

Test report No:
NIE: 67283RRF.002A2

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B & C (sec. 15.207) (10-1-19 Edition) & ICES-003 Issue 7 (October 2020)

(*) Identification of item tested	Charging dock with Bluetooth beacon transmitter
(*) Trademark	Navigil
(*) Model and /or type reference	BC
Other identification of the product	FCC ID: 2A2AY-N5BC IC: --- HW version: C SW version: 1.0
(*) Features	Bluetooth beacon transmitter.
Applicant	Navigil USA Corp. 3739 Pinehurst Drive, Holiday, FL 34691, USA
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B & C (sec. 15.207) (10-1-19 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager  2021.09.24 11:14:24 +02'00'
Date of issue	2021-09-24
Report template No	FDT08_23 (*) "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng	Frequency Range
Line	Conducted Emissions - Tested Line
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.
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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 conducted disturbance characteristics of EUT from 150 kHz to 30 MHz is $l = \pm 3,9$ dB for quasi-peak measurements, $l = \pm 3,2$ dB for peak measurements ($k = 2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $l = \pm 4,9$ dB for quasi-peak measurements, $l = \pm 4,6$ 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 $l = \pm 2,6$ dB for peaks 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 charging dock for the Navigil 580 watch. The dock has also internal Bluetooth beacon transmitter.

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 under test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	67283_2.1	Smart watch	580	1200000606	2021-04-22	Auxiliary Element
S/01	67283_3.1	Charger base	BC	1000003845 S	2021-04-22	Element Under Test
S/01	67283_6.1	USB cable	--	--	2021-04-22	Auxiliary Element
S/01	67283_8.1	AC/DC adapter	SWI5-5N-I38	--	2021-04-22	Auxiliary Element

Notes referenced to samples during the project.

Test sample description

Test Sample description (compulsory information for EMC and RF testing services)

Ports..... :	Port name and description		Cable				
			Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾	
	Power supply		3	[X]	[]	[]	
				[]	[]	[]	
				[]	[]	[]	
				[]	[]	[]	
				[]	[]	[]	
Supplementary information to the ports..... :		USB 5VDC power supply from provided AC wall charger. Connected to the watch via charging dock.					
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[X]	AC: 110Vac.	[X]	[]	[]	[X]	[]
	[]	AC:	[]	[]	[]	[]	[]
	[]	DC:					
[]	DC:						
Rated Power							
Clock frequencies.....							
Other parameters							
Software version		1.0					
Hardware version		C10					
Dimensions in cm (W x H x D)							
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
	AC Wall charger		SWI5-5-I38	CUI Inc.
				
				
				
				
				
Documents as provided by the applicant.....:	Description		File name	Issue date
				
				
				
				

⁽³⁾ Only for Medical Equipment

Identification of the client

Navigil Oy
Karaportti 5, 02610 Espoo, FINLAND

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2021-04-30
Date (finish)	2021-05-17

Document history

Report number	Date	Description
67283REM.002	2021-06-03	First release
67283REM.002A1	2021-09-23	Second release: First modification due to typo in the declaration of operational mode tested. This modification test report cancels and replaces the test report 67283REM.002
67283REM.002A1	2021-09-24	Third release. The reference to FCC CFR 47, Part 15, C Sec. 15.207, is included in the report for the Conducted Emission Test as this test is also performed as an intentional radiator, in communication mode. This modification test report cancels and replaces the test report 67283REM.002A1

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: Antonio Manuel Sánchez Carrizo and José Antonio Santiago Galván.

Testing verdicts

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

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
4659	PRE-AMPLIFIER G>28dB 1-18GHz	BBV 9718	SCHWARZBECK	2021-06-05
6142	PRE-AMPLIFIER G>38dB 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2022-03-08
7743	HORN ANTENNA 0,75-18GHz	3115	ETS LINDGREN	2023-08-24
7746	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2023-07-23
7816	EMI TEST RECEIVER 1Hz-26.5GHz	ESW26	ROHDE AND SCHWARZ	2021-09-05
7853	EMI RECEIVER 10Hz-30MHz	PMM 9010F	NARDA	2021-10-30
7859	THREE-PHASE ARTIFICIAL NETWORK 32A	PMM L3-32	NARDA	2021-11-20

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC 47 CFR Part 15B & 15C (sec. 15.107 & 15.207)	CE Continuous conducted emission	Pass	---
FCC 47 CFR Part 15B	RE Radiated emission. Electromagnetic field measure	Pass	---
<u>Supplementary information and remarks:</u> None			

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. Every operation mode takes a failure criteria for the immunity test that they were applying to it and a monitoring to guarantee performance of the same ones.

