TEST REPORT

Applicant Name:	Fanvil Link Technology Co.,LTD
Address:	13th Floor, Building 2, Runzhi R&D Center, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Report Number:	2501V68922E-RF-00C
FCC ID:	2BCUQ-W620H

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type:	Wireless Phone
Model No.:	W620H
Multiple Model(s) No.:	N/A
Trade Mark:	LINKVIL
Date Received:	2025-07-09
Issue Date:	2025-09-05

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.
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501V68922E-RF-00C	Original Report	2025-09-05

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	Wi-Fi (802.11ah)_ 1MHz: 903.5-926.5MHz Wi-Fi (802.11ah)_ 2MHz: 905-925MHz Wi-Fi (802.11ah)_ 4MHz: 906-922MHz
Maximum Conducted Peak Output Power	21.98dBm
Modulation Technique	OFDM-BPSK,QPSK, 16QAM, 64QAM
Antenna Specification#	2.52dBi (provided by the applicant)
Voltage Range	DC 5V from adapter or DC 3.85V from battery
Sample serial number	36CC-7 for Conducted and Radiated Emissions Test 36CC-8 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Adapter 1 Model: DCT12W050200US-AL Input: 100-240V 50/60Hz 0.3A max Output: 5.0V--2.0A Adapter 2 Model: F12L20-050200SPAU Input: 100-240V 50/60Hz 0.3A Output: 5.0V--2.0A 10.0W
Note: The EUT powered by two adapters or charger, the worst case power supply (Adapter 1+Charger) was selected to test for radiated emission below 1GHz according to BT report test result.	

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

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~150 kHz	3.63dB(k=2, 95% level of confidence)
	150 kHz ~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 engineering mode.

Channel List#

Channel	Frequency (MHz)	Channel	Frequency (MHz)
Wi-Fi (802.11ah)_ 1MHz:			
1	903.5	13	915.5
2	904.5	14	916.5
3	905.5	15	917.5
4	906.5	16	918.5
5	907.5	17	919.5
6	908.5	18	920.5
7	909.5	19	921.5
8	910.5	20	922.5
9	911.5	21	923.5
10	912.5	22	924.5
11	913.5	23	925.5
12	914.5	24	926.5
EUT was tested with Channel 1, 12 and 24.			
Wi-Fi (802.11ah)_ 2MHz:			
1	905	7	917
2	907	8	919
3	909	9	921
4	911	10	923
5	913	11	925
6	915	/	/
EUT was tested with Channel 1, 6 and 11.			
Wi-Fi (802.11ah)_ 4MHz:			
1	906	4	918
2	910	5	922
3	914	/	/
EUT was tested with Channel 1, 3 and 5.			

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

"SecureCRTPortable.exe #" exercise software was used and the power level as below#. The software and power level was provided by the manufacturer.

Mode	Data rate	Freq.[MHz]	Power Level#
4M	MCS0	906	10
	MCS0	914	10
	MCS0	922	10
2M	MCS0	905	10
	MCS0	915	10
	MCS0	925	10
1M	MCS0	903.5	10
	MCS0	914.5	10
	MCS0	926.5	10
Note: The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the power and PSD across all data rates bandwidths, and modulations.			

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

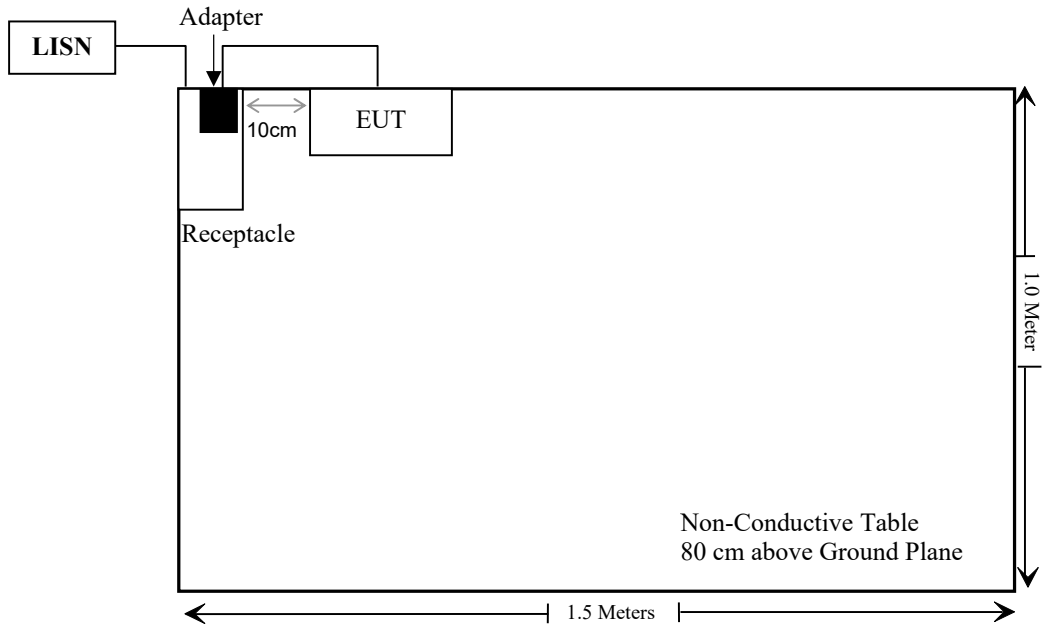
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Un-detachable DC Cable	1.5	Adapter	Charger/EUT
Unshielded Un-detachable AC Cable	1.2	Receptacle	LISN/AC Mains

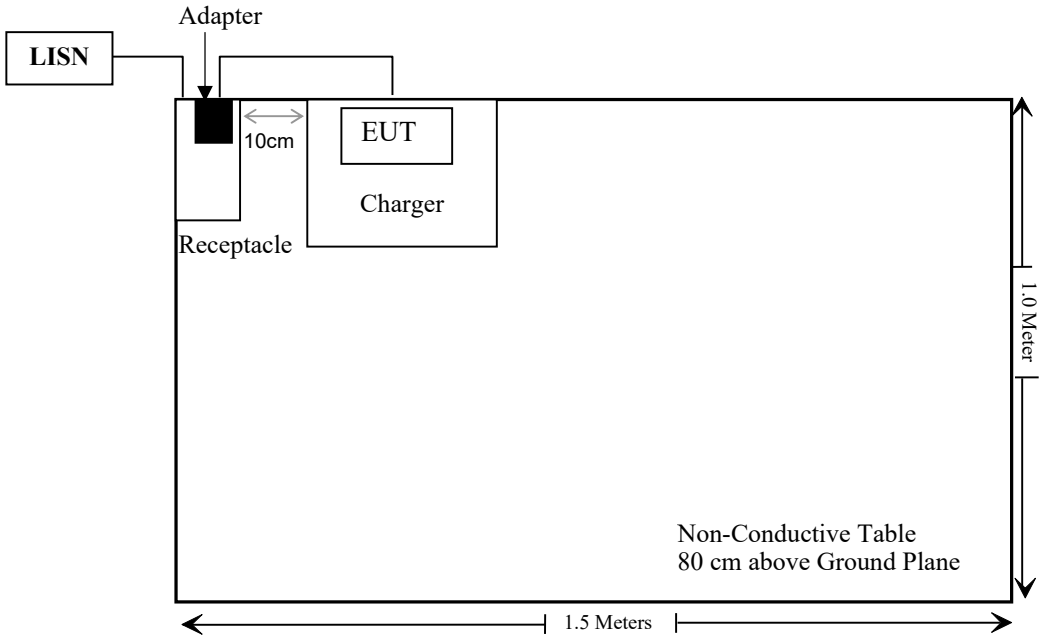
Block Diagram of Test Setup

For Conducted Emissions:

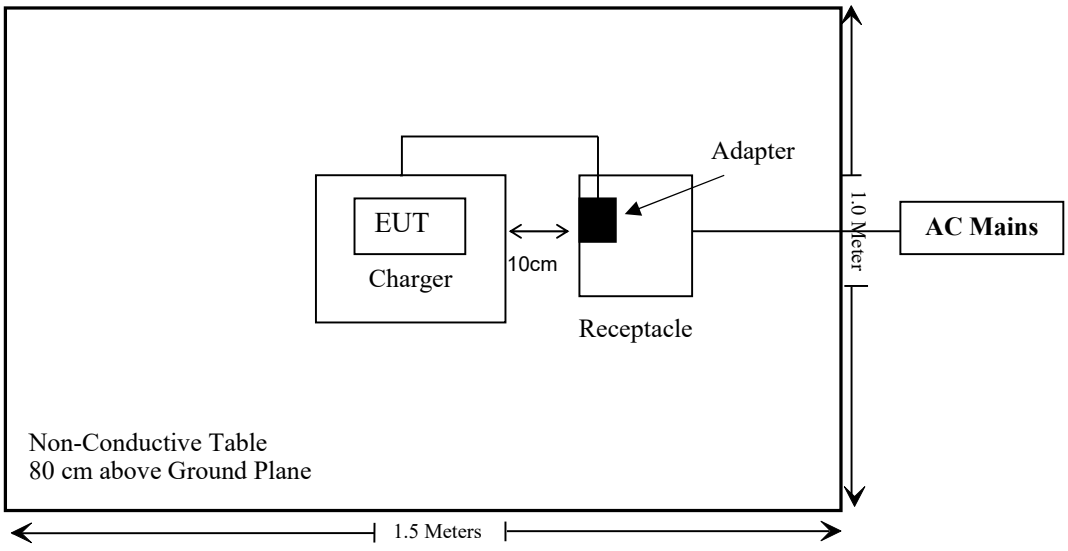
Adapter:



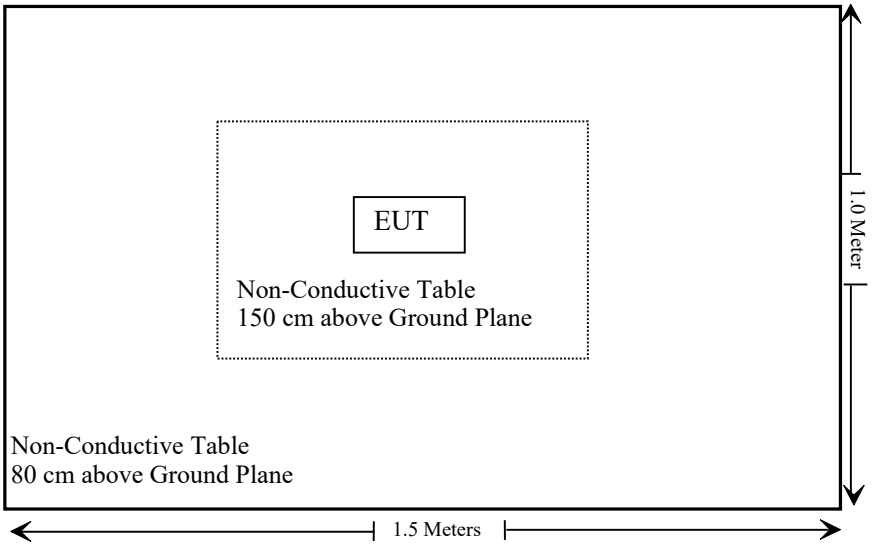
Adapter +Charger:



For Radiated Emissions (below 1GHz):



For Radiated Emissions (above 1GHz):



SUMMARY OF TEST RESULTS

Test Rules	Description of Test	Result
FCC §1.1307 & §2.1093	RF Exposure	Compliant
FCC §15.203	Antenna Requirement	Compliant
FCC §15.207(a)	AC Line Conducted Emissions	Compliant
FCC §15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
FCC §15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
FCC §15.247(b)(3)	Maximum Conducted Output Power	Compliant
FCC §15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
FCC §15.247(d)	Conducted Spurious Emission	Compliant
FCC §15.247(e)	Power Spectral Density	Compliant
C63.10 §11.6	Duty Cycle	/

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission 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	2025/04/29	2026/04/28
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2025/04/29	2026/04/28
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
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
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2024/12/04	2025/12/03
Rohde & Schwarz	Spectrum Analyzer	FSV40	101942	2024/09/20	2025/09/19
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25

*** 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 & §2.1093 - RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: 2501V68922E-SA.

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 that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna 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 responsible 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 arrangement, which was permanently attached, the antenna gain[#] is 2.52dBi, fulfill the requirement of this section. Please refer to the EUT photos.

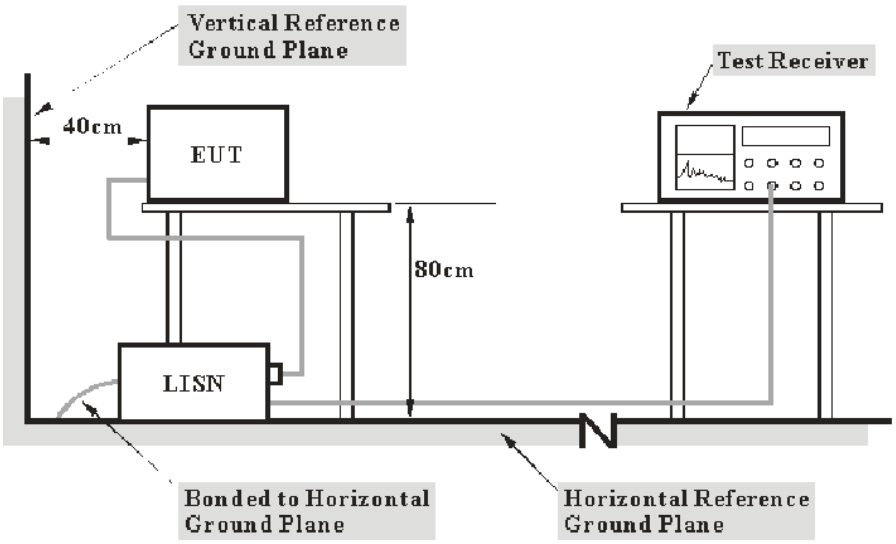
Result: Compliant.

FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

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 C63.10-2020 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	RBW
150 kHz – 30 MHz	9 kHz

Test Procedure

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

All final 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

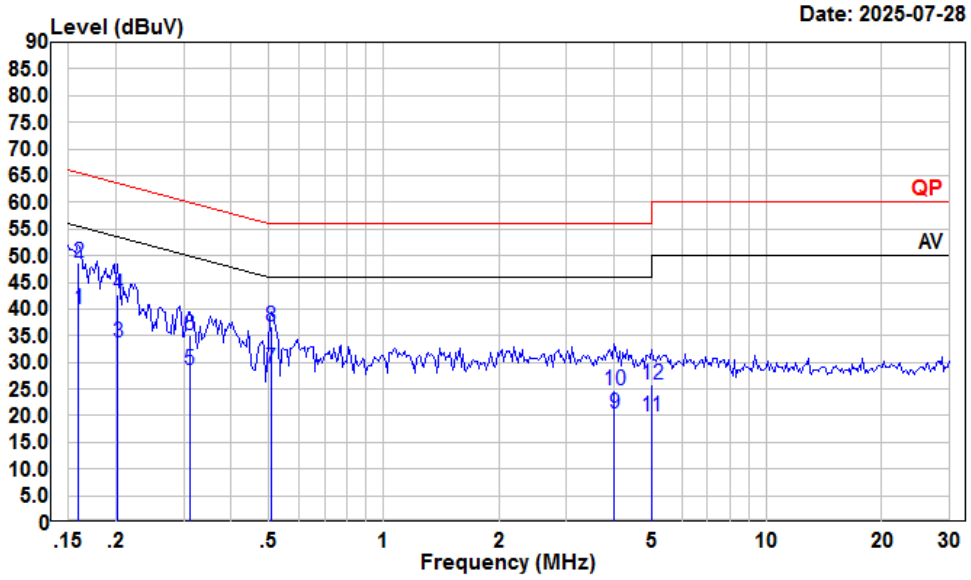
Temperature:	24.4~25.0 ℃
Relative Humidity:	53~56 %
ATM Pressure:	99.9 kPa

The testing was performed by Macy Shi on 2025-07-28 and 2025-08-21.

