TEST REPORT

Applicant Name:	Fanvil Technology Co., Ltd
Address:	10/F Block A, Dualshine Global Science Innovation Center, Honglang North 2nd Road, Bao'an District, Shenzhen, 518101, China
Report Number:	2401A110118E-RF-00A2
FCC ID:	2APPZ-V62W

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	IP Phone
Model No.:	J640W
Multiple Model(s) No.:	J620W
Trade Mark:	Fanvil
Date Received:	2024/12/13
Issue Date:	2025/01/25

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Wills Yu
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

Note: The information marked# is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401A110118E-RF-00A2	Class II Permissive Change Report	2025/01/25

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	IP Phone
Tested Model	J640W
Multiple Model(s)	J620W
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80
Maximum Conducted Average Output Power	5150-5250MHz: 14.80dBm 5725-5850MHz: 15.67dBm
Modulation Technique	OFDM, OFDMA
Antenna Specification#	5150-5250MHz: 4.0dBi 5725-5850MHz: 4.6dBi (provided by the applicant)
Voltage Range	DC 5V from adapter or DC 48V from POE
Sample serial number	2VWJ-5 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Adapter 1 Model: F05L5-050100SPAU Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5.0V, 1.0A, 5.0W Adapter 2 Model: DCT06W050100US-D0 Input: AC 100-240V, 50/60Hz, 200mA Output: DC 5.0V, 1.0A
Note: The Multiple models are electrically identical with the test model except for model name, screen size and the PCB board of the screen keypad. Please refer to the declaration letter# for more detail, which was provided by manufacturer.	

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Note: This is Class II permissive change application based on the Change ID device, model: V62W, FCC ID: 2APPZ-V62W. The Change ID device based on the original device, model: V62W, FCC ID: 2BCUQ-V62W, which was tested by Bay Area Compliance Laboratories Corp. (Shenzhen). The change between the original equipment and the current equipment is stated and guaranteed by the applicant, as following:

(1) Changing the company name to “Fanvil Technology Co., Ltd”.

(2) Changing the company address to “10/F Block A, Dualshine Global Science Innovation Center, Honglang North 2nd Road, Bao'an District, Shenzhen, 518101, China”.

(3) Changing the model number to “J640W, J620W”, where the model J640W and the original model V62W are the difference in model name, appearance color, appearance shape, screen size and the PCB board of the screen keypad, the model J620W and the original model V62W are the difference in model name, appearance color and appearance shape.

Based on above differences, it will affect partial test data “Conducted Emissions and Undesirable Emission for below 1GHz” for the model J640W, so the changed items were performed, we also updated related EUT photos in the report. The other test data and photos please refer to the report 2401U79863E-RF-00.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	0.009MHz~30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The system support 802.11a/n ht20/n ht40/ac vht20/ac vht40/ac vht80/ax20/ax40/ax80, the 802.11 n ht20/n ht40 were reduced since the identical parameters with 802.11ac vht20 and vht40.

For 5150-5250MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a/ac20/ax20 mode: channel 36, 40, 48 were tested;
For 802.11ac40 /ax40 mode: channel 38, 46 were tested;
For 802.11ac80 /ax80 mode, channel 42 was tested.

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

For 802.11a/ac20/ax20 mode: channel 149, 157, 165 were tested;
For 802.11ac40/ax40 mode: channel 151, 159 were tested;
For 802.11ac80 /ax80 mode, channel 155 was tested.

EUT Exercise Software

Test in the engineering mode. The power level was provided by the applicant. The device was tested with the worst case was performed as below:

Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level Setting#
5150-5250 MHz Band:				
802.11a	Lowest	5180	6Mbps	15
	Middle	5200	6Mbps	15
	Highest	5240	6Mbps	15
802.11ac vht20	Lowest	5180	MCS0	15
	Middle	5200	MCS0	15
	Highest	5240	MCS0	15
802.11ac vht40	Lowest	5190	MCS0	15
	Highest	5230	MCS0	15
802.11ac vht80	Middle	5210	MCS0	15
802.11ax20	Lowest	5180	MCS0	15
	Middle	5200	MCS0	15
	Highest	5240	MCS0	15
802.11ax40	Lowest	5190	MCS0	15
	Highest	5230	MCS0	15
802.11ax80	Middle	5210	MCS0	15
5725-5850 MHz Band:				
802.11a	Lowest	5745	6Mbps	15
	Middle	5785	6Mbps	15
	Highest	5825	6Mbps	15
802.11ac vht20	Lowest	5745	MCS0	15
	Middle	5785	MCS0	15
	Highest	5825	MCS0	15
802.11ac vht40	Lowest	5755	MCS0	15
	Highest	5795	MCS0	15
802.11ac vht80	Middle	5775	MCS0	15
802.11ax20	Lowest	5745	MCS0	15
	Middle	5785	MCS0	15
	Highest	5825	MCS0	15
802.11ax40	Lowest	5755	MCS0	15
	Highest	5795	MCS0	15
802.11ax80	Middle	5775	MCS0	15
The above are the worst-case data rates, which are determined for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations.				

Note: For 802.11ax mode, the device only support full RU mode.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
BULL	Receptacle	GN-415K	5503290068073
Grandstream	IP Phone	GXV3480	T11223323B898
N/A	Earphone	N/A	N/A
HIKVISION	Router	DS-3WR03	10021642429
Lenovo	PC	TIANYI510Pro-18ICB	R3NO28B21001
GOSPEL	PoE	G0720-480-050	200200019

