



FCC RADIO TEST REPORT

Applicant : ELO TOUCH SOLUTIONS, INC.

Address : 670 N. McCarthy Blvd., Suite 100 Milpitas, CA
95035 USA

Equipment : Touch All-in-One Computer

Model No. : ESY10I1E, ESY15I1E , ESY22I1E

Trade Name : Elo or **elo**

FCC ID : RBWESYQC5

I HEREBY CERTIFY THAT :

The sample was received on Jul. 19, 2024 and the testing was completed on Oct. 25, 2024 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





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History of this test report

Report No.	Issued Date	Description
24070407-TRFCC03	Nov. 18, 2024	Original



1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10:2013

FCC Rules and Regulations Part 15 Subpart C §15.247

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	PASS
15.207	. AC Power Line Conducted Emission	PASS
15.209 15.205	. Radiated Spurious Emission	PASS
15.247(d)	. Conducted Spurious Emission	PASS
15.247(a)(2)	. 6dB Bandwidth	PASS
15.247(b)	. 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, measurement uncertainty evaluation is not considered.



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, 5250-5350MHz, 5470-5725MHz, 5725-5875MHz 6GHz: 802.11a/ax: 5925MHz~6425MHz, 6425MHz~6525MHz 6525MHz~6875MHz, 6875MHz~7125MHz
Center Frequency Range	BT / BLE: 2402MHz-2480MHz WLAN:802.11b/g/n/ax: 2412MHz-2462MHz 5GHz:802.11a/n/ac/ax:5180-5240MHz, 5260-5320MHz, 5500-5720MHz, 5745-5825MHz 6GHz: 802.11a/ax: 5955MHz~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 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 5GHz: 802.11a/n: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 6GHz 802.11a: BPSK, QPSK, 16QAM, 64QAM 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, HT20/40 802.11ax: 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, VHT20/40/80/160 802.11ax: MCS0 – MCS11, HE20/40/80/160 6GHz 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11ax: MCS0 – MCS11, HE20/40/80/160
Antenna Type	PIFA Antenna



Antenna Gain (ESY10I1E)	For BT / BLE: 2400-2500MHz: ANT A: 2.01dBi For WLAN: 2400-2500MHz: ANT A: 2.01dBi, ANT B: 2.91dBi 5150-5250MHz: ANT A: 2.46dBi, ANT B: 2.22dBi 5250-5350MHz: ANT A: 2.19dBi, ANT B: 2.44dBi 5470-5725MHz: ANT A: 2.70dBi, ANT B: 2.38dBi 5725-5850MHz: ANT A: 2.70dBi, ANT B: 2.56dBi 5925-6425MHz: ANT A: 2.86dBi, ANT B: 2.54dBi 6425-6525MHz: ANT A: 2.72dBi, ANT B: 2.84dBi 6525-6875MHz: ANT A: 2.72dBi, ANT B: 2.84dBi 6875-7125MHz: ANT A: 2.46dBi, ANT B: 2.28dBi
Antenna Gain (ESY15I1E)	For BT / BLE: 2400-2500MHz: ANT A: 2.72dBi For WLAN: 2400-2500MHz: ANT A: 2.72dBi, ANT B: 2.42dBi 5150-5250MHz: ANT A: 2.44dBi, ANT B: 2.65dBi 5250-5350MHz: ANT A: 1.86dBi, ANT B: 2.69dBi 5470-5725MHz: ANT A: 2.83dBi, ANT B: 2.79dBi 5725-5850MHz: ANT A: 2.63dBi, ANT B: 2.79dBi 5925-6425MHz: ANT A: 2.53dBi, ANT B: 2.48dBi 6425-6525MHz: ANT A: 2.42dBi, ANT B: 2.44dBi 6525-6875MHz: ANT A: 2.42dBi, ANT B: 2.44dBi 6875-7125MHz: ANT A: 2.59dBi, ANT B: 2.44dBi
Antenna Gain (ESY22I1E)	For BT / BLE: 2400-2500MHz: ANT A: 2.32dBi For WLAN: 2400-2500MHz: ANT A: 2.32dBi, ANT B: 2.25dBi 5150-5250MHz: ANT A: 1.75dBi, ANT B: 2.17dBi 5250-5350MHz: ANT A: 2.34dBi, ANT B: 2.17dBi 5470-5725MHz: ANT A: 2.25dBi, ANT B: 2.35dBi 5725-5850MHz: ANT A: 2.65dBi, ANT B: 2.42dBi 5925-6425MHz: ANT A: 2.36dBi, ANT B: 2.58dBi 6425-6525MHz: ANT A: 2.38dBi, ANT B: 2.05dBi 6525-6875MHz: ANT A: 2.38dBi, ANT B: 2.47dBi 6875-7125MHz: ANT A: 2.28dBi, ANT B: 2.25dBi

EUT powered by

Adapter	ESY10I1E	ESY15I1E	ESY22I1E
Brand: Billion Model: BA090-190474MBX	☒	☒	☒
Brand: Billion Model: BA070-190342MBX	☒	☒	☒
Brand: Delta Model: ADP-65JH HB	☒	☒	☒

Flip Stand Without Panel powered by

Adapter	ESY10I1E	ESY15I1E	ESY22I1E
Brand: Billion Model: BS180-240625MBX	☒	☒	☐
Brand: Delta Model: ADP-150EH B	☒	☒	☐
Brand: Billion Model: BA090-240375MBX	☒	☐	☐

Power Cable(EU)*2	Brand: I-SHENG Model: CAB-PWR-EU-3 LOBE-1.8M-BLK-R
Power Cable(US)*2	Brand: I-SHENG Model: CAB-PWR-US-3 LOBE-1.8M-BLK-R
Flip Stand Without Panel (For ESY10I1E)	Brand: ELO Model: E554932 KIT, Z20-POS-STAND-GEN2-10
Flip Stand Without Panel (For ESY15I1E)	Brand: ELO Model: E767356 KIT, Z20-POS-STAND-GEN2-15
Type-C Cable	Brand: Hotron Model: E113033 CAB, USB-C TO USB-C, Z20 Gen2 15,330mm,HT
Poe Module	Brand: ELO Model: E669163, ELO-KIT-POE-ADAPTER-5.0
Panel (ESY10I1E)	Brand: BOE Model: TV101WUM-NH3 Brand: AUO Model: G101UAN4.0
Panel (ESY15I1E)	Brand: BOE Model: BOE PV156FHM-N20 Brand: LG Model: LP156WFC-SPDZ
Panel (ESY22I1E)	Brand: LG Model: M215WF3-SLS2 Brand: AUO Model: M215HAN01.2

Note:

1. EUT support TPC Function.
2. EUT supports DFS Client Mode, without radar detection.
3. WLAN and BT can simultaneously transmission.
4. The device not support Channel Puncturing or Bandwidth Reduction mechanisms supported
5. 802.11ax EUT Only Support Full RU
6. EUT Operating mode : Indoor Client.
7. For more details, please refer to the User's manual of the EUT.

Difference description:

Model No.	Remark
ESY10I1E	Only different sizes, other circuits, layout, product specifications are all the same.
ESY15I1E	
ESY22I1E	

Note: After engineering evaluation ,Model: ESY22I1E is worst case.



2.2 Carrier Frequency of Channels

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

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

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

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

Note: Channels remarked * are selected to perform test.



2.3 Test Mode and Test Software

- During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- The complete test system included remote workstation and EUT for RF test. The remote workstation included Notebook.
- An executive program, "QRCT V4.0-00189" under Windows OS system was executed to transmit and receive data via WLAN.
- 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), From Adapter
2	802.11g (6Mbps), From Adapter
3	802.11ax HE20 (7.3Mbps), From Adapter
4	802.11ax HE40 (14.6Mbps), From Adapter
caused "Test Mode 3" generated the worst case, it was reported as the final data.	
Radiation Emissions (9KHz ~30MHz & 30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps), Power from Adapter
2	802.11g (6Mbps), Power from Adapter
3	802.11ax HE20 (7.3Mbps), From Adapter
4	802.11ax HE40 (14.6Mbps), From Adapter
caused "Test Mode 3" generated the worst case, they were reported as the final data.	
Radiation Emissions (1GHz ~ 25GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps), Power from Adapter
2	802.11g (6Mbps), Power from Adapter
3	802.11ax HE20 (7.3Mbps), From Adapter
4	802.11ax HE40 (14.6Mbps), From Adapter
caused "Test Mode 1~4" 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 ESY10I1E

worst case (V)

Test Item /test voltage	AC 120V / 60Hz	AC 240V / 60Hz.
AC Power Line Conducted Emission	V	
Radiation Emissions (Below 1GHz)		V

For ESY15I1E

worst case (V)

Test Item /test voltage	AC 120V / 60Hz	AC 240V / 60Hz.
AC Power Line Conducted Emission		V
Radiation Emissions (Below 1GHz)		V

For ESY22I1E

worst case (V)

Test Item /test voltage	AC 120V / 60Hz	AC 240V / 60Hz.
AC Power Line Conducted Emission	V	
Radiation Emissions (Below 1GHz)	V	

**For ESY10I1E**

There are six types of Adapters + one PoE power supply mode .After engineering evaluation:

For Radiated Spurious Emission(Below 1G), BS180-240625MBX 10 inch without Docking is worst case.

For Radiated Spurious Emission(Above 1G),BA070-190342MBX 22 inch without Docking is worst case.

For AC Power Line Conducted Emission, BS180-240625MBX 10 inch with Docking is worst case.

Adapter	Brand: Billion Model: BS180-240625MBX
Adapter	Brand: Billion Model: BA090-190474MBX
Adapter	Brand: Billion Model: BA070-190342MBX
Adapter	Brand: Delta Model: ADP-65JH HB
Adapter	Brand: Delta Model: ADP-150EH B
Adapter	Brand: Billion Model: BA090-240375MBX
POE	Brand: Bluewave Model: JS-100GT

For ESY15I1E

There are six types of Adapters + one PoE power supply mode .After engineering evaluation:

For Radiated Spurious Emission(Below 1G), ADP-65JH HB 15 inch with Docking is worst case.

For Radiated Spurious Emission(Above 1G), BA070-190342MBX 22 inch without Docking is worst case.

For AC Power Line Conducted Emission, BS180-240625MBX 15 inch with Docking is worst case.

Adapter	Brand: Billion Model: BS180-240625MBX
Adapter	Brand: Billion Model: BA090-190474MBX
Adapter	Brand: Billion Model: BA070-190342MBX
Adapter	Brand: Delta Model: ADP-65JH HB
Adapter	Brand: Delta Model: ADP-150EH B
Adapter	Brand: Billion Model: BA090-240375MBX
POE	Brand: Bluewave Model: JS-100GT

For ESY22I1E

There are three types of Adapters + one PoE power supply mode .After engineering evaluation:

For Radiated Spurious Emission(Below 1G), ADP-65JH HB 22 inch without Docking is worst case.

For Radiated Spurious Emission(Above 1G),BA070-190342MBX 22 inch without Docking is worst case.

For AC Power Line Conducted Emission, BA070-190342MBX 22 inch without Docking is worst case.

Adapter	Brand: Delta Model: ADP-65JH HB
Adapter	Brand: Billion Model: BA090-190474MBX
Adapter	Brand: Billion Model: BA070-190342MBX
POE	Brand: Bluewave Model: JS-100GT



For ESY10I1E

There are two types of Panels: AUO&BOE. After engineering evaluation, BOE is worst case, hence, is used at test report.

Panel	Brand: BOE Model: TV101WUM-NH3 Brand: AUO Model: G101UAN4.0
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For ESY15I1E

There are two types of Panels: LG&BOE. After engineering evaluation, LG is worst case, hence, is used at test report.

Panel	Brand: BOE Model: BOE PV156FHM-N20 Brand: LG Model: LP156WFC-SPDZ
-------	--

For ESY22I1E

There are two types of Panels: LG&AUO. After engineering evaluation, LG is worst case, hence, is used at test report.

Panel (ESY22I1E)	Brand: LG Model: M215WF3-SLS2 Brand: AUO Model: M215HAN01.2
---------------------	--

The EUT incorporates a MIMO function

Modulation Type	TX CONFIGURATION
802.11b	1TX(Diversity)
802.11g	1TX(Diversity)
802.11n HT20	2TX
802.11n HT40	2TX
802.11ax HE20	2TX
802.11ax HE40	2TX



2.4 Description of Test System

RF Conducted				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	lenovo	S1GL2W	N/A	N/A
USB Cable (A to A)	BENEVO	E210567AWM	1m / NS	N/A
Radiated Emissions				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5450	N/A	Adapter / 1.8m / NS
USB Cable (A to A)	BENEVO	E210567AWM	1m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
HDD	TOSHIBA	TS1TSJ25M3S	N/A	N/A
Type-C Cable	DXDC	C8A1M3A02G1M0	0.4m/NA	N/A
POE	Bluewave	JS-100GT	N/A	N/A
AC Power Line Conducted Emission				
Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	DELL	Latitude E5470	N/A	Adapter / 1.8m / NS
USB Cable (A to A)	BENEVO	E210567AWM	1m / NS	N/A
Flash*4	TranScend	USB3.0 16GB	N/A	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	1.2m / NS	N/A
RJ45 Cable	TE CONNECTIVITY	CAT5E	15m / NS	N/A
HDD	TOSHIBA	TS1TSJ25M3S	N/A	N/A
Cash Drawer	EBN	EB-35064S-F1	N/A	1.8m / NS
POE	Bluewave	JS-100GT	N/A	N/A



2.5 General Information of Test

☒ Test Site	CerpPASS Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel: +886-3-3226-888 Fax: +886-3-3226-881	
	FCC	TW1439, TW1079
	IC	4934E-1, 4934E-2
Frequency Range Investigated	Conducted: from 150kHz to 30 MHz Radiation: from 9kHz to 25,000MHz	
Test Distance	The test distance of radiated emission from antenna to EUT is 3 M.	

SISO(ANT A)

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2024/08/27	28.3°C / 49%	Leon Huang
RF Conducted	RFCON01-NK	2024/08/28	28.1°C / 48%	Leon Huang
RF Conducted	RFCON01-NK	2024/09/16	26.9°C / 45%	Leon Huang
Radiated Emissions	3M02-NK	2024/09/10	19.6°C / 50%	Leon Huang
Radiated Emissions	3M02-NK	2024/10/08	22.1°C / 53%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2024/10/25	24.4°C / 48%	Park Chen

SISO(ANT B)

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2024/08/27	28.3°C / 49%	Leon Huang
RF Conducted	RFCON01-NK	2024/08/28	28.1°C / 48%	Leon Huang
RF Conducted	RFCON01-NK	2024/09/18	28.1°C / 43%	Leon Huang

MIMO(ANT A , B)

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2024/08/25	26.5°C / 46%	Leon Huang
RF Conducted	RFCON01-NK	2024/08/26	26.7°C / 43%	Leon Huang
RF Conducted	RFCON01-NK	2024/09/12	27.2°C / 42%	Leon Huang
Radiated Emissions	3M02-NK	2024/09/10	19.6°C / 50%	Leon Huang
Radiated Emissions	3M02-NK	2024/10/08	22.1°C / 53%	Leon Huang
AC Power Line Conducted Emission	CON02-NK	2024/10/24	25.1°C / 55%	Park Chen



2.6 Measurement Uncertainty

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

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±3.12dB
Radiated Spurious Emission(9KHz~30MHz)	±3.5dB
Radiated Spurious Emission(30MHz~1GHz)	±5.1dB
Radiated Spurious Emission(1GHz~40GHz)	±5.2dB
Conducted Spurious Emission	±2.1dB
6dB Bandwidth	±5.4%
20dB Bandwidth	±4.4%
Occupied Bandwidth	±4.5%
Peak Output Power(Conducted Power Meter)	±1.1dB
Dwell Time / Deactivation Time	±7.6%
Power Spectral Density	±2.0dB
Duty Cycle	±3.5%



3. Test Equipment and Ancillaries Used for Tests

Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Schwarzbeck	VULB9168	369	2024/02/19	2025/02/18
Active Loop Antenna	Schwarzbeck	FMZB 1513	414	2024/01/16	2025/01/15
Horn Antenna	EMCO	3115	31589	2024/02/26	2025/02/25
Horn Antenna	EMCO	3116	31974	2023/10/16	2024/10/15
EMI Receiver	ROHDE & SCHWARZ	ESR 7	101906	2024/05/13	2025/05/12
Spectrum Analyzer	ROHDE & SCHWARZ	FSV 40-N	101329	2024/07/16	2025/07/15
Preamplifier	Agilent	8449B	3008A01954	2024/03/01	2025/02/28
Preamplifier	EMC INSTRUMENTS	EMC184045	980065	2023/10/13	2024/10/12
Preamplifier	EM Electronics corp.	EM330	60659	2024/02/17	2025/02/16
Cable-6m(9k~300M)	N/A	EMC5D-BM-BM-6	130606	2024/03/13	2025/03/12
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1315	2024/02/23	2025/02/22
Cable-0.5m(1G-40G)	HUBER SUHNER	SUCOFLEX 104	805443/4	2024/03/05	2025/03/04
Cable-3m(1G-40G)	HUBER SUHNER	SUCOFLEX 104	805796/4	2024/03/05	2025/03/04
Cable-8m(1G-26.5G)	WOKEN	WCBA-WCA203SM	CCE1374	2024/03/05	2025/03/04
Cable-1m(1G-40G)	HUBER SUHNER	HUBER SUHNER / SF102	804398/2	2023/10/12	2024/10/11
Cable-3m(1G-40G)	HUBER SUHNER	HUBER SUHNER / SF102	804619/2	2023/10/12	2024/10/11
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA
Highpass Filter	Warison	WFIL-H3000-18000F-03	WRJ5CFWC2J1	2024/07/03	2025/07/02
Notch Filter	Warison	WFIL-N5925-7125F-04	WRQ4BFWC4M1	2024/03/11	2025/03/10
Hipass Filter	Warison	WFIL-H7500-18000F	WRQ4BFWC2J1	2024/03/11	2025/03/10

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
CAX Signal Analyzer	KEYSIGHT	N9000B	MY57100339	2023/11/06	2024/11/05
Power Meter	Anritsu	ML2495A	1224005	2024/02/17	2025/02/16
Power Sensor	Anritsu	MA2411B	1207295	2024/02/17	2025/02/16
Attenuator	KEYSIGHT	8491B	MY39250703	2024/02/20	2025/02/19



Test Item	AC Power Line Conducted Emission				
Test Site	CON02-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESR 7	101906	2024/05/13	2025/05/12
Two-Line V-Network	ROHDE & SCHWARZ	ENV216	102185	2024/08/27	2025/08/26
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127740	2024/08/27	2025/08/26
Cable-4m(9k-3G)	EMEC	RG-223	18274M	2024/08/08	2025/08/07
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	PIFA Antenna
Antenna Gain (ESY10I1E)	2400-2500MHz: ANT A: 2.01dBi, ANT B: 2.91dBi
Antenna Gain (ESY15I1E)	2400-2500MHz: ANT A: 2.72dBi, ANT B: 2.42dBi
Antenna Gain (ESY22I1E)	2400-2500MHz: ANT A: 2.32dBi, ANT B: 2.25dBi

