Nemko Korea Co., Ltd.

165-51, Yurim-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Republic of Korea
TEL : + 82 31 330 1700 FAX : + 82 31 322 2332

FCC EVALUATION REPORT FOR CERTIFICATION

Applicant :

SAMSUNG ELECTRONICS Co., Ltd.
129, Samsung-ro, Yeongtong-gu Suwon-si,
Gyeonggi-do, 16677, Korea, Republic of
Attn : Mr. Taehoon Kim

Dates of Issue : November 27, 2025
Test Report No. : REP119546
Test Site : Nemko Korea Co., Ltd.
EMC site, Korea

FCC ID	***A3LME90H30***
Trade Mark	**SAMSUNG**
Contact Person	**SAMSUNG ELECTRONICS Co., Ltd.** **129, Samsung-ro, Yeongtong-gu Suwon-si,** **Gyeonggi-do, 16677, Korea Republic of** **Mr. Taehoon Kim** **Telephone No. : + 82 31 8062 9326**

Applied Standard :	FCC Part 18 & Part 2
Classification :	Part 18 Consumer ISM equipment
EUT Type :	Microwave oven

The device bearing the Trade Mark and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in MP-5:1986.
I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

November 27, 2025
Tested By : Seungmin Lee
Engineer

November 27, 2025
Reviewed By : Taegyun Kim
Technical Manager

TABLE OF CONTENTS

SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 18.

Responsible Party :	SAMSUNG ELECTRONICS Co., Ltd.
Contact Person :	Mr. Taehoon Kim Tel No.: + 82 31 8062 9326
Manufacturer :	SAMSUNG ELECTRONICS Co., Ltd. 129, Samsung-ro, Yeongtong-gu Suwon-si, Gyeonggi-do, 16677, Korea, Republic of

- FCC ID: A3LME90H30
- Model: ME90H1780RAA
- Variant Model: ME90H1780***
  1st : Exterior colour, 0-9, A-Z
  2,3nd : Buyer code, Blanked or A-Z
- Trade Mark: SAMSUNG
- EUT Type: Microwave oven
- Applied Standard: FCC Part 18 & Part 2
- Test Procedure(s): MP-5:1986
- Dates of Test: October 15, 2025 to October 31, 2025
- Place of Tests: Nemko Korea Co., Ltd. EMC Site
- Test Report No.: REP119546

INTRODUCTION

The measurement procedure described in MP5:1986 for Methods of Measurement of radiated, powerline conducted radio noise, frequency and power output was used in determining emissions emanating from **Samsung Electronics Co., Ltd.**
FCC ID : **A3LME90H30, Microwave oven.**

These measurement tests were conducted at ***Nemko Korea Co., Ltd. EMC Laboratory***.
The site address is 165-51, Yurim-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Republic of Korea.
The area of Nemko Korea Corporation Ltd. EMC Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18 miles) south-southeast from central Seoul.

The Nemko Korea Co., Ltd. has been accredited as a Conformity Assessment Body (CAB).

Nemko Korea Co., Ltd.
165-51, Yurim-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Republic of Korea.
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Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. EMC Lab and Incheon Airport.

ACCREDITATION AND LISTING

Accreditation type		Accreditation number
	CAB Accreditation for DOC	Designation No. KR0026
	KOLAS Accredited Lab. (Korea Laboratory Accreditation Scheme)	Registration No. KT155
	Canada IC Registered site	Site No. 2040E
	VCCI registration site(RE/CE/Telecom CE)	Member No. 2118
	EMC CBTL	TL124
	KCC(RRL)Designated Lab.	Registration No. KR0026

EUT INFORMATION

EUT Information

Intended use	Household
Type of appliance	Over The Range
Model	ME90H1780RAA
Rated voltage & frequency	AC 120 V, 60 Hz Single Phase
Rated power output	950 W
Rated power consumption(MW)	1 700 W
Magnetron	OM75P by Samsung

Component List

Item	Model	Manufacturer	Serial Number
MAGNETRON	OM75P	Samsung	N/A
H.V TRANS	SHV-U1870C	DPC	N/A
H.V CAPACITOR	CH85-21086	Bicai	N/A
FAN MOTOR	SMV-U360B4	Samsung	N/A
FAN MOTOR(Alt.)	SMV-U360B4	SPG Co., Ltd.	N/A
CONTROL BOARD	OTR_PF3_23	Samsung	N/A

Description of the Changes according to FCC part 2.1043

Report No.	Difference
-	-

DESCRIPTION OF TESTS

Radiation Hazard

A 700 ㎖ water load was placed in the center of the oven.
The power setting was set to maximum power.
While the oven was operating, the Microwave Survey Meter probe was moved slowly around the door seams to check for leakage.

Input Power Measurement

A 700 ㎖ water load was placed in the center of the oven and the oven set to maximum power. A 700 ㎖ water load was chosen for its compatibility.
Input power and current were measured using a Power Analyzer.
Manufacturers to determine their input ratings commonly use this procedure.

Output Power Measurement

The Caloric Method was used to determine maximum output power.
The initial temperature of a 1 000 ㎖ water load was measured. The water load was placed in the center of the oven. The oven was operated at maximum output power for 47 seconds. Then the temperature of the water re-measured.

Frequency Measurements

Following the above test, after operating the oven long enough to assure that stable operating temperature were obtained, the operating frequency was monitored as the input voltage was varied between 80 percent to 125 percent of the nominal rating.
And the load quantity was reduced by evaporation to approximately 20 % of the original quantity with nominal rating.

DESCRIPTION OF TESTS

Conducted Emissions

The Line conducted emission test facility is located inside a 4 x 7 x 2.5 m shielded enclosure.
It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.
A 1 m x 1.5 m wooden table 0.8 m height is placed 0.4 m away from the vertical wall and 0.5 m away from the side of wall of the shielded room Rohde & Schwarz (ENV216) of the 50 ohm / 50 uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room.
The EUT is powered from the Rohde & Schwarz (ENV216).
Power to the LISN s are filtered by high-current high insertion loss power line filters.
The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1/2".
If d.c. power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,
All interconnecting cables more than 1 m were shortened by non-inductive bundling (serpentine fashion) to a 1 m length.
Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.
The spectrum was scanned from 150 ㎑ to 30 ㎒ with 15 s sweep time.
The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESR3).
The detector functions were set to quasi-peak mode & CISPR average mode.
The bandwidth of receiver was set to 9 ㎑. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.
Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; whichever determined the worst case emission.
Each EME reported was calibrated using the R&S signal generator.

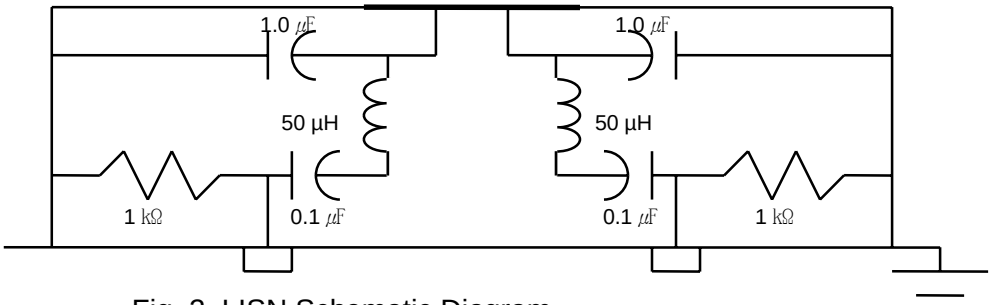


Fig. 2. LISN Schematic Diagram

DESCRIPTION OF TESTS

Radiated Emissions

Measurement were made indoors at 10 m & 3 m using antenna, signal conditioning unit and EMI test receiver to determine the frequency producing the maximum EME.
Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found.
The spectrum was scanned from 0.15 ㎒ to 30 ㎒ using Loop Antenna (ROHDE & SCHWARZ, HFH2-Z2) and from 30 ㎒ to 1 000 ㎒ using TRILOG Broadband Test Antenna (Schwarzbeck, VULB 9163). 1 GHz to 6 GHz and 6 GHz to 18 GHz, Double Ridged Horn Antennas (ROHDE & SCHWARZ, HF907) was used.
The test equipment was placed on a Styrofoam table.
Final Measurements were made indoors at 3 m using Loop Antenna (ROHDE & SCHWARZ, HFH2-Z2) for measurement from 0.15 to 30 ㎒ with RBW 9 ㎑ and made indoor at 10 m using TRILOG Broadband Test Antenna (Schwarzbeck, VULB 9163) for measurement from 30 ㎒ to 1 000 ㎒ with RBW 120 ㎑ and made indoors at 3 m using Double Ridged Horn Antennas (ROHDE & SCHWARZ, HF907).
The detector function were set to quasi peak mode and the bandwidth of the receiver were set to 9 ㎑, 120 ㎑ and peak mode 1 ㎒ depending on the frequency or type of signal.
The Double Ridged Broadband Horn antenna was tuned to the frequency found during preliminary radiated measurements.
The EUT support equipment and interconnecting cables were re-configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non- metallic 1.0 X 1.5 meter table.
The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.
The EUT is rotated about its vertical axis on the turntable, and the polarization and height of the receiving antenna are varied to obtain the highest field strength on the particular frequency under observation.
Each EME reported was calibrated using the R/S signal generator.

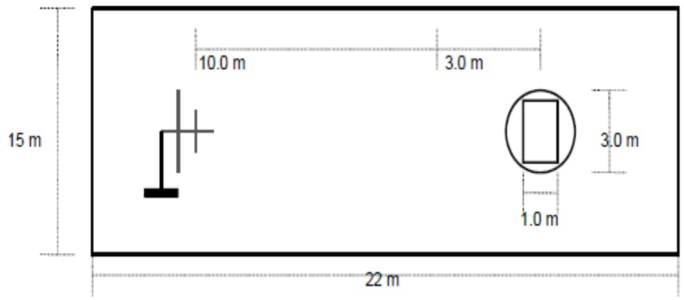


Fig. 3. Dimensions of 10 semi anechoic chamber

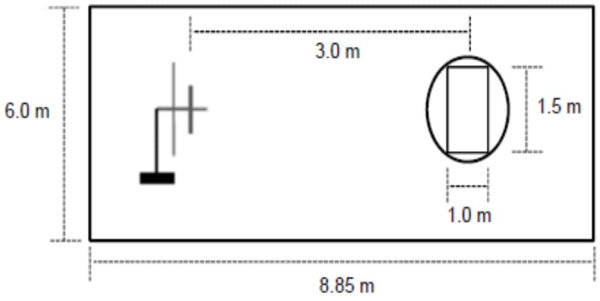


Fig. 4. Dimensions of 3 m full anechoic chamber

TEST DATA

Radiation Hazard

Probe Location	Maximum Leakage [mW/Cm2]	Limit [mW/Cm2]
A	0.10	1.00
B	0.10	1.00
C	0.10	1.00
D	0.10	1.00
E	0.10	1.00
F	0.10	1.00
G	0.10	1.00
H	0.10	1.00

Input Power Measurement

Operation mode	P rated (W)	P (W)	dP (%)	Required dP (%)
Power Input	1 700	1 682	1.07	+ 15 %

Output Power Measurement

Quantity of Water [ml]	Mass of the container [g]	Ambient temperature [℃]	Initial temperature [℃]	Final temperature [℃]	Heating time [s]	Power output [W]
1 000	405	23.5	10.0	20.3	44	914

Formula :

$$P = \frac{4.187 \times m_w \times (T_1 - T_0) + 0.55 \times m_c \times (T_1 - T_A)}{t}$$

NOTE :

P **is the microwave power output (W)**

m_w **is the mass of the water (g)**

m_c **is the mass of the container (g)**

T_A **is the ambient temperature (℃)**

T_0 **is the initial temperature of the water (℃)**

T_1 **is the final temperature of the water (℃)**

t **is the heating time (s), excluding the magnetron filament heating-up time.**

Tested by : ***Seungmin Lee***

TEST DATA

Frequency measurements

▶ **Frequency vs Line Voltage Variation Test**

[Room Temperature : 22.8 ± 1.0 ℃]

Line Voltage Variation (AC V)	*Pole	Frequency [㎒]	Allowed Tolerance for the ISM Band
96 (80 %)	H	Lower : 2426.14	Lower : 2 400 ㎒ Upper : 2 500 ㎒
	H	Upper : 2470.47	
	V	Lower : 2426.14	
	V	Upper : 2472.19	
108 (90 %)	H	Lower : 2425.77	
	H	Upper : 2471.06	
	V	Lower : 2425.77	
	V	Upper : 2469.12	
120 (100 %)	H	Lower : 2419.93	
	H	Upper : 2463.87	
	V	Lower : 2422.10	
	V	Upper : 2471.89	
132 (110 %)	H	Lower : 2426.59	
	H	Upper : 2466.94	
	V	Lower : 2428.99	
	V	Upper : 2466.04	
150 (125 %)	H	Lower : 2428.39	
	H	Upper : 2469.94	
	V	Lower : 2431.02	
	V	Upper : 2471.74	

NOTE :

1. *Pol. H = Horizontal V = Vertical
2. Initial load : 1 000 ㎖ of water in the beaker.
3. Line voltage varied from 80 % to 125 %.
4. ISM Frequency : 2 450 ㎒, Tolerance : ± 50 ㎒

RESULT : Pass

Tested by : ***Seungmin Lee***

TEST DATA

▶ **Frequency vs Load Variation Test**

[Room Temperature : 22.8 ± 1.0 ℃]

Volume of water (㎖)	*)Pole	Frequency [㎒]	Allowed Tolerance for the ISM Band
200	H	Lower : 2423.60	Lower : 2 400 ㎒ Upper : 2 500 ㎒
	H	Upper : 2462.97	
	V	Lower : 2423.44	
	V	Upper : 2460.27	
400	H	Lower : 2439.64	
	H	Upper : 2457.49	
	V	Lower : 2426.82	
	V	Upper : 2464.54	
600	H	Lower : 2426.14	
	H	Upper : 2464.62	
	V	Lower : 2427.27	
	V	Upper : 2463.87	
800	H	Lower : 2418.50	
	H	Upper : 2469.19	
	V	Lower : 2423.30	
	V	Upper : 2466.12	
1 000	H	Lower : 2419.93	
	H	Upper : 2463.87	
	V	Lower : 2422.10	
	V	Upper : 2471.89	

NOTE :