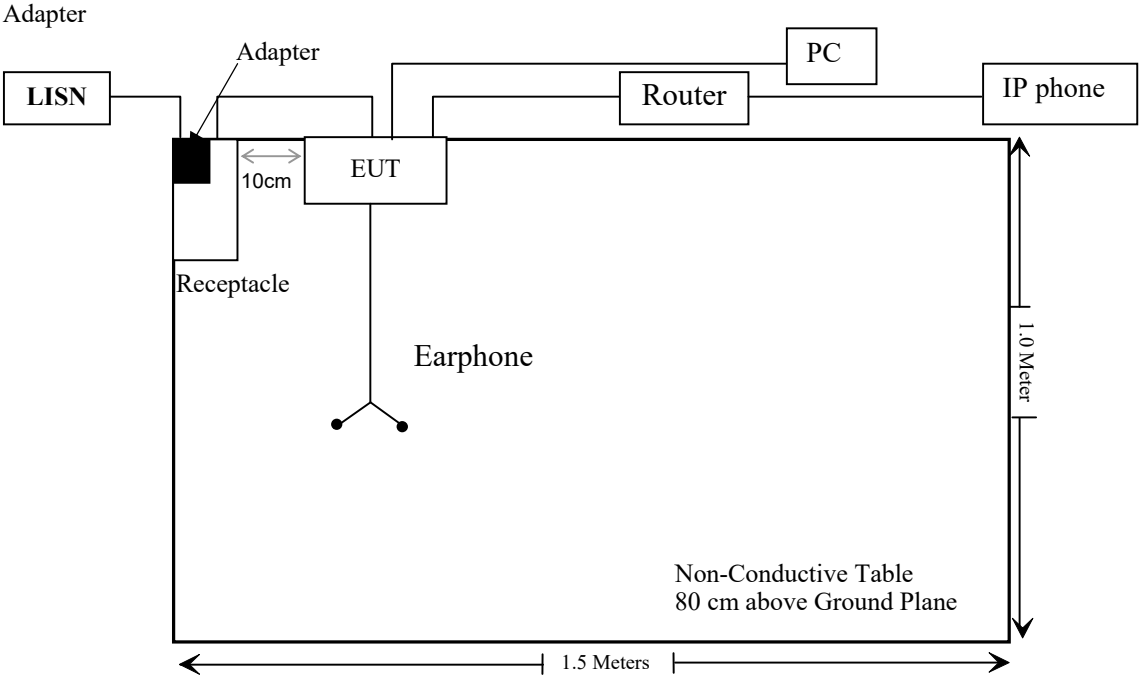
External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielded un-detachable AC cable	1.2	Receptacle	LISN/Mains
Un-shielded un-detachable DC cable	1.5	Adapter	EUT
Un-shielded detachable RJ45 cable	10.0	Router	EUT
Un-shielded detachable RJ45 cable	10.0	PC	EUT
Un-shielded detachable RJ45 cable	1.0	Router	IP Phone
Unshielded Detachable AC cable	0.5	PoE	Receptacle
Unshielded Detachable RJ45 cable	1.0	PoE	EUT

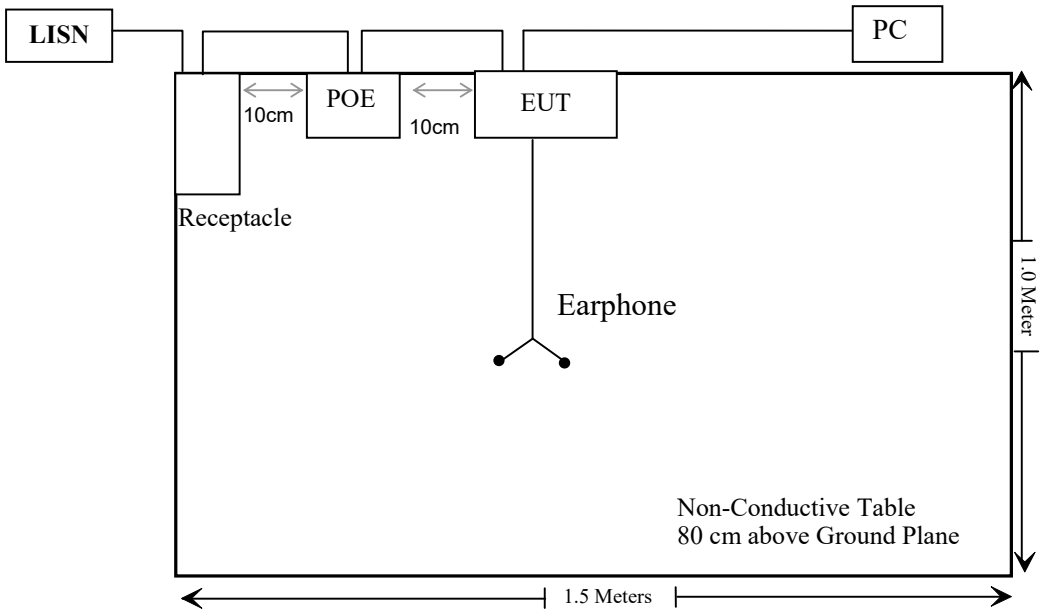
Block Diagram of Test Setup

For Conducted Emissions:

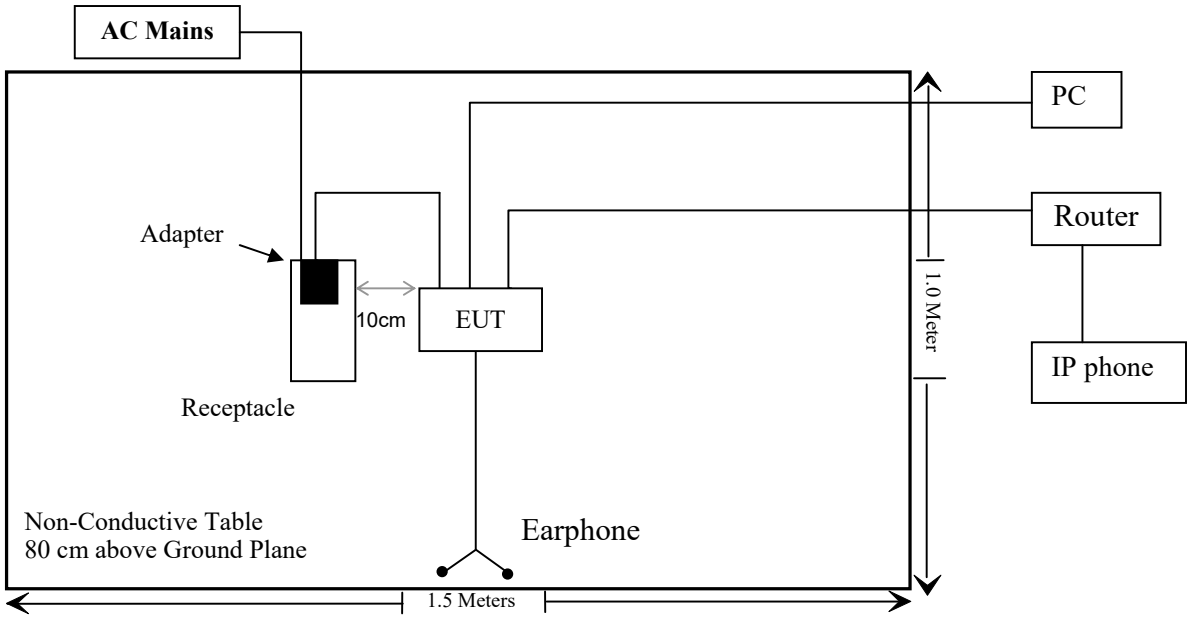
Adapter



POE



For Radiated Emissions (Below 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) & §2.1091	MPE-Based Exemption	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant**
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant*
§15.407(a)	Conducted Transmitter Output Power	Compliant*
§15.407 (a)	Power Spectral Density	Compliant*
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Not Applicable
C63.10 §11.6	Duty Cycle	*

Not Applicable: The device only supports W52 and W58 bands.
*: The test data please refer to the report 2401U79863E-RF-00.
**: Please refer to the report 2401U79863E-RF-00 for test data of radiation emission above 1GHz.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/12/04	2025/12/03
Rohde & Schwarz	LISN	ENV216	101613	2024/12/04	2025/12/03
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC 1.1307 (B) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

According to subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 v01 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(3)(i)(C)] to support an exemptionfrom further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

R is the minimum separation distance in meters
f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power#	Antenna Gain#		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
BT	2402-2480	6.5	5.1	2.95	9.45	8.81	0.2	768
BLE	2402-2480	4.0	5.1	2.95	6.95	4.95	0.2	768
2.4G Wi-Fi	2412-2462	10	5.1	2.95	12.95	19.72	0.2	768
5.2G Wi-Fi	5180-5240	15.0	4.0	1.85	16.85	48.42	0.2	768
5.8G Wi-Fi	5745-5825	16.0	4.6	2.45	18.45	69.98	0.2	768

Note 1: The tune-up power and antenna gain was declared by the applicant.
Note 2: 0dBd=2.15dBi.
Note 3: The BT and Wi-Fi cannot transmit at same time.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than t hat furnished by the responsible party shall be used with the device. The use of a permanently attached ant enna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient t o comply with the provisions of this Section. The manufacturer may design the unit so that a broken anten na can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be res ponsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has one internal antenna which was permanently attached, and the maximum antenna gain# is 4.0dBi for 5.2GHz band and 4.6dBi for 5.8GHz band, fulfill the requirement of this section. Please refer to the EUT photos.

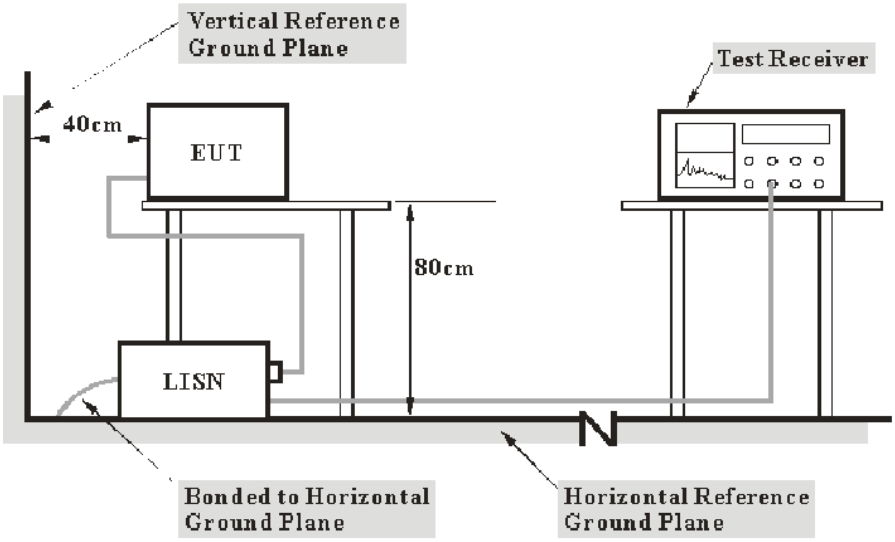
Result: Compliant

FCC §15.407 (b) (6) §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and Average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

The "**Over limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit
Level = Read Level + Factor

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

Environmental Conditions

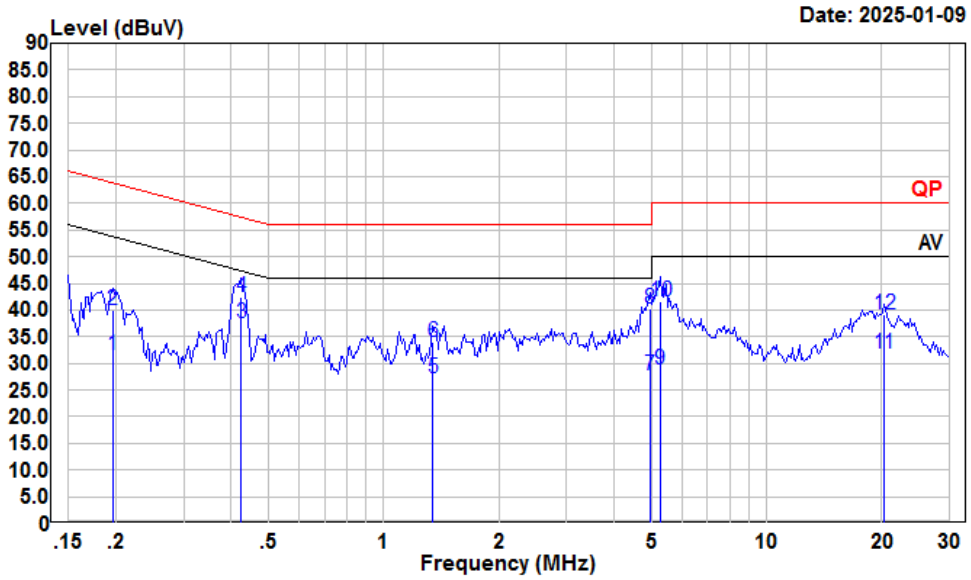
Temperature:	21~26 ℃
Relative Humidity:	40~50 %
ATM Pressure:	101~103 kPa

The testing was performed by Macy Shi from2025-01-09 to 2025-01-20.

