

TEST REPORT

of

FCC Part 15 Subpart C §15.209

FCC ID: 2AV76-NMOK-100W

1. Equipment Under Test : WIRELESS POWER CHARGING SYSTEM
2. Model Name : NMOK-100W
3. Variant Model Name(s) : (-)
4. Applicant : NIDEC MOBILITY KOREA CORPORATION
5. Manufacturer : NIDEC MOBILITY KOREA CORPORATION
6. Date of Receipt : 2020.03.06
7. Date of Test(s) : 2020.03.20 ~ 2020.04.22
8. Date of Issue : 2020.04.22

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

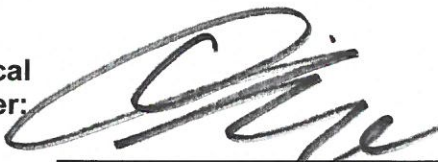
- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

Tested by:



Jinhyoung Cho

Technical
Manager:



Hyunhae You

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

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

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1.2. Details of Applicant

Applicant : NIDEC MOBILITY KOREA CORPORATION
Address : 790-12, Bogaewonsam-ro, Bogae-myeon, Anseong-si, Gyeonggi-do, South Korea, 17507
Contact Person : Nam, Sang-Il
Phone No. : +82 2 850 5789

1.3. Details of Manufacturer

Company : Same as applicant
Address : Same as applicant

1.4. Description of EUT

Kind of Product	WIRELESS POWER CHARGING SYSTEM	
Model Name	NMOK-100W	
Power Supply	DC 13.5 V	
Frequency Range	5 W	Ant. 1: 120 kHz Ant. 2: 120 kHz Ant. 3: 120 kHz
	10 W	Ant. 1: 120 kHz Ant. 2: 120 kHz Ant. 3: 120 kHz
Antenna Type	Inductive loop coil antenna	

1.5. Declaration by the Manufacturer

- The EUT has 3 loop coil antennas with one amplifier, and only one antenna can transmit at once.

1.6. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Spectrum Analyzer	R&S	FSV30	103210	Dec. 05, 2019	Annual	Dec. 05, 2020
Signal Generator	R&S	SMBV100A	259067	Jun. 10, 2019	Annual	Jun. 10, 2020
DC Power Supply	Agilent	U8002A	MY53150029	Jun. 10, 2019	Annual	Jun. 10, 2020
Test Receiver	R&S	ESU26	100109	Feb. 18, 2020	Annual	Feb. 18, 2021
Amplifier	H.P.	8447F	2944A03909	Aug. 07, 2019	Annual	Aug. 07, 2020
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 22, 2019	Biennial	Aug. 22, 2021
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB 9163	396	Mar. 21, 2019	Biennial	Mar. 21, 2021
Antenna Master	Innco systems GmbH	MA4640-XP-ET	MA4640/536/3 8330516/L	N.C.R.	N/A	N.C.R.
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.
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	SUCOFLEX	104 (3 m)	MY3258414	Jan. 28, 2020	Semi-annual	Jul. 28, 2020
Coaxial Cable	SUCOFLEX	104 (10 m)	MY3145814	Jan. 28, 2020	Semi-annual	Jul. 28, 2020

► Support Equipment

Description	Manufacturer	Model	FCC ID
Samsung Mobile Phone	Samsung Electronics Co., Ltd.	SM-G900L	A3LSMG900S
		SM-G955N	A3LSMG955N

1.7. 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) + Cable loss (dB)

1.8. Worst Case of Test Configurations

Charging mode with client device	Mode		Description
Model: SM-G900L FCC ID: A3LSMG900S	5 W	10 W	1 % of battery 50 % of battery 99 % of battery
Model: SM-G955N FCC ID: A3LSMG955N	Ant. 1 Ant. 2 Ant. 3	Ant. 1 Ant. 2 Ant. 3	

Note;

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

1.9. Summary of Test Result

The EUT has been tested according to the following specification:

APPLIED STANDARD: FCC Part 15 Subpart C		
Section	Test Item(s)	Result
15.209	Radiated emission, Spurious Emission and Field Strength of Fundamental	Complied
2.1049	20 dB Bandwidth	Complied
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.

1.10. Measurement Uncertainty

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

Parameter	Uncertainty
Occupied Bandwidth	± 9.66 kHz
Radiated Disturbance, 9 kHz to 30 MHz	± 3.59 dB
Radiated Disturbance, below 1 GHz	± 5.88 dB

Uncertainty figures are valid to a confidence level of 95 %.

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Report Number: F690501-RF-RTL000572

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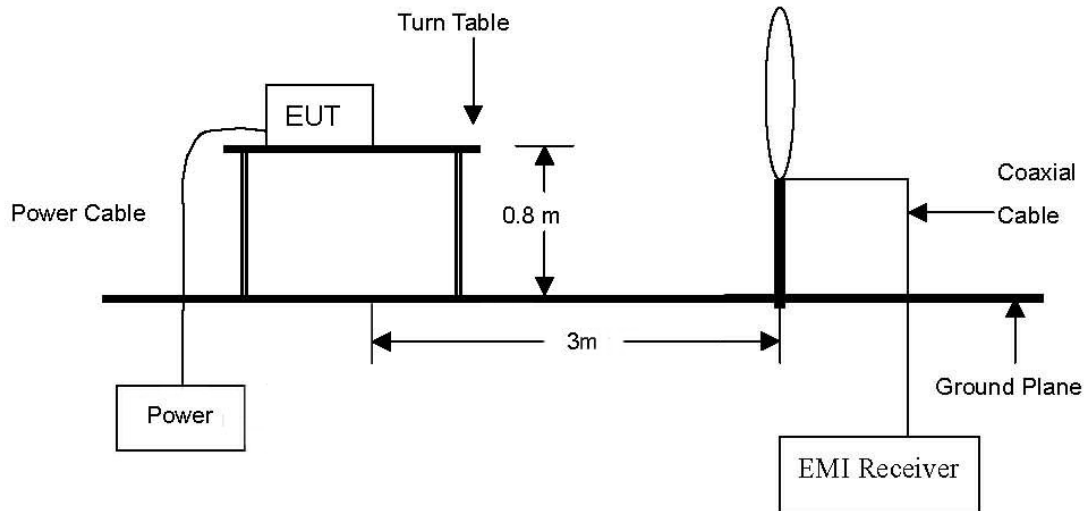
1.11. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL000572	2020.04.22	Initial

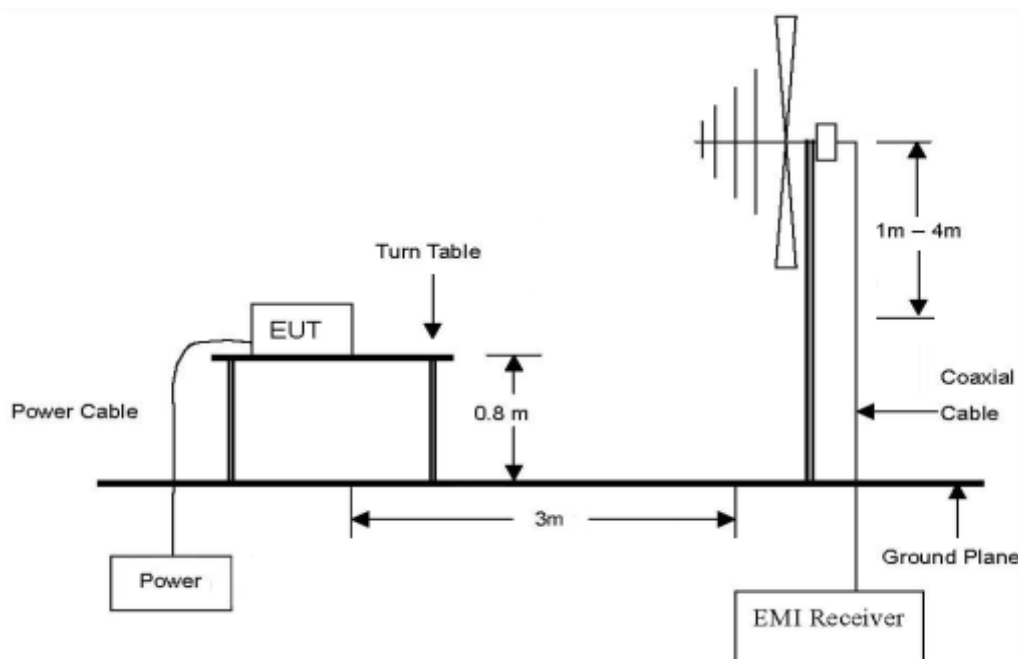
2. Field Strength of Fundamental and Spurious Emission

2.1. Test Setup

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

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

- 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.
- 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.
- 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.
- The test-receiver system was set to Quasi Peak and Average Detect Function and Specified Bandwidth with Maximum Hold Mode.

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

- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

2.4. Field Strength of Fundamental Test Result

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

All emissions tested both horizontal and vertical. The following table shows the highest levels of radiated emissions on the worst polarization.

Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	Ant. (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)
Ant. 1									
0.122	67.50	Average	H	17.80	0.07	85.37	5.37	25.88	20.51
Ant. 2									
0.121	58.60	Average	H	17.80	0.07	76.47	-3.53	25.95	29.48
Ant. 3									
0.122	74.60	Average	H	17.80	0.07	92.47	12.47	25.88	13.41

Test Condition: 10 W Operating mode with client device (1 % battery status of client device)

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	Ant. (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)
Ant. 1									
0.121	62.40	Average	H	17.80	0.07	80.27	0.27	25.95	25.68
Ant. 2									
0.121	64.60	Average	H	17.80	0.07	82.47	2.47	25.95	23.48
Ant. 3									
0.121	74.50	Average	H	17.80	0.07	92.37	12.37	25.95	13.58

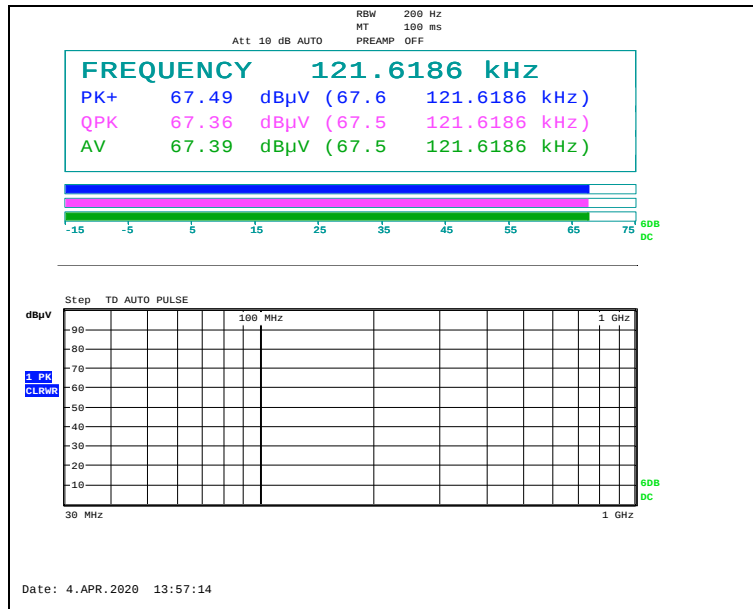
Remark;

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: 20 log (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).