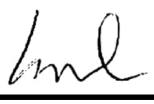
1. *Pol. H = Horizontal, V = Vertical

2. **The water load was varied between 200 ㎖ to 1 000 ㎖.**

3. Frequency was measured by using nominal voltage (AC 120 V).

4. ISM Frequency : 2 450 ㎒, Tolerance : ± 50 ㎒

RESULT : Pass



Tested by : ***Seungmin Lee***

TEST DATA

Conducted Emissions

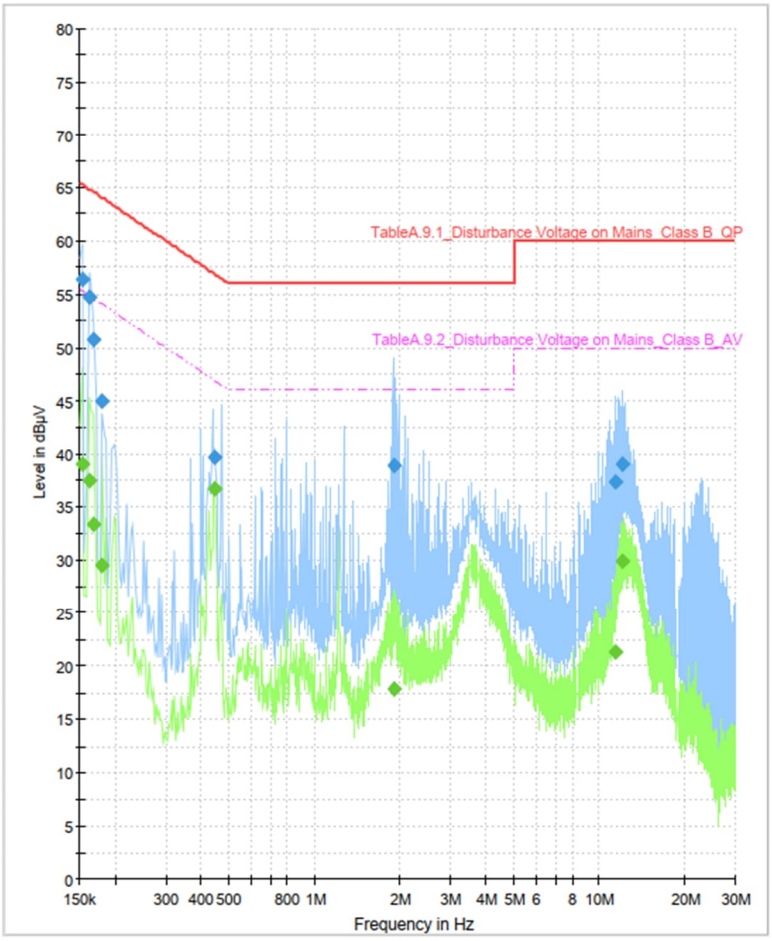
FCC ID : A3LME90H30

[Room Temperature : 22.3 ± 1.0 ℃]

Test Report

Common Information

Test Description:	Conducted emission (NK-25-E-0949)
Test Site:	Shielded room #1
Test Standard:	FCC Part 18 Class B
Environment Conditions:	AC 120 V, 60 Hz
Operator Name:	Seungmin, Lee
Mode:	Microwave Mode



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Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.152985	---	39.01	55.30	16.29	15000.0	9.000	L1	10.1
0.152985	56.35	---	65.30	8.95	15000.0	9.000	L1	10.1
0.161940	---	37.54	54.86	17.32	15000.0	9.000	L1	10.1
0.161940	54.70	---	64.86	10.15	15000.0	9.000	L1	10.1
0.167910	---	33.38	54.57	21.19	15000.0	9.000	L1	10.1
0.167910	50.72	---	64.57	13.85	15000.0	9.000	L1	10.1
0.179850	---	29.58	54.03	24.45	15000.0	9.000	L1	10.1
0.179850	44.93	---	64.03	19.10	15000.0	9.000	L1	10.1
0.445515	---	36.67	46.91	10.23	15000.0	9.000	N	10.1
0.445515	39.67	---	56.91	17.24	15000.0	9.000	N	10.1
1.896225	38.92	---	56.00	17.08	15000.0	9.000	L1	10.1
1.896225	---	17.81	46.00	28.19	15000.0	9.000	L1	10.1
11.430315	37.42	---	60.00	22.58	15000.0	9.000	L1	10.3
11.430315	---	21.34	50.00	28.66	15000.0	9.000	L1	10.3
12.092985	---	29.98	50.00	20.02	15000.0	9.000	N	10.3
12.092985	39.07	---	60.00	20.93	15000.0	9.000	N	10.3

(continuation of the "Final_Result" table from column 14 ...)

Frequency (MHz)	Comment
0.152985	
0.152985	
0.161940	
0.161940	
0.167910	
0.167910	
0.179850	
0.179850	
0.445515	
0.445515	
1.896225	
1.896225	
11.430315	
11.430315	
12.092985	
12.092985	

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NOTES:

1. Measurements using quasi-peak mode & average mode.
2. If no frequencies are specified in the tables, no measurement for quasi-peak or average was necessary.
3. Line : L = Line , N = Neutral
4. The limit for consumer device is on the FCC Part section 18.307(b).

Tested by : ***Seungmin Lee***

TEST DATA

Radiated Emissions (150 ㎑ to 30 ㎒)

FCC ID : A3LME90H30

[Room Temperature : 23.1 ± 1.0 ℃]

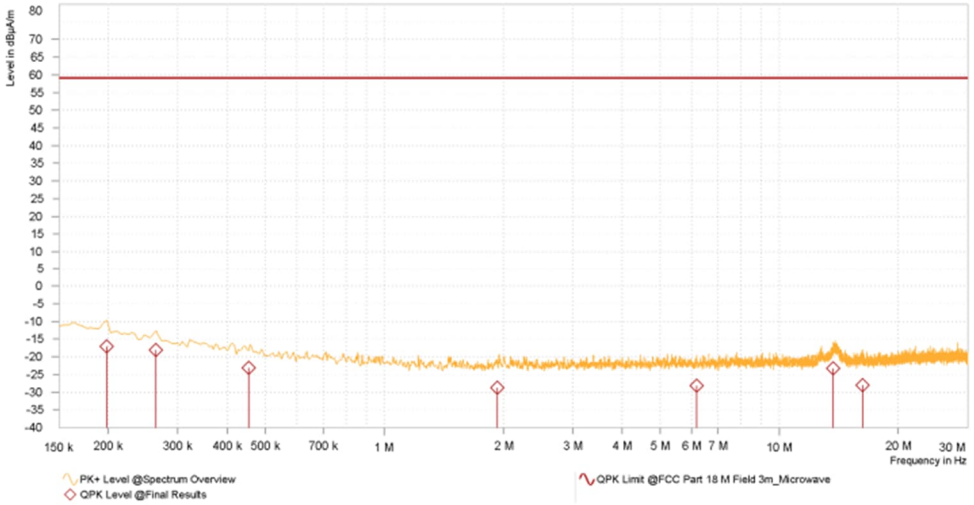
NK-25-E-0949_RE_9kHz-30MHz_LOOP(HFH2-Z2E)(dBuA/m)_NoAmp_Test

Test Report

Test Information

Test Description:	Radiated Emission(NK-25-E-0949)
Test Site:	3 m Chamber
Test Standard:	FCC Part 18
Environment Conditions:	AC 120V, 60 Hz
Operator Name:	Seungmin, Lee
Mode:	Microwave Mode

Spectrum Overview



EMI Final Results

Frequency [MHz]	QPK Level [dBµA/m]	QPK Limit [dBµA/m]	QPK Margin [dB]	Correction [dB]	Axis	Azimuth [deg]	Meas. BW [kHz]	Meas. Time [s]	Comment
0.198	-17.16	59.08	76.24	-30.84	Y	52.1	9.000	15.000	
0.264	-18.17	59.08	77.25	-30.82	X	250.7	9.000	15.000	
0.453	-23.13	59.08	82.21	-30.86	Y	5.4	9.000	15.000	
1.932	-28.73	59.08	87.81	-30.68	X	84.6	9.000	15.000	
6.181	-28.25	59.08	87.33	-30.48	Y	5.4	9.000	15.000	
13.705	-23.27	59.08	82.35	-30.06	Y	52.1	9.000	15.000	
16.251	-28.10	59.08	87.18	-29.85	X	197.7	9.000	15.000	

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<Radiated Measurements at 3 meters >

NOTES:

1. *Pol. H = Horizontal V = Vertical

2. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.

3. Distance Correction factor : 40 * log (300 / 3) = 80 dBuV/m

4. The limit at 300 meters is 20 * log (25 * SQRT (RF Power / 500)) – 51.5 dB

5. All other emissions were measured while a 700 ㎖ load was placed in the center of the oven.

6. The limit for consumer device is on the FCC Part section 18.305.

Tested by : ***Seungmin Lee***

TEST DATA

Radiated Emissions (30 ㎒ to 1 ㎓)

FCC ID : A3LME90H30

[Room Temperature : 22.8 ± 1.0 ℃]

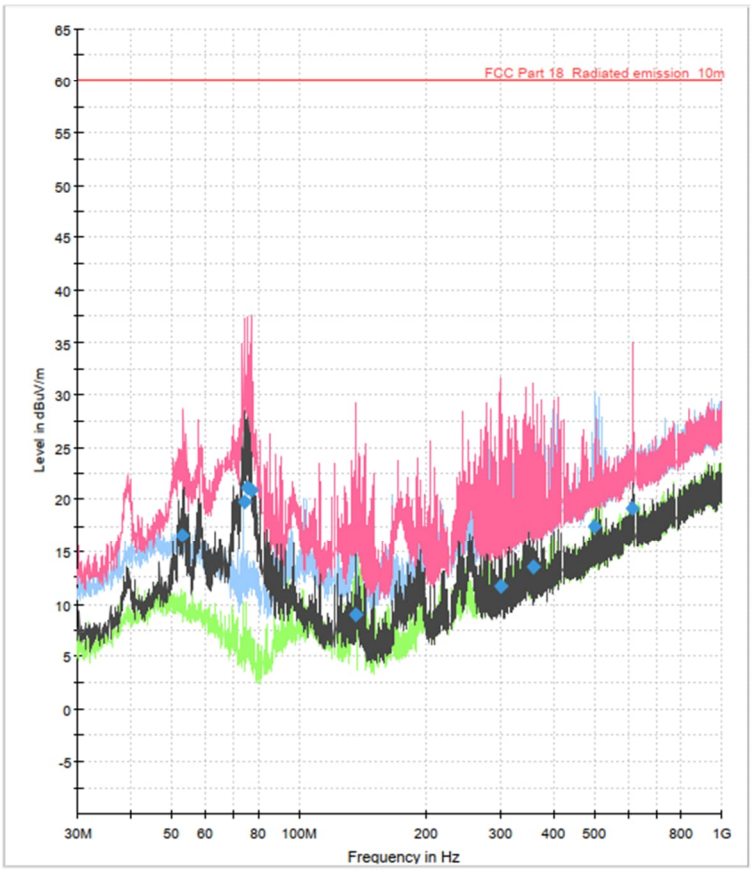
Test Report

Common Information

Test Description:	Radiated Emission(NK-25-E-0949)
Test Site:	10 m chamber #1
Test Standard:	FCC Part 18
Environment Conditions:	AC 120 V, 60 Hz
Operator Name:	Seungmin, Lee
Mode:	Microwave Mode

Full Spectrum

Full Spectrum



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Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
53.118333	16.61	60.08	43.47	15000.0	120.000	107.0	V	1.0
74.350556	19.82	60.08	40.26	15000.0	120.000	230.0	V	-14.0
75.590000	21.14	60.08	38.94	15000.0	120.000	170.0	V	-3.0
76.937222	20.90	60.08	39.18	15000.0	120.000	173.0	V	-20.0
136.053333	8.98	60.08	51.10	15000.0	120.000	100.0	V	8.0
299.228889	11.72	60.08	48.36	15000.0	120.000	180.0	H	-8.0
358.021667	13.50	60.08	46.58	15000.0	120.000	230.0	V	13.0
499.048889	17.48	60.08	42.60	15000.0	120.000	224.0	V	14.0
614.478889	19.14	60.08	40.94	15000.0	120.000	100.0	V	30.0

(continuation of the "Final_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB/m)	Comment
53.118333	-20.6	
74.350556	-26.1	
75.590000	-26.4	
76.937222	-26.7	
136.053333	-24.5	
299.228889	-18.4	
358.021667	-16.9	
499.048889	-13.4	
614.478889	-11.3	

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<Radiated Measurements at 10 meters>

NOTES:

1. *Pol. H = Horizontal V = Vertical

2. **AF + CL + Amp. = Antenna Factor + Cable Loss + Amplifier.

3. Distance Correction factor : 20 * log (300/10) ≒ 29.5 dB μV/m

4. The limit at 300 meters is 20 * log (25 * SQRT (RF Power/500))

5. All other emissions were measured while a 700 ml load was placed in the center of the oven.

6. The limit for consumer device is on the FCC Part section 18.305.

Tested by : ***Seungmin Lee***

TEST DATA

Radiated Emissions (Above 1 ㎓)

FCC ID : A3LME90H30

[Room Temperature : 22.9 ± 1.0 ℃]

Frequency	Pol*	Antenna Heights	Turntable Angles	Reading Level	Total Loss**	Result at 3 m		K	Results at 300 m	RF Power generated by equipment	Limits at 300 m
(MHz)	(H/V)	(cm)	(°)	(dBμV)	(dB)	(dBμV/m)	(μV/m)		(μV/m)	(W)	(μV/m)
2321.000	V	103	0.0	36.63	-8.67	27.96	25.00	0.0059	0.15	914.00	33.80
2539.500	V	200	15.9	37.87	-7.46	30.41	33.15	0.0065	0.21	914.00	33.80
2973.500	H	156	1.7	35.03	-5.70	29.33	29.28	0.0075	0.22	914.00	33.80
4920.500	V	153	2.6	34.14	1.70	35.84	61.94	0.0100	0.62	914.00	33.80
6147.000	V	200	14.1	33.64	3.89	37.53	75.25	0.0100	0.75	914.00	33.80
7354.500	H	195	0.1	39.80	5.24	45.04	178.65	0.0100	1.79	914.00	33.80
9807.500	V	125	0.0	37.40	7.90	45.30	184.08	0.0100	1.84	914.00	33.80
12277.500	V	151	2.7	38.24	9.54	47.78	244.91	0.0100	2.45	914.00	33.80
17190.000	H	200	29.9	39.18	16.18	55.36	586.14	0.0100	5.86	914.00	33.80

<Radiated Measurements at 3 meters>

NOTES:

1. * Pol. H =Horizontal V=Vertical

2. ** Total Loss = Antenna Factor + Cables Loss + Amplifier + HPF (High Pass Filter)

3. Field Strength (at 300 m) (uV/m) = K * 10 *[Fieldstrength at 3 m (dBuV/m) / 20]*

4. Where K is given by :

Frequency	K
1830 MHz	.0046
2745 MHz	.0070
3660 MHz	.0090
4575 MHz and above	.0100

For frequencies between those given in the table, the value of K is determined by linear interpolation.

