
Modulation Type: 802.11ax HE20  
CH01

Modulation Type: 802.11ax HE40  
CH03



CH06

CH06



CH11

CH09





BeamForming  
ANT 1  
Modulation Type: 802.11ax HE20  
CH01

Modulation Type: 802.11ax HE40  
CH03



CH06

CH06



CH11

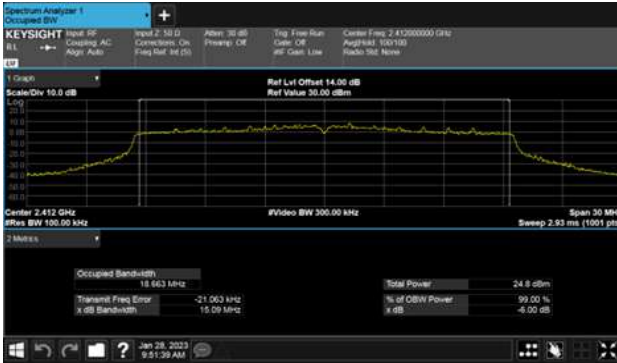
CH09





BeamForming  
ANT 2  
Modulation Type: 802.11ax HE20  
CH01

Modulation Type: 802.11ax HE40  
CH03



CH06

CH06



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CH09





## 10. Maximum Average Output Power

### 10.1 Test Limit

The Maximum Average Output Power Measurement is 30dBm.

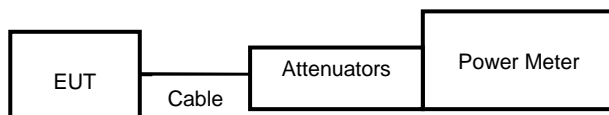
If transmitting antennas of directional gain greater than 6 dBi are used, the average output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

### 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

#### Non Beamforming

Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Powe Limit (dBm)
				ANT 1	ANT 2			
25	11b	1	2412	25.19	25.45	28.33	681.121	30.00
24.5		6	2437	24.77	25.01	27.90	616.873	30.00
25.5		11	2462	25.80	25.74	28.78	755.162	30.00
23	11g	1	2412	23.20	23.28	26.25	421.744	30.00
25.5		6	2437	25.81	25.98	28.91	777.344	30.00
25.5		11	2462	25.84	26.06	28.96	787.353	30.00
22	11ax HE20	1	2412	22.45	22.37	25.42	348.376	30.00
25.5		6	2437	25.41	26.80	29.17	826.166	30.00
23		11	2462	23.40	23.21	26.32	428.187	30.00
20.5	11ax HE40	3	2422	20.96	21.06	24.02	252.382	30.00
24		6	2437	23.93	24.38	27.17	521.330	30.00
22.5		9	2452	22.90	22.75	25.84	383.349	30.00

#### Beamforming

Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Powe Limit (dBm)
				ANT 1	ANT 2			
23	11ax HE20	1	2412	19.39	19.89	22.66	184.395	30.00
23		6	2437	19.33	19.87	22.62	182.755	30.00
23		11	2462	19.73	19.77	22.76	188.814	30.00
23	11ax HE40	3	2422	20.44	20.53	23.50	223.642	30.00
23		6	2437	20.58	20.18	23.39	218.520	30.00
23		9	2452	20.55	20.33	23.45	221.396	30.00





## 11. Power Spectral Density

### 11.1 Test Limit

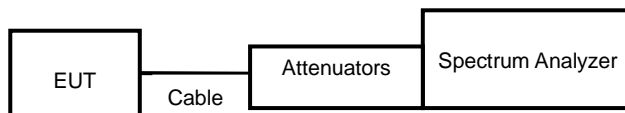
The Maximum of Power Spectral Density Measurement is 8dBm.