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 station in idle mode and charging smartwatch. Power supply: 110 Vac.
OM/02	EUT ON. Charging station. BTLE in communication and charging smartwatch. Power supply: 110 Vac.
OM/03	EUT ON. Charging station. BTLE disabled and charging smartwatch. Power supply: 110 Vac.

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 CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	RE Radiated emission.
FCC CFR 47, Part 15, Subpart B (sec. 15.107) & C (sec. 15.207) (10-1-19 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	CE Continuous conducted emission

Test Cases Details

FCC 47 CFR Part 15B sec 15.107 & 15C sec 15.207

CE Continuous conducted emission

Limits of interference Class B

The applied limit for continuous conducted emissions in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.107; Subpart C (10-1-19 Edition), Secs. 15.207 & ICES-003 Issue 7 (October 2020), in the frequency range 0,15 to 30 MHz, for Class B equipment was:

Frequency range (MHz)	Limit (dBμV)	
	Quasi-Peak	Average
0,15 to 0,5	66 - 56	56 - 46
0,5 to 5	56	46
5 to 30	60	50

Results

S/	OM	Code	Freq Rng (MHz)	Line	Comments	V
01	OM/02	CE0102L1	[0.15, 30]	L1		P
01	OM/02	CE0102N	[0.15, 30]	N		P
01	OM/03	CE0103L1	[0.15, 30]	L1		P
01	OM/03	CE0103N	[0.15, 30]	N		P