SISO-ANT A(ESY10I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.01 dBi
For PSD directional gain = G_{ant} = 2.01 dBi

SISO-ANT B(ESY10I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.91 dBi
For PSD directional gain = G_{ant} = 2.91 dBi

MIMO(ESY10I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.91 dBi
For PSD directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ = 5.48 (dBi)

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



SISO-ANT A(ESY15I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.72 dBi
For PSD directional gain = G_{ant} = 2.72 dBi

SISO-ANT B(ESY15I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.42 dBi
For PSD directional gain = G_{ant} = 2.42 dBi

MIMO(ESY15I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.72 dBi
For PSD directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ = 5.58 (dBi)

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

SISO-ANT A(ESY22I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.32 dBi
For PSD directional gain = G_{ant} = 2.32 dBi

SISO-ANT B(ESY22I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.25 dBi
For PSD directional gain = G_{ant} = 2.25 dBi

MIMO(ESY22I1E)

2412-2462MHz
For Power directional gain= G_{ant} = 2.32 dBi
For PSD directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ = 5.30 (dBi)

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



5. Test of AC Power Line Conducted Emission

5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.10-2013. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

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

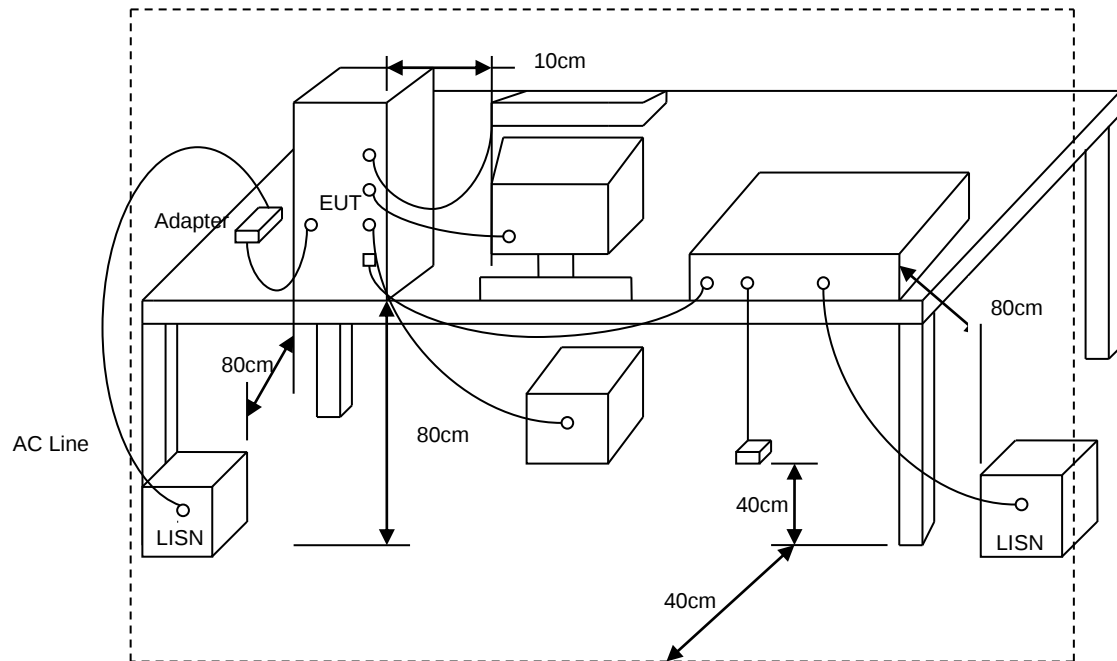
*Decreases with the logarithm of the frequency.

5.2 Test Procedures

- 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.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



5.3 Typical Test Setup



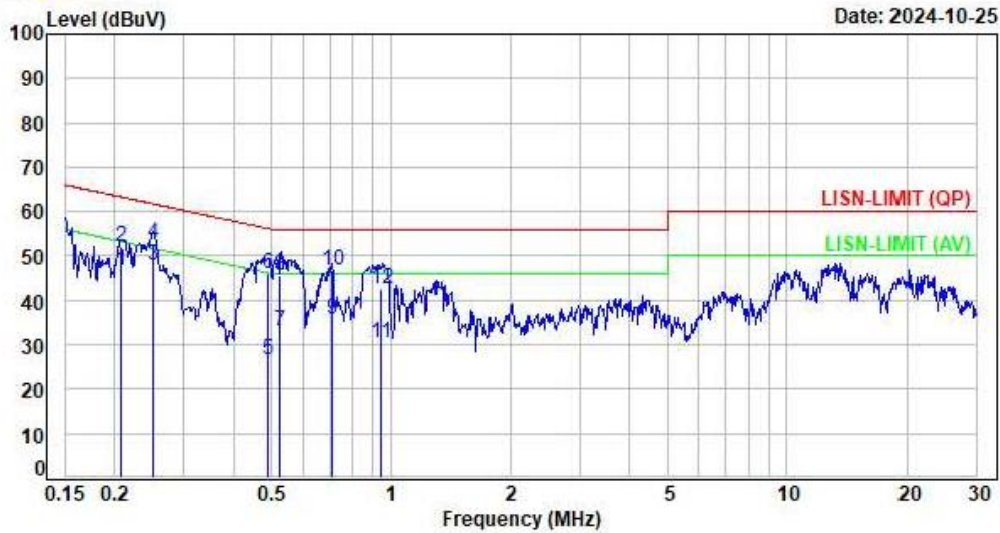


5.4 Test Result and Data

MIMO(ESY10I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 120V/60Hz)
Phase : Line

Data: 25



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2073	9.63	37.00	46.63	53.31	-6.68	Average	P
2	0.2073	9.63	42.55	52.18	63.31	-11.13	QP	P
3	0.2497	9.63	38.30	47.93	51.77	-3.84	Average	P
4	0.2497	9.63	43.22	52.85	61.77	-8.92	QP	P
5	0.4907	9.65	17.12	26.77	46.16	-19.39	Average	P
6	0.4907	9.65	36.48	46.13	56.16	-10.03	QP	P
7	0.5230	9.65	23.55	33.20	46.00	-12.80	Average	P
8	0.5230	9.65	36.15	45.80	56.00	-10.20	QP	P
9	0.7112	9.65	26.25	35.90	46.00	-10.10	Average	P
10	0.7112	9.65	37.22	46.87	56.00	-9.13	QP	P
11	0.9428	9.66	20.75	30.41	46.00	-15.59	Average	P
12	0.9428	9.66	32.82	42.48	56.00	-13.52	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

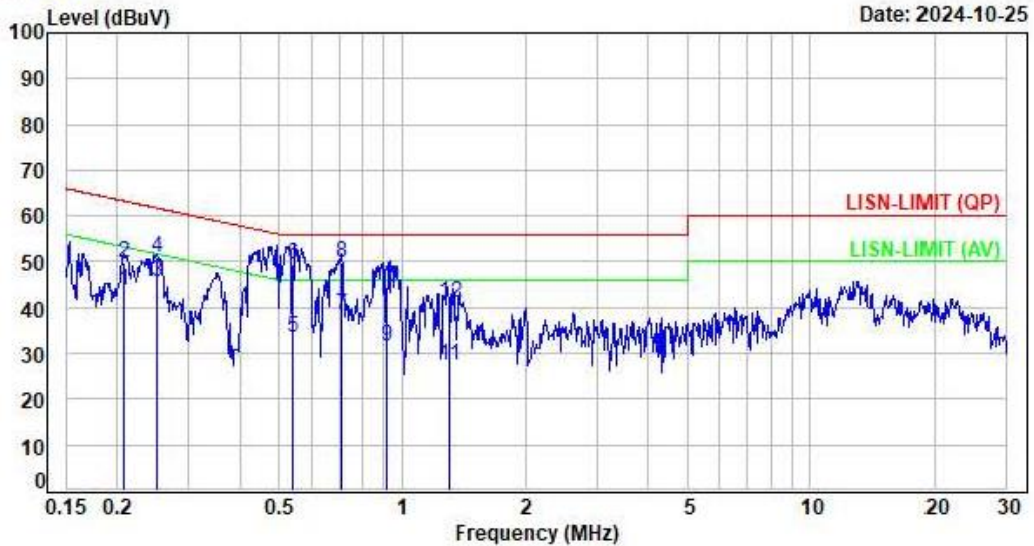
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



MIMO(ESY10I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 120V/60Hz)
Phase : Neutral

Data: 26



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2075	9.61	34.24	43.85	53.30	-9.45	Average	P
2	0.2075	9.61	40.25	49.86	63.30	-13.44	QP	P
3	0.2505	9.61	35.89	45.50	51.74	-6.24	Average	P
4	0.2505	9.61	41.37	50.98	61.74	-10.76	QP	P
5	0.5415	9.62	24.02	33.64	46.00	-12.36	Average	P
6	0.5415	9.62	39.85	49.47	56.00	-6.53	QP	P
7	0.7086	9.64	28.70	38.34	46.00	-7.66	Average	P
8	0.7086	9.64	40.15	49.79	56.00	-6.21	QP	P
9	0.9182	9.65	21.79	31.44	46.00	-14.56	Average	P
10	0.9182	9.65	34.94	44.59	56.00	-11.41	QP	P
11	1.2999	9.66	17.78	27.44	46.00	-18.56	Average	P
12	1.2999	9.66	31.52	41.18	56.00	-14.82	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

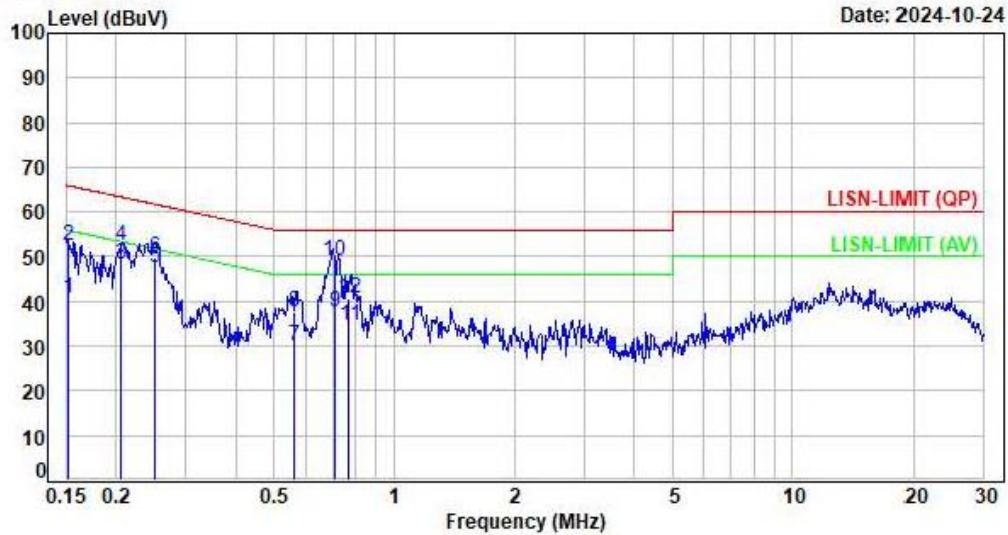
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



MIMO(ESY15I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 240V/60Hz)
Phase : Line

Data: 59



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1520	9.63	31.08	40.71	55.89	-15.18	Average	P
2	0.1520	9.63	42.78	52.41	65.89	-13.48	QP	P
3	0.2065	9.63	38.56	48.19	53.34	-5.15	Average	P
4	0.2065	9.63	42.70	52.33	63.34	-11.01	QP	P
5	0.2497	9.63	37.88	47.51	51.77	-4.26	Average	P
6	0.2497	9.63	40.28	49.91	61.77	-11.86	QP	P
7	0.5604	9.65	20.48	30.13	46.00	-15.87	Average	P
8	0.5604	9.65	27.82	37.47	56.00	-18.53	QP	P
9	0.7066	9.65	27.90	37.55	46.00	-8.45	Average	P
10	0.7066	9.65	39.56	49.21	56.00	-6.79	QP	P
11	0.7703	9.65	24.78	34.43	46.00	-11.57	Average	P
12	0.7703	9.65	30.88	40.53	56.00	-15.47	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

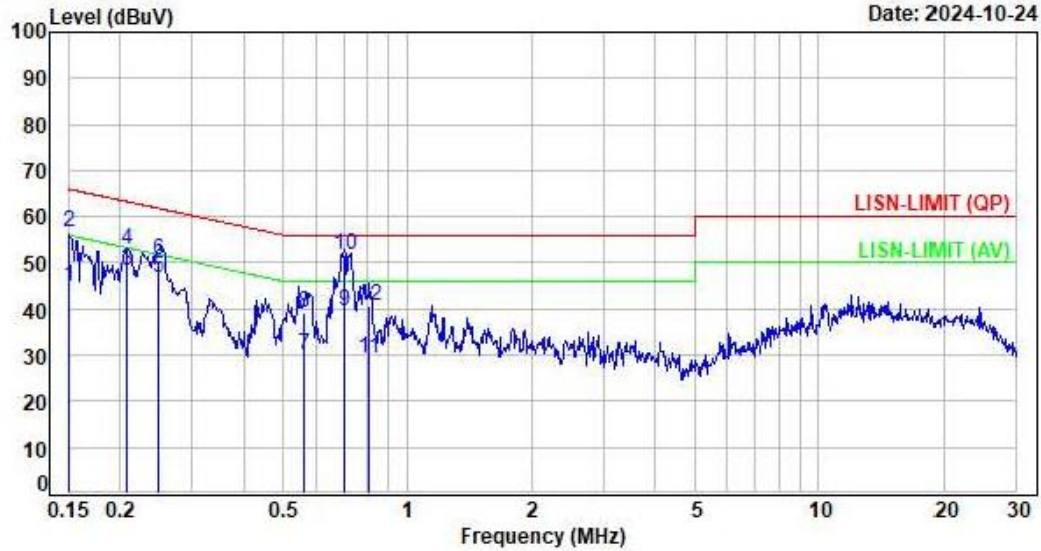
Factor=(LISM or ISN or Current Probe)Factor + Cable Loss



MIMO(ESY1511E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 240V/60Hz)
Phase : Neutral

Data: 60



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1500	9.61	35.44	45.05	56.00	-10.95	Average	P
2	0.1500	9.61	46.86	56.47	66.00	-9.53	QP	P
3	0.2079	9.61	38.65	48.26	53.29	-5.03	Average	P
4	0.2079	9.61	43.36	52.97	63.29	-10.32	QP	P
5	0.2489	9.61	37.29	46.90	51.79	-4.89	Average	P
6	0.2489	9.61	40.78	50.39	61.79	-11.40	QP	P
7	0.5590	9.62	20.38	30.00	46.00	-16.00	Average	P
8	0.5590	9.62	29.47	39.09	56.00	-16.91	QP	P
9	0.7038	9.64	30.04	39.68	46.00	-6.32	Average	P
10	0.7038	9.64	42.25	51.89	56.00	-4.11	QP	P
11	0.8049	9.64	19.60	29.24	46.00	-16.76	Average	P
12	0.8049	9.64	30.89	40.53	56.00	-15.47	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

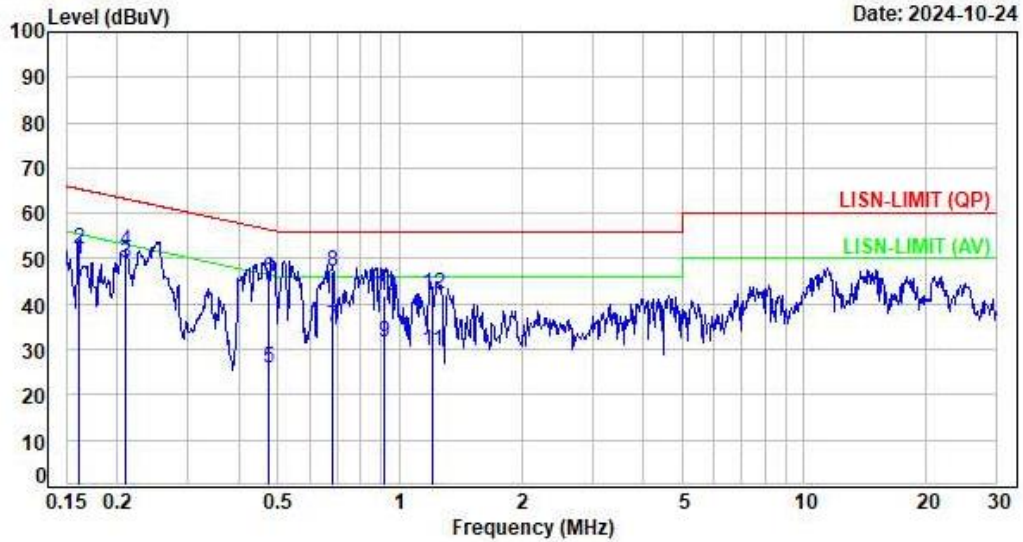
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



MIMO(ESY2211E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 120V/60Hz)
Phase : Line

Data: 36



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1607	9.63	40.28	49.91	55.43	-5.52	Average	P
2	0.1607	9.63	42.60	52.23	65.43	-13.20	QP	P
3	0.2096	9.63	39.34	48.97	53.22	-4.25	Average	P
4	0.2096	9.63	41.90	51.53	63.22	-11.69	QP	P
5	0.4735	9.65	16.32	25.97	46.45	-20.48	Average	P
6	0.4735	9.65	35.92	45.57	56.45	-10.88	QP	P
7	0.6798	9.65	25.39	35.04	46.00	-10.96	Average	P
8	0.6798	9.65	37.45	47.10	56.00	-8.90	QP	P
9	0.9126	9.66	21.84	31.50	46.00	-14.50	Average	P
10	0.9126	9.66	32.24	41.90	56.00	-14.10	QP	P
11	1.2068	9.67	19.91	29.58	46.00	-16.42	Average	P
12	1.2068	9.67	32.54	42.21	56.00	-13.79	QP	P

Note: Level=Reading+Factor

Margin=Level-Limit

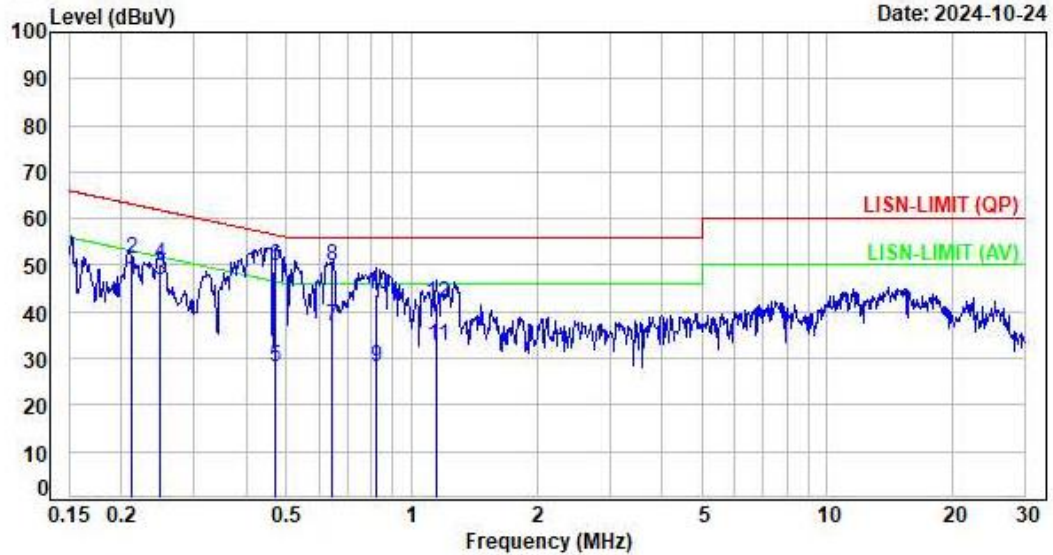
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss



MIMO(ESY22I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC 120V/60Hz)
Phase : Neutral

Data: 37



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2112	9.61	36.97	46.58	53.16	-6.58	Average	P
2	0.2112	9.61	41.55	51.16	63.16	-12.00	QP	P
3	0.2473	9.61	37.03	46.64	51.85	-5.21	Average	P
4	0.2473	9.61	40.65	50.26	61.85	-11.59	QP	P
5	0.4708	9.62	18.63	28.25	46.50	-18.25	Average	P
6	0.4708	9.62	40.07	49.69	56.50	-6.81	QP	P
7	0.6453	9.64	27.16	36.80	46.00	-9.20	Average	P
8	0.6453	9.64	40.24	49.88	56.00	-6.12	QP	P
9	0.8234	9.64	18.34	27.98	46.00	-18.02	Average	P
10	0.8234	9.64	34.24	43.88	56.00	-12.12	QP	P
11	1.1504	9.66	23.22	32.88	46.00	-13.12	Average	P
12	1.1504	9.66	32.34	42.00	56.00	-14.00	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.