EUT operation mode: Transmitting (Maximum output power mode, 802.11a 5745MHz)

For Adapter1

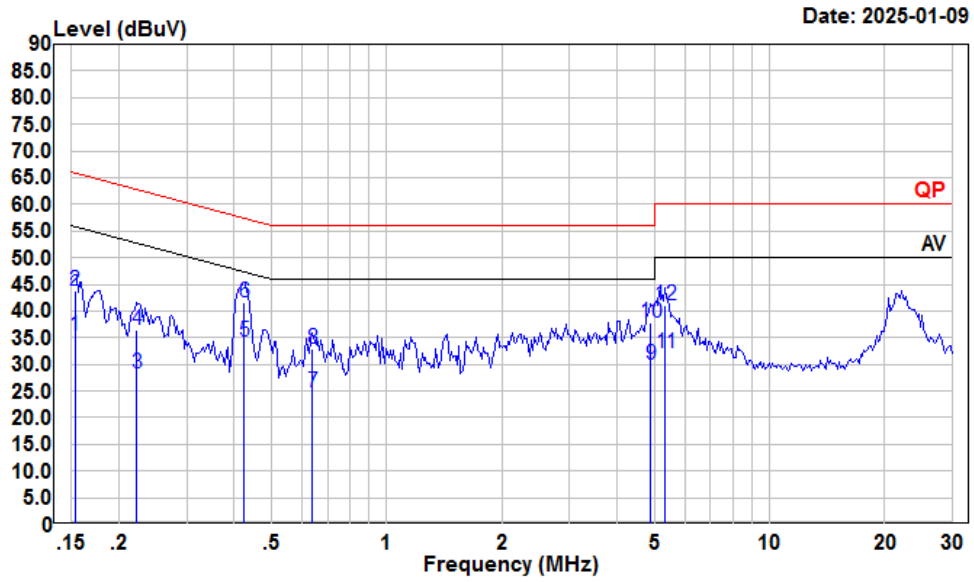
AC 120V/60 Hz, Line



Condition: Line
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.196	10.79	31.56	10.68	10.09	53.80	-22.24	Average
2	0.196	19.11	39.88	10.68	10.09	63.80	-23.92	QP
3	0.424	16.97	37.62	10.54	10.11	47.37	-9.75	Average
4	0.424	21.78	42.43	10.54	10.11	57.37	-14.94	QP
5	1.345	6.18	27.14	10.81	10.15	46.00	-18.86	Average
6	1.345	12.94	33.90	10.81	10.15	56.00	-22.10	QP
7	4.952	6.91	27.88	10.79	10.18	46.00	-18.12	Average
8	4.952	19.27	40.24	10.79	10.18	56.00	-15.76	QP
9	5.277	7.90	28.83	10.75	10.18	50.00	-21.17	Average
10	5.277	20.71	41.64	10.75	10.18	60.00	-18.36	QP
11	20.270	10.60	31.75	10.98	10.17	50.00	-18.25	Average
12	20.270	18.10	39.25	10.98	10.17	60.00	-20.75	QP

AC 120V/60 Hz, Neutral

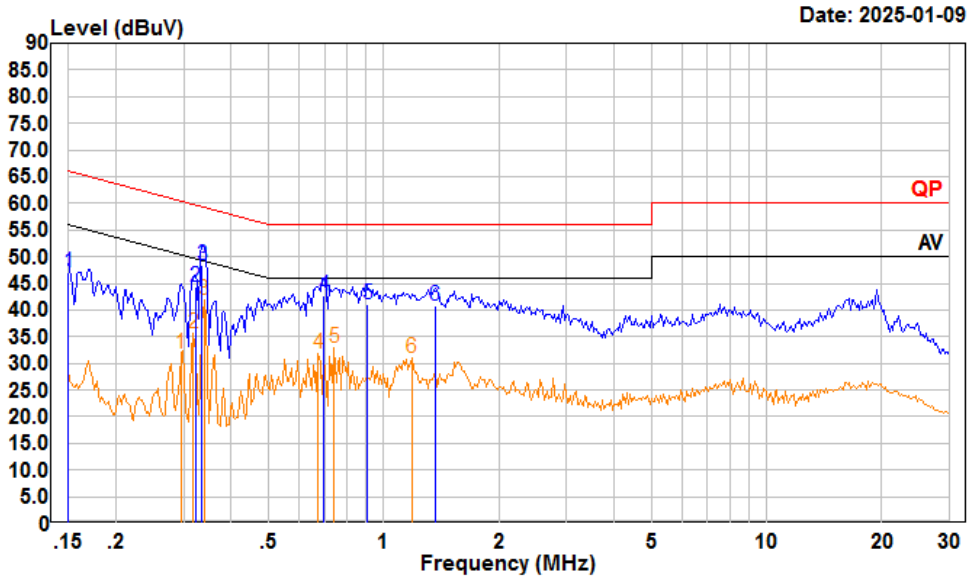


Condition: Neutral
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.153	14.79	35.35	10.43	10.13	55.82	-20.47	Average
2	0.153	23.13	43.69	10.43	10.13	65.82	-22.13	QP
3	0.222	7.37	28.23	10.77	10.09	52.74	-24.51	Average
4	0.222	15.66	36.52	10.77	10.09	62.74	-26.22	QP
5	0.424	13.55	34.21	10.55	10.11	47.37	-13.16	Average
6	0.424	21.04	41.70	10.55	10.11	57.37	-15.67	QP
7	0.641	4.06	24.76	10.57	10.13	46.00	-21.24	Average
8	0.641	12.12	32.82	10.57	10.13	56.00	-23.18	QP
9	4.900	8.80	29.83	10.85	10.18	46.00	-16.17	Average
10	4.900	16.69	37.72	10.85	10.18	56.00	-18.28	QP
11	5.333	11.19	32.16	10.79	10.18	50.00	-17.84	Average
12	5.333	20.00	40.97	10.79	10.18	60.00	-19.03	QP