Verdict

Pass

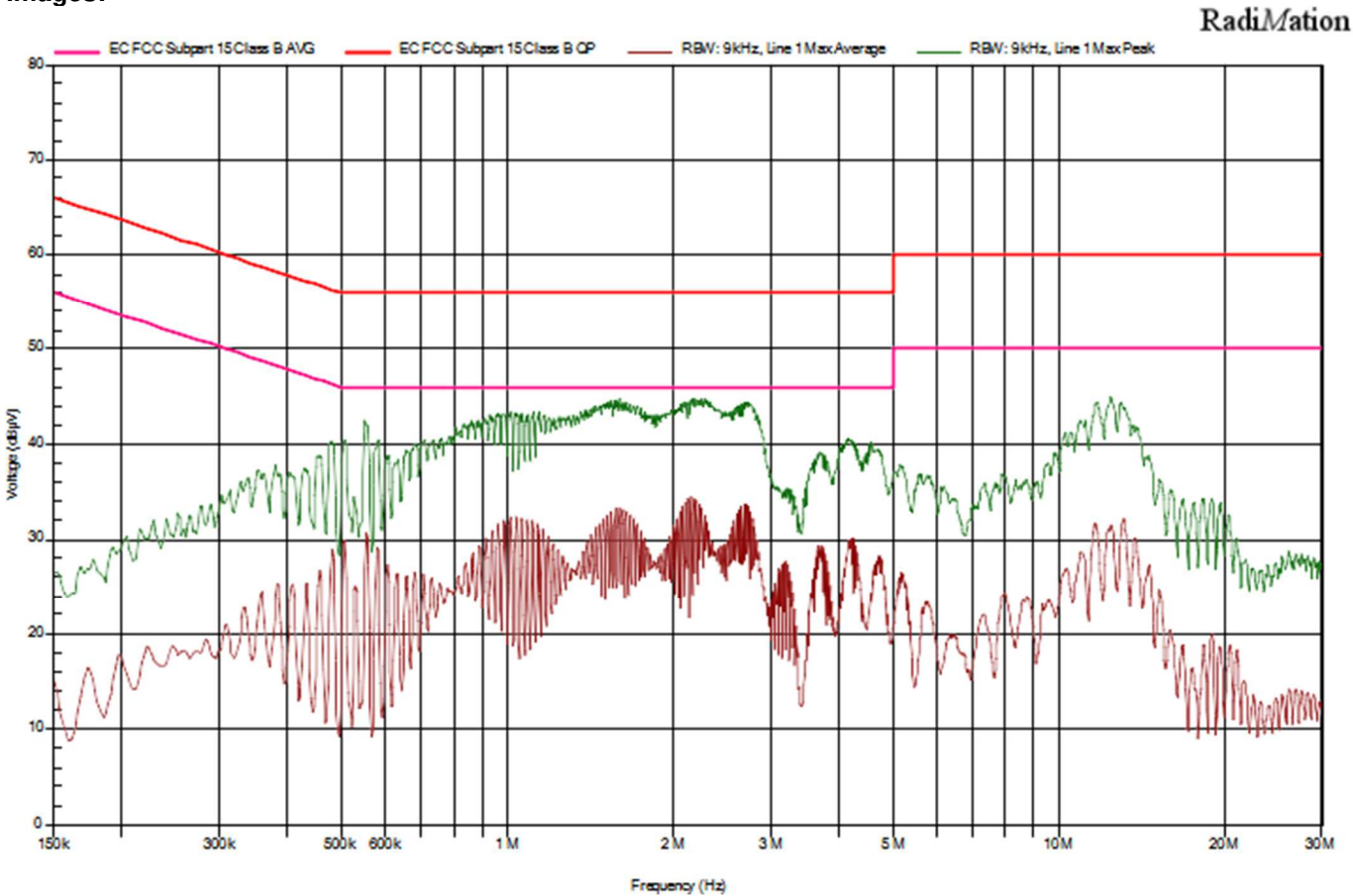
Attachments

EMC Test Code = CE0102L1, Frequency Range MHz = [0.15, 30], Conducted Emissions - Tested Line = L1

Sample ID: S/01

Operation Mode: OM/02. EUT ON. Charging station. BTLE in communication and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

