

TEST REPORT

Applicant Name: Qingdao Highway IOT Technology Co.,Ltd.
Address: No.31,Xinye Road,qingdao,China
Report Number: 2501X06587E-RF-00
FCC ID: 2BT5S-RFIDE8P

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type: UHF RFID Reader
Model No.: HW-RX-E8P
Multiple Model(s) No.: HW-R800, HW-R8, HW-UHF8-860ISM, HW-Rfly-RX-E8P,
HW-RX-E8P-US, HW-RX-E8P-CN, HW-RX-E8P-EU,
HW-RX-E8P-RUS
Trade Mark: 
Date Received: 2025/10/09
Issue Date: 2026/02/06

Test Result:

Pass▲

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

Prepared and Checked By:

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Bruce Lin
RF Engineer

Approved By:

Nancy Wang

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	2501X06587E-RF-00	Original Report	2026/02/06

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	UHF RFID Reader
Tested Model	HW-RX-E8P
Multiple Model(s)	HW-R800, HW-R8, HW-UHF8-860ISM, HW-Rfly-RX-E8P, HW-RX-E8P-US, HW-RX-E8P-CN, HW-RX-E8P-EU, HW-RX-E8P-RUS
Frequency Range	902.75-927.25MHz
Transmit Peak Power	25.32dBm
Modulation Technique	PR-ASK
Antenna Specification [#]	RFID Portal Antenna: 10.5dBi; Bottom Antenna No.12: 10.0dBi (provided by the applicant)
Voltage Range	DC 24V from power
Sample serial number	3AKC-2 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Model: NDR-240-24 Input: 100-240VAC 2.8A 50/60Hz Output: 24VDC, 10A
Note: The Multiple models are electrically identical with the test model except for model number and sales channel. 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 C of the Federal Communication Commission rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.207, 15.205, 15.209 and 15.247 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.

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 output power, conducted		0.86dB(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	9kHz - 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°C
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, test firm 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.

Channel List[#]

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	902.75	11	907.75	21	912.75	31	917.75	41	922.75
2	903.25	12	908.25	22	913.25	32	918.25	42	923.25
3	903.75	13	908.75	23	913.75	33	918.75	43	923.75
4	904.25	14	909.25	24	914.25	34	919.25	44	924.25
5	904.75	15	909.75	25	914.75	35	919.75	45	924.75
6	905.25	16	910.25	26	915.25	36	920.25	46	925.25
7	905.75	17	910.75	27	915.75	37	920.75	47	925.75
8	906.25	18	911.25	28	916.25	38	921.25	48	926.25
9	906.75	19	911.75	29	916.75	39	921.75	49	926.75
10	907.25	20	912.25	30	917.25	40	922.25	50	927.25
EUT was tested with Channel 1, 26 and 50.									

Note: This device has eight antenna ports from the same RF link and do not work simultaneously. The antenna is randomly selected based on the signal strength. Only the worst case is recorded in this report.

EUT Exercise Software

“UHF Software-16 3.0.9.exe”[#] exercise software was used and the power level is 25[#]. The software and power level was provided by the applicant.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Manufacturer	Description	Model	Serial Number
TP-Link	Router	RE705X	Unknown
DELL	PC	DESKTOP-1630AQ3	Unknown

Cable Description	Length (m)	From Port	To
Un-shielding Un-detachable AC Cable	1.2	AC Mains	Receptacle
Un-shielding Detachable AC Cable	1.2	Power	LISN / Receptacle
Un-shielding Un-Detachable DC Cable	1.0	EUT	Power
Un-shielding Detachable Cable	1.0	EUT	UK Terminal
Un-shielding Detachable Cable	1.5	EUT	PC
Un-shielding Detachable RJ45 Cable	3.0	EUT	Router

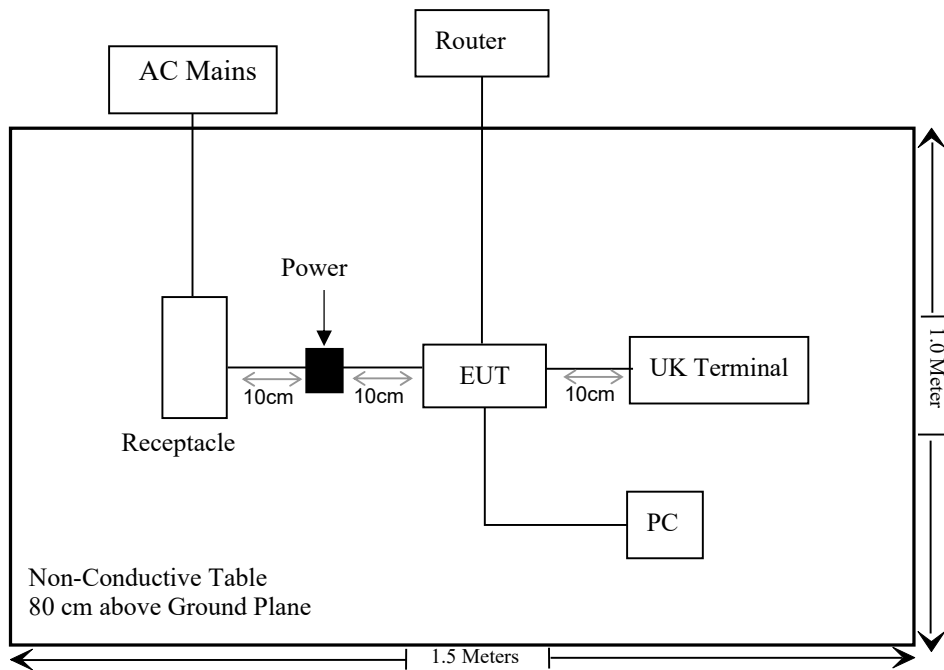
Diagram illustrating the experimental setup for the study. The setup is conducted on a Non-Conductive Table 80 cm above Ground Plane. The table dimensions are 1.5 Meters wide and 1.0 Meter high. The components and their positions are as follows:

- Power**: A small rectangular component on the left side of the table.
- EUT**: Equipment Under Test, positioned to the right of the Power component.
- UK Terminal**: Positioned to the right of the EUT.
- PC**: Personal Computer, positioned to the right of the UK Terminal.
- Router**: Positioned above the table, connected to the Power component and the UK Terminal.
- LISN**: Line Impedance Stabilization Network, connected to the Power component.

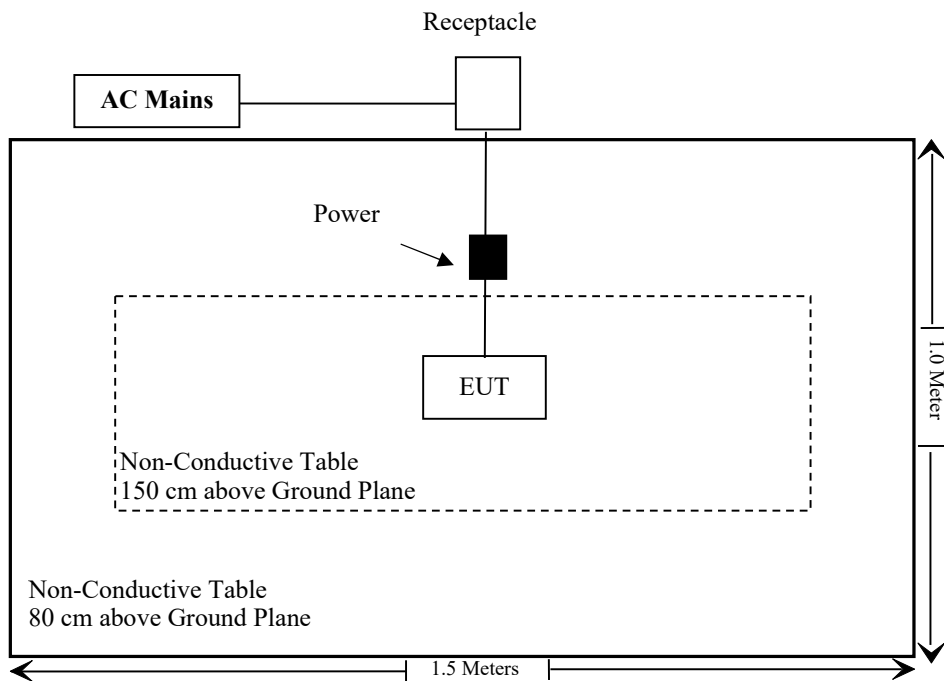
Distances between components are indicated:

- 10cm between Power and EUT.
- 10cm between EUT and UK Terminal.
- 10cm between UK Terminal and PC.

For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
FCC §15.203	Antenna Requirement	Compliant
FCC §15.207(a)	AC Line Conducted Emissions	Compliant
FCC §15.205, §15.209, §15.247(d)	Radiated Spurious emissions	Compliant
FCC §15.247(a)(1)(i)	20 dB Bandwidth	Compliant
FCC §15.247(a)(1)	Channel Separation	Compliant
FCC §15.247(a)(1)(i)	Time of Occupancy (Dwell Time)	Compliant
FCC §15.247(a)(1)(i)	Number of hopping Frequency	Compliant
FCC §15.247(b)(2)	Maximum Conducted Output Power	Compliant
FCC §15.247(d)	Band edges	Compliant
FCC §15.247(d)	Conducted Spurious Emission	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2025/09/01	2026/08/31
Rohde & Schwarz	LISN	ENV216	101613	2025/09/18	2026/09/17
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2025/09/18	2026/09/17
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2025/09/18	2026/09/17
Audix	EMI Test software	E3	191218 V9(c)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2025/09/01	2026/08/31
Sonoma instrument	Pre-amplifier	310 N	186238	2025/09/08	2026/09/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Chamber A Cable	Cable A1	Cable A1	2025/09/08	2026/09/07
Unknown	Chamber A Cable	Cable A2	Cable A2	2025/09/08	2026/09/07
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Chamber A Cable	Cable A3	Cable A3	2025/09/08	2026/09/07
Unknown	Chamber A Cable	Cable A4	Cable A4	2025/09/08	2026/09/07
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
TDK	Chamber	Chamber A	2#	2023/07/12	2026/07/11
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/09/01	2026/08/31
A.H.System	Preamplifier	PAM-0118P	489	2025/09/08	2026/09/07
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	Chamber B Cable	Cable B1	Cable B1	2025/09/08	2026/09/07
Unknown	Chamber B Cable	Cable B2	Cable B2	2025/09/08	2026/09/07
Unknown	Chamber B Cable	Cable B3	Cable B3	2025/09/08	2026/09/07
JD	Filter Switch Unit	DT7220FSU	DS79906	2025/08/12	2026/08/11
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2025/08/12	2026/08/11
Audix	EMI Test software	E3	191218 V9(c)	NCR	NCR
TDK	Chamber	Chamber B	1#	2023/07/14	2026/07/13
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200982	2025/08/12	2026/08/11
Unknown	10dB Attenuator	Unknown	F-03-EM224	2025/06/26	2026/06/25
Unknown	RF Cable	Cable RF2	Cable RF2	2025/09/17	2026/09/16

* **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 §1.1310, §2.1091 - Maximum Permissible Exposure (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Result

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

For worst case:

Mode Frequency (MHz)	Antenna Gain[#]		Max Tune-up Power[#]		Evaluation Distance (cm)	Power Density (mW/cm²)	MPE Limit (mW/cm²)
	(dBi)	(numeric)	(dBm)	(mW)			
902.75-927.25	10.5	11.22	25.5	354.81	25	0.5069	0.602

Note:

1. The tune up conducted power and antenna gain was declared by the applicant.
2. The EUT has two types of antenna and only records the higher gain.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 25cm 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 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 eight external antenna ports with unique antenna connector and two external antennas with unique antenna connector, fulfill the requirement of this section. Please refer to the EUT photos.