Below 1G-

For ESY10I1E -with Docking

For ESY15I1E & For ESY22I1 (Z-AXIS is the worst.)

Above 1G-

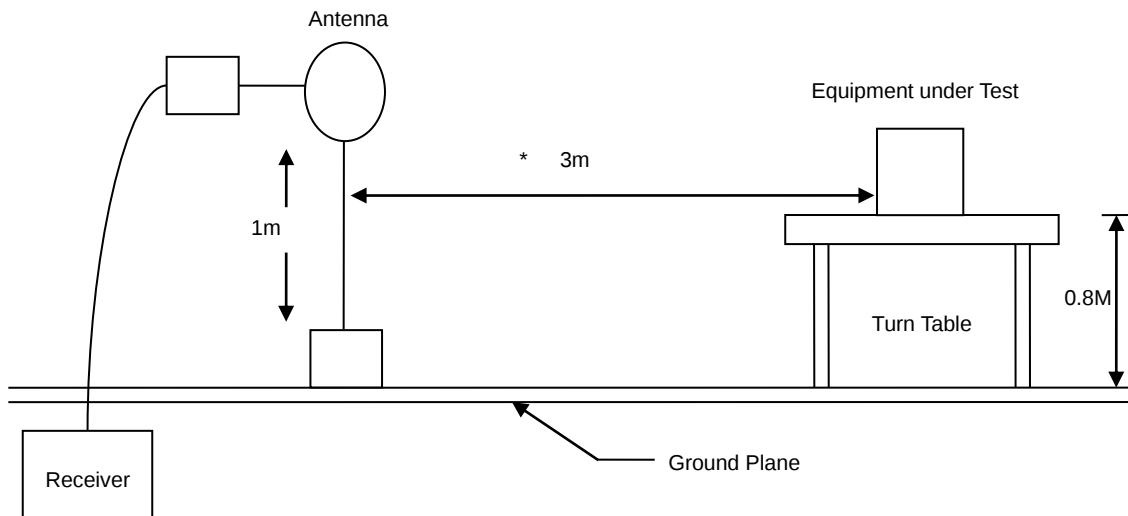
For ESY22I1 (Z-AXIS is the worst.)

- 2.Due to the test software function limit the operation band setting(200dBuV/m).
There's no corresponding limitation in the actual test item.

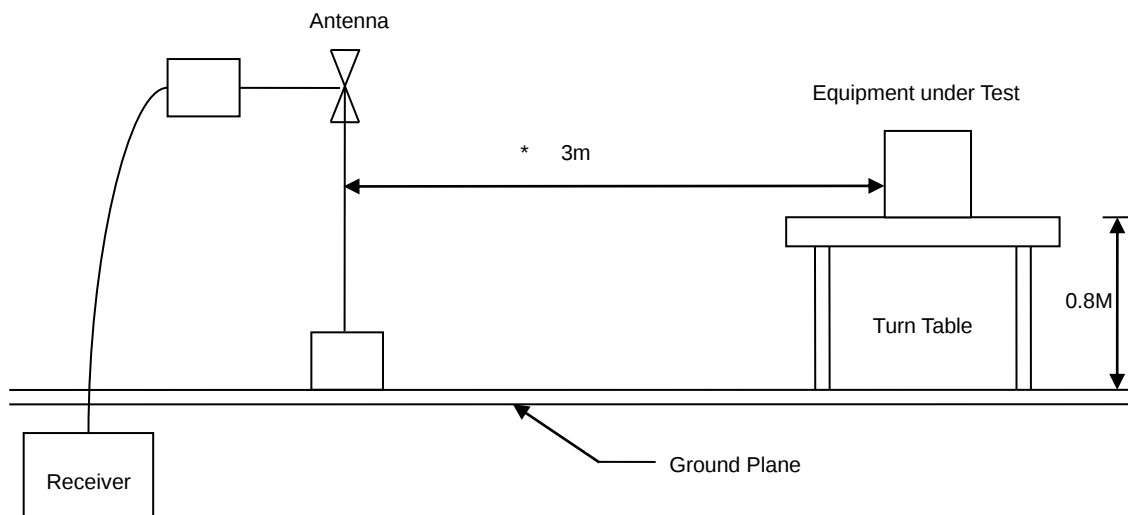


6.3 Typical Test Setup

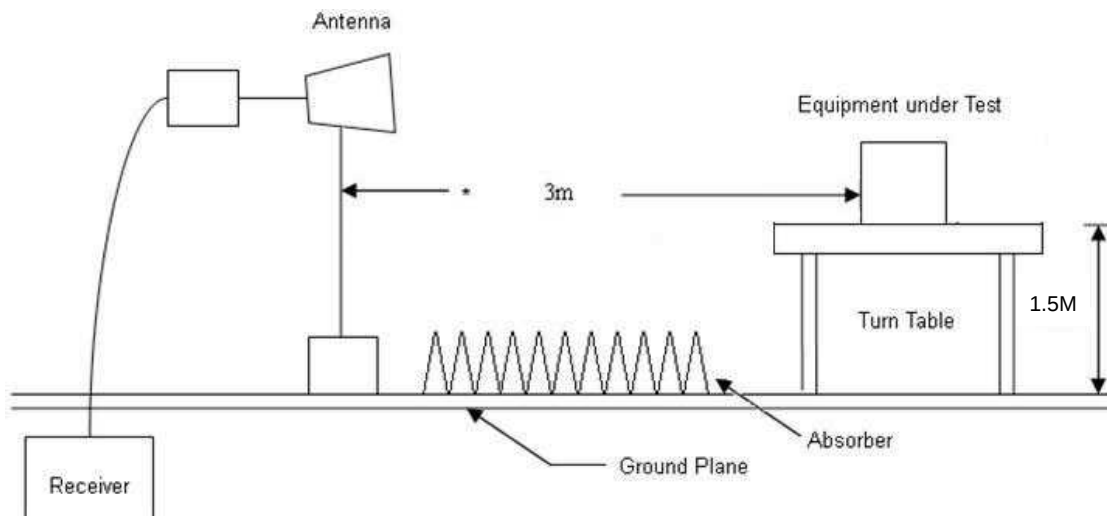
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup





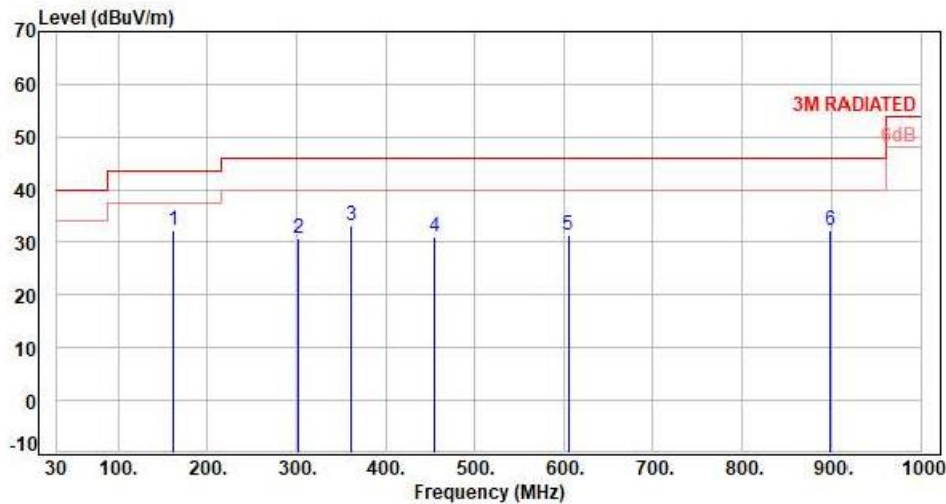
6.4 Test Result and Data (9KHz ~ 30MHz)

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

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

MIMO(ESY10I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC240V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	161.28	-9.41	41.71	32.30	43.50	-11.20	Peak	400	0	P
2	301.85	-8.55	39.17	30.62	46.00	-15.38	Peak	400	0	P
3	361.48	-6.86	40.05	33.19	46.00	-12.81	Peak	400	0	P
4	455.19	-4.26	35.44	31.18	46.00	-14.82	Peak	400	0	P
5	604.98	-0.74	32.16	31.42	46.00	-14.58	Peak	400	0	P
6	899.64	3.78	28.64	32.42	46.00	-13.58	Peak	400	0	P

Note: Level=Reading+Factor

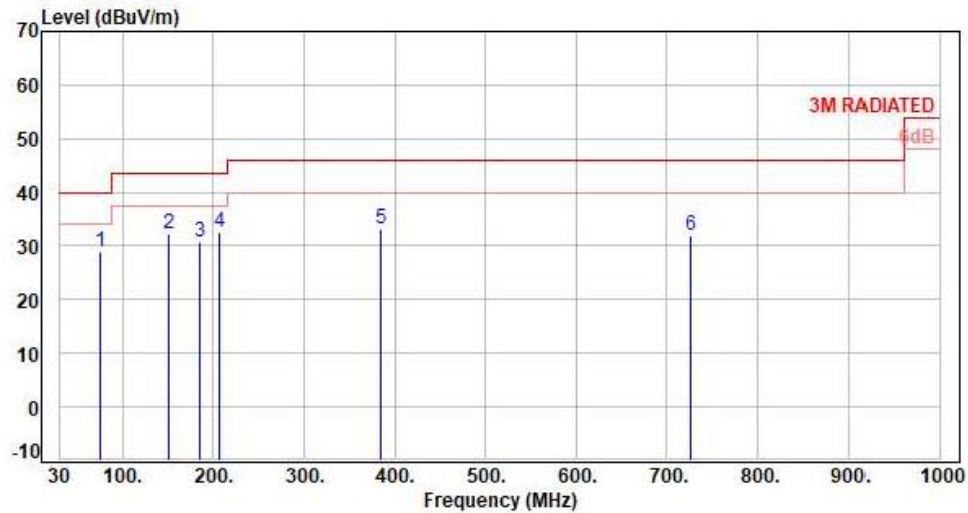
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO(ESY10I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC240V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	75.16	-13.33	42.15	28.82	40.00	-11.18	Peak	400	360	P
2	151.67	-9.48	41.67	32.19	43.50	-11.31	Peak	400	360	P
3	184.62	-11.09	41.74	30.65	43.50	-12.85	Peak	400	360	P
4	206.51	-12.27	44.98	32.71	43.50	-10.79	Peak	400	360	P
5	384.62	-6.18	39.35	33.17	46.00	-12.83	Peak	400	360	P
6	726.52	0.92	31.19	32.11	46.00	-13.89	Peak	400	360	P

Note: Level=Reading+Factor

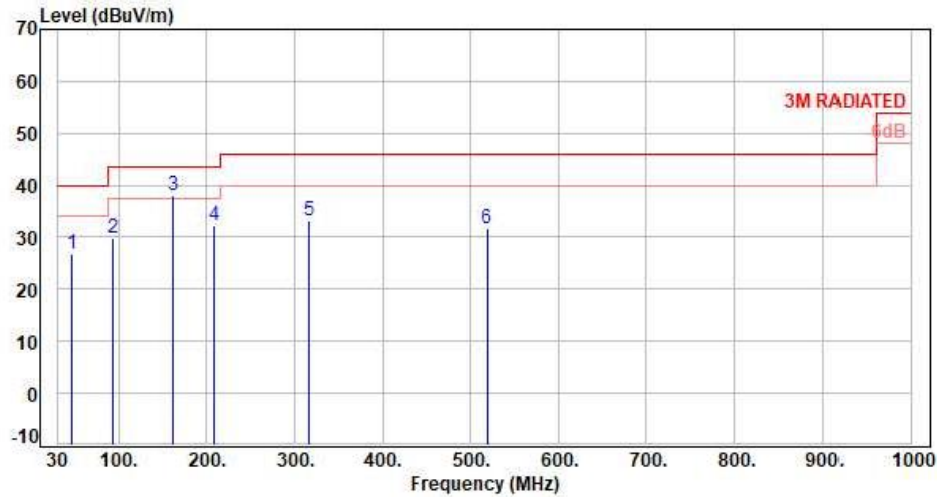
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO(ESY15I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC240V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	46.82	-9.34	36.28	26.94	40.00	-13.06	Peak	400	360	P
2	92.62	-15.74	45.66	29.92	43.50	-13.58	Peak	400	360	P
3	161.20	-9.40	47.37	37.97	43.50	-5.53	Peak	400	360	P
4	208.64	-12.26	44.54	32.28	43.50	-11.22	Peak	400	360	P
5	315.82	-8.04	41.24	33.20	46.00	-12.80	Peak	400	360	P
6	518.62	-2.83	34.47	31.64	46.00	-14.36	Peak	400	360	P

Note: Level=Reading+Factor

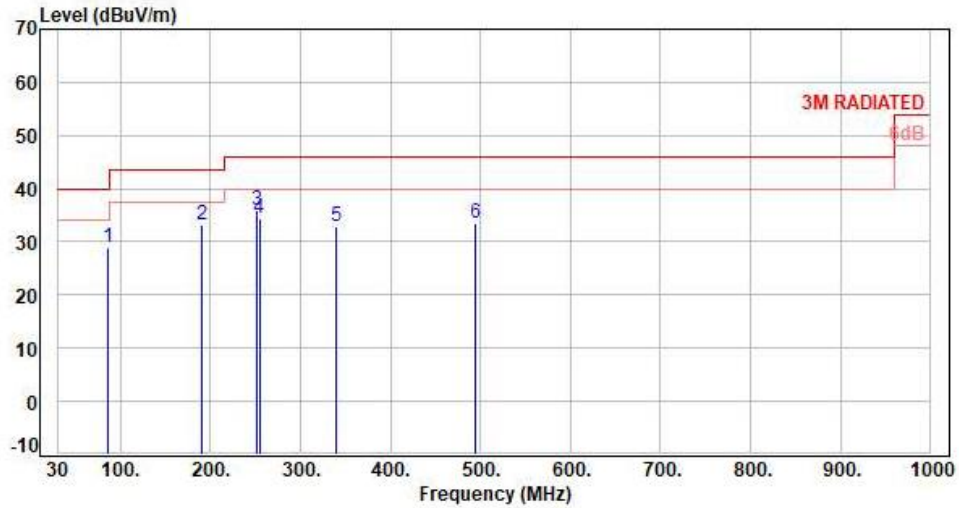
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO(ESY15I1E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC240V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	86.00	-15.85	44.85	29.00	40.00	-11.00	Peak	400	360	P
2	189.62	-11.50	44.84	33.34	43.50	-10.16	Peak	400	360	P
3	251.63	-10.10	46.10	36.00	46.00	-10.00	Peak	400	360	P
4	254.28	-9.98	44.47	34.49	46.00	-11.51	Peak	400	360	P
5	338.92	-7.36	40.16	32.80	46.00	-13.20	Peak	400	360	P
6	493.62	-3.83	37.25	33.42	46.00	-12.58	Peak	400	360	P

Note: Level=Reading+Factor

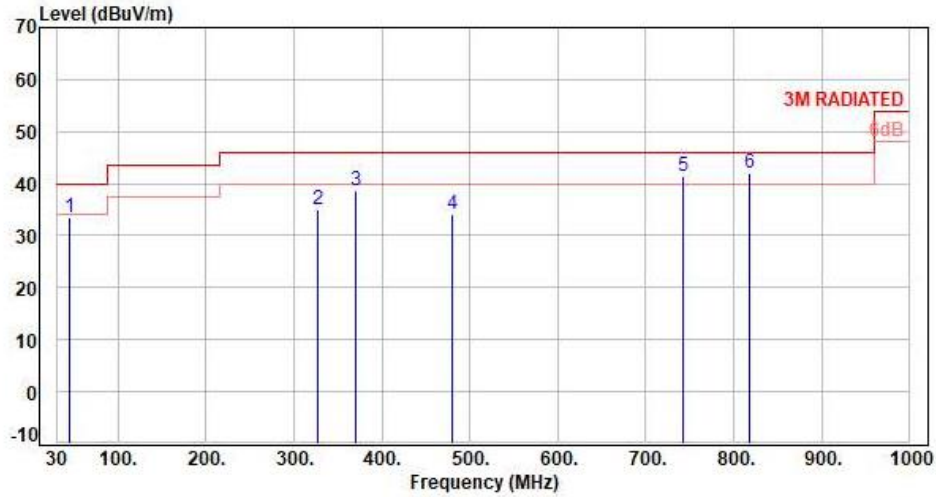
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO(ESY2211E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	44.55	-9.49	43.08	33.59	40.00	-6.41	Peak	400	0	P
2	326.82	-7.73	42.70	34.97	46.00	-11.03	Peak	400	0	P
3	370.90	-6.45	45.15	38.70	46.00	-7.30	Peak	400	0	P
4	480.08	-3.73	37.91	34.18	46.00	-11.82	Peak	400	0	P
5	743.26	1.61	39.73	41.34	46.00	-4.66	Peak	400	0	P
6	817.54	2.72	39.43	42.15	46.00	-3.85	Peak	400	0	P