EUT operation mode: Transmitting (Maximum output power mode, 2M_925MHz)

Adapter 1

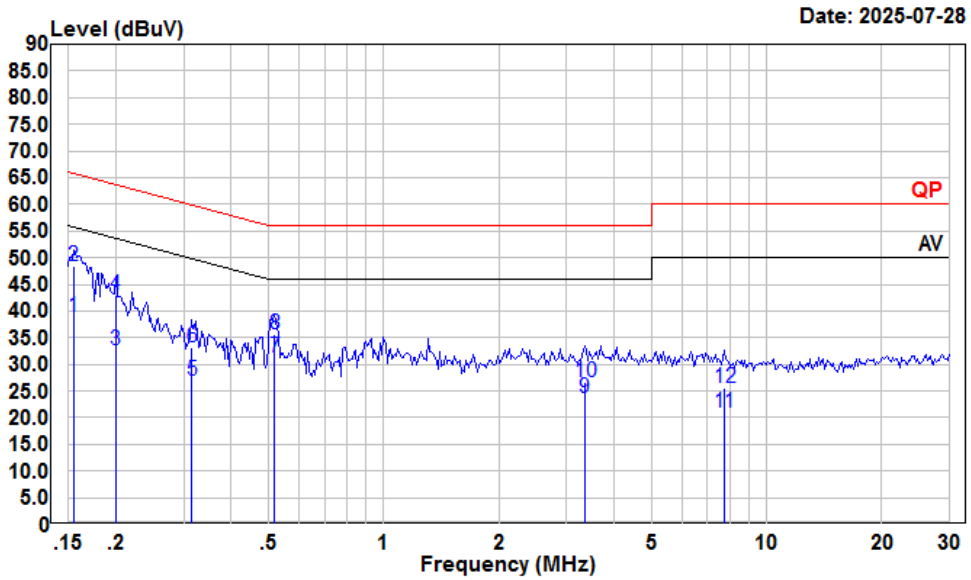
AC 120V/60 Hz, Line



Condition: Line
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.160	19.22	39.86	10.47	10.17	55.47	-15.61	Average
2	0.160	28.04	48.68	10.47	10.17	65.47	-16.79	QP
3	0.202	12.84	33.73	10.70	10.19	53.54	-19.81	Average
4	0.202	21.88	42.77	10.70	10.19	63.54	-20.77	QP
5	0.312	7.74	28.53	10.60	10.19	49.93	-21.40	Average
6	0.312	14.40	35.19	10.60	10.19	59.93	-24.74	QP
7	0.507	8.16	28.86	10.52	10.18	46.00	-17.14	Average
8	0.507	15.95	36.65	10.52	10.18	56.00	-19.35	QP
9	4.006	-0.86	20.28	10.90	10.24	46.00	-25.72	Average
10	4.006	3.61	24.75	10.90	10.24	56.00	-31.25	QP
11	5.005	-1.32	19.74	10.78	10.28	50.00	-30.26	Average
12	5.005	4.77	25.83	10.78	10.28	60.00	-34.17	QP

AC 120V/60 Hz, Neutral

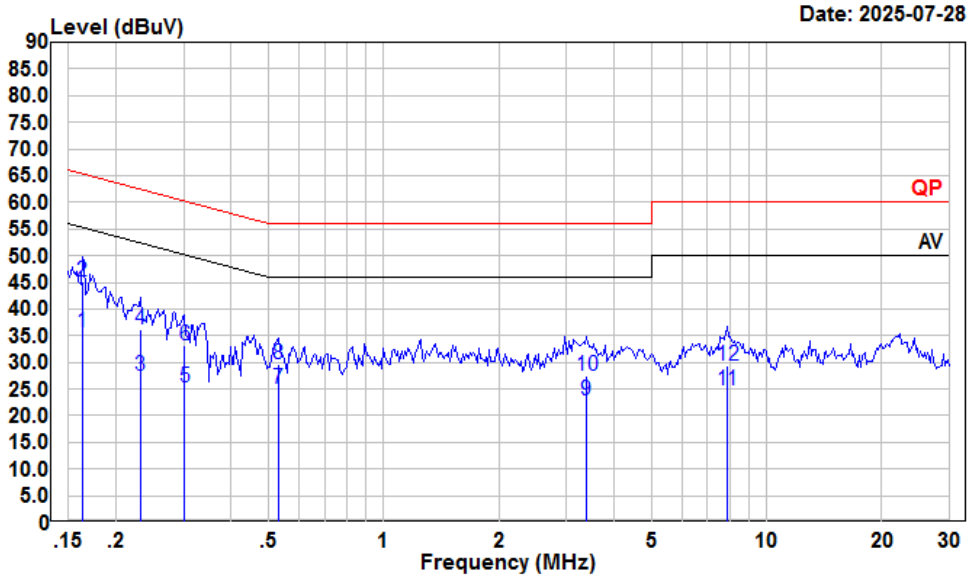


Condition: Neutral
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.155	18.22	38.83	10.44	10.17	55.74	-16.91	Average
2	0.155	27.76	48.37	10.44	10.17	65.74	-17.37	QP
3	0.200	11.69	32.68	10.80	10.19	53.62	-20.94	Average
4	0.200	22.07	43.06	10.80	10.19	63.62	-20.56	QP
5	0.315	5.98	26.82	10.65	10.19	49.84	-23.02	Average
6	0.315	12.46	33.30	10.65	10.19	59.84	-26.54	QP
7	0.518	10.49	31.19	10.51	10.19	46.00	-14.81	Average
8	0.518	15.01	35.71	10.51	10.19	56.00	-20.29	QP
9	3.346	2.45	23.63	10.92	10.26	46.00	-22.37	Average
10	3.346	5.37	26.55	10.92	10.26	56.00	-29.45	QP
11	7.728	0.18	20.99	10.57	10.24	50.00	-29.01	Average
12	7.728	4.67	25.48	10.57	10.24	60.00	-34.52	QP

Adapter 2

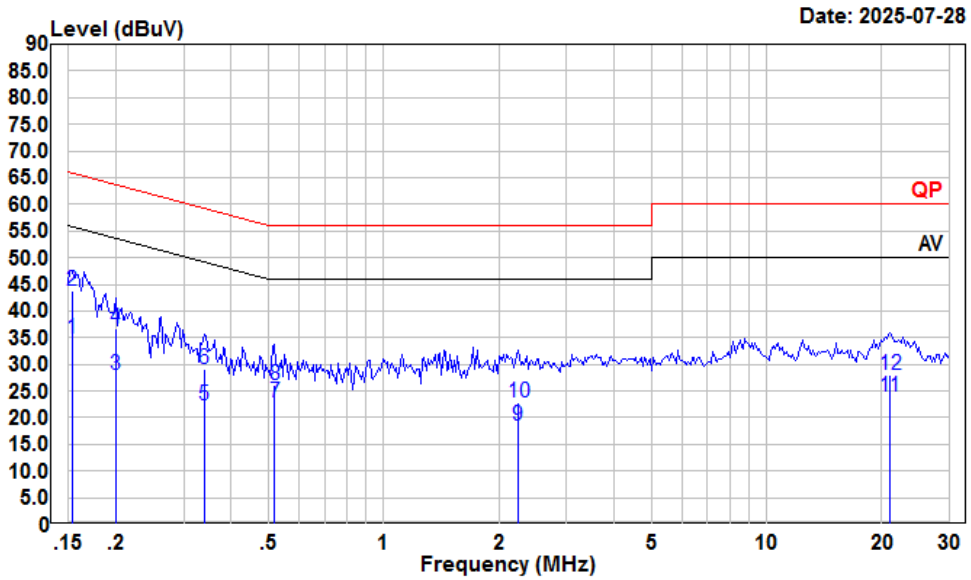
AC 120V/60 Hz, Line



Condition: Line
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.163	15.04	35.71	10.49	10.18	55.30	-19.59	Average
2	0.163	24.50	45.17	10.49	10.18	65.30	-20.13	QP
3	0.232	6.72	27.59	10.67	10.20	52.39	-24.80	Average
4	0.232	15.34	36.21	10.67	10.20	62.39	-26.18	QP
5	0.302	4.50	25.30	10.61	10.19	50.19	-24.89	Average
6	0.302	12.41	33.21	10.61	10.19	60.19	-26.98	QP
7	0.529	4.37	25.13	10.57	10.19	46.00	-20.87	Average
8	0.529	8.76	29.52	10.57	10.19	56.00	-26.48	QP
9	3.381	1.72	22.93	10.95	10.26	46.00	-23.07	Average
10	3.381	6.31	27.52	10.95	10.26	56.00	-28.48	QP
11	7.893	4.09	24.83	10.50	10.24	50.00	-25.17	Average
12	7.893	8.62	29.36	10.50	10.24	60.00	-30.64	QP

AC 120V/60 Hz, Neutral

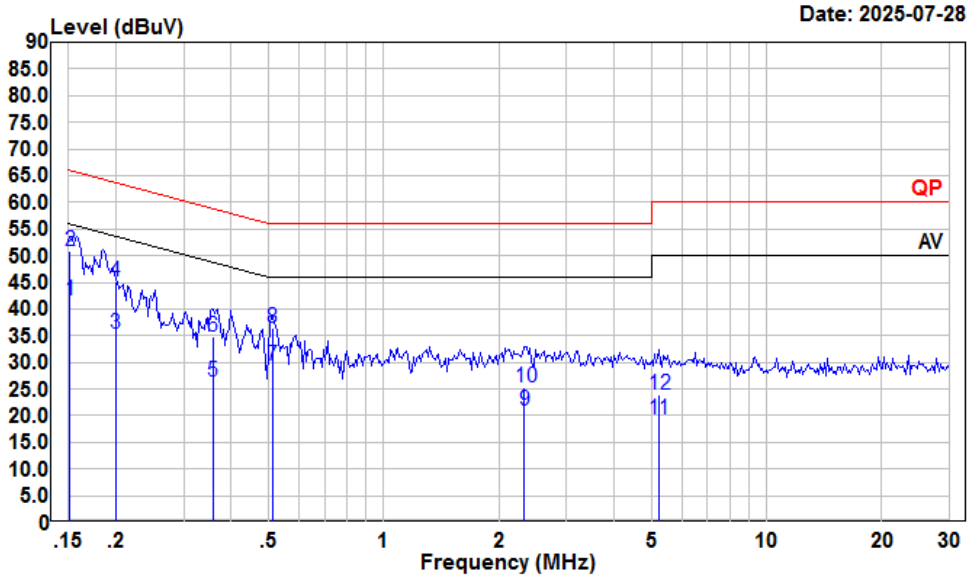


Condition: Neutral
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.153	14.21	34.80	10.43	10.16	55.82	-21.02	Average
2	0.153	23.26	43.85	10.43	10.16	65.82	-21.97	QP
3	0.200	7.13	28.12	10.80	10.19	53.62	-25.50	Average
4	0.200	15.81	36.80	10.80	10.19	63.62	-26.82	QP
5	0.339	1.38	22.19	10.63	10.18	49.22	-27.03	Average
6	0.339	8.17	28.98	10.63	10.18	59.22	-30.24	QP
7	0.518	2.15	22.85	10.51	10.19	46.00	-23.15	Average
8	0.518	5.46	26.16	10.51	10.19	56.00	-29.84	QP
9	2.237	-2.52	18.47	10.75	10.24	46.00	-27.53	Average
10	2.237	1.88	22.87	10.75	10.24	56.00	-33.13	QP
11	20.924	2.70	24.01	11.06	10.25	50.00	-25.99	Average
12	20.924	6.62	27.93	11.06	10.25	60.00	-32.07	QP

Adapter 1+ Charger

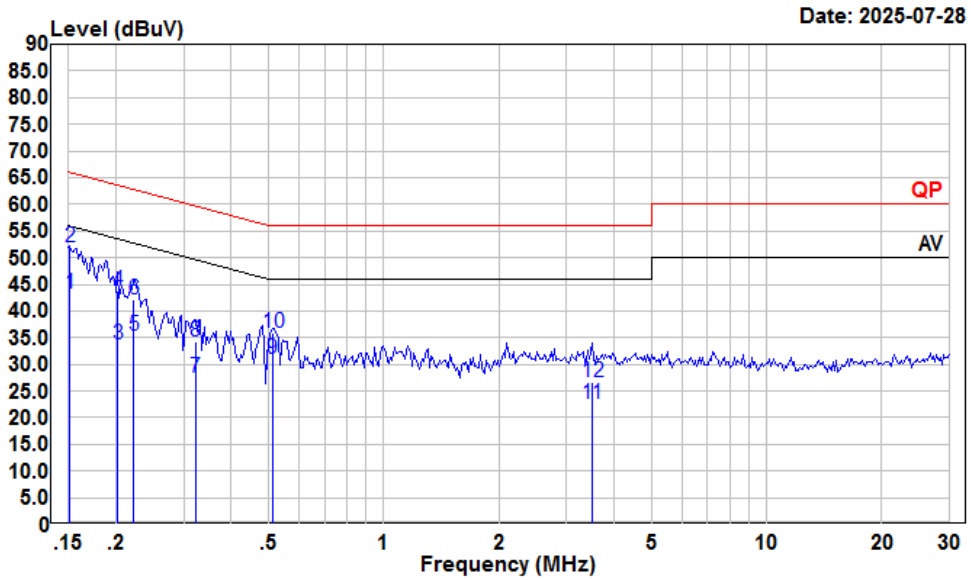
AC 120V/60 Hz, Line



Condition: Line
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.152	20.93	41.50	10.41	10.16	55.91	-14.41	Average
2	0.152	30.25	50.82	10.41	10.16	65.91	-15.09	QP
3	0.200	14.40	35.29	10.70	10.19	53.62	-18.33	Average
4	0.200	24.17	45.06	10.70	10.19	63.62	-18.56	QP
5	0.358	5.67	26.43	10.57	10.19	48.78	-22.35	Average
6	0.358	14.17	34.93	10.57	10.19	58.78	-23.85	QP
7	0.513	8.78	29.50	10.53	10.19	46.00	-16.50	Average
8	0.513	15.69	36.41	10.53	10.19	56.00	-19.59	QP
9	2.334	-0.37	20.93	11.06	10.24	46.00	-25.07	Average
10	2.334	4.10	25.40	11.06	10.24	56.00	-30.60	QP
11	5.221	-1.61	19.42	10.76	10.27	50.00	-30.58	Average
12	5.221	2.91	23.94	10.76	10.27	60.00	-36.06	QP

AC 120V/60 Hz, Neutral

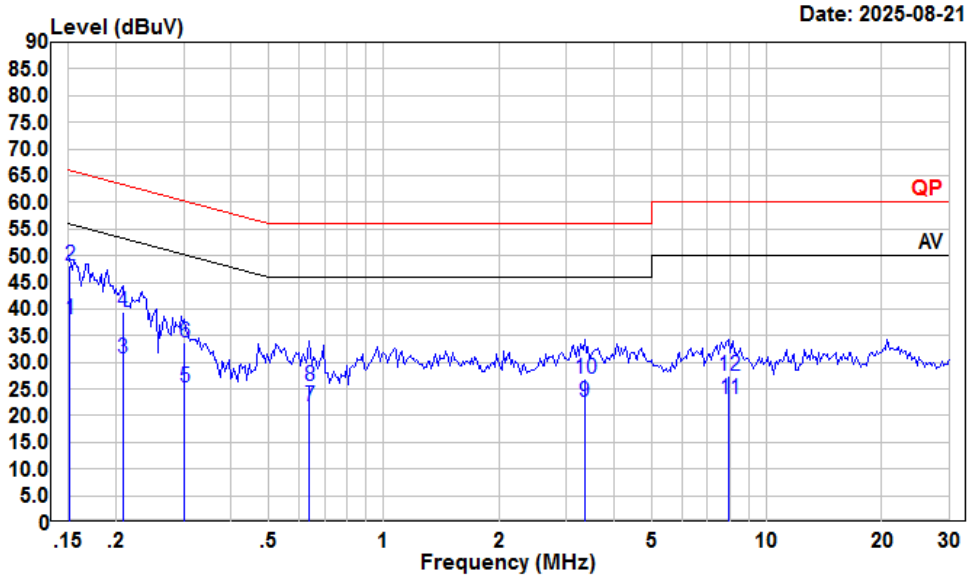


Condition: Neutral
Project : 2501V68922E-RF
test Mode: WIFI Transmitting
tester : Macy.shi Setting:RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.152	22.62	43.19	10.41	10.16	55.91	-12.72	Average
2	0.152	31.27	51.84	10.41	10.16	65.91	-14.07	QP
3	0.202	12.77	33.76	10.80	10.19	53.54	-19.78	Average
4	0.202	22.68	43.67	10.80	10.19	63.54	-19.87	QP
5	0.222	14.30	35.26	10.77	10.19	52.74	-17.48	Average
6	0.222	21.30	42.26	10.77	10.19	62.74	-20.48	QP
7	0.322	6.78	27.61	10.64	10.19	49.66	-22.05	Average
8	0.322	13.50	34.33	10.64	10.19	59.66	-25.33	QP
9	0.513	10.42	31.12	10.51	10.19	46.00	-14.88	Average
10	0.513	15.21	35.91	10.51	10.19	56.00	-20.09	QP
11	3.491	1.34	22.54	10.94	10.26	46.00	-23.46	Average
12	3.491	5.53	26.73	10.94	10.26	56.00	-29.27	QP

Adapter 2+ Charger

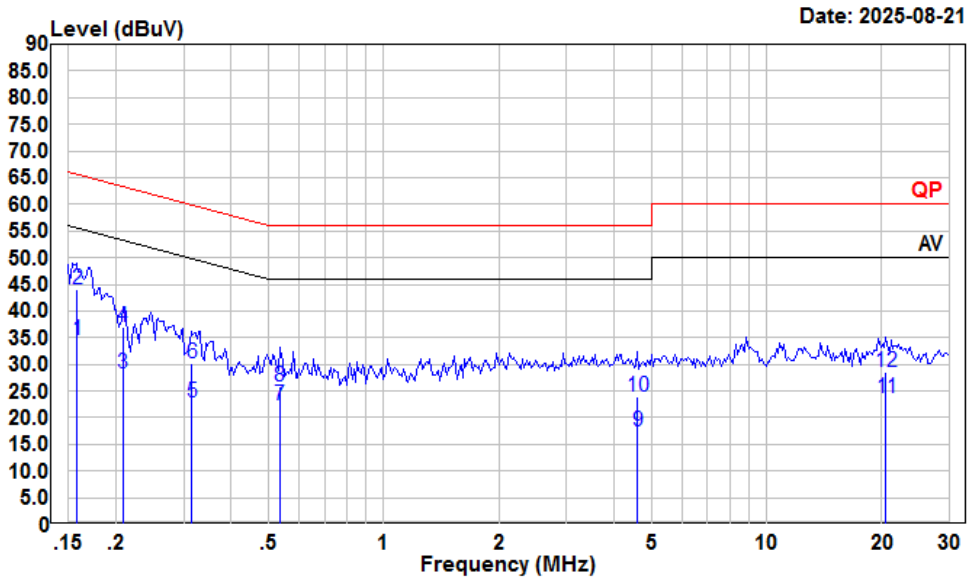
AC 120V/60 Hz, Line



Condition: Line
Project : 2501V68922E-RF
tester : Macy.shi Note:WIFI Transmitting
Setting : RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.152	17.58	38.15	10.41	10.16	55.91	-17.76	Average
2	0.152	27.58	48.15	10.41	10.16	65.91	-17.76	QP
3	0.208	9.80	30.68	10.69	10.19	53.27	-22.59	Average
4	0.208	18.43	39.31	10.69	10.19	63.27	-23.96	QP
5	0.302	4.63	25.43	10.61	10.19	50.19	-24.76	Average
6	0.302	12.82	33.62	10.61	10.19	60.19	-26.57	QP
7	0.641	0.65	21.67	10.79	10.23	46.00	-24.33	Average
8	0.641	4.55	25.57	10.79	10.23	56.00	-30.43	QP
9	3.346	1.31	22.52	10.95	10.26	46.00	-23.48	Average
10	3.346	5.84	27.05	10.95	10.26	56.00	-28.95	QP
11	7.977	2.38	23.11	10.49	10.24	50.00	-26.89	Average
12	7.977	6.84	27.57	10.49	10.24	60.00	-32.43	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2501V68922E-RF
tester : Macy.shi Note:WIFI Transmitting
Setting : RBW:9kHz