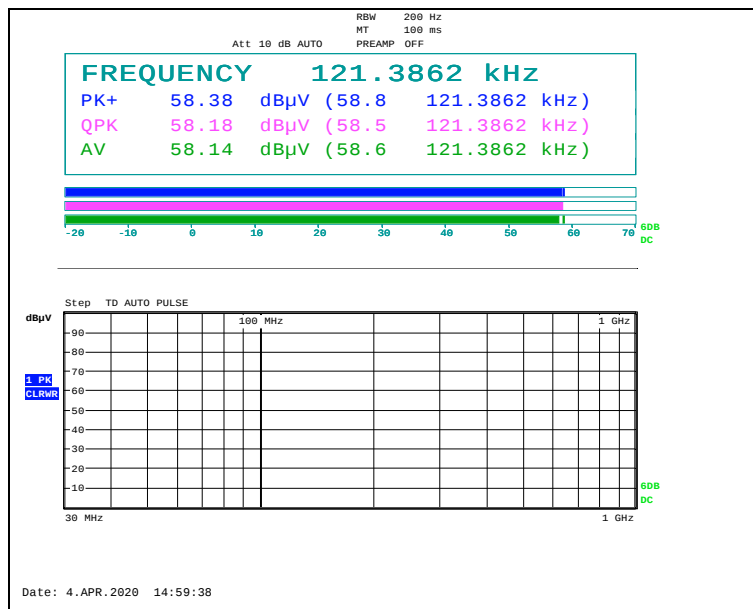
- Test plots

Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

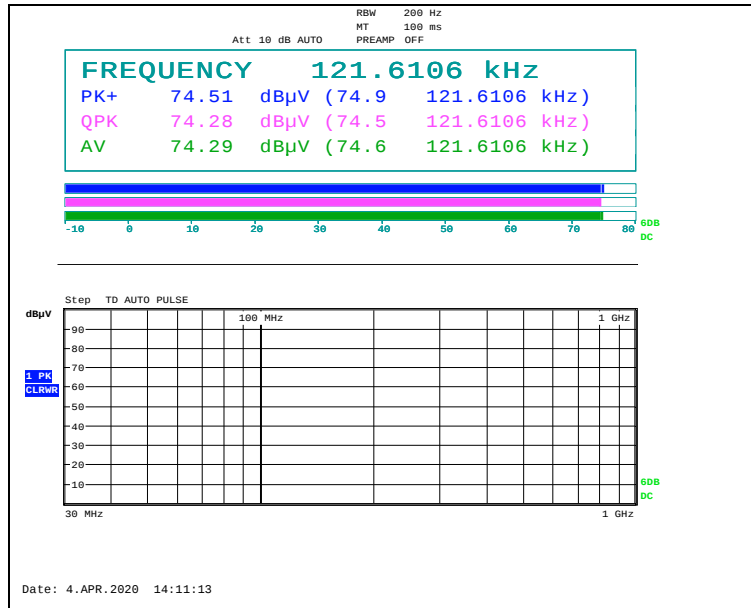
Ant. 1



Ant. 2

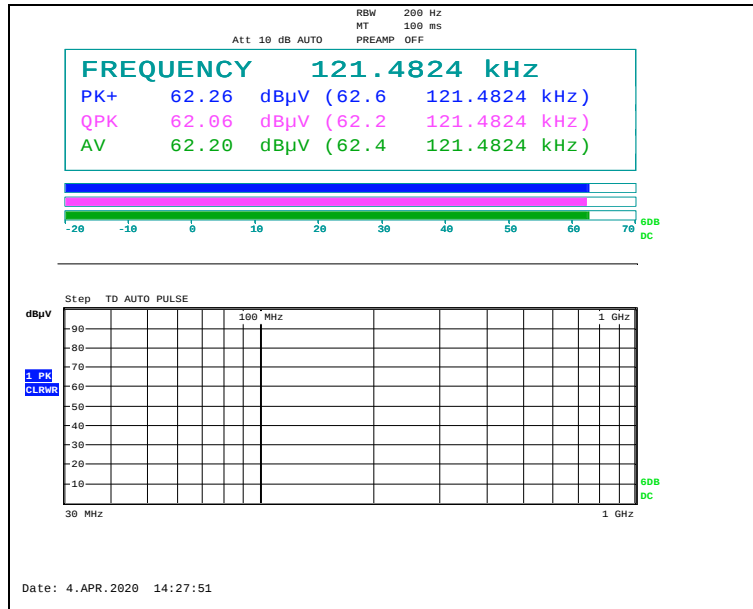


Ant. 3

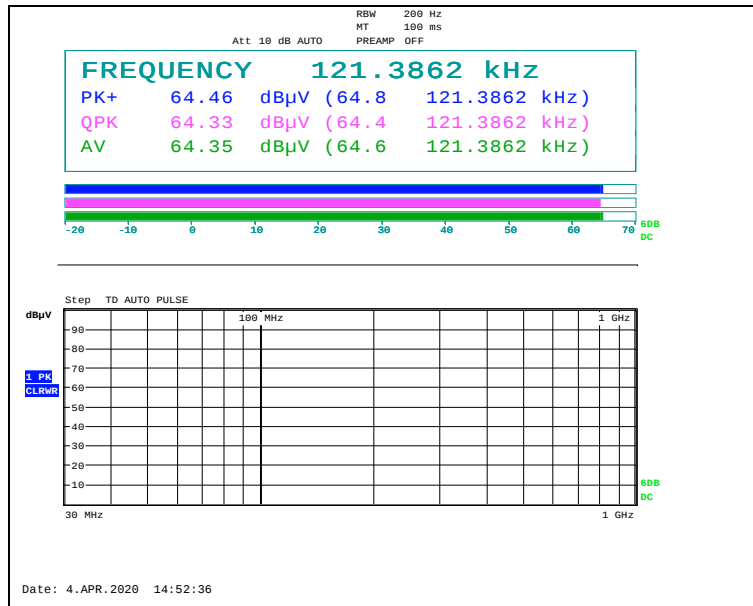


Test Condition: 10 W Operating mode with client device (1 % battery status of client device)

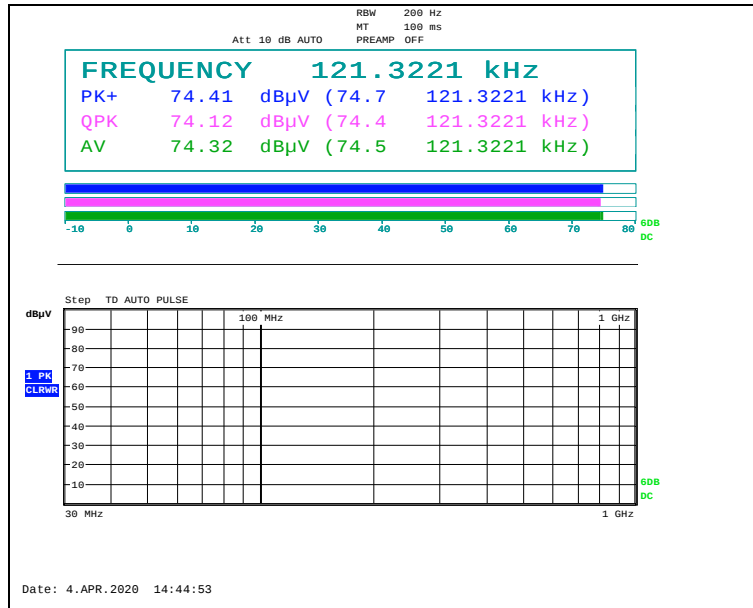
Ant. 1



Ant. 2



Ant. 3



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: 5 W Operating mode with client device (1 % battery status of client device)

Ant. 1

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)
0.022	33.90	Average	H	18.14	0.02	52.06	-27.94	40.76	68.70
0.045	24.30	Average	H	17.88	0.03	42.21	-37.79	34.54	72.33
0.090	17.80	Average	H	17.81	0.05	35.66	-44.34	28.55	72.89
0.190	14.40	Average	H	17.80	0.11	32.31	-47.69	22.03	69.72
0.350	8.80	Average	H	17.78	0.17	26.75	-53.25	16.72	69.97

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
31.42	40.10	Peak	V	15.51	-26.71	28.90	40.00	11.10
128.58	37.70	Peak	V	14.64	-25.28	27.06	43.50	16.44
192.92	40.50	Peak	H	16.59	-25.11	31.98	43.50	11.52
228.97	45.50	Peak	H	17.68	-25.03	38.15	46.00	7.85
504.41	32.60	Peak	V	23.09	-24.39	31.30	46.00	14.70
885.74	31.60	Peak	V	27.81	-22.19	37.22	46.00	8.78
Above 900.00	Not detected	-	-	-	-	-	-	-

Ant. 2

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	28.00	Average	H	18.23	0.02	46.25	-33.75	42.03	75.78
0.035	24.50	Average	H	17.89	0.02	42.41	-37.59	36.72	74.31
0.090	18.50	Average	H	17.81	0.05	36.36	-43.64	28.52	72.16
0.269	13.70	Average	H	17.80	0.14	31.64	-48.36	19.01	67.37
0.362	26.01	Average	H	17.77	0.17	43.95	-36.05	16.43	52.48

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
31.46	40.30	Peak	V	15.53	-26.71	29.12	40.00	10.88
128.58	39.50	Peak	V	14.64	-25.28	28.86	43.50	14.64
192.88	42.20	Peak	H	16.59	-25.11	33.68	43.50	9.82
229.13	46.20	Peak	H	17.68	-25.03	38.85	46.00	7.15
513.51	32.20	Peak	V	23.27	-24.33	31.14	46.00	14.86
832.68	35.10	Peak	H	27.21	-22.46	39.85	46.00	6.15
Above 900.00	Not detected	-	-	-	-	-	-	-

Ant. 3

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)
0.022	27.20	Average	H	18.14	0.02	45.36	-34.64	40.76	75.40
0.035	24.90	Average	H	17.89	0.02	42.81	-37.19	36.72	73.91
0.092	20.00	Quasi Peak	H	17.81	0.06	37.87	-42.13	28.33	70.46
0.150	16.20	Average	H	17.80	0.09	34.09	-45.91	24.08	69.99
0.341	8.20	Average	H	17.78	0.16	26.14	-53.86	16.95	70.81

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
31.29	40.00	Peak	V	15.45	-26.71	28.74	40.00	11.26
125.83	35.30	Peak	V	14.80	-25.29	24.81	43.50	18.69
188.92	38.60	Peak	H	16.09	-25.12	29.57	43.50	13.93
229.38	43.20	Peak	H	17.69	-25.03	35.86	46.00	10.14
504.45	32.80	Peak	V	23.09	-24.39	31.50	46.00	14.50
836.56	30.00	Peak	H	27.30	-22.43	34.87	46.00	11.13
Above 900.00	Not detected	-	-	-	-	-	-	-

Test Condition: 10 W Operating mode with client device (1 % battery status of client device)

Ant. 1

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	18.17	0.02	42.49	-37.51	41.16	78.67
0.035	24.13	Average	H	17.89	0.02	42.04	-37.96	36.72	74.68
0.090	18.20	Average	H	17.81	0.05	36.06	-43.94	28.52	72.46
0.150	16.14	Average	H	17.80	0.09	34.03	-45.97	24.08	70.05
0.341	8.20	Average	H	17.78	0.16	26.14	-53.86	16.95	70.81

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30.87	40.70	Quasi Peak	V	15.29	-26.72	29.27	40.00	10.73
52.88	29.90	Peak	V	19.81	-26.36	23.35	40.00	16.65
125.75	32.60	Peak	V	14.80	-25.29	22.11	43.50	21.39
229.82	40.50	Peak	H	17.70	-25.03	33.17	46.00	12.83
503.28	32.10	Peak	V	23.07	-24.39	30.78	46.00	15.22
888.01	29.90	Peak	H	27.86	-22.18	35.58	46.00	10.42
Above 900.00	Not detected	-	-	-	-	-	-	-

Ant. 2

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	22.80	Average	H	18.20	0.02	41.02	-38.98	41.58	80.56
0.045	24.60	Average	H	17.88	0.03	42.51	-37.49	34.54	72.03
0.089	17.60	Average	H	17.82	0.05	35.47	-44.53	28.62	73.15
0.150	16.30	Average	H	17.80	0.09	34.19	-45.81	24.08	69.89
0.197	15.10	Average	H	17.80	0.11	33.01	-46.99	21.71	68.70
0.341	8.30	Average	H	17.78	0.16	26.24	-53.76	16.95	70.71

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30.77	48.30	Peak	V	15.28	-26.72	<u>36.86</u>	40.00	3.14
54.17	30.90	Peak	H	19.57	-26.34	24.13	40.00	15.87
125.79	35.30	Peak	V	14.80	-25.29	24.81	43.50	18.69
232.53	42.10	Peak	H	17.80	-25.03	34.87	46.00	11.13
440.19	32.60	Peak	V	22.10	-24.54	30.16	46.00	15.84
836.92	31.40	Peak	V	27.30	-22.43	36.27	46.00	9.73
Above 900.00	Not detected	-	-	-	-	-	-	-

Ant. 3

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)
0.022	30.00	Average	H	18.14	0.02	48.16	-31.84	40.76	72.60
0.083	13.40	Average	H	17.82	0.05	31.27	-48.73	29.22	77.95
0.095	19.80	Quasi peak	H	17.81	0.06	37.67	-42.33	28.05	70.38
0.150	19.00	Average	H	17.80	0.09	36.89	-43.11	24.08	67.19
0.341	8.24	Average	H	17.78	0.16	26.18	-53.82	16.95	70.77