5. The limit at 300 meters is 25 * SQRT (RF Power/500)

6. Load for measurement of radiation on second and third harmonic : Two loads, one of 700 ㎖ and the other of 300 ㎖, of water were used. Each load was tested both with the beaker located in the center of the oven and with it in the corner.

7. The test was performed at peak detector mode with average.

8. The limit for consumer device is on the FCC Part section 18.305.

Tested by : ***Seungmin Lee***

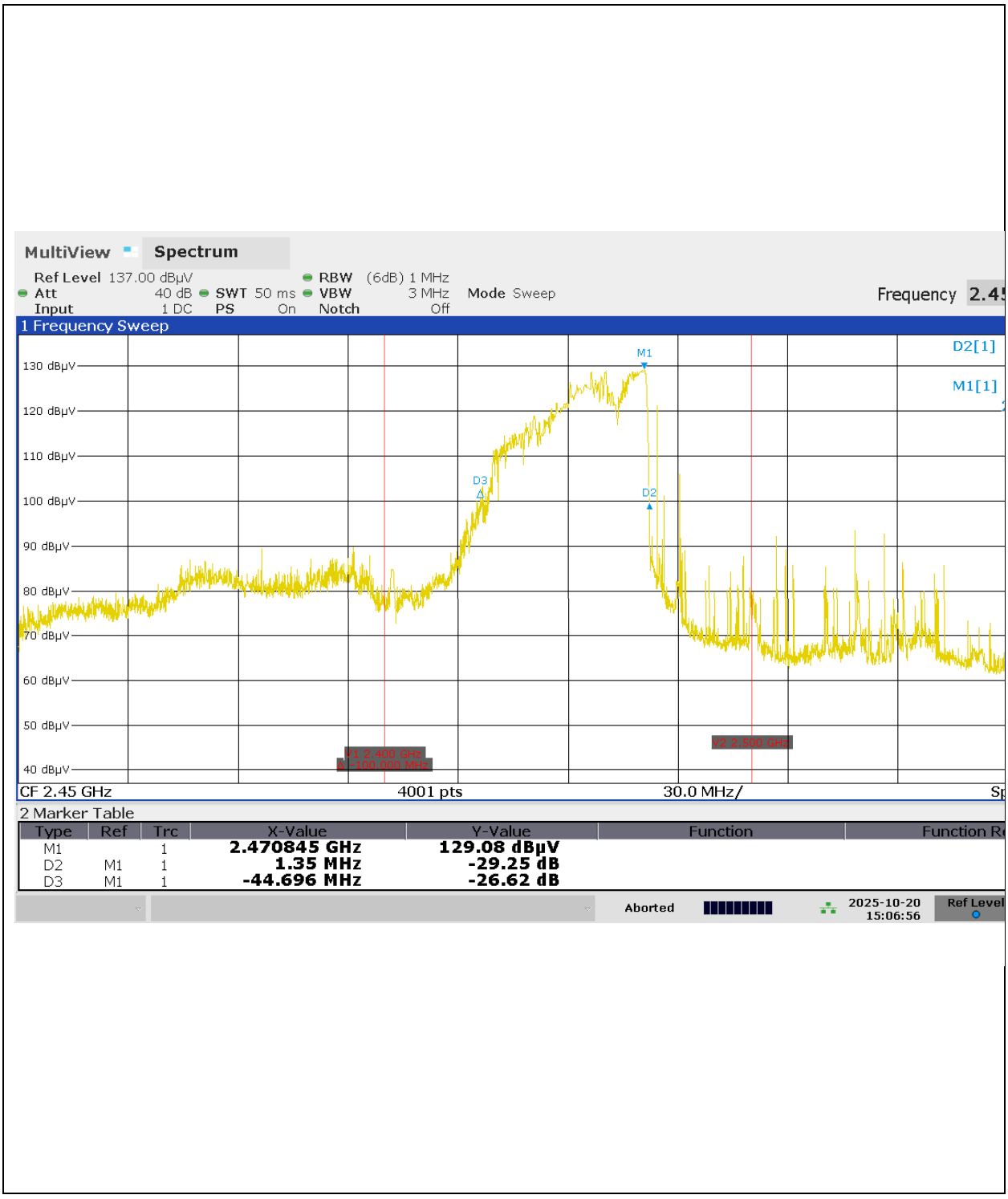
PLOTS OF EMISSIONS

- ***Frequency vs Line Voltage Variation Test***

Horizontal (96 V, 1 000 ㎖)

PLOTS OF EMISSIONS

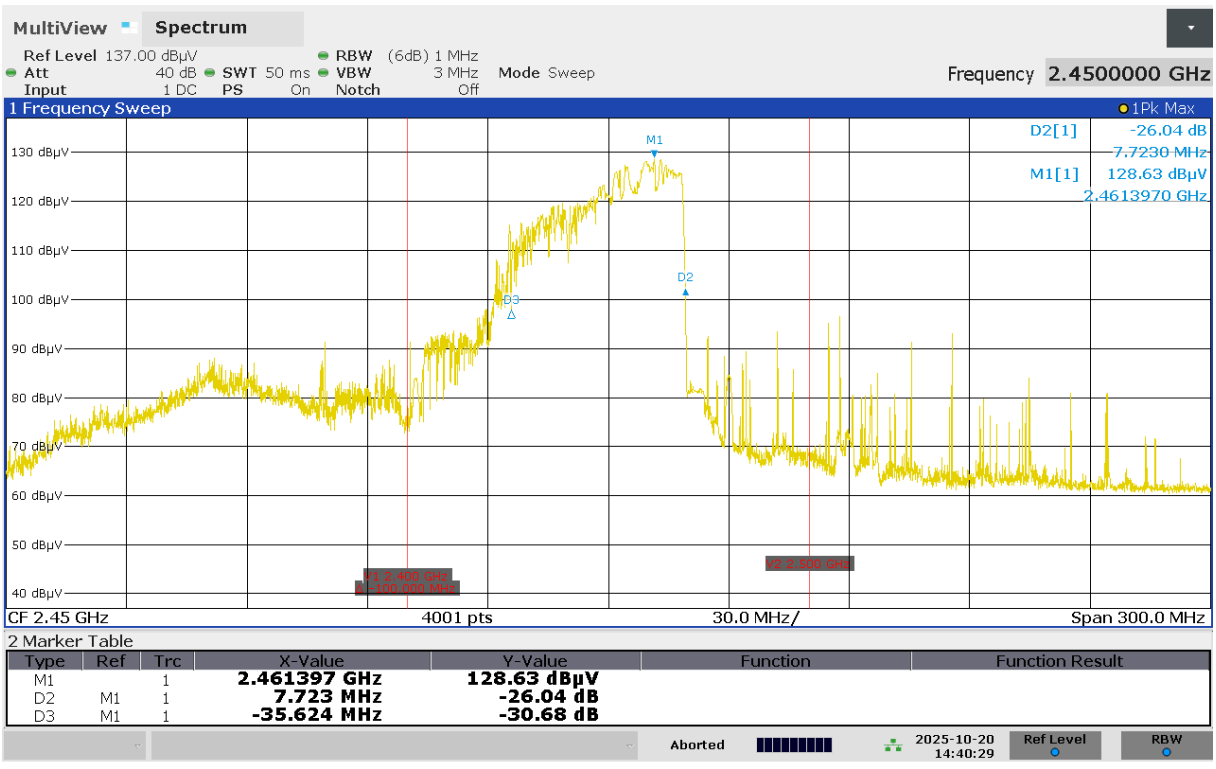
- ***Frequency vs Line Voltage Variation Test***



Vertical (96 V, 1 000 ㎖)

PLOTS OF EMISSIONS

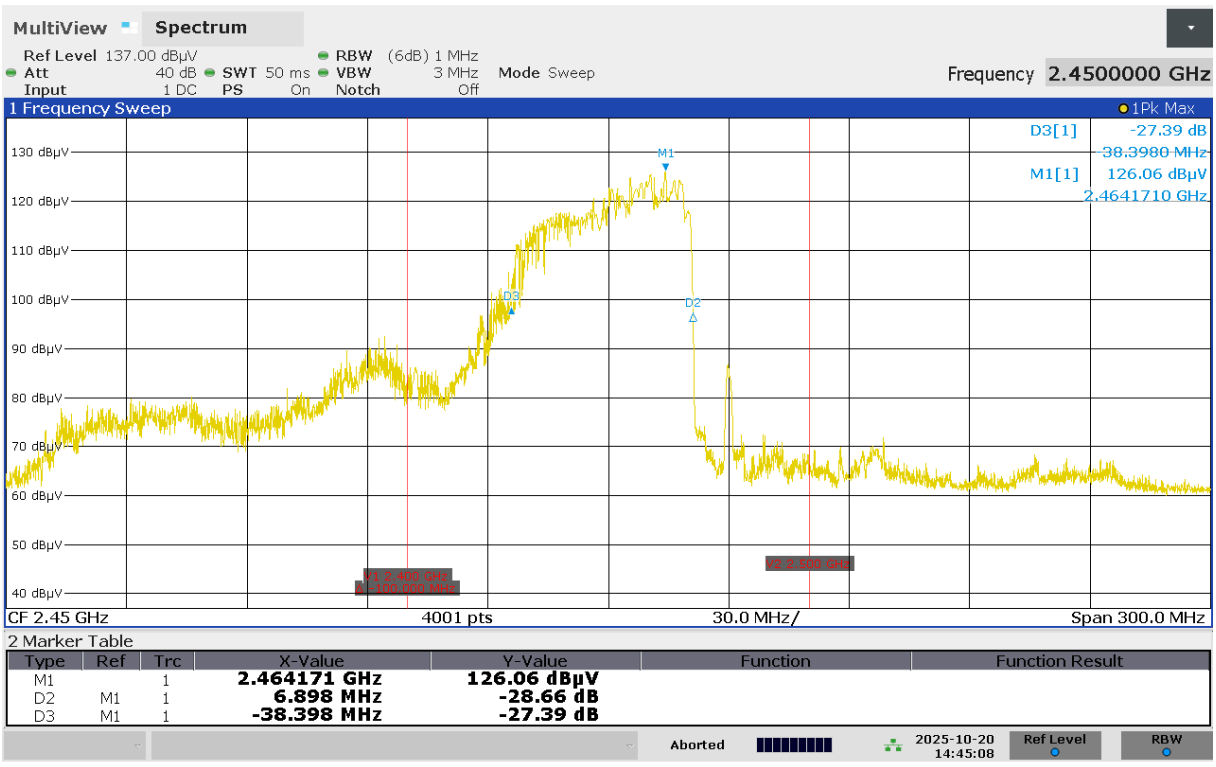
- ***Frequency vs Line Voltage Variation Test***



Horizontal (108 V, 1 000 ㎖)

PLOTS OF EMISSIONS

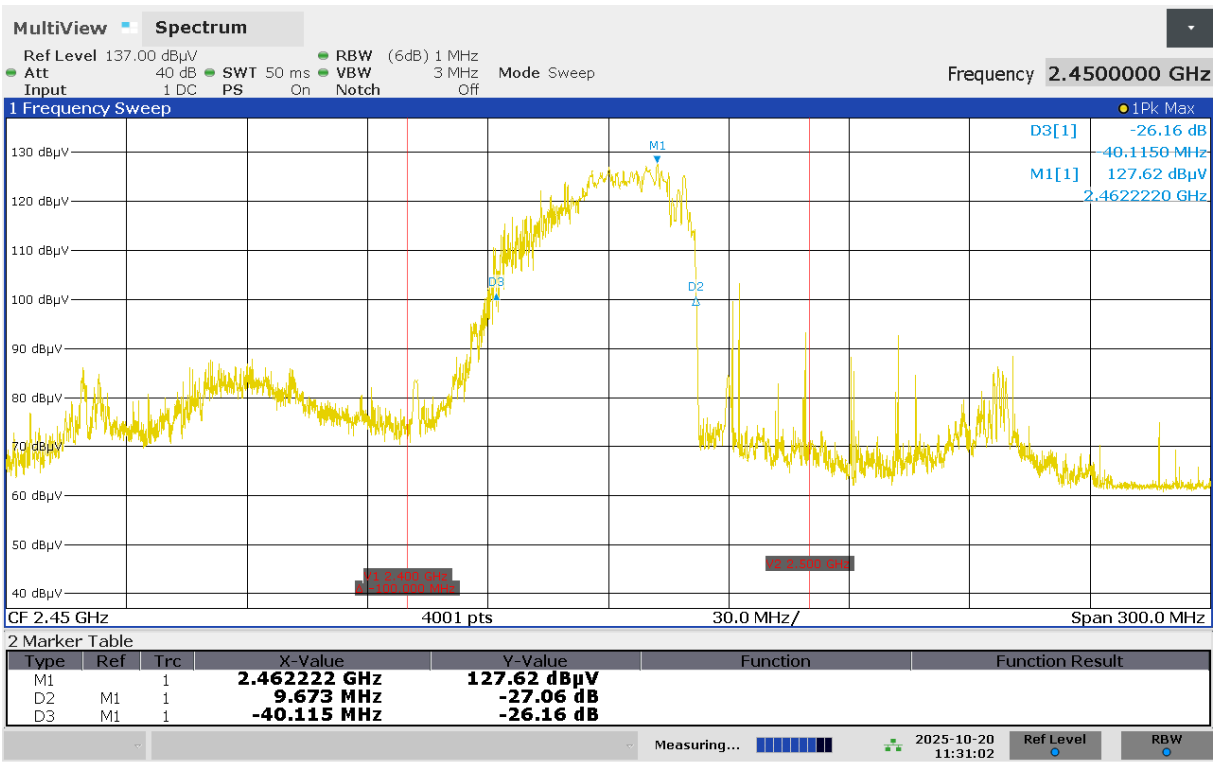
- ***Frequency vs Line Voltage Variation Test***



Vertical (108 V, 1 000 ㎖)