	Freq	Read Level	LISN Level	Cable Factor	Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.158	13.88	34.52	10.47	10.17	55.56	-21.04	Average
2	0.158	23.55	44.19	10.47	10.17	65.56	-21.37	QP
3	0.208	7.18	28.16	10.79	10.19	53.27	-25.11	Average
4	0.208	16.13	37.11	10.79	10.19	63.27	-26.16	QP
5	0.315	1.96	22.80	10.65	10.19	49.84	-27.04	Average
6	0.315	9.47	30.31	10.65	10.19	59.84	-29.53	QP
7	0.535	1.51	22.23	10.52	10.20	46.00	-23.77	Average
8	0.535	5.05	25.77	10.52	10.20	56.00	-30.23	QP
9	4.598	-3.63	17.53	10.90	10.26	46.00	-28.47	Average
10	4.598	2.91	24.07	10.90	10.26	56.00	-31.93	QP
11	20.486	2.43	23.76	11.08	10.25	50.00	-26.24	Average
12	20.486	7.10	28.43	11.08	10.25	60.00	-31.57	QP

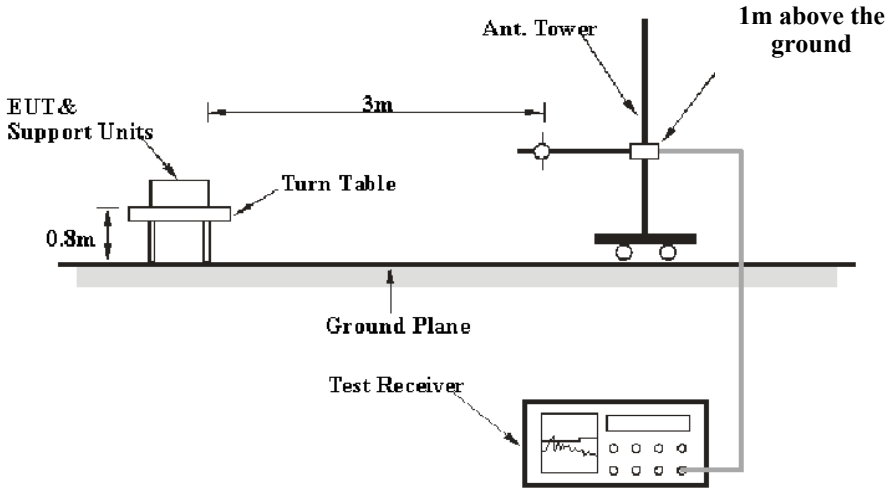
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

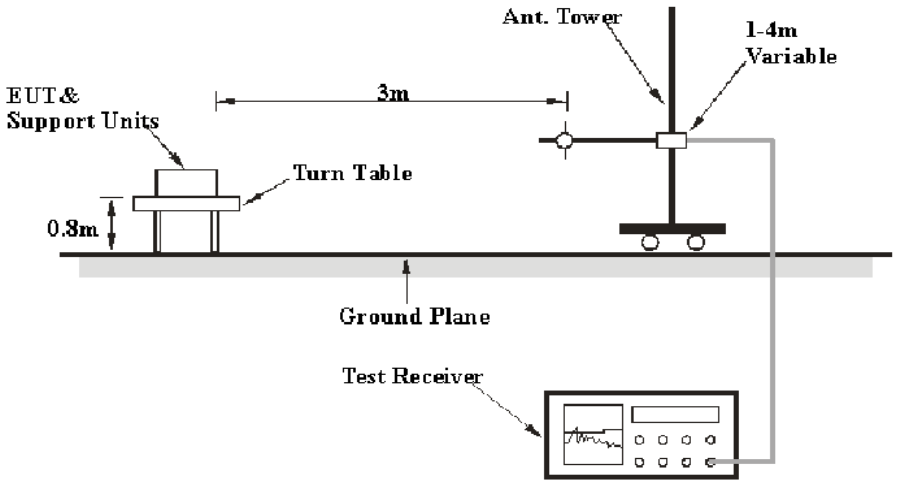
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

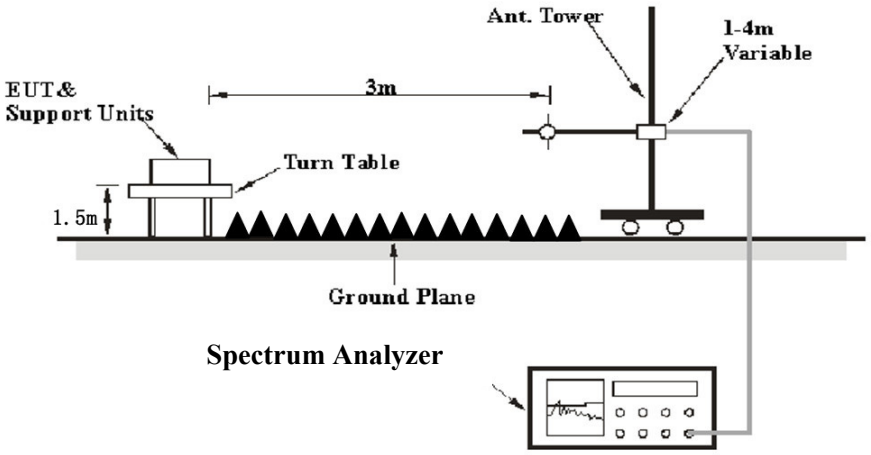
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

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

9 kHz-1GHz:

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

Above 1 GHz:
Pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	1 kHz	Peak
	<98%	1MHz	≥1/Ton	Peak

Final measurement for emission identified during pre-scan

Measurement	Duty cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3 MHz	Peak
AV	>98%	1MHz	10 Hz	Peak
	<98%	1MHz	≥1/Ton	Peak

Note: Ton is minimum transmission duration

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all 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, peak and average detection modes for frequencies above 1 GHz.

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.

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.

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

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

Test Data

Environmental Conditions

Temperature:	22.2~25.3 ℃
Relative Humidity:	45~54 %
ATM Pressure:	99.9~101.2 kPa

The testing was performed by Anson Su on 2025-07-31 & 2025-09-02 for below 1GHz and Ive Wang on 2025-07-28 & 2025-09-03 for above 1GHz.

EUT operation mode: Transmitting

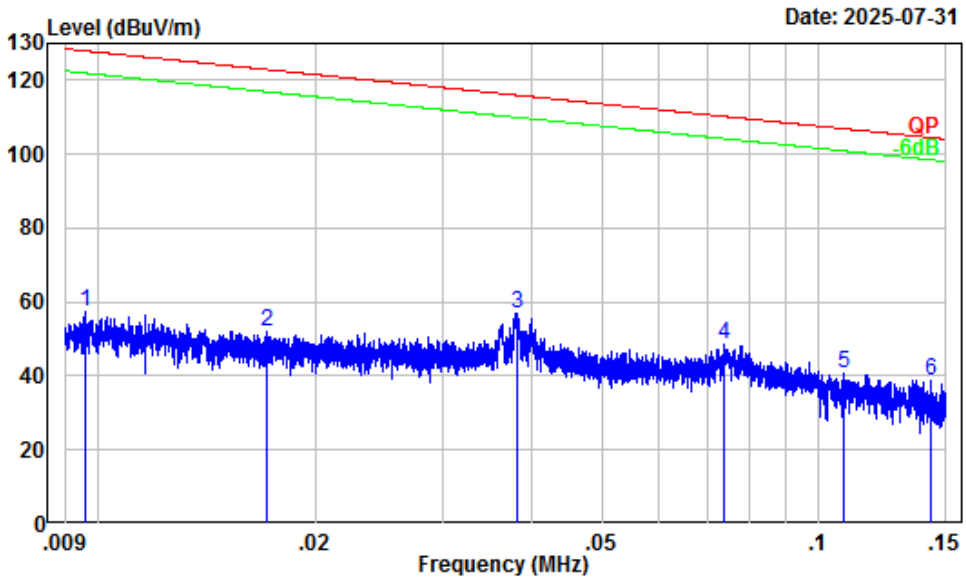
Note:

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

For the radiated spurious emission below 1GHz, when the test result of peak was less than the limit of QP/Average more than 6dB, just peak value was recorded.

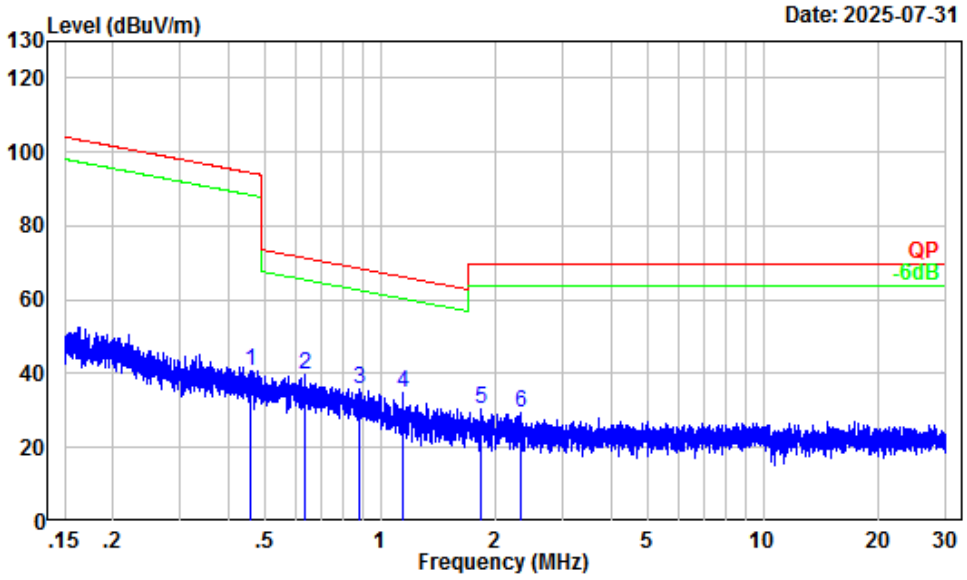
9 kHz-30MHz: (Maximum output power mode, 2M_925MHz)

Parallel (worst case)



Site : Chamber A
Condition : 3m
Project Number : 2501V68922E-RF
Test Mode : WIFI Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.010	32.38	24.78	57.16	127.94	-70.78	Peak
2	0.017	30.95	21.08	52.03	122.94	-70.91	Peak
3	0.038	27.64	29.07	56.71	115.96	-59.25	Peak
4	0.074	24.02	24.40	48.42	110.24	-61.82	Peak
5	0.108	21.52	19.21	40.73	106.92	-66.19	Peak
6	0.143	19.47	19.38	38.85	104.50	-65.65	Peak

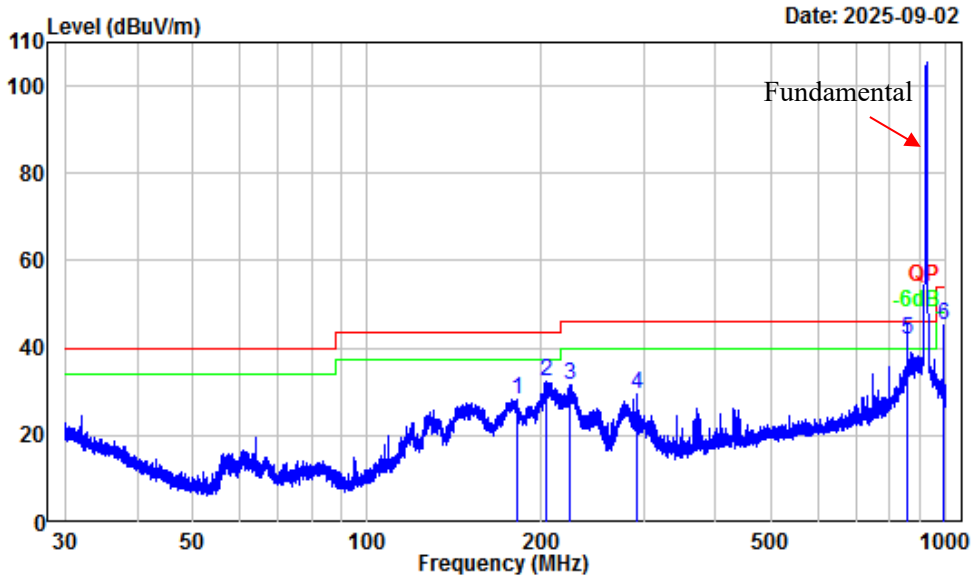


Site : Chamber A
Condition : 3m
Project Number : 2501V68922E-RF
Test Mode : WIFI Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.458	7.20	33.69	40.89	94.39	-53.50	Peak
2	0.638	4.70	34.91	39.61	71.46	-31.85	Peak
3	0.884	2.07	33.63	35.70	68.56	-32.86	Peak
4	1.147	0.79	34.20	34.99	66.26	-31.27	Peak
5	1.832	-1.13	31.71	30.58	69.54	-38.96	Peak
6	2.326	-1.78	31.34	29.56	69.54	-39.98	Peak

30 MHz~1 GHz: (Maximum output power mode, 2M_925MHz)

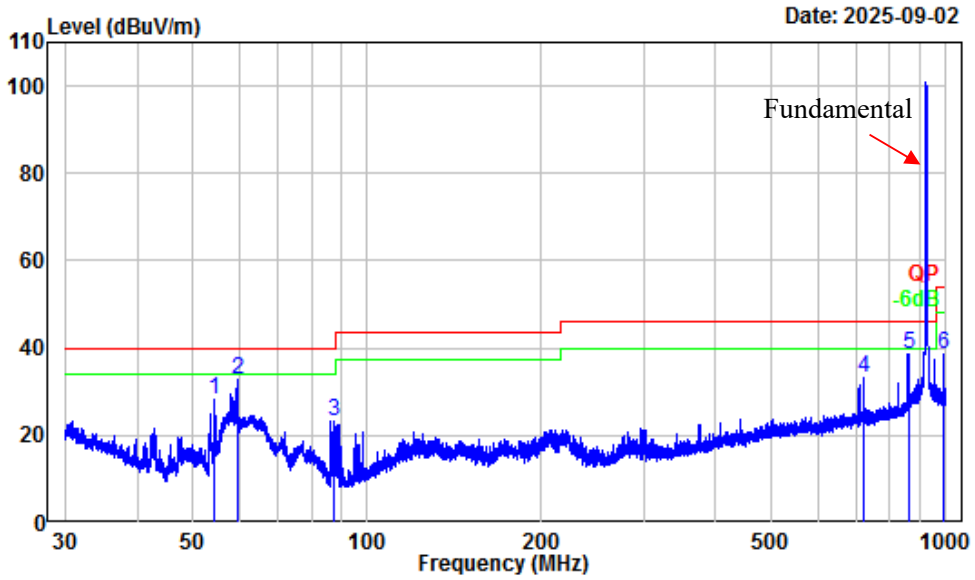
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501V68922E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	181.05	-13.70	42.08	28.38	43.50	-15.12	Peak
2	203.70	-13.34	45.65	32.31	43.50	-11.19	Peak
3	224.62	-14.09	45.76	31.67	46.00	-14.33	Peak
4	293.21	-11.21	40.54	29.33	46.00	-16.67	Peak
5	860.04	-1.62	43.50	41.88	46.00	-4.12	QP
6	988.24	-0.59	45.69	45.10	54.00	-8.90	Peak

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2501V68922E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	54.40	-18.32	46.51	28.19	40.00	-11.81	Peak
2	59.60	-18.16	51.04	32.88	40.00	-7.12	Peak
3	87.61	-18.08	41.33	23.25	40.00	-16.75	Peak
4	722.04	-3.21	36.35	33.14	46.00	-12.86	Peak
5	861.17	-1.62	40.29	38.67	46.00	-7.33	Peak
6	989.97	-0.60	39.25	38.65	54.00	-15.35	Peak

Above 1 GHz:

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Absolute Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1MHz							
Low Channel 903.5MHz							
2710.50	53.66	PK	H	-10.54	43.12	74	-30.88
2710.50	55.26	PK	V	-10.54	44.72	74	-29.28
3614.00	63.92	PK	H	-10.06	53.86	74	-20.14
3614.00	44.89	AV	H	-10.06	34.83	54	-19.17
3614.00	64.30	PK	V	-10.06	54.24	74	-19.76
3614.00	45.03	AV	V	-10.06	34.97	54	-19.03
4517.50	51.61	PK	H	-8.04	43.57	74	-30.43
4517.50	55.86	PK	V	-8.04	47.82	74	-26.18
Middle Channel 914.5MHz							
2743.50	51.09	PK	H	-10.95	40.14	74	-33.86
2743.50	55.93	PK	V	-10.95	44.98	74	-29.02
3658.00	64.98	PK	H	-9.73	55.25	74	-18.75
3658.00	46.15	AV	H	-9.73	36.42	54	-17.58
3658.00	65.82	PK	V	-9.73	56.09	74	-17.91
3658.00	46.93	AV	V	-9.73	37.20	54	-16.80
4572.50	54.32	PK	H	-8.18	46.14	74	-27.86
4572.50	56.63	PK	V	-8.18	48.45	74	-25.55
High Channel 926.5MHz							
2779.50	51.97	PK	H	-10.61	41.36	74	-32.64
2779.50	53.35	PK	V	-10.61	42.74	74	-31.26
3706.00	65.78	PK	H	-9.50	56.28	74	-17.72
3706.00	46.43	AV	H	-9.50	36.93	54	-17.07
3706.00	68.82	PK	V	-9.50	59.32	74	-14.68
3706.00	46.89	AV	V	-9.50	37.39	54	-16.61
4632.50	53.60	PK	H	-8.20	45.40	74	-28.60
4632.50	58.23	PK	V	-8.20	50.03	74	-23.97