Above 30 MHz

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30.08	47.30	Peak	V	15.21	-26.73	<u>35.78</u>	40.00	4.22
50.33	31.70	Peak	V	20.23	-26.43	25.50	40.00	14.50
125.91	35.60	Peak	V	14.80	-25.29	25.11	43.50	18.39
226.63	40.30	Peak	H	17.63	-25.03	32.90	46.00	13.10
365.05	34.50	Peak	H	20.30	-24.74	30.06	46.00	15.94
888.01	35.10	Peak	V	27.86	-22.18	40.78	46.00	5.22
Above 900.00	Not detected	-	-	-	-	-	-	-

Remark;

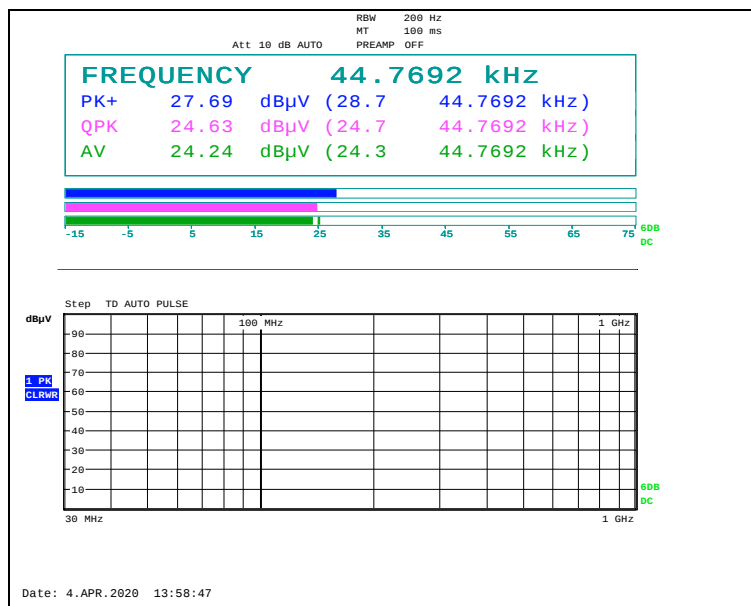
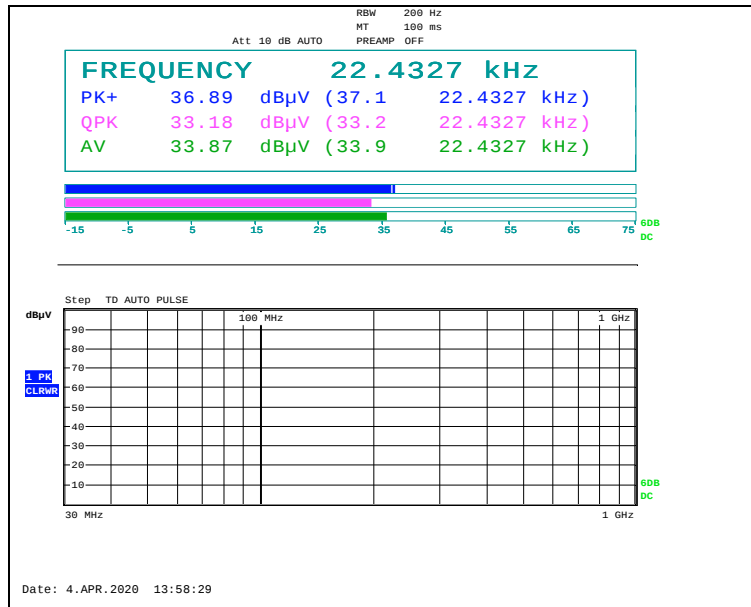
- According to §15.31(f)(2)
 - 300 m Result (dB μ V/m) = 3 m Result (dB μ V/m) - 40log(300/3) (dB μ V/m)
 - 30 m Result (dB μ V/m) = 3 m Result (dB μ V/m) - 40log(30/3) (dB μ V/m)
- According to field strength table of general requirement in §15.209 (a), field strength limits below 1.705 MHz were calculated 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)
- 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.
- The limit above was calculated based on table of §15.209(a).
- Radiated spurious emission measurement as below 30 MHz.
(Actual (dB μ A/m) at 3m = Reading (dB μ V) + AF (dB/m) + CL (dB))
- Radiated spurious emission measurement as above 30 MHz.
(Actual (dB μ A/m) = Reading (dB μ V) + AF (dB/m) + CL (dB) + AMP (dB))

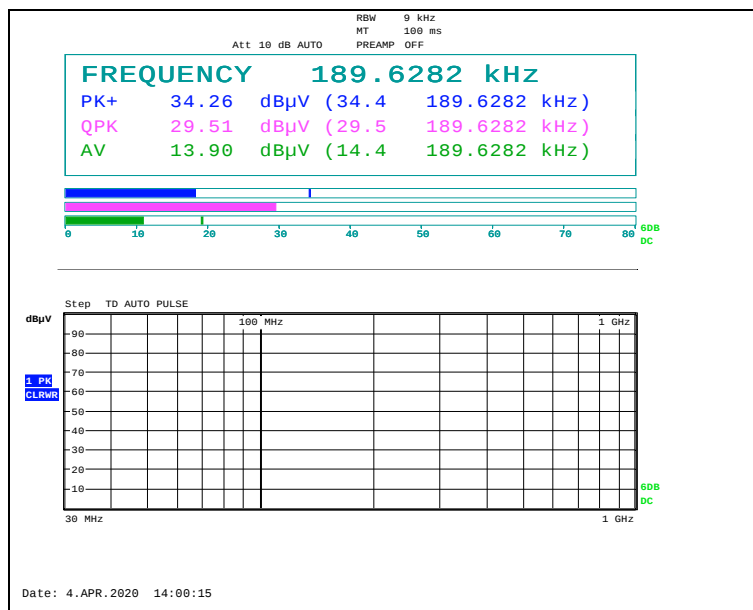
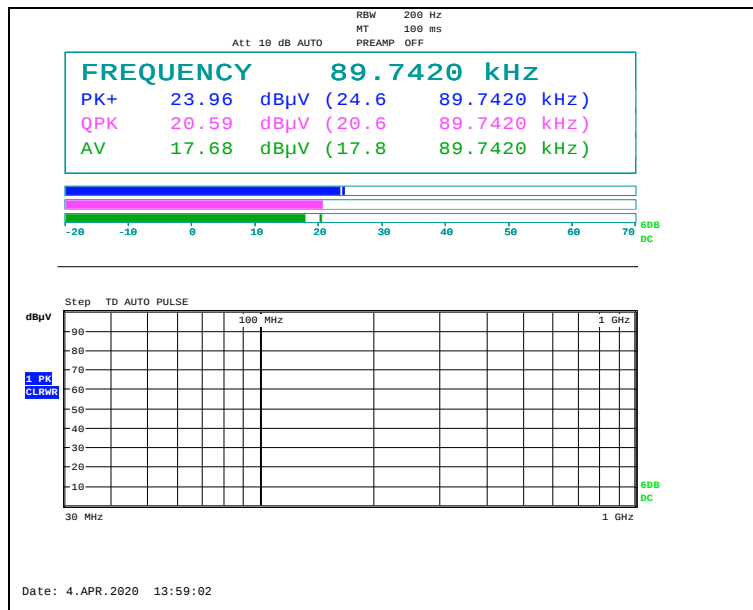
Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

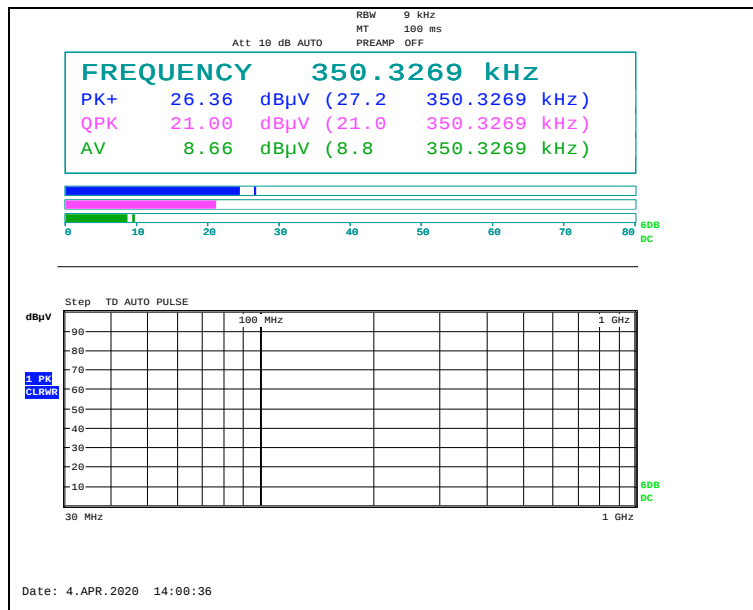
- Test plots

Ant. 1

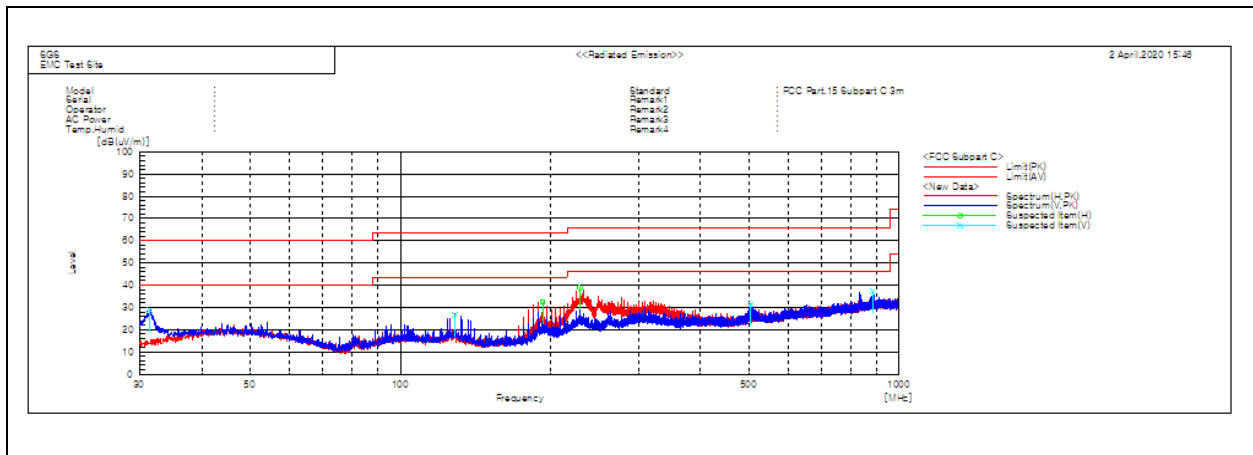
Below 30 MHz







Above 30 MHz

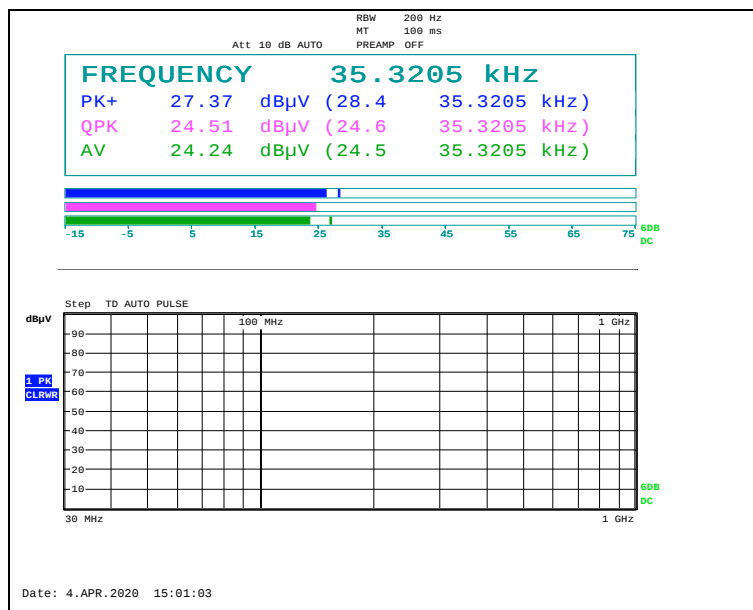
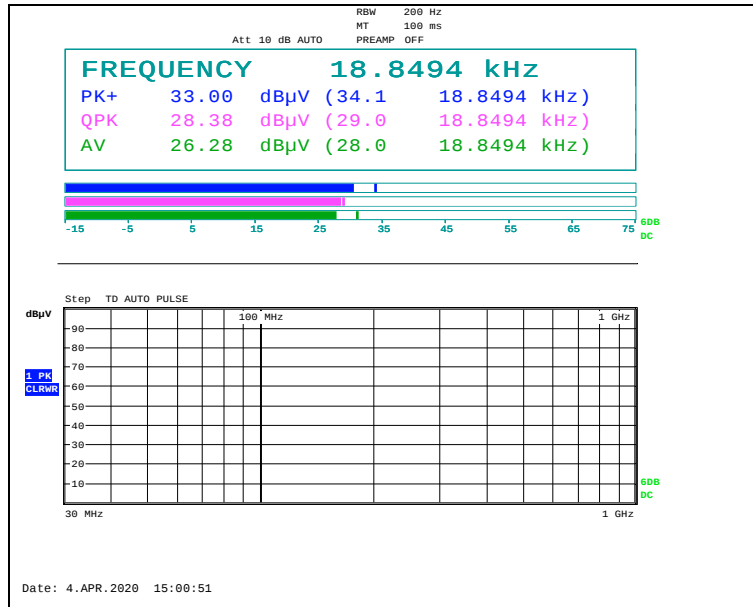