For Adapter2

AC 120V/60 Hz, Line



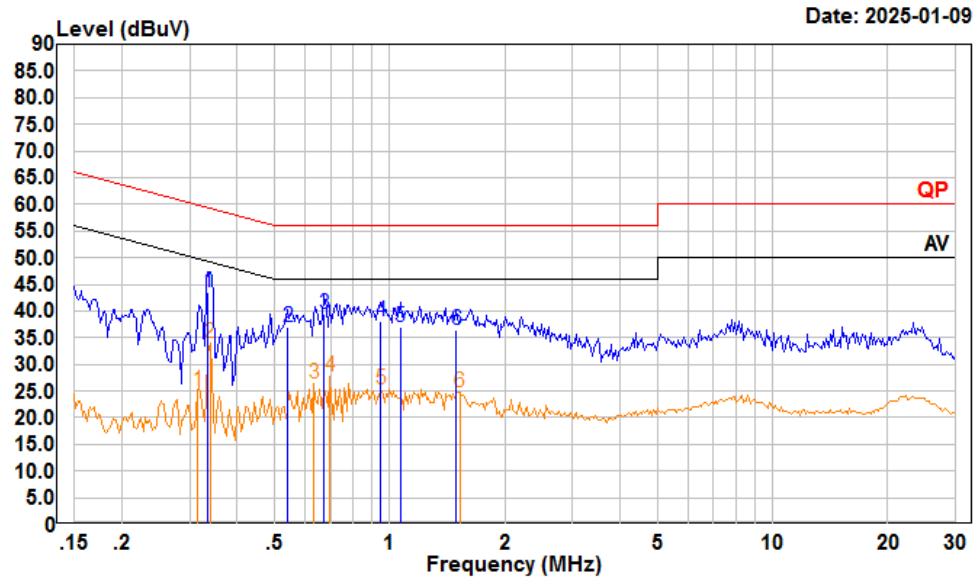
Trace: 1

Condition: Line
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	26.40	46.93	10.40	10.13	66.00	-19.07	QP
2	0.322	23.70	44.41	10.60	10.11	59.66	-15.25	QP
3	0.336	27.59	48.30	10.59	10.12	59.31	-11.01	QP
4	0.697	21.69	42.74	10.90	10.15	56.00	-13.26	QP
5	0.909	20.30	41.08	10.68	10.10	56.00	-14.92	QP
6	1.359	19.70	40.67	10.82	10.15	56.00	-15.33	QP

	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.296	11.07	31.79	10.61	10.11	50.37	-18.58	Average
2	0.318	14.86	35.57	10.60	10.11	49.75	-14.18	Average
3	0.339	21.13	41.83	10.58	10.12	49.22	-7.39	Average
4	0.675	10.94	31.94	10.86	10.14	46.00	-14.06	Average
5	0.743	11.84	32.83	10.85	10.14	46.00	-13.17	Average
6	1.184	10.13	30.99	10.72	10.14	46.00	-15.01	Average

AC 120V/60 Hz, Neutral



Trace: 1

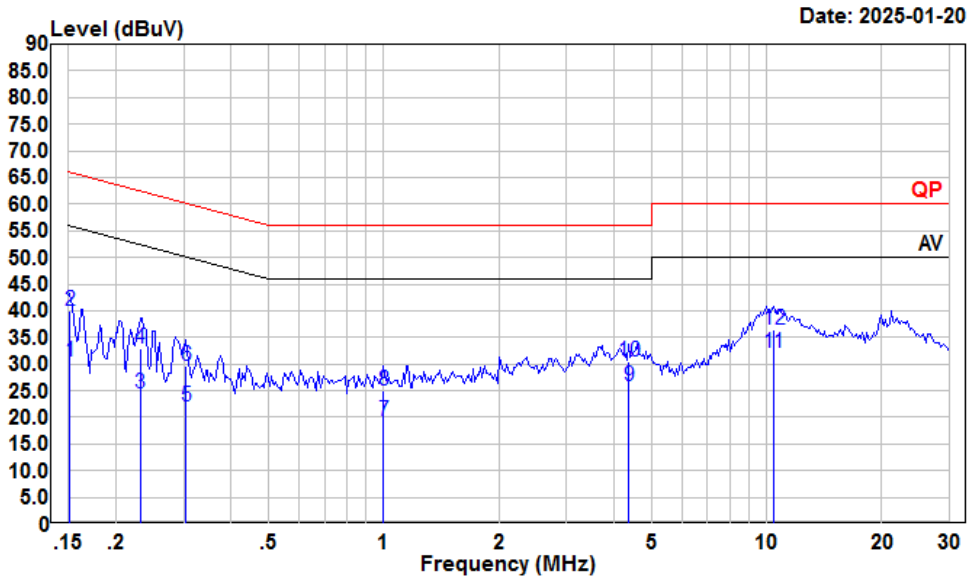
Condition: Neutral
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.336	22.70	43.45	10.63	10.12	59.31	-15.86	QP
2	0.541	16.41	37.06	10.52	10.13	56.00	-18.94	QP
3	0.675	18.80	39.53	10.59	10.14	56.00	-16.47	QP
4	0.948	17.30	38.17	10.77	10.10	56.00	-17.83	QP
5	1.065	16.20	37.11	10.79	10.12	56.00	-18.89	QP
6	1.495	15.60	36.50	10.74	10.16	56.00	-19.50	QP

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.315	4.36	25.12	10.65	10.11	49.84	-24.72	Average
2	0.339	13.14	33.89	10.63	10.12	49.22	-15.33	Average
3	0.634	5.65	26.35	10.57	10.13	46.00	-19.65	Average
4	0.697	7.13	27.88	10.60	10.15	46.00	-18.12	Average
5	0.948	4.36	25.23	10.77	10.10	46.00	-20.77	Average
6	1.527	3.87	24.77	10.74	10.16	46.00	-21.23	Average