PLOTS OF EMISSIONS

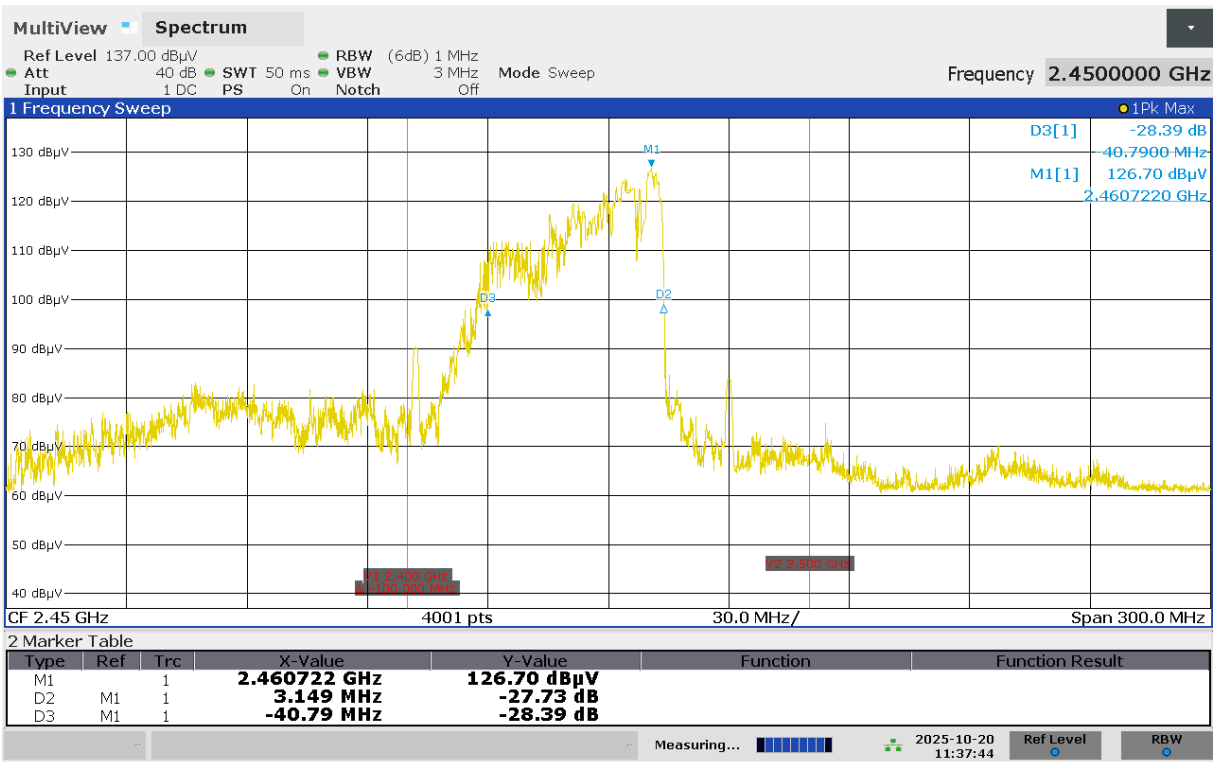
- ***Frequency vs Line Voltage Variation Test***



Horizontal (120 V, 1 000 ㎐)

PLOTS OF EMISSIONS

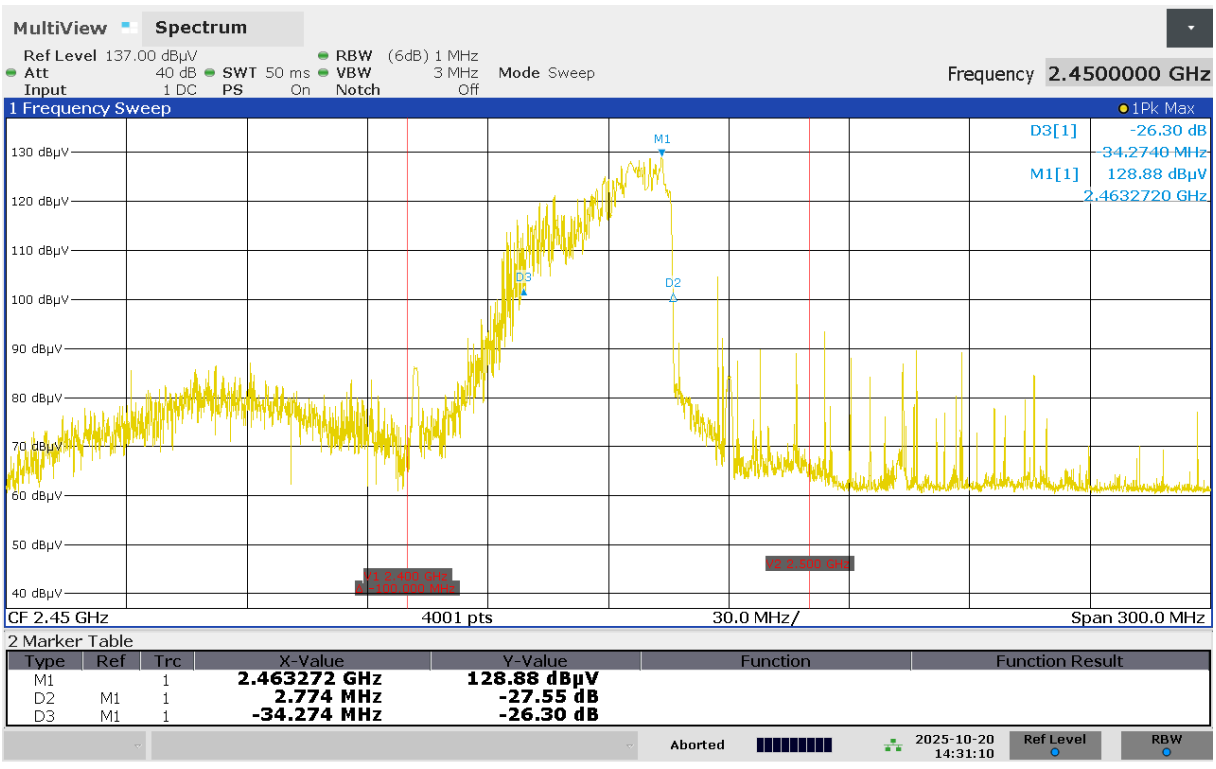
- ***Frequency vs Line Voltage Variation Test***



Vertical (120 V, 1 000 ㎖)

PLOTS OF EMISSIONS

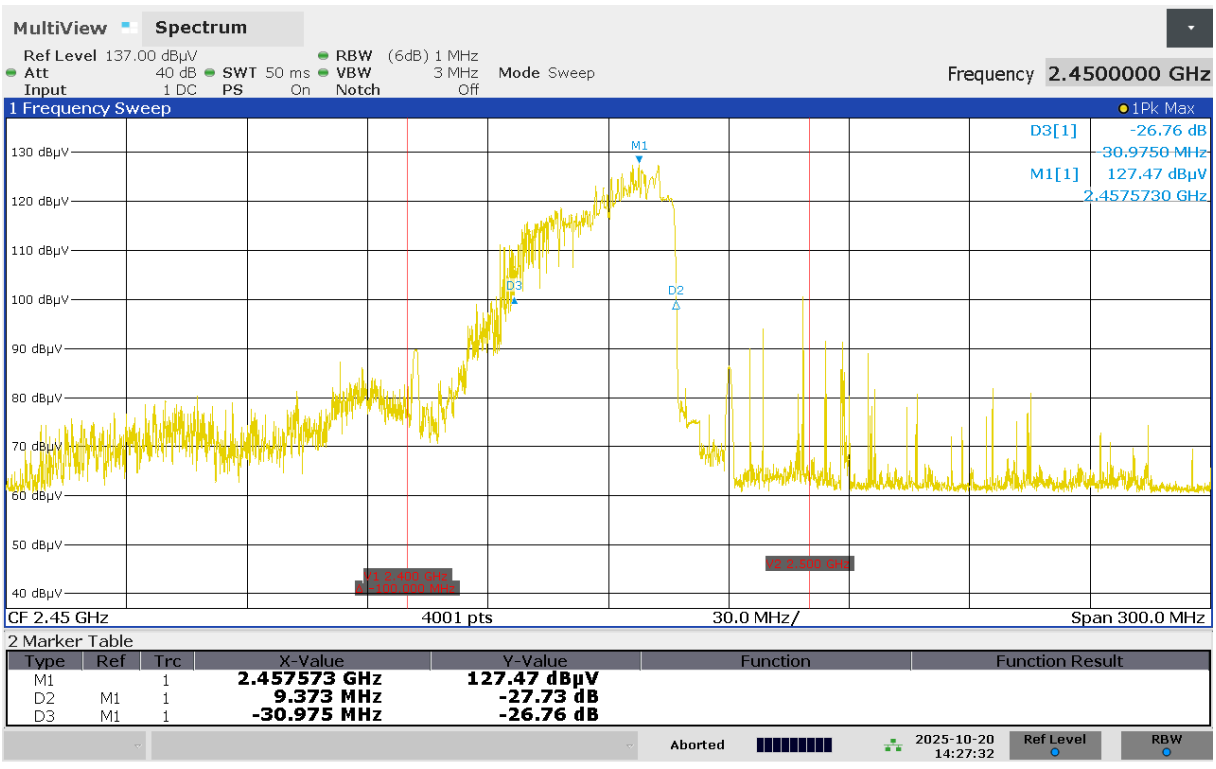
- ***Frequency vs Line Voltage Variation Test***



Horizontal (132 V, 1 000 ㎖)

PLOTS OF EMISSIONS

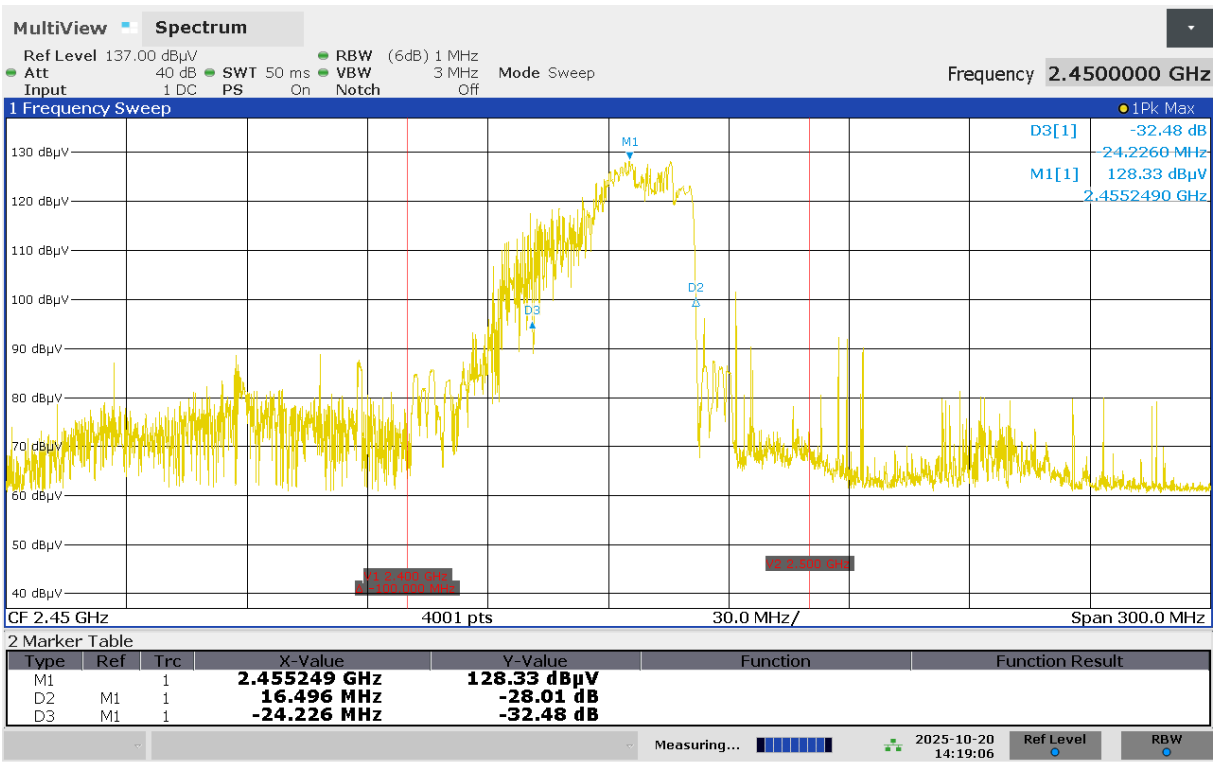
- ***Frequency vs Line Voltage Variation Test***



Vertical (132 V, 1 000 ㎖)

PLOTS OF EMISSIONS

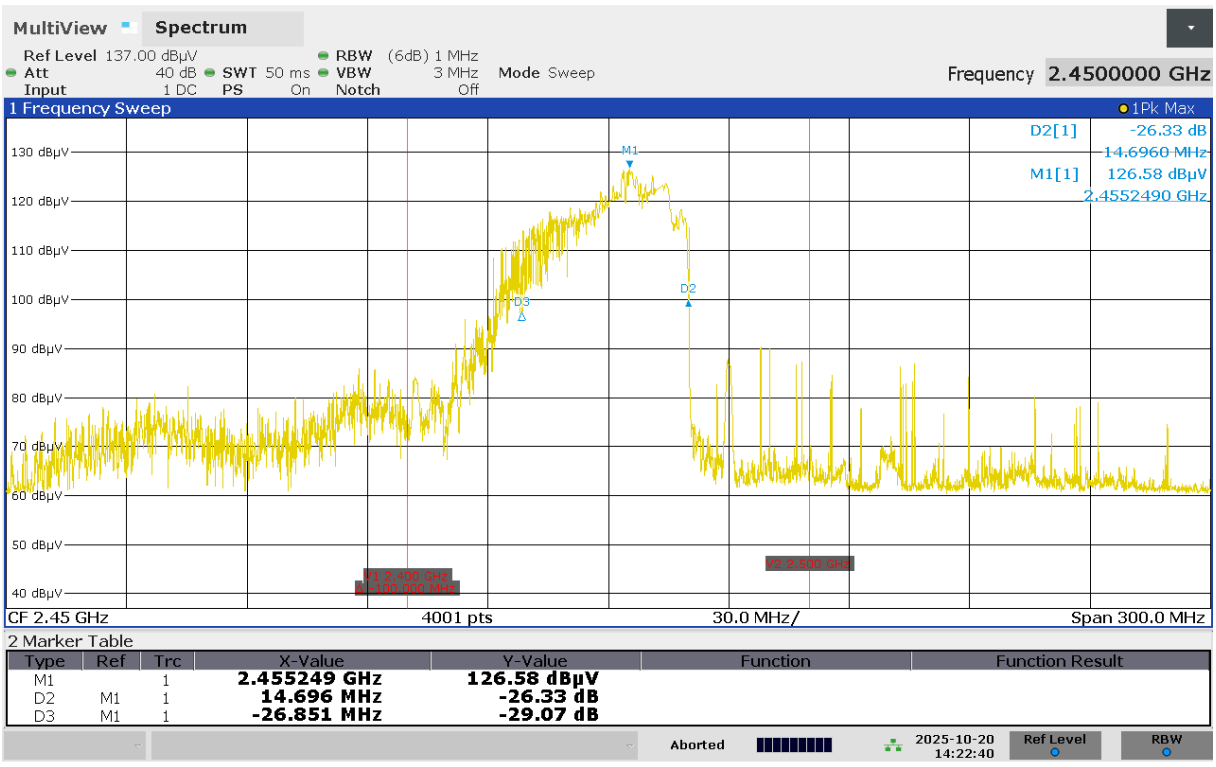
- ***Frequency vs Line Voltage Variation Test***



