

TEST REPORT

of

FCC Part 15 Subpart C §15.209

FCC ID: 2BNFQ-GWC001

Equipment Under Test : Wireless Charger
Model Name : GWC-001
Variant Model Name(s) : -
Applicant : GKR CO., LTD.
Manufacturer : GKR CO., LTD.
Date of Receipt : 2025.01.21
Date of Test(s) : 2025.03.25 ~ 2025.04.10
Date of Issue : 2025.04.17

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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- 4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by:



Finn Nam

Technical
Manager:



Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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1.2. Details of Applicant

Applicant : GKR CO., LTD.

Address : 24-3, Irye-ro, Goa-eup, Gumi-si, Gyeongsangbuk-do, Republic Of Korea , 39141

Contact Person : Seo, Jung-hyun

Phone No. : +82 70 7791 0332

1.3. Details of Manufacturer

Company : Same as applicant

Address : Same as applicant

1.4. Description of EUT

Kind of Product	Wireless Charger	
Model Name	GWC-001	
Serial Number	300619-11952	
Power Supply	DC 24 V	
Operation Mode	5 W, 15 W	
Frequency Range	5 W	127 kHz
	15 W	127 kHz
	Idle	127 kHz
Antenna Type	Coil Antenna	
Antenna Part Number	AWTA-1000604R5-12R5-N	
H/W Version	MA00	
S/W Version	V0100	

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	R&S	SMBV100A	259067	Jun. 19, 2024	Annual	Jun. 19, 2025
DC Power Supply	R&S	HMP2020	102130	May 02, 2024	Annual	May 02, 2025
Spectrum Analyzer	R&S	FSV30	103210	Mar. 21, 2025	Annual	Mar. 21, 2026
Loop Antenna	Schwarzbeck Mess-Elektronik	HFRAE 5161	5161-028	Nov. 06, 2024	Annual	Nov. 06, 2025
Amplifier	H.P.	8447F	2944A03909	Aug. 09, 2024	Annual	Aug. 09, 2025
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Mar. 25, 2025	Biennial	Mar. 25, 2027
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB 9163	9163-396	Apr. 02, 2025	Biennial	Apr. 02, 2027
EMI Test Receiver	R&S	ESU26	100109	Jan. 13, 2025	N/A	Jan. 13, 2026
Turn Table	Innco systems GmbH	DS 1200 S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/3 8330516/L	N.C.R.	N/A	N.C.R.
Antenna Mast	Innco systems GmbH	MA4640-XP-ET	MA4640/536/3 8330516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	SENSORVIEW	NMST-13A26-NMST-5 m	TPC24021900 04	Apr. 08, 2025	Semi-annual	Oct. 08, 2025
Coaxial Cable	SENSORVIEW	NMST-13A26-NMST-10 m	TPC24021900 01	Apr. 08, 2025	Semi-annual	Oct. 08ss, 2025
Coaxial Cable	RADIALL	TESTPRO 3	182287	Apr. 11, 2025	Semi-annual	Oct. 11, 2025

► Support Equipment

Description	Manufacturer	Model	FCC ID
SAMSUNG Mobile Phone	Samsung Electronics Co., Ltd.	SM-N950N	A3LSMN950KOR
SAMSUNG Mobile Phone	Samsung Electronics Co., Ltd.	SM-G925S	A3LSMG925KOR

Note;

- For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15 Subpart C		
Section	Test Item(s)	Result
15.209	Radiated Emission, Spurious Emission and Field Strength of Fundamental	Pass
2.1049	20 dB Bandwidth	Pass
15.207	AC Power Line Conducted Emission	N/A ¹⁾

Note;

1) The AC power line test was not performed because the EUT use battery power for operation and which do not operate from the AC power lines.

-The three coils built into the product do not operate simultaneously.

1.7. Test Procedure(s)

The measurement procedures described in the American National Standard of Procedure for Compliance Testing of unlicensed Wireless Devices (ANSI C63.10-2013).

1.8. Sample Calculation

Where relevant, the following sample calculation is provided:

Field strength level (dB μ V/m) = Measured level (dB μ V) + Antenna factor (dB/m) + Cable loss (dB) + (AMP (dB))

1.9. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL005939	2025.04.17	Initial

1.10. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty	
20 dB Bandwidth	0.01 kHz	
Radiated Emission, 9 kHz to 30 MHz	H	3.40 dB
	V	3.40 dB
Radiated Emission, below 1 GHz	H	4.60 dB
	V	5.00 dB

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence.

1.11. Worst Case of Test Configurations

Charging mode With client device		Mode		Description
Model	FCC ID			
SM-N981U	A3LSMN981U	5 W, 15 W	127 kHz	1 % of battery 50 % of battery 99 % of battery

Coil 1

Mode	Battery	Frequency (kHz)	Detect Mode	Reading (dB μ V)
5 W	1 %	127	Average	70.30
	50 %			70.30
	99 %			<u>76.30</u>
15 W	1 %	127	Average	74.60
	50 %			74.50
	99 %			<u>75.70</u>

Coil 2

Mode	Battery	Frequency (kHz)	Detect Mode	Reading (dB μ V)
5 W	1 %	127	Average	48.90
	50 %			49.20
	99 %			<u>57.50</u>
15 W	1 %	127	Average	<u>58.40</u>
	50 %			58.30
	99 %			58.20

Coil 3

Mode	Battery	Frequency (kHz)	Detect Mode	Reading (dB μ V)
5 W	1 %	127	Average	69.10
	50 %			69.10
	99 %			<u>76.70</u>
15 W	1 %	127	Average	74.70
	50 %			75.20
	99 %			<u>78.40</u>

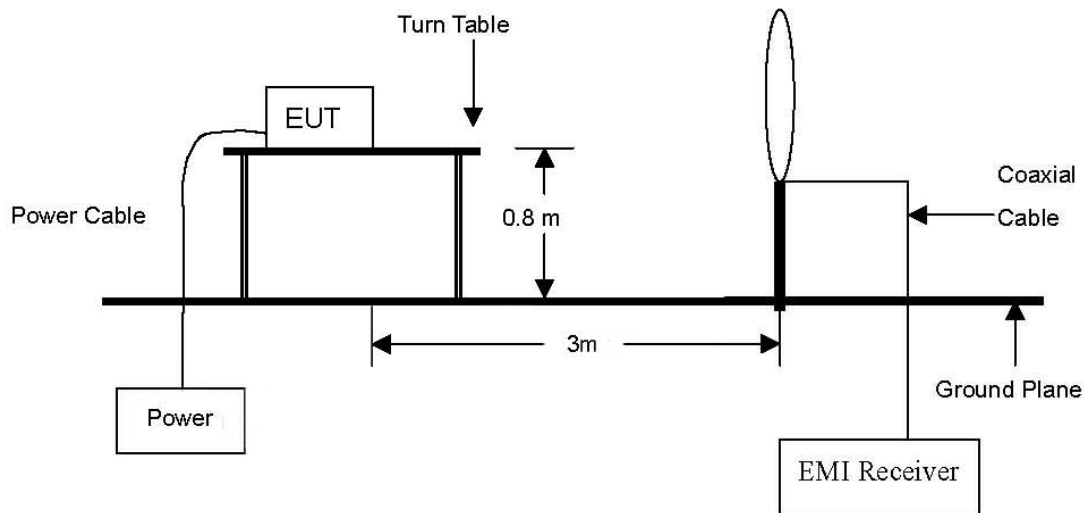
Note;

- EUT was investigated with client device under normal charging condition as above then worst value was only reported.

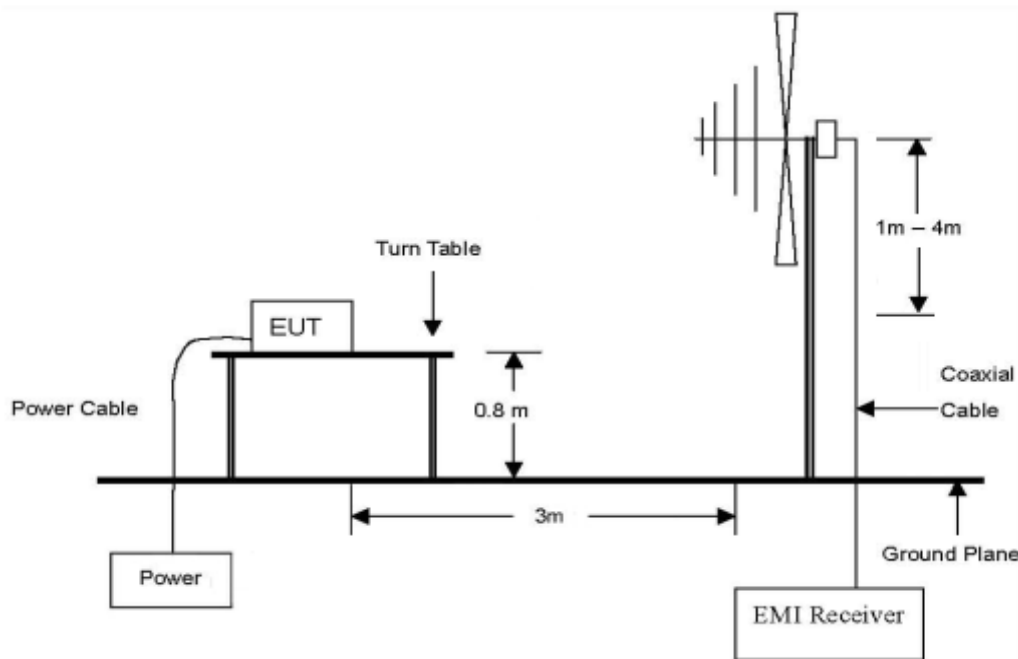
2. Field Strength of Fundamental and Spurious Emission

2.1. Test Setup

The diagram below shows the test setup that is utilized to make the measurements for emission from 9 MHz to 30 MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz.