For POE

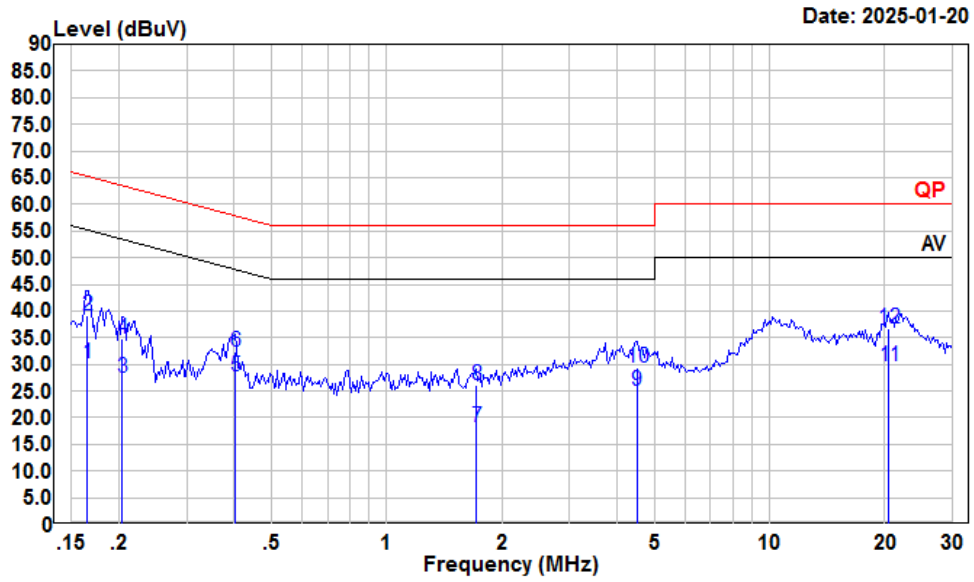
AC 120V/60 Hz, Line



Condition: Line
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.152	9.83	30.37	10.41	10.13	55.91	-25.54	Average
2	0.152	19.33	39.87	10.41	10.13	65.91	-26.04	QP
3	0.232	3.67	24.42	10.67	10.08	52.39	-27.97	Average
4	0.232	12.21	32.96	10.67	10.08	62.39	-29.43	QP
5	0.305	1.36	22.08	10.61	10.11	50.10	-28.02	Average
6	0.305	8.81	29.53	10.61	10.11	60.10	-30.57	QP
7	1.000	-1.42	19.29	10.60	10.11	46.00	-26.71	Average
8	1.000	4.44	25.15	10.60	10.11	56.00	-30.85	QP
9	4.361	4.91	25.96	10.85	10.20	46.00	-20.04	Average
10	4.361	9.53	30.58	10.85	10.20	56.00	-25.42	QP
11	10.397	11.69	32.20	10.30	10.21	50.00	-17.80	Average
12	10.397	15.97	36.48	10.30	10.21	60.00	-23.52	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2401A110118E-RFA2
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz VBW:Auto SWT:Auto

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.165	9.62	30.26	10.53	10.11	55.21	-24.95	Average
2	0.165	18.53	39.17	10.53	10.11	65.21	-26.04	QP
3	0.204	6.58	27.46	10.79	10.09	53.45	-25.99	Average
4	0.204	13.96	34.84	10.79	10.09	63.45	-28.61	QP
5	0.402	6.97	27.64	10.57	10.10	47.81	-20.17	Average
6	0.402	11.58	32.25	10.57	10.10	57.81	-25.56	QP
7	1.716	-2.77	18.12	10.72	10.17	46.00	-27.88	Average
8	1.716	5.24	26.13	10.72	10.17	56.00	-29.87	QP
9	4.501	3.90	25.01	10.92	10.19	46.00	-20.99	Average
10	4.501	8.17	29.28	10.92	10.19	56.00	-26.72	QP
11	20.486	8.47	29.72	11.08	10.17	50.00	-20.28	Average
12	20.486	15.38	36.63	11.08	10.17	60.00	-23.37	QP

§15.205 & §15.209 & §15.407(B) - UNDESIRABLE EMISSION

Applicable Standard

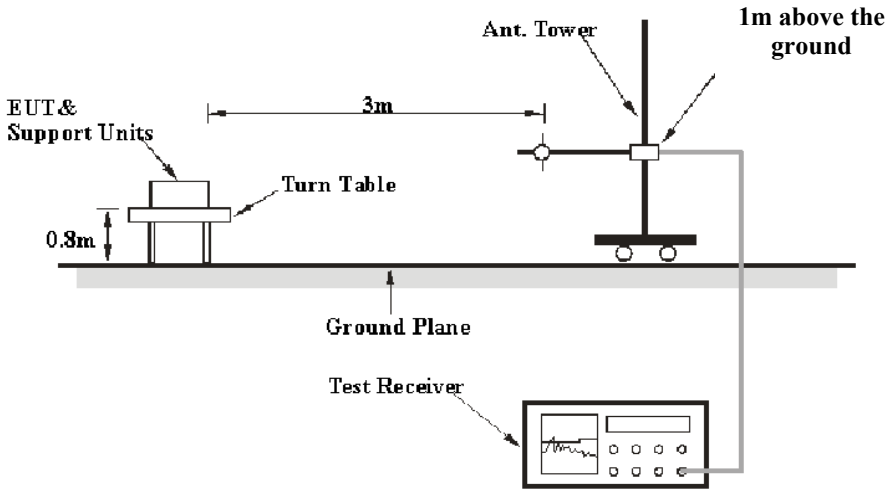
FCC §15.407 (b); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