Note: Level=Reading+Factor

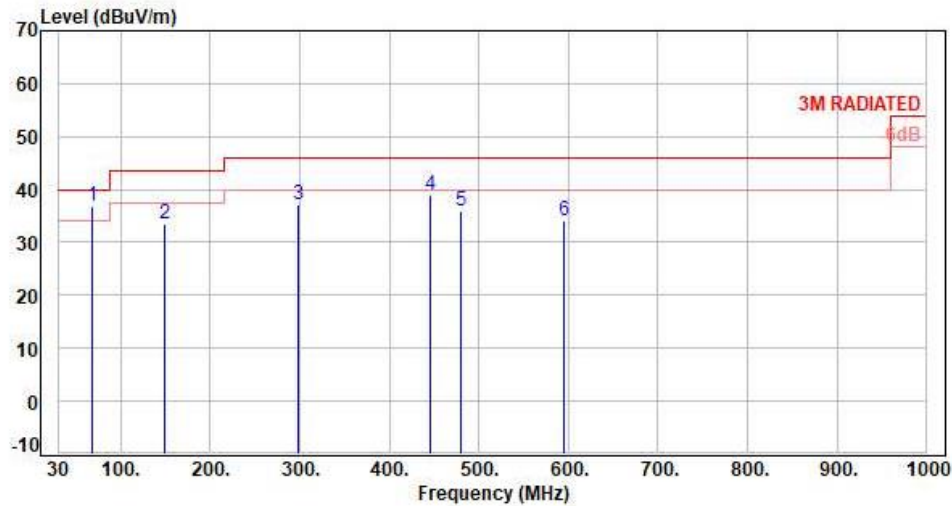
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO(ESY2211E)

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	68.15	-11.18	48.10	36.92	40.00	-3.08	Peak	400	360	P
2	148.34	-9.57	43.04	33.47	43.50	-10.03	Peak	400	360	P
3	297.72	-8.63	45.73	37.10	46.00	-8.90	Peak	400	360	P
4	445.16	-4.49	43.53	39.04	46.00	-6.96	Peak	400	360	P
5	480.08	-3.73	39.72	35.99	46.00	-10.01	Peak	400	360	P
6	594.54	-1.09	35.30	34.21	46.00	-11.79	Peak	400	360	P

Note: Level=Reading+Factor

Margin=Level-Limit

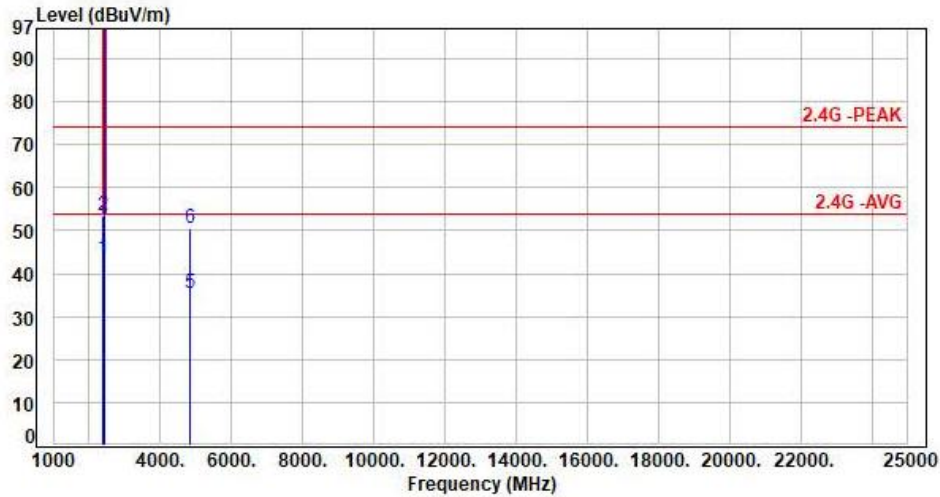
Factor=Antenna Factor + cable loss - Amplifier Factor



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

SISO ANT A

Test Mode : 1TX 11b CH01 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	45.86	43.53	54.00	-10.47	Average	107	16	P
2	2390.00	-2.33	55.78	53.45	74.00	-20.55	Peak	107	16	P
3	2412.00	-2.29	99.19	96.90	200.00	-103.10	Average	107	16	P
4	2412.00	-2.29	102.04	99.75	200.00	-100.25	Peak	107	16	P
5	4824.00	5.64	29.71	35.35	54.00	-18.65	Average	100	162	P
6	4824.00	5.64	44.82	50.46	74.00	-23.54	Peak	100	162	P

Note: Level=Reading+Factor

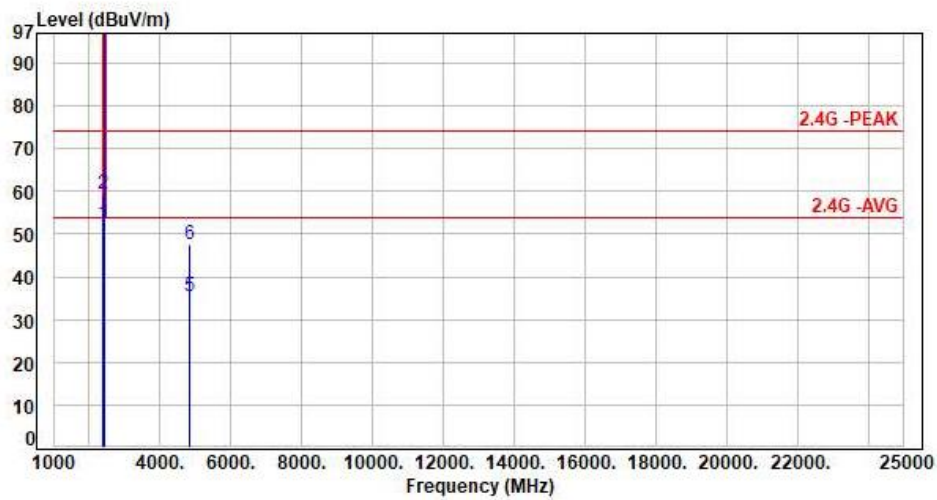
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11b CH01 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	54.83	52.50	54.00	-1.50	Average	138	277	P
2	2390.00	-2.33	61.71	59.38	74.00	-14.62	Peak	138	277	P
3	2412.00	-2.29	107.30	105.01	200.00	-94.99	Average	138	277	P
4	2412.00	-2.29	110.28	107.99	200.00	-92.01	Peak	138	277	P
5	4824.00	5.64	29.74	35.38	54.00	-18.62	Average	100	135	P
6	4824.00	5.64	41.82	47.46	74.00	-26.54	Peak	100	135	P

Note: Level=Reading+Factor

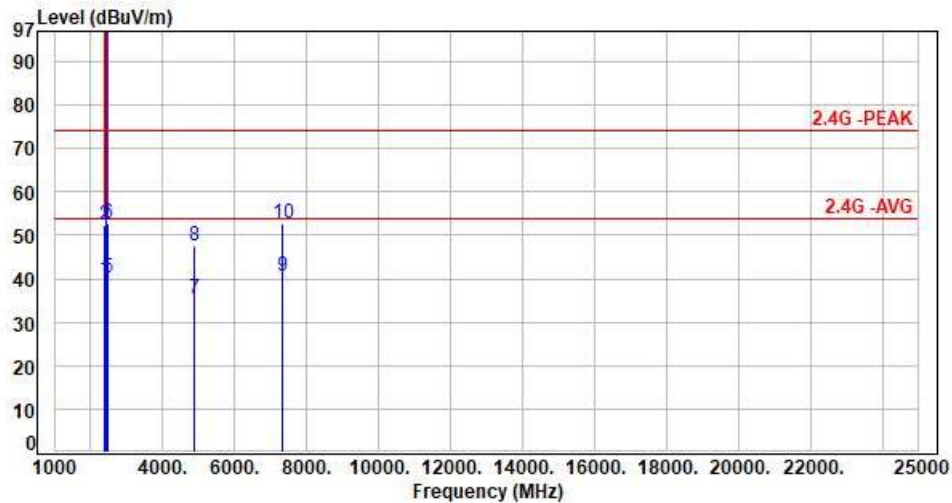
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11b CH06 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	42.05	39.72	54.00	-14.28	Average	100	64	P
2	2390.00	-2.33	54.61	52.28	74.00	-21.72	Peak	100	64	P
3	2437.00	-2.17	101.50	99.33	200.00	-100.67	Average	100	64	P
4	2437.00	-2.17	103.84	101.67	200.00	-98.33	Peak	100	64	P
5	2483.50	-2.01	42.08	40.07	54.00	-13.93	Average	100	64	P
6	2483.50	-2.01	54.77	52.76	74.00	-21.24	Peak	100	64	P
7	4874.00	5.79	29.75	35.54	54.00	-18.46	Average	100	113	P
8	4874.00	5.79	41.82	47.61	74.00	-26.39	Peak	100	113	P
9	7311.00	10.90	29.74	40.64	54.00	-13.36	Average	100	226	P
10	7311.00	10.90	41.94	52.84	74.00	-21.16	Peak	100	226	P

Note: Level=Reading+Factor

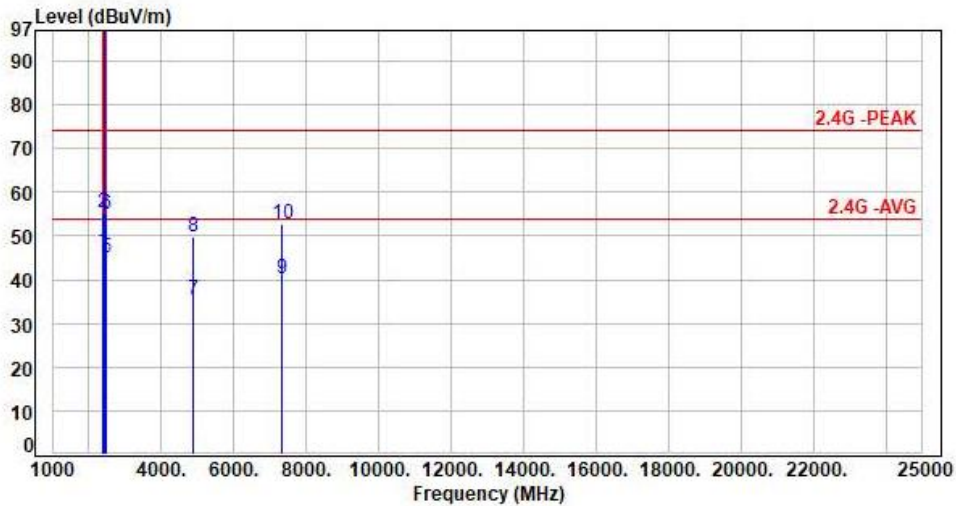
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11b CH06 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	48.71	46.38	54.00	-7.62	Average	100	278	P
2	2390.00	-2.33	57.71	55.38	74.00	-18.62	Peak	100	278	P
3	2437.00	-2.17	109.86	107.69	200.00	-92.31	Average	100	278	P
4	2437.00	-2.17	112.08	109.91	200.00	-90.09	Peak	100	278	P
5	2483.50	-2.01	46.91	44.90	54.00	-9.10	Average	100	278	P
6	2483.50	-2.01	56.82	54.81	74.00	-19.19	Peak	100	278	P
7	4874.00	5.79	29.47	35.26	54.00	-18.74	Average	100	186	P
8	4874.00	5.79	44.16	49.95	74.00	-24.05	Peak	100	186	P
9	7311.00	10.90	29.46	40.36	54.00	-13.64	Average	100	195	P
10	7311.00	10.90	41.82	52.72	74.00	-21.28	Peak	100	195	P

Note: Level=Reading+Factor

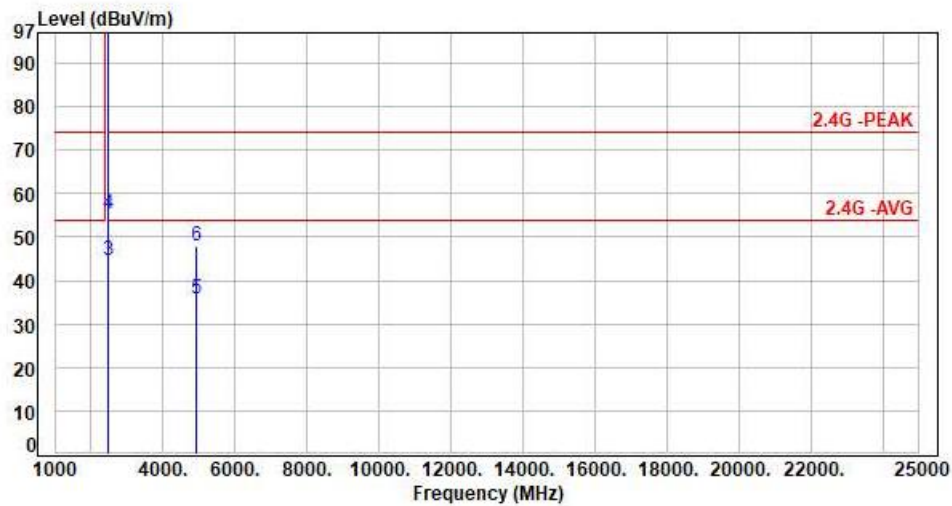
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11b CH11 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



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	-2.04	98.15	96.11	200.00	-103.89	Average	113	11	P
2	2462.00	-2.04	101.99	99.95	200.00	-100.05	Peak	113	11	P
3	2483.50	-2.01	46.56	44.55	54.00	-9.45	Average	113	11	P
4	2483.50	-2.01	57.26	55.25	74.00	-18.75	Peak	113	11	P
5	4924.00	5.95	29.74	35.69	54.00	-18.31	Average	100	151	P
6	4924.00	5.95	41.86	47.81	74.00	-26.19	Peak	100	151	P

Note: Level=Reading+Factor

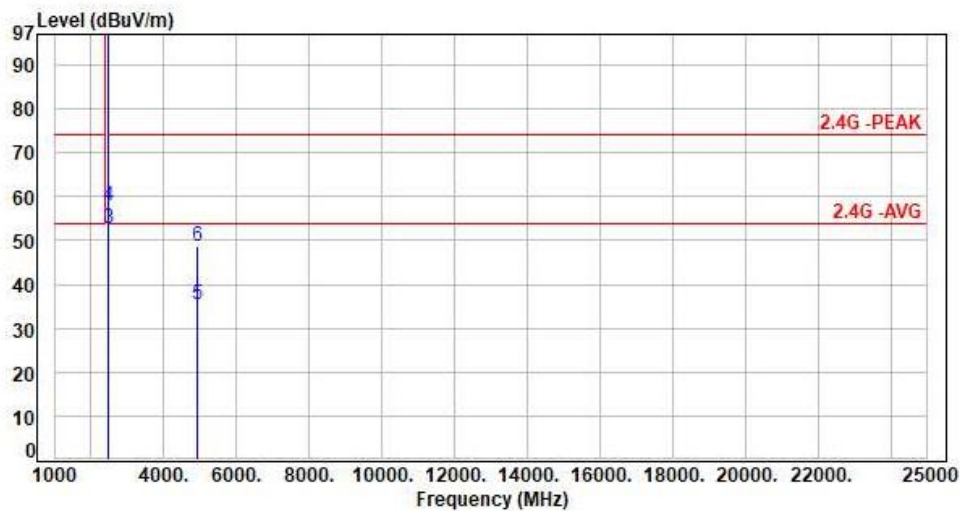
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11b CH11 1Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



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	-2.04	107.22	105.18	200.00	-94.82	Average	121	278	P
2	2462.00	-2.04	110.03	107.99	200.00	-92.01	Peak	121	278	P
3	2483.50	-2.01	54.57	52.56	54.00	-1.44	Average	121	278	P
4	2483.50	-2.01	59.87	57.86	74.00	-16.14	Peak	121	278	P
5	4924.00	5.95	29.46	35.41	54.00	-18.59	Average	100	142	P
6	4924.00	5.95	42.71	48.66	74.00	-25.34	Peak	100	142	P

Note: Level=Reading+Factor

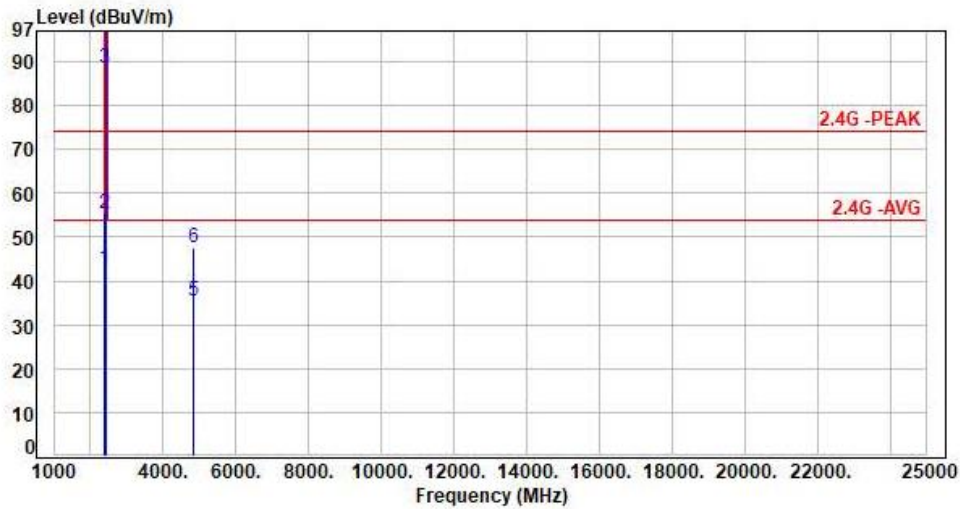
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH01 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	45.05	42.72	54.00	-11.28	Average	100	62	P
2	2390.00	-2.33	57.76	55.43	74.00	-18.57	Peak	100	62	P
3	2412.00	-2.29	90.73	88.44	200.00	-111.56	Average	100	62	P
4	2412.00	-2.29	100.41	98.12	200.00	-101.88	Peak	100	62	P
5	4824.00	5.64	29.74	35.38	54.00	-18.62	Average	100	194	P
6	4824.00	5.64	41.82	47.46	74.00	-26.54	Peak	100	194	P

Note: Level=Reading+Factor

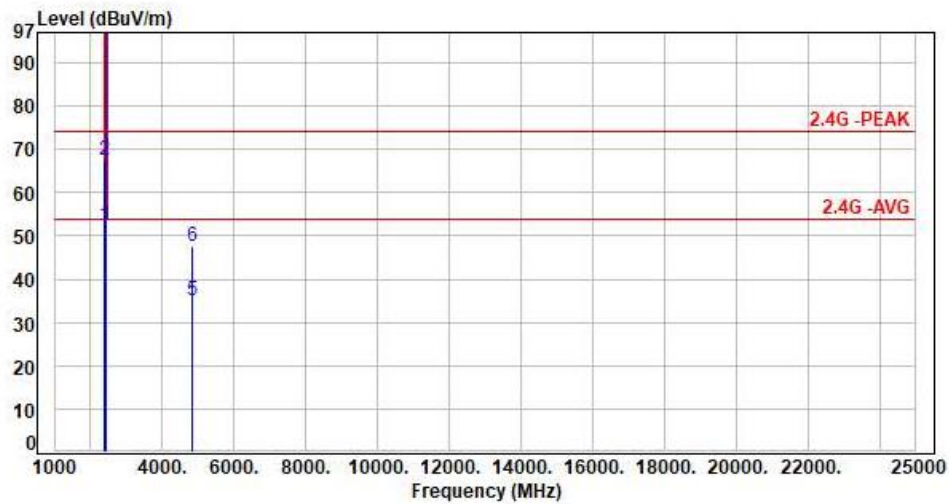
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH01 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	54.77	52.44	54.00	-1.56	Average	100	275	P
2	2390.00	-2.33	69.79	67.46	74.00	-6.54	Peak	100	275	P
3	2412.00	-2.29	98.64	96.35	200.00	-103.65	Average	100	275	P
4	2412.00	-2.29	108.69	106.40	200.00	-93.60	Peak	100	275	P
5	4824.00	5.64	29.46	35.10	54.00	-18.90	Average	100	224	P
6	4824.00	5.64	41.96	47.60	74.00	-26.40	Peak	100	224	P