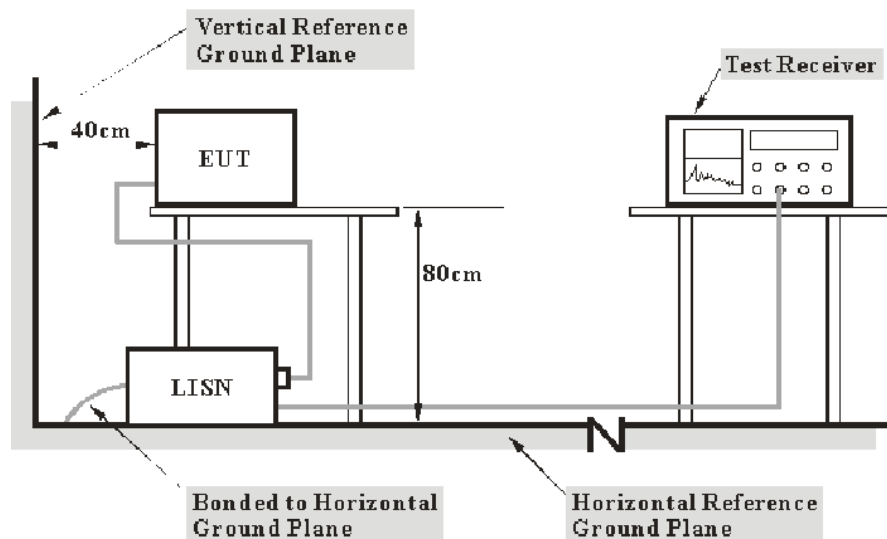
Result: Compliant

FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

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 measurement procedure of EUT setup is according with ANSI C63.10-2020. The related limit was specified in FCC Part 15.207.

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

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

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:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

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:

$$\begin{aligned}\text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Read Level} + \text{Factor}\end{aligned}$$

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

Test Data

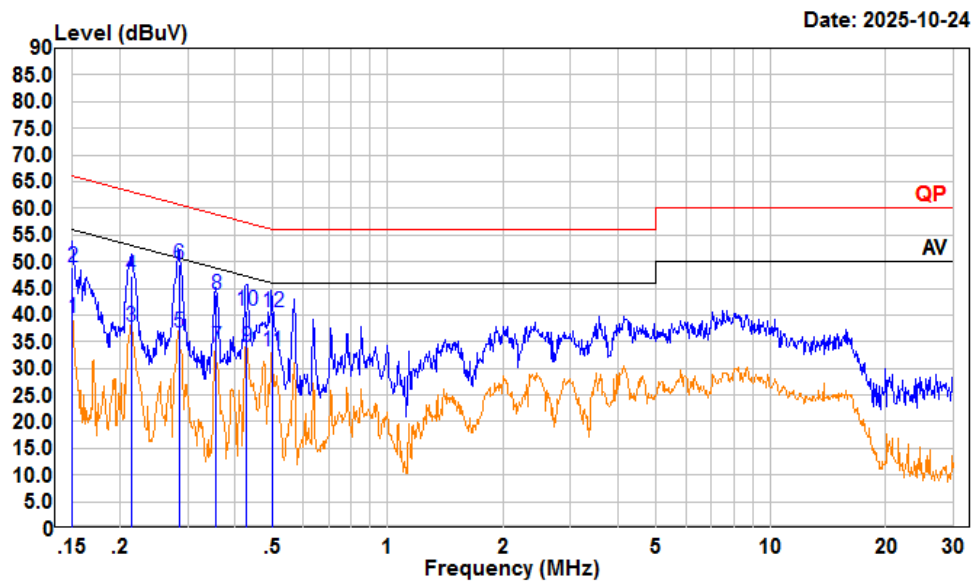
Environmental Conditions

Temperature:	25.1 °C
Relative Humidity:	45 %
ATM Pressure:	101.1 kPa

The testing was performed by Macy Shi on 2025-10-24.

EUT operation mode: Transmitting (Maximum output power mode, 927.25MHz)

AC 120V/60 Hz, Line



Condition: Line

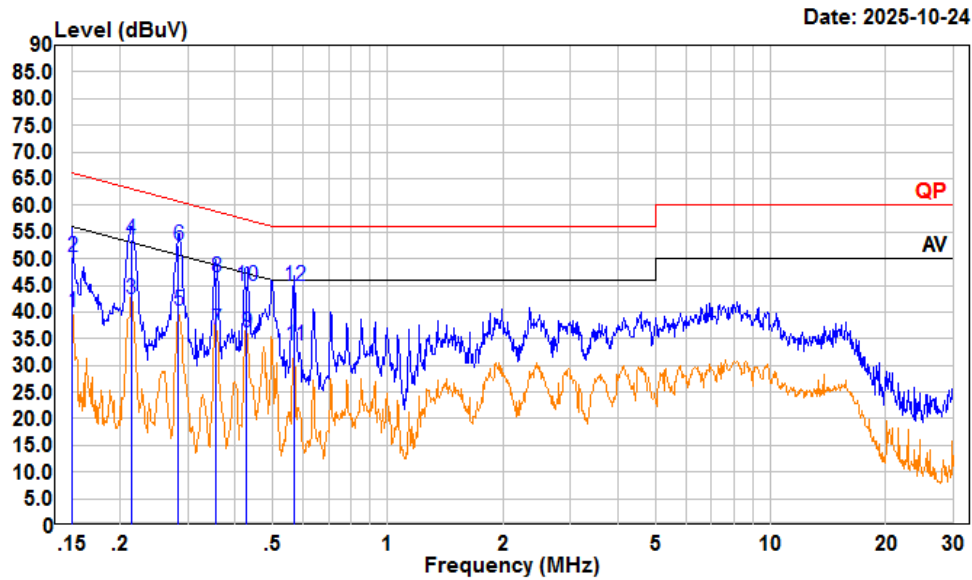
Project : 2501X06587E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	19.85	39.47	9.60	10.02	56.00	-16.53	Average
2	0.150	29.32	48.94	9.60	10.02	66.00	-17.06	QP
3	0.214	18.17	37.80	9.60	10.03	53.06	-15.26	Average
4	0.214	27.70	47.33	9.60	10.03	63.06	-15.73	QP
5	0.286	17.09	36.72	9.60	10.03	50.65	-13.93	Average
6	0.286	29.88	49.51	9.60	10.03	60.65	-11.14	QP
7	0.356	14.34	33.97	9.60	10.03	48.82	-14.85	Average
8	0.356	24.12	43.75	9.60	10.03	58.82	-15.07	QP
9	0.428	14.30	33.93	9.60	10.03	47.30	-13.37	Average
10	0.428	21.16	40.79	9.60	10.03	57.30	-16.51	QP
11	0.498	13.57	33.20	9.60	10.03	46.03	-12.83	Average
12	0.498	20.85	40.48	9.60	10.03	56.03	-15.55	QP

AC 120V/60 Hz, Neutral



Condition: neutral

Project : 2501X06587E-RF

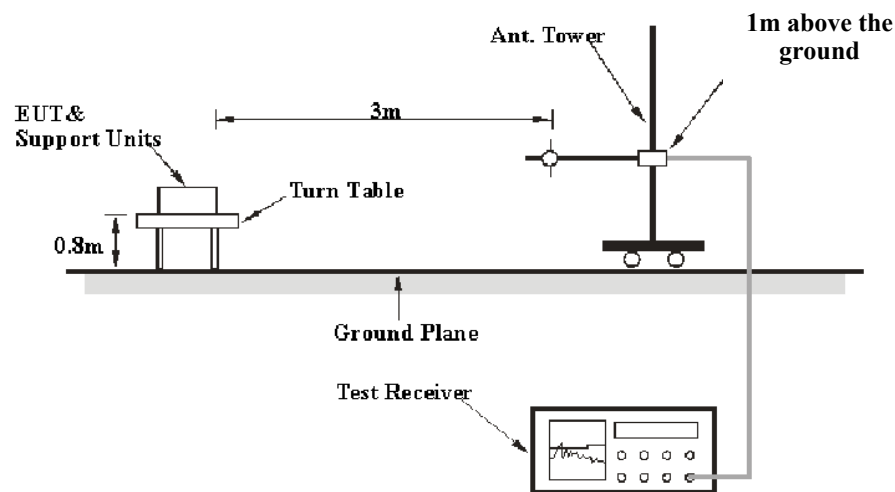
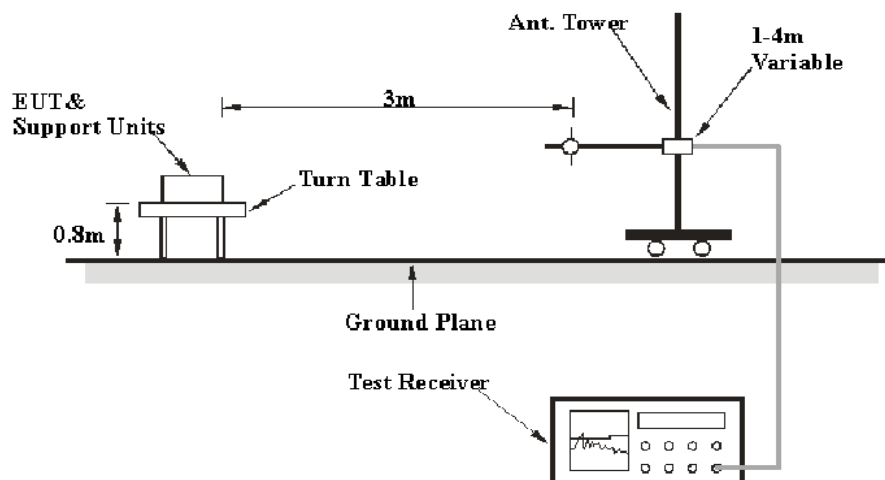
tester : Macy.shi Note:Transmitting

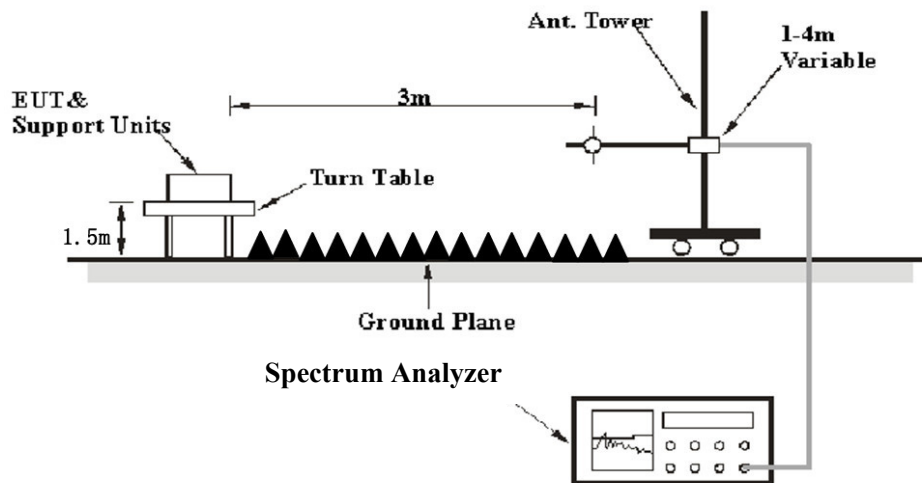
Setting : RBW:9kHz

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	20.49	40.11	9.60	10.02	56.00	-15.89	Average
2	0.150	30.63	50.25	9.60	10.02	66.00	-15.75	QP
3	0.214	22.89	42.52	9.60	10.03	53.06	-10.54	Average
4	0.214	33.93	53.56	9.60	10.03	63.06	-9.50	QP
5	0.285	20.55	40.18	9.60	10.03	50.68	-10.50	Average
6	0.285	32.92	52.55	9.60	10.03	60.68	-8.13	QP
7	0.356	17.00	36.63	9.60	10.03	48.83	-12.20	Average
8	0.356	27.00	46.63	9.60	10.03	58.83	-12.20	QP
9	0.428	16.62	36.25	9.60	10.03	47.30	-11.05	Average
10	0.428	25.15	44.78	9.60	10.03	57.30	-12.52	QP
11	0.570	14.12	33.76	9.60	10.04	46.00	-12.24	Average
12	0.570	25.22	44.86	9.60	10.04	56.00	-11.14	QP

FCC §15.205, §15.209 & §15.247(d) - RADIATED EMISSIONS**Applicable Standard**

FCC §15.205; §15.209; §15.247(d)

EUT Setup**9 kHz-30MHz:****30MHz-1GHz:**

Above 1GHz:

The radiated emission tests were performed in the 3 meters, 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

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement	Detector
9 kHz – 150 kHz	/	/	200 Hz	QP	QP
	300 Hz	1 kHz	/	PK	Peak
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	Peak
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	Peak
Above 1 GHz	1MHz	3 MHz	/	PK	Peak
	1MHz	≥10 Hz	/	Average	Peak

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:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\begin{aligned}\text{Over Limit/Margin} &= \text{Level/Corrected Amplitude} - \text{Limit} \\ \text{Level / Corrected Amplitude} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Test Data

Environmental Conditions

Temperature:	23.6~23.8 °C
Relative Humidity:	49~58 %
ATM Pressure:	101.1~102.3 kPa

The testing was performed by Nico Wu on 2025-12-10 for below 1GHz and Wing K Ji on 2025-12-26 for above 1GHz.