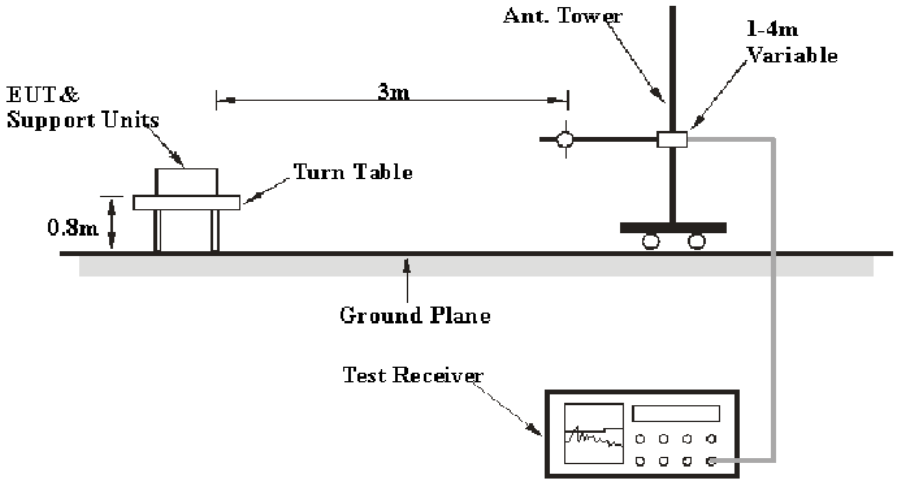
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

9 kHz-30MHz:



30MHz-1GHz:



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

All emissions under the average limit and under the noise floor have not recorded in the report.

According to ANSI C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified, extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance). In some cases, a different distance correction factor may be required;

$$E_{\mathrm{SpecLimit}} = E_{\mathrm{Meas}} + 20\log\left(\frac{d_{\mathrm{Meas}}}{d_{\mathrm{SpecLimit}}}\right)$$

where

$E_{\mathrm{SpecLimit}}$	is the field strength of the emission at the distance specified by the limit, in dBμV/m
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m
$d_{\mathrm{SpecLimit}}$	is the distance specified by the limit, in m

So the extrapolation factor of 1m is 20*log(1/3)= -9.5 dB, for 18-40GHz range, the limit of 1m distance was added by 9.5dB from limit of 3m to compared with the result measurement at 1m distance.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit; Margin = Limit–Corrected Amplitude
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	23.4℃
Relative Humidity:	46 %
ATM Pressure:	101.3 kPa

The testing was performed by Jack Liu from 2025-01-08 to 2025-01-09 for below 1GHz.

EUT operation mode: Transmitting

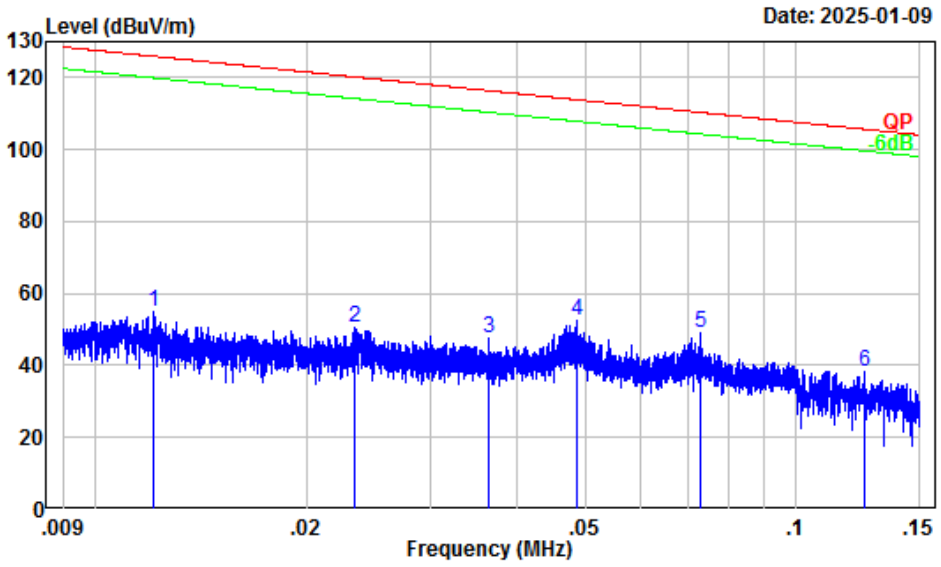
Note: Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.

Note: for below 1GHz range, according to the test result of BT report, the adapter 2 was worst case, so the worst case adapter 2 was tested in this report.

9 kHz-30MHz: *(Maximum output power mode, 802.11a 5745MHz)*

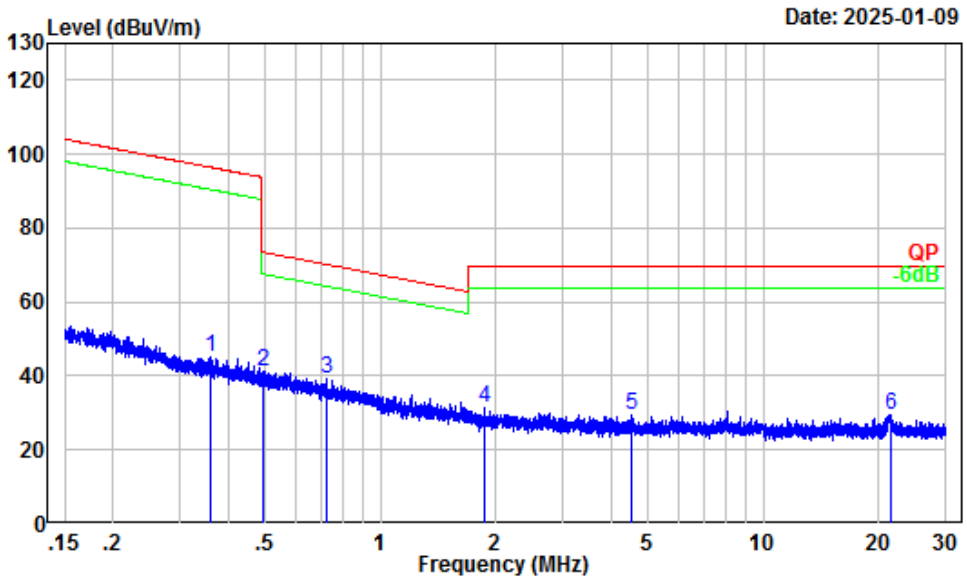
Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

Parallel (worst case)