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Absolute Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2MHz							
Low Channel 905MHz							
2715.00	76.82	PK	H	-10.55	66.27	74	-7.73
2715.00	47.10	AV	H	-10.55	36.55	54	-17.45
2715.00	81.44	PK	V	-10.55	70.89	74	-3.11
2715.00	54.07	AV	V	-10.55	43.52	54	-10.48
3620.00	66.50	PK	H	-10.01	56.49	74	-17.51
3620.00	44.23	AV	H	-10.01	34.22	54	-19.78
3620.00	64.25	PK	V	-10.01	54.24	74	-19.76
3620.00	43.63	AV	V	-10.01	33.62	54	-20.38
4525.00	55.73	PK	H	-8.05	47.68	74	-26.32
4525.00	39.07	AV	H	-8.05	31.02	54	-22.98
4525.00	57.16	PK	V	-8.05	49.11	74	-24.89
4525.00	39.42	AV	V	-8.05	31.37	54	-22.63
Middle Channel 915MHz							
2745.00	74.60	PK	H	-10.64	63.96	74	-10.04
2745.00	47.67	AV	H	-10.64	37.03	54	-16.97
2745.00	79.75	PK	V	-10.64	69.11	74	-4.89
2745.00	51.88	AV	V	-10.64	41.24	54	-12.76
3660.00	66.03	PK	H	-9.72	56.31	74	-17.69
3660.00	45.89	AV	H	-9.72	36.17	54	-17.83
3660.00	66.84	PK	V	-9.72	57.12	74	-16.88
3660.00	45.28	AV	V	-9.72	35.56	54	-18.44
4575.00	58.60	PK	H	-8.18	50.42	74	-23.58
4575.00	39.97	AV	H	-8.18	31.79	54	-22.21
4575.00	58.84	PK	V	-8.18	50.66	74	-23.34
4575.00	40.12	AV	V	-8.18	31.94	54	-22.06

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Absolute Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
High Channel 925MHz							
2775.00	71.55	PK	H	-10.62	60.93	74	-13.07
2775.00	45.59	AV	H	-10.62	34.97	54	-19.03
2775.00	78.55	PK	V	-10.62	67.93	74	-6.07
2775.00	50.24	AV	V	-10.62	39.62	54	-14.38
3700.00	66.82	PK	H	-9.49	57.33	74	-16.67
3700.00	47.15	AV	H	-9.49	37.66	54	-16.34
3700.00	66.93	PK	V	-9.49	57.44	74	-16.56
3700.00	46.28	AV	V	-9.49	36.79	54	-17.21
4625.00	59.29	PK	H	-8.21	51.08	74	-22.92
4625.00	41.02	AV	H	-8.21	32.81	54	-21.19
4625.00	61.46	PK	V	-8.21	53.25	74	-20.75
4625.00	41.70	AV	V	-8.21	33.49	54	-20.51

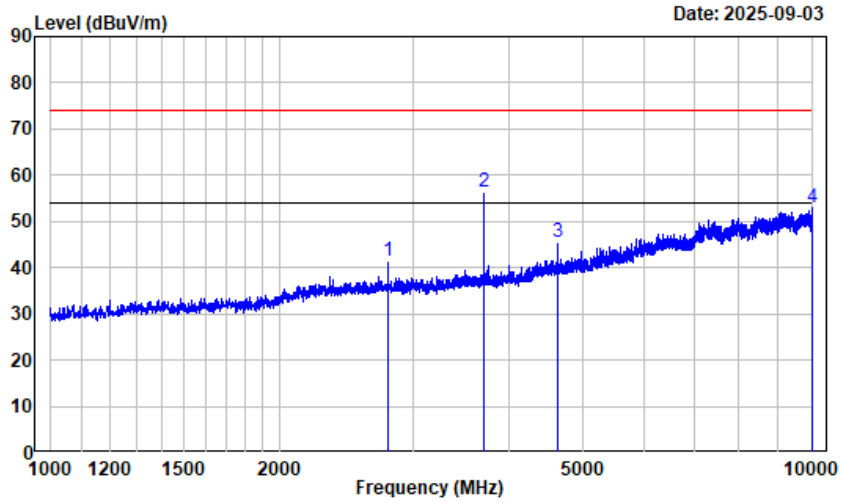
Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Absolute Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
4MHz							
Low Channel 906MHz							
2718.00	77.38	PK	H	-10.56	66.82	74	-7.18
2718.00	59.68	AV	H	-10.56	49.12	54	-4.88
2718.00	76.05	PK	V	-10.56	65.49	74	-8.51
2718.00	57.48	AV	V	-10.56	46.92	54	-7.08
3624.00	70.65	PK	H	-9.98	60.67	74	-13.33
3624.00	57.43	AV	H	-9.98	47.45	54	-6.55
3624.00	69.59	PK	V	-9.98	59.61	74	-14.39
3624.00	56.94	AV	V	-9.98	46.96	54	-7.04
4530.00	64.58	PK	H	-8.07	56.51	74	-17.49
4530.00	48.92	AV	H	-8.07	40.85	54	-13.15
4530.00	65.48	PK	V	-8.07	57.41	74	-16.59
4530.00	49.04	AV	V	-8.07	40.97	54	-13.03
Middle Channel 914MHz							
2742.00	78.52	PK	H	-10.63	67.89	74	-6.11
2742.00	60.45	AV	H	-10.63	49.82	54	-4.18
2742.00	76.76	PK	V	-10.63	66.13	74	-7.87
2742.00	57.58	AV	V	-10.63	46.95	54	-7.05
3656.00	70.68	PK	H	-9.74	60.94	74	-13.06
3656.00	57.39	AV	H	-9.74	47.65	54	-6.35
3656.00	72.14	PK	V	-9.74	62.40	74	-11.60
3656.00	58.64	AV	V	-9.74	48.90	54	-5.10
4570.00	64.46	PK	H	-8.17	56.29	74	-17.71
4570.00	49.56	AV	H	-8.17	41.39	54	-12.61
4570.00	65.20	PK	V	-8.17	57.03	74	-16.97
4570.00	49.96	AV	V	-8.17	41.79	54	-12.21

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Absolute Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
High Channel 922MHz							
2766.00	73.99	PK	H	-10.63	63.36	74	-10.64
2766.00	53.65	AV	H	-10.63	43.02	54	-10.98
2766.00	74.55	PK	V	-10.63	63.92	74	-10.08
2766.00	54.56	AV	V	-10.63	43.93	54	-10.07
3688.00	74.34	PK	H	-9.56	64.78	74	-9.22
3688.00	59.99	AV	H	-9.56	50.43	54	-3.57
3688.00	72.74	PK	V	-9.56	63.18	74	-10.82
3688.00	58.84	AV	V	-9.56	49.28	54	-4.72
4610.00	67.12	PK	H	-8.23	58.89	74	-15.11
4610.00	51.15	AV	H	-8.23	42.92	54	-11.08
4610.00	67.43	PK	V	-8.23	59.20	74	-14.80
4610.00	52.44	AV	V	-8.23	44.21	54	-9.79

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude/Level = Corrected Factor + Reading
Margin = Corrected Amplitude/Level - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak values were recorded.

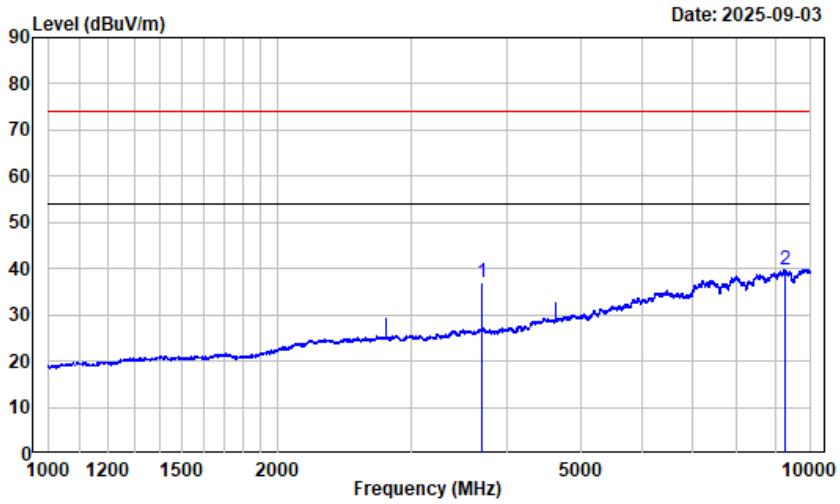
Listed with the worst harmonic margin test plot:

1M_High Channel

Horizontal_Peak	
1-10GHz	 Condition : Horizontal Project No. : 2501V68922E-RF Tester : Ive Wang Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak Note : WiFi_1M_926.5 Freq / Factor / Read Level / Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 2779.500 -10.61 51.97 41.36 74.00 -32.64 Peak 2 3706.000 -9.50 65.78 56.28 74.00 -17.72 Peak 3 4632.500 -8.20 53.60 45.40 74.00 -28.60 Peak 4 9983.500 1.43 51.71 53.14 74.00 -20.86 Peak

Horizontal_Average

1-10GHz

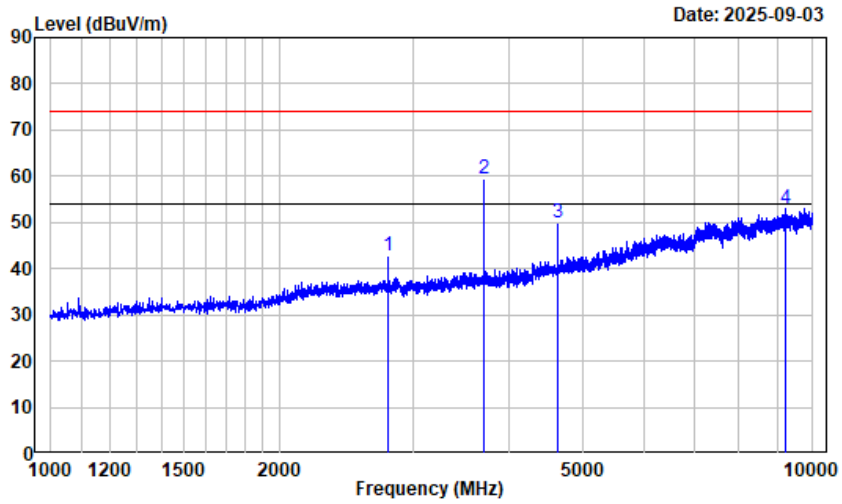


Condition : Horizontal
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_1M_926.5

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3706.000	-9.50	46.43	36.93	54.00	-17.07	Average
2	9253.000	0.79	38.99	39.78	54.00	-14.22	Average

Vertical_Peak

1-10GHz

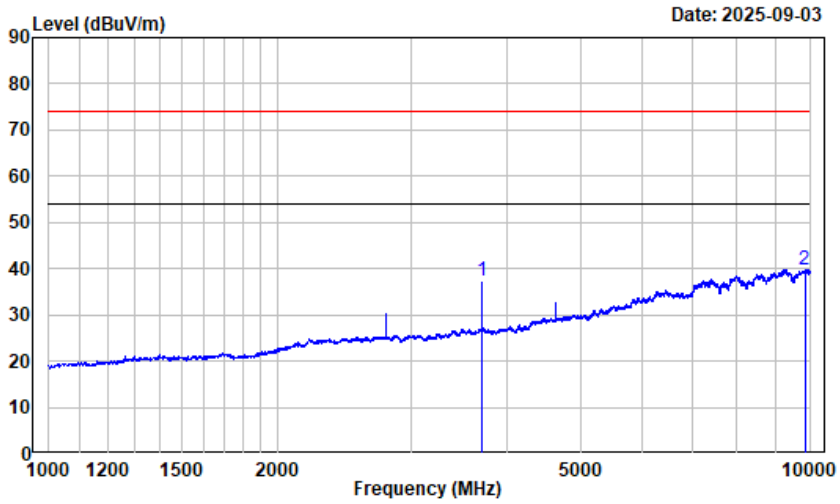


Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : WiFi_1M_926.5

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2779.500	-10.61	53.35	42.74	74.00	-31.26	Peak
2	3706.000	-9.50	68.82	59.32	74.00	-14.68	Peak
3	4632.500	-8.20	58.23	50.03	74.00	-23.97	Peak
4	9230.500	0.59	52.30	52.89	74.00	-21.11	Peak

Vertical_Average

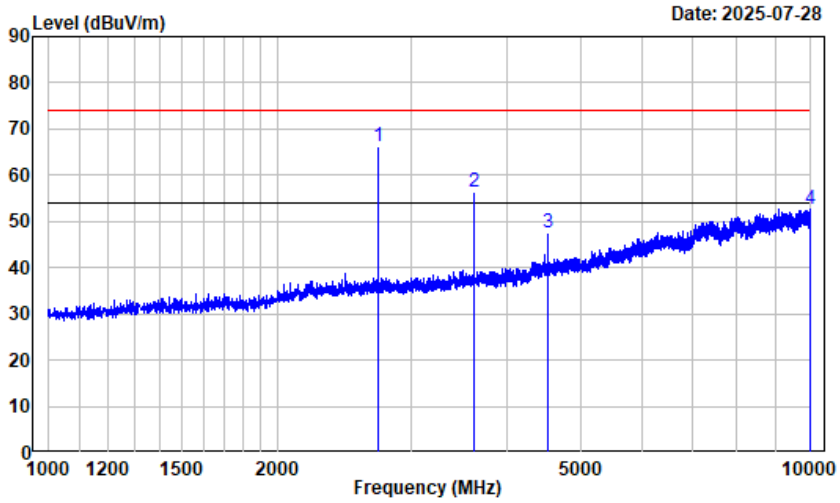
1-10GHz



Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_1M_926.5

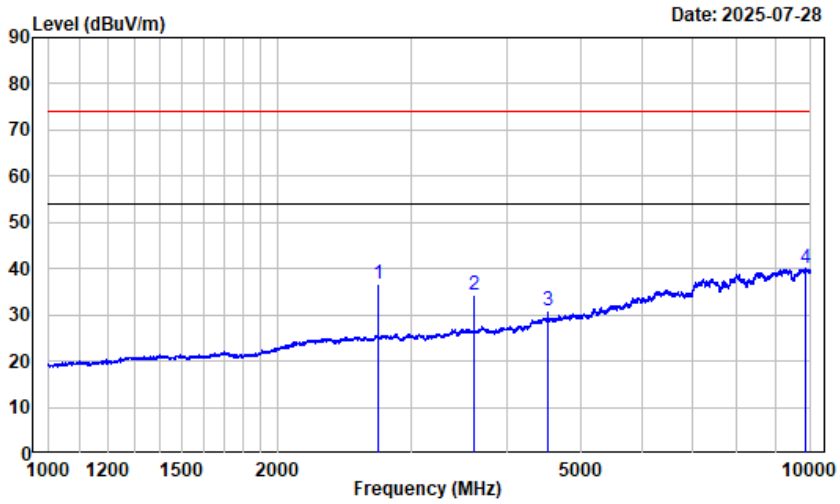
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3706.000	-9.50	46.89	37.39	54.00	-16.61	Average
2	9823.000	1.32	38.49	39.81	54.00	-14.19	Average

2M-Low Channel

Horizontal_Peak	
1-10GHz	 Condition : Horizontal Project No. : 2501V68922E-RF Tester : Ive Wang Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak Note : WiFi_2M_905 Freq / Factor / Read Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 2715.000 -10.55 76.82 66.27 74.00 -7.73 Peak 2 3620.000 -10.01 66.50 56.49 74.00 -17.51 Peak 3 4525.000 -8.05 55.73 47.68 74.00 -26.32 Peak 4 9996.625 1.50 51.05 52.55 74.00 -21.45 Peak

Horizontal_Average

1-10GHz

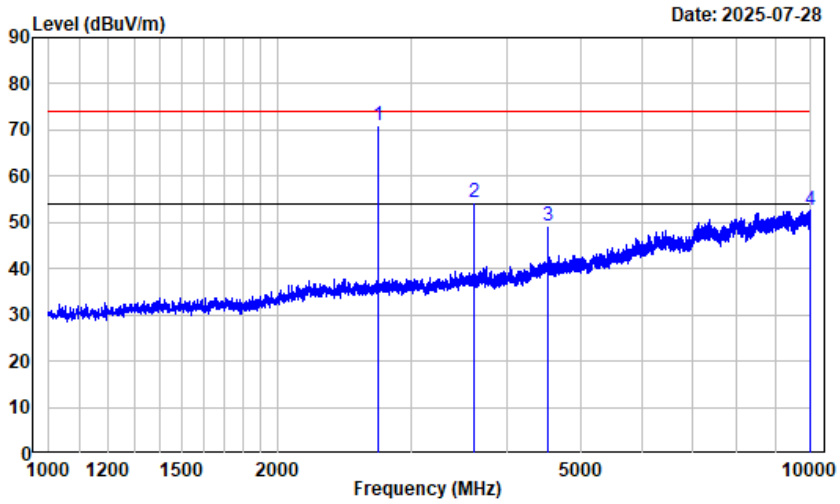


Condition : Horizontal
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_2M_905

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2715.000	-10.55	47.10	36.55	54.00	-17.45	Average
2	3620.000	-10.01	44.23	34.22	54.00	-19.78	Average
3	4525.000	-8.05	39.07	31.02	54.00	-22.98	Average
4	9852.606	1.35	38.67	40.02	54.00	-13.98	Average

Vertical_Peak

1-10GHz

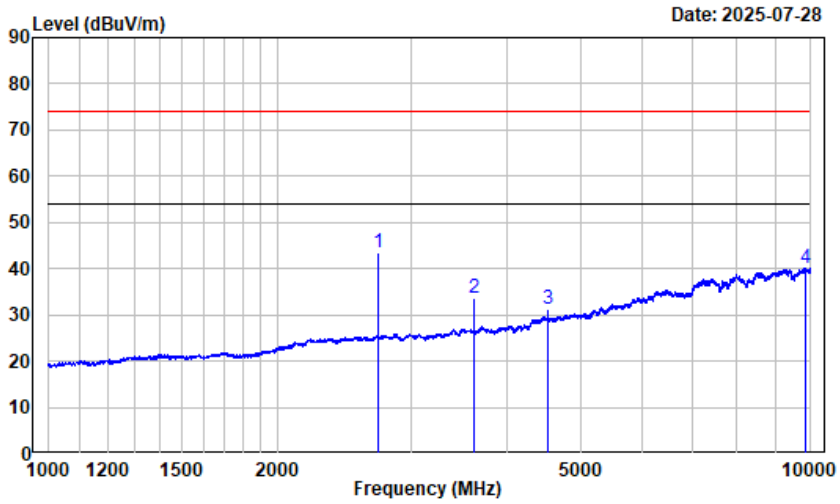


Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : WiFi_2M_905

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2715.000	-10.55	81.44	70.89	74.00	-3.11	Peak
2	3620.000	-10.01	64.25	54.24	74.00	-19.76	Peak
3	4525.000	-8.05	57.16	49.11	74.00	-24.89	Peak
4	9996.625	1.50	51.17	52.67	74.00	-21.33	Peak

