



TEST REPORT

This laboratory is accredited by Radio Research Laboratory
The tests reported herein have been performed in accordance with
its terms of accreditation.

Test Report No.	CE2017-00112
Date of Receipt	07 August, 2017
Date of test	08 August, 2017 ~ 19 August, 2017
Issue Date	21 August, 2017
Applied Standard	FCC part 18
Trade Name	LG
Equipment Name	HOUSEHOLD DUAL FUEL RANGE
Model Name	SKSDR480SIS
FCC ID	BEJZ65143B
Applicant	LG Electronics USA
Address	1000 Sylvan Avenue Englewood Cliffs, New Jersey, United States
Test Laboratory	KTC (Korea Testing Certification)
Address	22 Heungan-daero 27beon-gil, Gunpo-si, Gyeonggi-do, Korea

Signature

Tested by Ho-suneg Lee
Engineer

Approved by Cheol-woo, Park
General Manager

This report details the results of the testing carried out only one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. This report must not be used by the client to claim product certification, approval or endorsement by agency of the federal government.



Table of contents

1. Report information

- 1.1 Revision history
- 1.2 Sample calculation

2. Summary of test results

- 2.1 Emission

3. General Information

- 3.1 Test facility
- 3.2 Equipment Under Test(E.U.T)
- 3.3 Description of EUT
- 3.4 Mode

4. Test Setup configuration

- 4.1 Cable description
- 4.2 EUT operating mode(s)
- 4.3 Test Condition

5. Result of individual tests

- 5.1 Conducted emission
- 5.2 Radiated emission



1. Report information

1.1 Revision history

No.	Revised detailed information
Issue 0	There are no revisions and this version is basic test report.

1.2 Sample calculation

1.2.1 Conducted disturbance (at 10 MHz)

- Class B limit = 60 dB μ V (Quasi-peak limit)
- Level (50 dB μ V) = Meter Reading (40.2 dB μ V) + factor (9.8 dB, AMN factor 9.7 dB + Cable loss 0.1 dB)
- Margin (10 dB) = Limit (60 dB μ V) – Level (50 dB μ V) = 10 dB below limit

1.2.2 Radiated disturbance (at 100 MHz)

- Class B limit = 40 dB μ V/m at 3 m
- Level (30 dB μ V/m)
= Meter Reading (50 dB μ V) + factor (- 20 dB (1/m), antenna factor + cable loss – amplifier gain)
- Margin (10 dB) = Limit (40 dB μ V/m) – Level (30 dB μ V/m) = 10 dB below limit

2. Summary of test results

2.1 Emission

The EUT has been tested according to the following specifications:

Applied	Test type	Applied standard	Result
<input checked="" type="checkbox"/>	Conducted emission	FCC Part 18 / MP-5:1986	Complied
<input checked="" type="checkbox"/>	Radiated emission		Complied



3. General Information

3.1 Test facility

We are the accredited EMC laboratory for RRA(KOREA).

We certify that the above products had performed test on our laboratory and it was confirmed to comply with FCC requirement.

The sites are constructed in conformance with the requirements of CISPR publication 16/ANSI C63.4

These products might be marketed at the US accordance to DoC of FCC Rule based on the standard 47CFR Part 2.906 and 18.

The test was performed accordance to the procedures from FCC/OET MP-5.

Test data and results are issue on the EMC test report No. as follows.

3.2 Equipment Under Test (E.U.T)

Name of E.U.T. : HOUSEHOLD DUAL FUEL RANGE

Model Name: SKSDR480SIS

Information of Variant model: None

3.3 Description of EUT

Oven Range Models	SKSDR480SIS
Description	48" Duel Fuel Pro Range
Electrical Requirements	120/240 V : 13.5 kW, 120/208 V : 10.5 kW
Exterior Dimensions	47 7/8" (W) x 35 7/64" (H) x 26 39/64" (D) (D with door closed) 121.6 cm (W) x 89.6 cm (H) x 67.6 cm (D) (D with door closed)
Height to cooking surface	36" (91.4 cm)
Net weight	529.1 lb (240 kg)
Total capacity	Right Oven : 5.2 cu.ft, Left Oven : 2.7 cu.ft. Total : 7.9 cu.ft

3.4 Mode (Inductions Heating)

	Low Frequency	High Frequency
Small Hob # 1	25 kHz	75 kHz
Small Hob # 2	25 kHz	75 kHz

4. Test Setup configuration

4.1 Cable description

The type(s) of cables which were connected to the ports (of the EUT) are as follows:

No.	From the port of EUT	To	Length[m]	Shielded[Y/N]
1	Power cable	AC power	1.3	N
2				
3				
4				
5				
6				
7				
8				
9				

4.2 EUT operating mode(s)

To achieve compliance applied standard specification, the following mode(s) were made during compliance testing: Induction Mode

4.3 Test Condition

The EUT was installed, arranged and operated in a manner that is most representative of equipment as typically used.

The measurements were carried out while varying operating modes and cable positions within typically arrangement to determine maximum emission level.

The representative and worst test mode(s) were noted in the test report.

◆ Test voltage / Frequency : AC 208 V, AC 240 V / 60 Hz

This device has been tested in the configurations of induction mode.

Induction mode : This device has been operated with an enameled steel vessel filled with tap water up to 80 % of it's maximum capacity.

5. Results of individual test

5.1 Disturbance voltage at the mains terminals

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH (50 ohm /50uH for RF lighting devices) coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/50uH (50 ohm /50uH for RF lighting devices) coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to FCC/OET MP-5: 1986 on conducted measurement.