Test mode: Transmitting

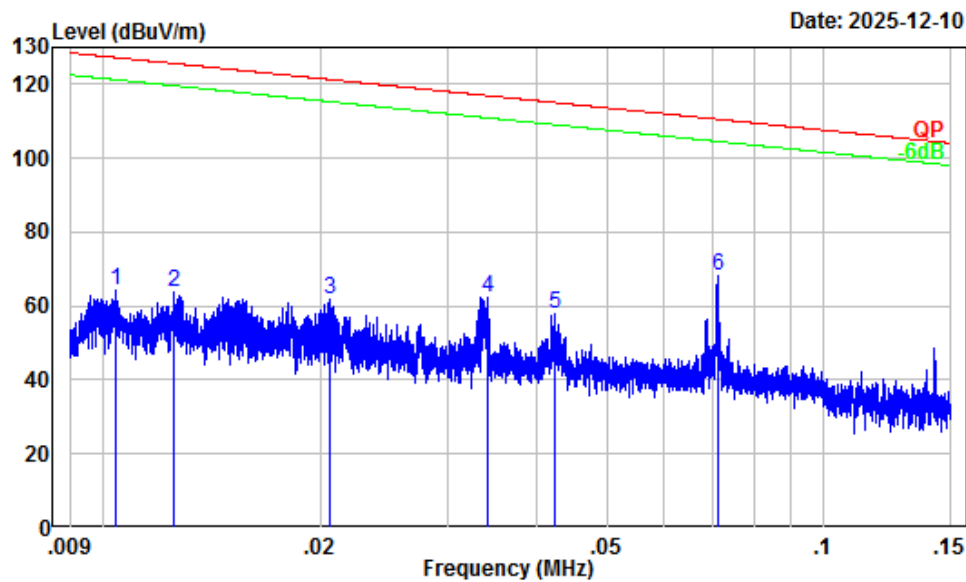
Note:

- 1. After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.*
- 2. 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 were recorded.*

RFID Portal Antenna

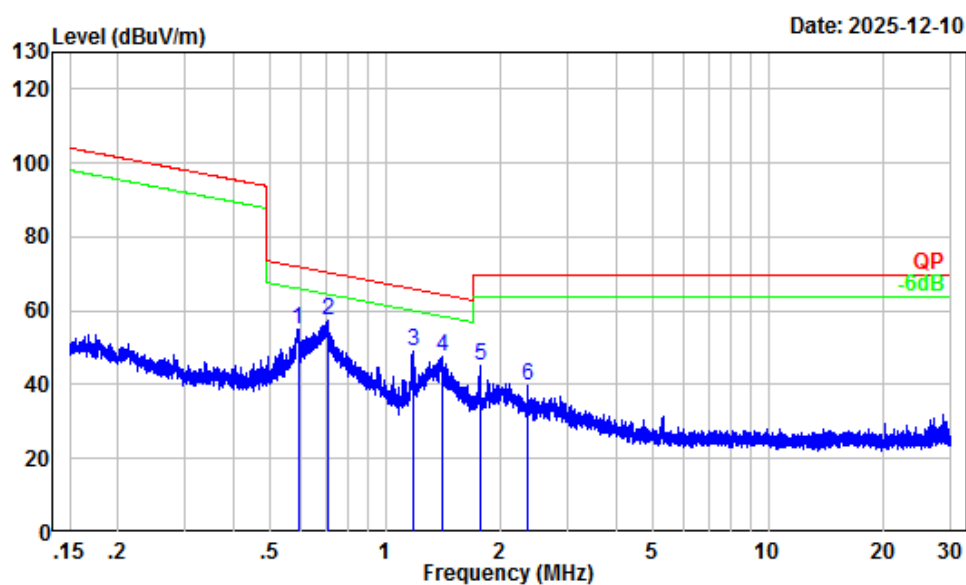
9 kHz-30MHz: (Maximum output power mode, 927.25MHz)

Parallel (worst case)



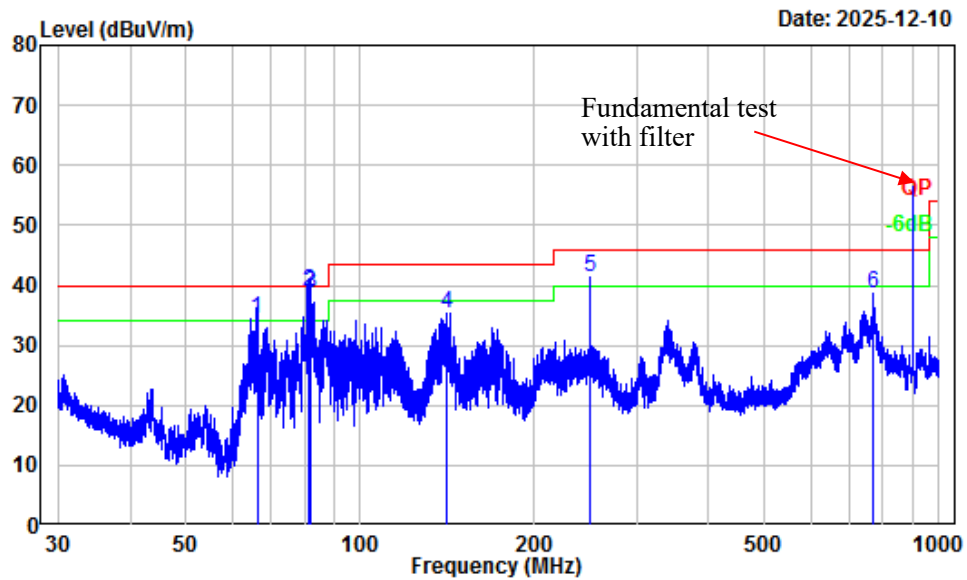
Site : Chamber A
Condition : 3m
Project Number : 2501X06587E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.010	32.22	31.99	64.21	127.25	-63.04	Peak
2	0.013	31.81	32.12	63.93	125.61	-61.68	Peak
3	0.021	30.28	31.36	61.64	121.32	-59.68	Peak
4	0.034	28.06	34.45	62.51	116.94	-54.43	Peak
5	0.042	27.21	30.79	58.00	115.07	-57.07	Peak
6	0.071	24.27	44.11	68.38	110.55	-42.17	Peak



Site : Chamber A
 Condition : 3m
 Project Number : 2501X06587E-RF
 Test Mode : Transmitting
 Detector: Peak RBW/VBW: 10/30kHz
 Tester : Nico Wu

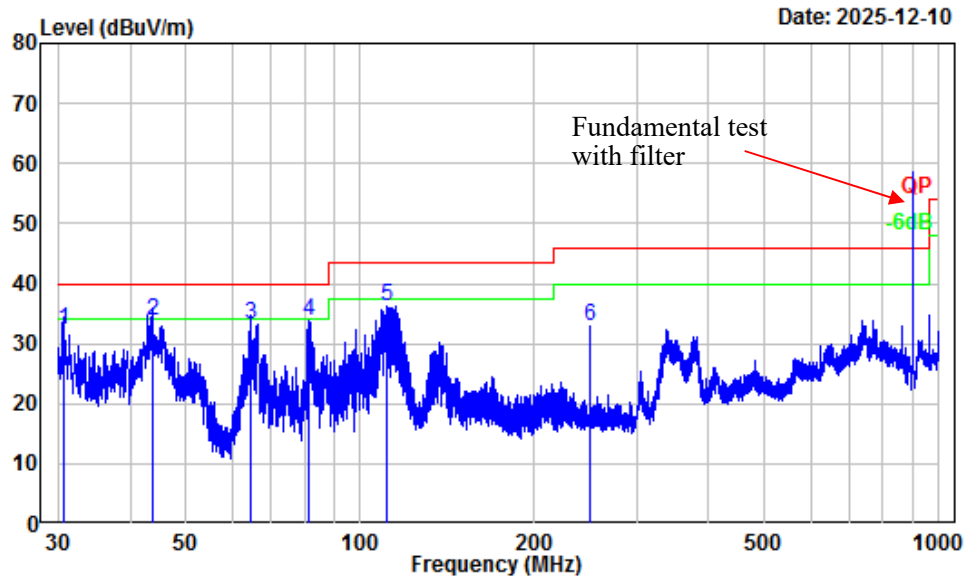
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.592	5.26	49.83	55.09	72.12	-17.03	Peak
2	0.710	3.81	53.59	57.40	70.51	-13.11	Peak
3	1.178	0.70	48.49	49.19	66.02	-16.83	Peak
4	1.406	0.06	47.37	47.43	64.45	-17.02	Peak
5	1.766	-0.94	45.88	44.94	69.54	-24.60	Peak
6	2.355	-1.80	41.43	39.63	69.54	-29.91	Peak

30MHz-1GHz: (Maximum output power mode, 927.25MHz)**Horizontal**

Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501X06587E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Nico Wu

	Freq Factor		Read	Limit	Over	Remark
	MHz	dB/m	Level	Level	Line	
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	66.30	-17.88	52.39	34.51	40.00	-5.49 QP
2	81.18	-18.00	57.00	39.00	40.00	-1.00 QP
3	82.03	-18.00	56.70	38.70	40.00	-1.30 QP
4	141.21	-11.91	47.31	35.40	43.50	-8.10 Peak
5	249.97	-13.09	54.50	41.41	46.00	-4.59 QP
6	772.13	-2.52	41.28	38.76	46.00	-7.24 Peak

Vertical



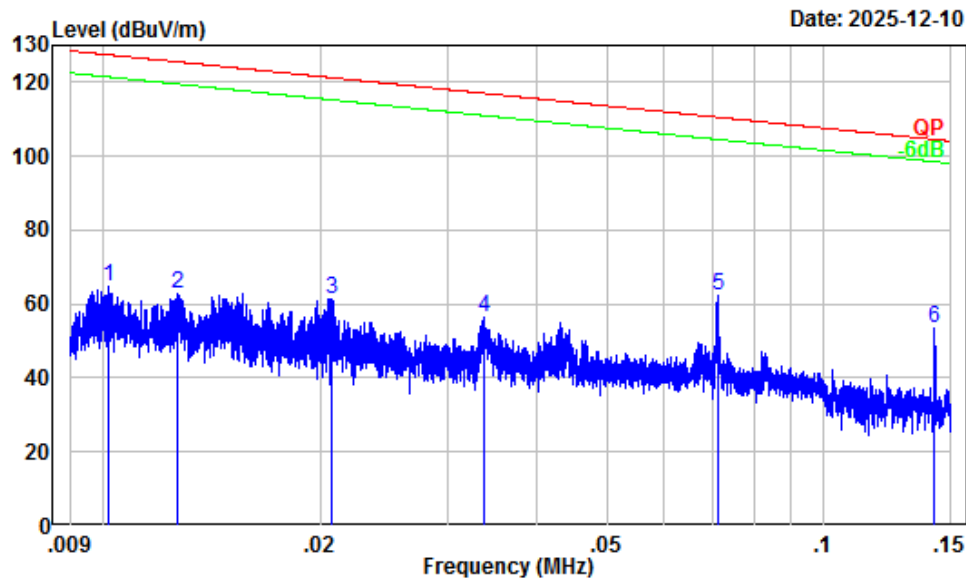
Site : Chamber A
Condition : 3m Vertical
Project Number : 2501X06587E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.62	-6.28	38.50	32.22	40.00	-7.78	QP
2	43.81	-15.06	49.00	33.94	40.00	-6.06	QP
3	64.77	-18.00	51.10	33.10	40.00	-6.90	QP
4	81.21	-18.00	51.74	33.74	40.00	-6.26	Peak
5	111.49	-12.82	49.17	36.35	43.50	-7.15	Peak
6	249.97	-13.09	46.01	32.92	46.00	-13.08	Peak