Vertical_Average

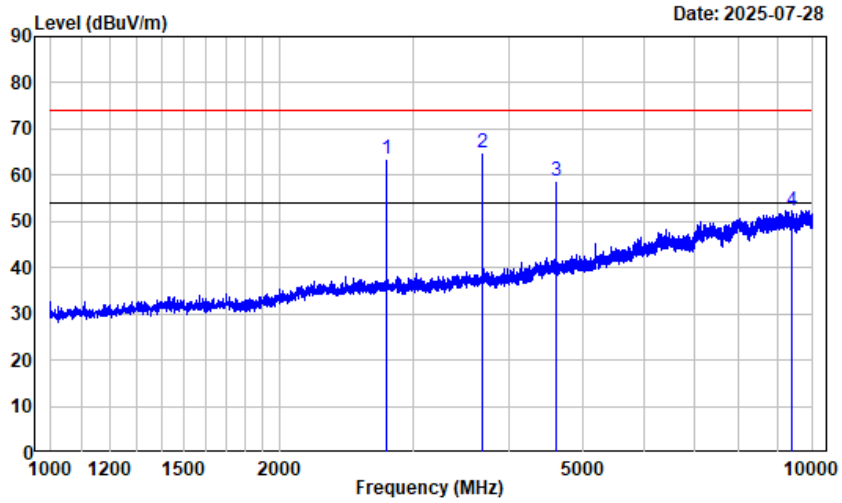
1-10GHz



Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_2M_905

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2715.000	-10.55	54.07	43.52	54.00	-10.48	Average
2	3620.000	-10.01	43.63	33.62	54.00	-20.38	Average
3	4525.000	-8.05	39.42	31.37	54.00	-22.63	Average
4	9826.729	1.32	38.74	40.06	54.00	-13.94	Average

4M- High Channel

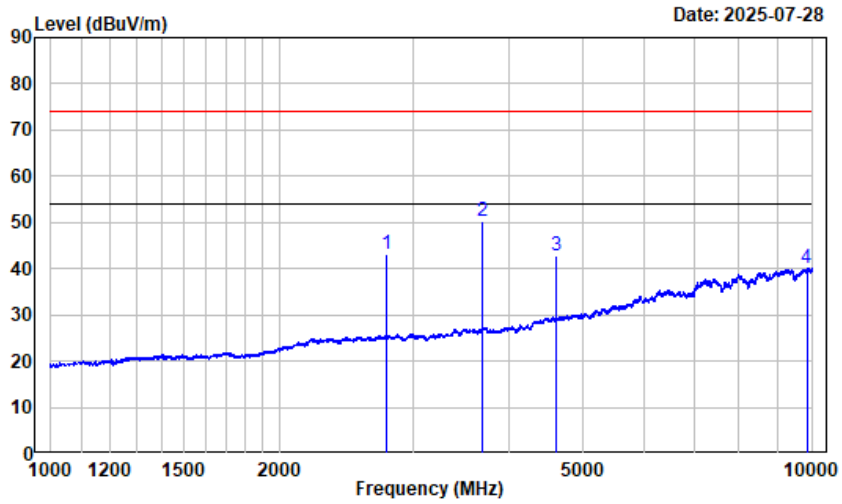
Horizontal_Peak	
1-10GHz	

Condition : Horizontal
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : WiFi_4M_922

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2766.000	-10.63	73.99	63.36	74.00	-10.64	Peak
2	3688.000	-9.56	74.34	64.78	74.00	-9.22	Peak
3	4610.000	-8.23	67.12	58.89	74.00	-15.11	Peak
4	9410.427	0.90	51.51	52.41	74.00	-21.59	Peak

Horizontal_Average

1-10GHz

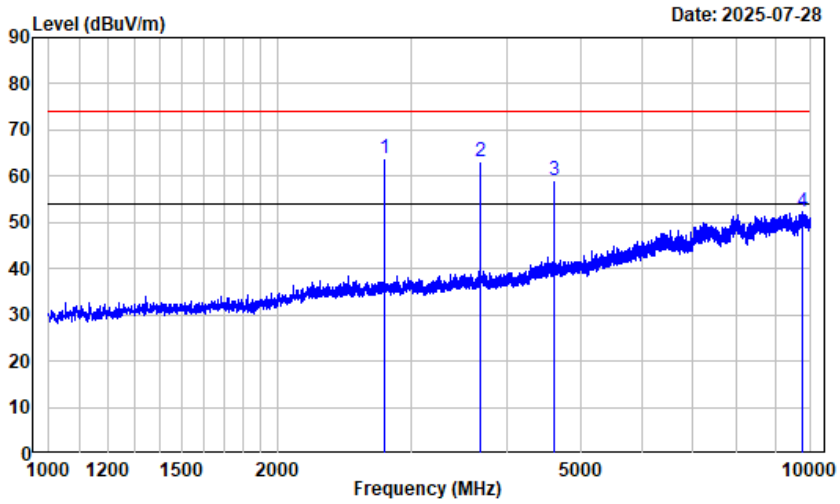


Condition : Horizontal
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_4M_922

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2766.000	-10.63	53.65	43.02	54.00	-10.98	Average
2	3688.000	-9.56	59.99	50.43	54.00	-3.57	Average
3	4610.000	-8.23	51.15	42.92	54.00	-11.08	Average
4	9823.353	1.32	38.86	40.18	54.00	-13.82	Average

Vertical_Peak

1-10GHz

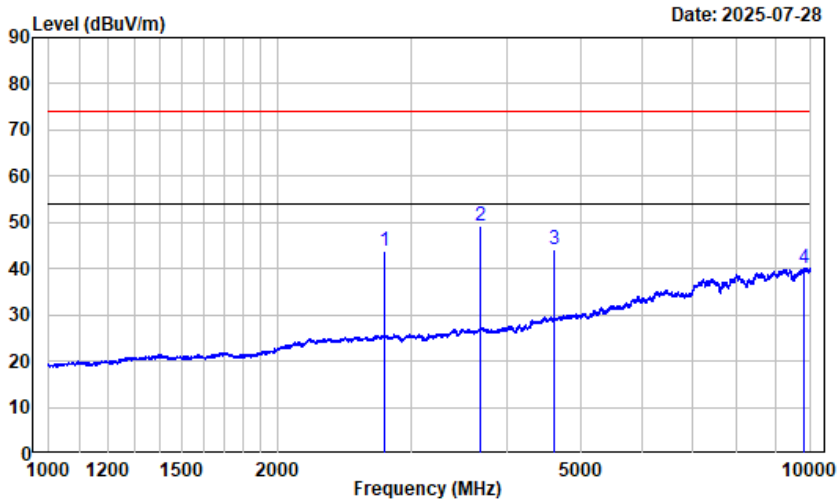


Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : WiFi_4M_922

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2766.000	-10.63	74.55	63.92	74.00	-10.08	Peak
2	3688.000	-9.56	72.74	63.18	74.00	-10.82	Peak
3	4610.000	-8.23	67.43	59.20	74.00	-14.80	Peak
4	9750.219	1.19	51.13	52.32	74.00	-21.68	Peak

Vertical_Average

1-10GHz



Condition : Vertical
Project No. : 2501V68922E-RF
Tester : Ive Wang
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : WiFi_4M_922

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2766.000	-10.63	54.56	43.93	54.00	-10.07	Average
2	3688.000	-9.56	58.84	49.28	54.00	-4.72	Average
3	4610.000	-8.23	52.44	44.21	54.00	-9.79	Average
4	9819.978	1.31	38.79	40.10	54.00	-13.90	Average

FCC §15.247(a) (2) - 6 dB EMISSION BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 11.8.1 & Clause 6.9.3
The steps for the first option are as follows:

a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.

b) Set the VBW ≥ [3 × RBW].

c) Detector = peak.

d) Trace mode = max-hold.

e) Sweep = No faster than coupled (auto) time.

f) Allow the trace to stabilize.

g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−6 dB down amplitude". If a marker is below this "−6 dB down amplitude" value, then it shall be as close as possible to this value.

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.6.2.

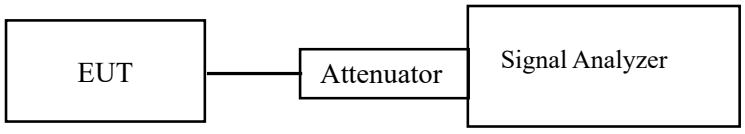
d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang from 2025-07-26 to 2025-09-05.

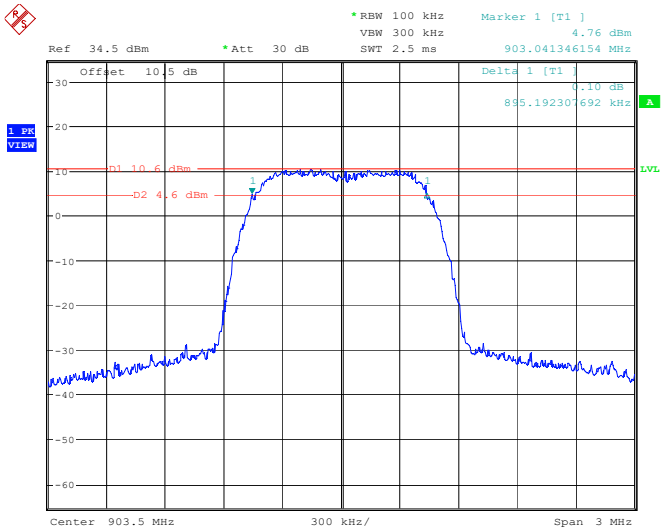
EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

Test Mode	Test Channel	Test Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
1MHz	Lowest	903.5	0.895	0.5
	Middle	914.5	0.898	0.5
	Highest	926.5	0.905	0.5
2MHz	Lowest	905.0	1.815	0.5
	Middle	915.0	1.823	0.5
	Highest	925.0	1.844	0.5
4MHz	Lowest	906.0	3.696	0.5
	Middle	914.0	3.658	0.5
	Highest	922.0	3.658	0.5

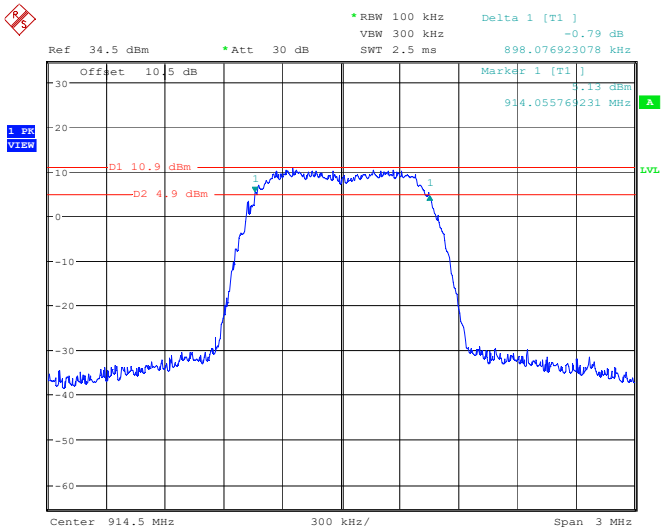
1MHz:

Low Channel



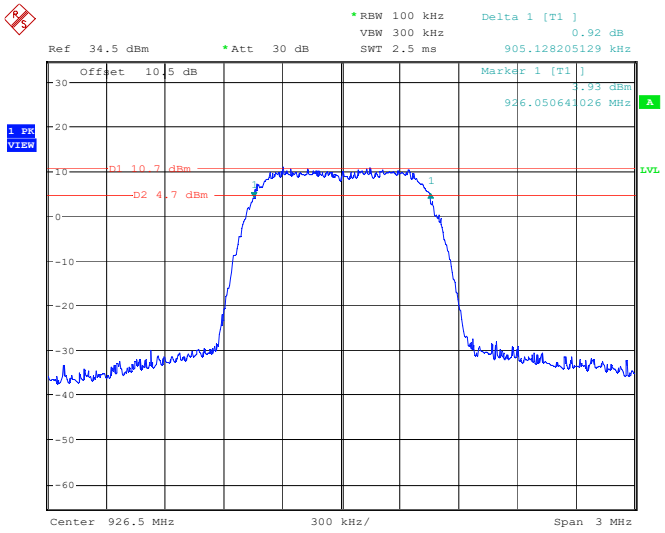
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:28:12

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:25:53

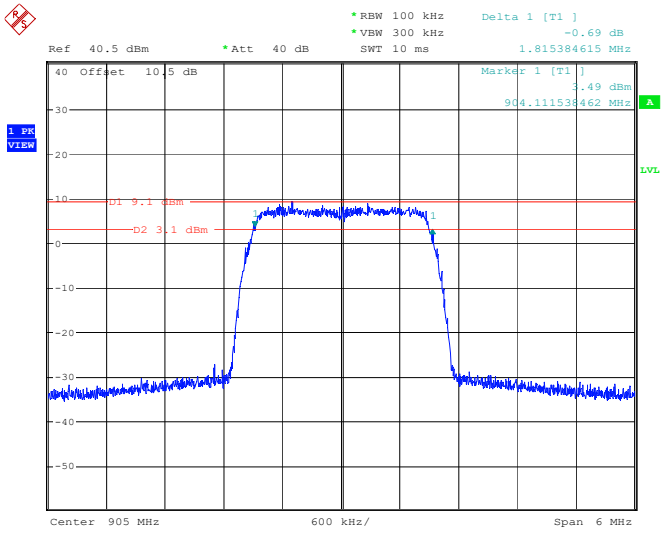
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:17:50

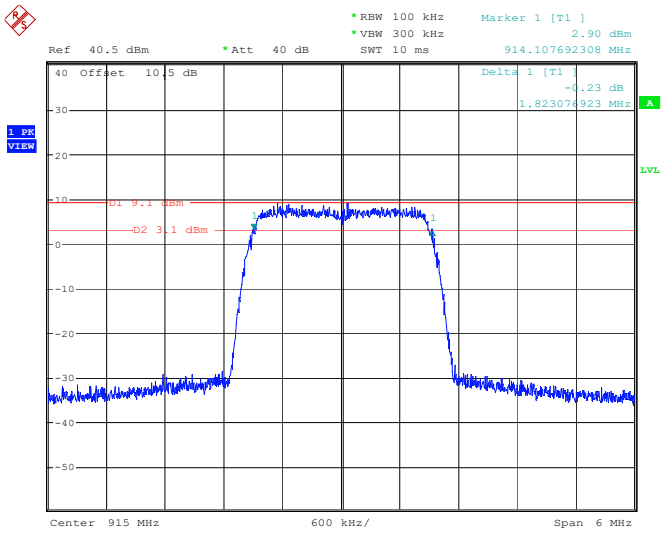
2MHz:

Low Channel



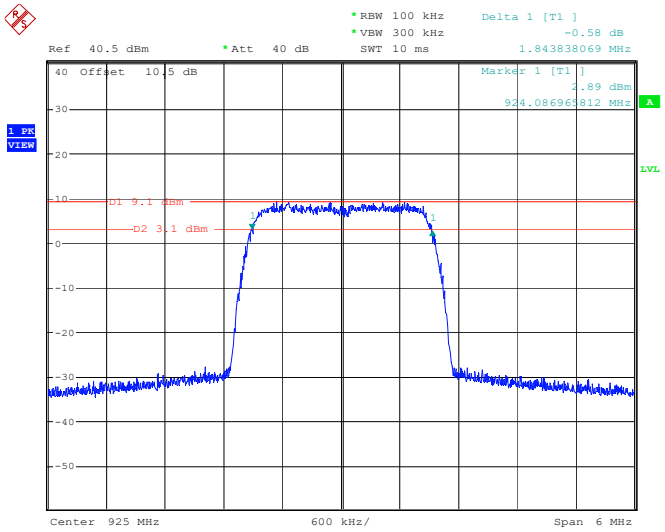
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:07:55

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:05:31

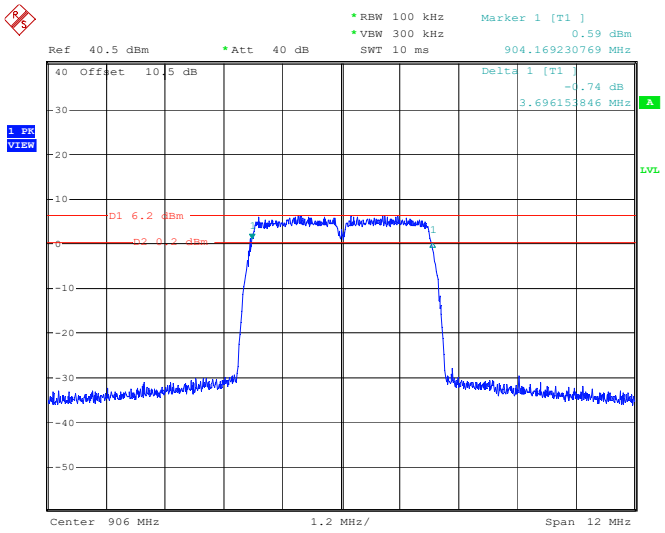
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:04:06

4MHz:

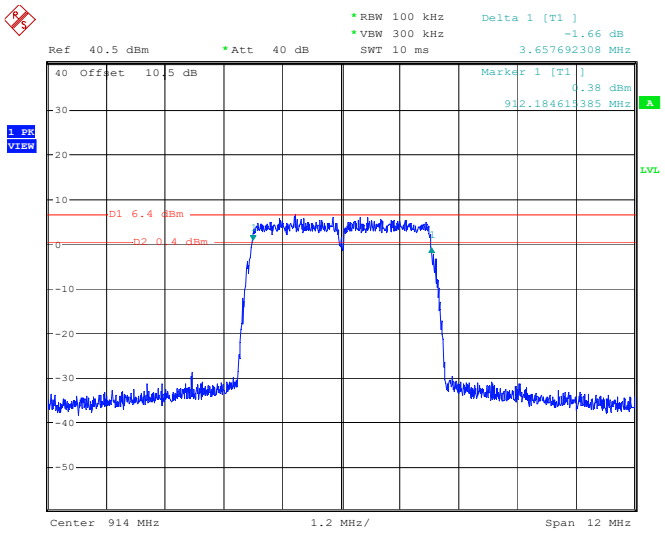
Low Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 26.JUL.2025 18:11:23

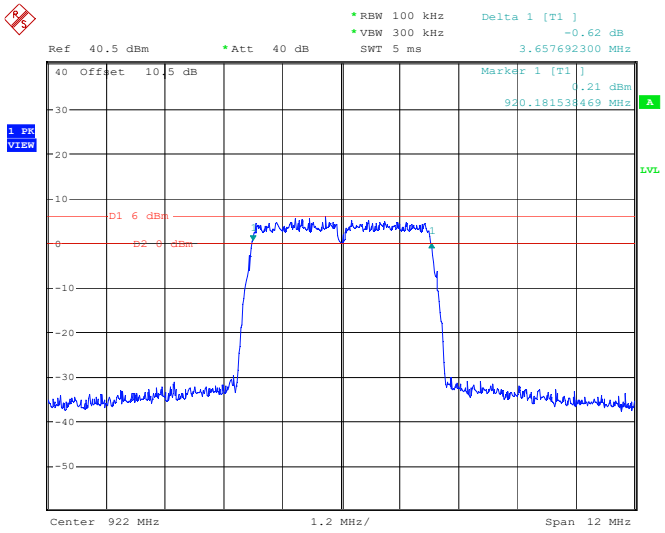
Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 26.JUL.2025 18:21:01

High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:26:16

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 11.9.1.1

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW ≥ DTS bandwidth.

b) Set VBW ≥ [3 × RBW].

c) Set span ≥ [3 × RBW].