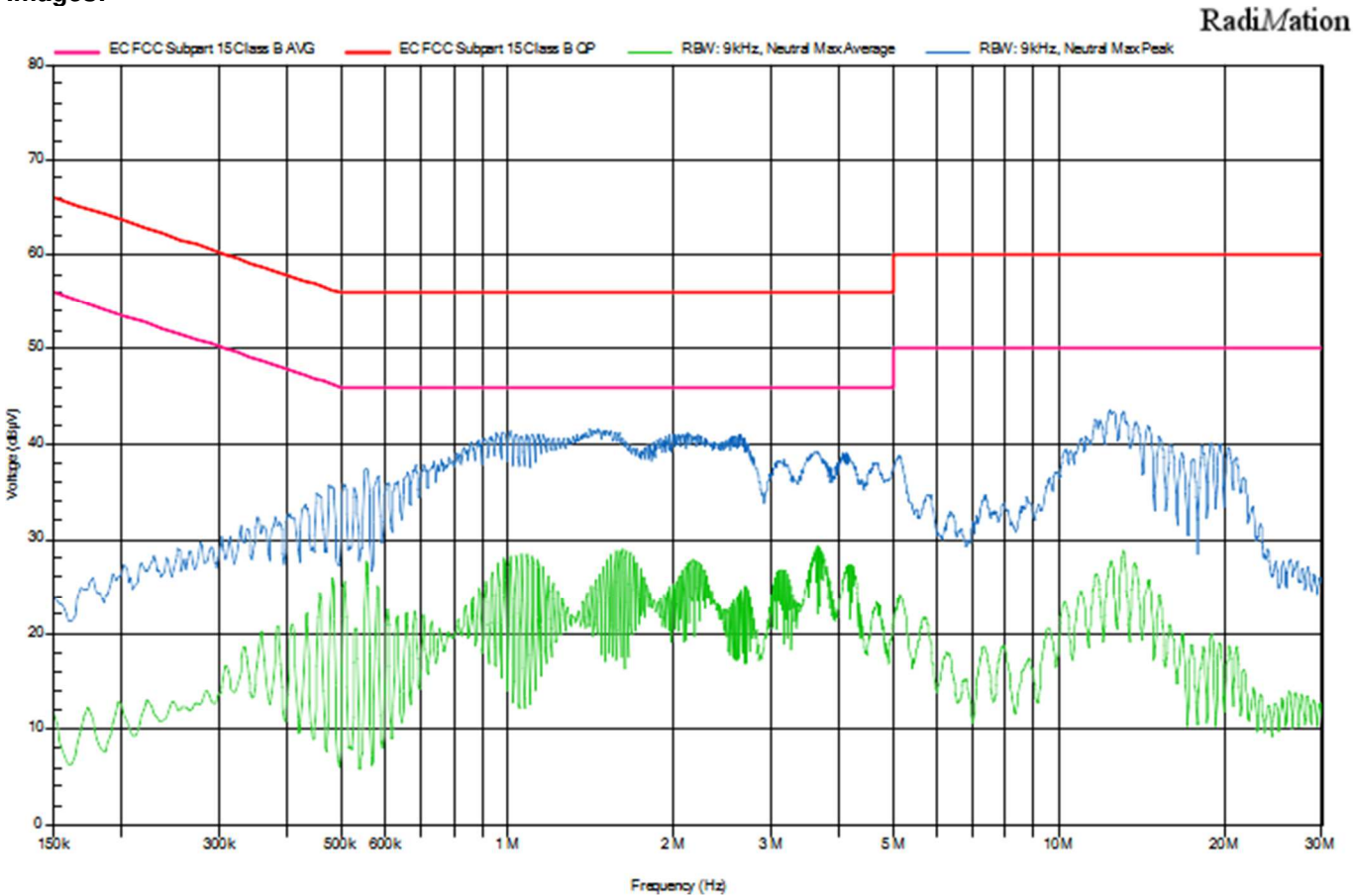
Frequency(MHz)	Average(dBµV)	Peak(dBµV)	Line
0,984229 MHz	31,3 dBµV	43,2 dBµV	L1
1,011 MHz	32,3 dBµV	43,4 dBµV	L1
1,136 MHz	31,6 dBµV	42,9 dBµV	L1
1,518 MHz	32,6 dBµV	44,3 dBµV	L1
1,567 MHz	33,3 dBµV	44,5 dBµV	L1
1,716 MHz	31,6 dBµV	43,2 dBµV	L1
2,099 MHz	34 dBµV	44 dBµV	L1
2,276 MHz	30,6 dBµV	44,8 dBµV	L1
2,606 MHz	32,7 dBµV	43,4 dBµV	L1
2,679 MHz	33,8 dBµV	44,4 dBµV	L1

EMC Test Code = CE0102N, Frequency Range MHz = [0.15, 30], Conducted Emissions - Tested Line = N

Sample ID: S/01

Operation Mode: OM/02. EUT ON. Charging station. BTLE in communication and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