Bottom Antenna No.12

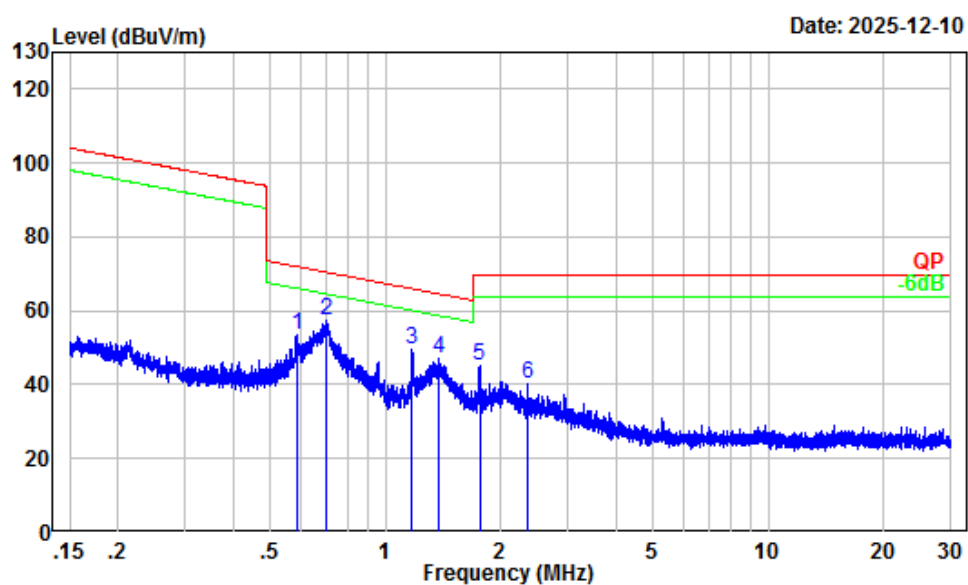
9 kHz-30MHz: (Maximum output power mode, 927.25MHz)

Parallel (worst case)



Site : Chamber A
Condition : 3m
Project Number : 2501X06587E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.010	32.27	32.68	64.95	127.46	-62.51	Peak
2	0.013	31.79	31.00	62.79	125.53	-62.74	Peak
3	0.021	30.26	30.91	61.17	121.27	-60.10	Peak
4	0.034	28.11	28.54	56.65	117.04	-60.39	Peak
5	0.071	24.28	38.04	62.32	110.55	-48.23	Peak
6	0.142	19.50	34.19	53.69	104.53	-50.84	Peak

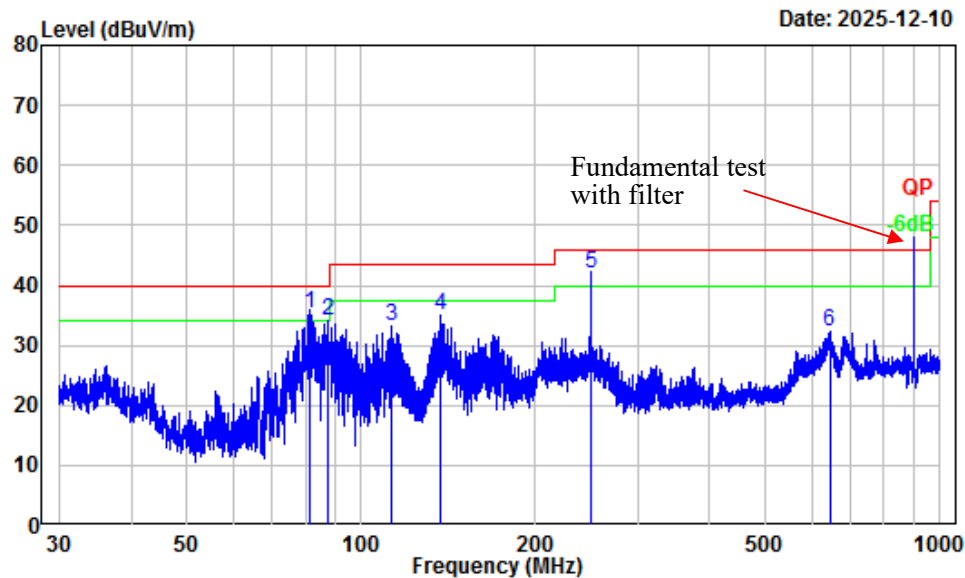


Site : Chamber A
 Condition : 3m
 Project Number : 2501X06587E-RF
 Test Mode : Transmitting
 Detector: Peak RBW/VBW: 10/30kHz
 Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.589	5.30	48.05	53.35	72.16	-18.81	Peak
2	0.700	3.93	53.38	57.31	70.64	-13.33	Peak
3	1.176	0.71	48.80	49.51	66.04	-16.53	Peak
4	1.375	0.15	46.98	47.13	64.65	-17.52	Peak
5	1.762	-0.93	46.01	45.08	69.54	-24.46	Peak
6	2.351	-1.79	41.95	40.16	69.54	-29.38	Peak

30MHz-1GHz: (Maximum output power mode, 927.25MHz)

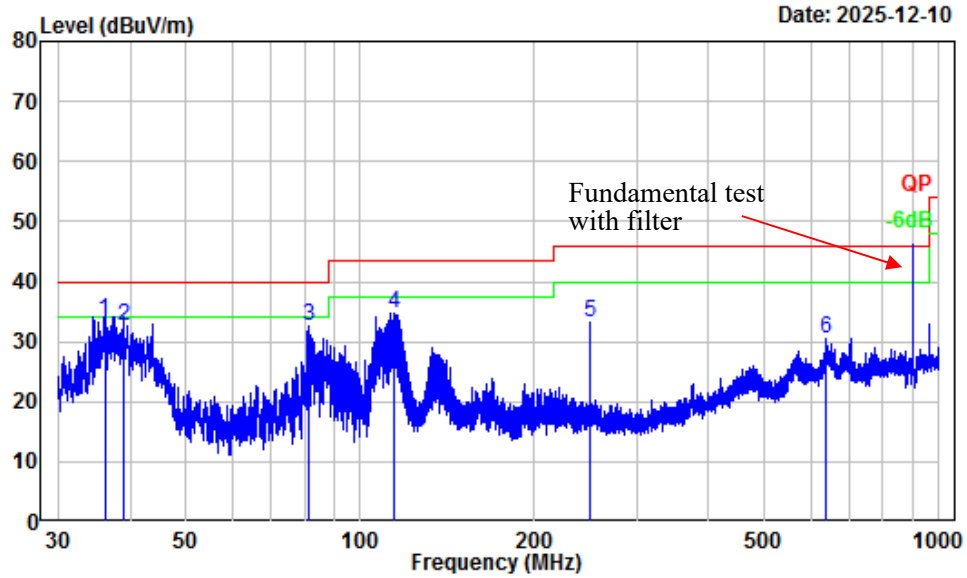
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501X06587E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	81.18	-18.00	53.40	35.40	40.00	-4.60	QP
2	87.65	-18.08	52.08	34.00	40.00	-6.00	Peak
3	113.07	-12.54	45.74	33.20	43.50	-10.30	Peak
4	136.94	-11.60	46.53	34.93	43.50	-8.57	Peak
5	249.97	-13.09	55.10	42.01	46.00	-3.99	QP
6	644.84	-4.23	36.39	32.16	46.00	-13.84	Peak

Vertical



Site : Chamber A
 Condition : 3m Vertical
 Project Number : 2501X06587E-RF
 Test Mode : Transmitting
 Detector: Peak RBW/VBW: 100/300kHz
 Tester : Nico Wu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	36.14	-9.59	43.09	33.50	40.00	-6.50	QP
2	38.97	-11.66	44.31	32.65	40.00	-7.35	QP
3	81.21	-18.00	50.49	32.49	40.00	-7.51	Peak
4	114.56	-12.22	47.06	34.84	43.50	-8.66	Peak
5	249.97	-13.09	46.26	33.17	46.00	-12.83	Peak
6	639.77	-4.24	34.76	30.52	46.00	-15.48	Peak

Above 1GHz:

Frequency (MHz)	Reading (dBμV)	PK/AV	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
RFID Portal Antenna							
Low Channel							
1805.50	59.66	PK	H	-13.99	45.67	74	-28.33
1805.50	61.05	PK	V	-13.99	47.06	74	-26.94
2708.25	74.88	PK	H	-10.50	64.38	74	-9.62
2708.25	56.43	AV	H	-10.50	45.93	54	-8.07
2708.25	76.55	PK	V	-10.50	66.05	74	-7.95
2708.25	58.14	AV	V	-10.50	47.64	54	-6.36
Middle Channel							
1830.50	57.47	PK	H	-13.84	43.63	74	-30.37
1830.50	57.92	PK	V	-13.84	44.08	74	-29.92
2745.75	73.31	PK	H	-10.63	62.68	74	-11.32
2745.75	55.30	AV	H	-10.63	44.67	54	-9.33
2745.75	75.58	PK	V	-10.63	64.95	74	-9.05
2745.75	58.19	AV	V	-10.63	47.56	54	-6.44
High Channel							
1854.50	62.39	PK	H	-13.70	48.69	74	-25.31
1854.50	63.52	PK	V	-13.70	49.82	74	-24.18
2781.75	71.67	PK	H	-10.63	61.04	74	-12.96
2781.75	55.36	AV	H	-10.63	44.73	54	-9.27
2781.75	73.59	PK	V	-10.63	62.96	74	-11.04
2781.75	56.94	AV	V	-10.63	46.31	54	-7.69

Frequency (MHz)	Reading (dB μ V)	PK/AV	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
Bottom Antenna No.12							
Low Channel							
1805.50	53.06	PK	H	-13.99	39.07	74	-34.93
1805.50	54.23	PK	V	-13.99	40.24	74	-33.76
2708.25	76.95	PK	H	-10.50	66.45	74	-7.55
2708.25	57.95	AV	H	-10.50	47.45	54	-6.55
2708.25	78.69	PK	V	-10.50	68.19	74	-5.81
2708.25	58.07	AV	V	-10.50	47.57	54	-6.43
Middle Channel							
1830.50	53.85	PK	H	-13.84	40.01	74	-33.99
1830.50	54.53	PK	V	-13.84	40.69	74	-33.31
2745.75	68.69	PK	H	-10.63	58.06	74	-15.94
2745.75	52.98	AV	H	-10.63	42.35	54	-11.65
2745.75	70.69	PK	V	-10.63	60.06	74	-13.94
2745.75	54.14	AV	V	-10.63	43.51	54	-10.49
High Channel							
1854.50	53.62	PK	H	-13.70	39.92	74	-34.08
1854.50	58.10	PK	V	-13.70	44.40	74	-29.60
2781.75	66.45	PK	H	-10.63	55.82	74	-18.18
2781.75	51.15	AV	H	-10.63	40.52	54	-13.48
2781.75	69.39	PK	V	-10.63	58.76	74	-15.24
2781.75	53.87	AV	V	-10.63	43.24	54	-10.76

Note:

Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Factor + Reading

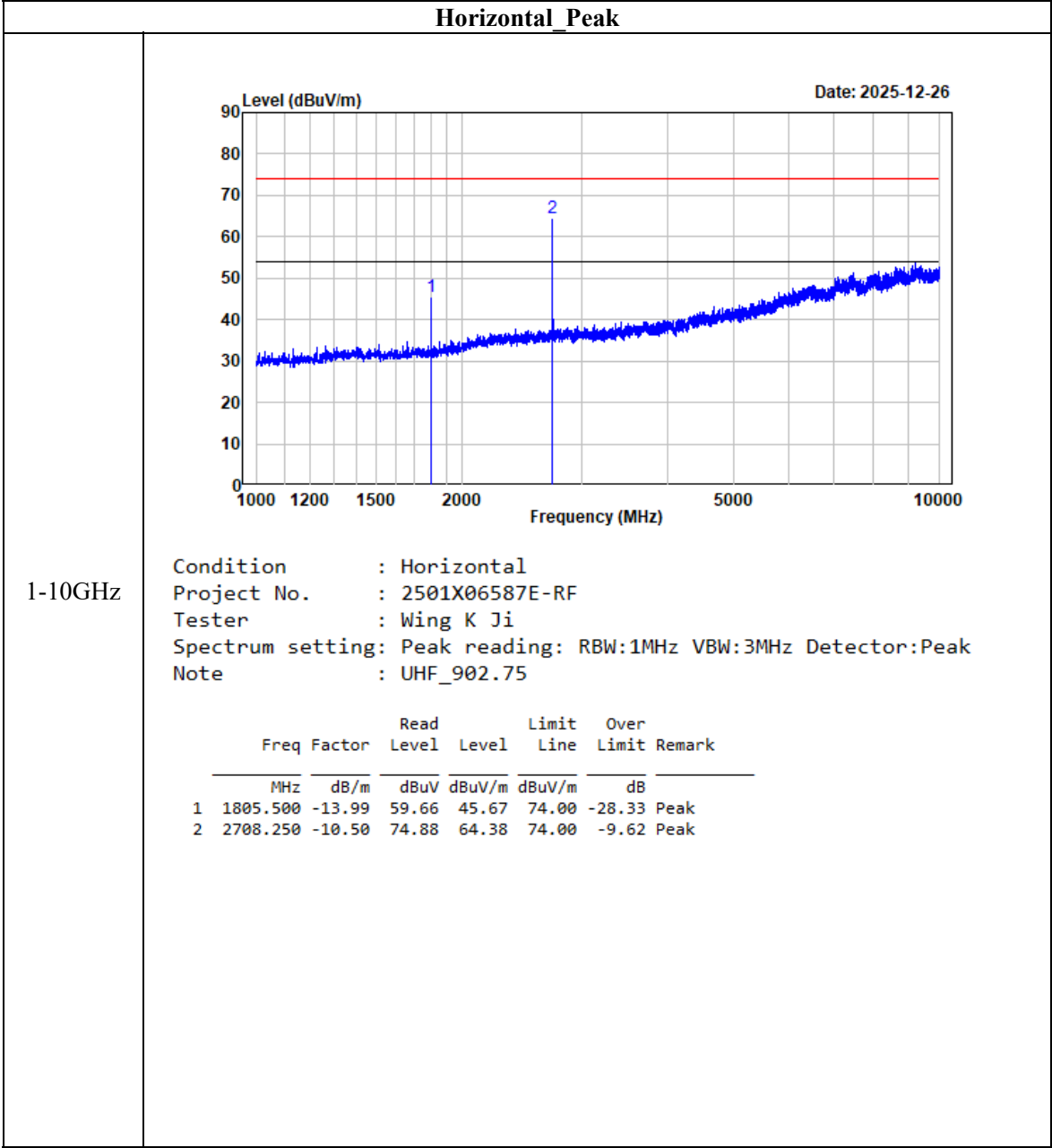
Margin = Corrected. Amplitude - Limit

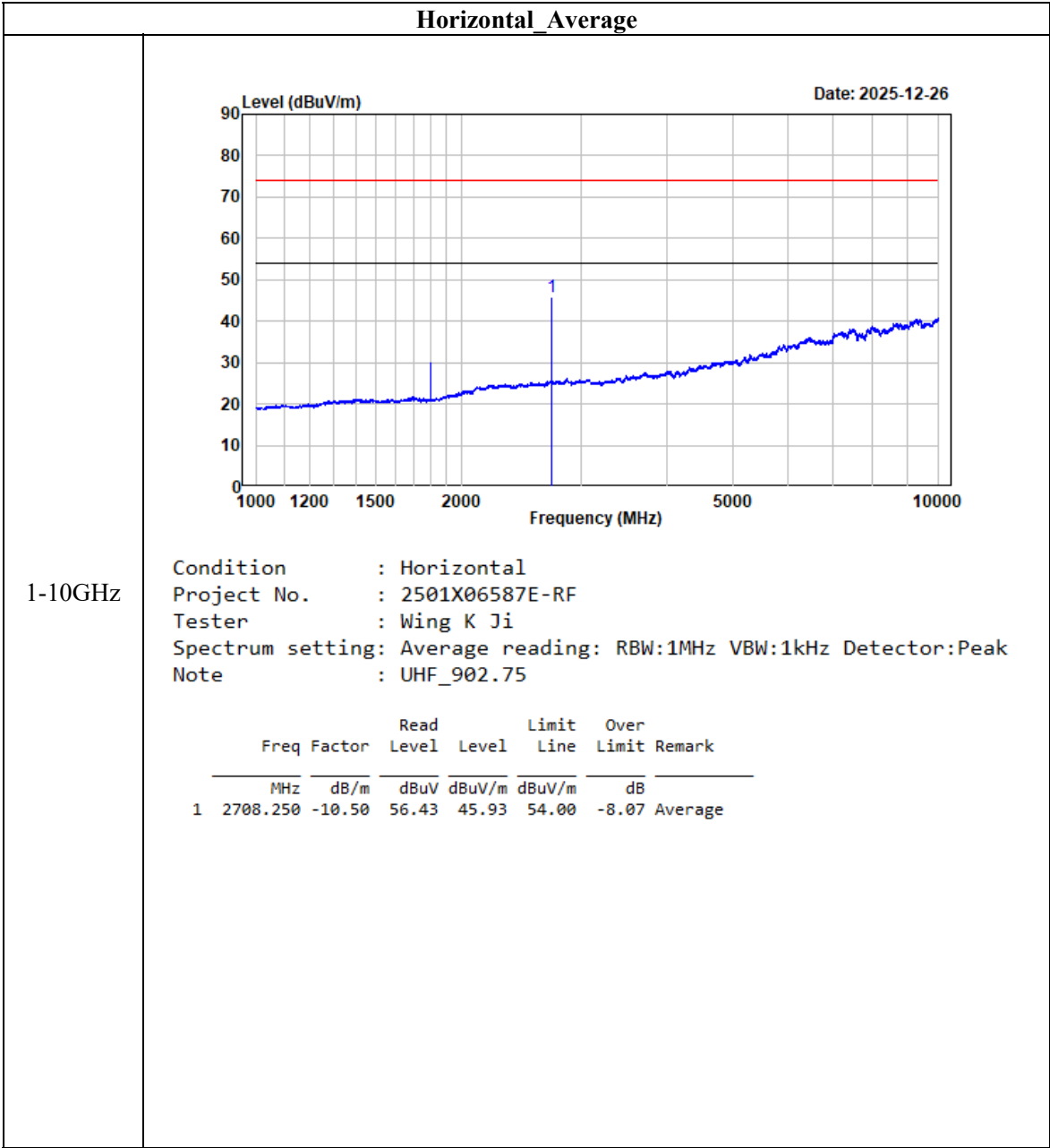
The other spurious emission which is in the noise floor level was not recorded.

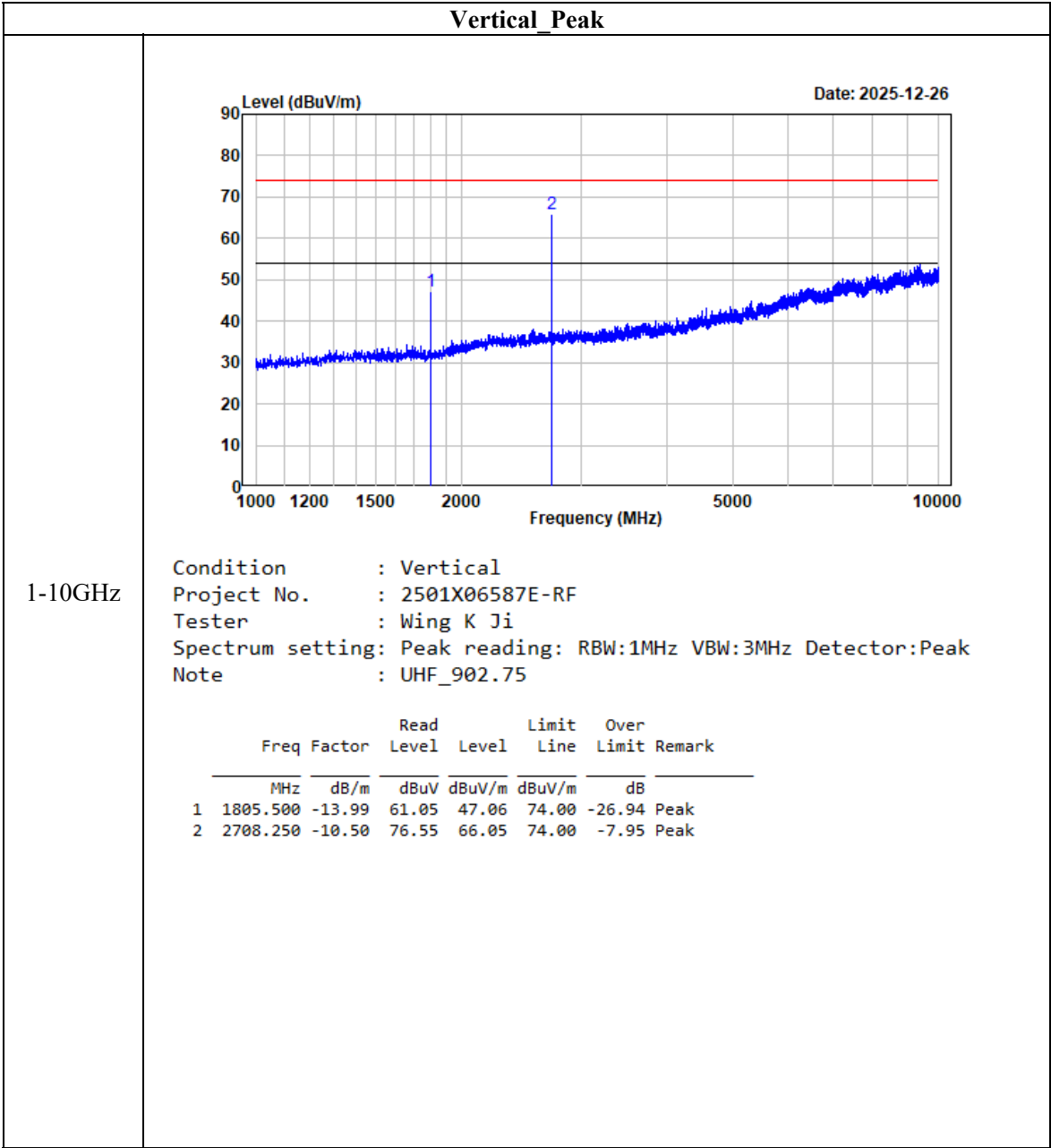
The test result of peak was less than the limit of average, so just peak values were recorded.