Horizontal (150 V, 1 000 ㎖)

PLOTS OF EMISSIONS

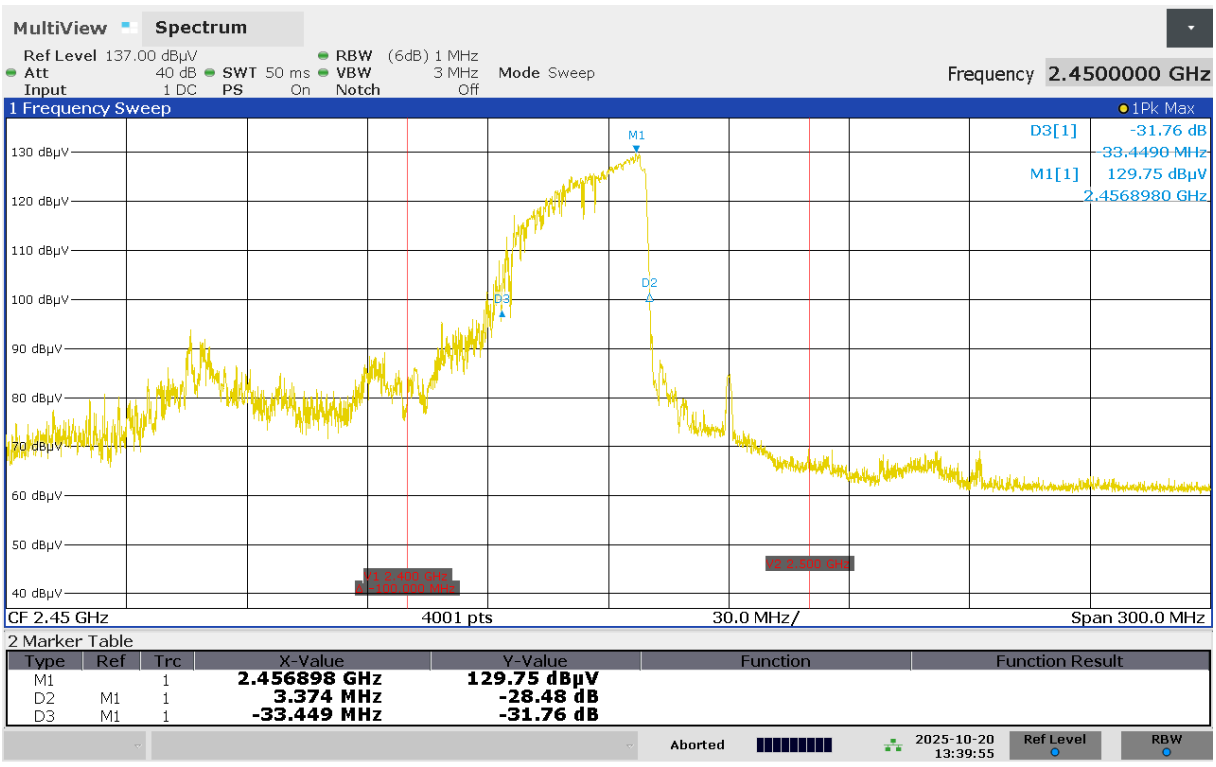
- ***Frequency vs Line Voltage Variation Test***



Vertical (150 V, 1 000 ㎖)

PLOTS OF EMISSIONS

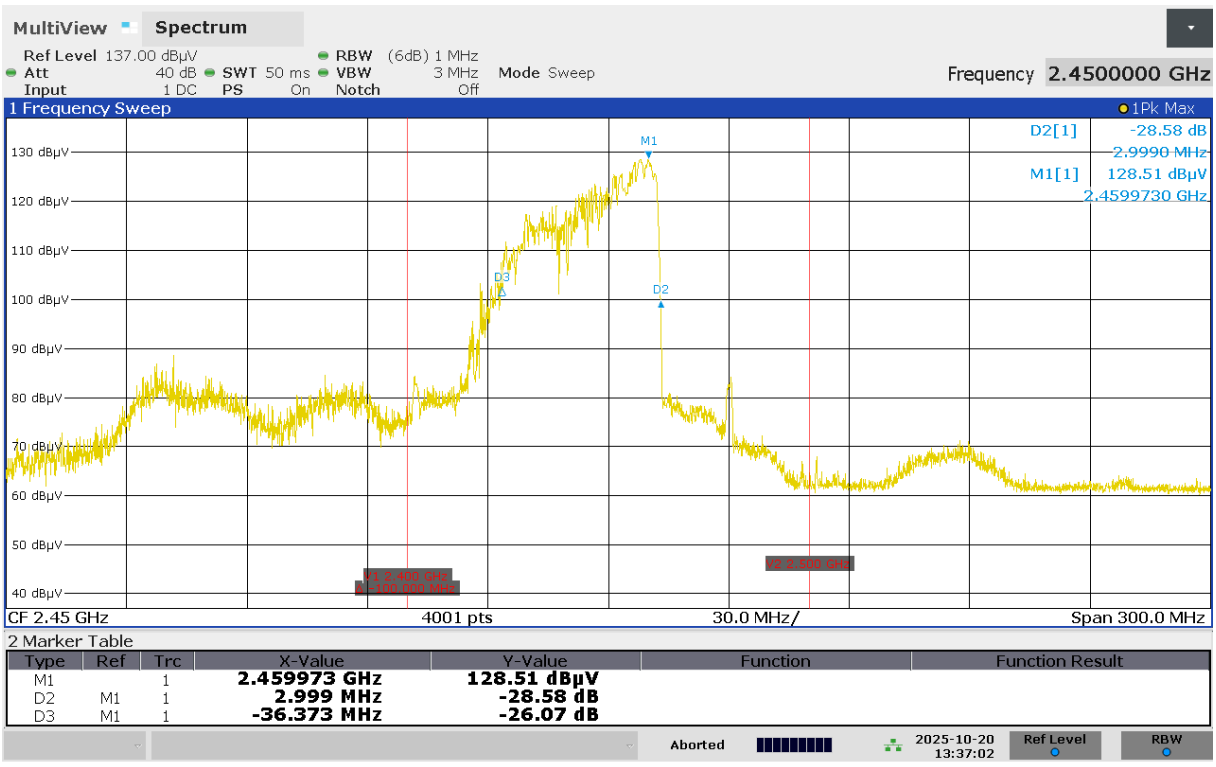
- ***Frequency vs Load Variation Test***



Horizontal (120 V, 200 ㎖)

PLOTS OF EMISSIONS

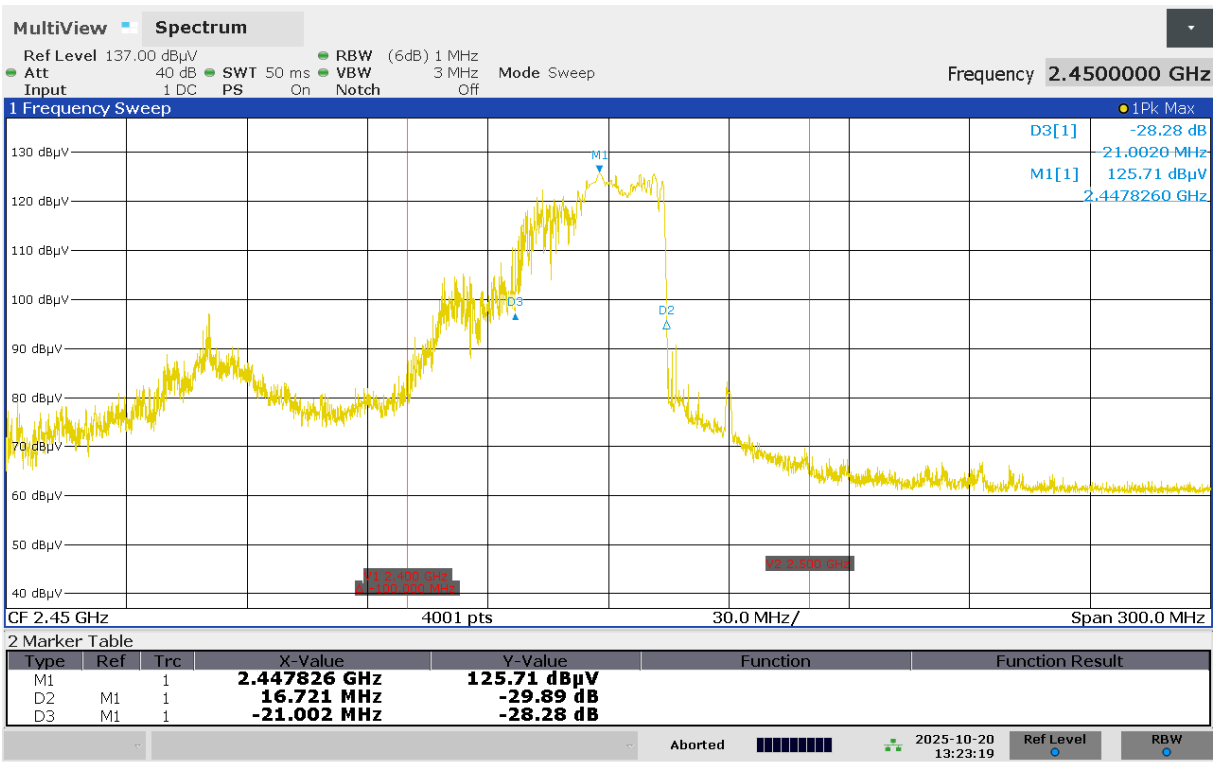
- ***Frequency vs Load Variation Test***



Vertical (120 V, 200 ㎖)

PLOTS OF EMISSIONS

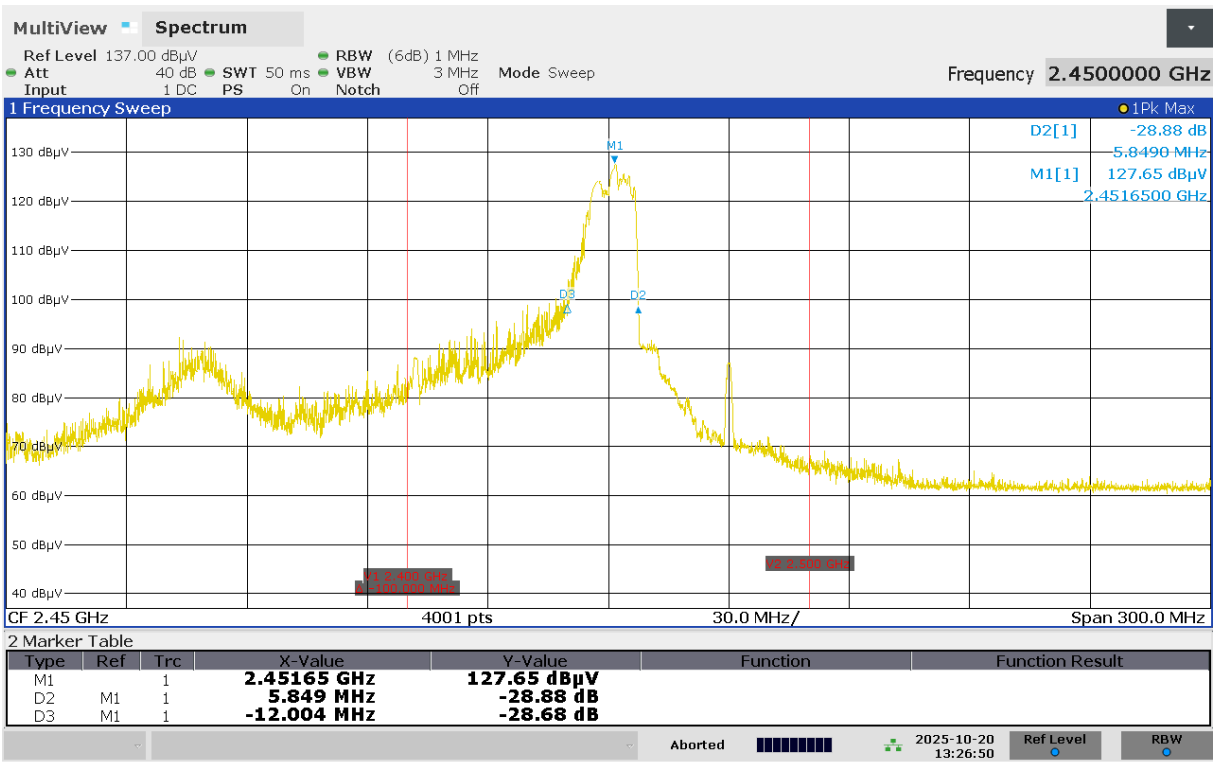
- ***Frequency vs Load Variation Test***



Horizontal (120 V, 400 ㎐)

PLOTS OF EMISSIONS

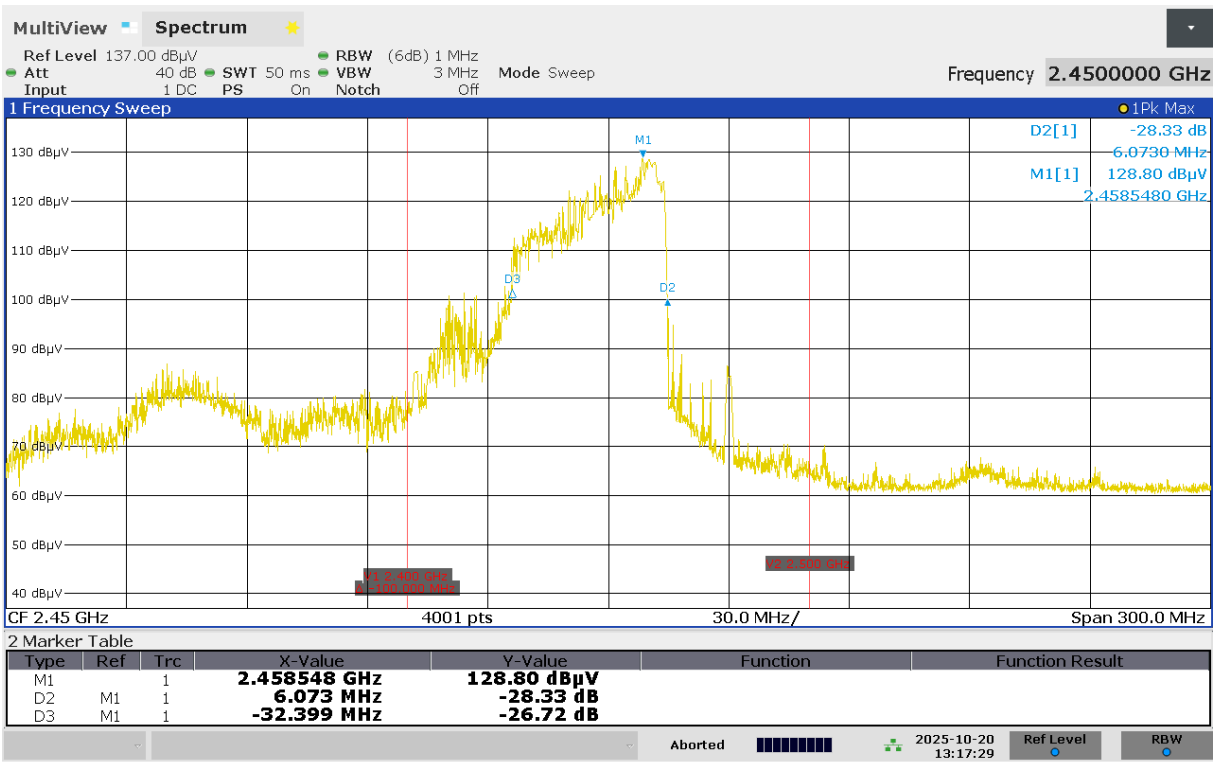
- ***Frequency vs Load Variation Test***