Limits of disturbance voltage at the mains terminals

(a) All Induction cooking ranges and ultrasonic equipment:

Frequency range Limits MHz	Limits dB(μV)	
	Quasi-peak	Average
0.009 to 0.05	110	-
0.05 to 0.15	90 to 80 *)	-
0,15 to 0,50	66 to 56 *)	56 to 46 *)
0,50 to 5	56	46
5 to 30	60	50
*) Decreasing linearly with the logarithm of the frequency		

(b) All other part 18 customer devices :

Frequency range Limits MHz	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56 *)	56 to 46 *)
0,50 to 5	56	46
5 to 30	60	50
*) Decreasing linearly with the logarithm of the frequency		



5.1.1 Test instrumentation

Test instrumentations which were used in the Conducted disturbance test are as follows;

Test instrumentation	Model name	Manufacturer	Serial Number	Calibration	
				Date	Interval (Month)
EMI Test Receiver	ESCI	Rohde & Schwarz	100343	2017-06-01	12
LISN	LT32C	AFJ Inter. Srl	32031008134	2017-09-12	12
PULSE LIMITER	ESH3-Z2	Rohde & Schwarz	101134	2016-09-12	12

5.1.2 Temperature and humidity condition

Test date	11 August, 2017	Test Engineer	Ho-seung, Lee	
Climate condition	Ambient temperature	20.4 °C	Relative humidity	46 %
	Atmospheric pressure	1003.6 Kpa		

5.1.3 Test results

● Cooking element #1 (AC 208 V)

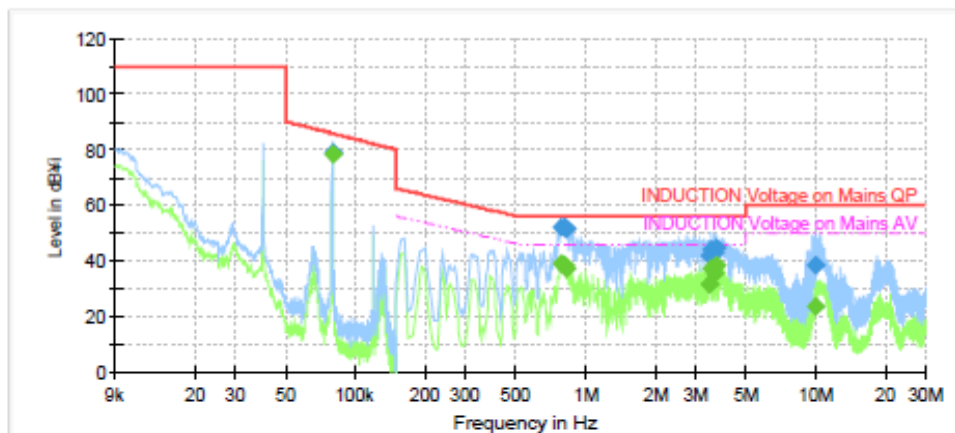
CE2017-00112_Front_(208 V)

1 / 1

Test Report

Common Information

Test Description: EMI SYSTEM Conducted Emission
Test Site: KTC EM Wave Technology Evaluation Center
Test Standard: -
Environment Conditions: -
Operator Name: Hoseung Lee
Comment:



* Preview Result 2-AVG [Preview Result 2.Result:2]
Preview Result 1-PK+ [Preview Result 1.Result:1]
Limit [INDUCTION Voltage on Mains AV.LimitLine:1]
QuasiPeak-QPK [Final_Result.Result:4]
INDUCTION Voltage on Mains QP [..]

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Comment
0.079080	---	78.51	---	---	0.200	L1	
0.079080	79.05	---	85.79	6.74	0.200	L1	
0.786000	---	38.60	46.00	7.40	9.000	L1	
0.786000	51.79	---	56.00	4.21	9.000	N	
0.806000	---	38.27	46.00	7.73	9.000	L1	
0.806000	52.12	---	56.00	3.88	9.000	L1	
0.818000	---	37.29	46.00	8.71	9.000	L1	
0.818000	51.68	---	56.00	4.32	9.000	N	
3.454000	---	31.51	46.00	14.49	9.000	L1	
3.454000	41.89	---	56.00	14.11	9.000	L1	
3.526000	---	37.33	46.00	8.67	9.000	L1	
3.526000	44.13	---	56.00	11.87	9.000	L1	
3.606000	---	35.36	46.00	10.64	9.000	L1	
3.606000	42.60	---	56.00	13.40	9.000	L1	
3.682000	---	38.40	46.00	7.60	9.000	N	
3.682000	44.47	---	56.00	11.53	9.000	L1	
9.914000	---	23.15	50.00	26.85	9.000	L1	
9.914000	38.30	---	60.00	21.70	9.000	L1	

Cooking element #2 (AC 208 V)