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

### 11.3 Test Setup Layout





### 11.4 Test Result and Data

#### Non Beamforming

Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3KHz Bandwidth(dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT 1	ANT 2				
11b	1	2412	-5.07	-3.981	-1.48	2.07	0.59	8.00
	6	2437	-5.168	-5.35	-2.25	2.07	-0.18	8.00
	11	2462	-4.594	-3.302	-0.89	2.07	1.18	8.00
11g	1	2412	-6.498	-6.876	-3.67	0.21	-3.46	8.00
	6	2437	-5.363	-3.359	-1.24	0.21	-1.03	8.00
	11	2462	-3.716	-3.848	-0.77	0.21	-0.56	8.00
11ax HE20	1	2412	-10.82	-11.474	-8.12	0.41	-7.71	8.00
	6	2437	-8.86	-6.824	-4.71	0.41	-4.30	8.00
	11	2462	-11.069	-10.607	-7.82	0.41	-7.41	8.00
11ax HE40	3	2422	-1.195	-1.758	1.54	0.41	1.95	8.00
	6	2437	1.584	2.565	5.11	0.41	5.52	8.00
	9	2452	0.982	0.217	3.63	0.41	4.04	8.00

#### Beamforming

Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3KHz Bandwidth(dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT 1	ANT 2				
11ax HE20	1	2412	-0.802	-0.203	2.52	0.64	3.16	8.00
	6	2437	-1.080	-0.188	2.40	0.64	3.04	8.00
	11	2462	-0.639	-0.299	2.54	0.64	3.18	8.00
11ax HE40	3	2422	-2.226	-2.142	0.83	0.43	1.26	8.00
	6	2437	-1.380	-1.435	1.60	0.43	2.03	8.00
	9	2452	-1.714	-2.652	0.85	0.43	1.28	8.00





Non BeamForming

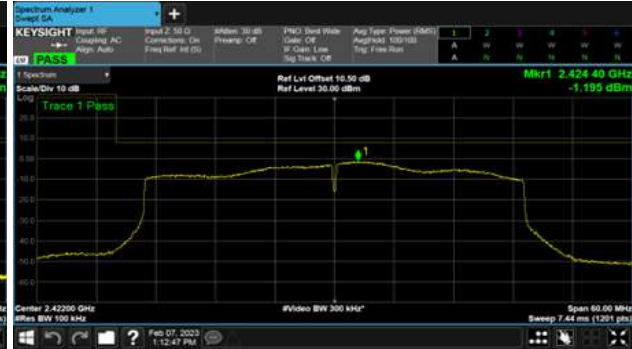
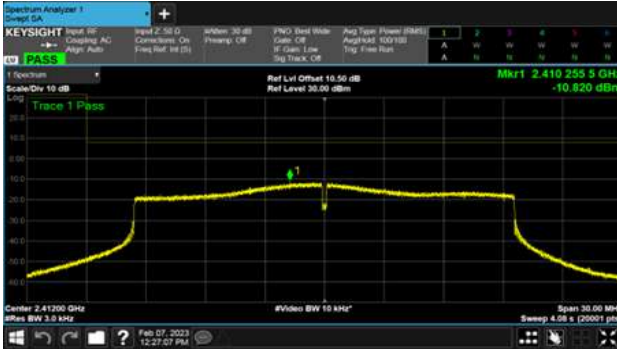
ANT 1