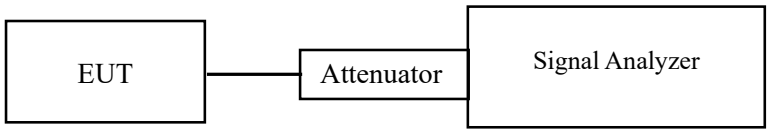
d) Sweep time = No faster than coupled (auto) time.

e) Detector = peak.

f) Trace mode = max-hold.

g) Allow trace to fully stabilize.

h) Use peak marker function to determine the peak amplitude level.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable loss

Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang from 2025-07-26 to 2025-09-05.

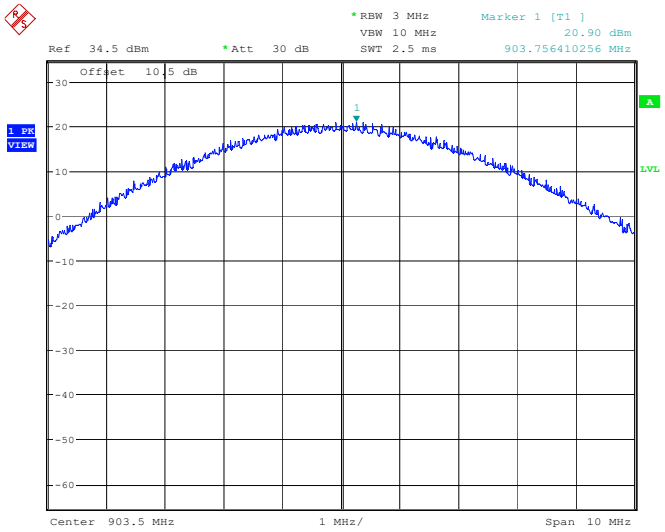
EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

Test Mode	Test Channel	Test Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	Limit (dBm)
1MHz	Lowest	903.5	20.90	≤30
	Middle	914.5	20.85	≤30
	Highest	926.5	20.27	≤30
2MHz	Lowest	905.0	21.90	≤30
	Middle	915.0	21.39	≤30
	Highest	925.0	21.98	≤30
4MHz	Lowest	906.0	21.69	≤30
	Middle	914.0	21.78	≤30
	Highest	922.0	21.82	≤30

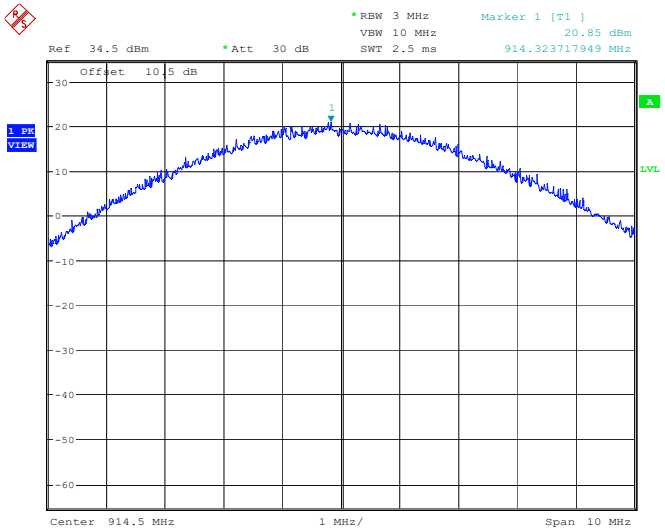
1MHz:

Low Channel



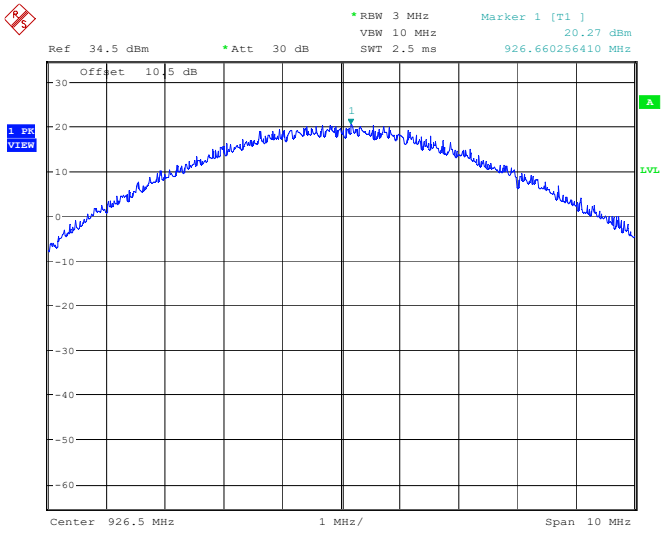
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:08:30

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:09:11

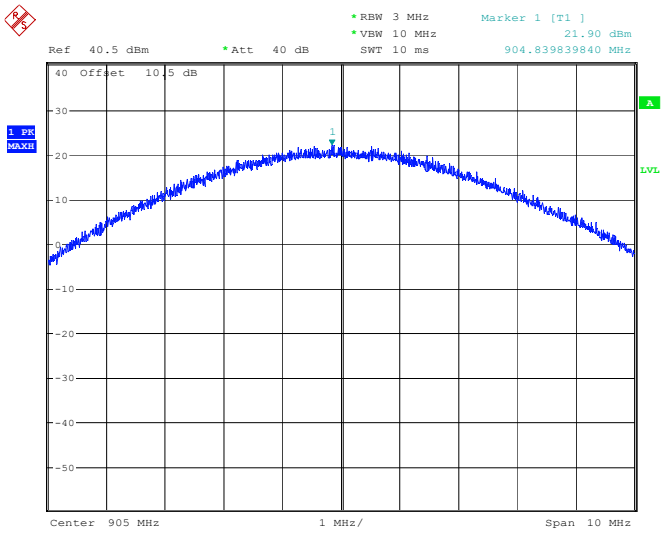
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:11:12

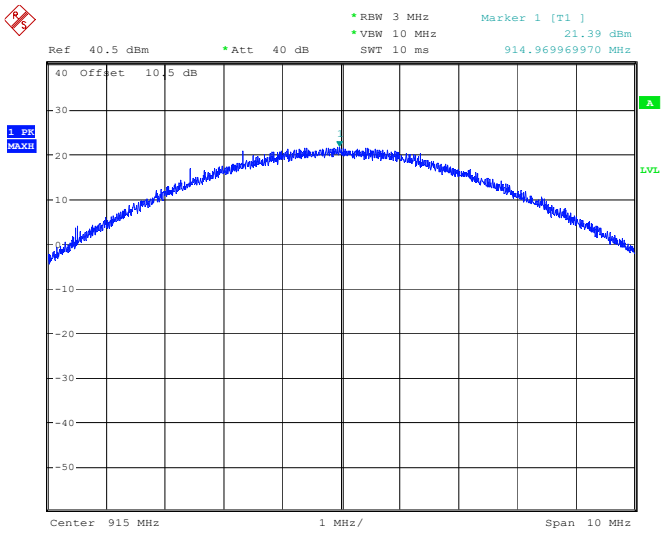
2MHz:

Low Channel



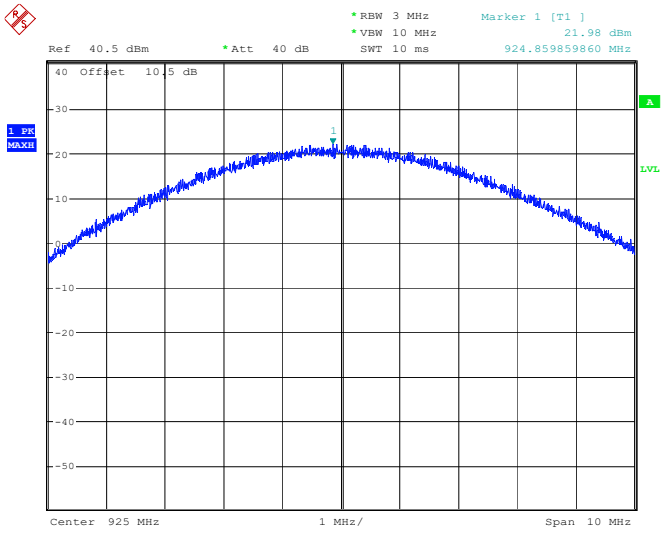
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 17:56:06

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 17:57:40

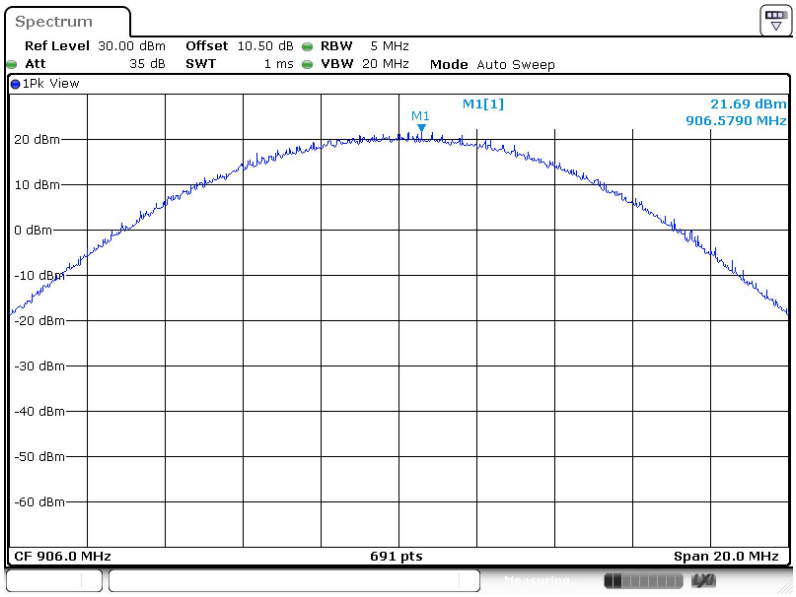
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 17:58:54

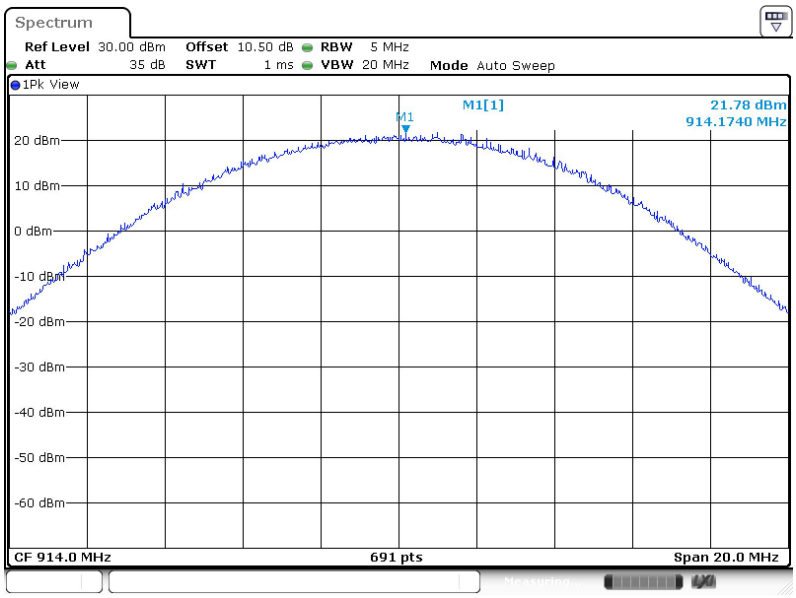
4MHz:

Low Channel



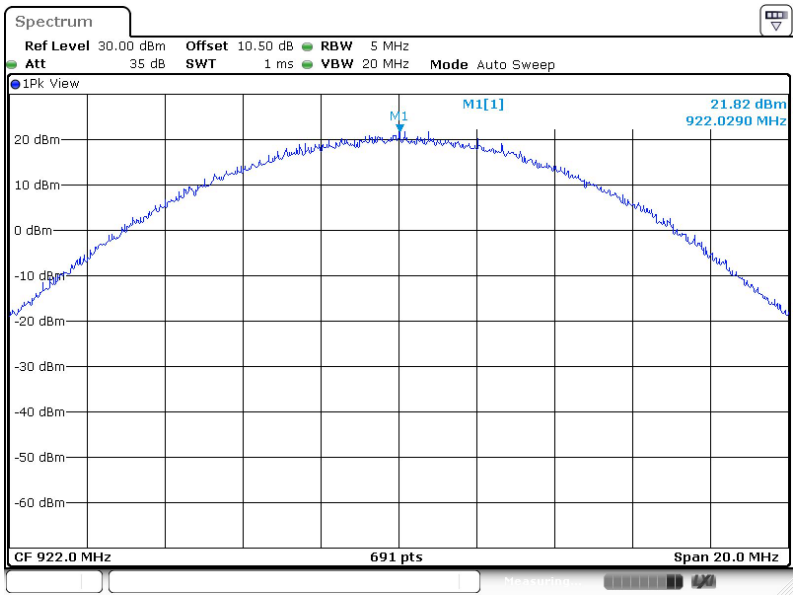
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 22.AUG.2025 09:46:25

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 22.AUG.2025 09:45:05

High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 22.AUG.2025 09:47:29

FCC §15.247(d) - 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

Test Method: ANSI C63.10-2020 Clause 11.11.3

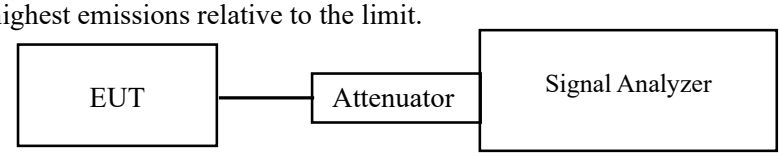
Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

b) Set the RBW = 100 kHz.
c) Set the VBW $\geqslant$ [3 $\times$ RBW].
d) Detector = peak.
e) Sweep time = No faster than coupled (auto) time.
f) Trace mode = max-hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.



Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

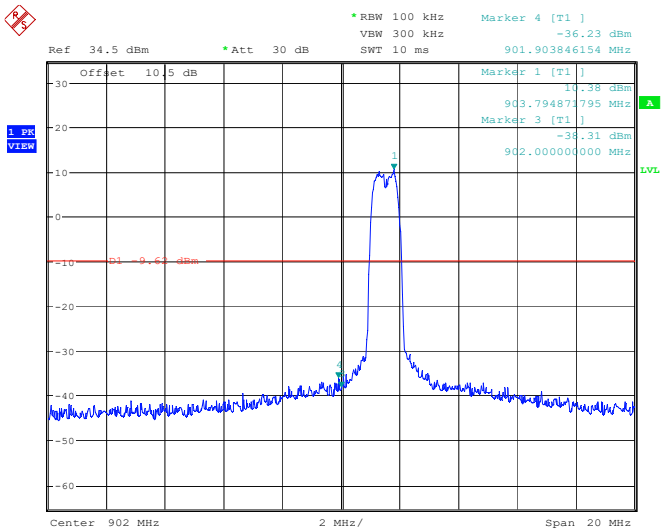
The testing was performed by Cheeb Huang from 2025-07-26 to 2025-09-05.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the following plots.