Note: Level=Reading+Factor

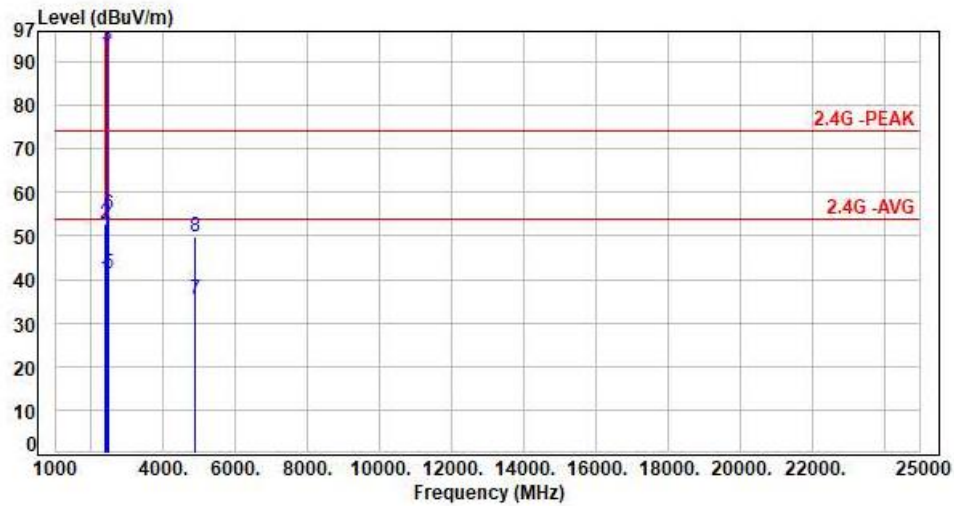
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH06 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	42.66	40.33	54.00	-13.67	Average	100	63	P
2	2390.00	-2.33	55.21	52.88	74.00	-21.12	Peak	100	63	P
3	2437.00	-2.17	95.75	93.58	200.00	-106.42	Average	100	63	P
4	2437.00	-2.17	104.77	102.60	200.00	-97.40	Peak	100	63	P
5	2483.50	-2.01	43.16	41.15	54.00	-12.85	Average	100	63	P
6	2483.50	-2.01	56.81	54.80	74.00	-19.20	Peak	100	63	P
7	4874.00	5.79	29.46	35.25	54.00	-18.75	Average	100	212	P
8	4874.00	5.79	43.86	49.65	74.00	-24.35	Peak	100	212	P

Note: Level=Reading+Factor

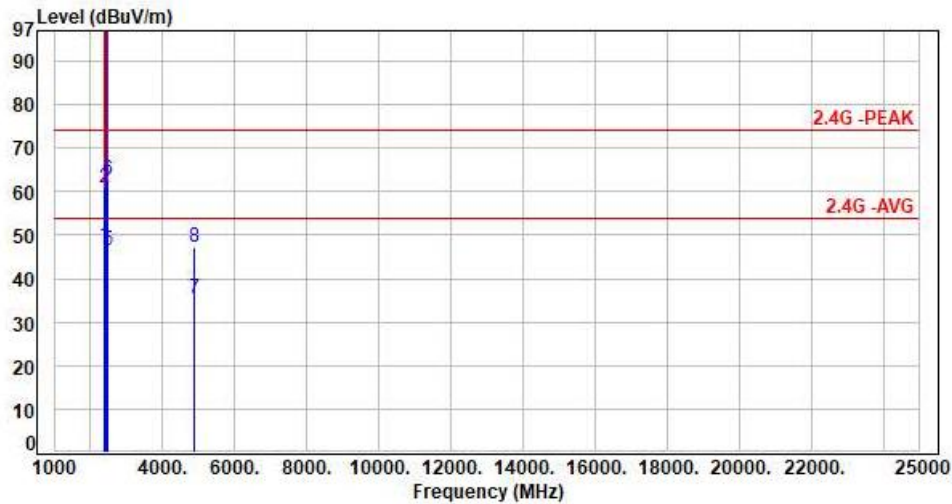
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH06 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	50.09	47.76	54.00	-6.24	Average	100	278	P
2	2390.00	-2.33	63.27	60.94	74.00	-13.06	Peak	100	278	P
3	2437.00	-2.17	104.13	101.96	200.00	-98.04	Average	100	278	P
4	2437.00	-2.17	112.88	110.71	200.00	-89.29	Peak	100	278	P
5	2483.50	-2.01	48.57	46.56	54.00	-7.44	Average	100	278	P
6	2483.50	-2.01	64.53	62.52	74.00	-11.48	Peak	100	278	P
7	4874.00	5.79	29.76	35.55	54.00	-18.45	Average	100	164	P
8	4874.00	5.79	41.28	47.07	74.00	-26.93	Peak	100	164	P

Note: Level=Reading+Factor

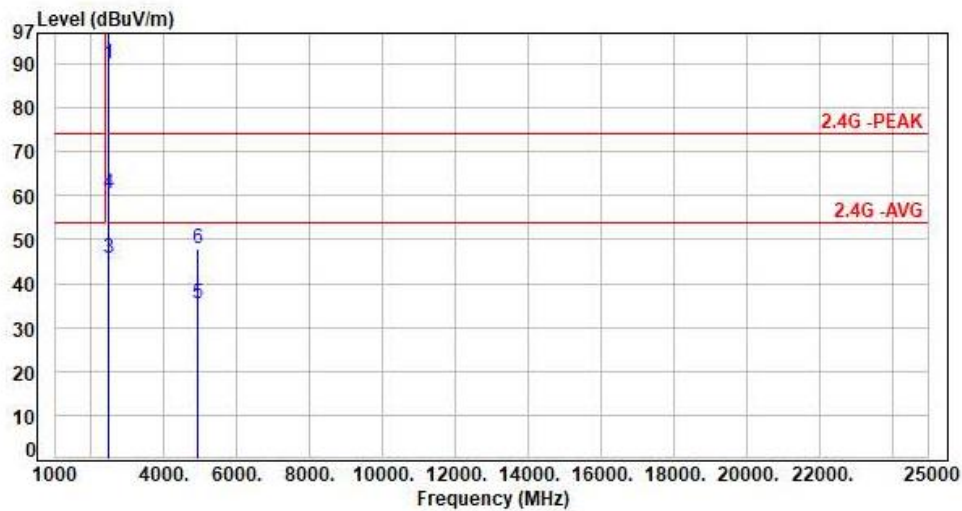
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH11 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



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	-2.04	92.00	89.96	200.00	-110.04	Average	100	11	P
2	2462.00	-2.04	100.91	98.87	200.00	-101.13	Peak	100	11	P
3	2483.50	-2.01	47.77	45.76	54.00	-8.24	Average	100	11	P
4	2483.50	-2.01	62.46	60.45	74.00	-13.55	Peak	100	11	P
5	4924.00	5.95	29.47	35.42	54.00	-18.58	Average	100	155	P
6	4924.00	5.95	41.88	47.83	74.00	-26.17	Peak	100	155	P

Note: Level=Reading+Factor

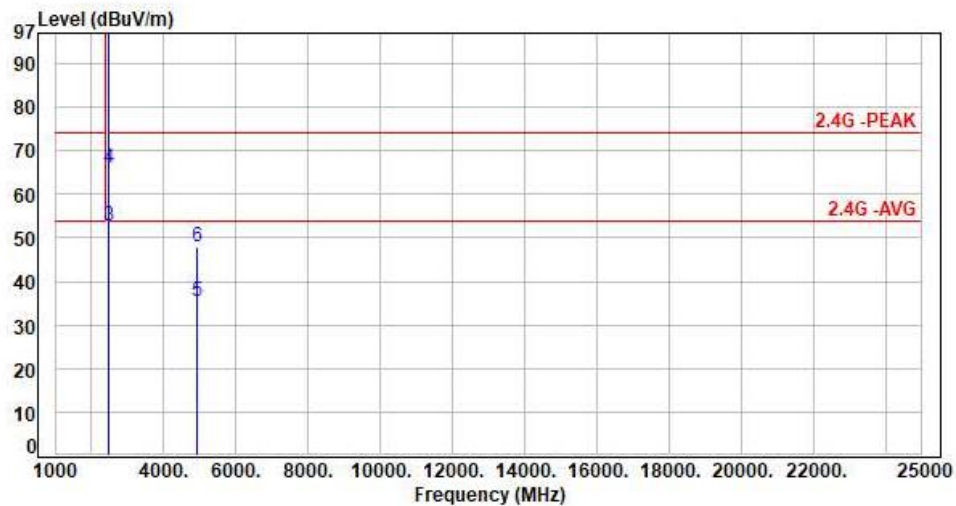
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



SISO ANT A

Test Mode : 1TX 11g CH11 6Mbps
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



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	-2.04	100.35	98.31	200.00	-101.69	Average	113	279	P
2	2462.00	-2.04	109.80	107.76	200.00	-92.24	Peak	113	279	P
3	2483.50	-2.01	54.82	52.81	54.00	-1.19	Average	113	279	P
4	2483.50	-2.01	67.87	65.86	74.00	-8.14	Peak	113	279	P
5	4924.00	5.95	29.41	35.36	54.00	-18.64	Average	100	224	P
6	4924.00	5.95	41.86	47.81	74.00	-26.19	Peak	100	224	P

Note: Level=Reading+Factor

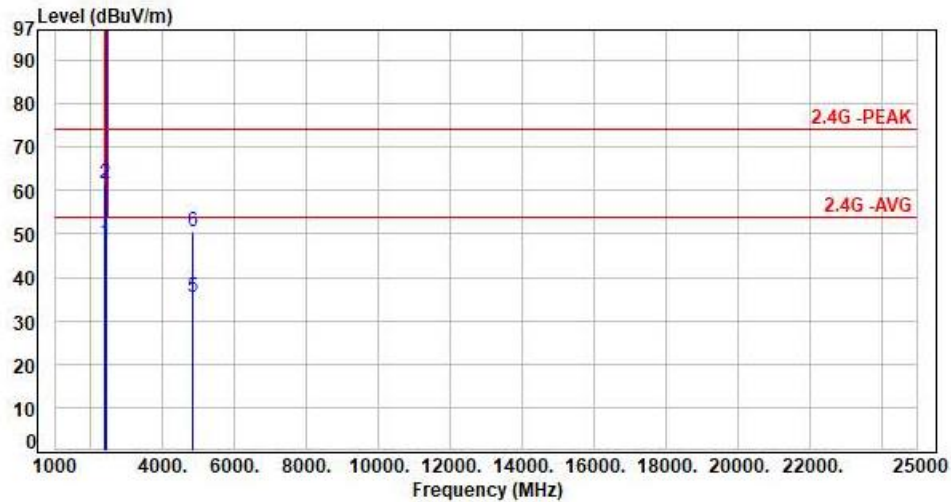
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH01 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	50.40	48.07	54.00	-5.93	Average	294	95	P
2	2390.00	-2.33	64.01	61.68	74.00	-12.32	Peak	294	95	P
3	2412.00	-2.29	98.52	96.23	200.00	-103.77	Average	294	95	P
4	2412.00	-2.29	111.06	108.77	200.00	-91.23	Peak	294	95	P
5	4824.00	5.64	29.70	35.34	54.00	-18.66	Average	100	182	P
6	4824.00	5.64	44.82	50.46	74.00	-23.54	Peak	100	182	P

Note: Level=Reading+Factor

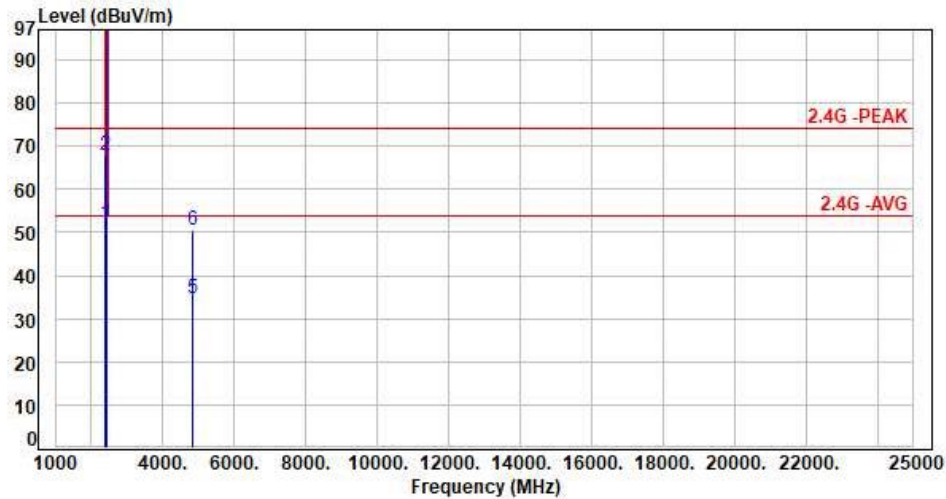
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH01 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	54.49	52.16	54.00	-1.84	Average	100	278	P
2	2390.00	-2.33	70.03	67.70	74.00	-6.30	Peak	100	278	P
3	2412.00	-2.29	103.10	100.81	200.00	-99.19	Average	100	278	P
4	2412.00	-2.29	116.20	113.91	200.00	-86.09	Peak	100	278	P
5	4824.00	5.64	29.14	34.78	54.00	-19.22	Average	100	192	P
6	4824.00	5.64	44.80	50.44	74.00	-23.56	Peak	100	192	P

Note: Level=Reading+Factor

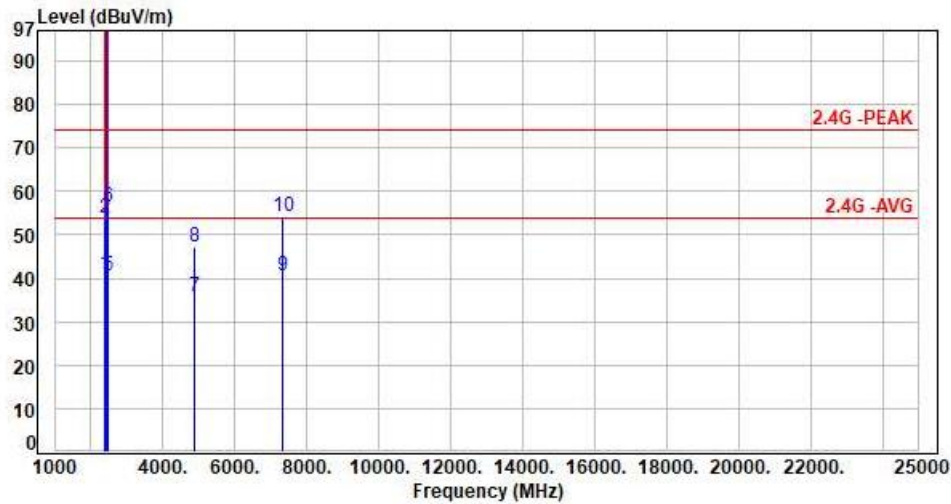
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	43.40	41.07	54.00	-12.93	Average	255	96	P
2	2390.00	-2.33	56.31	53.98	74.00	-20.02	Peak	255	96	P
3	2437.00	-2.17	101.35	99.18	200.00	-100.82	Average	255	96	P
4	2437.00	-2.17	113.73	111.56	200.00	-88.44	Peak	255	96	P
5	2483.50	-2.01	42.67	40.66	54.00	-13.34	Average	255	96	P
6	2483.50	-2.01	58.48	56.47	74.00	-17.53	Peak	255	96	P
7	4874.00	5.79	29.90	35.69	54.00	-18.31	Average	100	168	P
8	4874.00	5.79	41.42	47.21	74.00	-26.79	Peak	100	168	P
9	7311.00	10.90	29.83	40.73	54.00	-13.27	Average	100	168	P
10	7311.00	10.90	43.35	54.25	74.00	-19.75	Peak	100	168	P

Note: Level=Reading+Factor

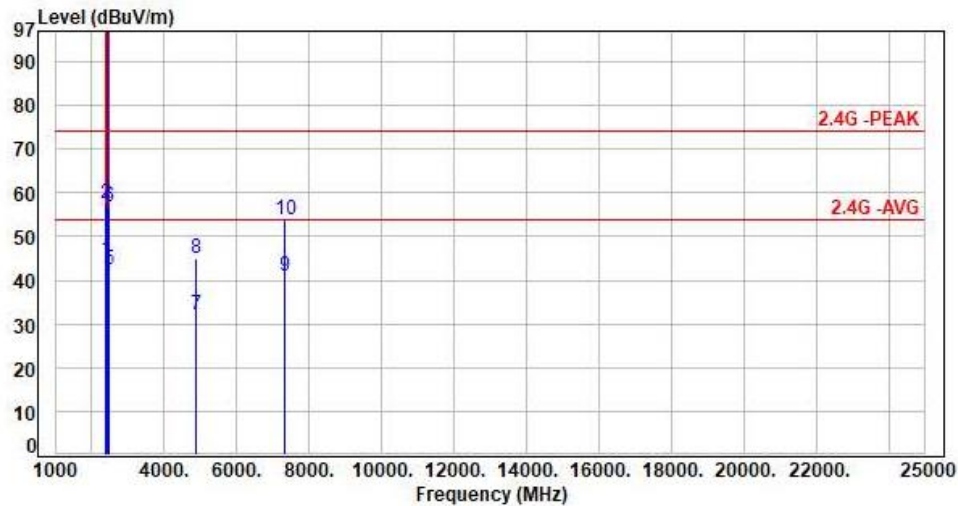
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	47.10	44.77	54.00	-9.23	Average	100	278	P
2	2390.00	-2.33	59.88	57.55	74.00	-16.45	Peak	100	278	P
3	2437.00	-2.17	105.10	102.93	200.00	-97.07	Average	100	278	P
4	2437.00	-2.17	117.59	115.42	200.00	-84.58	Peak	100	278	P
5	2483.50	-2.01	44.55	42.54	54.00	-11.46	Average	100	278	P
6	2483.50	-2.01	58.88	56.87	74.00	-17.13	Peak	100	278	P
7	4874.00	5.79	26.46	32.25	54.00	-21.75	Average	100	281	P
8	4874.00	5.79	39.18	44.97	74.00	-29.03	Peak	100	281	P
9	7311.00	10.90	30.21	41.11	54.00	-12.89	Average	100	177	P
10	7311.00	10.90	43.04	53.94	74.00	-20.06	Peak	100	177	P