Modulation Type: 802.11ax HE20

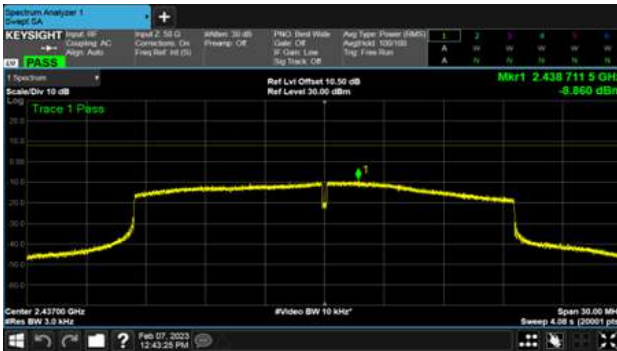
CH01

Modulation Type: 802.11ax HE40

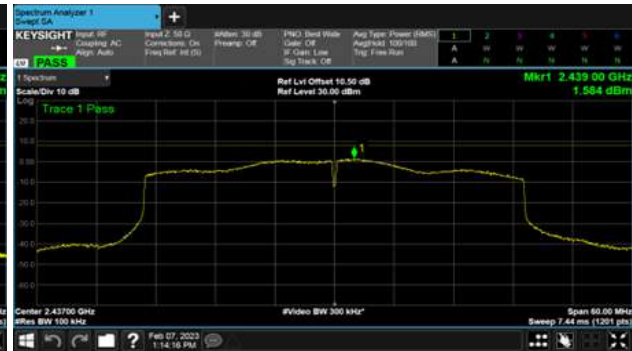
CH03



CH06



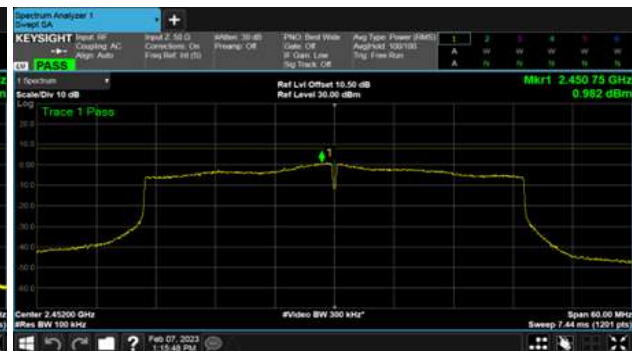
CH06



CH11



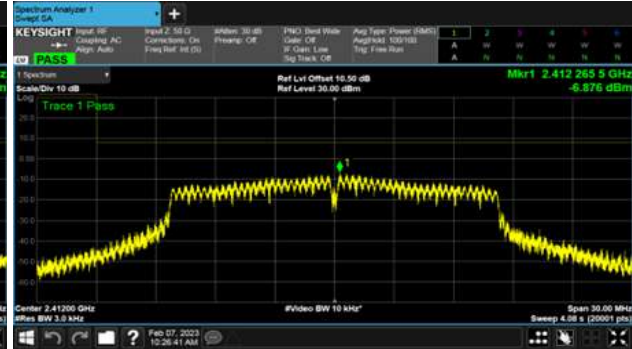
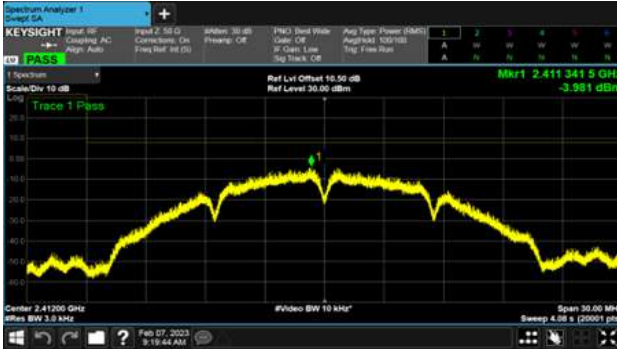
CH09





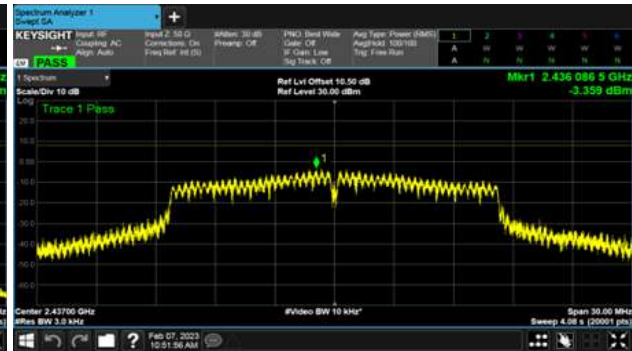
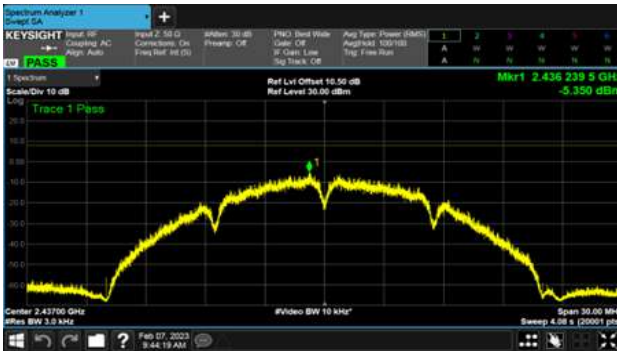
Non BeamForming  
ANT 2  
Modulation Type: 802.11b  
CH01