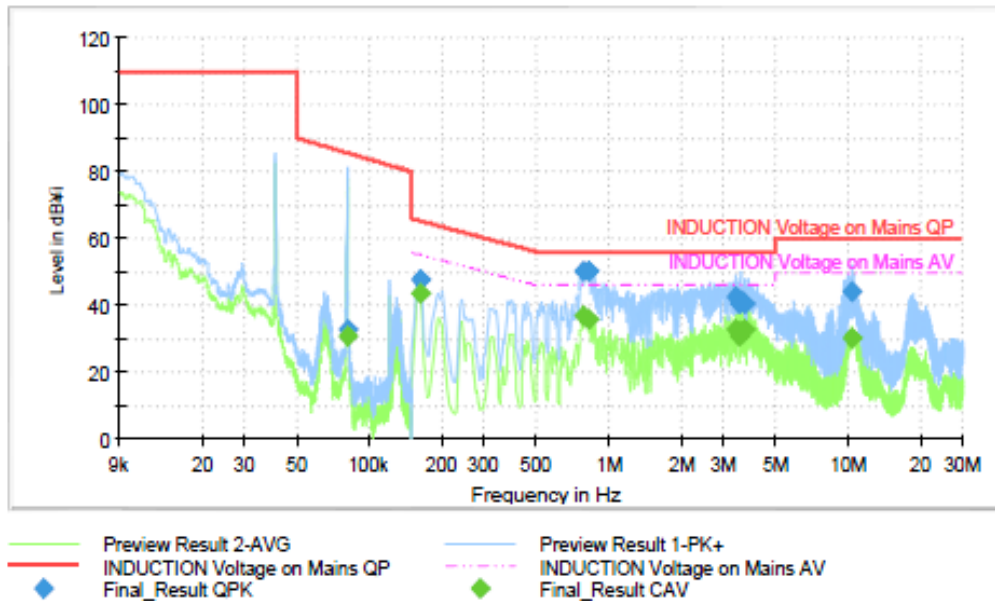
CE2017-00112_Rear_(208 V)

1 / 1

Test Report

Common Information

Test Description: EMI SYSTEM Conducted Emission
Test Site: KTC EM Wave Technology Evaluation Center
Test Standard: -
Environment Conditions: -
Operator Name: Hoseung Lee
Comment:



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Comment
0.080600	---	30.79	---	---	0.200	L1	
0.080600	32.69	---	85.61	52.92	0.200	L1	
0.162000	---	43.42	55.28	11.86	9.000	L1	
0.162000	47.94	---	65.28	17.35	9.000	L1	
0.786000	---	36.76	46.00	9.24	9.000	L1	
0.786000	50.26	---	56.00	5.74	9.000	N	
0.818000	---	35.97	46.00	10.03	9.000	L1	
0.818000	50.36	---	56.00	5.64	9.000	L1	
3.402000	---	32.88	46.00	13.12	9.000	L1	
3.402000	42.35	---	56.00	13.65	9.000	L1	
3.522000	---	30.91	46.00	15.09	9.000	L1	
3.522000	40.64	---	56.00	15.36	9.000	N	
3.562000	---	32.08	46.00	13.92	9.000	L1	
3.562000	41.73	---	56.00	14.27	9.000	L1	
3.678000	---	32.87	46.00	13.13	9.000	L1	
3.678000	40.76	---	56.00	15.24	9.000	N	
10.306000	---	30.37	50.00	19.63	9.000	L1	
10.306000	43.97	---	60.00	16.03	9.000	L1	

● Cooking element #1 (AC 240 V)

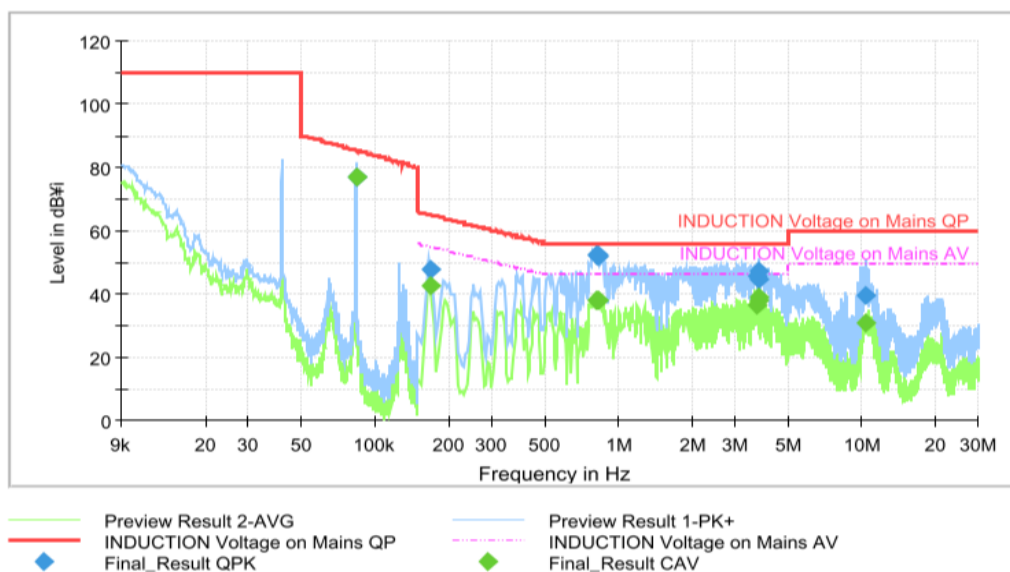
CE2017-00112_Front_(240 V)

1 / 1

Test Report

Common Information

Test Description: EMI SYSTEM Conducted Emission
Test Site: KTC EM Wave Technology Evaluation Center
Test Standard: -
Environment Conditions: -
Operator Name: Hoseung Lee
Comment:



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Comment
0.083240	---	76.89	---	---	0.200	L1	
0.083240	77.13	---	85.32	8.19	0.200	L1	
0.170000	---	42.40	54.89	12.48	9.000	L1	
0.170000	47.52	---	64.89	17.37	9.000	L1	
0.806000	---	38.08	46.00	7.92	9.000	L1	
0.806000	52.33	---	56.00	3.67	9.000	N	
0.818000	---	37.97	46.00	8.03	9.000	L1	
0.818000	52.31	---	56.00	3.69	9.000	L1	
0.826000	---	37.95	46.00	8.05	9.000	L1	
0.826000	51.68	---	56.00	4.32	9.000	L1	
3.722000	---	36.39	46.00	9.61	9.000	L1	
3.722000	45.45	---	56.00	10.55	9.000	L1	
3.754000	---	38.01	46.00	7.99	9.000	N	
3.754000	44.75	---	56.00	11.25	9.000	L1	
3.790000	---	39.09	46.00	6.91	9.000	L1	
3.790000	47.00	---	56.00	9.00	9.000	N	
10.322000	---	30.79	50.00	19.21	9.000	L1	
10.322000	39.60	---	60.00	20.40	9.000	L1	