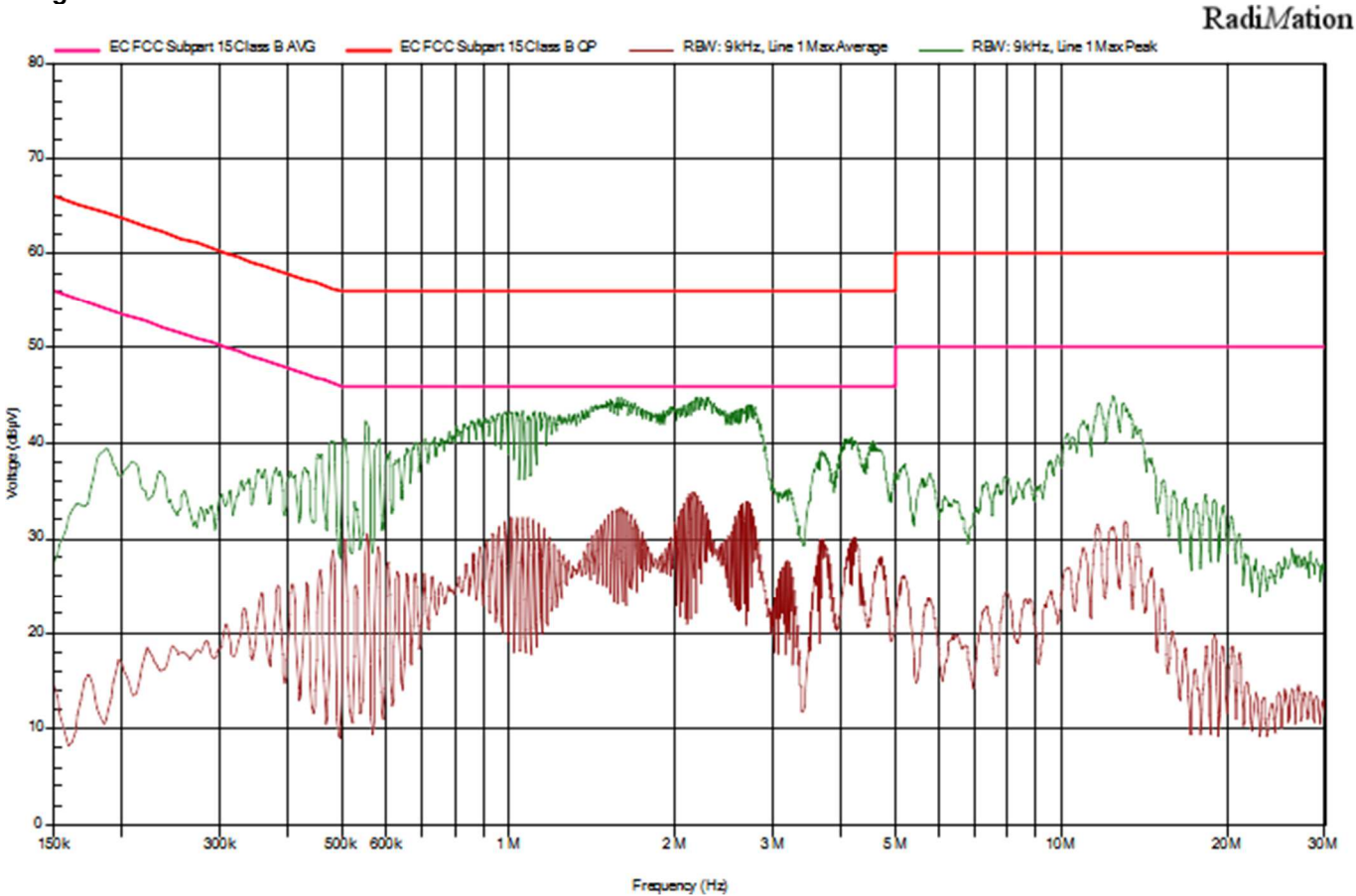
Frequency(MHz)	Average(dBµV)	Peak(dBµV)	Line
0,888129 MHz	24,8 dBµV	39,8 dBµV	N
1,011 MHz	28,3 dBµV	41,4 dBµV	N
1,136 MHz	27,8 dBµV	41,1 dBµV	N
1,26 MHz	23,6 dBµV	40,2 dBµV	N
1,516 MHz	27,8 dBµV	41,4 dBµV	N
1,567 MHz	28,8 dBµV	41,1 dBµV	N
2,019 MHz	24,9 dBµV	41,1 dBµV	N
2,146 MHz	27,7 dBµV	41,1 dBµV	N
2,602 MHz	23,9 dBµV	40,6 dBµV	N
2,626 MHz	24,1 dBµV	40,6 dBµV	N

EMC Test Code = CE0103L1, Frequency Range MHz = [0.15, 30], Conducted Emissions - Tested Line = L1

Sample ID: S/01

Operation Mode: OM/03. EUT ON. Charging station. BTLE disabled and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

