

Test report No:
78472REM.010

Test report

FCC Rules and Regulations CFR 47, Part 18, Subpart C (10-1-20 Edition) ; RSS-216 Issue 2 (January 2016) Amendment 1 (September 2020) and ICES-001 Issue 5 (Updated 6-2020)

(*) Identification of item tested	Charger for Wellness ring
(*) Trademark	OURA
(*) Model and /or type reference	OA12
(*) Other identification of the product	FCC ID: 2AD7V-OURA2402 IC: 20635-OURA2402
(*) Features	Features: Inductive charging HW version: 01 SW version: 2.0.7
Manufacturer	Oura Health Oy Elektroniikkatie 10, 90590 Oulu, Finland
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 18, Subpart C (10-1-20 Edition) RSS-216 Issue 2 (January 2016) Amendment 1 (September 2020) and ICES-001 Issue 5 (Updated 6-2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager
Date of issue	2024-05-08
Report template No	FDT08_24 (*) "Data provided by the client"

 Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (CA29507456)



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Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng [L]	Frequency Range [Lower Limit]
Freq Rng [U]	Frequency Range [Upper Limit]
MP	Measurement Point
OM	Operation Mode
S/	Sample
V	Verdict

Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification S.A.U.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ dB for peak measurements ($k=2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75 GHz is $I = \pm 2,6$ dB for peak and average measurements ($k=2$).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample consists of a charger for Wellness ring. OURA is a revolutionary wellness ring and app, designed to help user gets more restful sleep and performs better. It enables user to learn how the lifestyle choices affect user's sleep, and how the quality of the sleep affects user's ability to perform. The OURA ring can automatically tell when user is sleeping. When user goes to sleep, the OURA ring analyzes the quality of the rest and recovery by measuring the heart rate (optically), respiration rate, body temperature, and movement. While user is awake, it monitors the duration and intensity of the activities, and the time user spends sitting. The OURA app integrates and visualizes this data to identify patterns between the sleep quality and daily activities. By understanding how well user slept and recharged, it can determine the readiness to perform and help user adjust the intensity and duration of the day's activities. It can also uncover actionable insights for changes to the daily activities that can help user sleep better.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	78472_10.1	USB-C Cable	--	--	2024-03-05	Element Under Test
	78472_11.1	OA12 size 10 (Charger)	OA12	--	2024-03-05	Element Under Test
	78472_12.1	OA11 size 10 (Ring)	OA11	--	2024-03-05	Auxiliary Element
	78472_6.1	AC/DC Charger	A2347	--	2024-03-05	Auxiliary Element

Notes referenced to samples during the project:

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	USB-C	1	[X]	[]	[]	[]	
			[]	[]	[]	[]	
			[]	[]	[]	[]	
			[]	[]	[]	[]	
			[]	[]	[]	[]	
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[]	AC:	[]	[]	[]	[]	[]
	[]	AC:	[]	[]	[]	[]	[]
	[X]	DC: 5V					
	[]	DC:					
Rated Power							
Clock frequencies..... :							
Other parameters							
Software version	2.0.7						
Hardware version	01						
Dimensions in cm (W x H x D)	5.0 x 5.0 x 1.69						
Mounting position	[X]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					

	[]	Other:	
Modules/parts.....:	Module/parts of test item	Type	Manufacturer
			
			
			
			
Accessories (not part of the test item)	Description	Type	Manufacturer
			
			
			
			
			
			
Documents as provided by the applicant	Description	File name	Issue date
			
			
			
			

⁽³⁾ Only for Medical Equipment

Identification of the client

Oura Health Oy
Elektroniikkatie 10, 90590 Oulu, Finland

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2024-03-05
Date (finish)	2024-03-07

Document history

Report number	Date	Description
78472REM.010	2024-05-08	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860mbar Max. = 1060mbar

Remarks and comments

The tests have been performed by the technical personnel: Jia Hao Luo Chen.