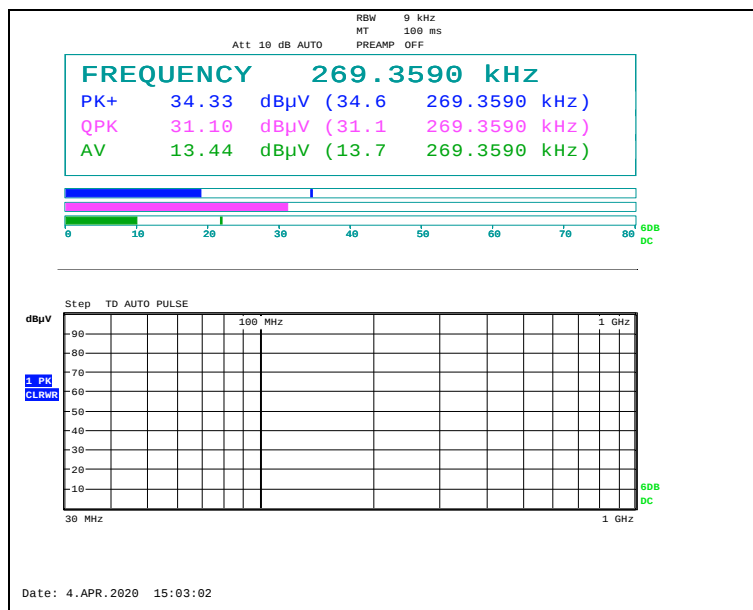
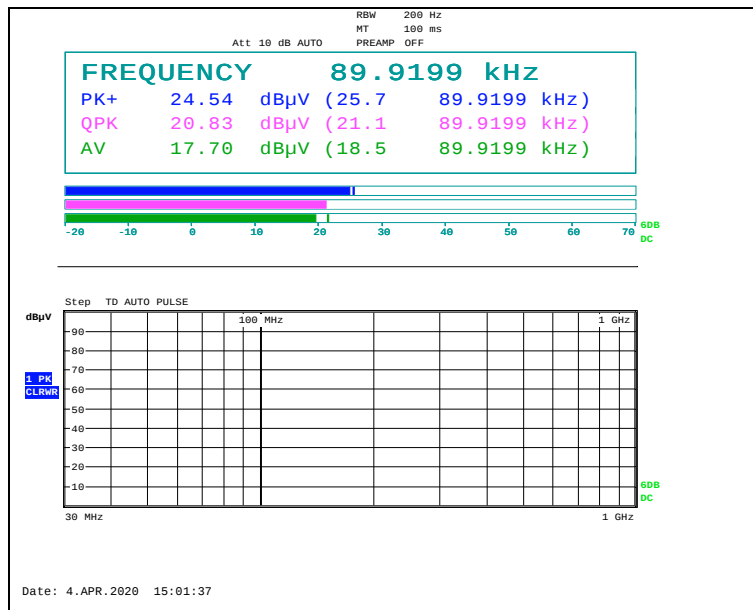
Remark;

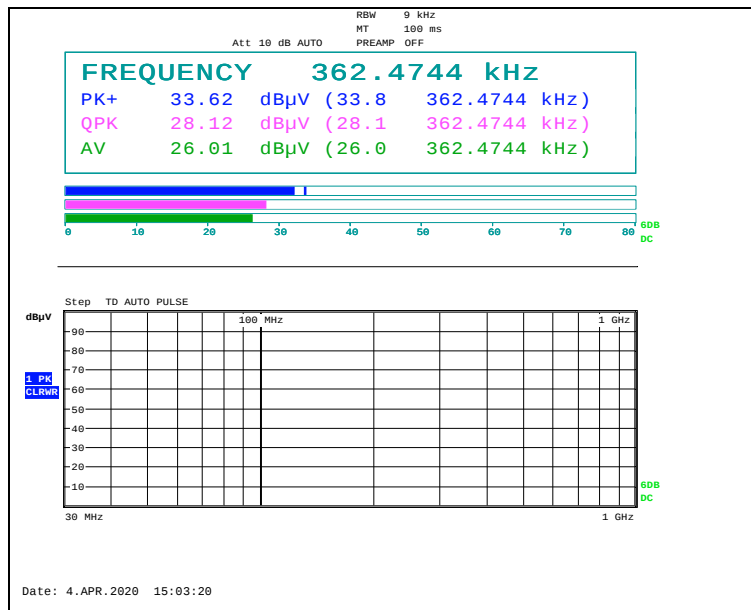
- Traces shown in the plot were made by using a peak detector.

Ant. 2

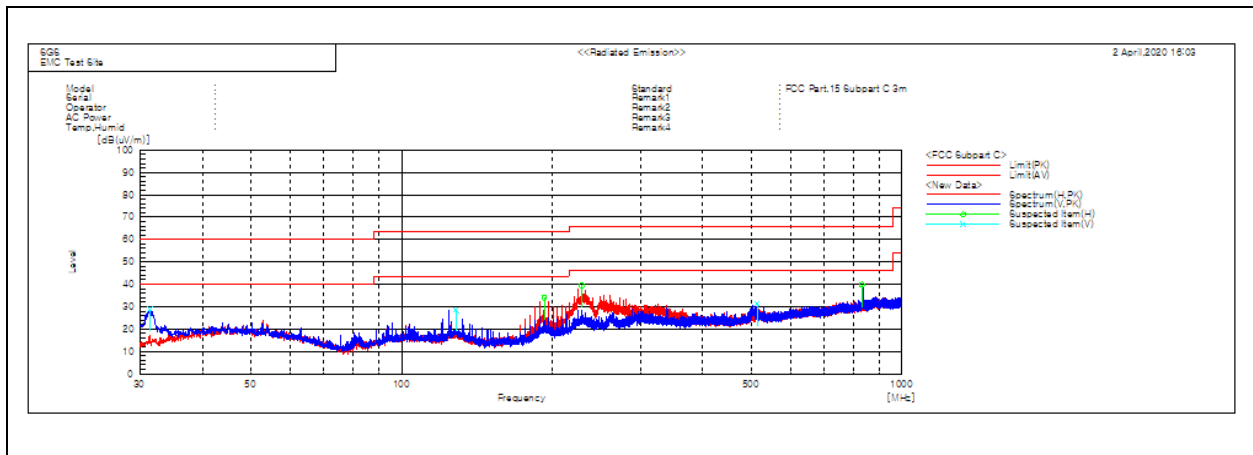
Below 30 MHz







Above 30 MHz

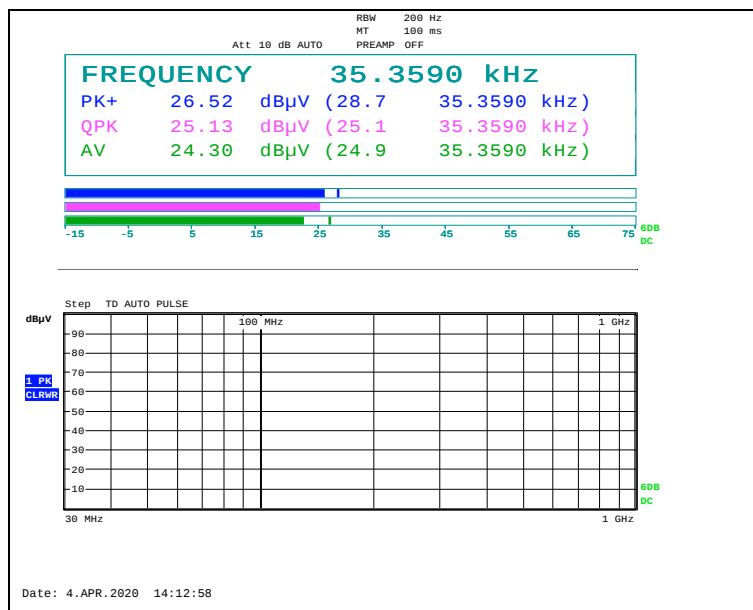
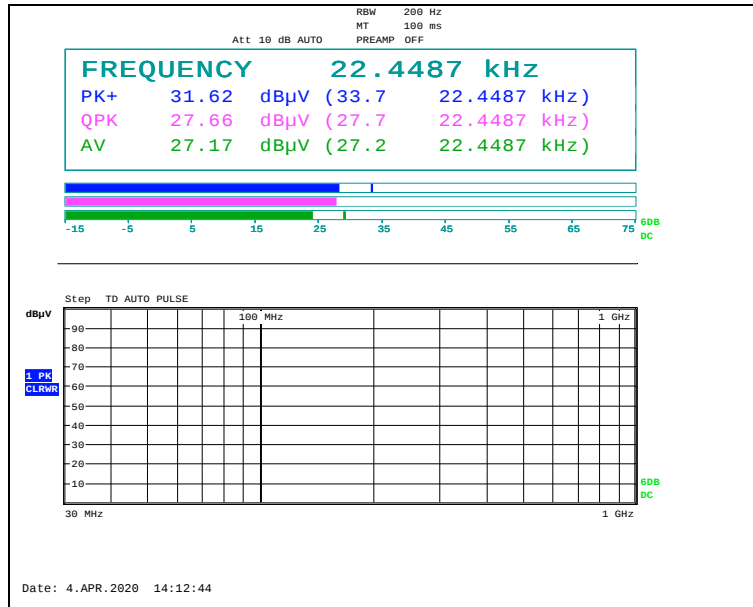


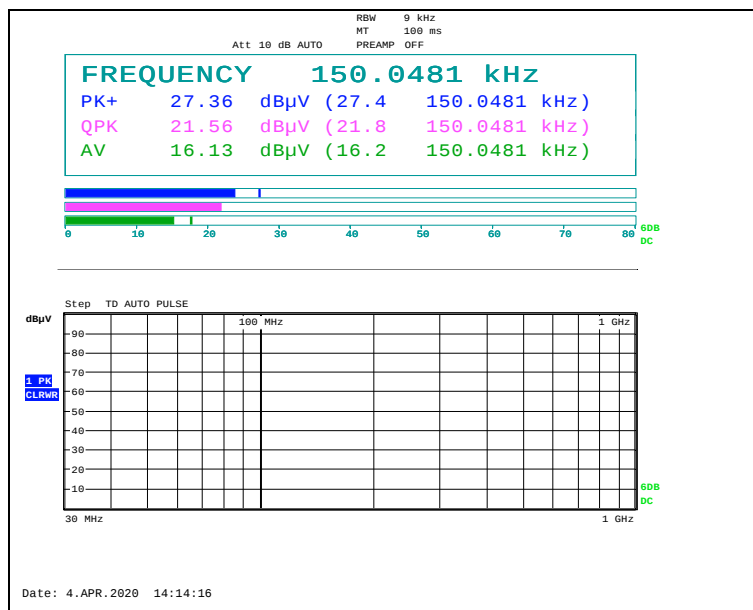
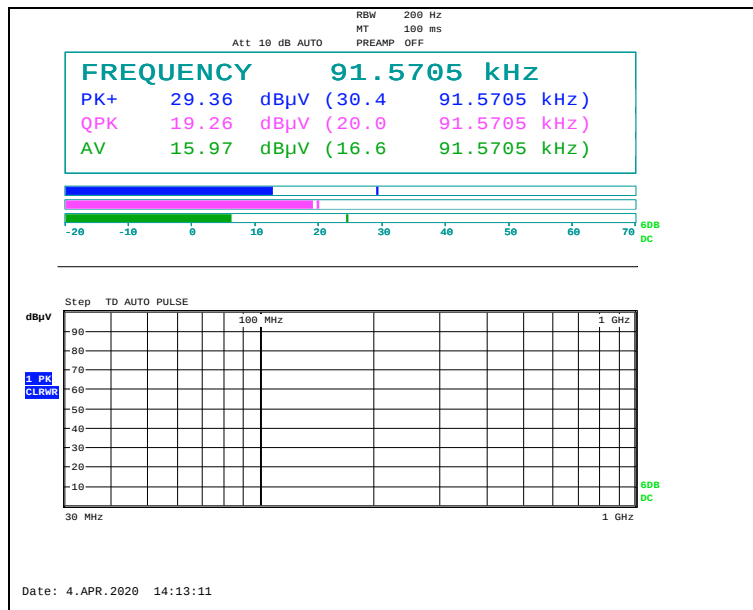
Remark;