Site : Chamber A
Condition : 3m
Project Number: 2401A110118E-RFA2
Test Mode : Tramsmitting
Setting PK RBW: 0.3KHz VBW:1KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	31.90	22.96	54.86	125.94	-71.08	Peak
2	0.02	29.74	20.56	50.30	120.20	-69.90	Peak
3	0.04	27.82	19.74	47.56	116.37	-68.81	Peak
4	0.05	26.54	26.19	52.73	113.86	-61.13	Peak
5	0.07	24.11	24.81	48.92	110.35	-61.43	Peak
6	0.12	20.53	17.83	38.36	105.67	-67.31	Peak

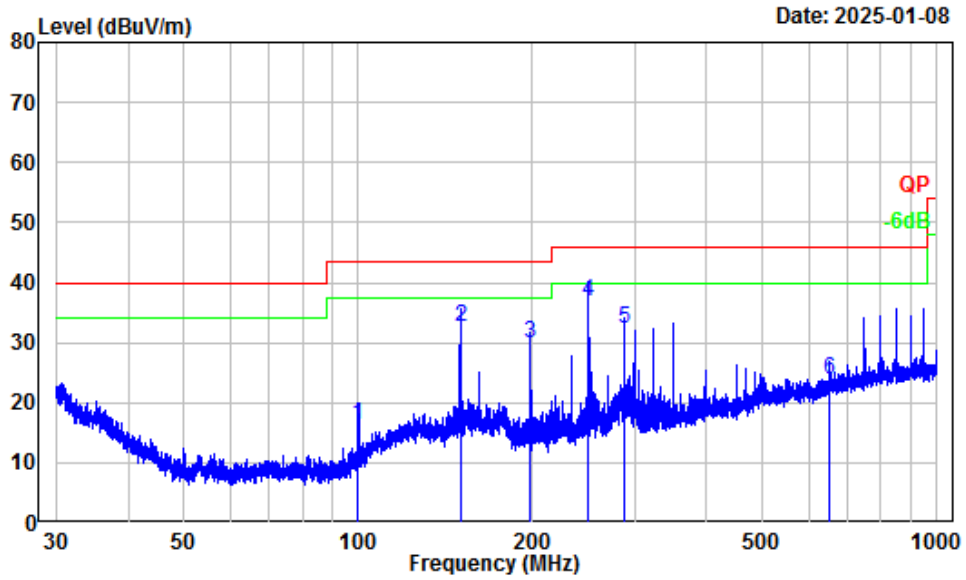


Site : Chamber A
Condition : 3m
Project Number: 2401A110118E-RFA2
Test Mode : Tramsmitting
Setting PK RBW: 10KHz VBW:30KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.36	9.03	36.08	45.11	96.44	-51.33	Peak
2	0.49	6.52	34.70	41.22	73.73	-32.51	Peak
3	0.73	3.59	35.47	39.06	70.29	-31.23	Peak
4	1.88	-1.26	32.66	31.40	69.54	-38.14	Peak
5	4.52	-2.75	32.05	29.30	69.54	-40.24	Peak
6	21.47	-3.10	32.35	29.25	69.54	-40.29	Peak

30 MHz–1 GHz: *(Maximum output power mode, 802.11a 5745MHz)*

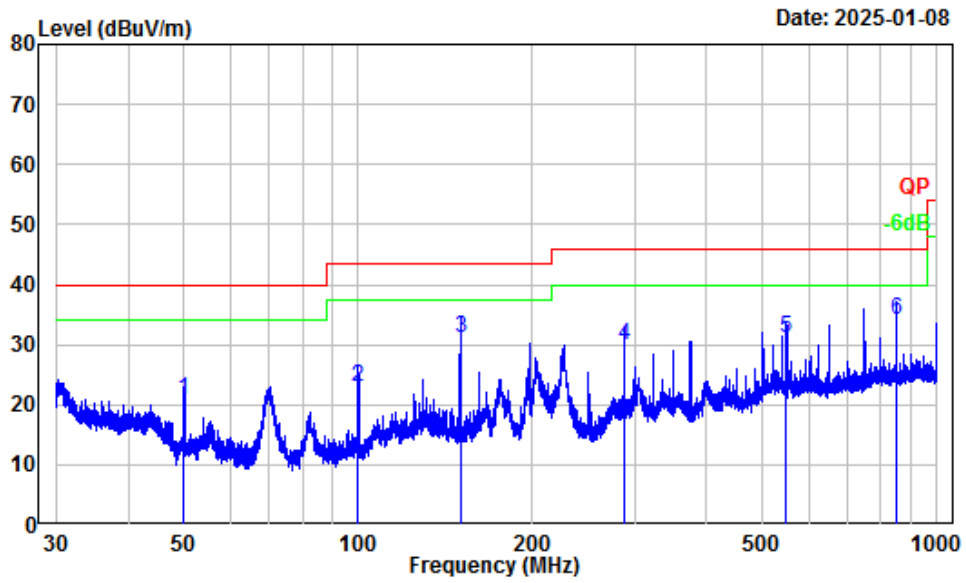
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401A110118E-RFA2
Test Mode : Tramsmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	100.01	-15.89	32.21	16.32	43.50	-27.18	QP
2	150.01	-12.46	45.03	32.57	43.50	-10.93	QP
3	197.98	-13.28	43.04	29.76	43.50	-13.74	QP
4	249.97	-13.09	50.04	36.95	46.00	-9.05	QP
5	287.99	-11.22	43.42	32.20	46.00	-13.80	QP
6	650.23	-4.13	28.07	23.94	46.00	-22.06	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401A110118E-RFA2
Test Mode : Tramsmitting
Setting QP RBW: 120KHz
Tester : Jack Liu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	49.99	-17.92	38.87	20.95	40.00	-19.05	QP
2	100.01	-15.89	38.80	22.91	43.50	-20.59	QP
3	150.01	-12.46	43.67	31.21	43.50	-12.29	QP
4	287.99	-11.22	40.98	29.76	46.00	-16.24	QP
5	549.98	-5.43	36.40	30.97	46.00	-15.03	QP
6	850.29	-1.72	35.70	33.98	46.00	-12.02	QP

EUT PHOTOGRAPHS

Please refer to the attachment 2401A110118E-RFA2 External photo and 2401A110118E-RFA2 Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401A110118E-RFCA2 Test Setup photo.

******END OF REPORT******