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
04523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU26	ROHDE AND SCHWARZ	2026-01-04
05862	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2025-02-15
07763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2026-01-16
06495	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2024-03-19
09968	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2026-09-22
07862	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-3G	BONN ELEKTRONIK	2025-04-02
07769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2025-03-13
07770	RF PREAMPLIFIER 10MHz-6GHz	BBV 9743 B	SCHWARZBECK	2025-02-06
08130	SEMIANECHOIC ABSORBER LINED CHAMBER	P29419	ALBATROSS	--
08134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	--
07550	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
07549	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
07762	ACTIVE LOOP ANTENNA 9kHz-30MHz	FMZB 1519B	SCHWARZBECK	2025-12-01

Summary

Test Specification	Requirement – Test case	Verdict	Remark
FCC Rules and Regulations CFR 47, Part 18, Subpart C (10-1-20 Edition) RSS-216 Issue 2 (January 2016) Amendment 1 (September 2020) ICES-001 Issue 5 (Updated 6-2020)	RE Radiated emission. Electromagnetic field measure	P	(1)
	RE Axis Radiated emission. Electromagnetic field measure	P	--
	CE Continuous conducted emission	N/A	(2)
<u>Supplementary information and remarks:</u> (1) Range: $f > 12.75$ GHz. Test required only to the 5th harmonics of the maximum internal work frequency in the EUT. (2) According to Subpart C (15.207), this test is applicable for an intentional radiator that is designed to be connected to the public utility (AC) power line.			

Appendix A: Test results

Appendix A content

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Description of the operation modes

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.
The operation modes used by the samples to which the present report refers, are shown in the following table:

Id	Description
OM/01	EUT ON. Charging ring battery through wireless charger (Power supply: 5Vdc through AC/DC connected to 230Vac, 60Hz).

Test standards version applied

The product standards and test standards applied for each test cases are shown in the following table:

Product Test Standard	Test standard	Requirement – Test case
FCC Rules and Regulations CFR 47, Part 18, Subpart C (10-1-20 Edition)	ANSI C63.4 (2014)	RE Radiated emission.
RSS-216 Issue 2 (January 2016) Amendment 1 (September 2020)	ANSI C63.4 (2014)	CE Continuous conducted emission
ICES-001 Issue 5 (Updated 6-2020)		

Test Cases Details

RE Radiated emission. Electromagnetic field measure

Limits

Limits for FCC part 18.305

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	25	300 ¹⁾
		500 or more	25 × SQRT(power/500)	300 ¹⁾
	Any non-ISM frequency	Below 500	15	300 ¹⁾
		500 or more	15 × SQRT(power/500)	300 ¹⁾

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.

RSS-216

The radiated emissions within 9 kHz – 30 MHz and within 30 – 1000 MHz from the WPT subassembly of WPT source and client devices and WPT systems shall comply with the limits applicable to induction cooking equipment, as set out in ICES-001.

ICES-001

Magnetic field strength radiated emission limits for induction cooking appliances

Frequency range (MHz)	Quasi-peak, at 3 m distance (dBµV/m)
0.009 – 0.07	120.5
0.07 – 0.15	120.5 to 90.5 *
0.15 – 30	90.5 to 58.5 *
*The limit level in dBµV/m decreases linearly with the logarithm of frequency.	

Electric field strength radiated emission limits for induction cooking appliances

Frequency range (MHz)	Quasi-peak, at 3 m distance (dBµV/m)
30 – 230	40
230 – 1000	47
*The limit level in dBµV/m decreases linearly with the logarithm of frequency.	

Results

S/	OM	Code	Freq Rng [L] (MHz)	Freq Rng [U] (MHz)	V
01	OM/01	RE0101_AxisX	0.00900	30.00000	P
01	OM/01	RE0101_AxisY	0.00900	30.00000	P
01	OM/01	RE0101_AxisZ	0.00900	30.00000	P
01	OM/01	RE0101LR	30.00000	1000.00000	P
01	OM/01	RE0101_AxisX_ICES001	0.00900	30.00000	P
01	OM/01	RE0101_AxisY_ICES001	0.00900	30.00000	P
01	OM/01	RE0101_AxisZ_ICES001	0.00900	30.00000	P
01	OM/01	RE0101LR_ICES001	30.00000	1000.00000	P