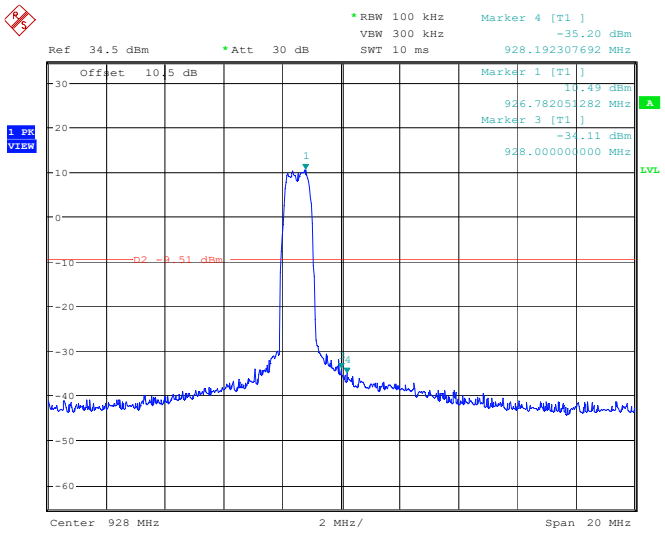
1MHz:

Band edge, Left side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:41:24

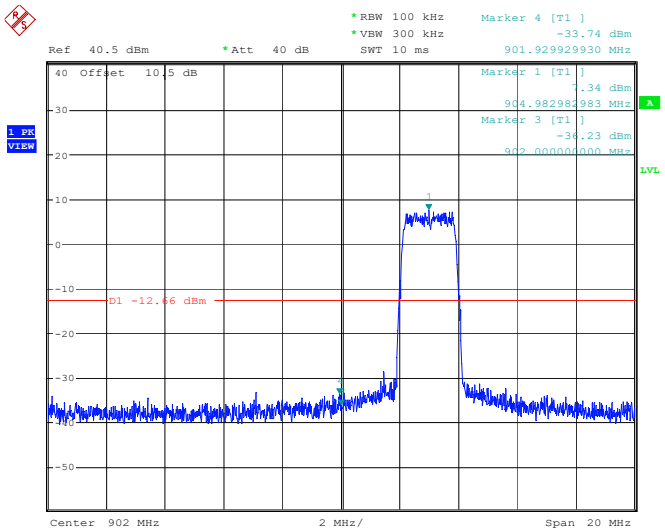
Band edge, Right side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 11:39:53

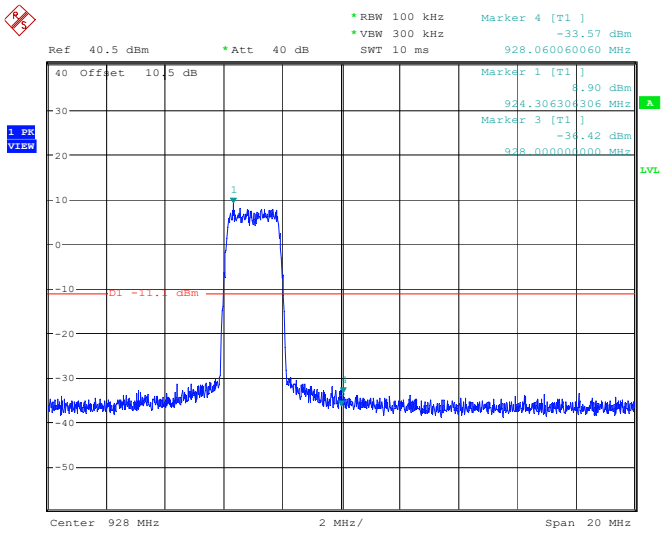
2MHz:

Band edge, Left side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:23:02

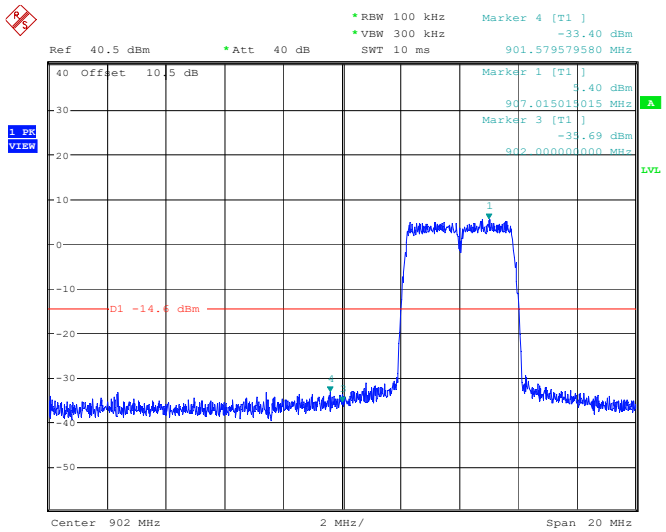
Band edge, Right side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:25:05

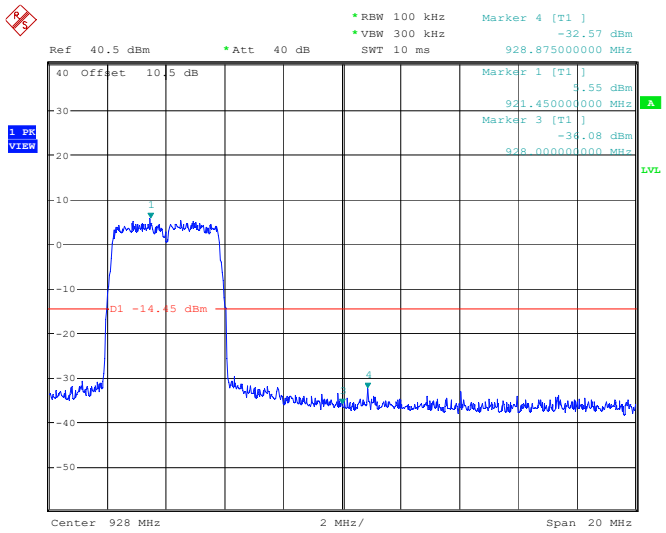
4MHz:

Band edge, Left side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:21:32

Band edge, Right side



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:38:15

FCC §15.247(d) - CONDUCTED SPURIOUS EMISSION

Applicable Standard

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

Test Method: ANSI C63.10-2020 Clause 11.11.3

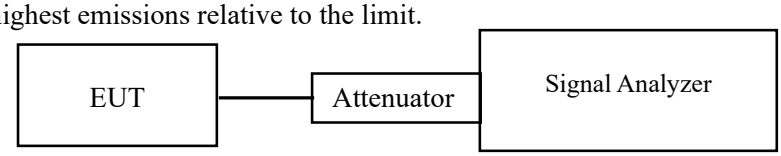
Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

b) Set the RBW = 100 kHz.
c) Set the VBW $\geqslant$ [3 $\times$ RBW].
d) Detector = peak.
e) Sweep time = No faster than coupled (auto) time.
f) Trace mode = max-hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.



Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

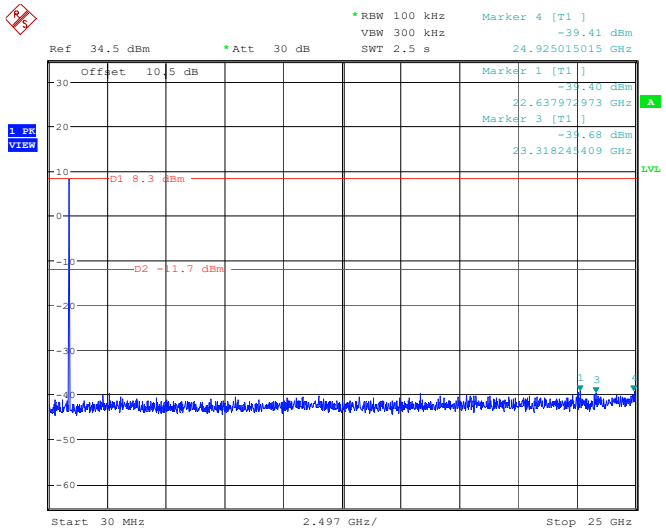
The testing was performed by Cheeb Huang from 2025-07-26 to 2025-09-05.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the following plots.

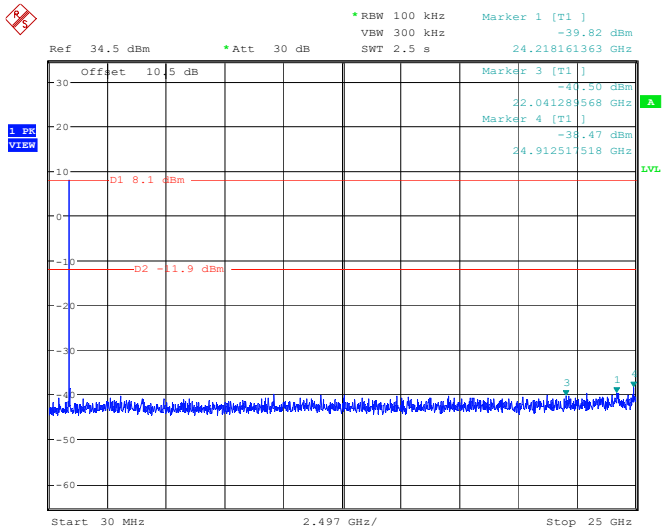
1MHz:

Low Channel



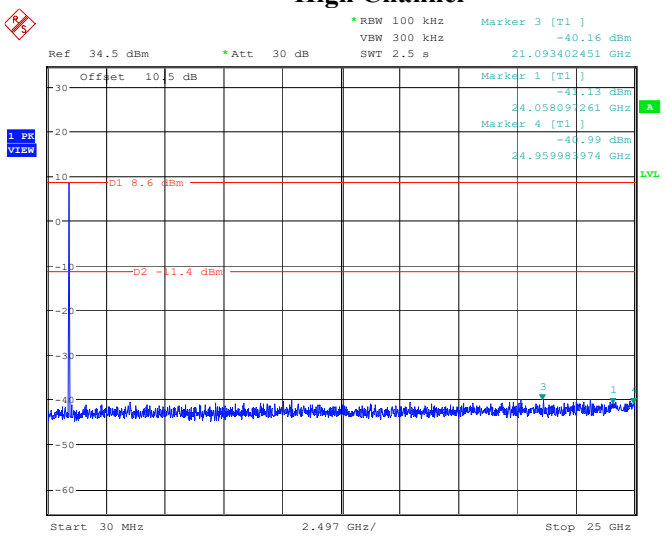
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 12:14:11

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 12:16:20

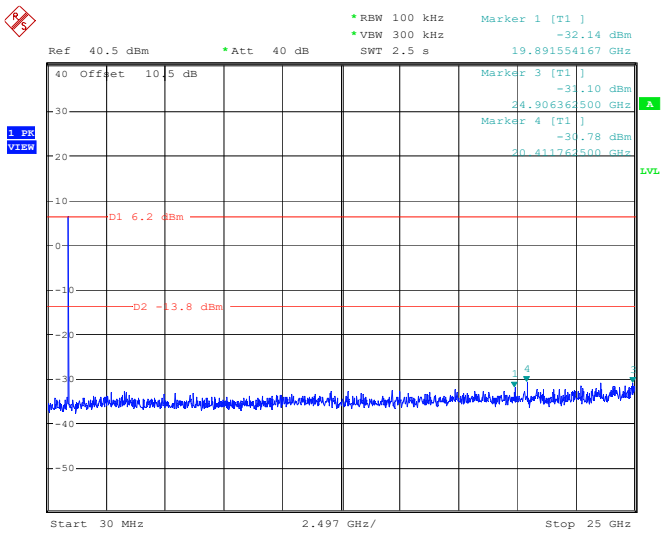
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 12:18:13

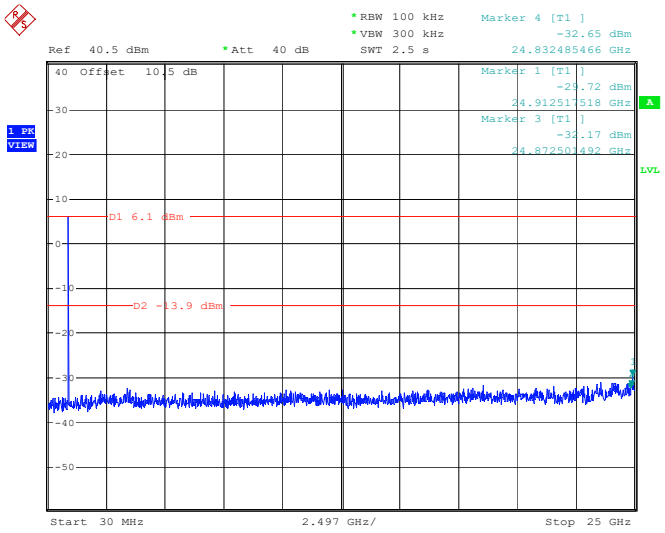
2MHz:

Low Channel



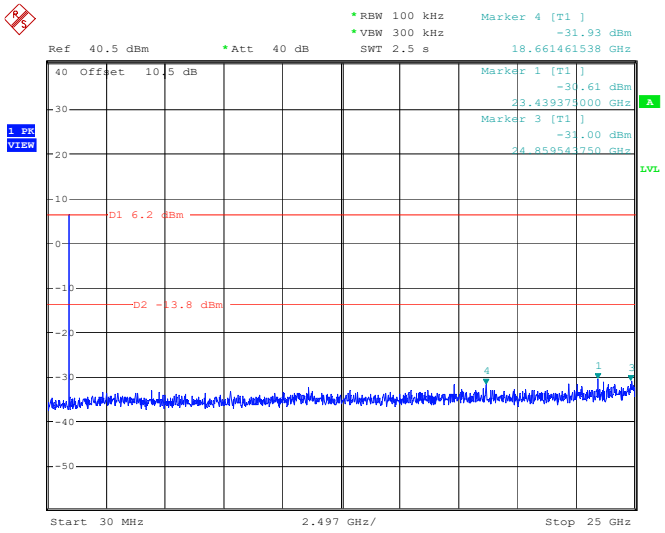
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:50:00

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 20:23:44

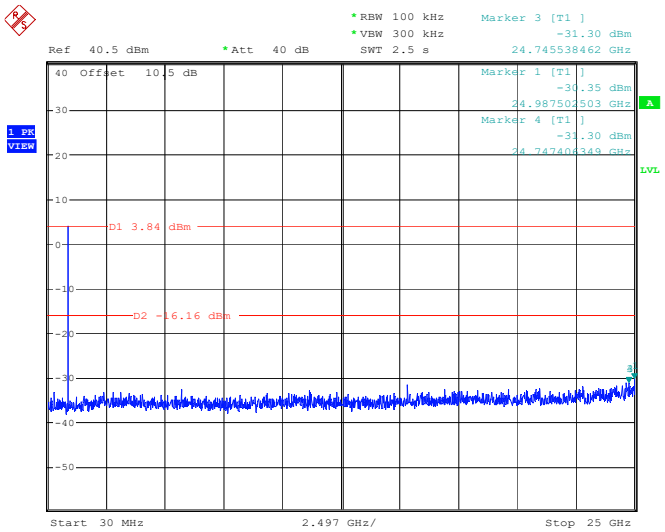
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:54:20

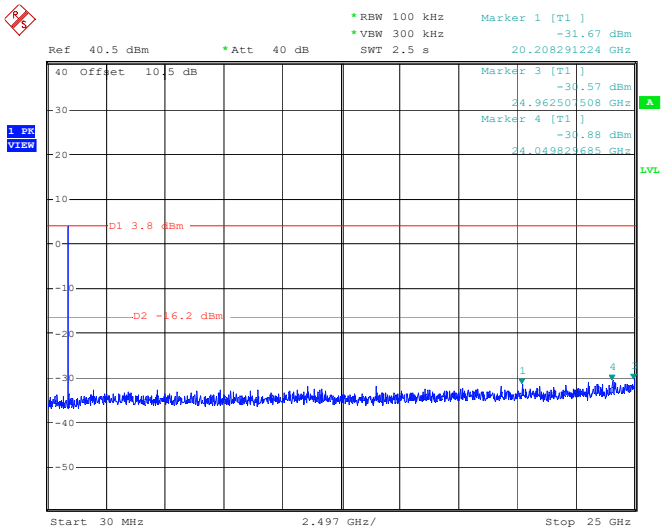
4MHz:

Low Channel



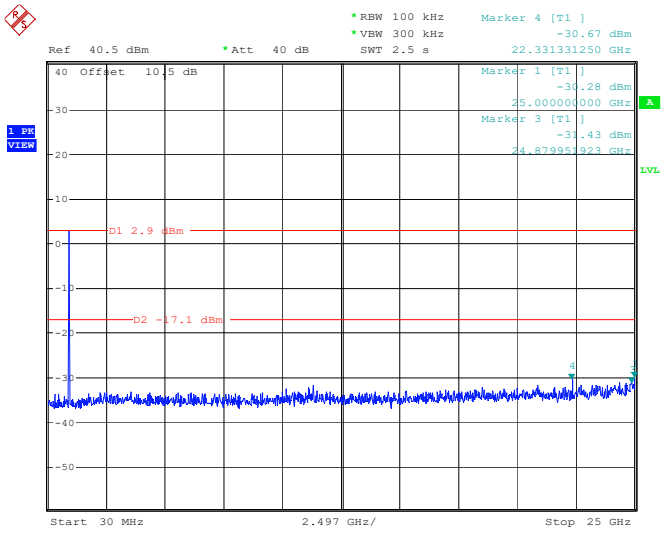
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 20:11:11

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:36:37

High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:45:32

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

a) Set analyzer center frequency to DTS channel center frequency.

b) Set the span >1.5 times the DTS bandwidth.

c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.

d) Set the VBW ≥ [3 × RBW].

e) Detector = peak.

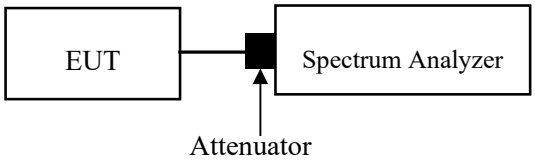
f) Sweep time = No faster than coupled (auto) time.

g) Trace mode = max-hold.

h) Allow trace to fully stabilize.

i) Use the peak marker function to determine the maximum amplitude level within the RBW.

j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable loss

Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang from 2025-07-26 to 2025-09-05.