Note: Level=Reading+Factor

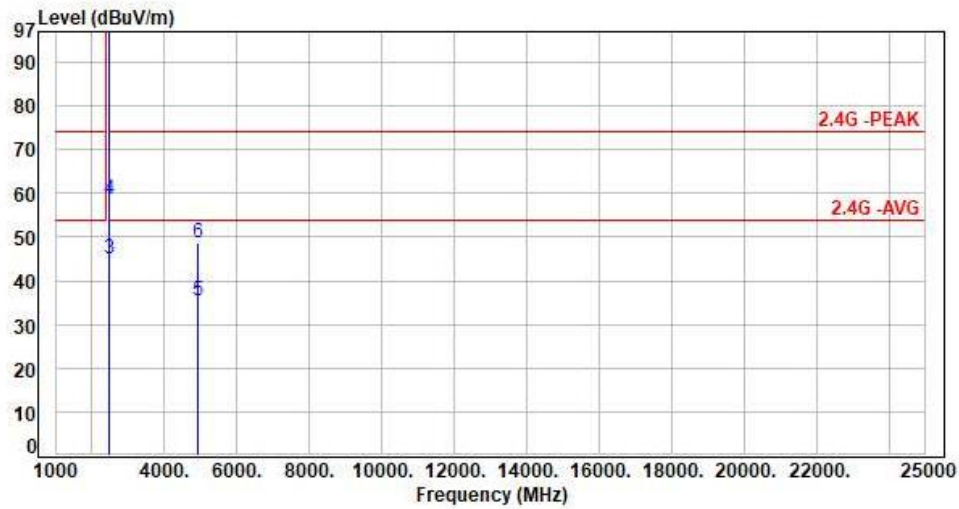
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH11 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



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	-2.04	97.94	95.90	200.00	-104.10	Average	100	96	P
2	2462.00	-2.04	111.18	109.14	200.00	-90.86	Peak	100	96	P
3	2483.50	-2.01	47.13	45.12	54.00	-8.88	Average	100	96	P
4	2483.50	-2.01	60.69	58.68	74.00	-15.32	Peak	100	96	P
5	4924.00	5.95	29.47	35.42	54.00	-18.58	Average	100	163	P
6	4924.00	5.95	42.82	48.77	74.00	-25.23	Peak	100	163	P

Note: Level=Reading+Factor

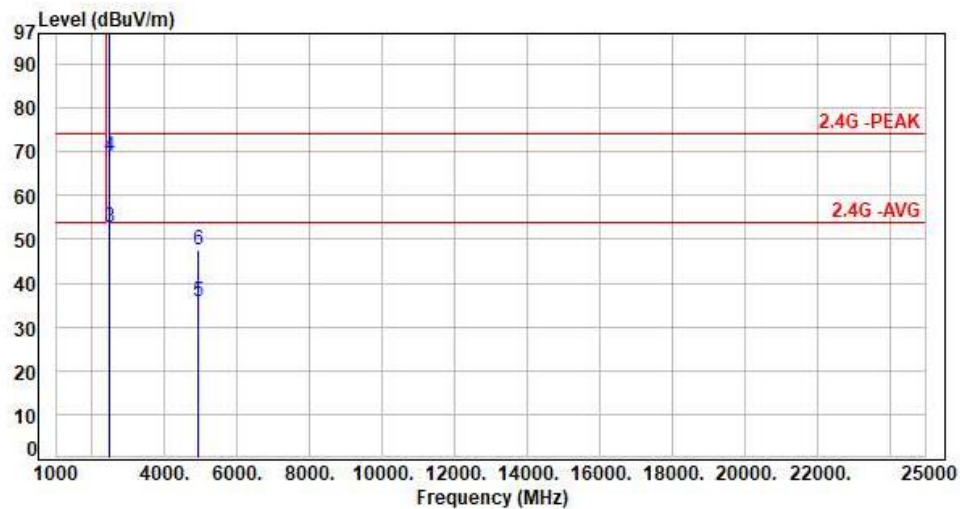
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax20 CH11 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



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	-2.04	102.77	100.73	200.00	-99.27	Average	100	283	P
2	2462.00	-2.04	115.70	113.66	200.00	-86.34	Peak	100	283	P
3	2483.50	-2.01	54.84	52.83	54.00	-1.17	Average	100	283	P
4	2483.50	-2.01	71.06	69.05	74.00	-4.95	Peak	100	283	P
5	4924.00	5.95	29.74	35.69	54.00	-18.31	Average	100	171	P
6	4924.00	5.95	41.62	47.57	74.00	-26.43	Peak	100	171	P

Note: Level=Reading+Factor

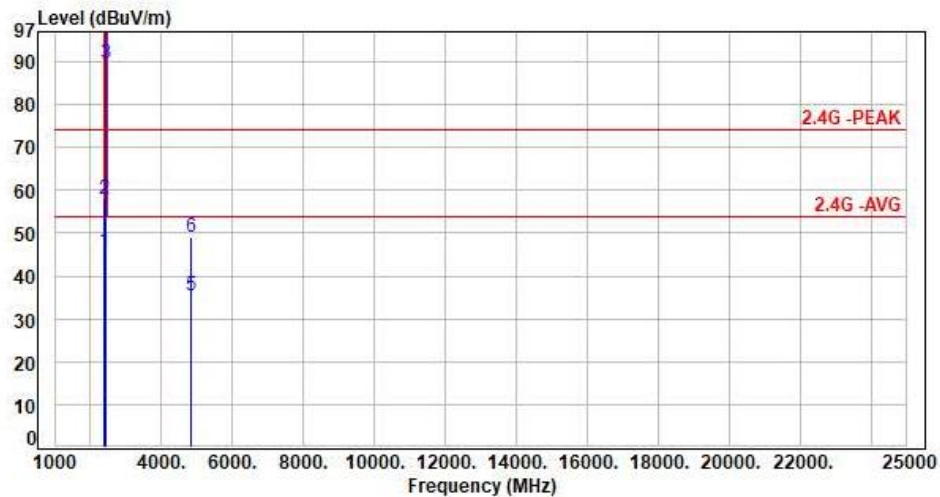
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH03 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	48.18	45.85	54.00	-8.15	Average	286	94	P
2	2390.00	-2.33	60.28	57.95	74.00	-16.05	Peak	286	94	P
3	2422.00	-2.19	91.87	89.68	200.00	-110.32	Average	286	94	P
4	2422.00	-2.19	103.65	101.46	200.00	-98.54	Peak	286	94	P
5	4844.00	5.70	29.66	35.36	54.00	-18.64	Average	100	113	P
6	4844.00	5.70	43.28	48.98	74.00	-25.02	Peak	100	113	P

Note: Level=Reading+Factor

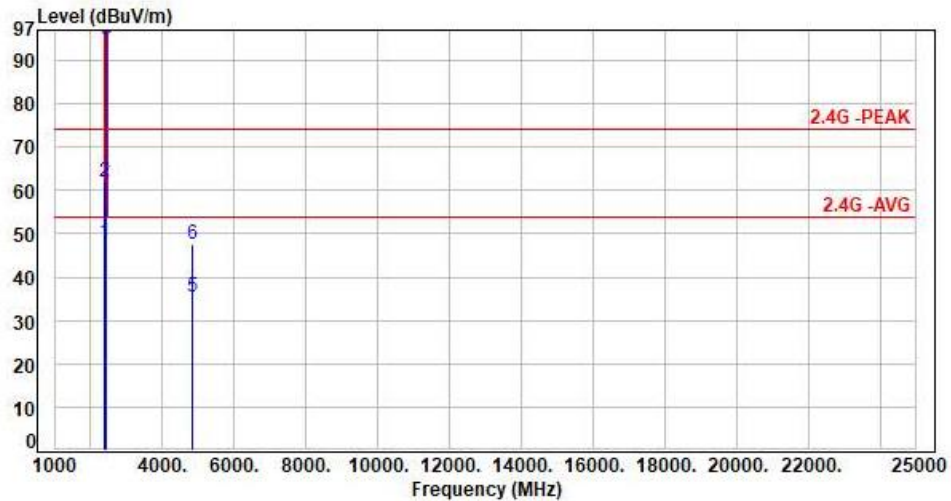
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH03 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	50.17	47.84	54.00	-6.16	Average	100	279	P
2	2390.00	-2.33	64.32	61.99	74.00	-12.01	Peak	100	279	P
3	2422.00	-2.19	96.85	94.66	200.00	-105.34	Average	100	279	P
4	2422.00	-2.19	107.86	105.67	200.00	-94.33	Peak	100	279	P
5	4844.00	5.70	29.61	35.31	54.00	-18.69	Average	100	146	P
6	4844.00	5.70	41.92	47.62	74.00	-26.38	Peak	100	146	P

Note: Level=Reading+Factor

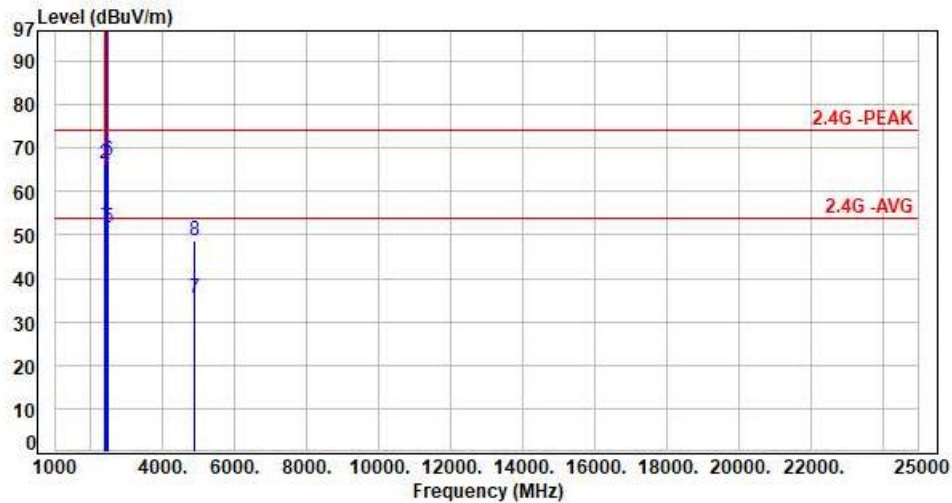
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	54.85	52.52	54.00	-1.48	Average	100	280	P
2	2390.00	-2.33	68.54	66.21	74.00	-7.79	Peak	100	280	P
3	2437.00	-2.17	101.15	98.98	200.00	-101.02	Average	100	280	P
4	2437.00	-2.17	113.91	111.74	200.00	-88.26	Peak	100	280	P
5	2483.50	-2.01	53.72	51.71	54.00	-2.29	Average	100	280	P
6	2483.50	-2.01	69.19	67.18	74.00	-6.82	Peak	100	280	P
7	4874.00	5.79	29.55	35.34	54.00	-18.66	Average	100	162	P
8	4874.00	5.79	42.71	48.50	74.00	-25.50	Peak	100	162	P

Note: Level=Reading+Factor

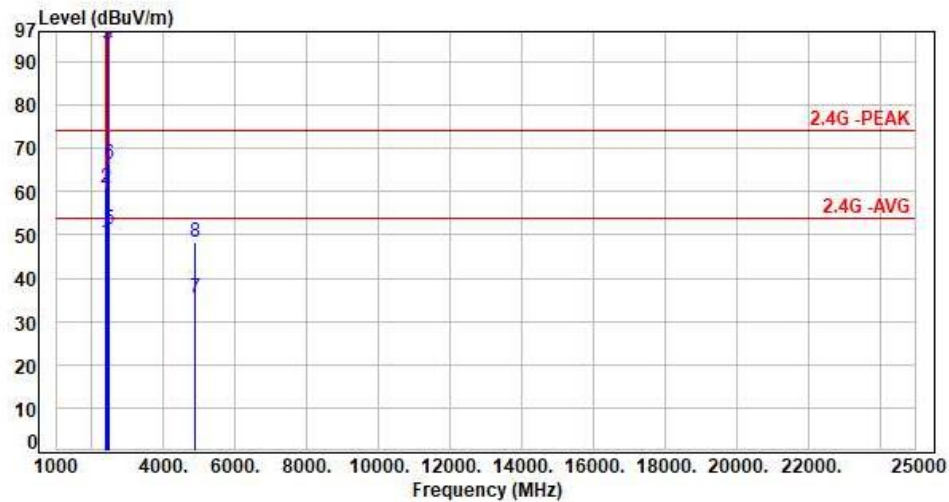
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH06 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-2.33	50.59	48.26	54.00	-5.74	Average	278	96	P
2	2390.00	-2.33	63.20	60.87	74.00	-13.13	Peak	278	96	P
3	2437.00	-2.17	96.40	94.23	200.00	-105.77	Average	278	96	P
4	2437.00	-2.17	108.42	106.25	200.00	-93.75	Peak	278	96	P
5	2483.50	-2.01	53.23	51.22	54.00	-2.78	Average	278	96	P
6	2483.50	-2.01	68.25	66.24	74.00	-7.76	Peak	278	96	P
7	4874.00	5.79	29.74	35.53	54.00	-18.47	Average	100	192	P
8	4874.00	5.79	42.67	48.46	74.00	-25.54	Peak	100	192	P

Note: Level=Reading+Factor

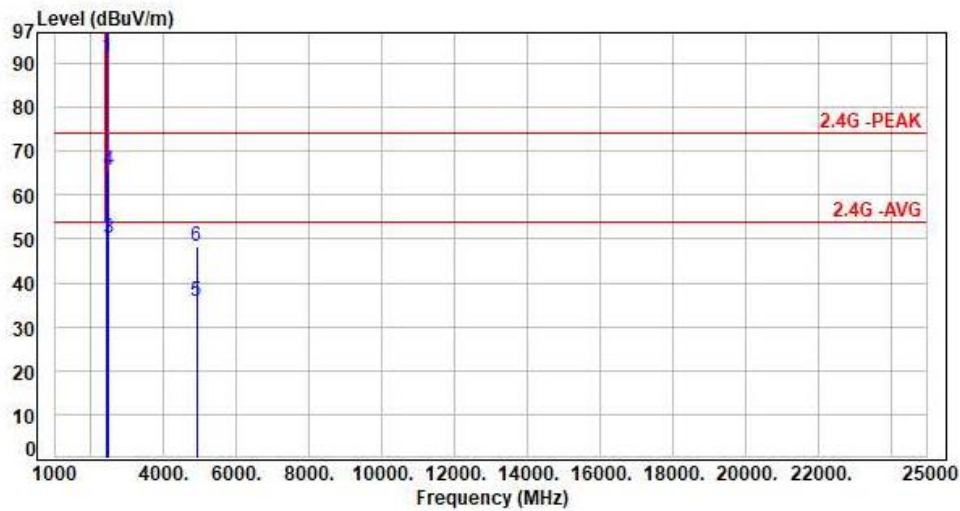
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH09 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Vertical



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	-2.13	93.53	91.40	200.00	-108.60	Average	284	96	P
2	2452.00	-2.13	104.64	102.51	200.00	-97.49	Peak	284	96	P
3	2483.50	-2.01	52.12	50.11	54.00	-3.89	Average	284	96	P
4	2483.50	-2.01	67.56	65.55	74.00	-8.45	Peak	284	96	P
5	4904.00	5.89	29.73	35.62	54.00	-18.38	Average	100	131	P
6	4904.00	5.89	42.60	48.49	74.00	-25.51	Peak	100	131	P

Note: Level=Reading+Factor

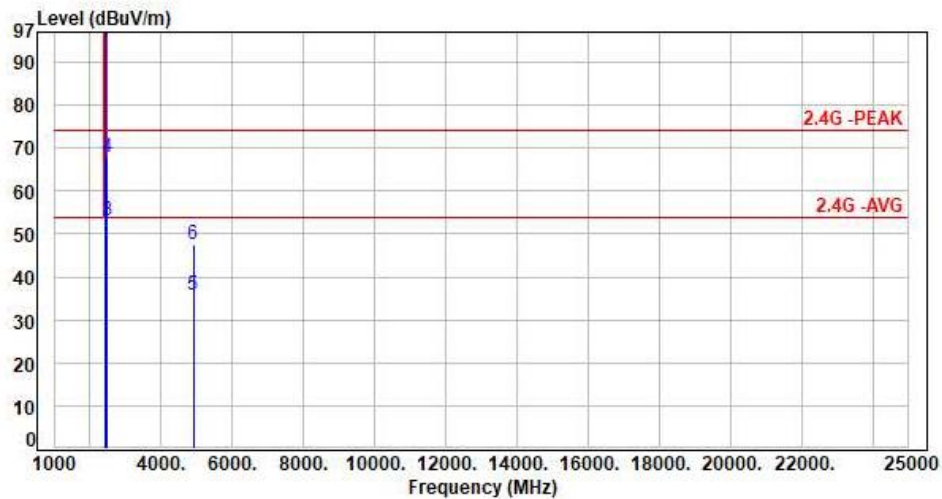
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



MIMO

Test Mode : 2TX 11ax40 CH09 NSS1 MCS0
Voltage : From Adapter(AC120V/60Hz)
Pol : Horizontal



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	-2.13	97.42	95.29	200.00	-104.71	Average	107	279	P
2	2452.00	-2.13	110.02	107.89	200.00	-92.11	Peak	107	279	P
3	2483.50	-2.01	55.00	52.99	54.00	-1.01	Average	107	279	P
4	2483.50	-2.01	69.98	67.97	74.00	-6.03	Peak	107	279	P
5	4904.00	5.89	29.73	35.62	54.00	-18.38	Average	100	161	P
6	4904.00	5.89	41.81	47.70	74.00	-26.30	Peak	100	161	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

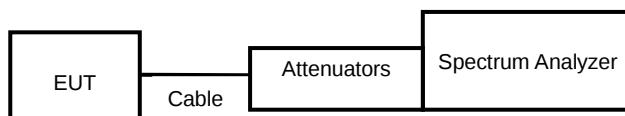
Below -30dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

7.2 Test Procedure

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

- The transmitter output was connected to the spectrum analyzer via a low loss cable.
- Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 30dB relative to the maximum measured in-band peak PSD level.
- The band edges was measured and recorded.

7.3 Test Setup Layout



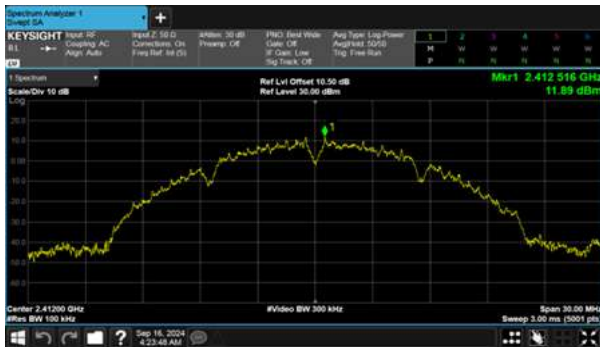
7.4 Test Result and Data

Note: Test plots refers to the following pages.