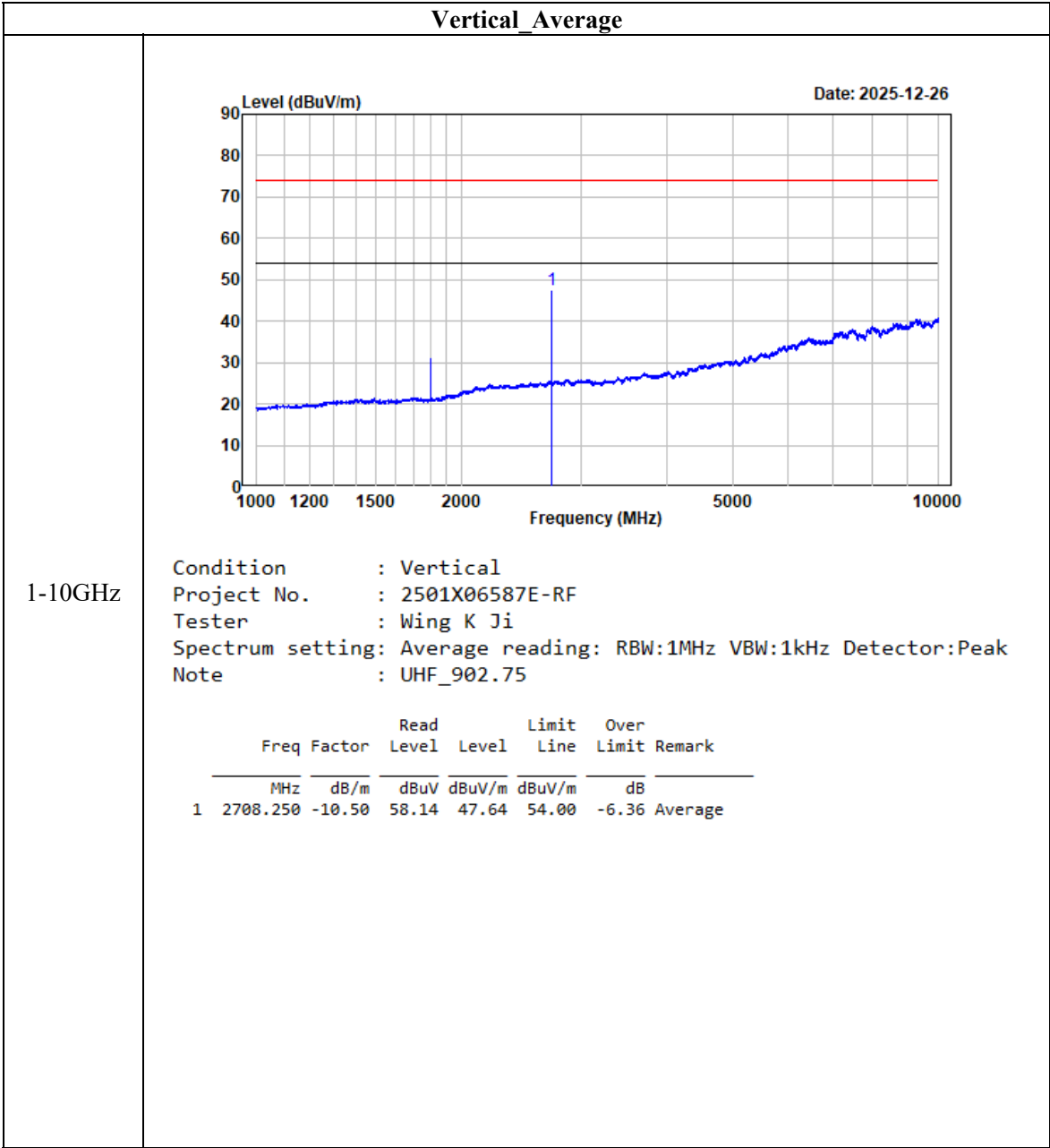
Listed with the worst case test plot:

RFID Portal Antenna

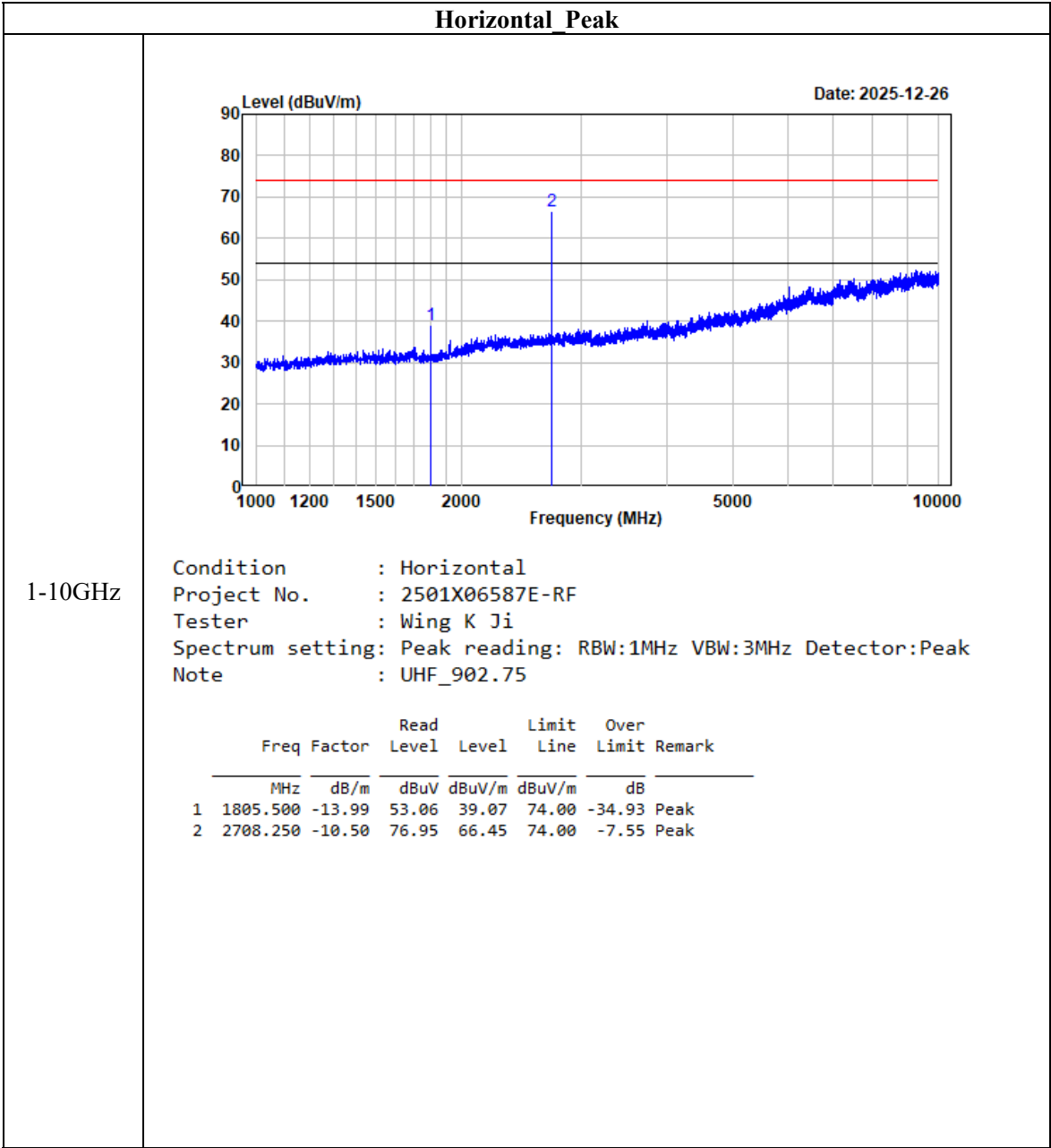


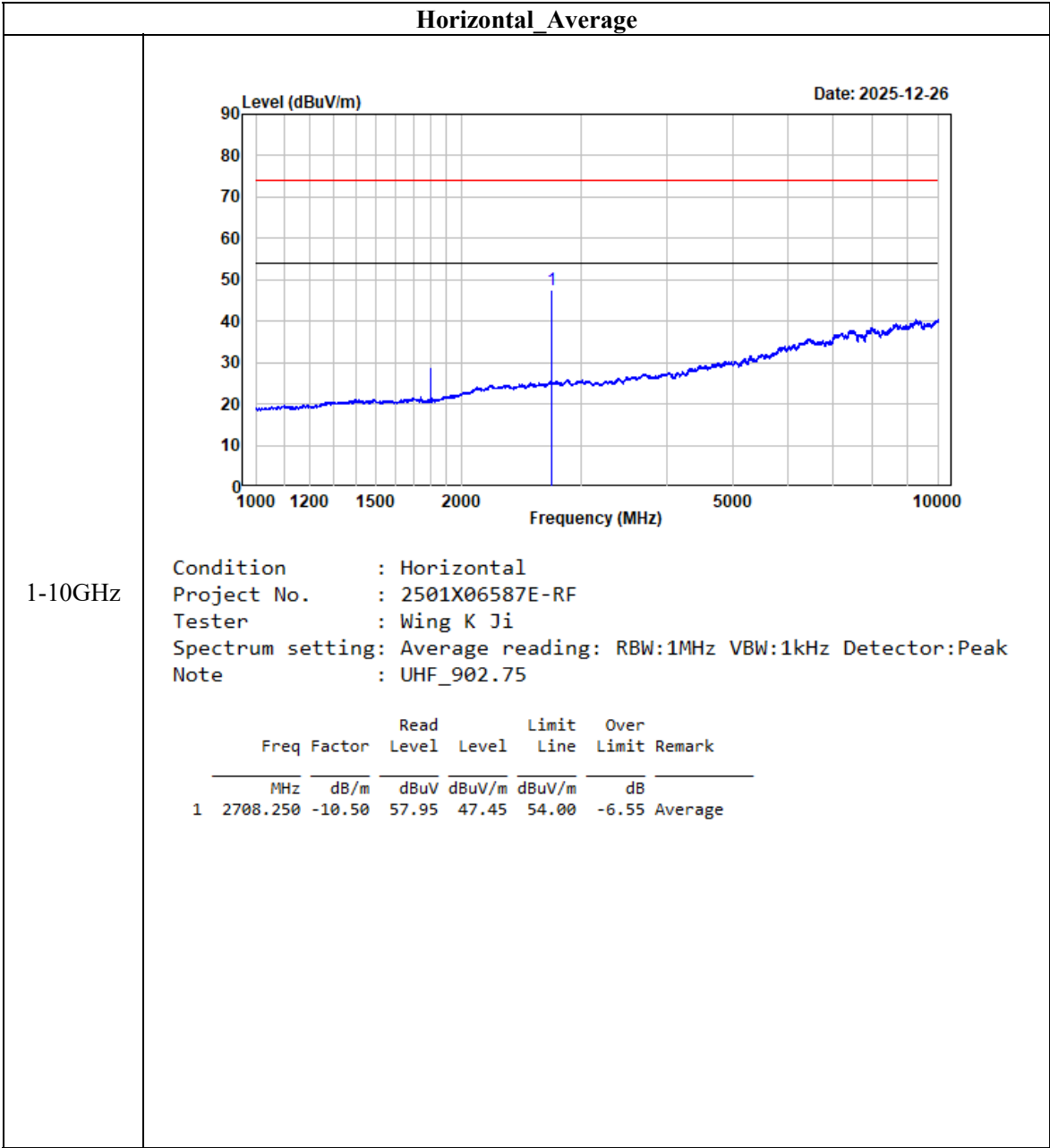


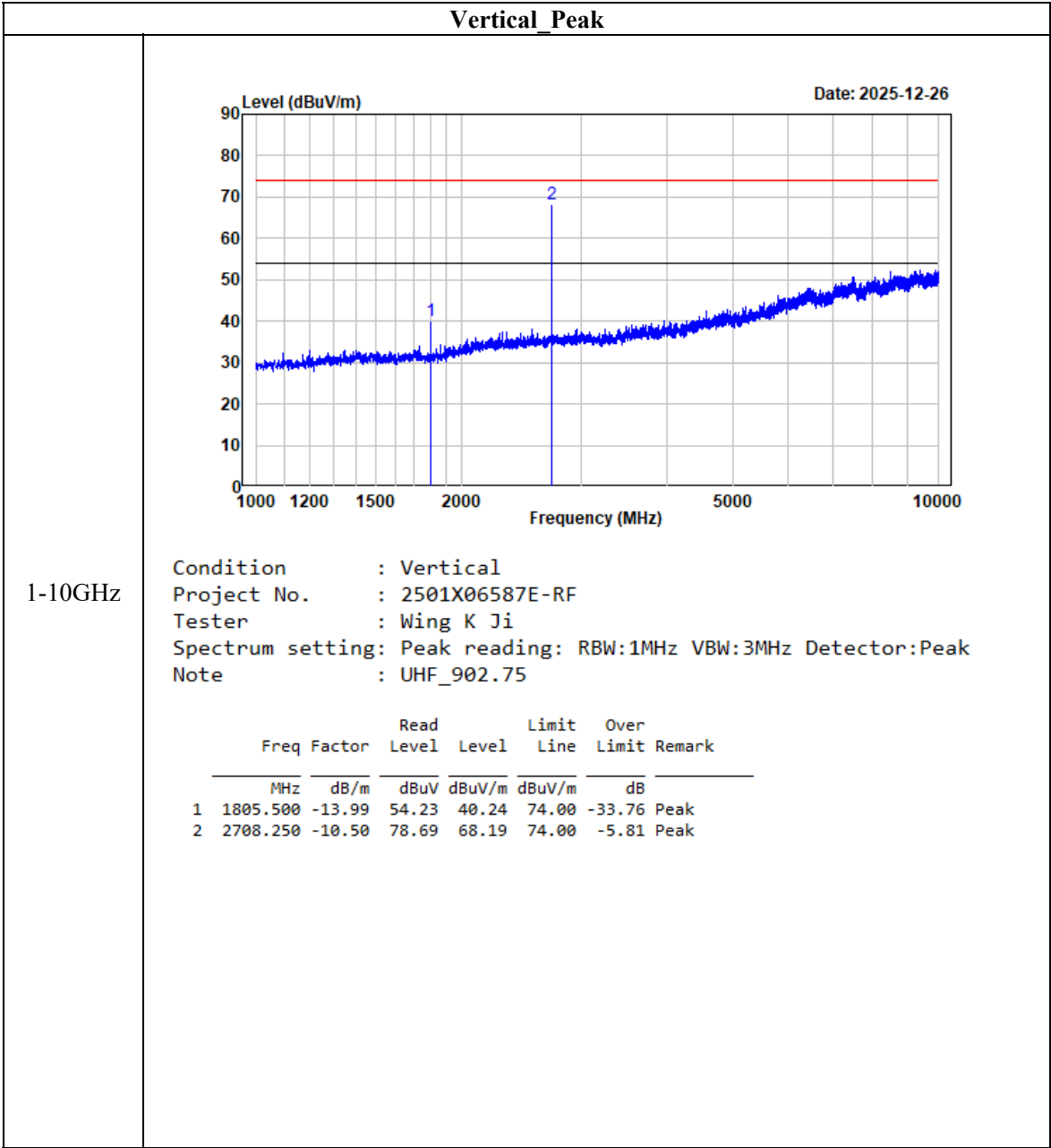


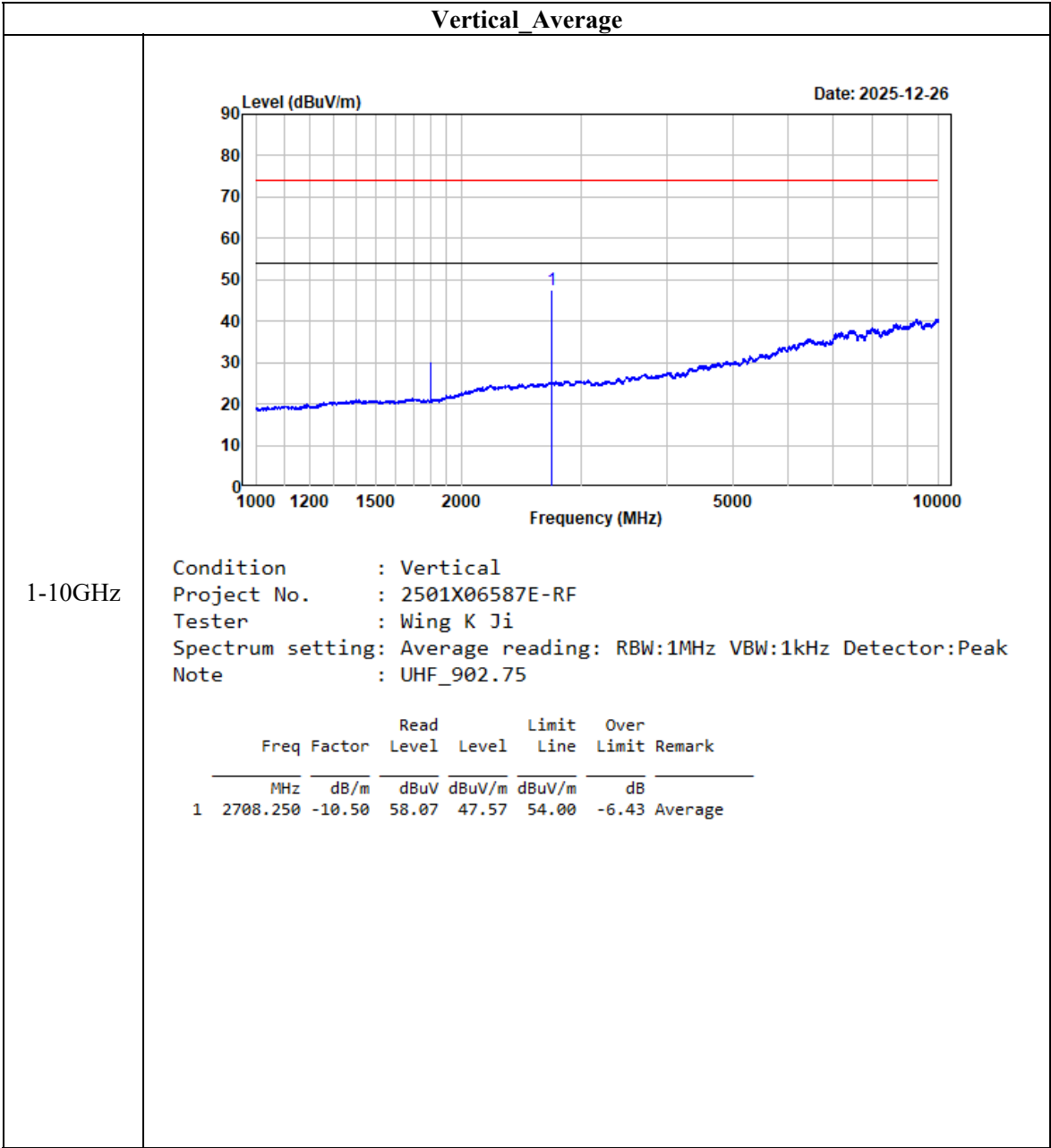


Bottom Antenna No.12









FCC §15.247(a) (1) - CHANNEL SEPARATION

Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test Procedure

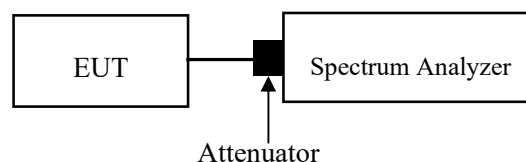
Test Method: ANSI C63.10-2020 Clause 7.8.2

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW) $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.

Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the carrier separation need only be measured for one of those modulation schemes or data rates.



Test Data

Environmental Conditions

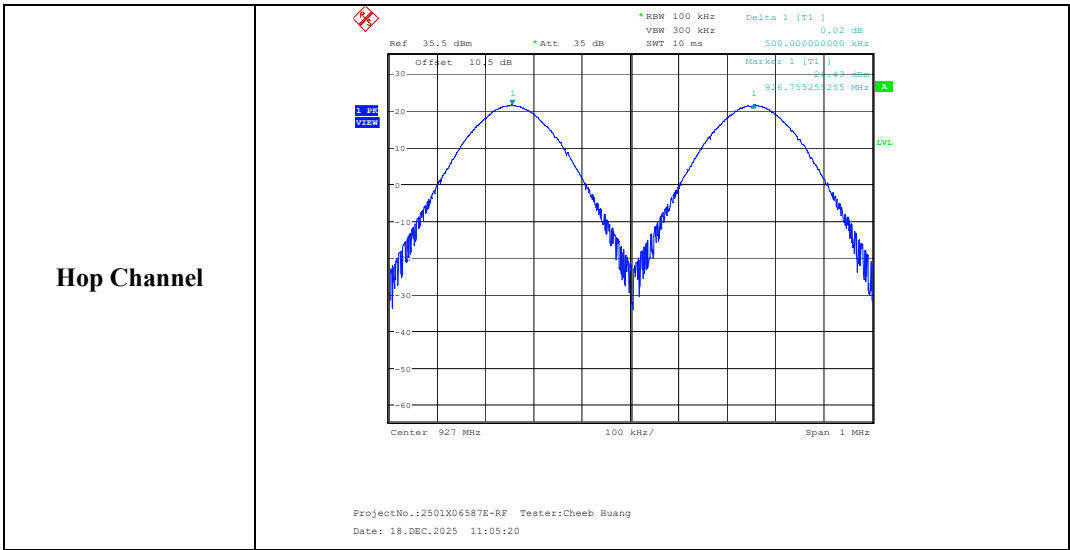
Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang on 2025-12-18.

EUT operation mode: Transmitting

Test Result: Compliant.

Test Mode	Frequency [MHz]	Frequency Separation [MHz]	20dB Bandwidth [MHz]	Verdict
FHSS	Hop	0.500	0.108	Pass
Limit= MAX {25 kHz, BW _{20dB} }				



FCC §15.247(a) (1) (i) - 20 dB EMISSION BANDWIDTH

Applicable Standard

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

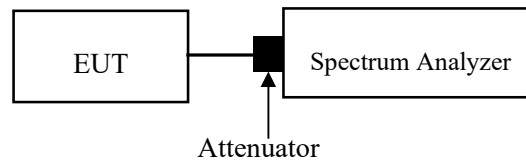
Test Procedure

Test Method: ANSI C63.10-2020 Clause 6.9.2

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five 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 video bandwidth (VBW) shall be at least three times 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) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
- f) Set detection mode to peak and trace mode to max-hold.
- g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- h) Determine the “-xx dB down amplitude” using $[(\text{reference value}) - xx]$. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

j) Place 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 “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The dBc bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

k) The dBc 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:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

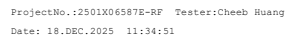
The testing was performed by Cheeb Huang on 2025-12-18.

EUT operation mode: Transmitting

Test Result: Compliant.

Test Channel	Test Frequency (MHz)	20 dB Bandwidth (MHz)	Limit (MHz)
Lowest	902.75	0.108	≤0.25
Middle	915.25	0.108	≤0.25
Highest	927.25	0.108	≤0.25

Low Channel



ProjectNo.:2501X06587E-RF Tester:Cheeb Huang
Date: 18.DEC.2025 11:33:51

ProjectNo.:2501X06587E-RF Tester:Cheeb Huang
Date: 18.DEC.2025 11:32:11

FCC §15.247(a) (1) (i) - NUMBER OF HOPPING FREQUENCY

Applicable Standard

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Procedure

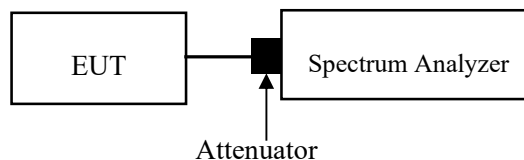
Test Method: ANSI C63.10-2020 Clause 7.8.3

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow the trace to stabilize.

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A spectral plot of the data shall be included in the test report.

Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the number of channels need only be measured for one of those modulation schemes or data rates.



Test Data**Environmental Conditions**

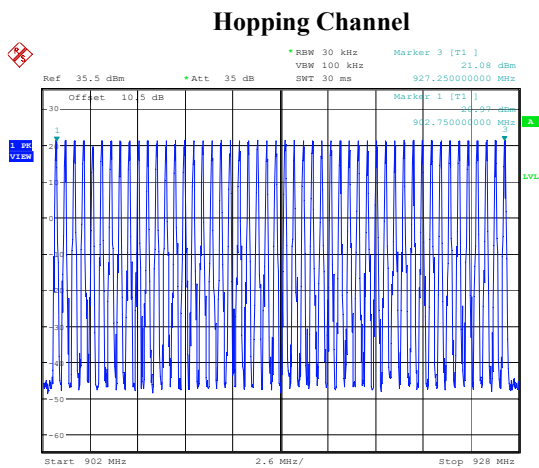
Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang on 2025-12-18.

EUT operation mode: Transmitting

Test Result: Compliant.

Frequency Range (MHz)	Number of Hopping Channel (CH)	Limits (CH)
902-928	50	≥50



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FCC §15.247(a) (1) (i) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.4

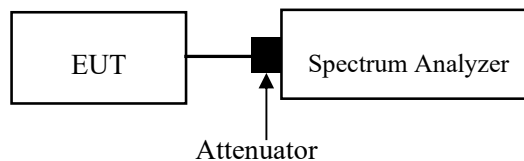
Use the following spectrum analyzer settings to determine the dwell time per hop:

- a) Span: Zero span, centered on a hopping channel.
- b) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1 / T$, where T is the expected transmission time per hop.
- c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = $1/\text{hopping rate}$) should achieve this.
- d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel.
- e) Detector function: Peak.
- f) Trace: Clear-write, single sweep.
- g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers.

To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time.

The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is $3 / 0.5 \times 10$, or 60 hops.

The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.



Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang on 2025-12-18.