Cooking element #2 (AC 240 V)

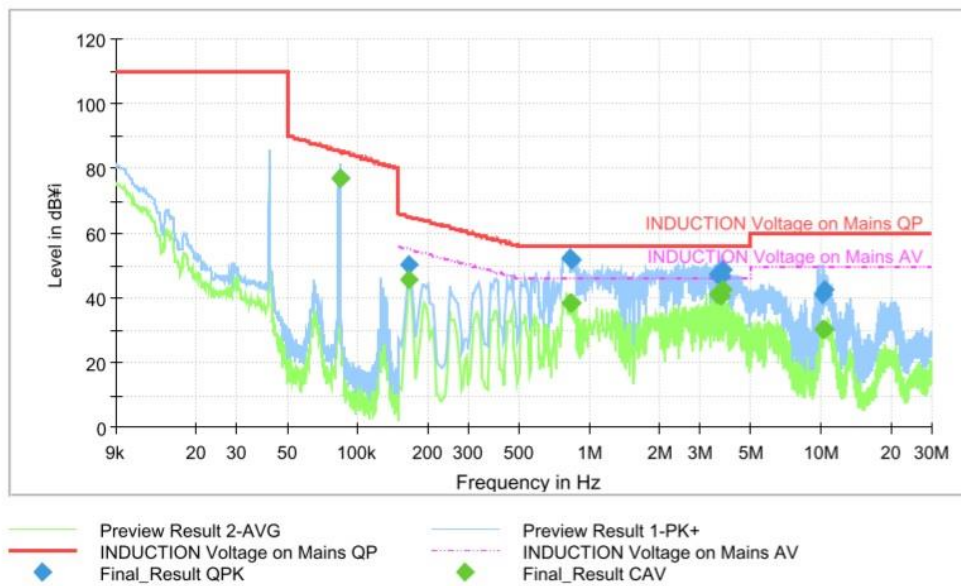
CE2017-00112_Rear_(240 V)

1 / 1

Test Report

Common Information

Test Description: EMI SYSTEM Conducted Emission
Test Site: KTC EM Wave Technology Evaluation Center
Test Standard: -
Environment Conditions: -
Operator Name: Hoseung Lee
Comment:



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Comment
0.083240	---	76.90	---	---	0.200	L1	
0.083240	77.10	---	85.32	8.22	0.200	L1	
0.166000	---	45.80	55.08	9.29	9.000	L1	
0.166000	50.42	---	65.08	14.66	9.000	L1	
0.818000	---	38.49	46.00	7.51	9.000	L1	
0.818000	52.56	---	56.00	3.44	9.000	N	
0.834000	---	38.21	46.00	7.79	9.000	L1	
0.834000	51.63	---	56.00	4.37	9.000	L1	
3.586000	---	41.22	46.00	4.78	9.000	L1	
3.586000	47.21	---	56.00	8.79	9.000	L1	
3.670000	---	40.64	46.00	5.36	9.000	N	
3.670000	46.48	---	56.00	9.52	9.000	L1	
3.750000	---	42.60	46.00	3.40	9.000	L1	
3.750000	48.62	---	56.00	7.38	9.000	N	
10.170000	---	30.23	50.00	19.77	9.000	L1	
10.170000	41.07	---	60.00	18.93	9.000	L1	
10.302000	---	30.16	50.00	19.84	9.000	L1	
10.302000	42.62	---	60.00	17.38	9.000	L1	

5.2 Radiated disturbance (Field strength)

- (a) According to exploratory test no any obvious emission were detected from 9kHz to 30MHz. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
- (b) ISM equipment operating on a frequency specified in §18.301 is permitted unlimited radiated energy in the band specified for that frequency.
- (c) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 25 × SQRT(power/500)	300 ¹ 300
	Any non-ISM frequency	Below 500 500 or more	15 15 × SQRT(power/500)	300 ¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) 2,400/F(kHz) × SQRT(power/500)	300 ³ 300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	24,000/F(kHz) 15	30 30
Induction cooking ranges	Below 90 kHz On or above 90 kHz	Any Any	1,500 300	⁴ 30 ⁴ 30

¹ Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

² Reduced to the greatest extent possible.

³ Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴ Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.



(c) The field strength limits for RF lighting devices shall be the following:

Frequency (MHz)	Field strength limit at 30 meters (μV/m)
Non-consumer equipment:	
30-88	30
88-216	50
216-1000	70
Consumer equipment:	
30-88	10
88-216	15
216-1000	20

NOTES

1. The tighter limit shall apply at the boundary between two frequency ranges.
2. Testing for compliance with these limits may be made at closer distances, provided a sufficient number of measurements are taken to plot the radiation pattern, to determine the major lobes of radiation, and to determine the expected field strength level at 30, 300, or 1600 meters. Alternatively, if measurements are made at only one closer fixed distance, then the permissible field strength limits shall be adjusted using 1/d as an attenuation factor.