Vertical (120 V, 400 ㎐)

PLOTS OF EMISSIONS

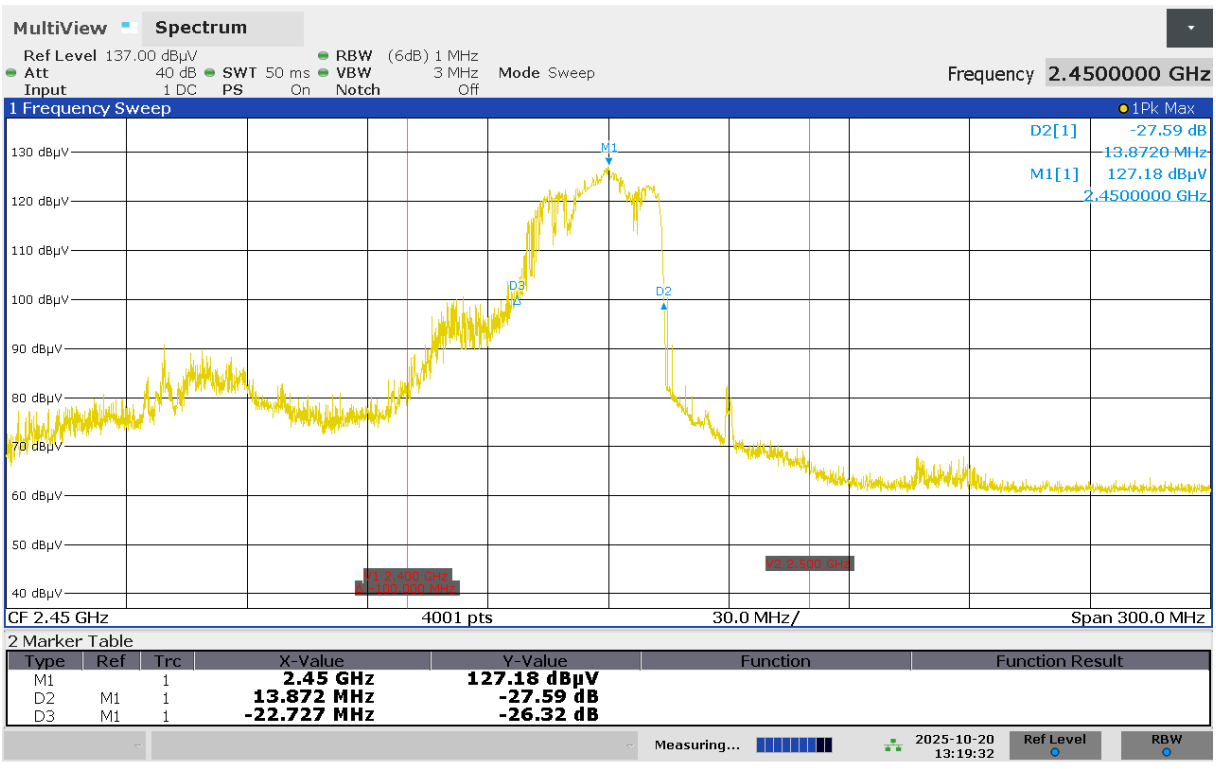
- ***Frequency vs Load Variation Test***



Horizontal (120 V, 600 ㎒)

PLOTS OF EMISSIONS

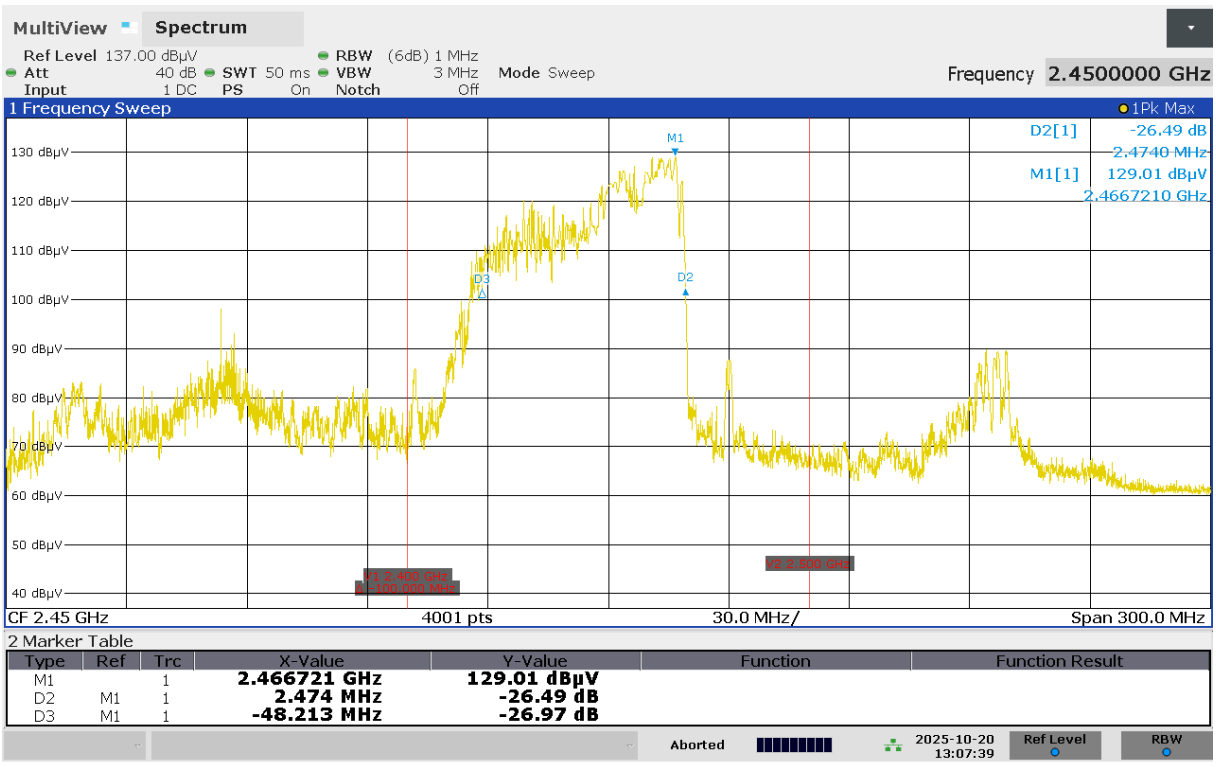
- ***Frequency vs Load Variation Test***



Vertical (120 V, 600 ㎖)

PLOTS OF EMISSIONS

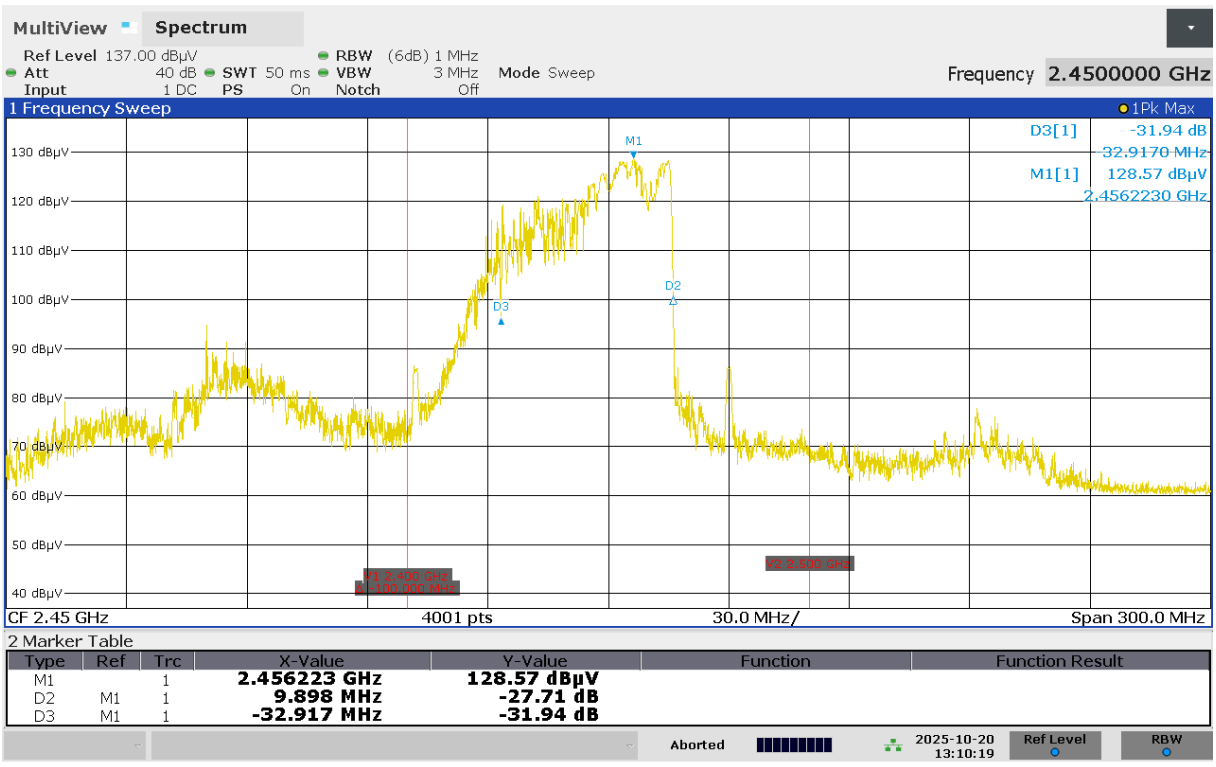
- ***Frequency vs Load Variation Test***



Horizontal (120 V, 800 ㎖)

PLOTS OF EMISSIONS

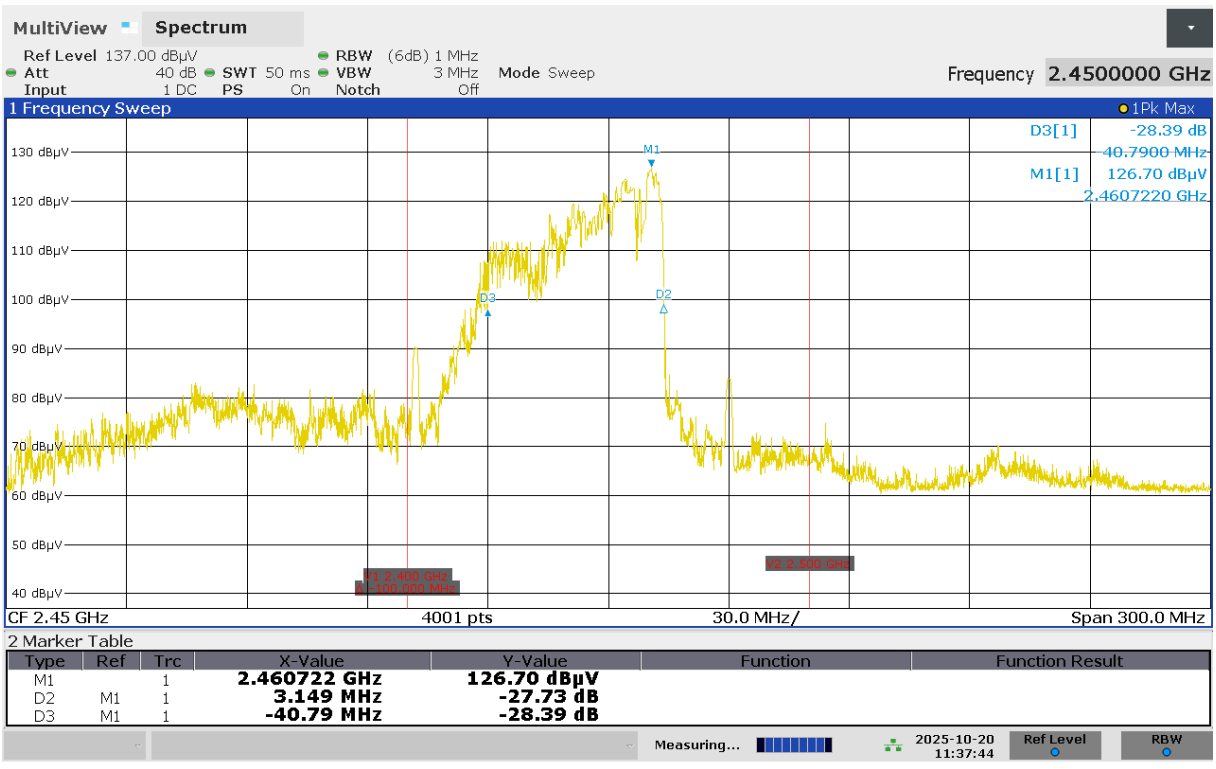
- ***Frequency vs Load Variation Test***



Vertical (120 V, 800 ㎖)