2.2. Limit

2.2.1. Radiated emission limits, general requirements

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2 400/F(kHz)	300
0.490-1.705	24 000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. however, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241

According to §15.209(d), The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1 000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

2.3. Test Procedures

Radiated emissions from the EUT were measured according to the dictates of ANSI C63.10:2013.

2.3.1. Test Procedures for emission from 9 kHz to 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to Quasi Peak and Average Detect Function and Specified Bandwidth with Maximum Hold Mode.
5. To get a maximum emission level from the EUT, the EUT is manipulated through three orthogonal planes (X, Y, Z). Worst orthogonal plan of EUT is X – axis during radiation test.

2.3.2. Test Procedures for emission from 30 MHz to 1 000 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3 meter away from the interference-receiving antenna.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

2.4. Field Strength of Fundamental Test Result

Ambient temperature : $(23 \pm 1) ^\circ\text{C}$
Relative humidity : 47 % R.H.

The following table shows the highest levels of radiated emissions on between polarizations of horizontal and vertical.

Test Condition: Idle mode

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	66.20	Average	H	18.30	0.06	84.56	4.56	25.53	20.97

Coil 1

Test Condition: 5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	76.30	Average	H	18.30	0.06	94.66	14.66	25.53	10.87

Test Condition: 15 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	75.70	Average	H	18.30	0.06	94.06	14.06	25.53	11.47

Coil 2

Test Condition: 5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	57.52	Average	H	18.30	0.06	75.88	-4.12	25.53	29.65

Test Condition: 15 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	58.40	Average	H	18.30	0.06	76.76	-3.24	25.53	28.77

Coil 3

Test Condition: 5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	76.70	Average	H	18.30	0.06	95.06	15.06	25.53	10.47

Test Condition: 15 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Cable (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m	Limit (dB μ V/m) at 300 m	Margin (dB)
Operating Frequency: 127 kHz									
0.127	78.40	Average	H	18.30	0.06	96.76	16.76	25.53	8.77

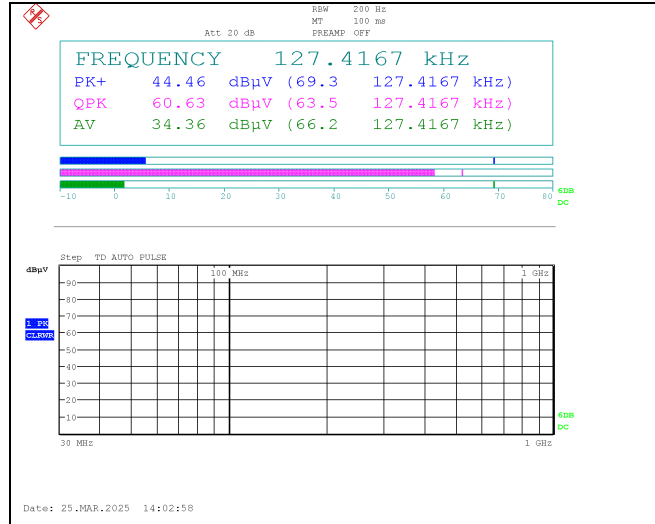
Remark;

1. According to §15.31(f)(2),
 - 300 m Result (dB μ V/m) = 3 m Result (dB μ V/m) - 40log (300/3) (dB μ V/m).
2. According to field strength table of general requirement in §15.209(a), field strength limits below 1.705 MHz were calculated as below.
 - 9 kHz to 490 kHz: 20log (2 400 / F (kHz)) at 300 m (dB μ V/m)
 - 490 kHz to 1.705 MHz: 20log (24 000/F (kHz)) at 30 m (dB μ V/m)
3. According to §15.209(d), the measurements were tested by using Quasi peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1 GHz in these three bands on measurements employing an average detector.
4. The limit above was calculated based on table of §15.209(a).
5. Actual (dB μ V/m) at 3 m = Reading (dB μ V) + AF (dB/m) + CL (dB).

- Test plots

Test Condition: Idle mode

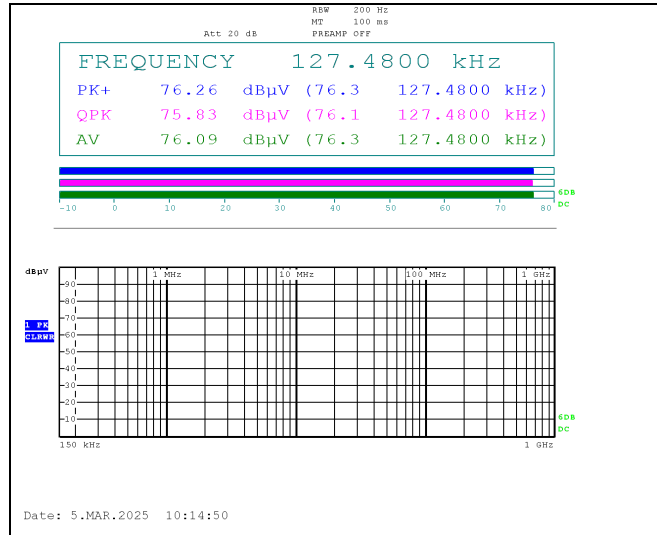
Operating Frequency: 127 kHz



Coil 1

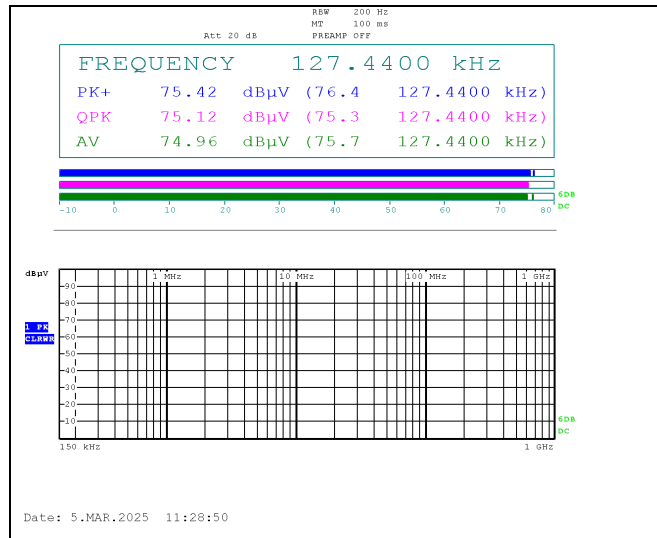
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

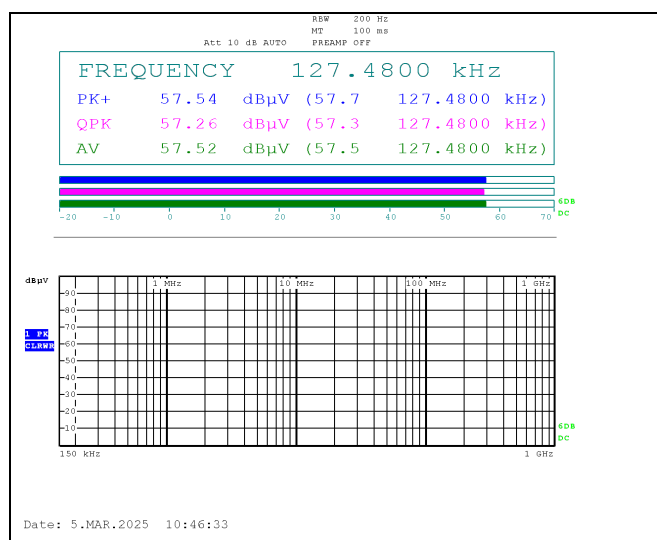
Operating Frequency: 127 kHz



Coil 2

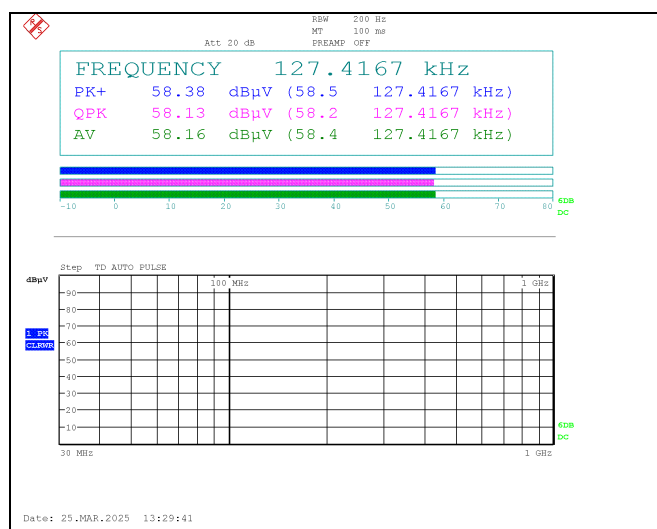
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