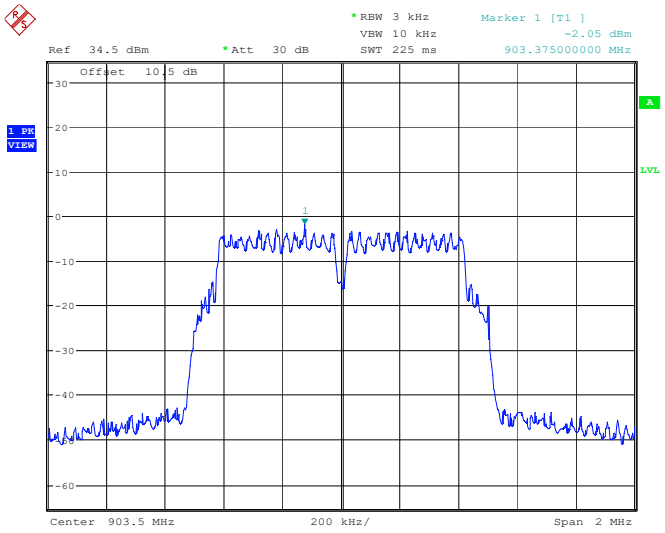
EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

Test Mode	Test Channel	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
1MHz	Lowest	903.5	-2.05	≤8.00
	Middle	914.5	-2.61	≤8.00
	Highest	926.5	-2.38	≤8.00
2MHz	Lowest	905.0	-5.80	≤8.00
	Middle	915.0	-5.32	≤8.00
	Highest	925.0	-5.09	≤8.00
4MHz	Lowest	906.0	-7.30	≤8.00
	Middle	914.0	-7.15	≤8.00
	Highest	922.0	-7.56	≤8.00

1MHz:

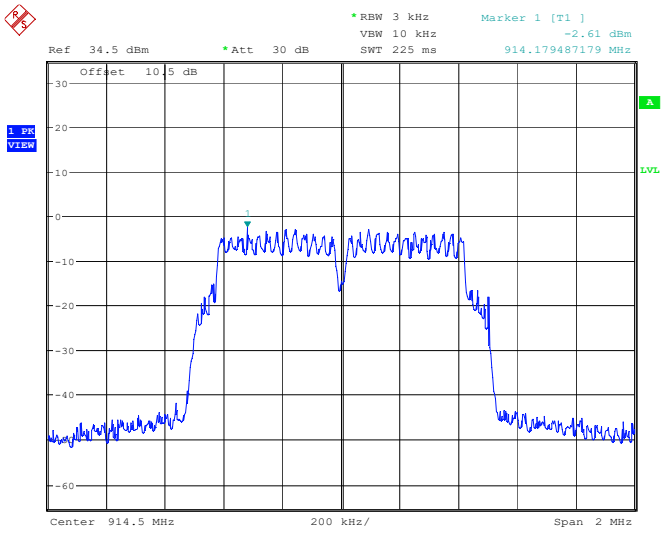
Low Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 5.SEP.2025 12:05:06

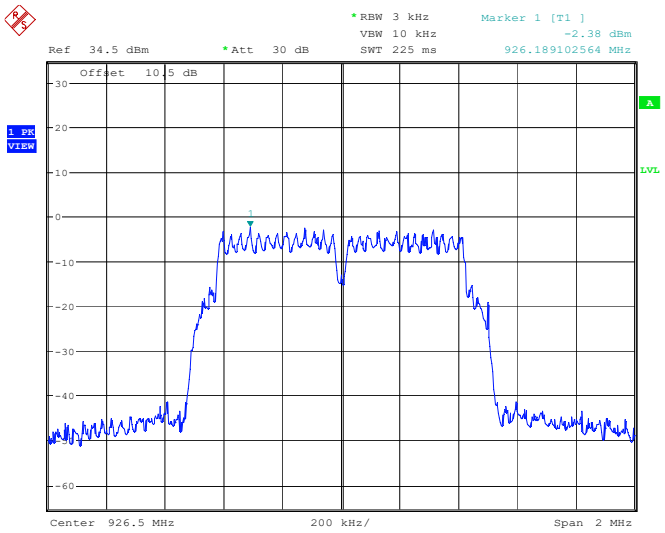
Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 5.SEP.2025 12:03:09

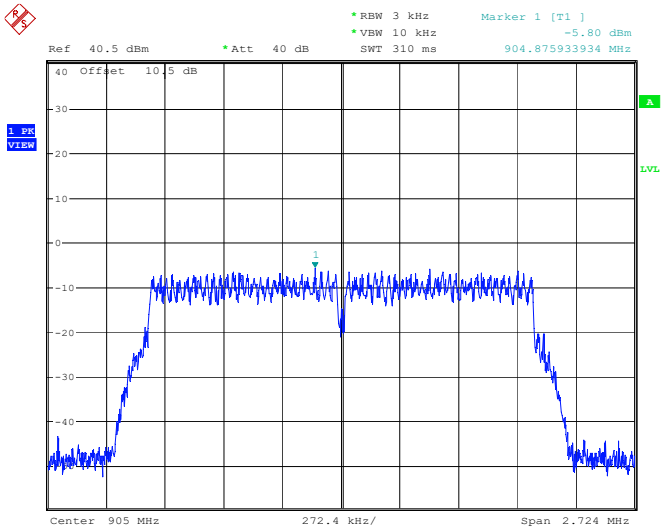
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 5.SEP.2025 12:06:03

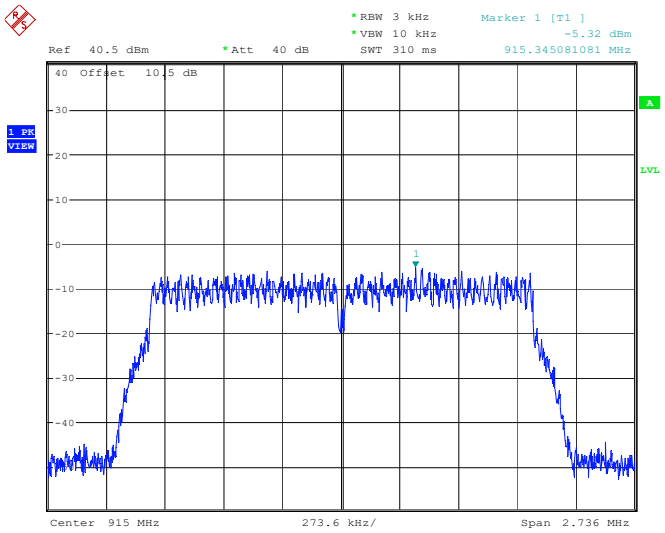
2MHz:

Low Channel



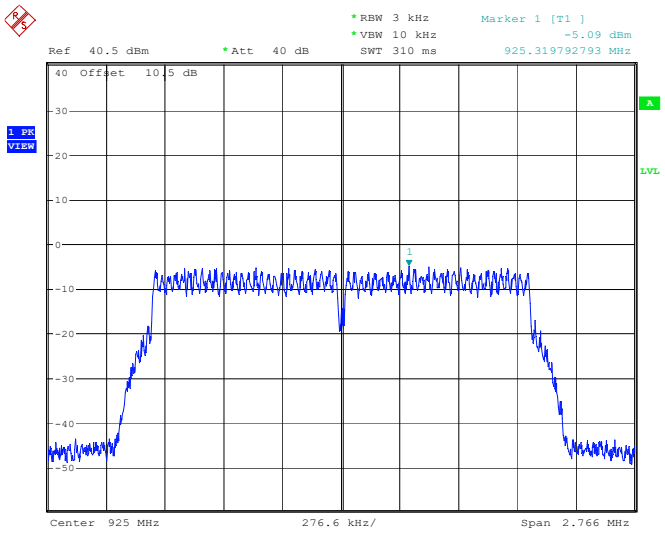
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:52:42

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:50:11

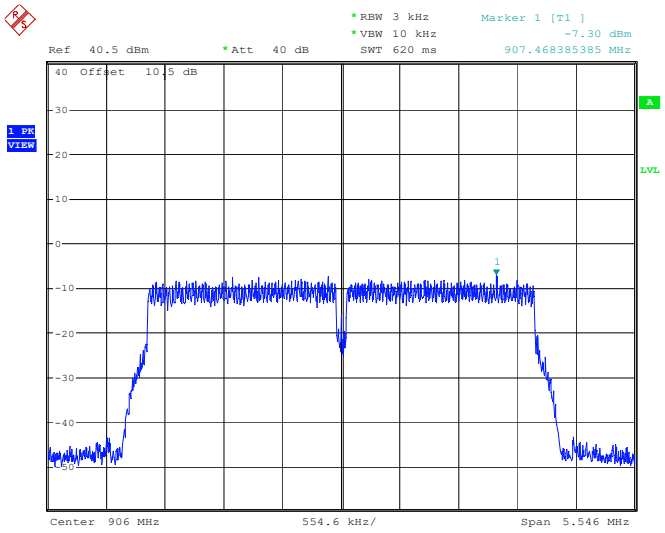
High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 18:46:43

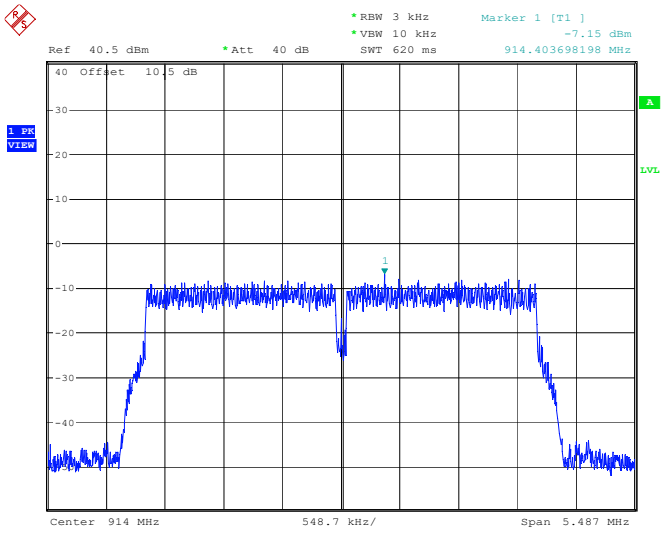
4MHz:

Low Channel



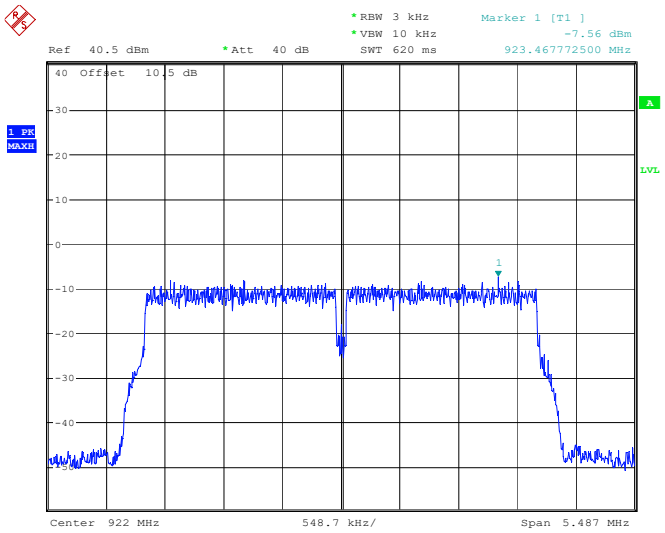
ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:01:30

Middle Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 26.JUL.2025 19:02:49

High Channel



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 17:35:07

C63.10 §11.6- DUTY CYCLE

Test Procedure

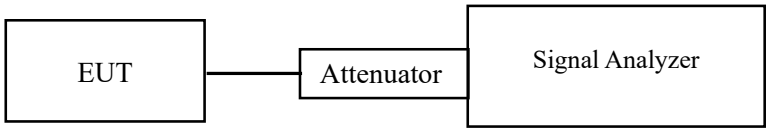
According to ANSI C63.10-2020 Section 11.6

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.

b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

1) Set the center frequency of the instrument to the center frequency of the transmission.
2) Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.
3) Set VBW ≥ RBW. Set detector = peak or average.
4) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if T ≤ 16.7 μs.)



Test Data

Environmental Conditions

Temperature:	25.7~26.5 ℃
Relative Humidity:	53~61 %
ATM Pressure:	101 kPa

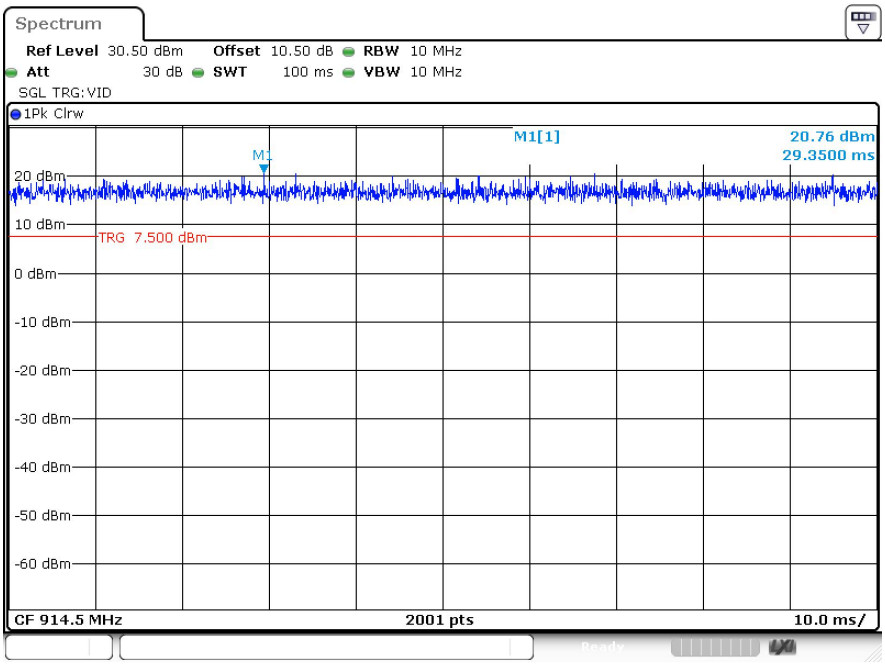
The testing was performed by Cheeb Huang from 2025-08-11 to 2025-09-05.

EUT operation mode: Transmitting

Test Result: Compliant.

Test Mode	Test Frequency (MHz)	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)	$1/T_{on}$ (Hz)	VBW Setting (Hz)
1MHz	914.5	100	100	100.00	/	0.01
2MHz	915.0	100	100	100.00	/	0.01
4MHz	914.0	100	100	100.00	/	0.01

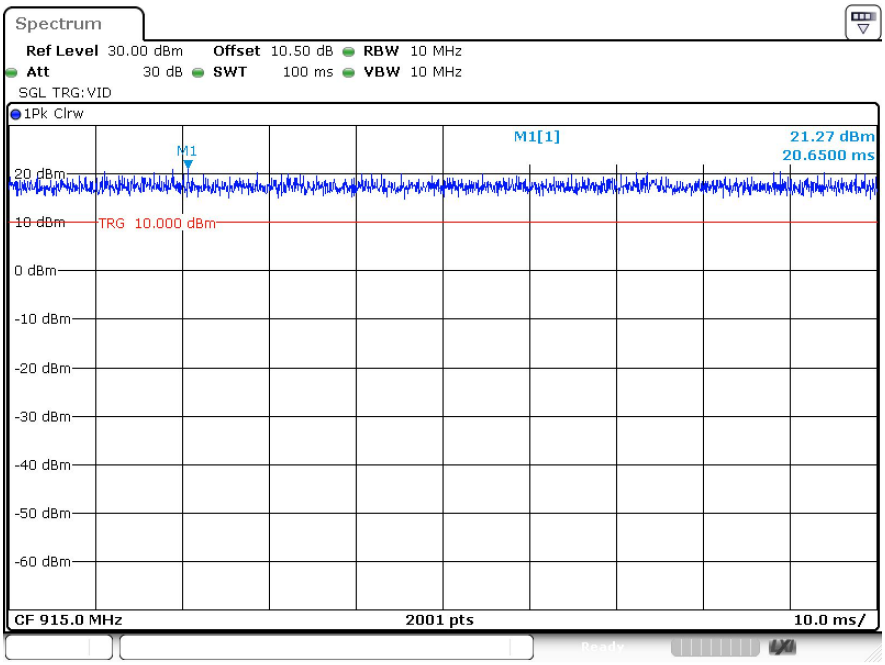
1MHz



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 5.SEP.2025 11:57:11

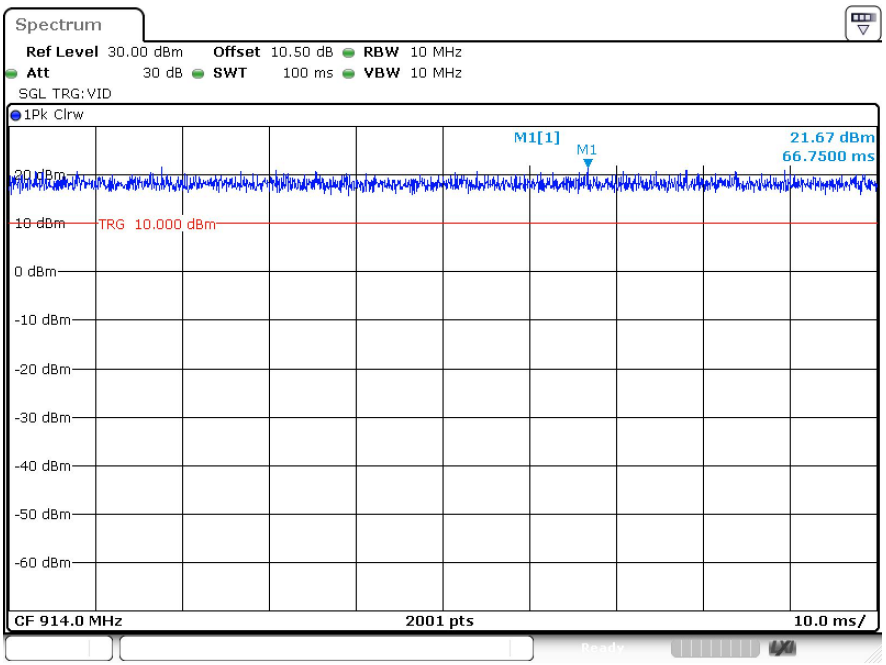
2MHz



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang

Date: 11.AUG.2025 14:07:14

4MHz



ProjectNo.:2501V68922E-RF Tester:Cheeb Huang
Date: 11.AUG.2025 14:05:55

EUT PHOTOGRAPHS

Please refer to the attachment 2501V68922E-RF-EXP External photo and 2501V68922E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501V68922E-RF-00C-TSP Test Setup photo.

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