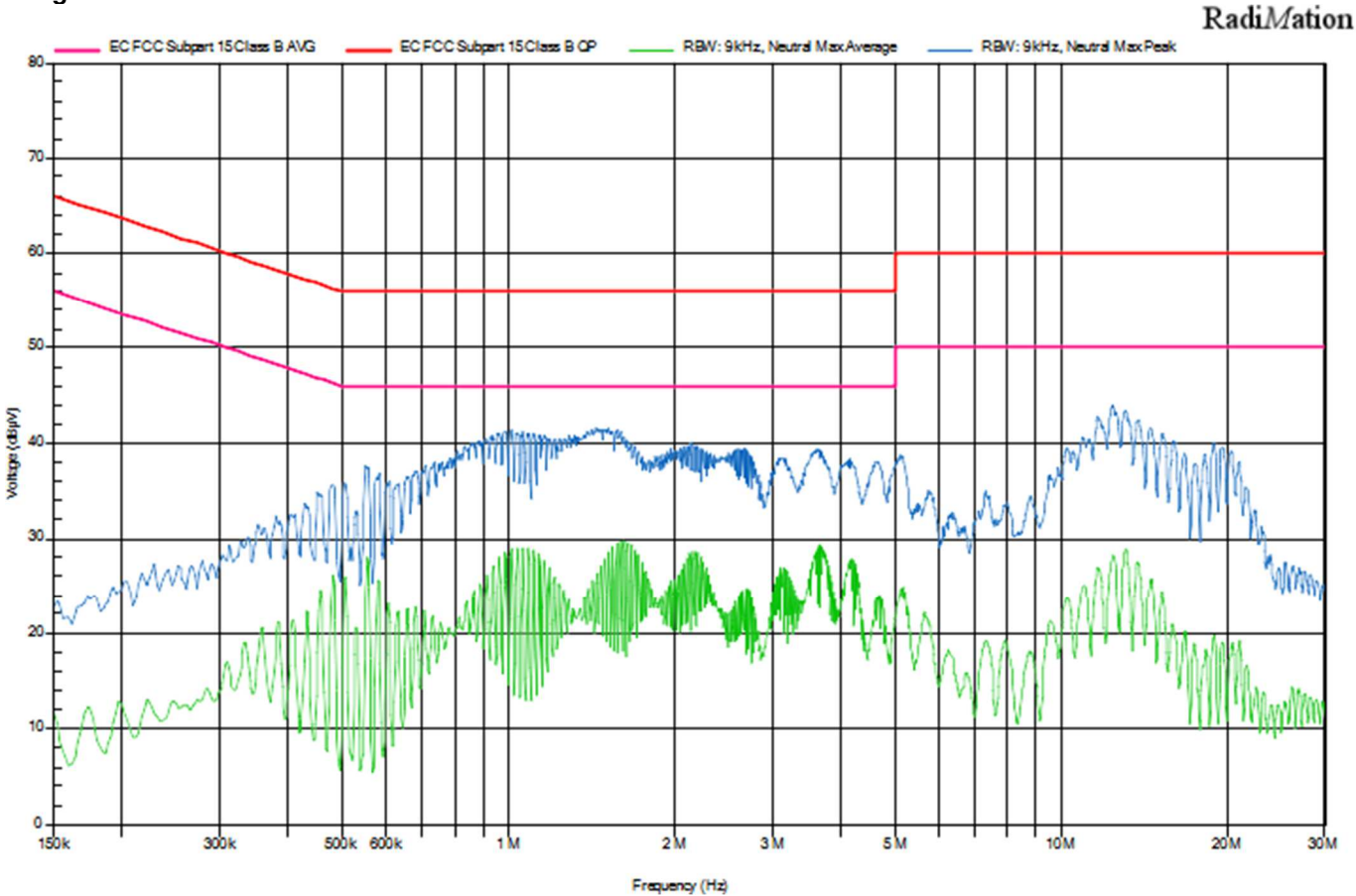
Frequency(MHz)	Average(dBµV)	Peak(dBµV)	Line
1,009 MHz	32,2 dBµV	43,2 dBµV	L1
1,035 MHz	32,2 dBµV	43,2 dBµV	L1
1,133 MHz	31,7 dBµV	42,9 dBµV	L1
1,54 MHz	32,9 dBµV	44,5 dBµV	L1
1,565 MHz	33,2 dBµV	44,2 dBµV	L1
1,739 MHz	30,8 dBµV	43,5 dBµV	L1
2,121 MHz	34,7 dBµV	44,1 dBµV	L1
2,199 MHz	33 dBµV	44,9 dBµV	L1
2,602 MHz	33 dBµV	43,5 dBµV	L1
2,626 MHz	33,5 dBµV	43,7 dBµV	L1