Modulation Type: 802.11g  
CH01



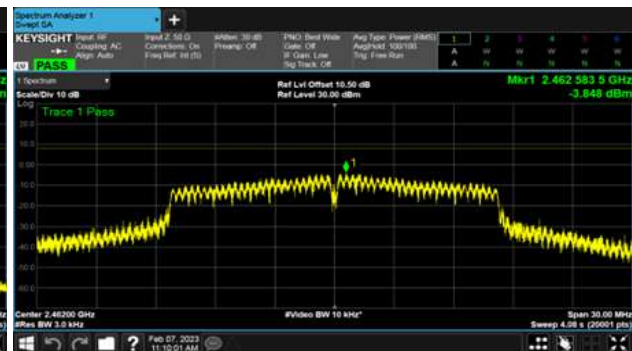
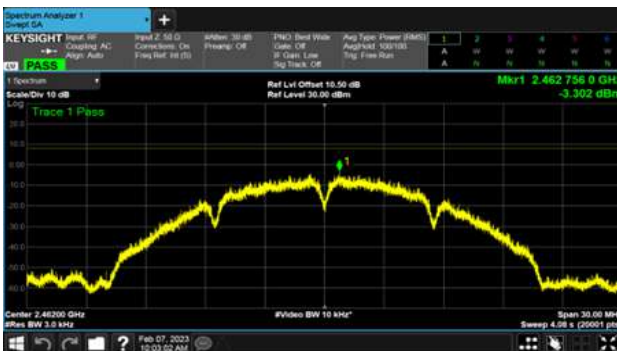
CH06

CH06



CH11

CH11





Non BeamForming

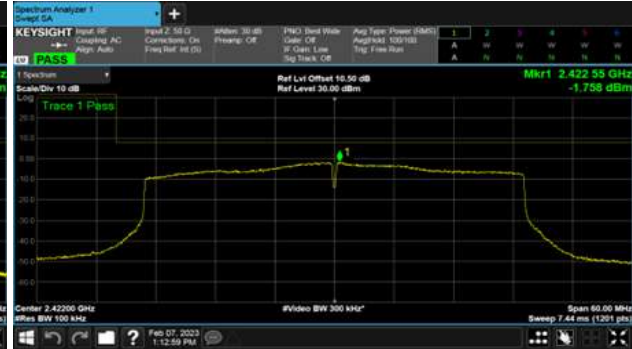
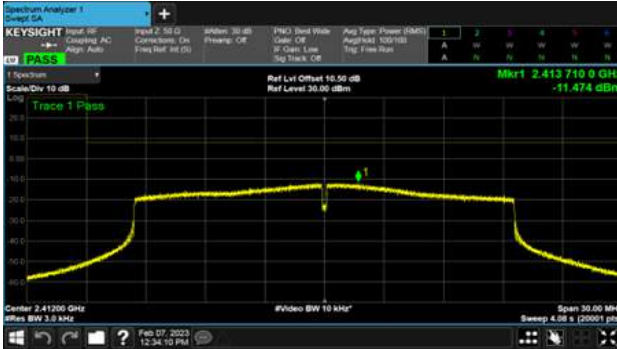
ANT 2