Limits for radiated disturbance of ITE at a measuring distance of 3 m

Frequency range Limits MHz	Class B Limits dB(μV/m)	
	Peak	Average
Above 1 000	74	54

5.2.1 Test instrumentation

Test instrumentations which were used in the Radiated disturbance test are as follows;

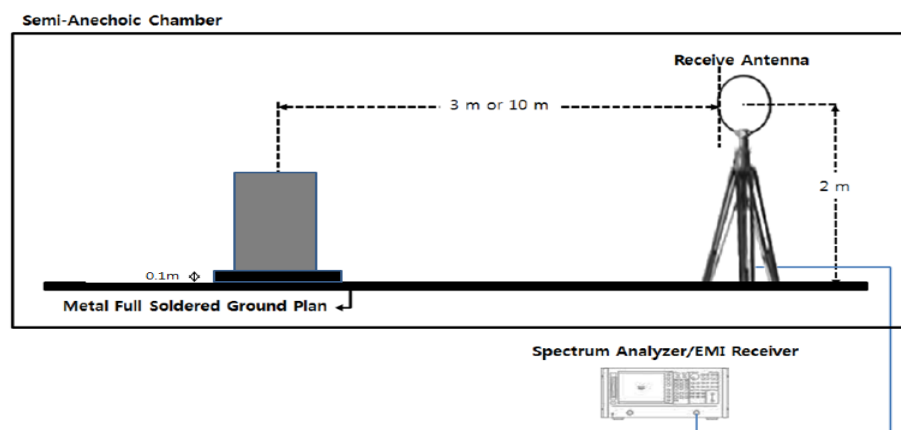
Test instrumentation	Model name	Manufacturer	Serial Number	Calibration	
				Date	Interval (Month)
EMI Test Receiver	ESU40	Rohde & Schwarz	100198	2018.05.25	12
Loop Antenna	HFH2-Z2	Rohde & Schwarz	827945/007	2017.11.18	12
Antenna Mast	MA4000-EP	Innco Systems	201/16140507/L	N/A	-
Antenna Mast	MA4000-EP	Innco Systems	243/21551208/L	N/A	-
Turn Table	DT3000-3t	Innco Systems	-	N/A	-

5.2.2 Temperature and humidity condition

Test date		Test engineer			
Climate condition	Ambient temperature	20.4 °C	Relative humidity	45 %	
	Atmospheric pressure	1003.4 Kpa			
Test place	10 m Semi-Anechoic Chamber				

5.2.3 Test Set-up

The Radiated emission measurements were conducted at the worst test conditions. The measurements of below 1 GHz were made at 3 m Semi Anechoic Chamber or 10 m Semi Anechoic Chamber that complies with CISPR 16/ANSI C63.4. The frequency range of 9 kHz to 30 MHz, the EUT was placed on a non-conductive turntable approximately 0.1 m above the ground plane. The turntable with EUT was rotated 360° and receive antenna was fixed 2.0 m on the ground plane.



5.2.4 Test results

Test Date : 17 August, 2017

Measurement Distance : 10 m

Note : Frequency range to be scanned up to 30 MHz, because the frequency band in which the EUT operates less than 1.705 MHz

- Measurement setting

Frequency range	9 kHz ~ 150 kHz	0.15 MHz ~ 30 MHz
Detector mode	Average	Average
Resolution bandwidth	200 Hz	9 kHz

- Measurement Data : Induction Mode (Detector Mode : AVR)

Distance (Meters)	Frequency [MHz]	ANT Pol	Reading [dBuV]	D.C.F	C.F	Field Strength [dBuV/m]	Limits [dBuV/m]	Margin [dB]	Cooking element
10	0.0405	H	52.2	-38.4	20.1	33.9	63.52	29.62	#1

Distance (Meters)	Frequency [MHz]	ANT Pol	Reading [dBuV]	D.C.F	C.F	Field Strength [dBuV/m]	Limits [dBuV/m]	Margin [dB]	Cooking element
10	0.0400	V	56.3	-38.4	20.1	38.0	63.52	25.52	#1

Distance (Meters)	Frequency [MHz]	ANT Pol	Reading [dBuV]	D.C.F	C.F	Field Strength [dBuV/m]	Limits [dBuV/m]	Margin [dB]	Cooking element
10	0.0406	H	55.7	-35.0	20.1	40.8	63.52	22.72	#2

Distance (Meters)	Frequency [MHz]	ANT Pol	Reading [dBuV]	D.C.F	C.F	Field Strength [dBuV/m]	Limits [dBuV/m]	Margin [dB]	Cooking element
10	0.0406	V	53.9	-35.0	20.1	39.0	63.52	24.52	#2



Note.1 The worst case data were reported.

And no other spurious and harmonic emissions were reported greater than listed emission above table.

2. All measurements were recorded using a spectrum analyzer employing a peak detector for below 30 MHz
3. Correction Factor (C.F) : Cable loss + Antenna Factor
4. Distance Correction Factor (D.C.F) = $[FS_{d1} - FS_{d2}] / \log_{10}(d1/d2)$ where:
d1 and d2 are the measurement distances ($d2 > d1$) in m
FS_{d1} is the field strength at d1 in dBuV/m
FS_{d2} is the field strength at d2 in dBuV/m