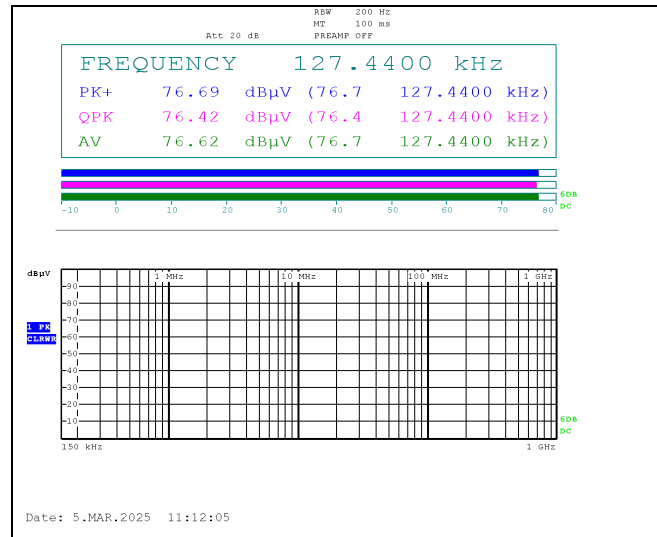
Operating Frequency: 127 kHz



Coil 3

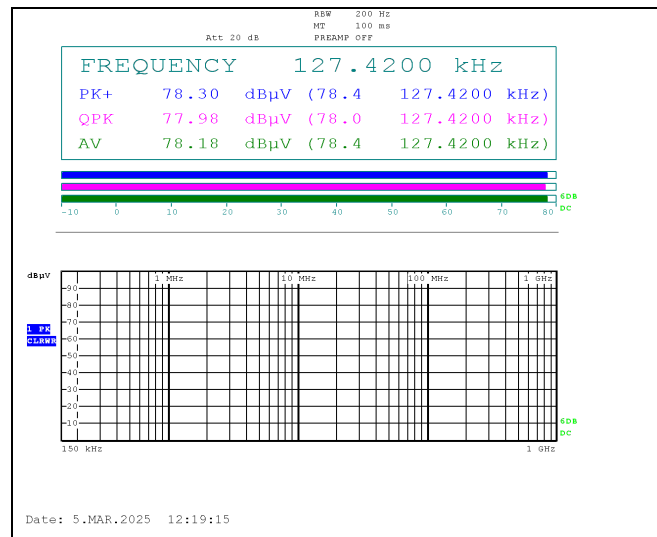
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 kHz



2.5. Spurious Emission Test Result

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 % R.H.

The following table shows the highest levels of radiated emissions on between polarizations of horizontal and vertical.

Test Condition: Idle mode

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dBμV/m) at 3 m	Actual (dBμV/m) at 300 m or 30 m	Limit (dBμV/m) at 300 m or 30 m	Margin (dB)
0.034	40.10	Average	H	18.49	0.03	58.62	-21.38	36.97	58.35
0.104	21.70	Quasi Peak	H	18.30	0.04	40.04	-39.96	27.26	67.22
0.582	22.90	Quasi Peak	H	18.33	0.45	41.68	1.68	32.31	30.63
Above 1.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.		Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
413.96	31.67	Quasi Peak	V	-3.23	28.44	46.00	17.56
904.72	23.64	Quasi Peak	H	4.45	28.09	46.00	17.91

Coil 1

Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.021	24.50	Average	H	18.68	0.03	43.21	-36.79	41.16	77.95
0.086	21.10	Average	H	18.34	0.04	39.48	-40.52	28.91	69.43
0.382	41.70	Average	H	18.30	0.26	60.26	-19.74	15.96	35.70
1.569	25.10	Quasi Peak	H	18.56	0.63	44.29	4.29	23.69	19.40
2.674	15.60	Quasi Peak	H	18.67	0.18	34.45	-5.55	29.54	35.09
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
37.11	43.48	Quasi Peak	V	-9.66	33.82	40.00	6.18
83.62	33.54	Quasi Peak	V	-13.12	20.42	40.00	19.58
107.33	32.60	Quasi Peak	V	-8.82	23.78	43.50	19.72
162.67	45.03	Quasi Peak	H	-11.25	33.78	43.50	9.72
415.79	29.75	Quasi Peak	V	-3.26	26.49	46.00	19.51
Above 500.00	Not detected	-	-	-	-	-	-

Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.020	24.40	Average	H	18.70	0.03	43.13	-36.87	41.58	78.45
0.051	22.00	Average	H	18.44	0.03	40.47	-39.53	33.45	72.98
0.089	15.10	Average	H	18.33	0.04	33.47	-46.53	28.62	75.15
0.384	34.90	Average	H	18.30	0.27	53.47	-26.53	15.92	42.45
1.586	24.20	Quasi Peak	H	18.56	0.63	43.39	3.39	23.60	20.21
Above 2.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36.84	42.68	Quasi Peak	V	-9.78	32.90	40.00	7.10
84.91	39.54	Quasi Peak	V	-12.67	26.87	40.00	13.13
106.09	39.89	Quasi Peak	V	-8.75	31.14	43.50	12.36
160.95	47.36	Quasi Peak	H	-11.34	36.02	43.50	7.48
835.32	23.77	Quasi Peak	H	2.86	26.63	46.00	19.37
Above 900.00	Not detected	-	-	-	-	-	-

Coil 2

Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.020	26.70	Average	H	18.70	0.03	45.43	-34.57	41.58	76.15
0.067	15.40	Average	H	18.39	0.04	33.83	-46.17	31.08	77.25
0.426	28.80	Average	H	18.30	0.32	47.42	-32.58	15.02	47.60
1.533	24.70	Quasi Peak	H	18.55	0.64	43.89	3.89	23.89	20.00
2.690	15.50	Quasi Peak	H	18.67	0.17	34.34	-5.66	29.54	35.20
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36.14	46.43	Quasi Peak	V	-10.14	36.29	40.00	3.71
84.70	35.33	Quasi Peak	V	-12.76	22.57	40.00	17.43
149.53	49.04	Quasi Peak	H	-12.24	36.80	43.50	6.70
418.05	33.11	Quasi Peak	V	-3.21	29.90	46.00	16.10
Above 500.00	Not detected	-	-	-	-	-	-

Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.019	28.30	Average	H	18.72	0.03	47.05	-32.95	42.03	74.98
0.077	12.70	Average	H	18.37	0.04	31.11	-48.89	29.87	78.76
0.383	41.70	Average	H	18.30	0.27	60.27	-19.73	15.94	35.67
1.662	25.40	Quasi Peak	H	18.57	0.61	44.58	4.58	23.19	18.61
Above 2.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36.84	44.61	Quasi Peak	V	-9.78	34.83	40.00	5.17
84.64	35.43	Quasi Peak	V	-12.78	22.65	40.00	17.35
107.06	33.21	Quasi Peak	V	-8.82	24.39	43.50	19.11
159.06	47.93	Quasi Peak	H	-11.45	36.48	43.50	7.02
Above 200.00	Not detected	-	-	-	-	-	-

Coil 3

Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.021	24.30	Average	H	18.68	0.03	43.01	-36.99	41.16	78.15
0.035	27.00	Average	H	18.49	0.03	45.52	-34.48	36.72	71.20
0.077	21.20	Average	H	18.37	0.04	39.61	-40.39	29.87	70.26
0.382	34.80	Average	H	18.30	0.26	53.36	-26.64	15.96	42.60
1.626	26.50	Quasi Peak	H	18.56	0.62	45.68	5.68	23.38	17.70
2.697	14.40	Quasi Peak	H	18.67	0.16	33.23	-6.77	29.54	36.31
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
37.11	43.22	Quasi Peak	V	-9.66	33.56	40.00	6.44
85.72	36.65	Quasi Peak	V	-12.35	24.30	40.00	15.70
107.17	37.82	Quasi Peak	V	-8.82	29.00	43.50	14.50
156.91	43.27	Quasi Peak	H	-11.68	31.59	43.50	11.91
417.52	29.40	Quasi Peak	V	-3.22	26.18	46.00	19.82
891.74	24.44	Quasi Peak	H	4.03	28.47	46.00	17.53
Above 900.00	Not detected	-	-	-	-	-	-

Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m) at 3 m	Actual (dB μ V/m) at 300 m or 30 m	Limit (dB μ V/m) at 300 m or 30 m	Margin (dB)
0.020	24.30	Average	H	18.70	0.03	43.03	-36.97	41.58	78.55
0.051	25.30	Average	H	18.44	0.03	43.77	-36.23	33.45	69.68
0.117	25.90	Average	H	18.30	0.05	44.25	-35.75	26.24	61.99
0.380	42.20	Average	H	18.30	0.26	60.76	-19.24	16.01	35.25
1.576	25.40	Quasi Peak	H	18.56	0.63	44.59	4.59	23.65	19.06
Above 2.000	Not detected	-	-	-	-	-	-	-	-

Above 30 MHz

Radiated Emissions			Ant.	Correction (dB/m)	Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.		Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
36.84	45.28	Quasi Peak	V	-9.78	35.50	40.00	4.50
84.54	44.25	Quasi Peak	V	-12.83	31.42	40.00	8.58
106.36	41.69	Quasi Peak	V	-8.77	32.92	43.50	10.58
164.94	41.64	Quasi Peak	H	-11.11	30.53	43.50	12.97
414.34	29.43	Quasi Peak	V	-3.24	26.19	46.00	19.81
799.53	23.82	Quasi Peak	H	2.43	26.25	46.00	19.75
Above 800.00	Not detected	-	-	-	-	-	-

Remark;

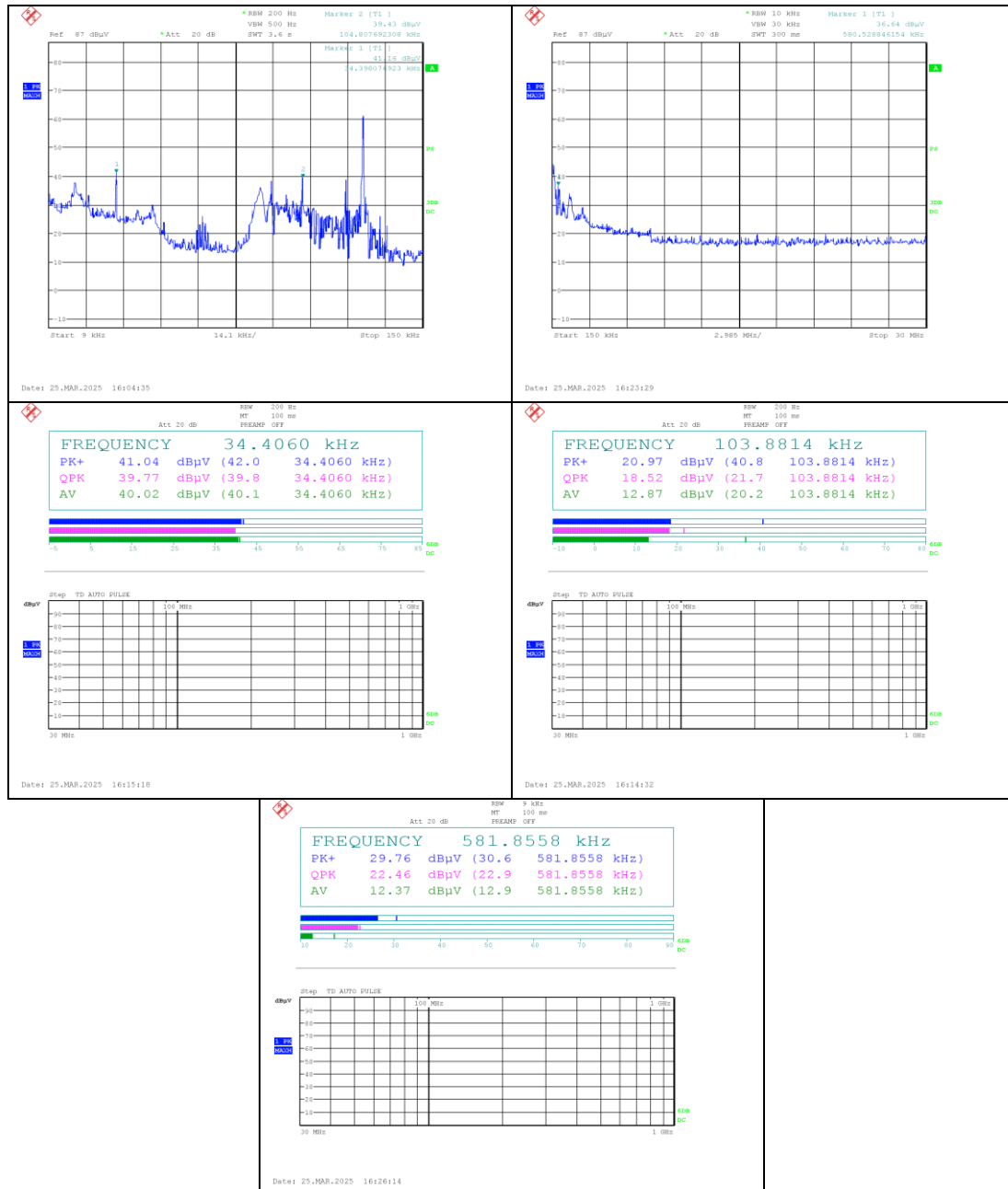
1. According to §15.31 (f)(2),
 - 300 m Result (dB μ V/m) = 3 m Result (dB μ V/m) - 40log (300/3) (dB μ V/m)
 - 30 m Result (dB μ V/m) = 3 m Result (dB μ V/m) - 40log (30/3) (dB μ V/m)
2. According to field strength table of general requirement in §15.209 (a), field strength limits below 1.705 MHz were calculated as below.
 - 9 kHz to 490 kHz: 20log (2 400 / F (kHz)) at 300 m (dB μ V/m)
 - 490 kHz to 1.705 MHz: 20log (24 000 / F (kHz)) at 30 m (dB μ V/m)
3. According to §15.209 (d), the measurements were tested by using Quasi peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1 GHz in these three bands on measurements employing an average detector.
4. The limit above was calculated based on table of §15.209 (a).
5. Actual (dB μ V/m) at 3 m were calculated as below.
 - Below 30 MHz : Reading (dB μ V) + AF (dB/m) + CL (dB)
 - Above 30 MHz : Actual = Reading + Correction (Correction = Antenna Factor + AMP Factor + Cable Loss)
6. According to §15.31(o), emission levels are not report much lower than the limits by over 20 dB.
7. Test from 30 MHz to 1 000 MHz was performed using the software of ELEKTRAT(V5.02) from Rohde & Schwarz GmbH & Co. KG.