Verdict

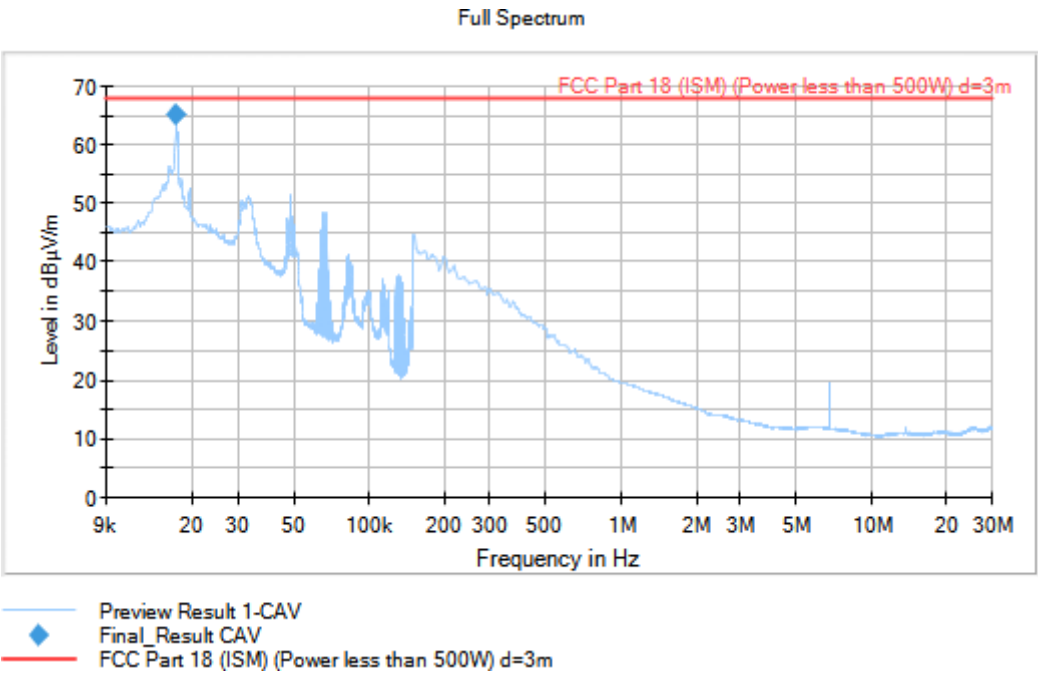
Pass

Attachments

EMC Test Code = RE0101_AxisX
Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000

Sample ID: S/01
Operation Mode: OM/01

Images:

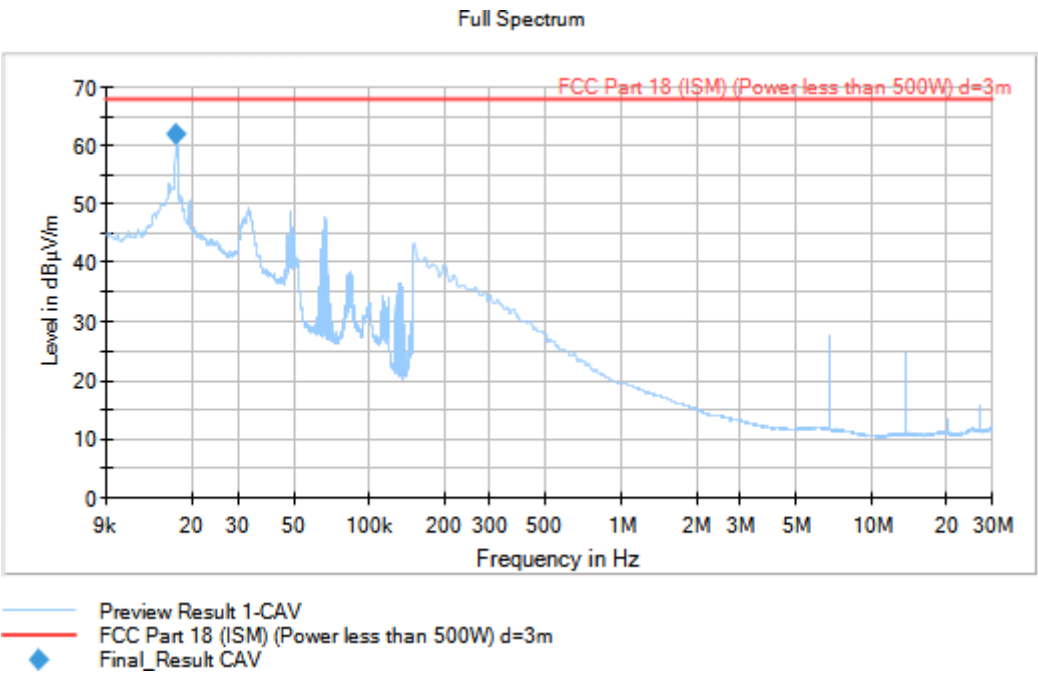


Tables:

Frequency (MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017000	65.25	67.96	2.71

EMC Test Code = RE0101_AxisY
Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000
Sample ID: S/01
Operation Mode: OM/01

Images:

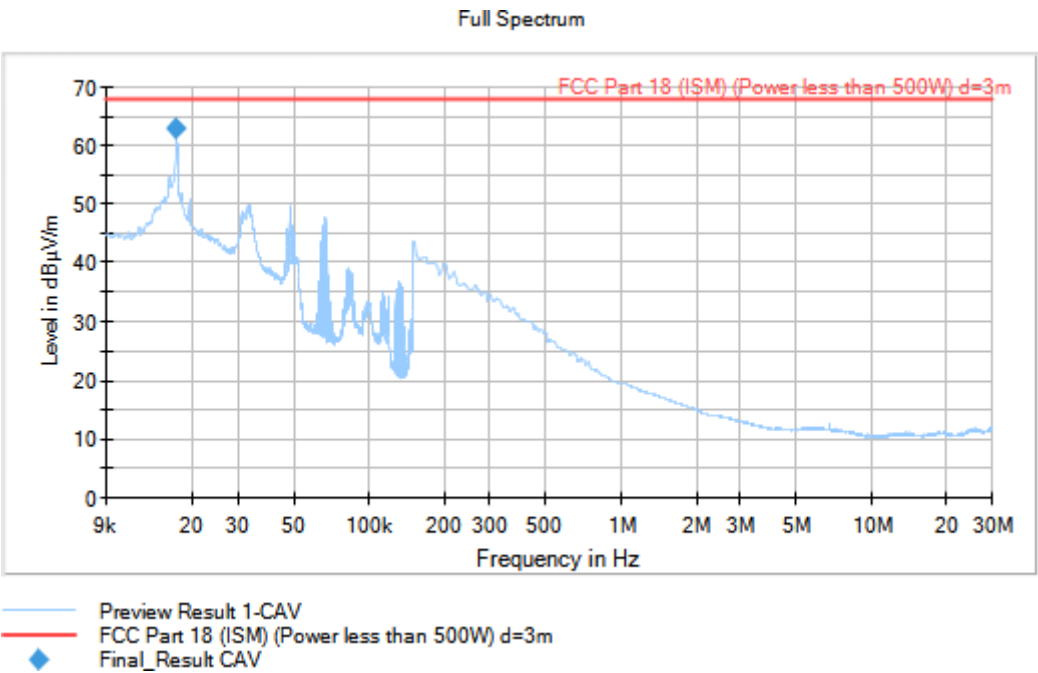


Tables:

Frequency (MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017000	61.98	67.96	5.98

EMC Test Code = RE0101_AxisZ
Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000
Sample ID: S/01
Operation Mode: OM/01

Images:

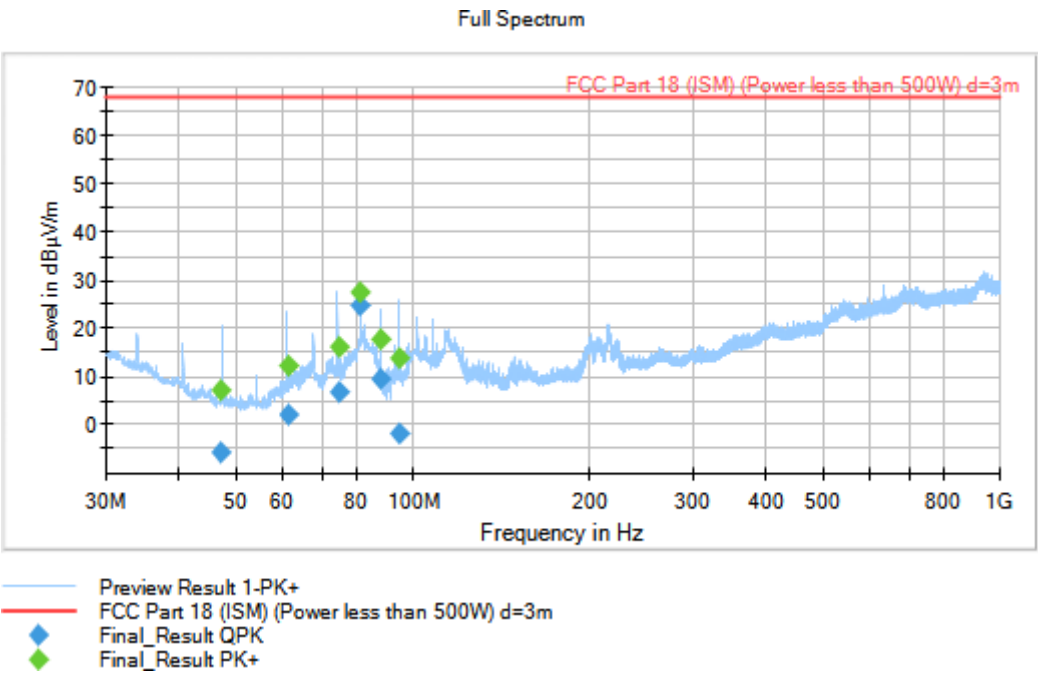


Tables:

Frequency (MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017050	62.94	67.96	5.02

EMC Test Code = RE0101LR
Frequency Range [Lower Limit] MHz = 30.00000
Frequency Range [Upper Limit] MHz = 1000.00000
Sample ID: S/01
Operation Mode: OM/01

Images:



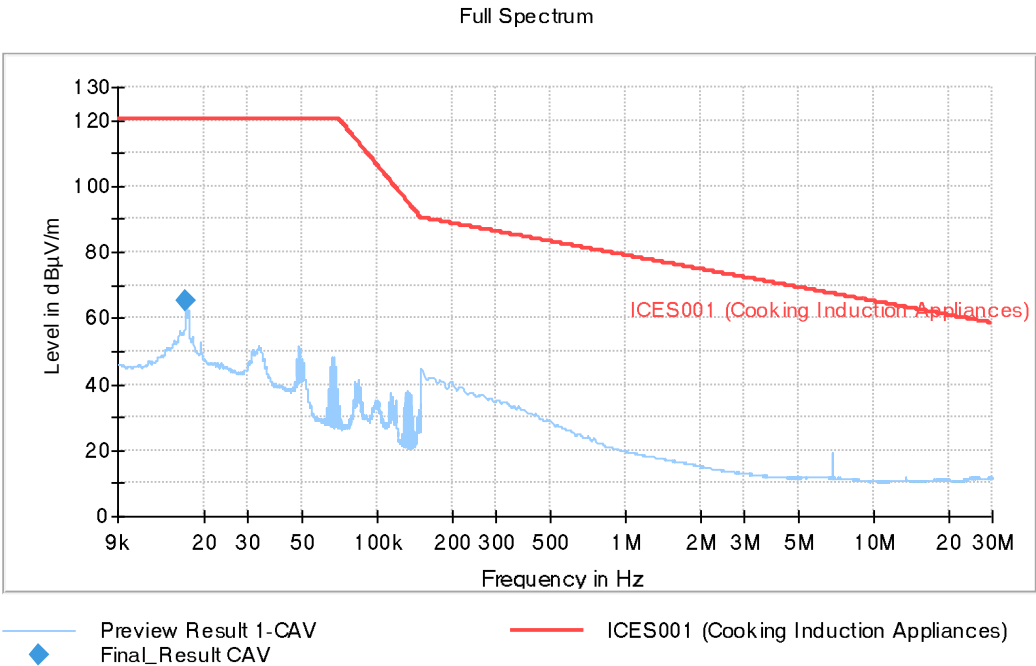
Tables:

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
47.093000	---	7.30	---	---	140.0	V	128.0
47.093000	-5.55	---	67.96	73.51	140.0	V	128.0
61.399000	2.10	---	67.96	65.86	121.0	V	76.0
61.399000	---	12.18	---	---	121.0	V	76.0
74.747000	6.78	---	67.96	61.18	124.0	V	268.0
74.747000	---	16.25	---	---	124.0	V	268.0
81.348000	---	27.48	---	---	100.0	V	177.0
81.348000	24.73	---	67.96	43.23	100.0	V	177.0
88.260000	9.46	---	67.96	58.5	197.0	V	86.0
88.260000	---	17.81	---	---	197.0	V	86.0
94.560000	-1.71	---	67.96	69.67	252.0	V	116.0
94.560000	---	13.68	---	---	252.0	V	116.0