PLOTS OF EMISSIONS

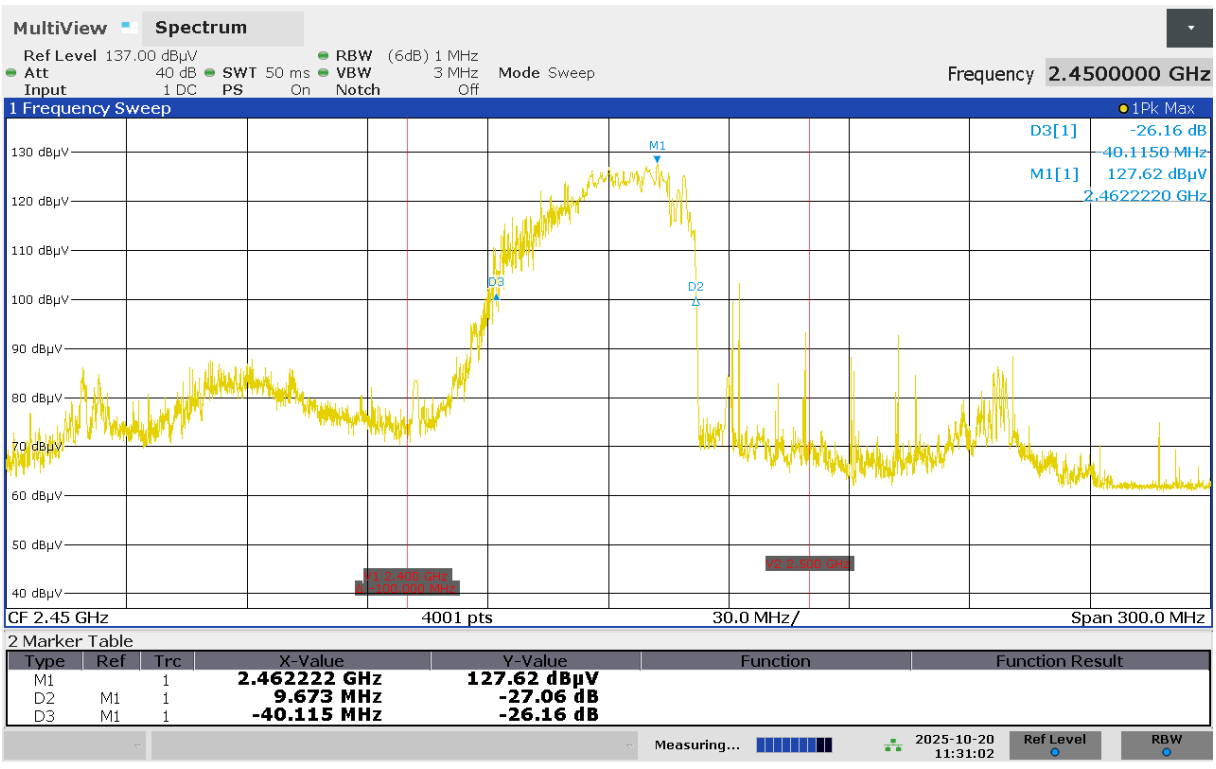
- ***Frequency vs Load Variation Test***



Horizontal (120 V, 1 000 ㎖)

PLOTS OF EMISSIONS

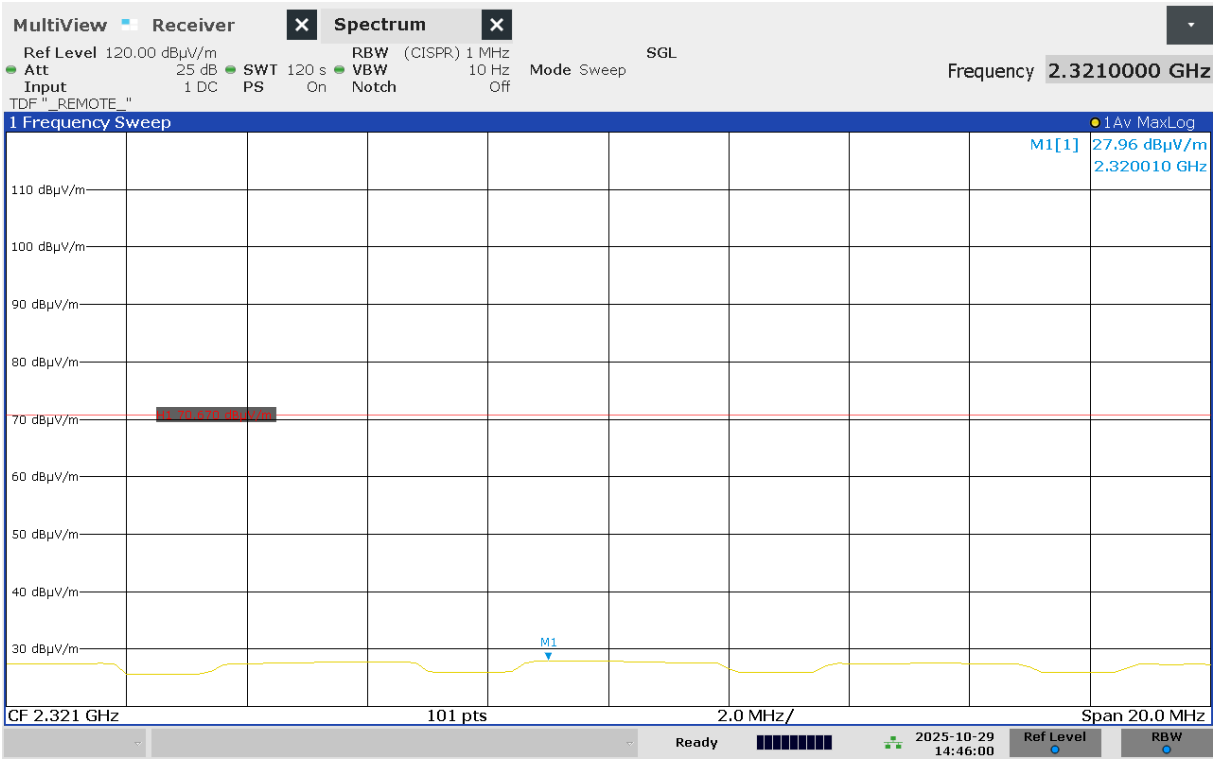
- ***Frequency vs Load Variation Test***



Vertical (120 V, 1 000 ㎖)

PLOTS OF EMISSIONS

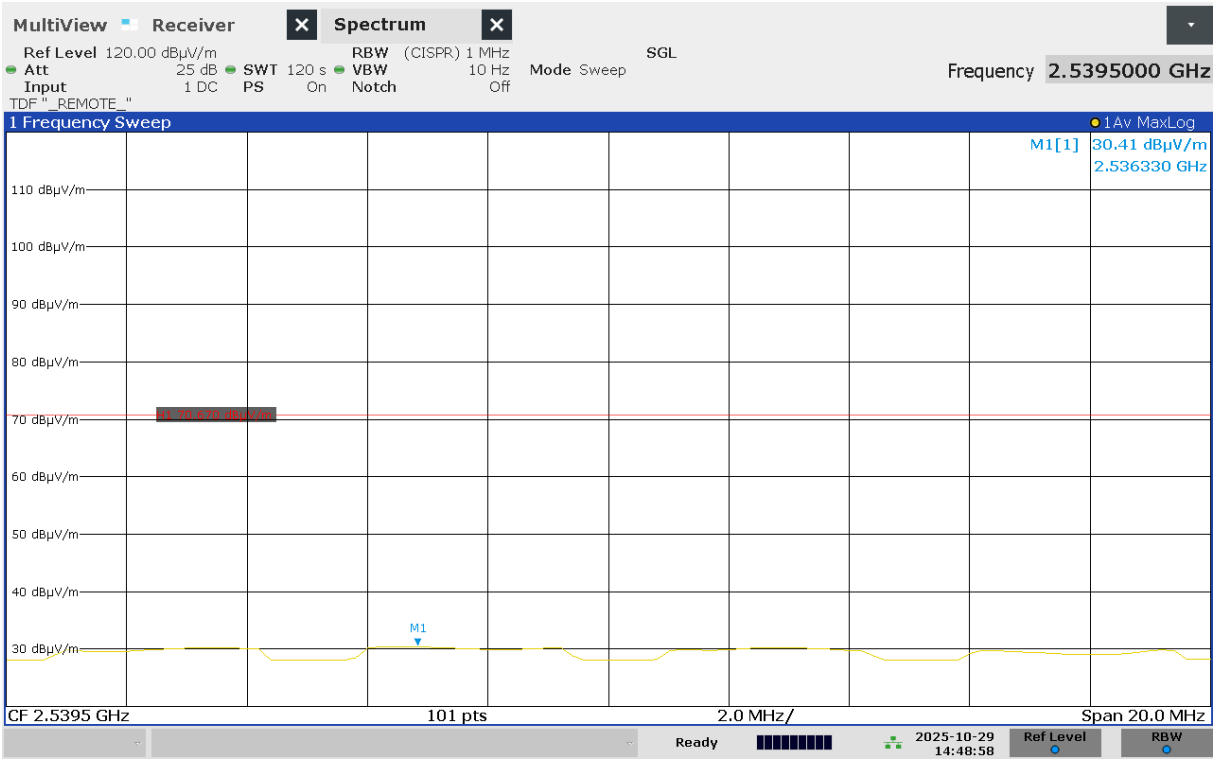
- ***Radiated Emissions (Above 1 GHz)***



2 321 MHz

PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***



2 539.5 MHz

PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***

2 973.5 MHz

PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***

4 920.5 MHz

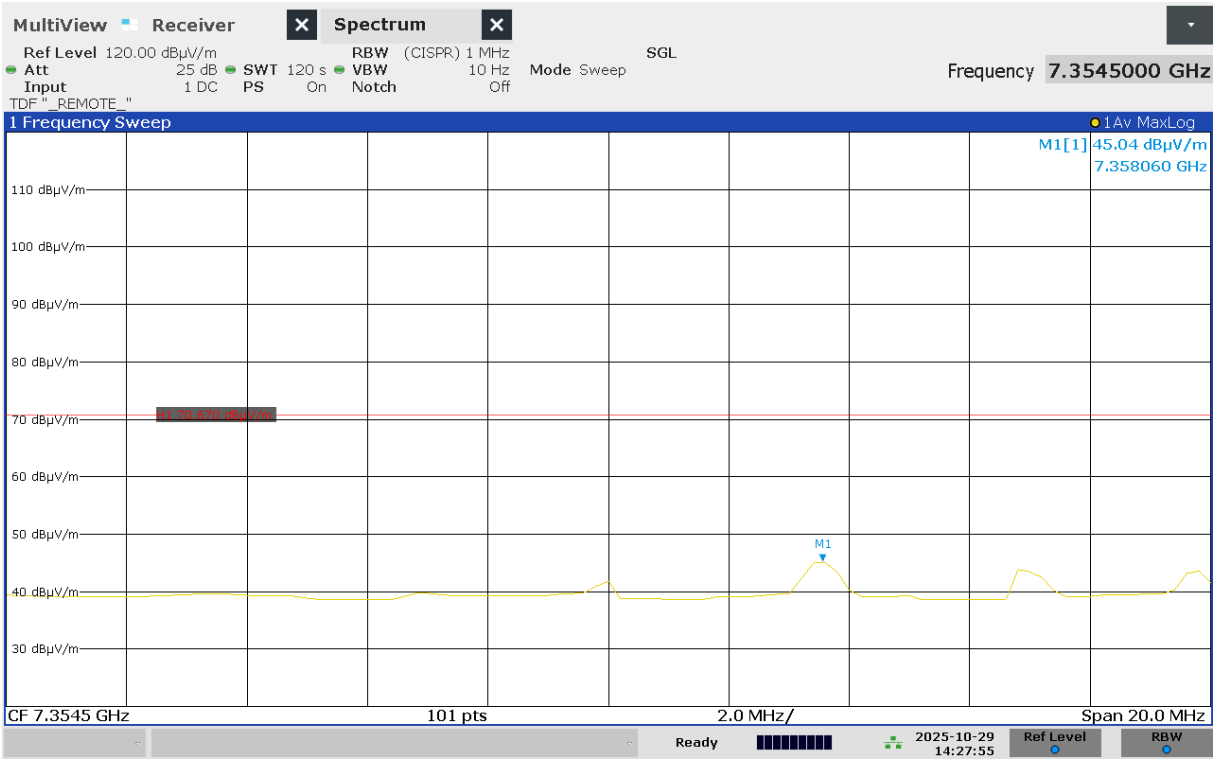
PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***

6 147 MHz

PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***



7 354.5 MHz

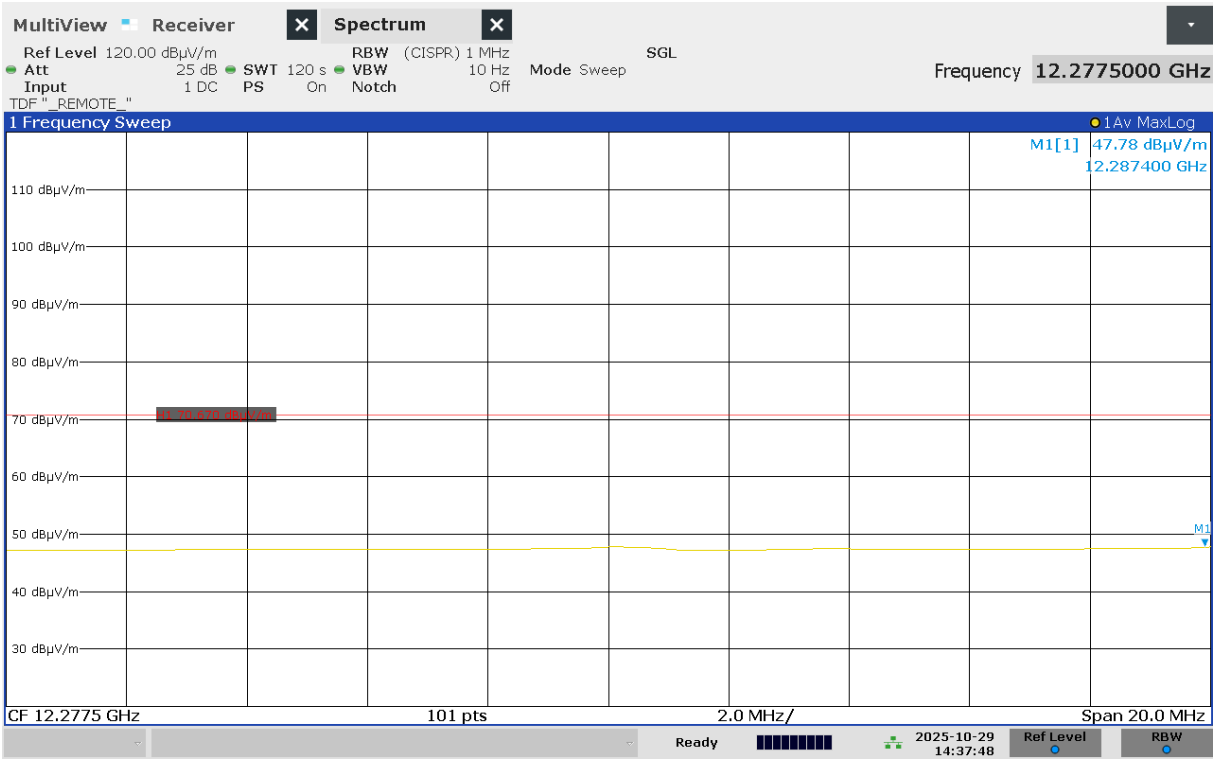
PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***