Modulation Type: 802.11ax HE20

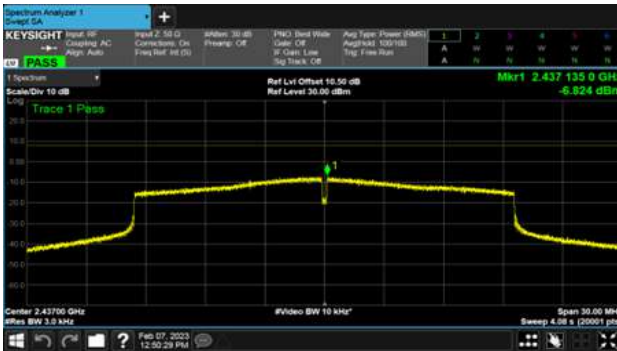
CH01

Modulation Type: 802.11ax HE40

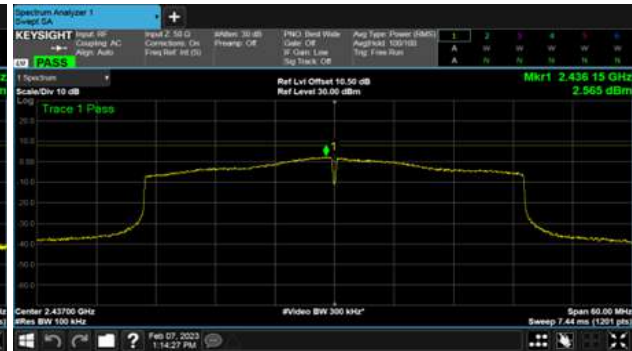
CH03



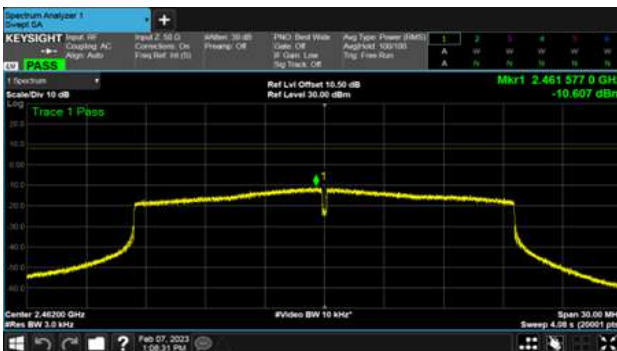
CH06



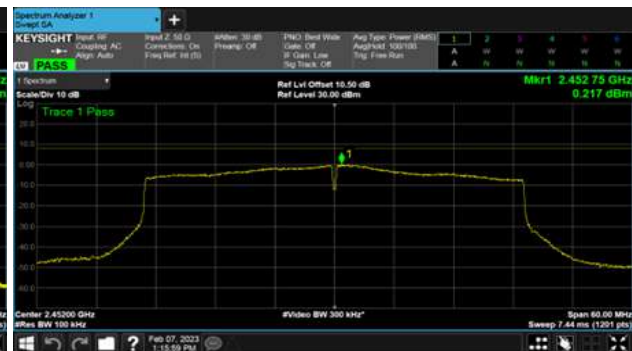
CH06



CH11



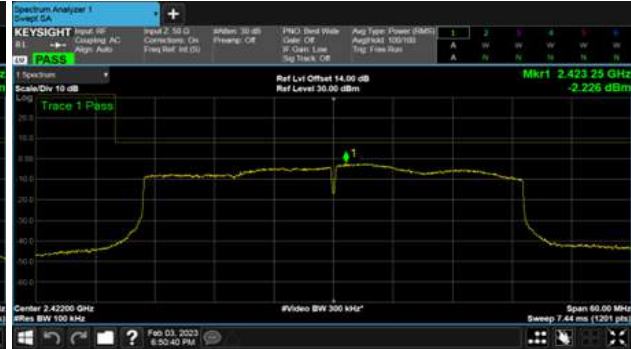
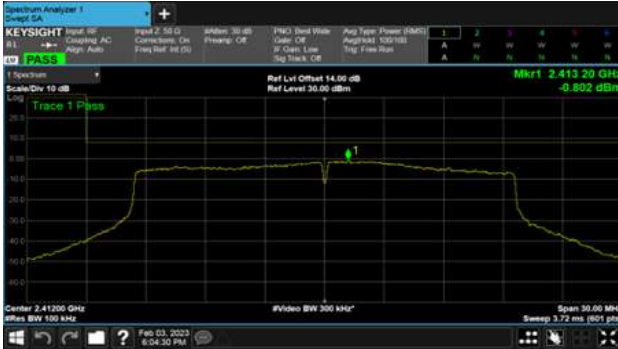
CH09





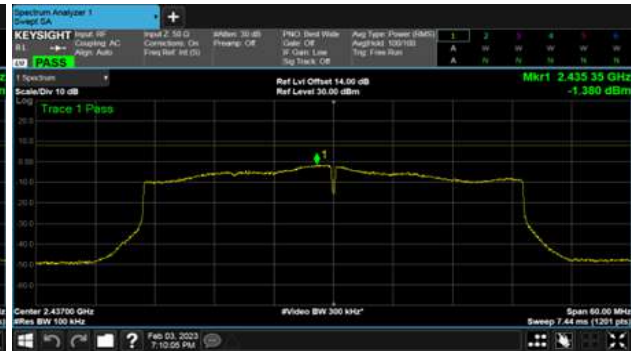
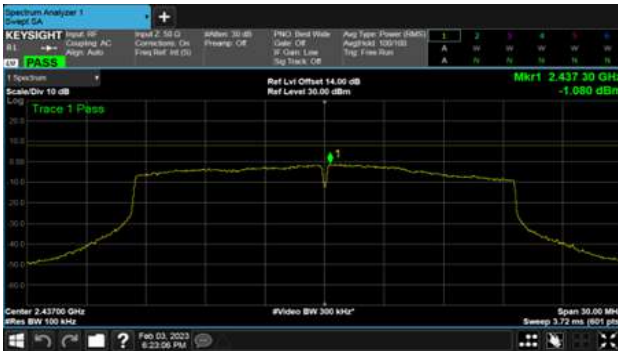
BeamForming  
ANT 1  
Modulation Type: 802.11ax HE20  
CH01