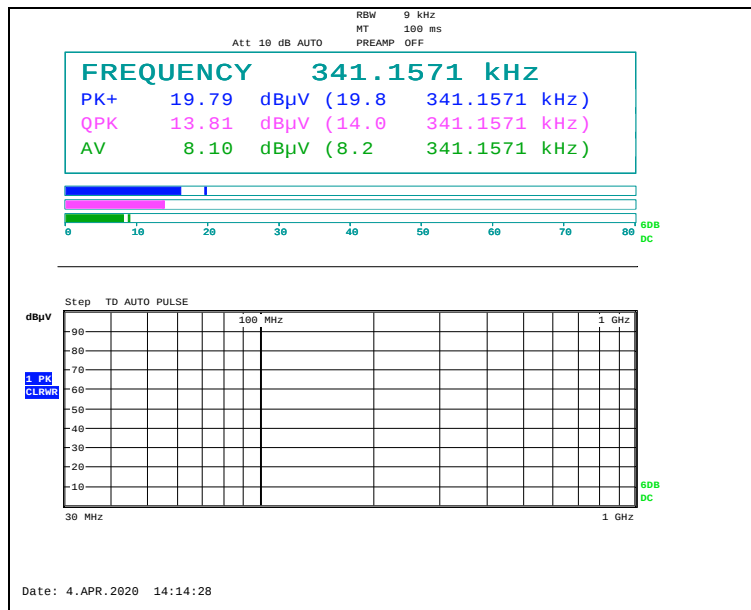
- Traces shown in the plot were made by using a peak detector.

Ant. 3

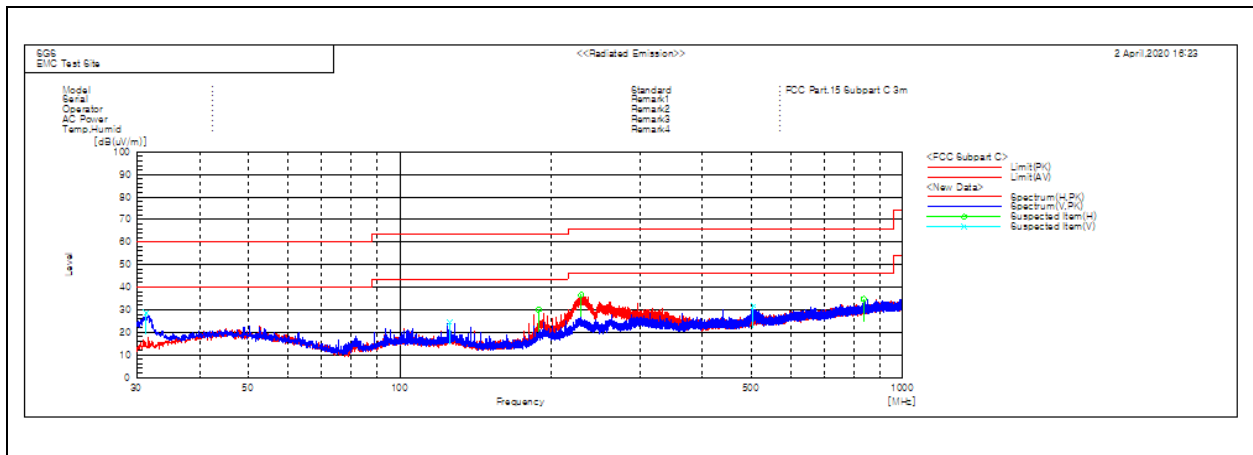
Below 30 MHz







Above 30 MHz



Remark;

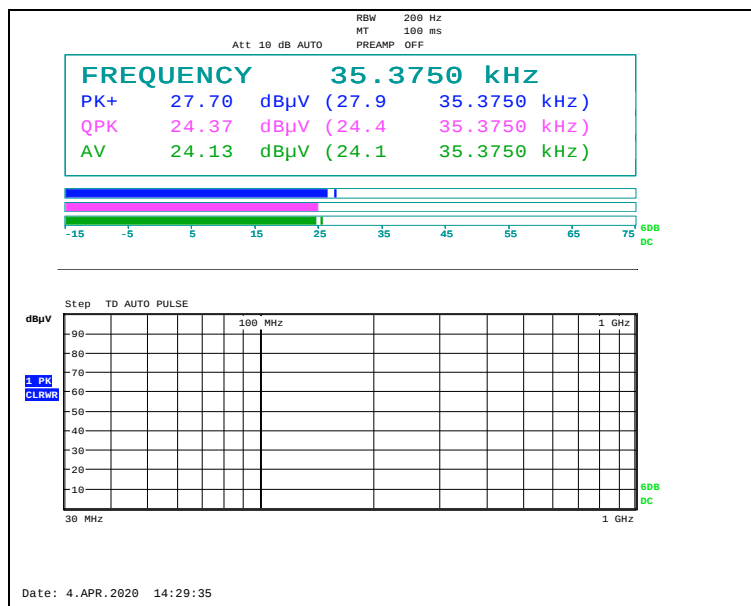
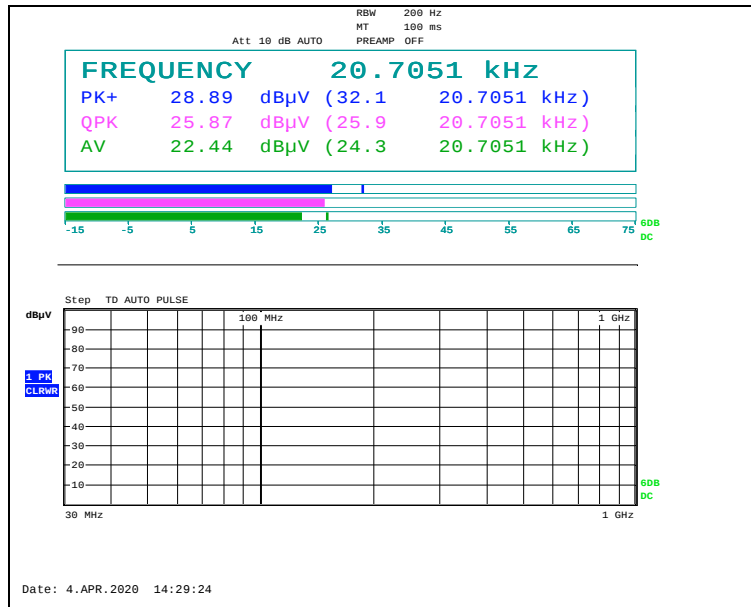
- Traces shown in the plot were made by using a peak detector.

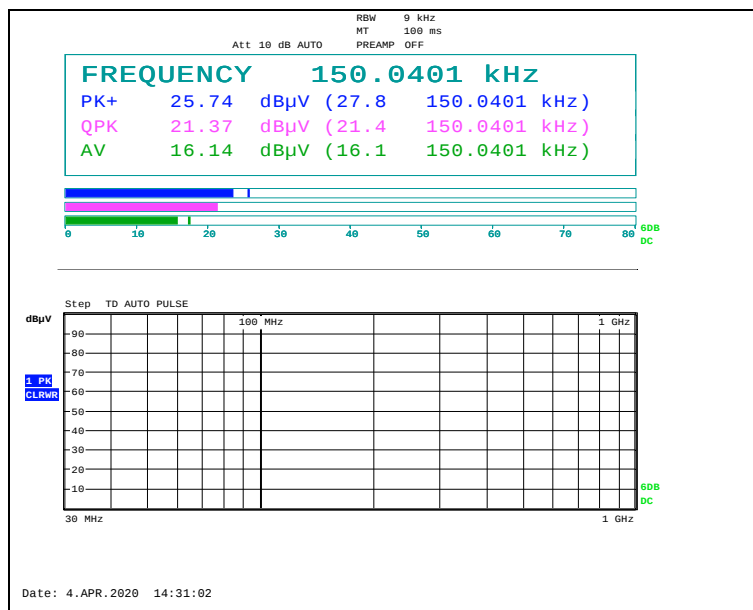
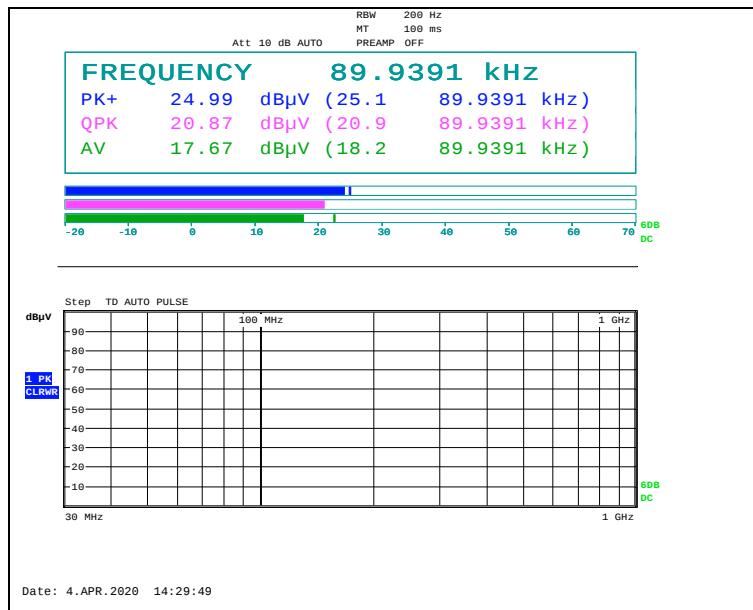
Test Condition: 10 W Operating mode with client device (1 % battery status of client device)