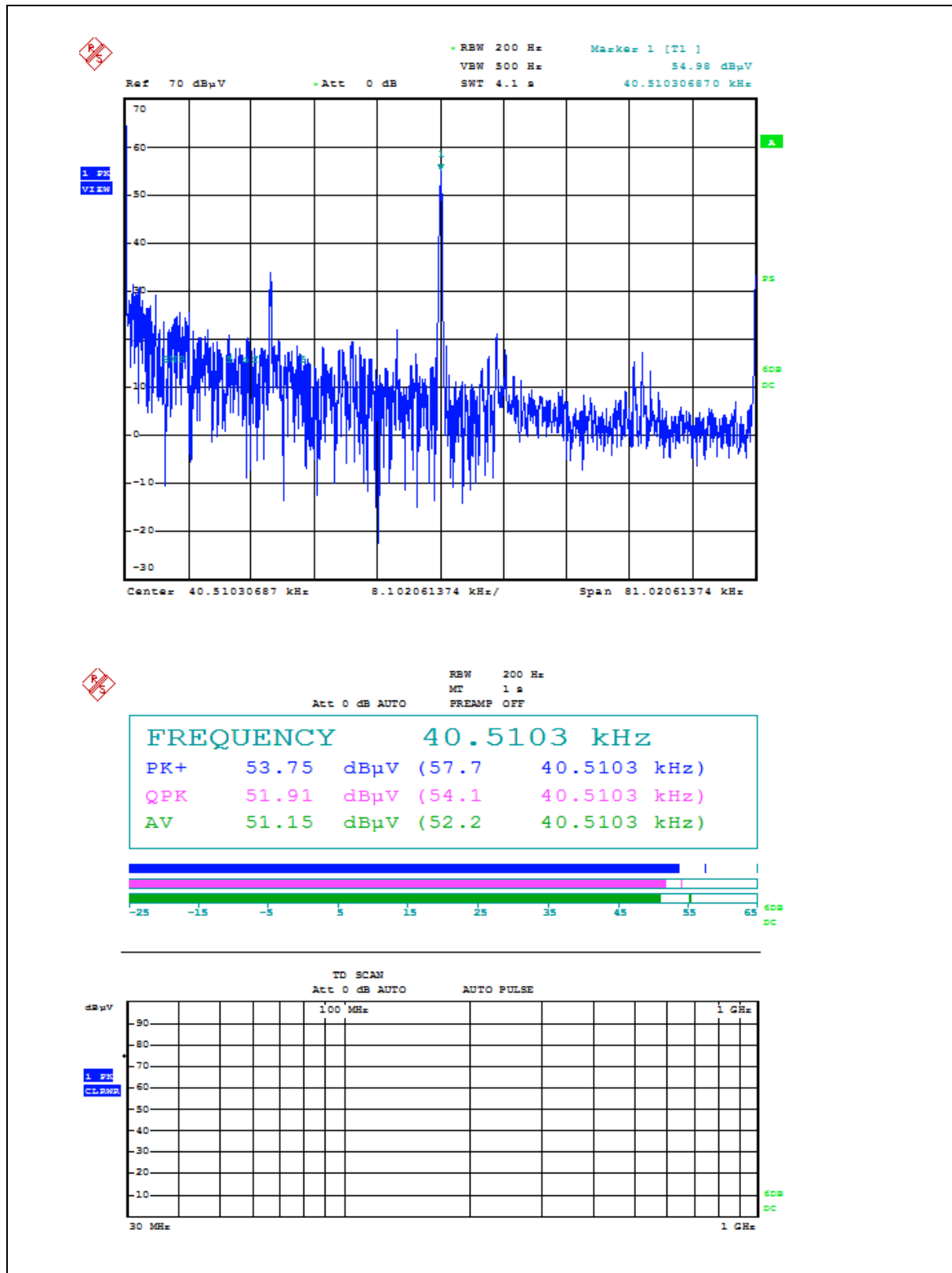
#1 of cooking element			
Distance (m)	Meter reading	C.F	Final reading
3	72.3	20.1	92.4
5	67.9	20.1	88
10	52.2	20.1	72.3
Extrapolation factor from 5 m to 10 m : - 52.2 Extrapolation factor from 3 m to 10 m : - 38.4			

#2 of cooking element			
Distance (m)	Meter reading	C.F	Final reading
3	74.0	20.1	94.1
5	68.9	20.1	89.0
10	55.7	20.1	75.8
Extrapolation factor from 5 m to 10 m : - 43.8 Extrapolation factor from 3 m to 10 m : - 35.0			