- Test plots

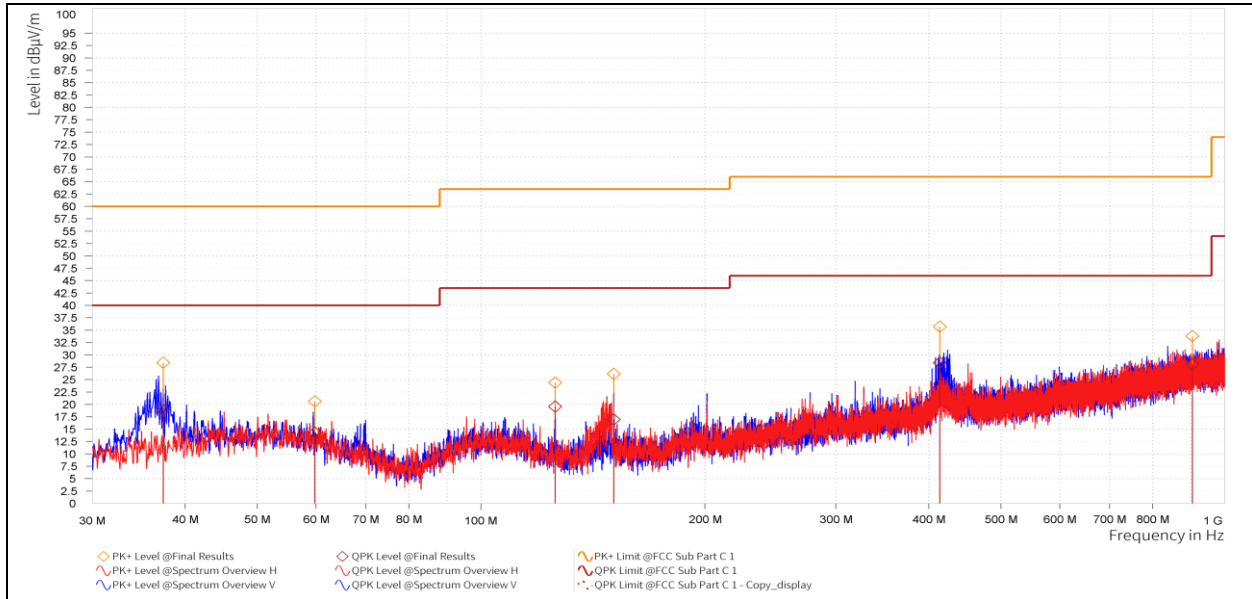
Test Condition: Idle mode

Operating Frequency: 127 MHz

Below 30 MHz



Above 30 MHz



Coil 1

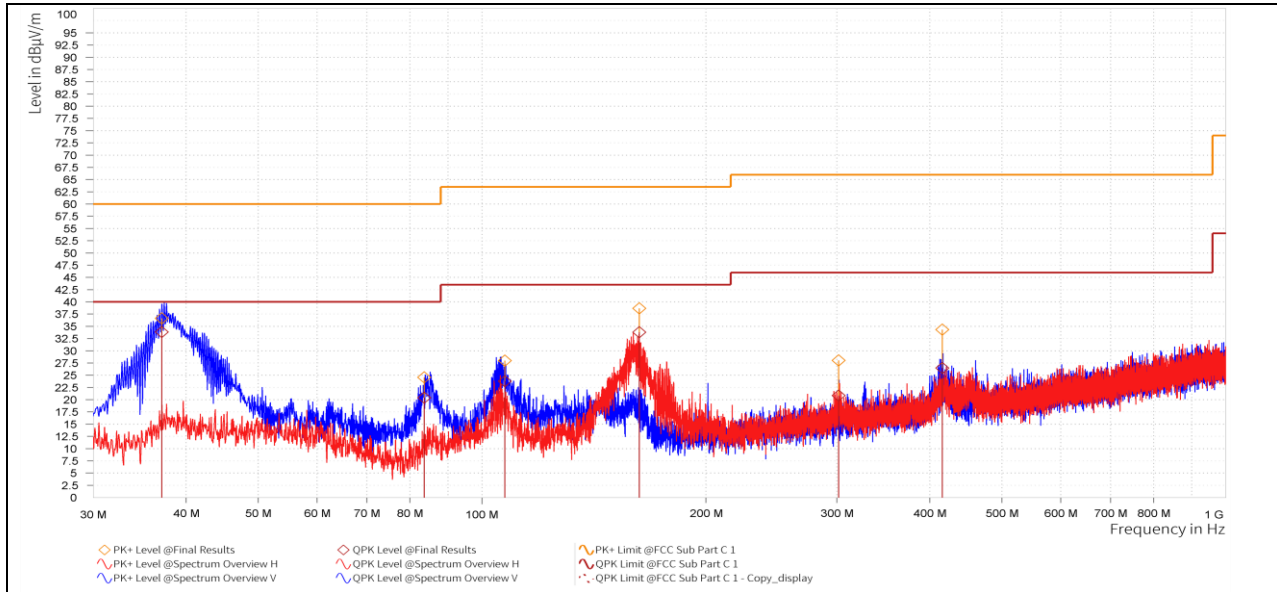
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz



Above 30 MHz



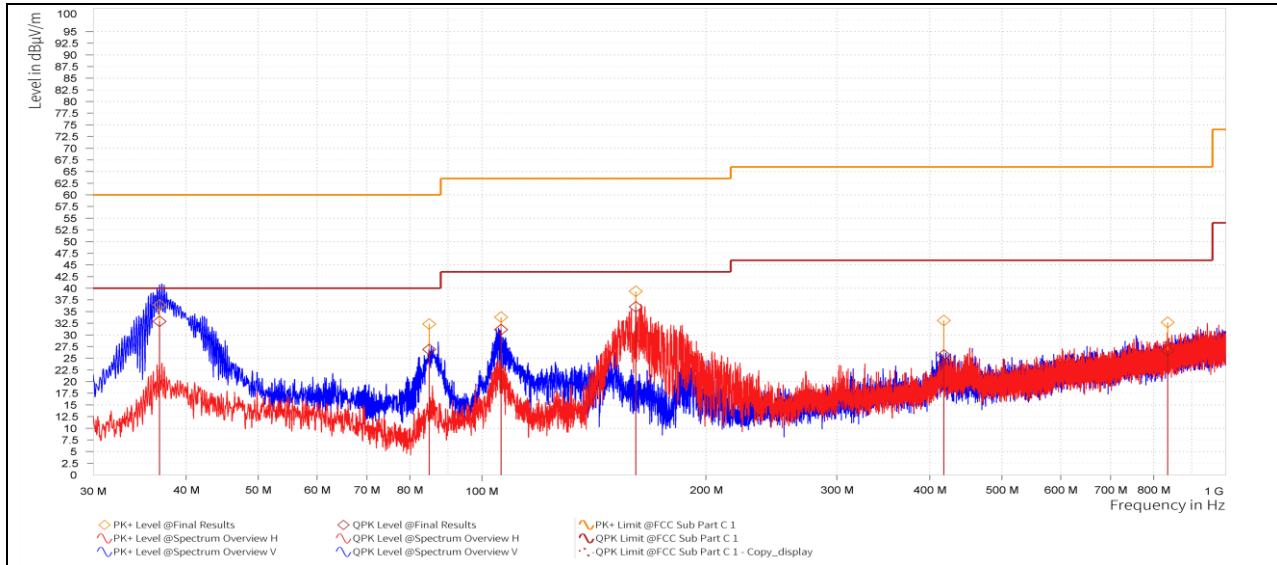
Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz



Above 30 MHz

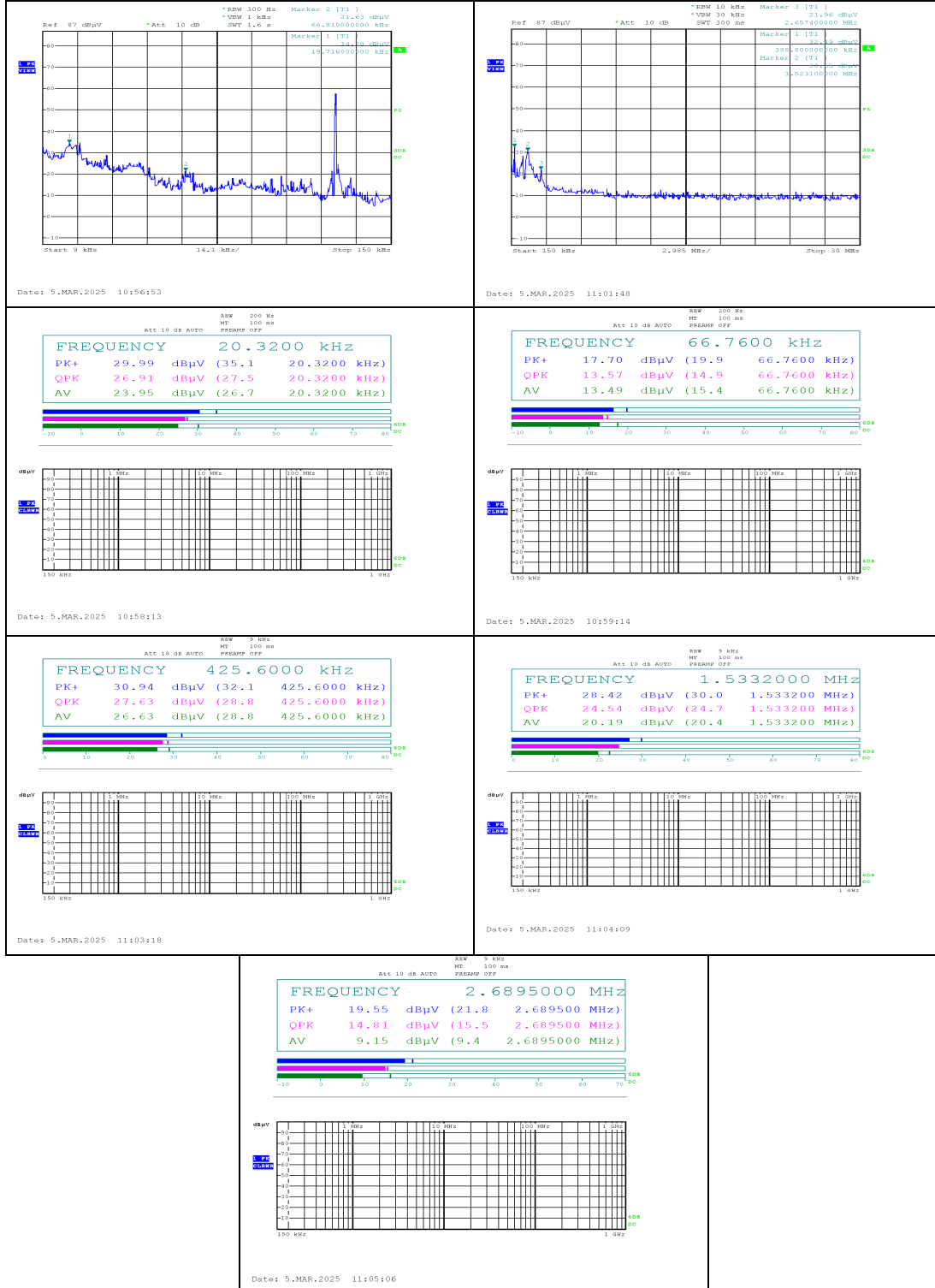


Coil 2

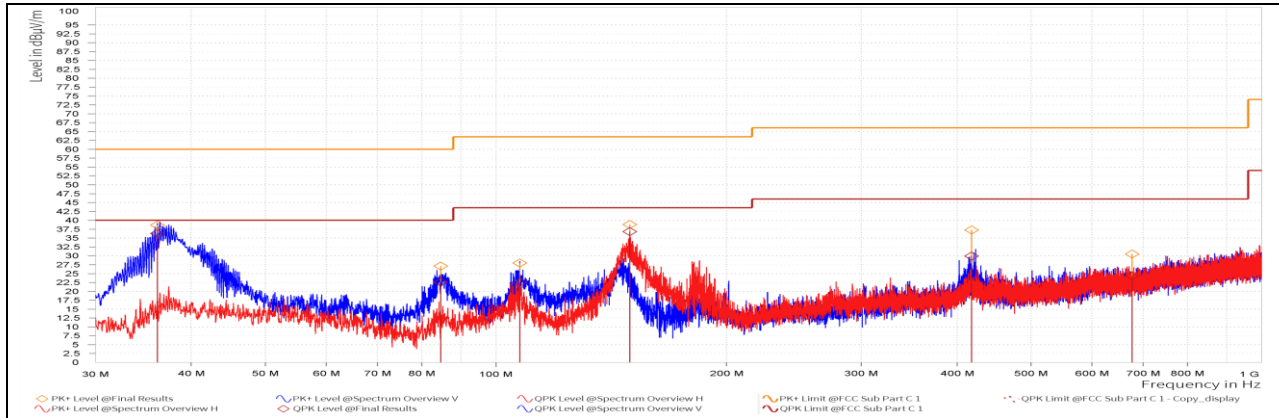
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz



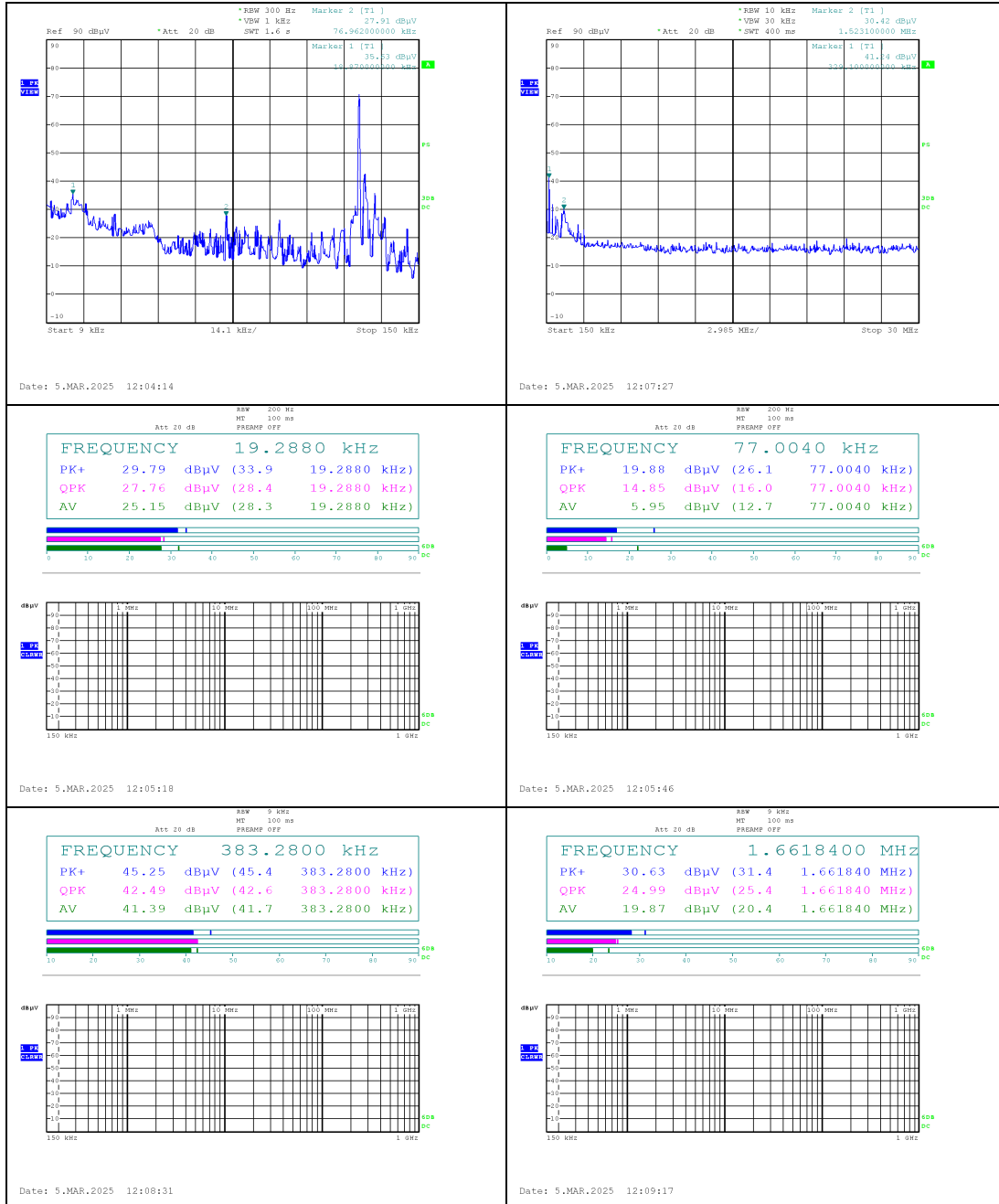
Above 30 MHz



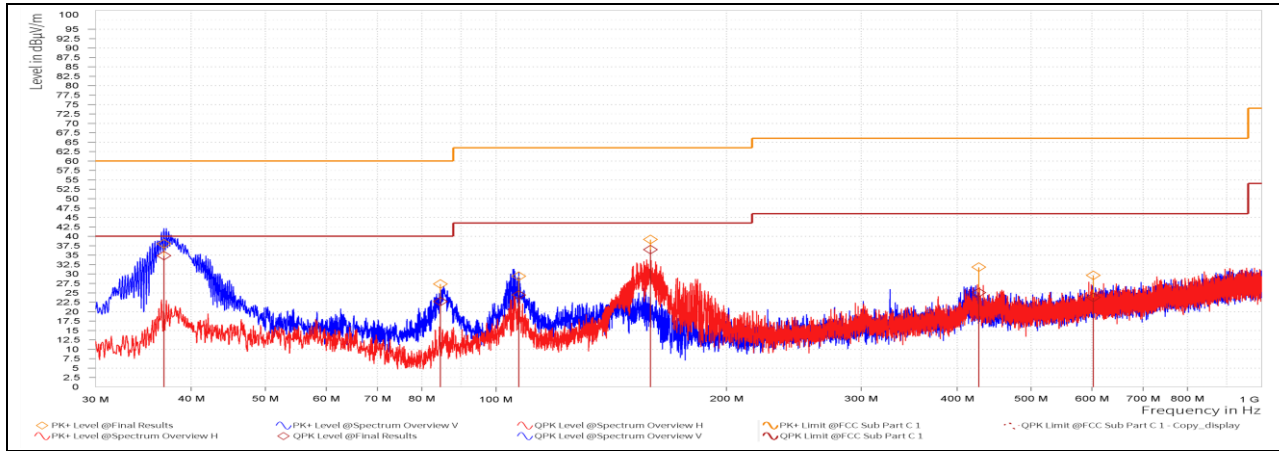
Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz



Above 30 MHz

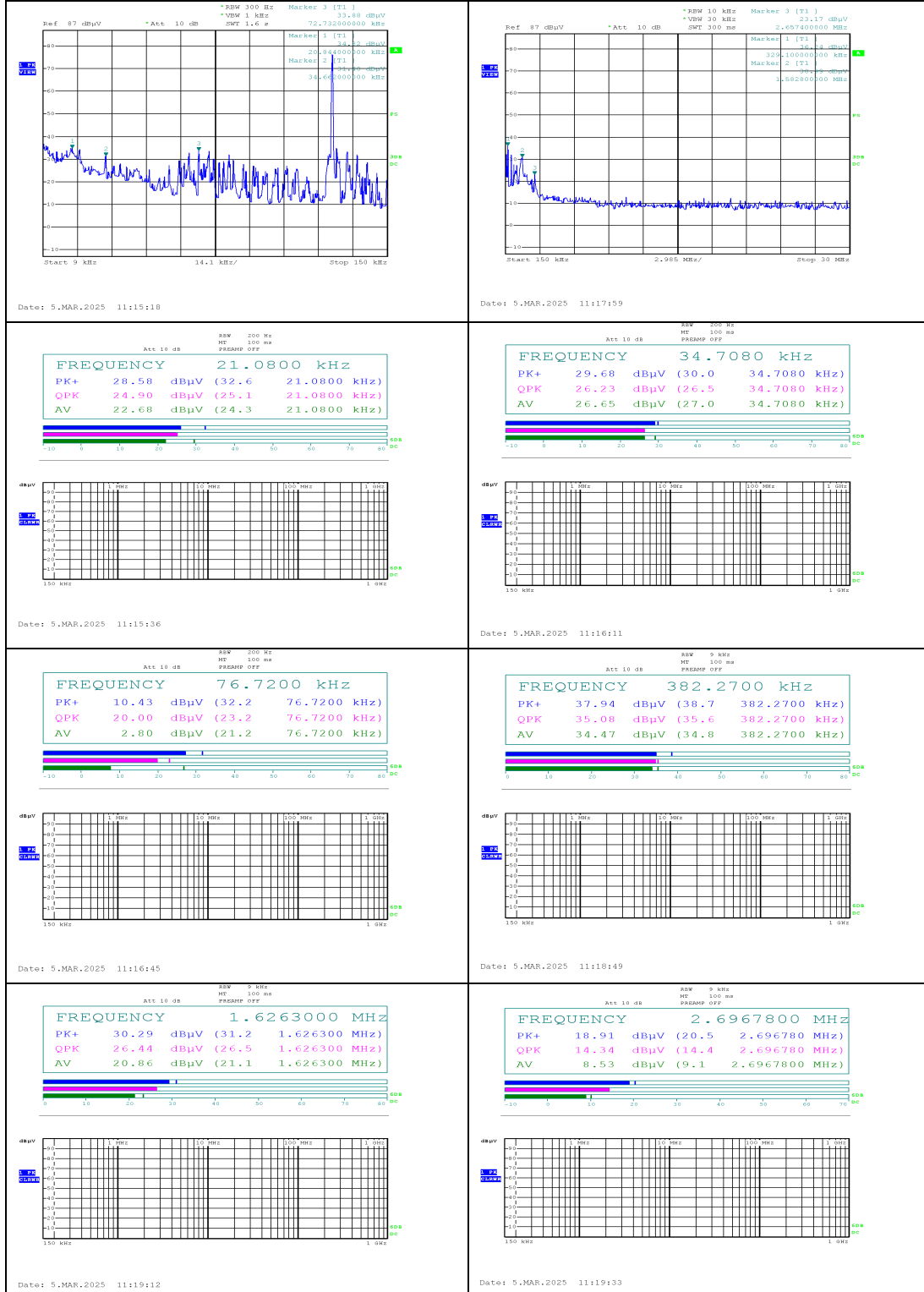


Coil 3

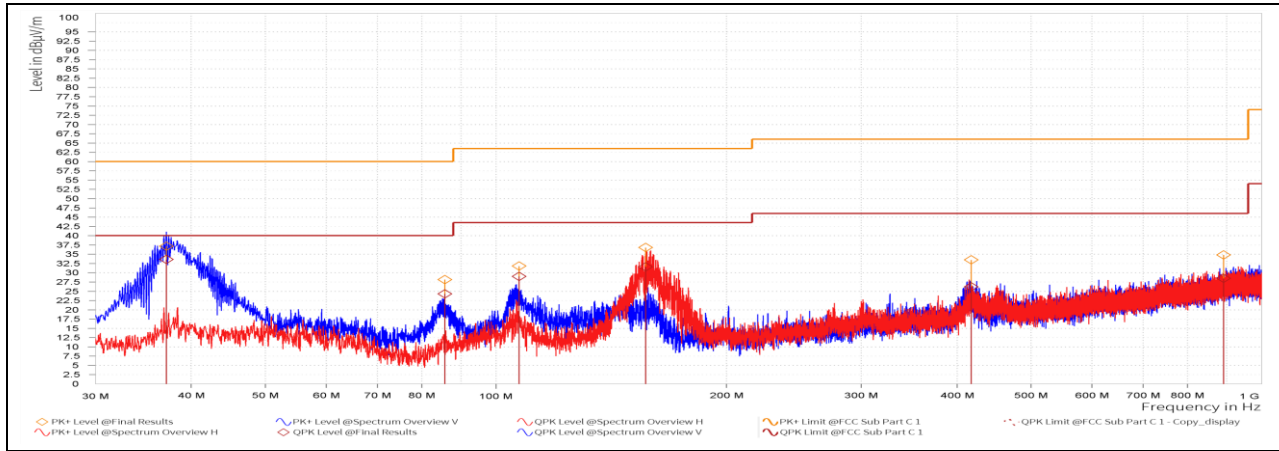
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz



Above 30 MHz



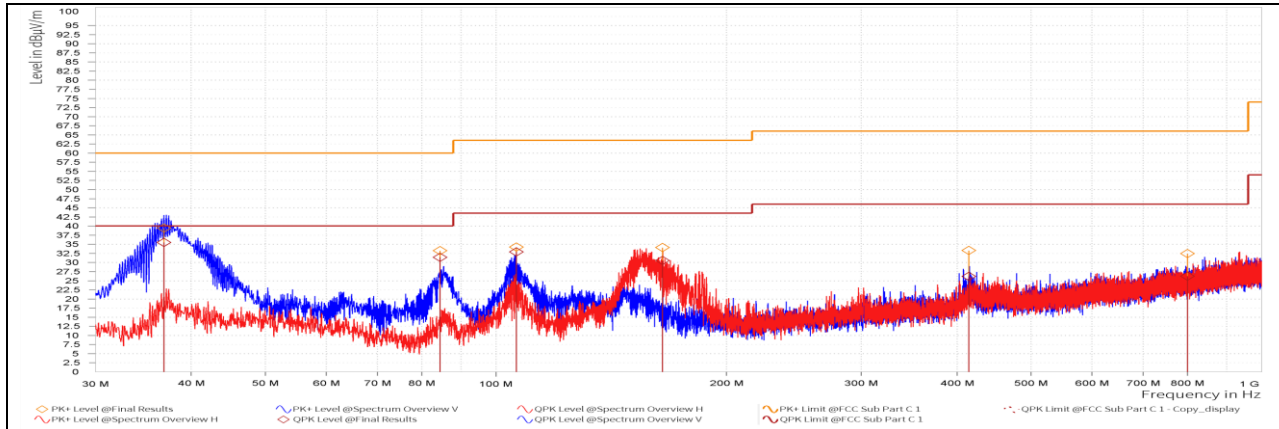
Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 MHz

Below 30 MHz

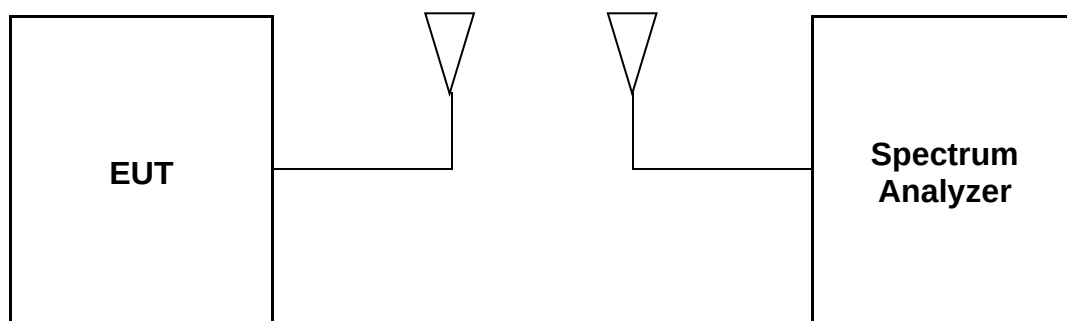


Above 30 MHz



3. 20 dB Bandwidth

3.1. Test Setup



3.2. Limit

None; for reporting purposed only

3.3. Test Procedure

- a. Span = set to capture all products of the modulation process, including the emission skirts.
 RBW = 200 Hz, VBW = 200 Hz, Sweep = auto, Detector = peak, Trace = max hold.
- b. The marker-to-peak function to set the mark to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is 20 dB bandwidth of the emission.