9 807.5 MHz

PLOTS OF EMISSIONS

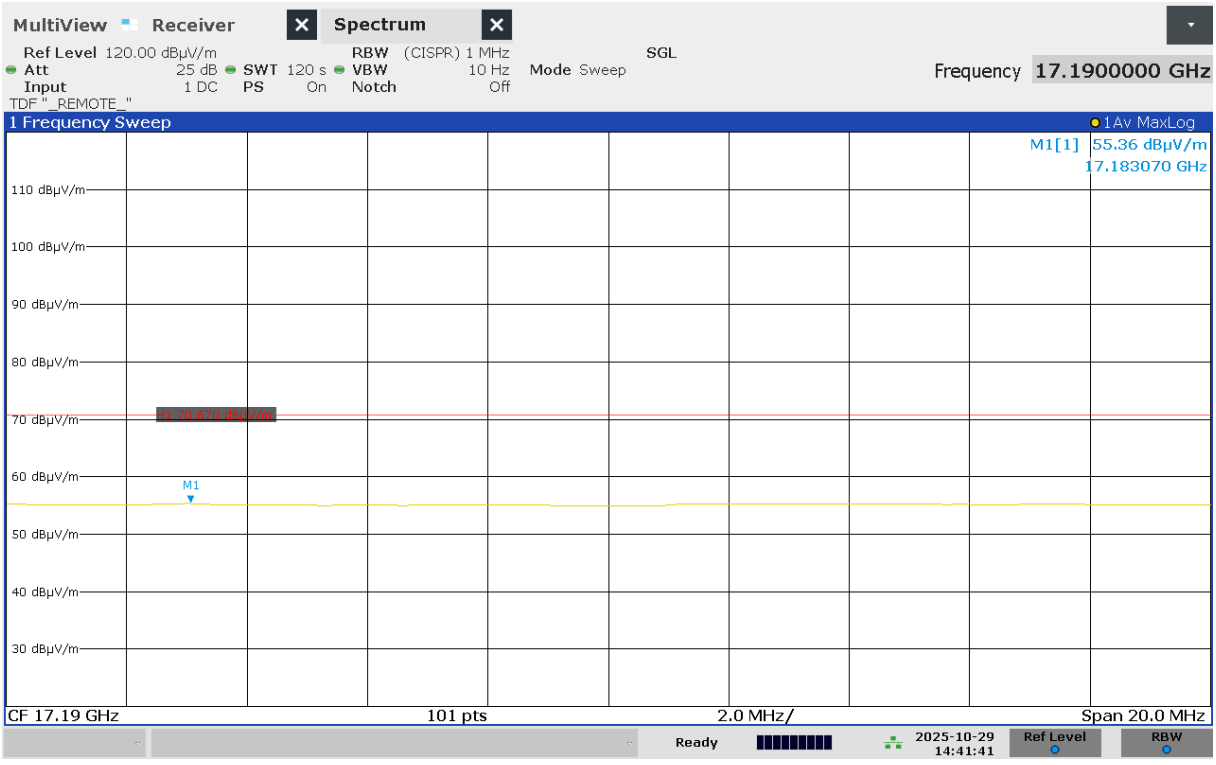
- ***Radiated Emissions (Above 1 GHz)***



12 277.5 MHz

PLOTS OF EMISSIONS

- ***Radiated Emissions (Above 1 GHz)***



17 190 MHz

ACCURACY OF MEASUREMENT

The Measurement Uncertainties stated were calculated in accordance with the requirements of measurement uncertainty contained in CISPR 16-4-2 with the confidence level of 95 %

1. Conducted Uncertainty Calculation

Source of Uncertainty	Xi	Uncertainty of Xi		Coverage factor k	u(Xi) (dB)	Ci	Ci u(Xi) (dB)
		Value (dB)	Probability Distribution				
Receiver reading 1)	R_I	± 0.10	normal 1	1.00	0.10	1	0.10
AMN Voltage division factor 2)	L_{AMN}	± 0.16	normal 2	2.00	0.08	1	0.08
Sine wave voltage 3)	dV_{SW}	± 0.18	normal 2	2.00	0.09	1	0.09
Pulse amplitude response 4)	dV_{PA}	± 0.58	normal 2	2.00	0.29	1	0.29
Pulse repetition rate response 5)	dV_{PR}	± 0.35	normal 2	2.00	0.18	1	0.18
Noise floor proximity 6)	dV_{NF}	± 0.00	rectangular	$\sqrt{3}$	0.00	1	0.00
AMN VDF frequency interpolation 7)	dV_{FI}	± 0.10	rectangular	$\sqrt{3}$	0.06	1	0.06
AMN Impedance 8)	dz	± 1.63	normal 2	2.00	0.82	1	0.82
Mismatch : AMN-Receiver 9)	M	± 0.07	U-Shaped	$\sqrt{2}$	0.05	1	0.05
Combined Standard Uncertainty	Normal			u_c = 0.90 dB			
Expended Uncertainty U	Normal (k = 2)			U = 1.80 dB (CL is approx. 95 %)			

2. Radiation Uncertainty Calculation (0.15 ㎒ ~ 30 ㎒)

Source of Uncertainty	Xi	Uncertainty of Xi		Coverage factor k	u(Xi) (dB)	Ci	Ci u(Xi) (dB)
		Value (dB)	Probability Distribution				
Receiver reading 1)	R_i	± 0.01	normal 1	1.00	0.01	1	0.01
Sine wave voltage 2)	dV_{sw}	± 0.18	normal 2	2.00	0.09	1	0.09
Pulse amplitude response 3)	dV_{pa}	± 0.58	normal 2	2.00	0.29	1	0.29
Pulse repetition rate response 4)	dV_{pr}	± 0.35	normal 2	2.00	0.18	1	0.18
Noise floor proximity 5)	dV_{nf}	± 0.50	normal 2	2.00	0.29	1	0.29
Antenna Factor Calibration 6)	A_F	± 1.50	normal 2	2.00	0.75	1	0.75
Antenna Directivity 7)	A_D	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Factor Height Dependence 8)	A_H	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Phase Centre Variation 9)	A_P	± 0.20	rectangular	$\sqrt{3}$	0.12	1	0.12
Antenna Factor Frequency Interpolation 10)	A_i	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Site Imperfections 11)	S_i	± 4.00	triangular	$\sqrt{6}$	1.63	1	1.63
Measurement Distance Variation 12)	D_V	± 0.10	rectangular	$\sqrt{3}$	0.06	1	0.06
Antenna Balance 13)	D_{bal}	± 1.00	rectangular	$\sqrt{3}$	0.58	1	0.58
Cross Polarisation 14)	D_{cross}	± 0.90	rectangular	$\sqrt{3}$	0.52	1	0.52
Mismatch 15)	M	+ 0.89 - 1.00	U-Shaped	$\sqrt{2}$	0.70	1	0.70
Combined Standard Uncertainty	Normal			u_c = 2.18 dB			
Expended Uncertainty U	Normal (k = 2)			U = 4.36 dB (CL is approx. 95 %)			

3. Radiation Uncertainty Calculation (30 ㎒ ~ 1 ㎓)

Source of Uncertainty	Xi	Uncertainty of Xi		Coverage factor k	u(Xi) (dB)	Ci	Ci u(Xi) (dB)
		Value (dB)	Probability Distribution				
Receiver reading 1)	R_i	± 0.30	normal 1	1.00	0.30	1	0.20
Sine wave voltage 2)	dV_{sw}	± 0.18	normal 2	2.00	0.09	1	0.09
Pulse amplitude response 3)	dV_{pa}	± 0.70	normal 2	2.00	0.35	1	0.35
Pulse repetition rate response 4)	dV_{pr}	± 0.70	normal 2	2.00	0.35	1	0.35
Noise floor proximity 5)	dV_{nf}	± 0.50	normal 2	2.00	0.29	1	0.29
Antenna Factor Calibration 6)	A_F	± 1.30	normal 2	2.00	0.65	1	0.65
Antenna Directivity 7)	A_D	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Factor Height Dependence 8)	A_H	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Phase Centre Variation 9)	A_P	± 0.20	rectangular	$\sqrt{3}$	0.12	1	0.12
Antenna Factor Frequency Interpolation 10)	A_I	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Site Imperfections 11)	S_i	± 4.00	triangular	$\sqrt{6}$	1.63	1	1.63
Measurement Distance Variation 12)	D_V	± 0.10	rectangular	$\sqrt{3}$	0.06	1	0.06
Antenna Balance 13)	D_{bal}	± 1.00	rectangular	$\sqrt{3}$	0.58	1	0.58
Cross Polarisation 14)	D_{cross}	± 0.90	rectangular	$\sqrt{3}$	0.52	1	0.52
Mismatch 15)	M	+ 0.89 - 1.00	U-Shaped	$\sqrt{2}$	0.70	1	0.70
Combined Standard Uncertainty	Normal			u_c = 2.20 dB			
Expended Uncertainty U	Normal (k = 2)			U = 4.40 dB (CL is approx. 95 %)			

4. Radiation Uncertainty Calculation (Above 1 ㎓)

Source of Uncertainty	Xi	Uncertainty of Xi		Coverage factor	u(Xi) (dB)	Ci	Ci u(Xi) (dB)
		Value (dB)	Probability Distribution	k			
Receiver Reading 1)	R_i	± 1.04	normal 1	1	1.04	1	1.04
Preamplifier gain 2) SCU18F(1-18)GHz SCU26F(18-26)GHz SCU40-F(26-40)GHz	G_p	± 0.23 ± 0.35 ± 0.33	normal 2	2	0.12 0.18 0.17	1	0.12 0.18 0.17
Receiver Sine Wave 3)	$dVsw$	± 0.25	normal 2	2	0.13	1	0.13
Instability of preamp gain 4)	$dGpw$	± 1.2	rectangular	$\sqrt{3}$	0.70	1	0.70
Noise Floor Proximity 5)	$dVnf$	± 1.00	rectangular	$\sqrt{3}$	0.58	1	0.58
Antenna Factor Calibration 6) HF907 (1-18)GHz QSH20S20 (18-26)GHz QMS-00238 (26-40)GHz	A_F	± 1.40 ± 1.60 ± 1.60	normal 2	2	0.70 0.80 0.80	1	0.70 0.80 0.80
Directivity difference 7)	A_D	± 3.00	rectangular	$\sqrt{3}$	0.87	1	0.87
Phase Centre location 8)	A_P	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Antenna Factor Frequency Interpolation 9)	A_I	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Site Imperfections 10)	S_i	± 3.00	triangular	$\sqrt{6}$	1.22	1	1.22
Effect of setup table material 11)	dA_{NT}	± 2.00	rectangular	$\sqrt{3}$	0.87	1	0.87
Separation distance 12)	d_D	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Cross Polarization 13)	D_{Cross}	± 0.90	rectangular	$\sqrt{3}$	0.52	1	0.52
Mismatch (antenna-Preamplifier) 14)	M	+ 1.30 - 1.50	U-Shaped	$\sqrt{2}$	1.09	1	1.09
Mismatch (preamplifier-receiver) 15)	M	+ 1.20 - 1.40	U-Shaped	$\sqrt{2}$	1.18	1	1.18
Combined Standard Uncertainty	Normal			u_c = 2.90 dB			
Expended Uncertainty U	Normal (k = 2)			U = 5.80 dB (CL is approx. 95 %)			

LIST OF TEST EQUIPMENT

No.	Instrument	Manufacturer	Model	Serial No.	Calibration Due Date	Calibration Interval
1	EMI TEST RECEIVER	Rohde & Schwarz	ESR3	102930	2026.07.02	1 year
2	Software	Rohde & Schwarz	EMC32	Version 11.50	-	-
3	FOUR-LINE V-NETWORK	Rohde & Schwarz	ENV432	101842	2026.07.03	1 year
4	EMI TEST RECEIVER	Rohde & Schwarz	ESW44	103221	2026.01.07	1 year
5	Low Noise Amplifier	TESTEK	TK-PA01S	250111-L	2026.04.21	1 year
6	Open Switch and Control Unit	Rohde & Schwarz	OSP230	101830	-	-
7	TILT ANTENNA MAST	innco systems GmbH	MA4640/800 -XP-EP	NK-B-E-0205	-	-
8	Turntable	innco systems GmbH	DT3000-3t	NK-B-E-0206	-	-
9	CONTROLLER	innco systems GmbH	CO3000	CO3000/1373/52 220621/P	-	-
10	BIAS UNIT	ROHDE & SCHWARZ	IN 600	101621	-	-
11	Active Loop Antenna	ROHDE & SCHWARZ	HFH2-Z2E	101190	2026.01.13	1 year
12	TRIPOD FOR HFH2-Z2E	ROHDE & SCHWARZ	HFH2-Z8	101938	-	
13	TRILOG Broadband Test Antenna	SCHWARZBECK	VULB 9163	1736	2026.08.12	2 years
14	ATTENUATOR	FAIRVIEW	SA3N5W-06	NK-B-E-0455	2026.07.02	1 year
15	EMI TEST RECEIVER	Rohde & Schwarz	ESW44	103318	2026.01.08	1 year
16	Turntable	innco systems GmbH	DS2000-S-2t	NK-B-E-0360	-	-
17	CONTROLLER	innco systems GmbH	CO3000	CO3000/1473/54 610422/P	-	-
18	Open Switch and Control Unit	Rohde & Schwarz	OSP220	102977	-	-
19	TILT ANTENNA MAST	innco systems GmbH	MA4640/800 -XP-EP	NK-B-E-0422	-	-
20	DOUBLE RIDGED HORN ANTENNA	Rohde & Schwarz	HF907	103175	2026.10.02	1 year
21	Signal Conditioning Unit	Rohde & Schwarz	SCU18F	101056	2026.03.27	1 year
22	Signal Conditioning Unit	Rohde & Schwarz	SCU26F	100750	2026.01.13	1 year
23	Horn Antenna	Steatite Antennas	QMS-00225	32226	2026.01.13	1 year
24	WiFi Filter Bank	ROHDE & SCHWARZ	U082	U082-001	-	-
25	Software	Rohde & Schwarz	EMC32	Version 11.50	-	-
26	Software	Rohde & Schwarz	ELEKTRA	Version 5.03.1	-	-
27	Multimeter	FLUKE Corporation	FLUKE-101	58980136WS	2026.01.08	1 year

- END -