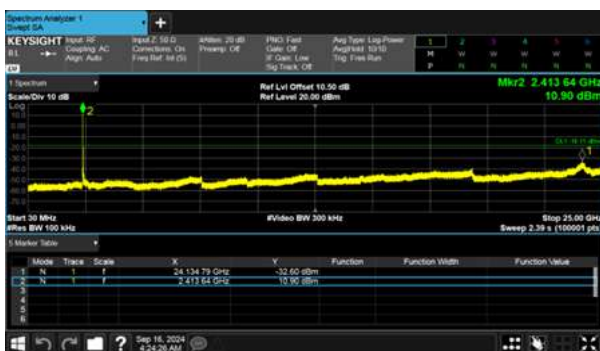
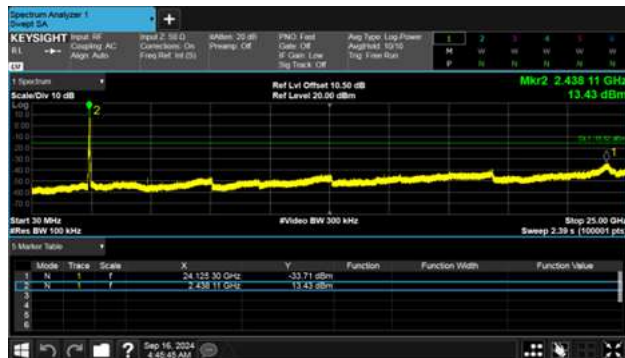


SISO ANT A

Modulation Type: 802.11b, CH 01



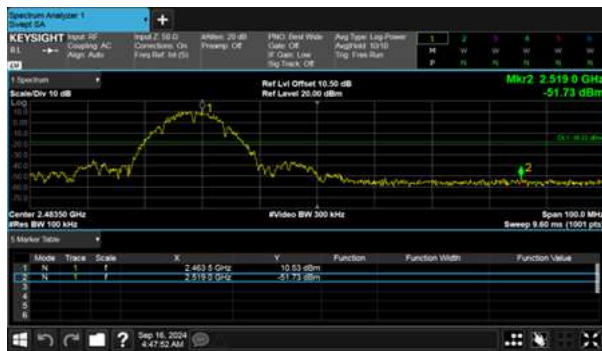
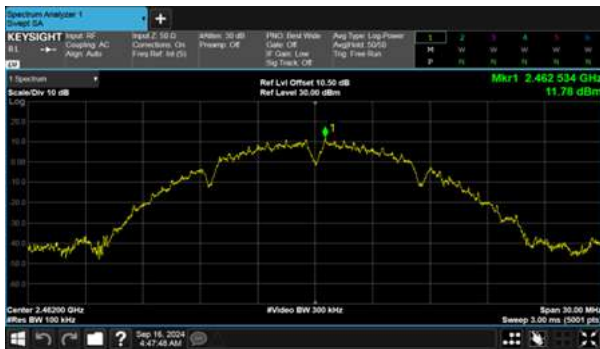
Modulation Type: 802.11b, CH 06





SISO ANT A

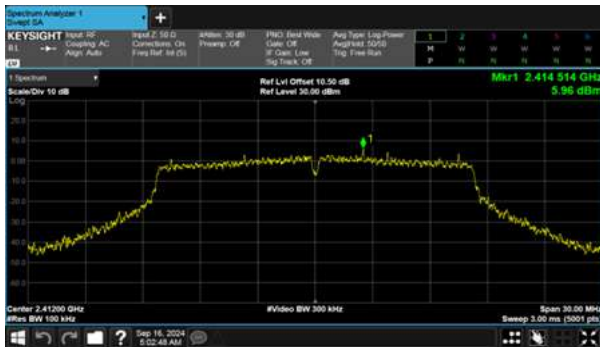
Modulation Type: 802.11b, CH 11



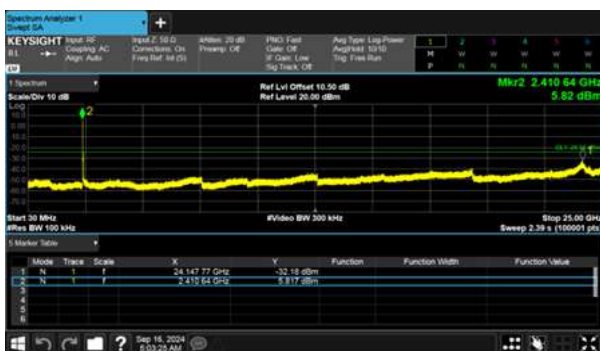
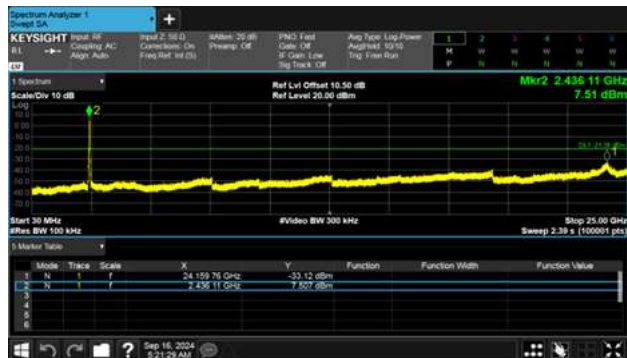
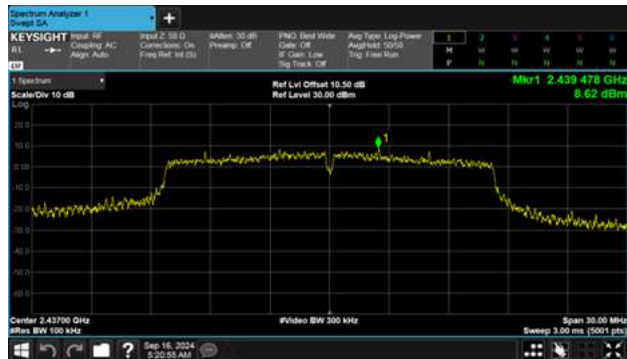


SISO ANT A

Modulation Type: 802.11g, CH 01

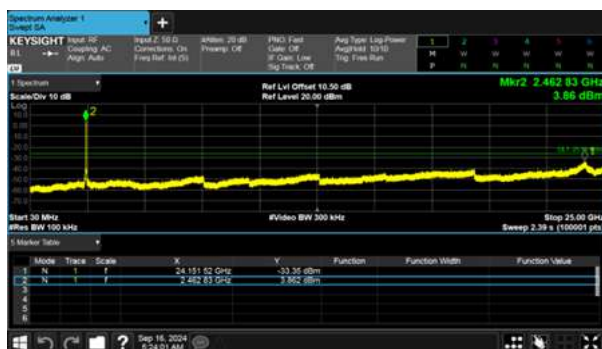
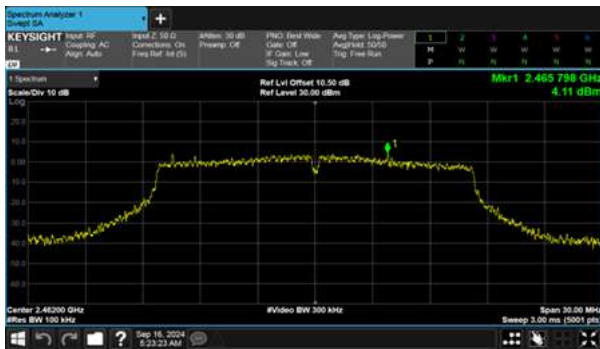


Modulation Type: 802.11g, CH 06





SISO ANT A
Modulation Type: 802.11g, CH 11

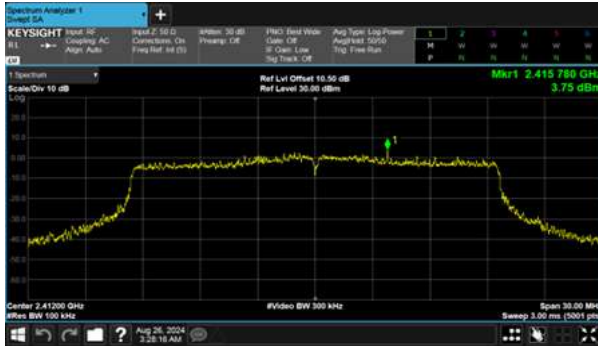




MIMO

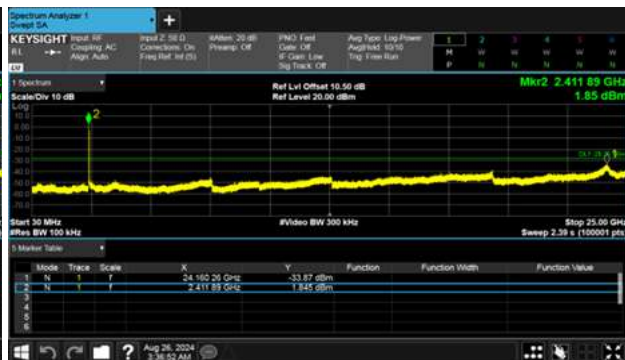
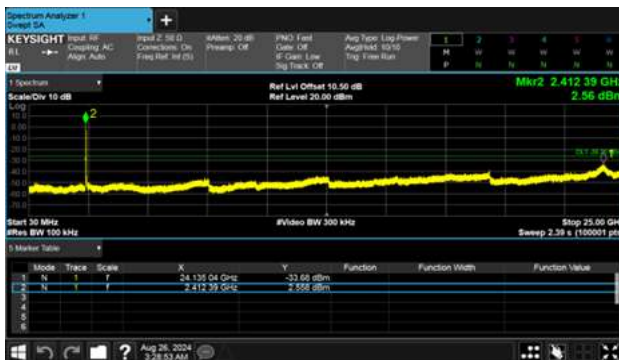
ANT A

Modulation Type: 802.11ax20, CH01



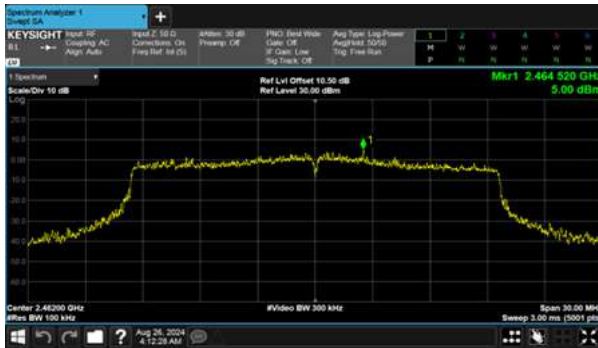
ANT B

Modulation Type: 802.11ax20, CH01

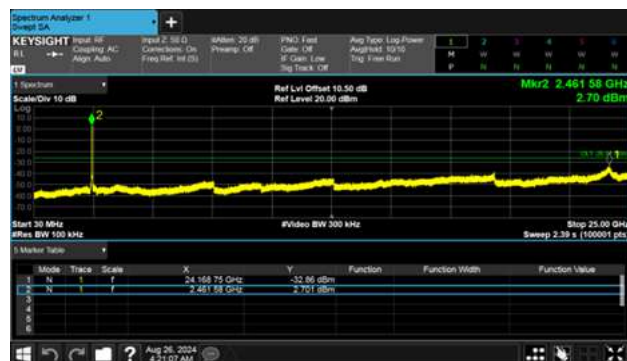
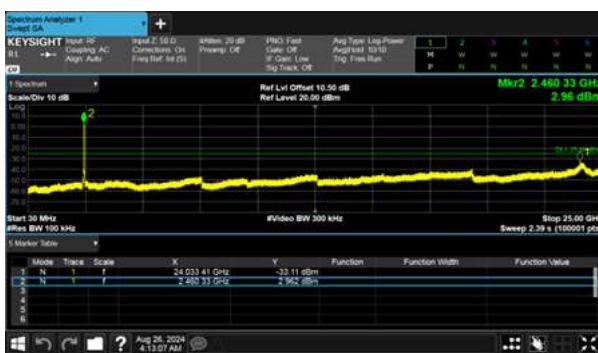
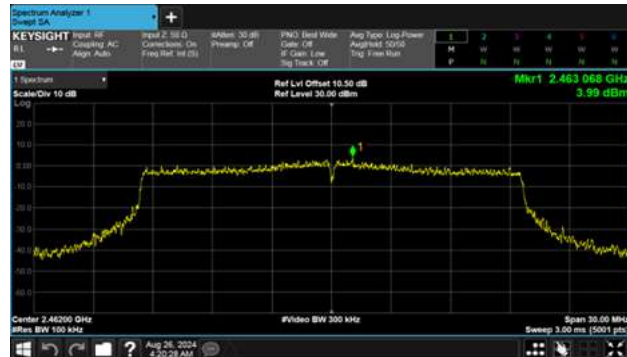




MIMO
ANT A
Modulation Type: 802.11ax20, CH11

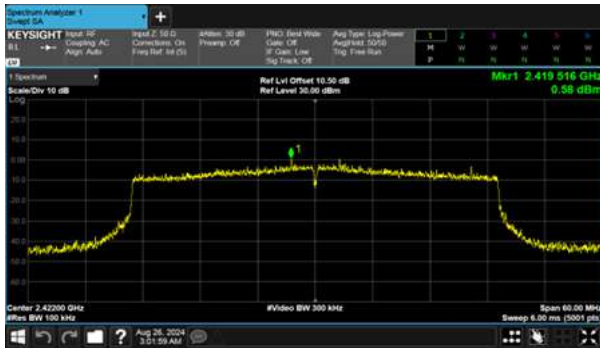


ANT B
Modulation Type: 802.11ax20, CH11

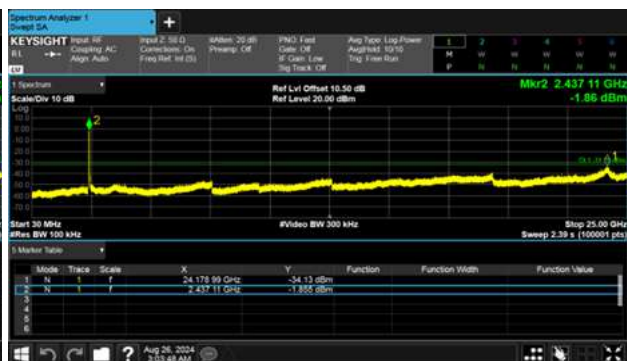
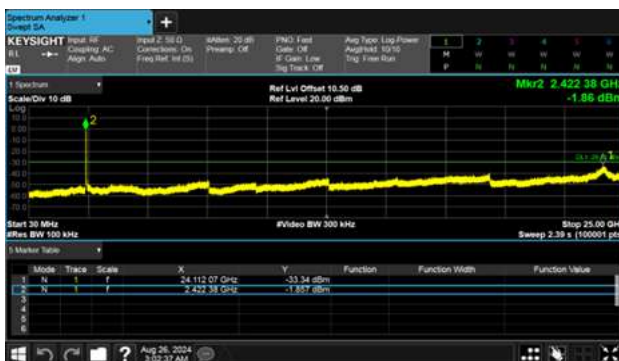
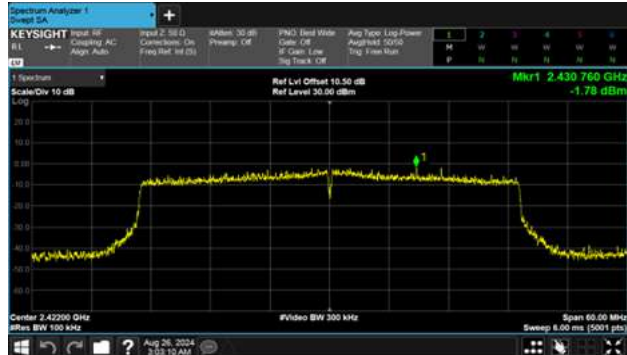




MIMO
ANT A
Modulation Type: 802.11ax40, CH03



ANT B
Modulation Type: 802.11ax40, CH03

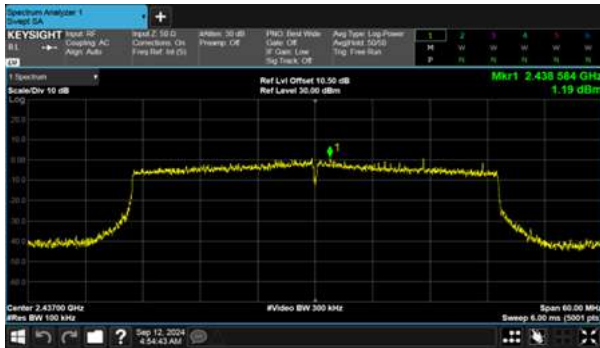




MIMO

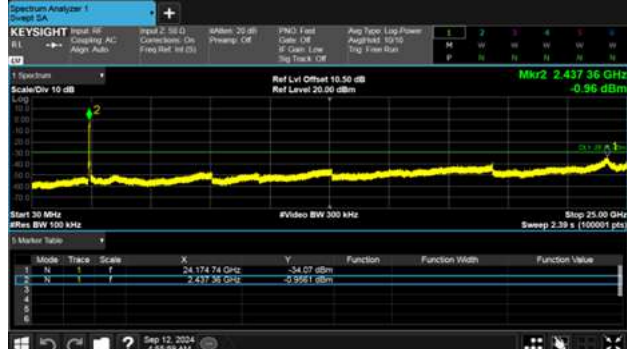
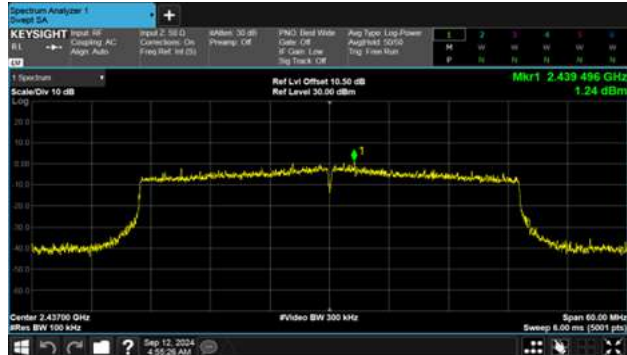
ANT A

Modulation Type: 802.11ax40, CH06



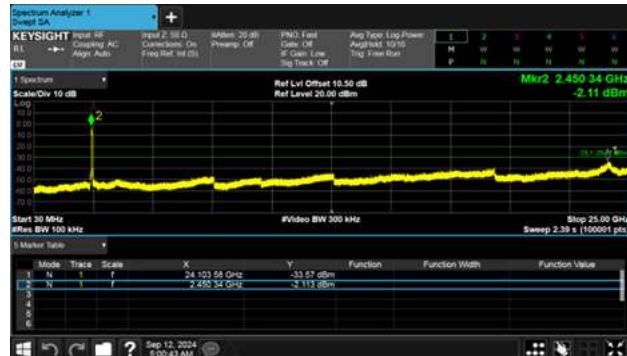
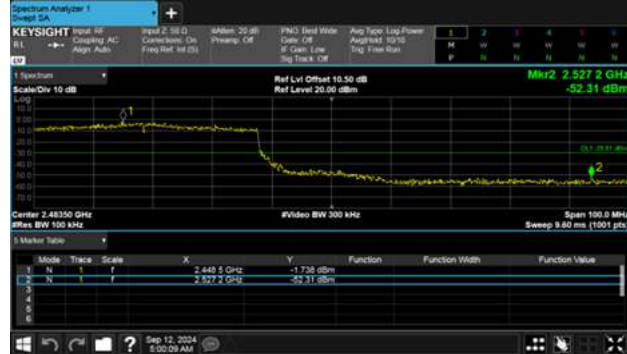
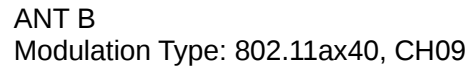
ANT B

Modulation Type: 802.11ax40, CH06





MIMO
ANT A
Modulation Type: 802.11ax40, CH09





8. On Time, Duty Cycle and Measurement methods

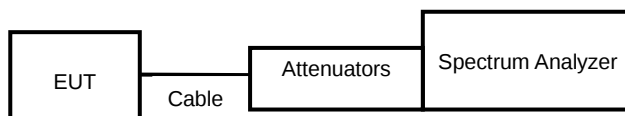
8.1 Test Limit

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

SISO

Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
11b,1M	0.668	0.677	98.71%
11g,6M	2.105	2.115	99.53%

MIMO

Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
11ax HE20	5.436	5.440	99.93%
11ax HE40	3.086	3.086	100.00%



SISO

Modulation Type: 802.11b



MIMO

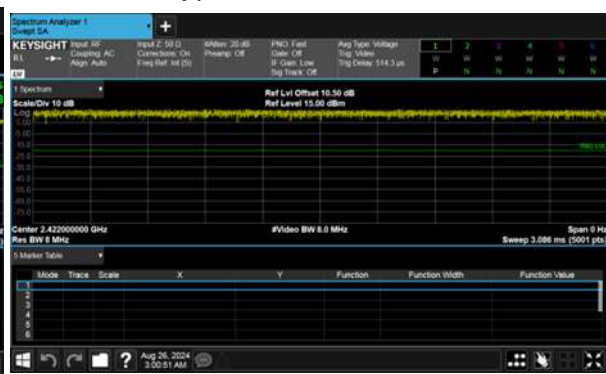
Modulation Type: 802.11ax20



Modulation Type: 802.11g



Modulation Type: 802.11ax40





9. 6dB Bandwidth Measurement Data

9.1 Test Limit

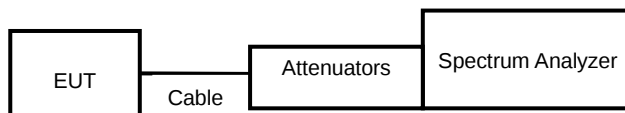
The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

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

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- The 6dB Bandwidth was measured and recorded.