3.4. Test Result

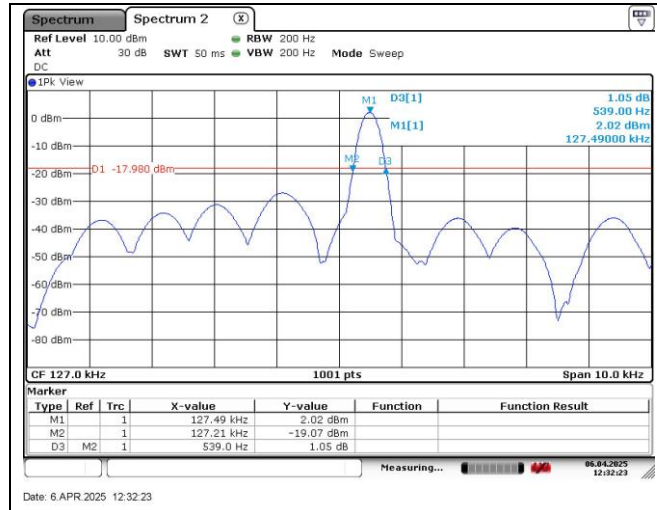
Ambient temperature : $(23 \pm 1) ^\circ\text{C}$
 Relative humidity : 47 % R.H.

Test Condition	Coil	Frequency (kHz)	EUT Status	20 dB Bandwidth (kHz)	Limit
Idle	-	127	Without client device	0.539	Reporting proposed only
5 W	1	127	With client device	0.549	
	2			0.559	
	3			0.549	
15 W	1	127		0.559	
	2			0.559	
	3			0.549	

- Test plots

Test Condition: Idle mode

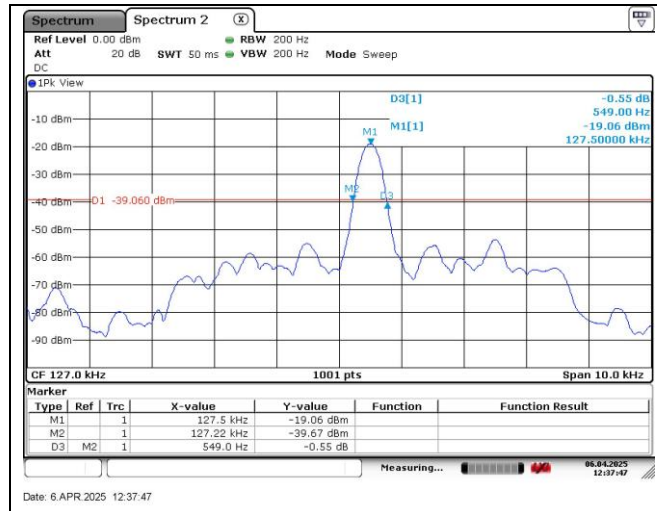
Operating Frequency: 127 kHz



Coil 1

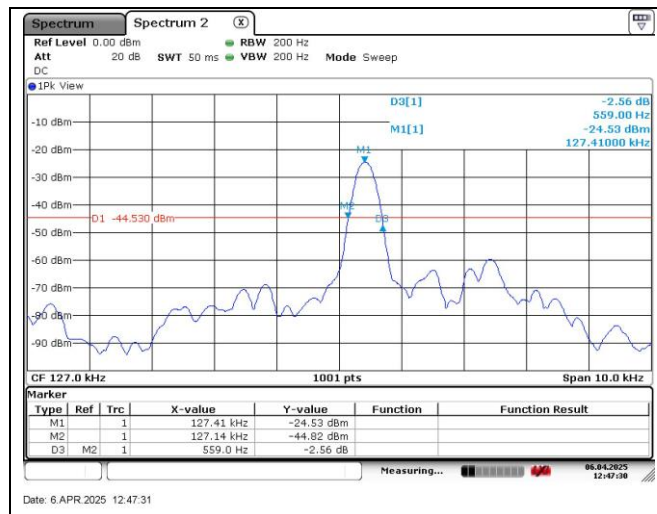
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

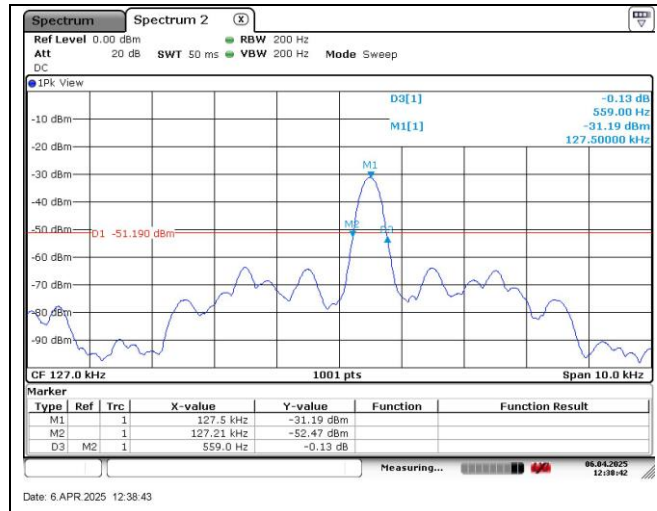
Operating Frequency: 127 kHz



Coil 2

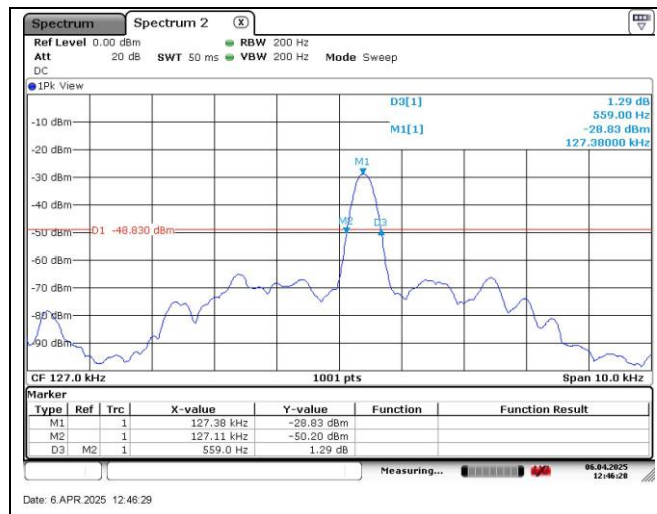
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

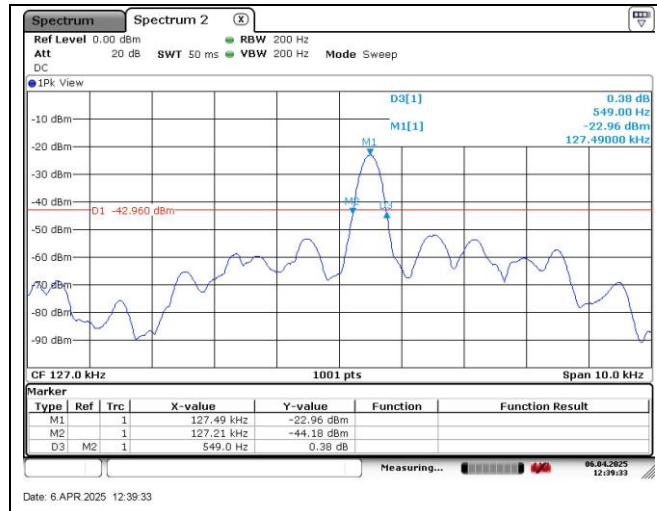
Operating Frequency: 127 kHz



Coil 3

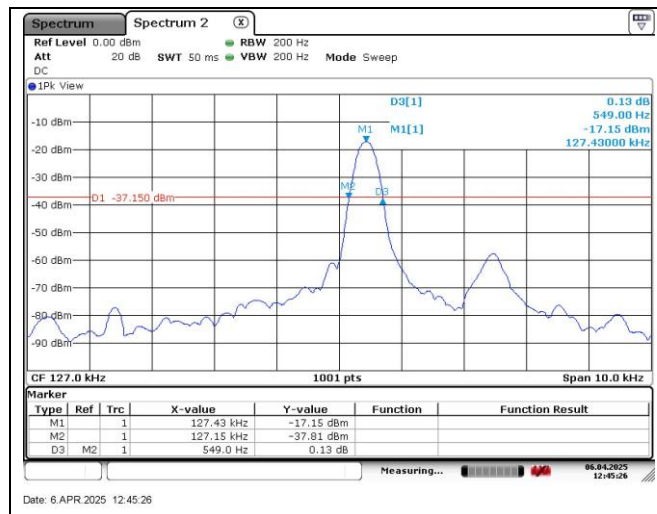
Test Condition: 5 W Operating mode with client device

Operating Frequency: 127 kHz



Test Condition: 15 W Operating mode with client device

Operating Frequency: 127 kHz



- End of the Test Report -