EMC Test Code = RE0101_AxisX_ICES001 Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000

Sample ID: S/01
Operation Mode: OM/01

Images:



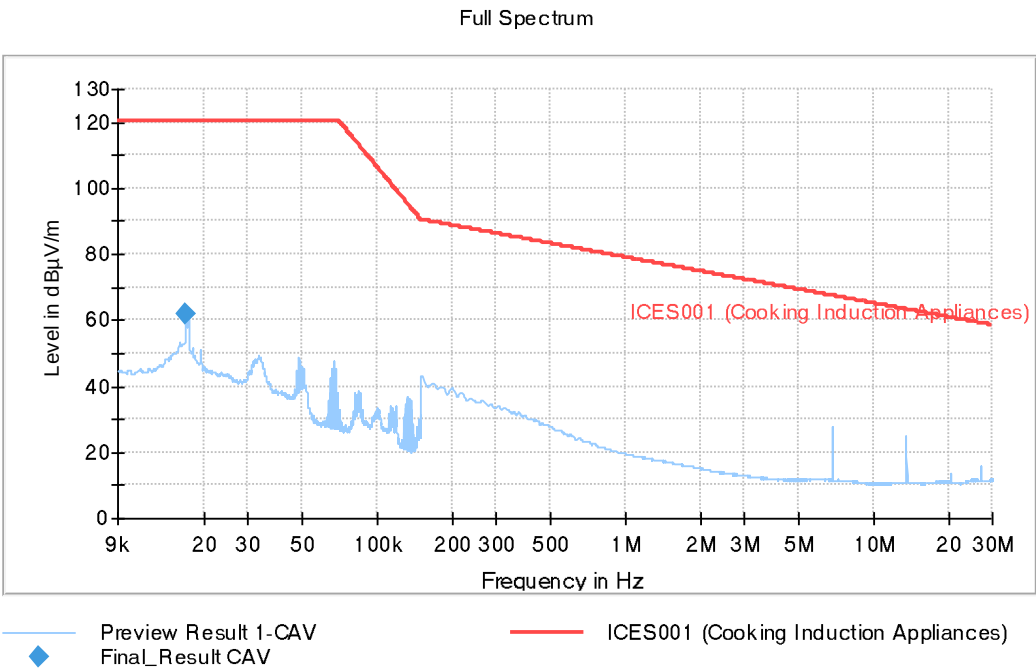
Tables:

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017000	65.25	120.5	55.25

EMC Test Code = RE0101_AxisY_ICES001 Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000

Sample ID: S/01
Operation Mode: OM/01

Images:



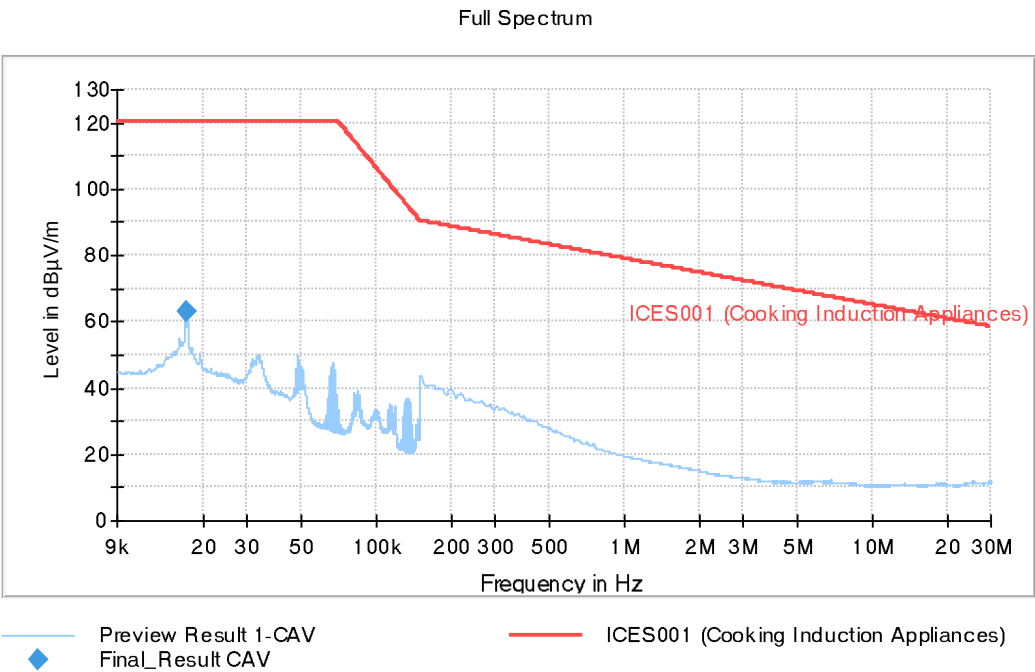
Tables:

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017000	61.98	120.5	58.52

EMC Test Code = RE0101_AxisZ_ICES001 Frequency Range [Lower Limit] MHz = 0.00900
Frequency Range [Upper Limit] MHz = 30.00000

Sample ID: S/01
Operation Mode: OM/01

Images:



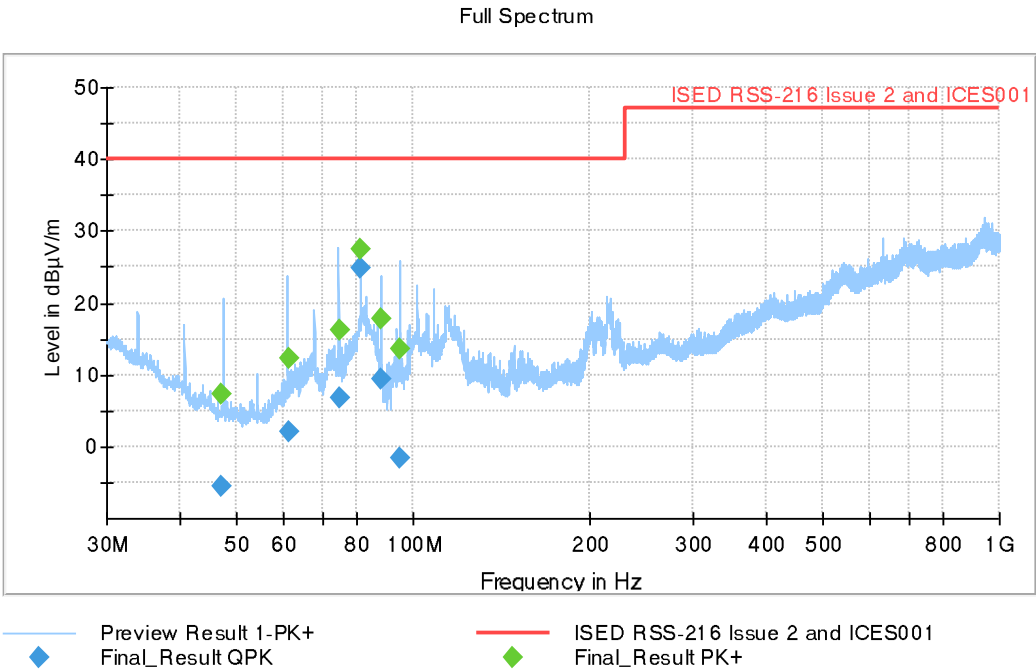
Tables:

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
0.017050	62.94	120.5	57.56

EMC Test Code = RE0101LR_ICES001 Frequency Range [Lower Limit] MHz = 30.00000
Frequency Range [Upper Limit] MHz = 1000.00000

Sample ID: S/01
Operation Mode: OM/01

Images:



Tables:

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
47.093000	---	7.30	---	---	140.0	V	128.0
47.093000	-5.55	---	40.00	45.55	140.0	V	128.0
61.399000	2.10	---	40.00	37.90	121.0	V	76.0
61.399000	---	12.18	---	---	121.0	V	76.0
74.747000	6.78	---	40.00	33.22	124.0	V	268.0
74.747000	---	16.25	---	---	124.0	V	268.0
81.348000	---	27.48	---	---	100.0	V	177.0
81.348000	24.73	---	40.00	15.27	100.0	V	177.0
88.260000	9.46	---	40.00	30.54	197.0	V	86.0
88.260000	---	17.81	---	---	197.0	V	86.0
94.560000	-1.71	---	40.00	41.71	252.0	V	116.0
94.560000	---	13.68	---	---	252.0	V	116.0