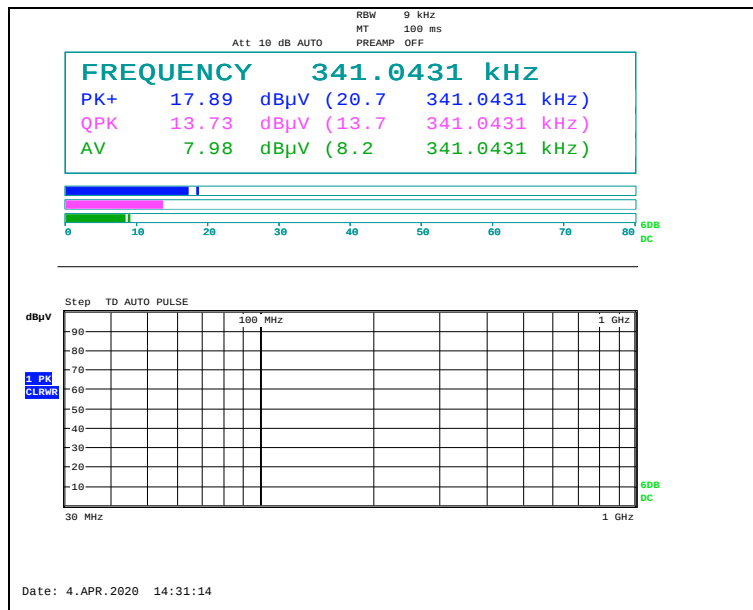
- Test plots

Ant. 1

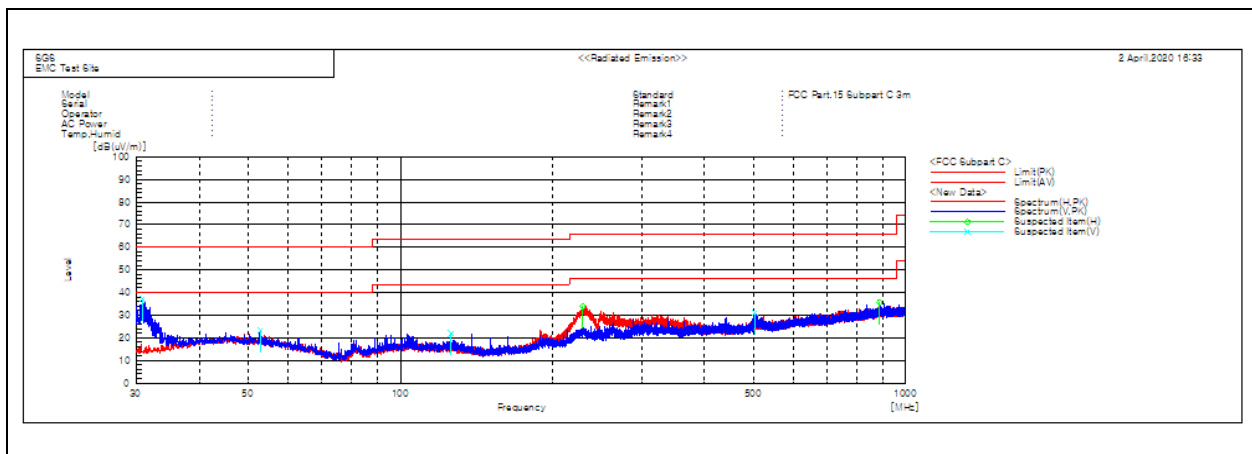
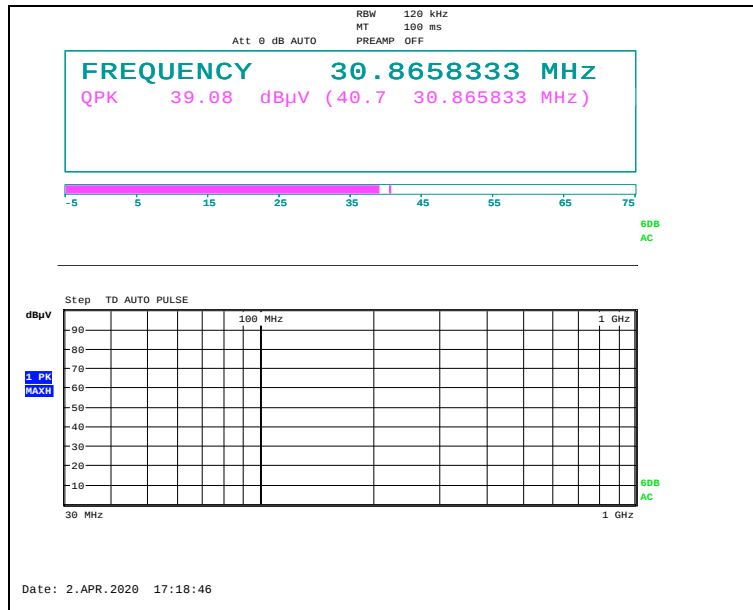
Below 30 MHz







Above 30 MHz

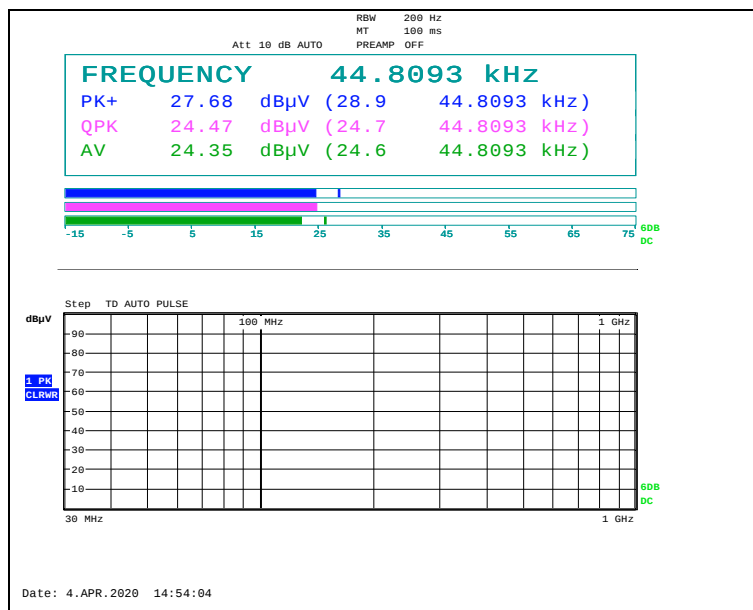
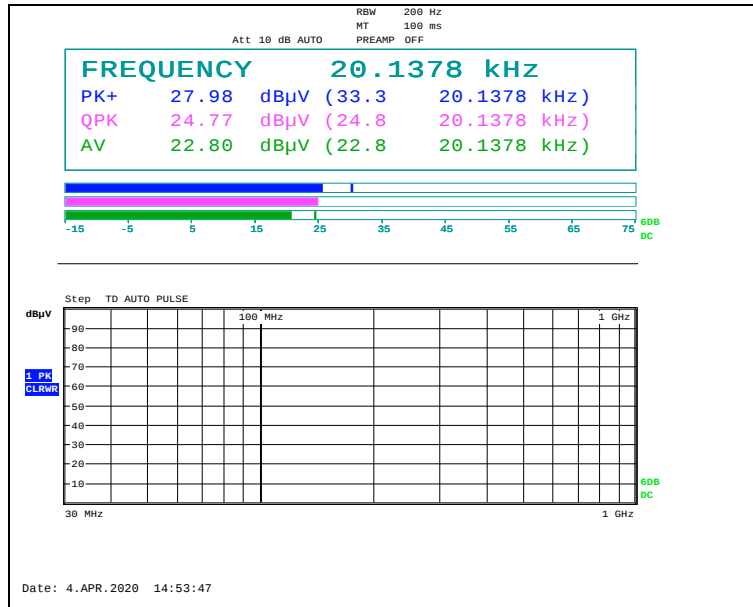


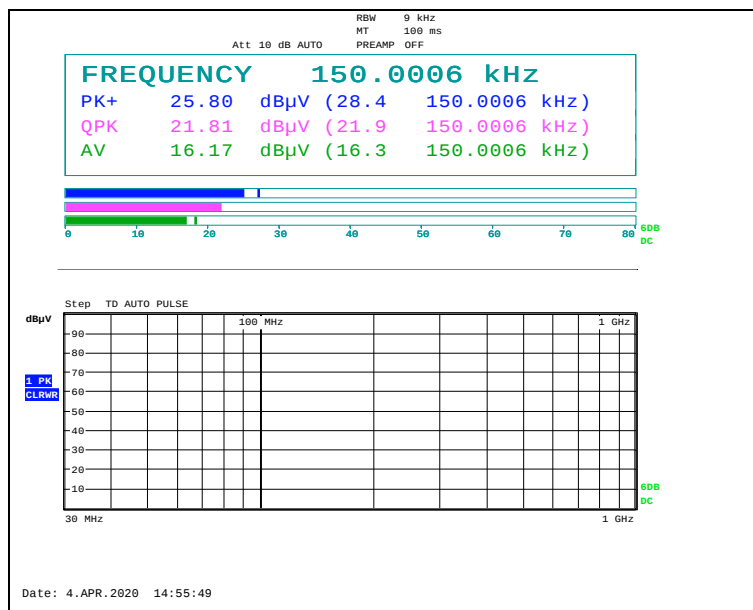
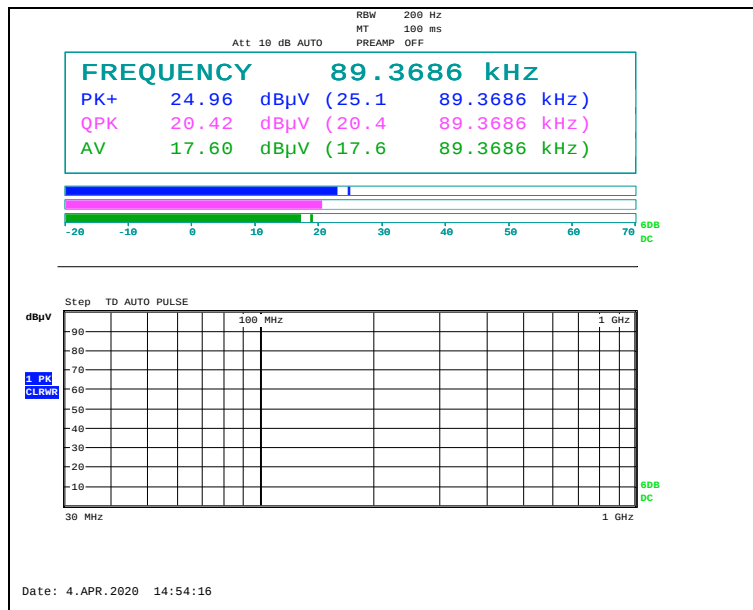
Remark;

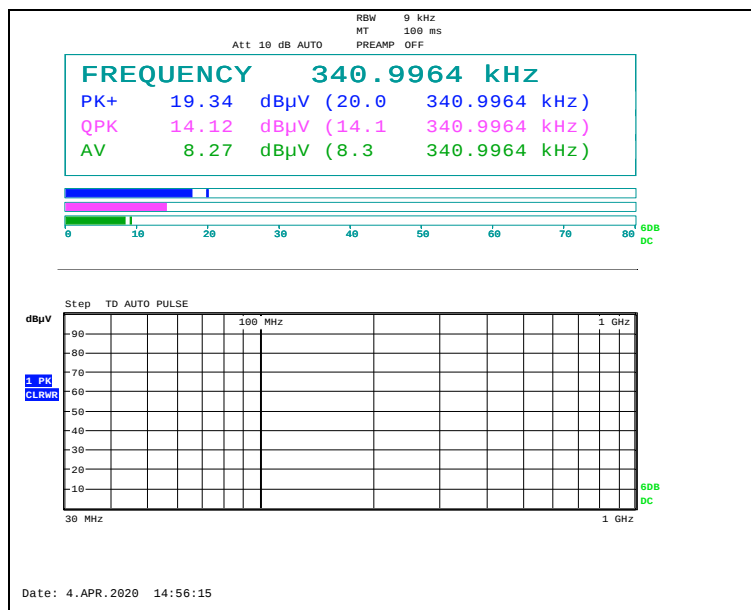
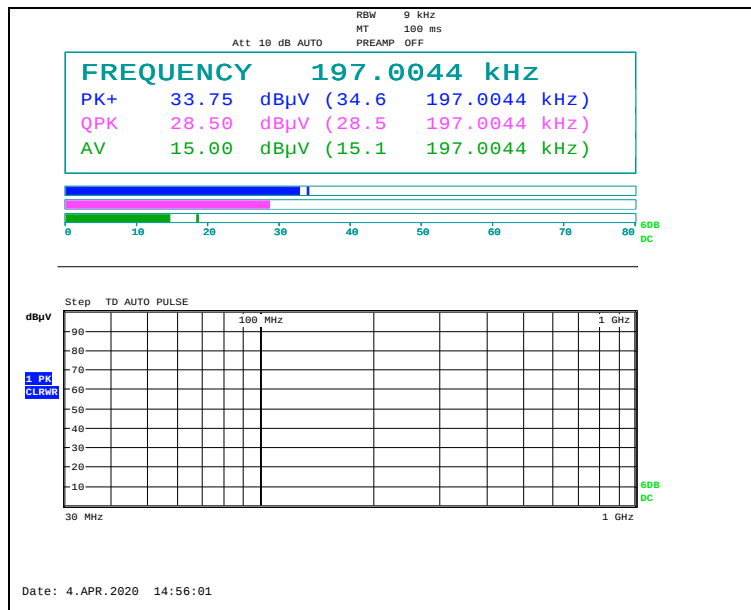
- Traces shown in the plot were made by using a peak detector.