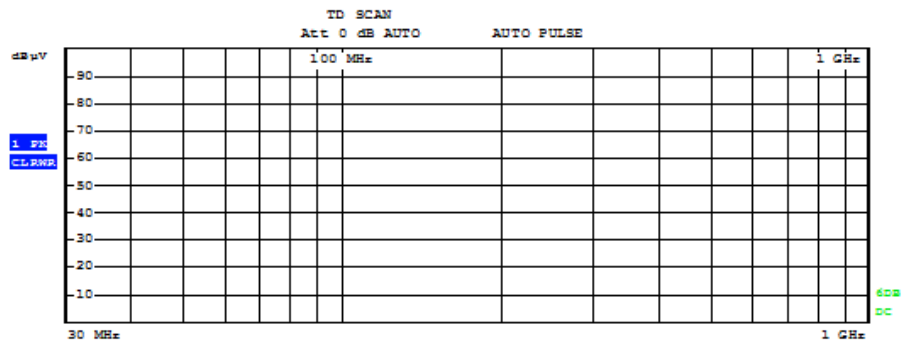
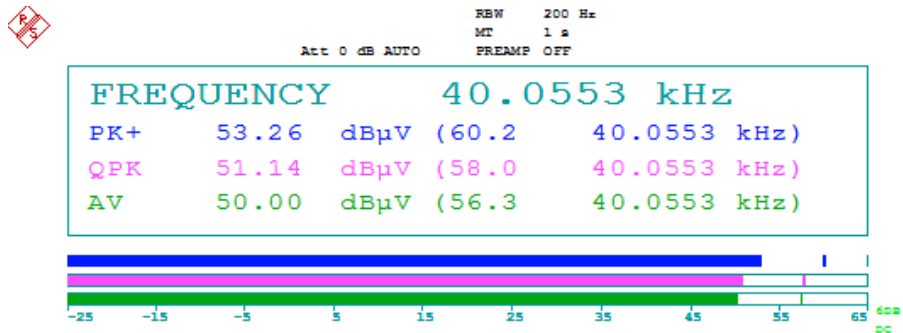
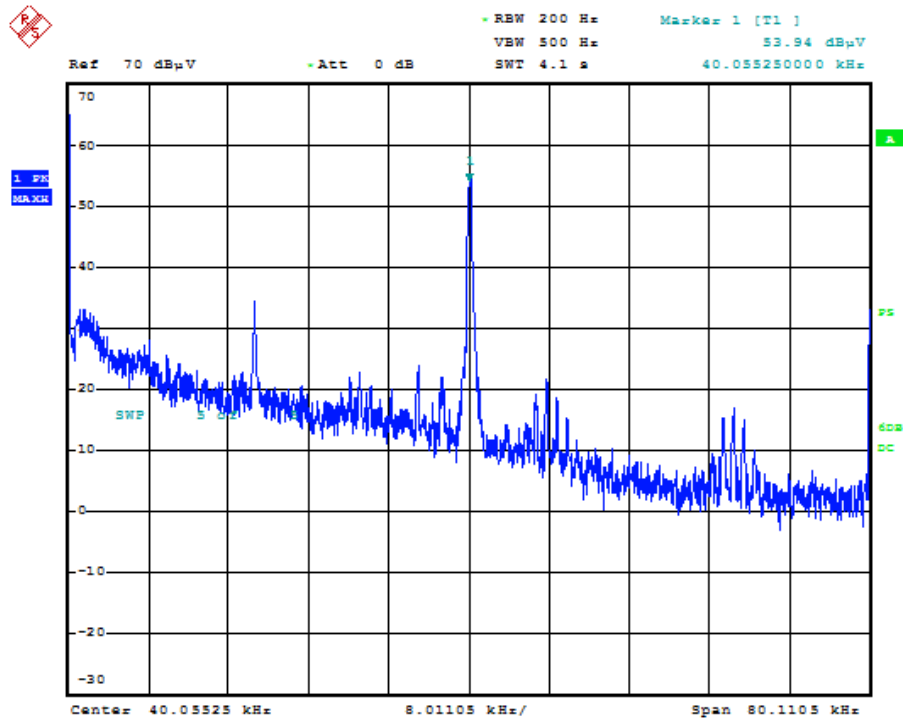
5. Sample calculation
Field Strength = Reading + D.C.F
Margin = Limit – Field Strength
Where D.C.F = Distance Correction Factor
6. “V” = Vertical / “H” = Horizontal
7. Cooking element “1” = right front, “2” = right rear

5.2.5 Test results

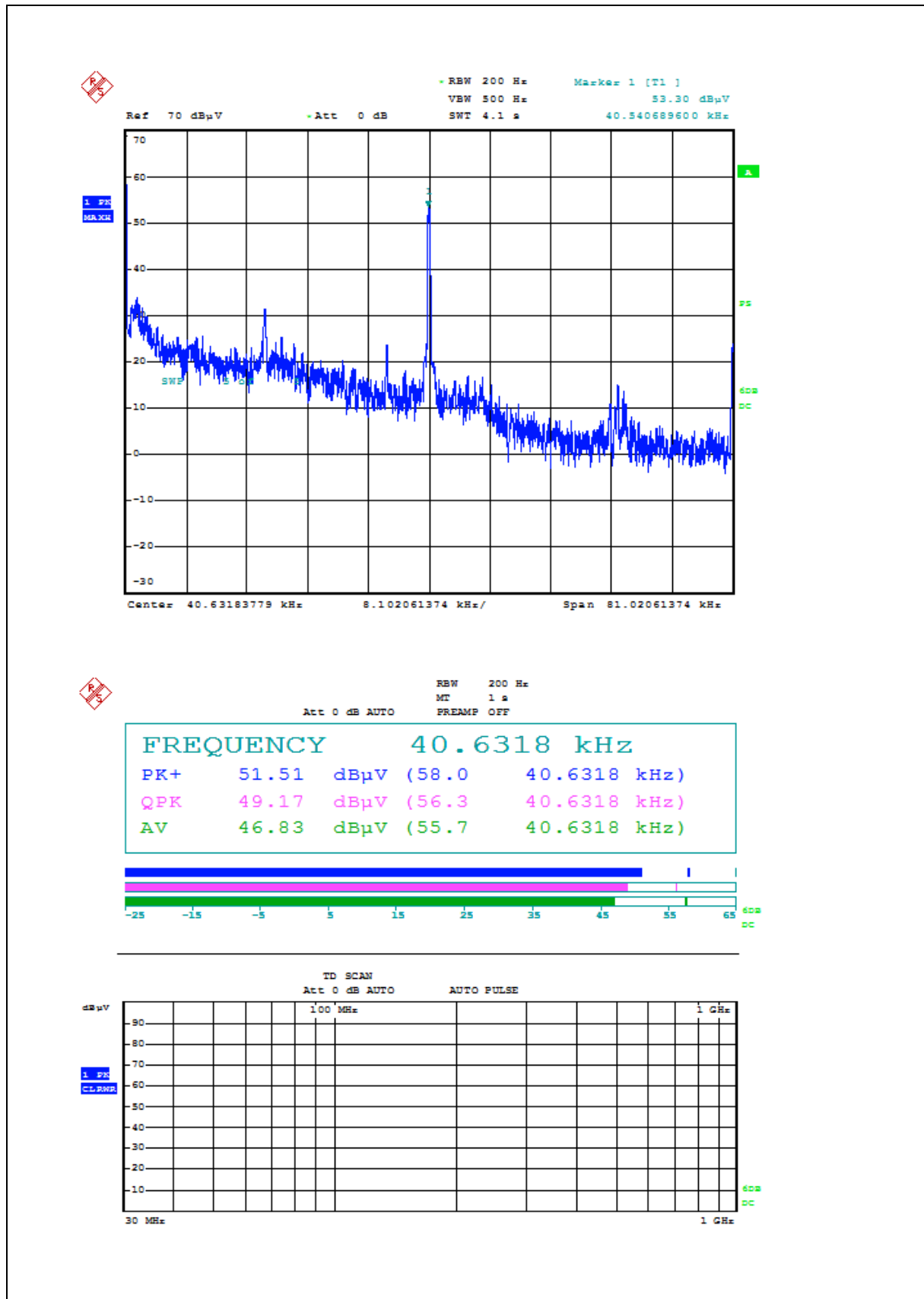
● Cooking element #1 for Horizontal at 10 m