9.3 Test Setup Layout



**9.4 Test Result and Data****SISO**

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
			ANT A	
11b	1	2412	7.60	0.5
	6	2437	9.11	0.5
	11	2462	7.16	0.5
11g	1	2412	15.13	0.5
	6	2437	15.16	0.5
	11	2462	15.13	0.5

MIMO

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)
			ANT A	ANT B	
11ax HE20	1	2412	16.07	15.04	0.5
	6	2437	16.71	15.47	0.5
	11	2462	16.04	16.34	0.5
11ax HE40	3	2422	35.03	35.48	0.5
	6	2437	35.80	35.60	0.5
	9	2452	35.94	35.41	0.5



6dB Bandwidth
SISO ANT A
Modulation Type: 802.11b
CH01



Modulation Type: 802.11g
CH01



CH06



CH06



CH11



CH11





6dB Bandwidth
MIMO
ANT A
Modulation Type: 802.11ax20
CH01



ANT B
Modulation Type: 802.11ax20
CH01



CH06



CH06



CH11



CH11





6dB Bandwidth

MIMO

ANT A

Modulation Type: 802.11ax40

CH03



ANT B

Modulation Type: 802.11ax40

CH03



CH06



CH06



CH09



CH09





10. Maximum Average Output Power

10.1 Test Limit

The Maximum Average Output Power Measurement is 30dBm.

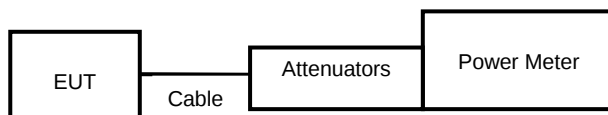
If transmitting antennas of directional gain greater than 6 dBi are used, the average output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

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**

ESY1011E

ANT A

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A			
1	21.5	11b	1	2412	20.04	20.04	100.925	30.00
	22.5		6	2437	23.83	23.83	241.546	30.00
	21.5		11	2462	19.96	19.96	99.083	30.00
6	17	11g	1	2412	16.07	16.07	40.458	30.00
	21		6	2437	20.33	20.33	107.895	30.00
	18		11	2462	16.60	16.60	45.709	30.00

ANT B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT B			
1	21	11b	1	2412	19.76	19.76	94.624	30.00
	22.5		6	2437	21.86	21.86	153.462	30.00
	21		11	2462	19.79	19.79	95.280	30.00
6	17	11g	1	2412	15.92	15.92	39.084	30.00
	21		6	2437	19.21	19.21	83.368	30.00
	17.5		11	2462	16.53	16.53	44.978	30.00

ANT A, B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A	ANT B			
NSS1-MCS0	16	11ax HE20	1	2412	15.37	15.01	18.20	66.131	30.00
	18.5		6	2437	17.59	16.85	20.25	105.829	30.00
	16.5		11	2462	15.47	15.88	18.69	73.963	30.00
NSS1-MCS0	14.5	11ax HE40	3	2422	13.69	13.53	16.62	45.931	30.00
	17		6	2437	15.72	14.97	18.37	68.730	30.00
	15		9	2452	6.88	7.11	10.01	10.016	30.00

ESY15I1E
ANT A

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A			
1	21.5	11b	1	2412	20.22	20.22	105.196	30.00
	22.5		6	2437	24.02	24.02	252.348	30.00
	21.5		11	2462	20.11	20.11	102.565	30.00
6	17	11g	1	2412	16.18	16.18	41.495	30.00
	21		6	2437	20.49	20.49	111.944	30.00
	18		11	2462	16.76	16.76	47.424	30.00

ANT B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT B			
1	21	11b	1	2412	19.92	19.92	98.175	30.00
	22.5		6	2437	22.07	22.07	161.065	30.00
	21		11	2462	19.93	19.93	98.401	30.00
6	17	11g	1	2412	16.07	16.07	40.458	30.00
	21		6	2437	19.34	19.34	85.901	30.00
	17.5		11	2462	16.74	16.74	47.206	30.00

ANT A, B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A	ANT B			
NSS1-MCS0	16	11ax HE20	1	2412	15.48	15.11	18.31	67.752	30.00
	18.5		6	2437	17.74	17.02	20.41	109.779	30.00
	16.5		11	2462	15.59	16.02	18.82	76.219	30.00
NSS1-MCS0	14.5	11ax HE40	3	2422	13.82	13.73	16.79	47.704	30.00
	17		6	2437	15.98	15.13	18.59	72.211	30.00
	15		9	2452	7.03	7.33	10.19	10.454	30.00



ESY22I1E

ANT A

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A			
1	21.5	11b	1	2412	20.36	20.36	108.643	30.00
	22.5		6	2437	24.15	24.15	260.016	30.00
	21.5		11	2462	20.28	20.28	106.660	30.00
6	17	11g	1	2412	16.37	16.37	43.351	30.00
	21		6	2437	20.64	20.64	115.878	30.00
	18		11	2462	16.92	16.92	49.204	30.00

ANT B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT B			
1	21	11b	1	2412	20.05	20.05	101.158	30.00
	22.5		6	2437	22.20	22.20	165.959	30.00
	21		11	2462	20.11	20.11	102.565	30.00
6	17	11g	1	2412	16.27	16.27	42.364	30.00
	21		6	2437	19.52	19.52	89.536	30.00
	17.5		11	2462	16.87	16.87	48.641	30.00

ANT A, B

Data Rate	Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)		Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
					ANT A	ANT B			
NSS1-MCS0	16	11ax HE20	1	2412	15.56	15.22	18.40	69.241	30.00
	18.5		6	2437	17.93	17.19	20.59	114.447	30.00
	16.5		11	2462	15.67	16.06	18.88	77.262	30.00
NSS1-MCS0	14.5	11ax HE40	3	2422	13.88	13.72	16.81	47.985	30.00
	17		6	2437	16.11	15.32	18.74	74.873	30.00
	15		9	2452	7.22	7.51	10.38	10.909	30.00



11. Power Spectral Density

11.1 Test Limit

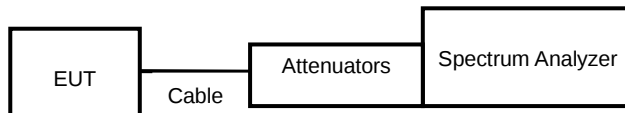
The Maximum of Power Spectral Density Measurement is 8dBm.

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****SISO**

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 A				
11b	1	2412	-7.037	-7.04	0.00	-7.04	8.00
	6	2437	-4.395	-4.40	0.00	-4.40	8.00
	11	2462	-7.437	-7.44	0.00	-7.44	8.00
11g	1	2412	-15.236	-15.24	0.00	-15.24	8.00
	6	2437	-10.891	-10.89	0.00	-10.89	8.00
	11	2462	-14.146	-14.15	0.00	-14.15	8.00

MIMO

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 A	ANT B				
11ax HE20	1	2412	-18.619	-18.798	-15.70	0.00	-15.70	8.00
	6	2437	-16.049	-16.934	-13.46	0.00	-13.46	8.00
	11	2462	-18.201	-18.114	-15.15	0.00	-15.15	8.00

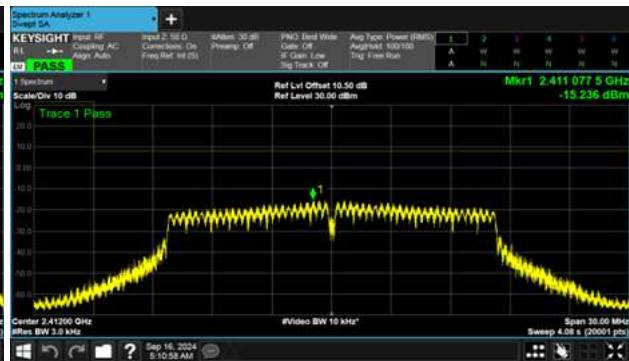
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 100KHz Bandwidth(dBm)		Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A	ANT B				
11ax HE40	3	2422	-8.375	-8.981	-5.66	0.00	-5.66	8.00
	6	2437	-6.477	-7.046	-3.74	0.00	-3.74	8.00
	9	2452	-9.239	-9.013	-6.11	0.00	-6.11	8.00



SISO ANT A
Modulation Type: 802.11b
CH01



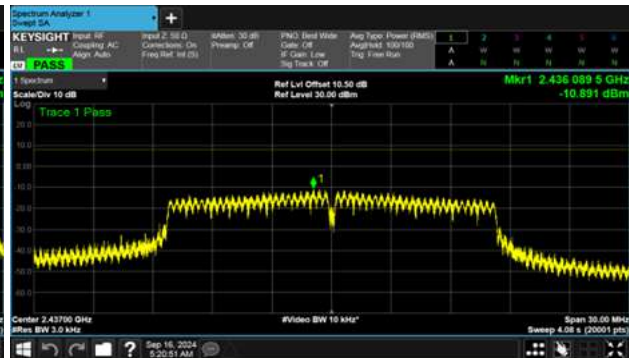
Modulation Type: 802.11g
CH01



CH06



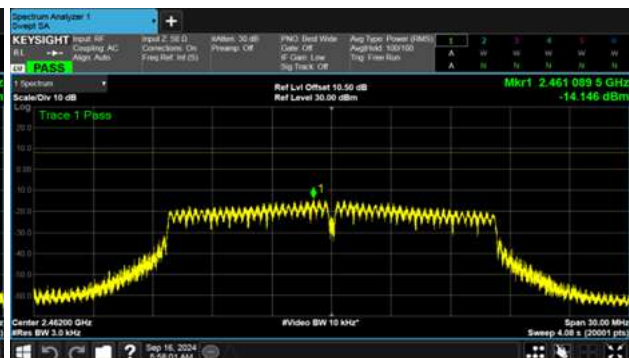
CH06



CH11

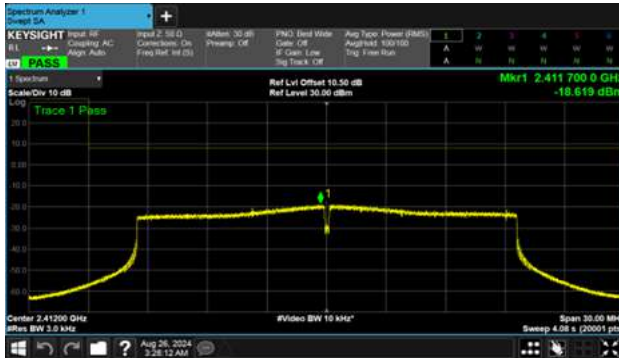


CH11

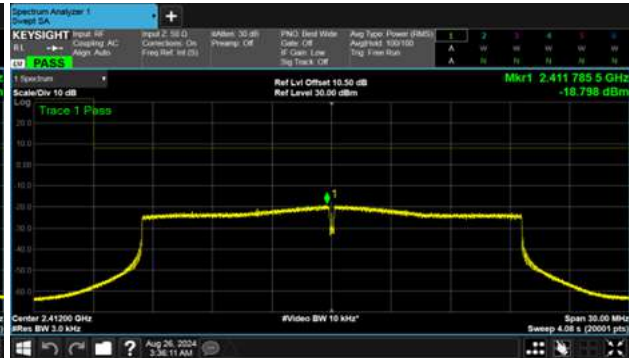




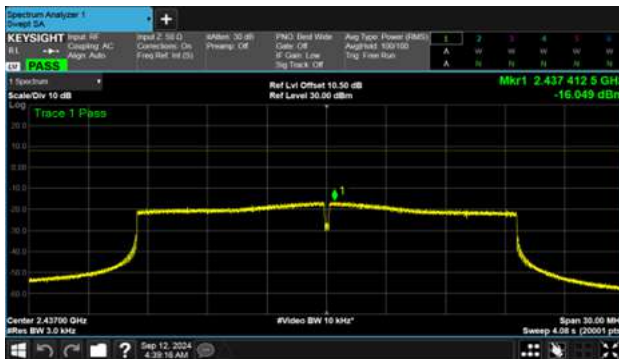
MIMO
ANT A
Modulation Type: 802.11ax20
CH01



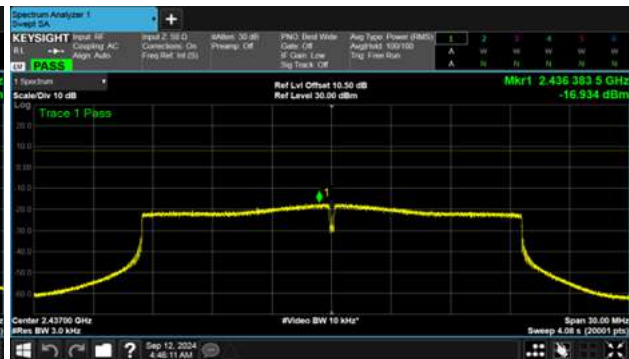
ANT B
Modulation Type: 802.11ax20
CH01



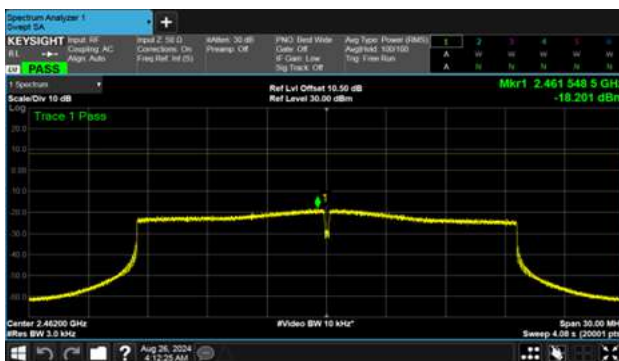
CH06



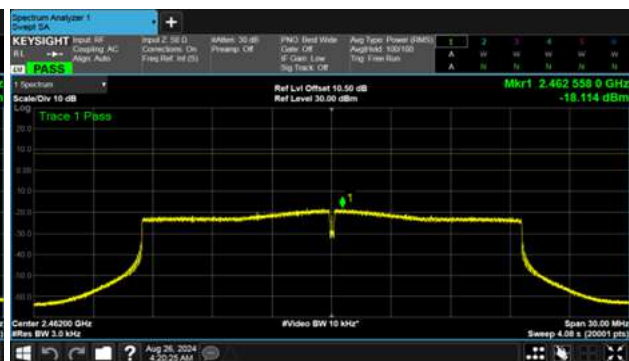
CH06



CH11



CH11

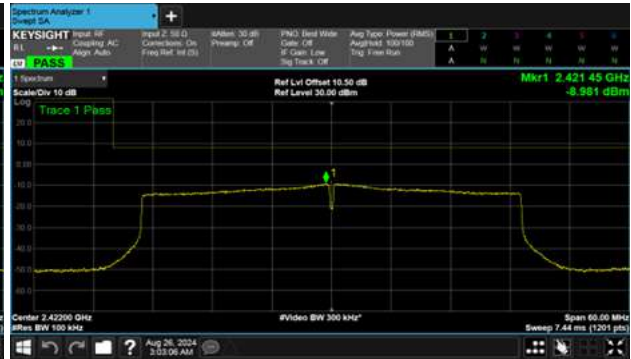




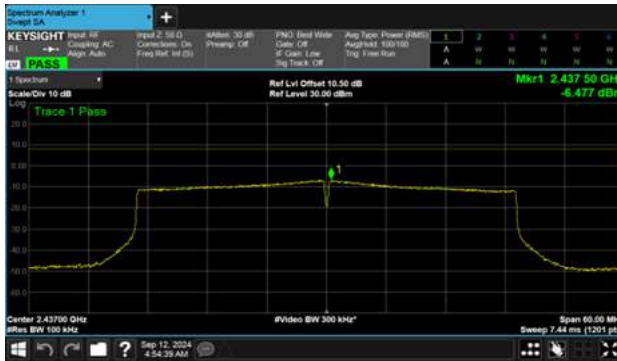
MIMO
ANT A
Modulation Type: 802.11ax40
CH03



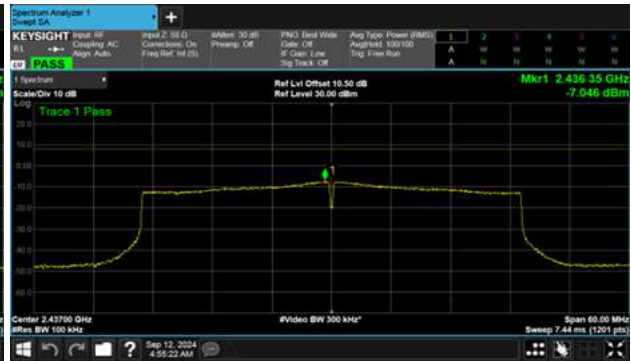
ANT B
Modulation Type: 802.11ax40
CH03



CH06



CH06



CH09



CH09