Ant. 2

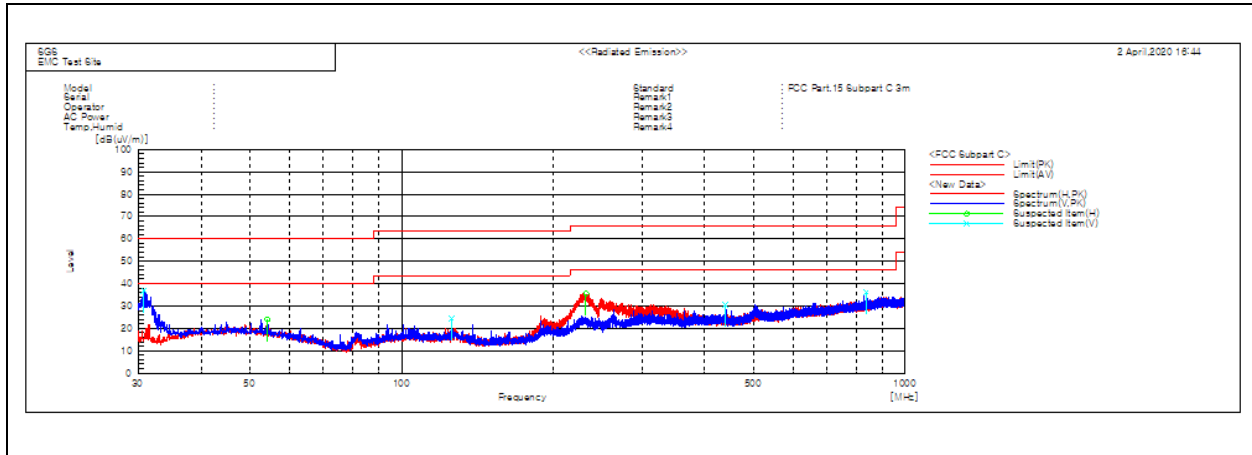
Below 30 MHz







Above 30 MHz

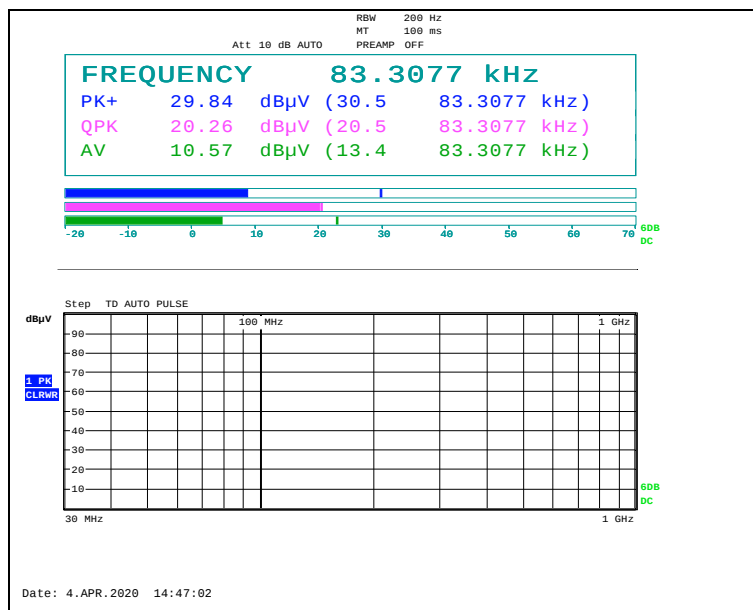
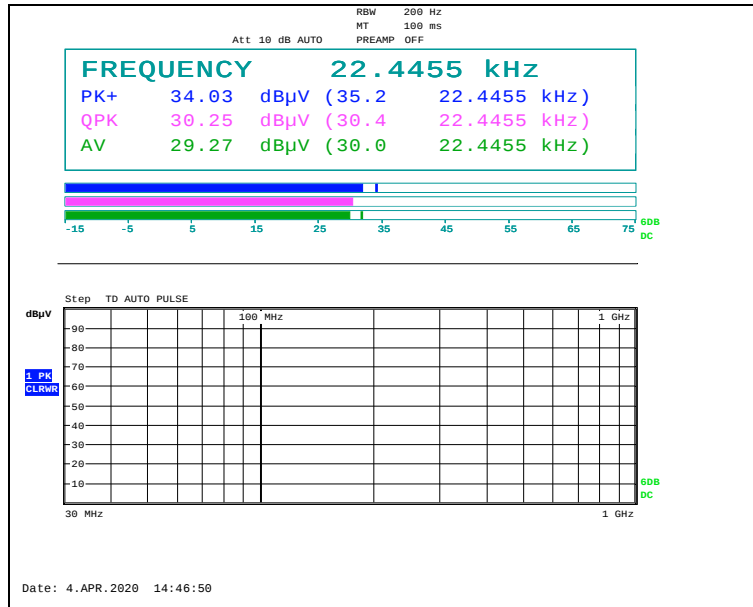


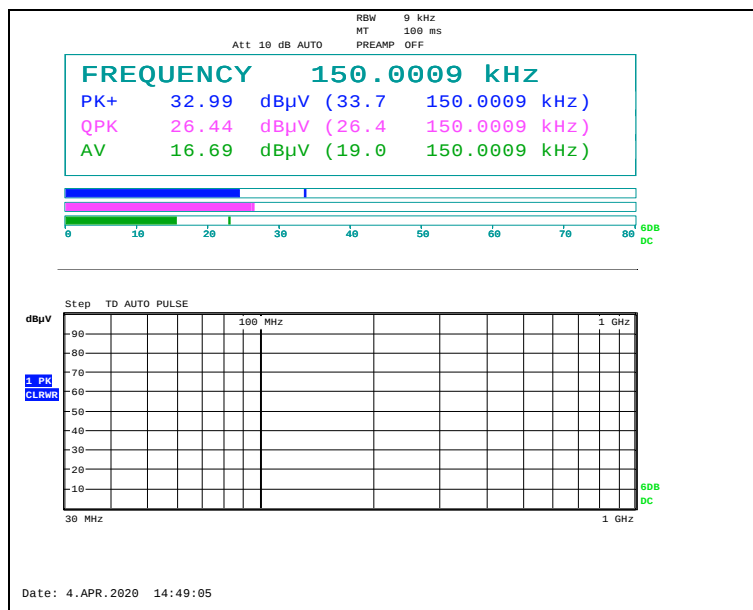
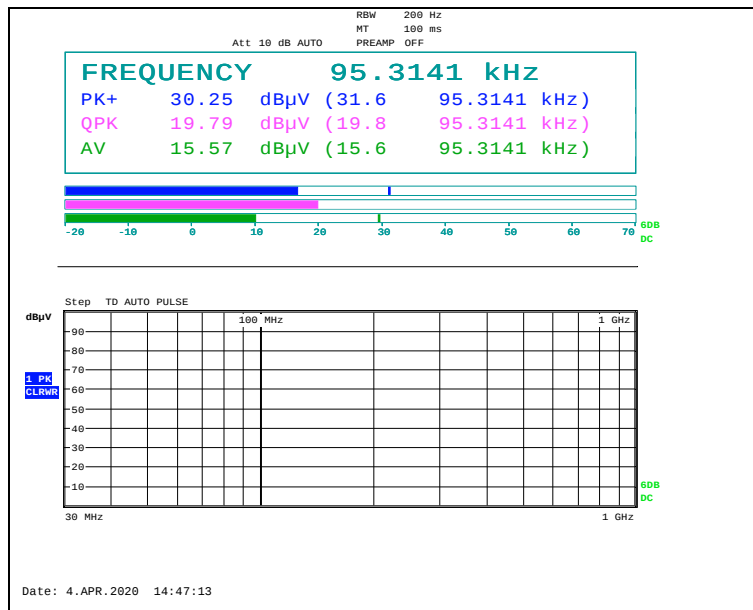
Remark;

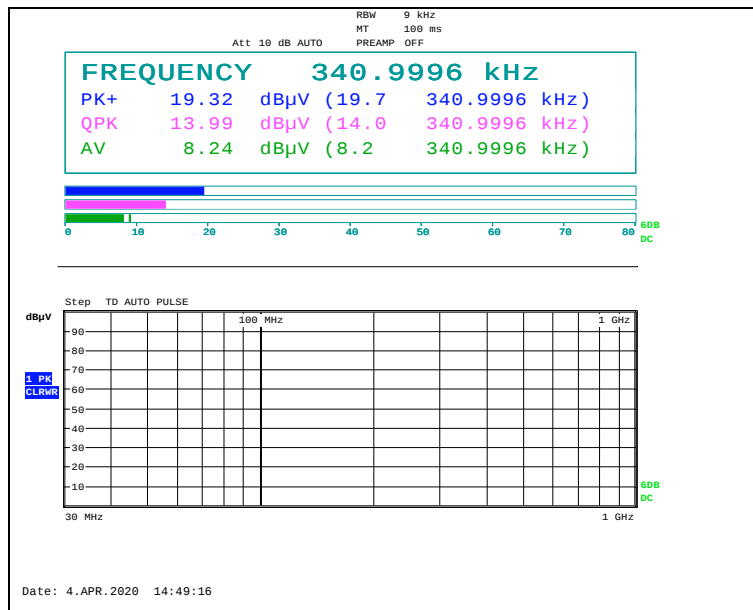
- Traces shown in the plot were made by using a peak detector.

Ant. 3

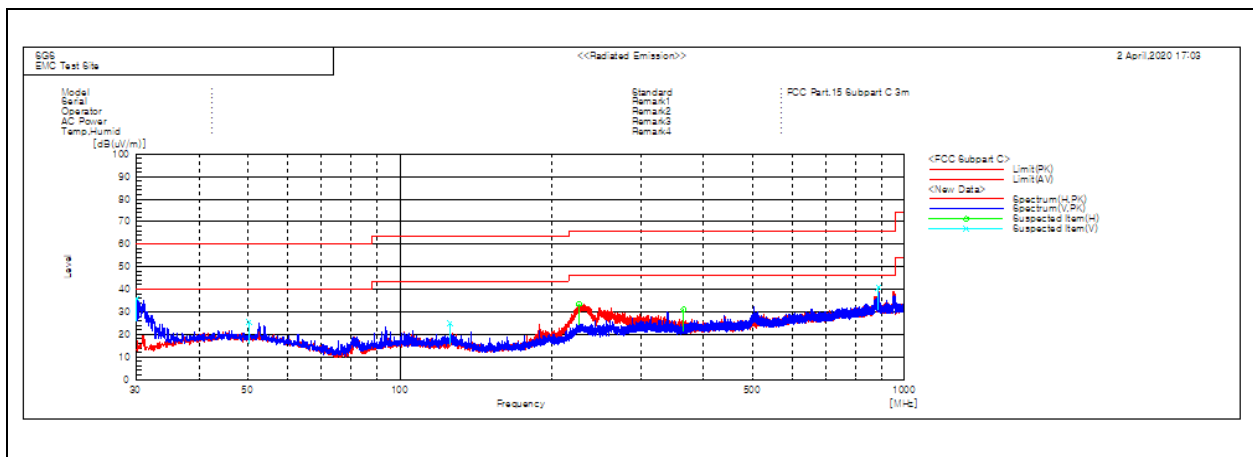
Below 30 MHz







Above 30 MHz

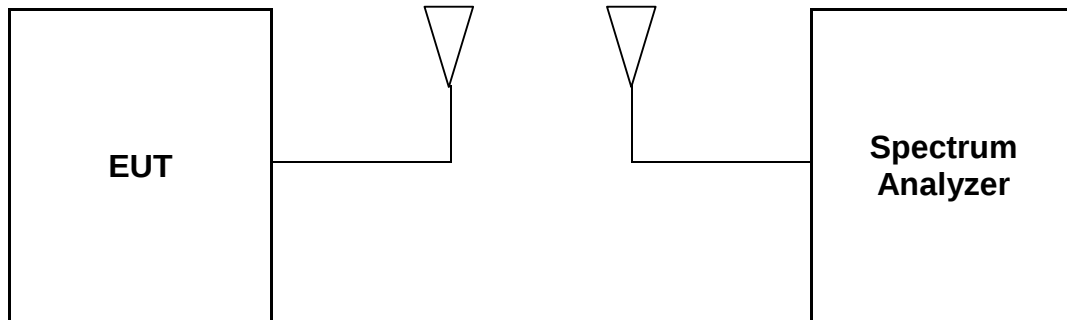


Remark;

- Traces shown in the plot were made by using a peak detector.