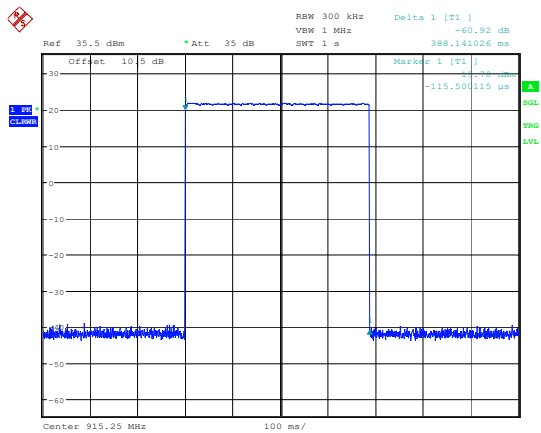
EUT operation mode: Transmitting

Test Result: Compliant.

Mode	Frequency (MHz)	Pulse width (s)	Observation time (s)	Hopping Numbers in Observation time	Dwell Time (s)	Limit (s)	Result
Hopping	915.25	0.388	20	1	0.388	0.400	Pass

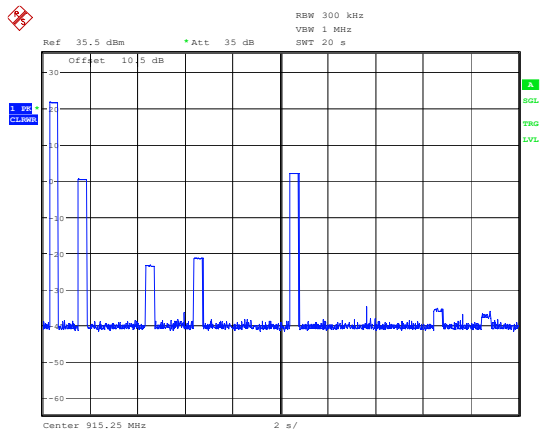
Note: Dwell Time=Pulse Width*Hopping Number

Pulse time



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Hopping Number in 20s



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FCC §15.247(b) (2) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

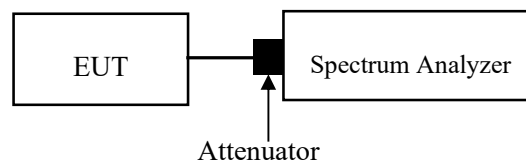
For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.5

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. Frequency hopping shall be disabled for this test. Use the following spectrum analyzer settings:

- a) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- b) RBW > 20 dB bandwidth of the emission being measured.
- c) VBW $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow trace to stabilize.
- h) Use the marker-to-peak function to set the marker to the peak of the emission.
- i) The indicated level is the peak output power, after any corrections for external attenuators and cables.
- j) A spectral plot of the test results and setup description shall be included in the test report.



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**

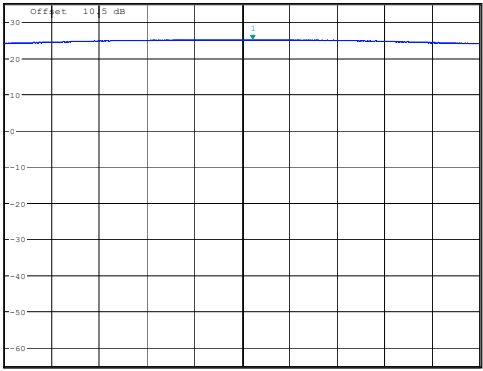
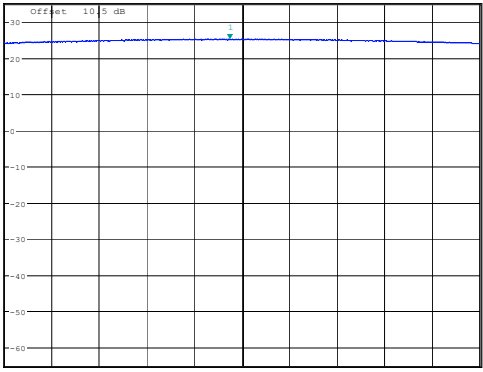
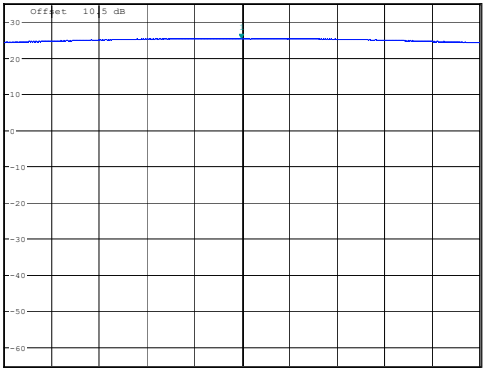
Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang on 2025-12-26.

EUT operation mode: Transmitting

Test Result: Compliant.

Test Channel	Test Frequency (MHz)	Peak Conducted Output Power (dBm)	Limits (dBm)
Lowest	902.75	25.11	25.5
Middle	915.25	25.19	25.5
Highest	927.25	25.32	25.5
Note: The maximum antenna gain is 10.5dBi, so Limit = 30-(10.5-6) dBm = 25.5dBm			

Low Channel	 Ref 35 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] 25.11 dBm * VSW 3 MHz 902.763500000 MHz SWT 5 ms Offset 10.5 dB Center 902.75 MHz 60 kHz/ Span 600 kHz ProjectNo.:2501X06587E-RF Tester:Cheeb Huang Date: 26.DEC.2025 11:58:22
Middle Channel	 Ref 35 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] 25.19 dBm * VSW 3 MHz 915.235000000 MHz SWT 5 ms Offset 10.5 dB Center 915.25 MHz 60 kHz/ Span 600 kHz ProjectNo.:2501X06587E-RF Tester:Cheeb Huang Date: 26.DEC.2025 11:59:37
High Channel	 Ref 35 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] 25.32 dBm * VSW 3 MHz 927.249250000 MHz SWT 5 ms Offset 10.5 dB Center 927.25 MHz 60 kHz/ Span 600 kHz ProjectNo.:2501X06587E-RF Tester:Cheeb Huang Date: 26.DEC.2025 12:00:45

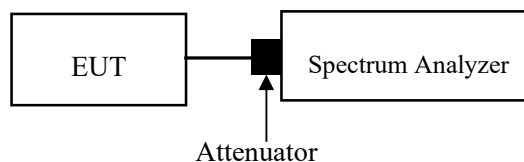
FCC §15.247(d) - 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE**Applicable Standard**

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 7.8.7.2 & Clause 6.10

- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products that fall outside of the authorized band of operation.
- 2) Reference level: As required to keep the signal from exceeding the maximum instrument 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.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: No faster than coupled (auto) time.
- 5) Resolution bandwidth: 100 kHz.
- 6) Video bandwidth: 300 kHz.
- 7) Detector: Peak.
- 8) Trace: Max-hold.

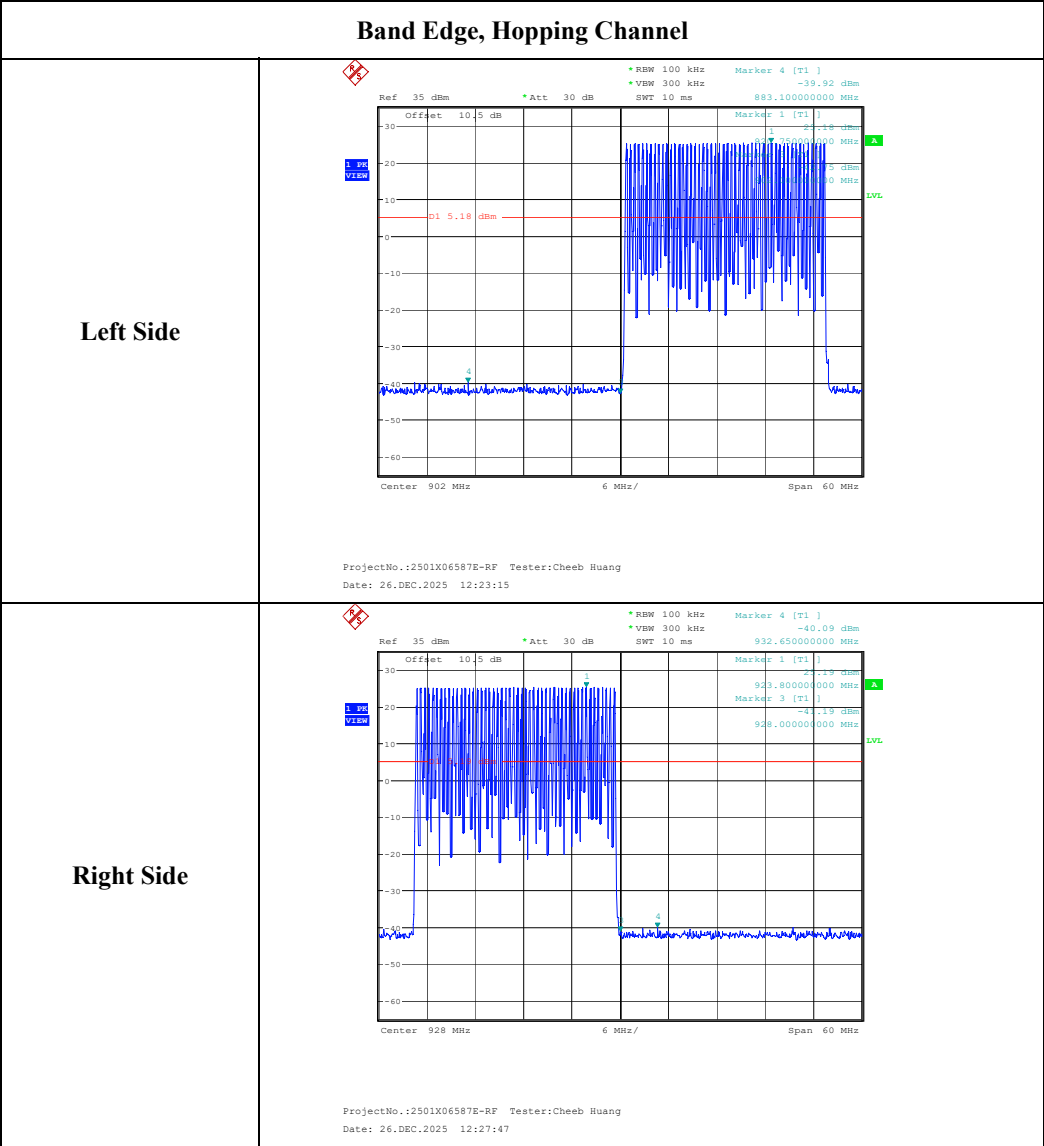
**Test Data****Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang from 2025-12-26.

EUT operation mode: Transmitting

Test Result: Compliant.



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)).

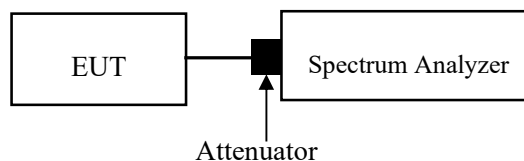
Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.7.1

To demonstrate compliance with the relative out-of-band emissions requirements conducted spurious emissions shall be measured for the transmit frequencies, per 5.5 and 5.6, and at the maximum transmit powers. Frequency hopping shall be disabled for this test with the exception of measurements at the allocated band-edges which shall be repeated with hopping enabled.

Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The frequency range of testing shall span 30 MHz to 10 times the operating frequency and this may be done in a single sweep or, to aid resolution, across a number of sweeps. The resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector.

The limit is based on the highest in-band level across all channels measured using the same instrument settings (resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector). To help clearly demonstrate compliance a display line may be set at the required offset (typically 20 dB) below the highest in-band level. Where the highest in-band level is not clearly identified in the out-of-band measurements a separate spectral plot showing the in-band level shall be provided.



Note : The worst cable loss among the test frequency range was added into plots.

Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	54 %
ATM Pressure:	100.8 kPa

The testing was performed by Cheeb Huang on 2025-12-18.

EUT operation mode: Transmitting

Test Result: Compliant.



EUT PHOTOGRAPHS

Please refer to the attachment 2501X06587E-RF-EXP External photo and 2501X06587E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501X06587E-RF-TSP Test Setup photo.

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