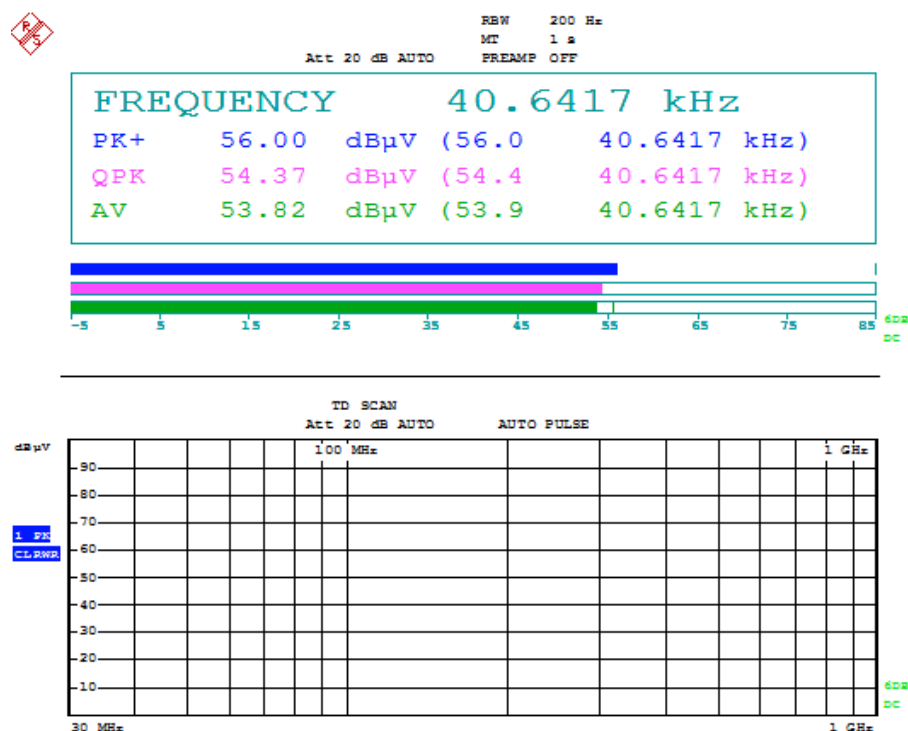
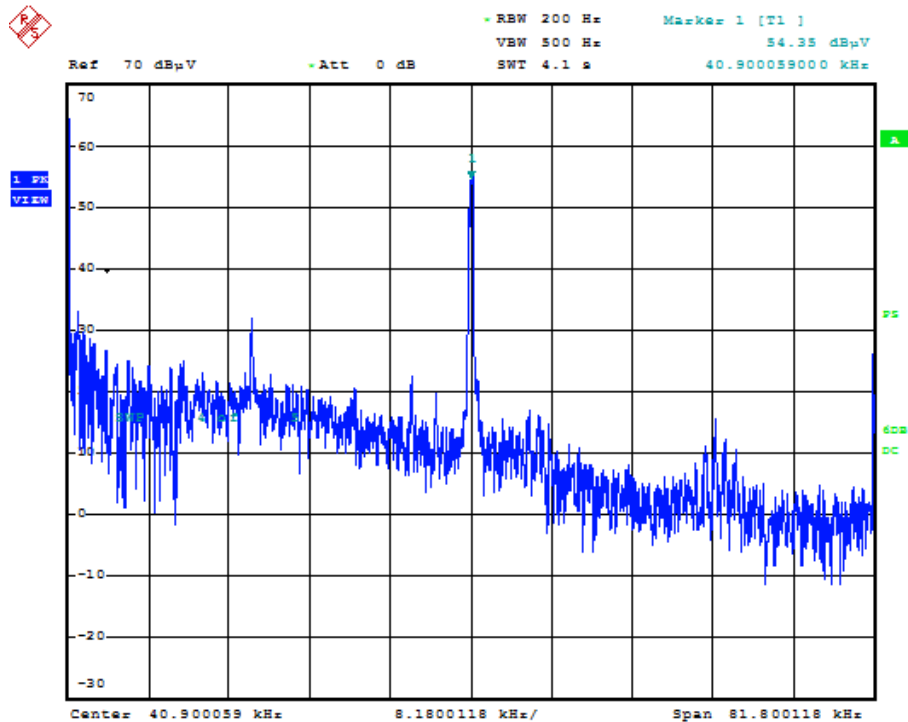
● Cooking element #1 for Vertical at 10 m



● Cooking element #2 for Horizontal at 10 m



- **Cooking element #2 for Vertical at 10 m**



End.