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

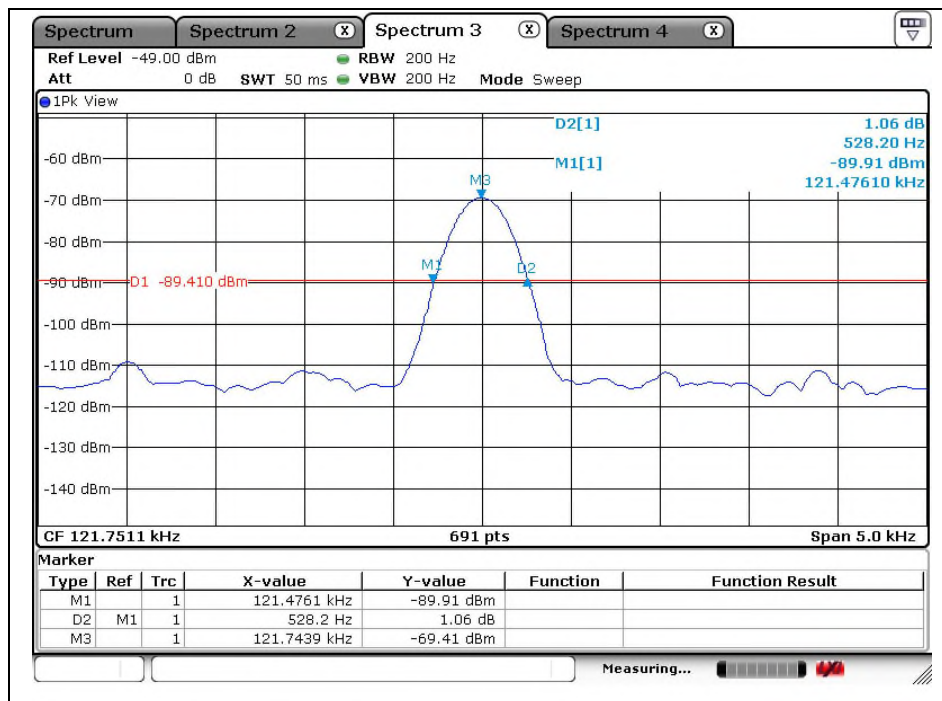
Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

Test Condition		EUT Status	20 dB Bandwidth (kHz)	Limit
5 W	Ant. 1	With client device (1 % battery status of client device)	0.528	Reporting proposed only
	Ant. 2		0.528	
	Ant. 3		0.536	
10 W	Ant. 1		0.536	
	Ant. 2		0.536	
	Ant. 3		0.543	

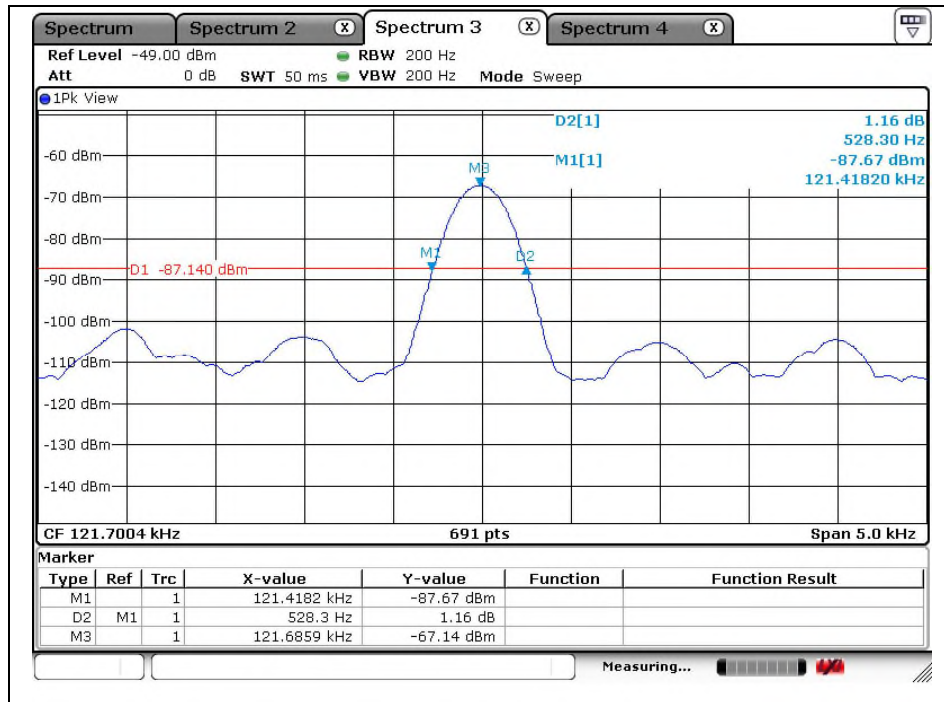
Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

- Test plots

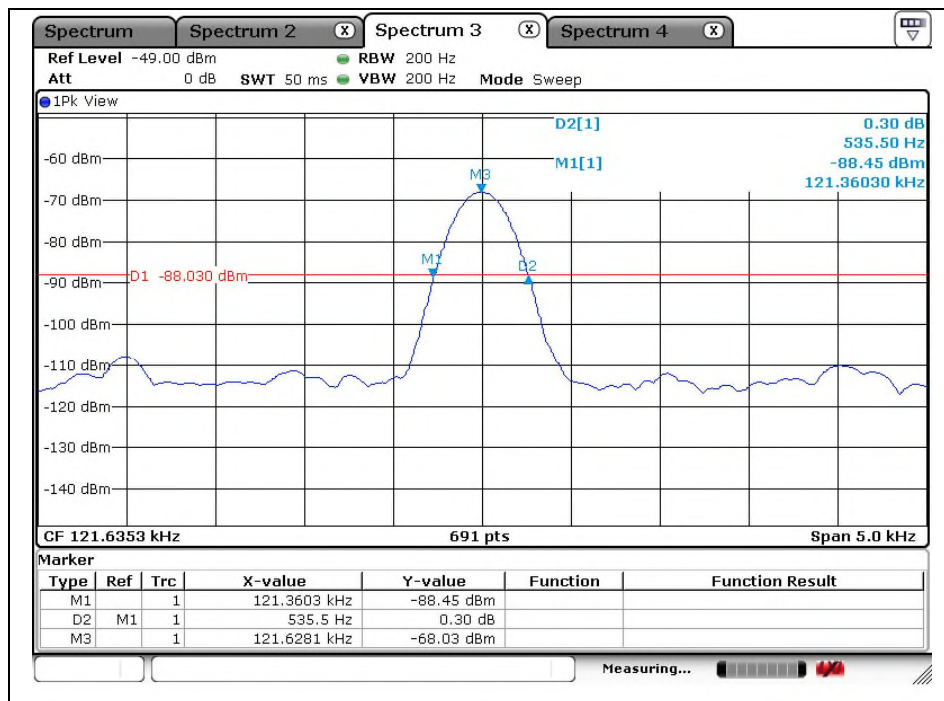
Ant. 1



Ant. 2

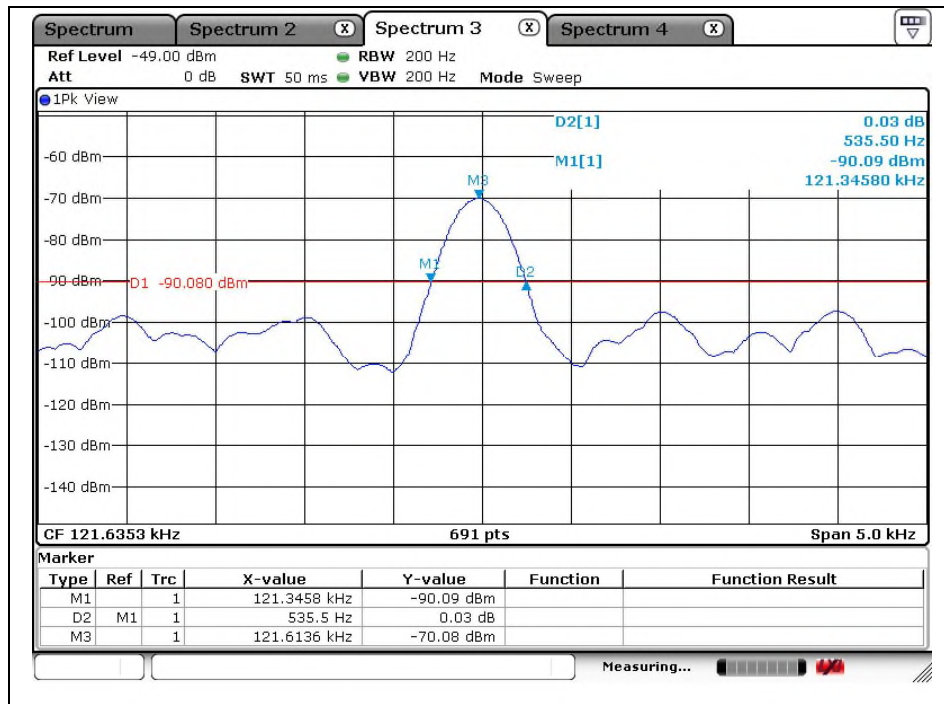


Ant. 3

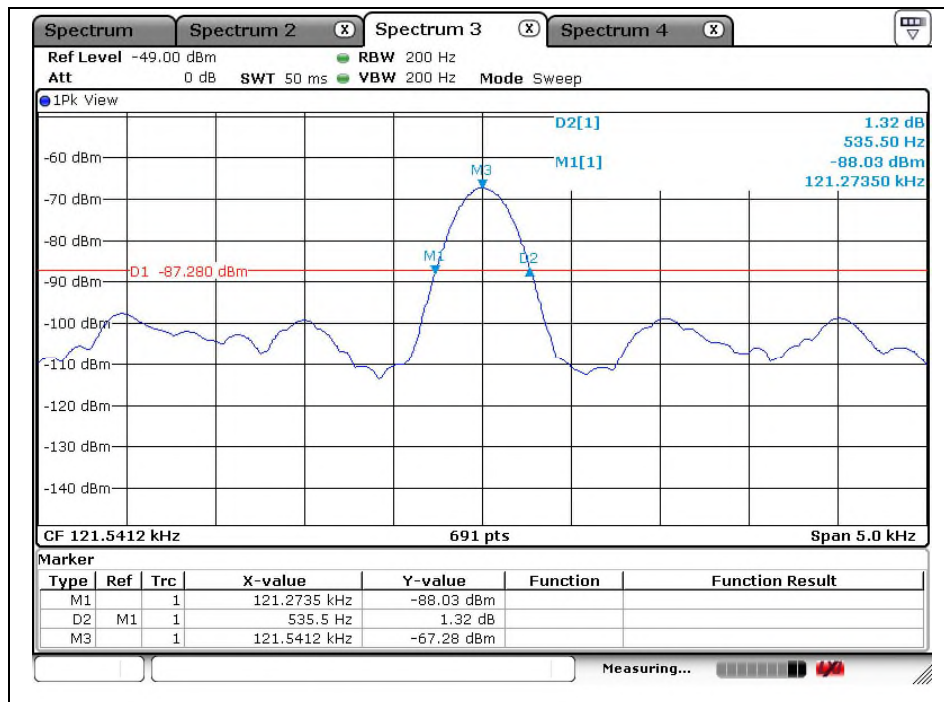


Test Condition: 10 W Operating mode with client device (1 % battery status of client device)

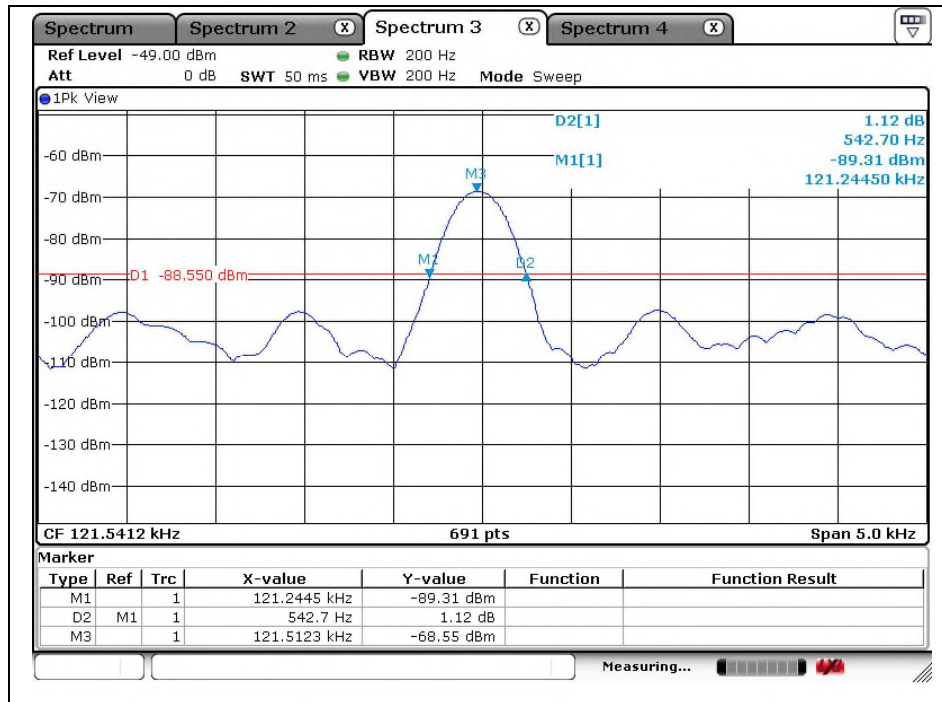
Ant. 1



Ant. 2



Ant. 3



- End of the Test Report -