Modulation Type: 802.11ax HE40  
CH03



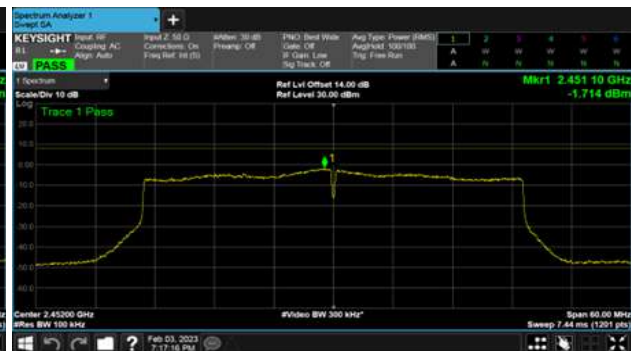
CH06

CH06



CH11

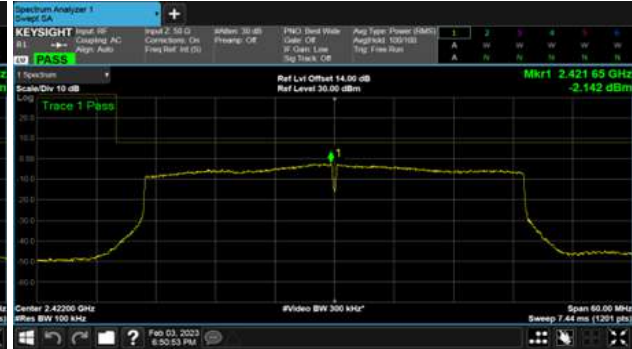
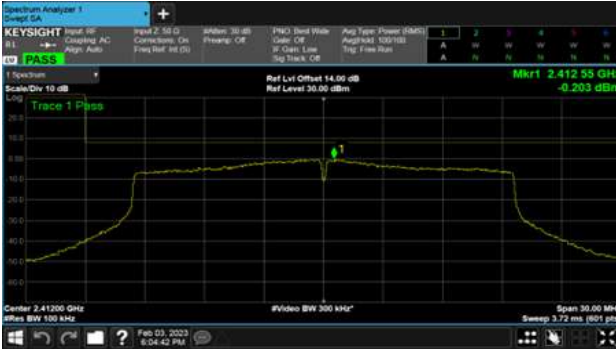
CH09





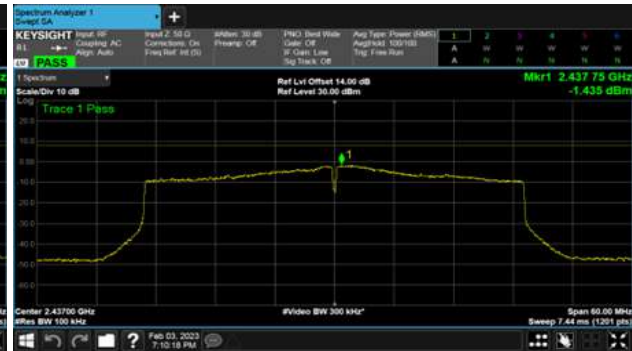
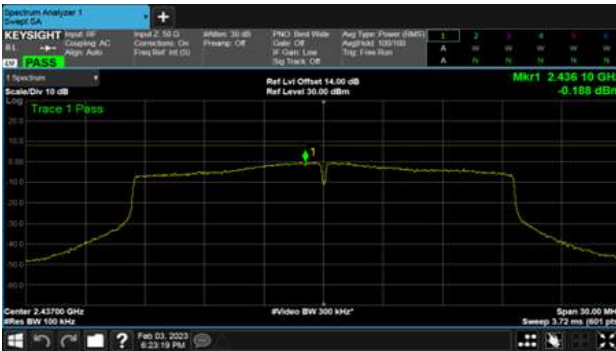
BeamForming  
ANT 2  
Modulation Type: 802.11ax HE20  
CH01

Modulation Type: 802.11ax HE40  
CH03



CH06

CH06



CH11

CH09