EMC Test Code = CE0103N, Frequency Range MHz = [0.15, 30], Conducted Emissions - Tested Line = N

Sample ID: S/01

Operation Mode: OM/03. EUT ON. Charging station. BTLE disabled and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

Frequency(MHz)	Average(dBµV)	Peak(dBµV)	Line
0,888129 MHz	25,3 dBµV	39,8 dBµV	N
0,984229 MHz	27,9 dBµV	41,2 dBµV	N
1,011 MHz	29 dBµV	41,5 dBµV	N
1,136 MHz	28,4 dBµV	40,9 dBµV	N
1,258 MHz	24,4 dBµV	39,9 dBµV	N
1,44 MHz	25,3 dBµV	41,6 dBµV	N
1,591 MHz	29,7 dBµV	41,2 dBµV	N
2,146 MHz	28,2 dBµV	39,8 dBµV	N
12,402 MHz	26,9 dBµV	44 dBµV	N
13,07 MHz	26,9 dBµV	43,4 dBµV	N

RE Radiated emission. Electromagnetic field measure

Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2019)

Frequency of emission (MHz)	Field strength (microvolt/meter)
30-88	100
88-216	150
21-960	200
Above 960	500
*Above 1GHz, the limit is defined for an AVG detector.	

Results

S/	OM	Code	Freq Rng (MHz)	Comments	V
01	OM/01	RE0101LR	[30, 1000]		P
01	OM/01	RE0101HR	[1000, 12750]		P

Verdict

Pass

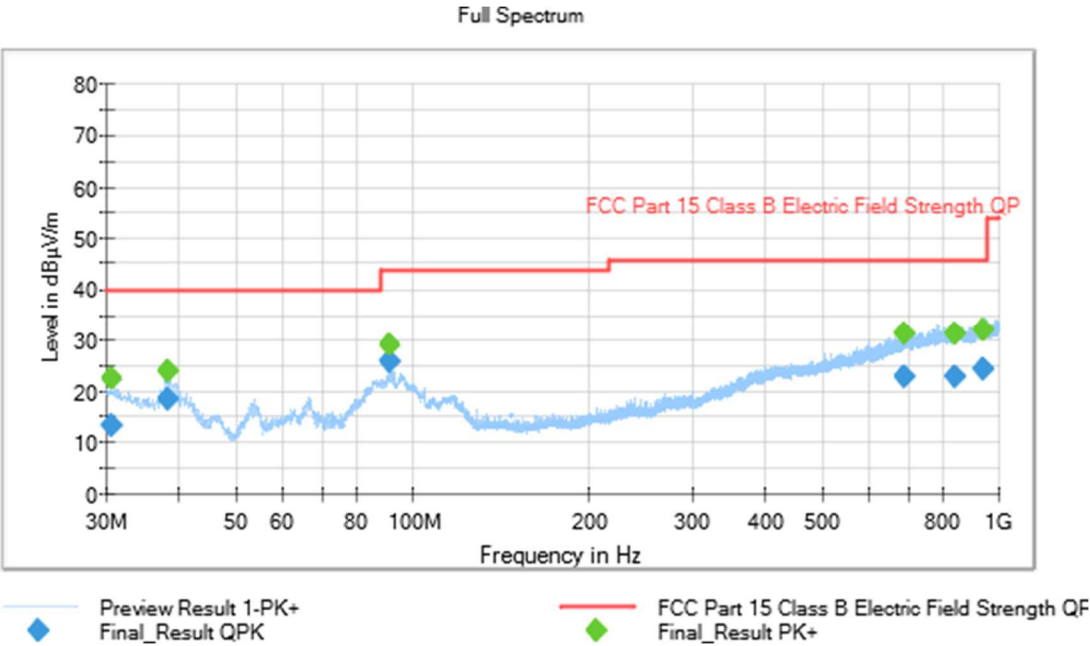
Attachments

EMC Test Code = RE0101LR, Frequency Range MHz = [30, 1000]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Charging station in idle mode and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

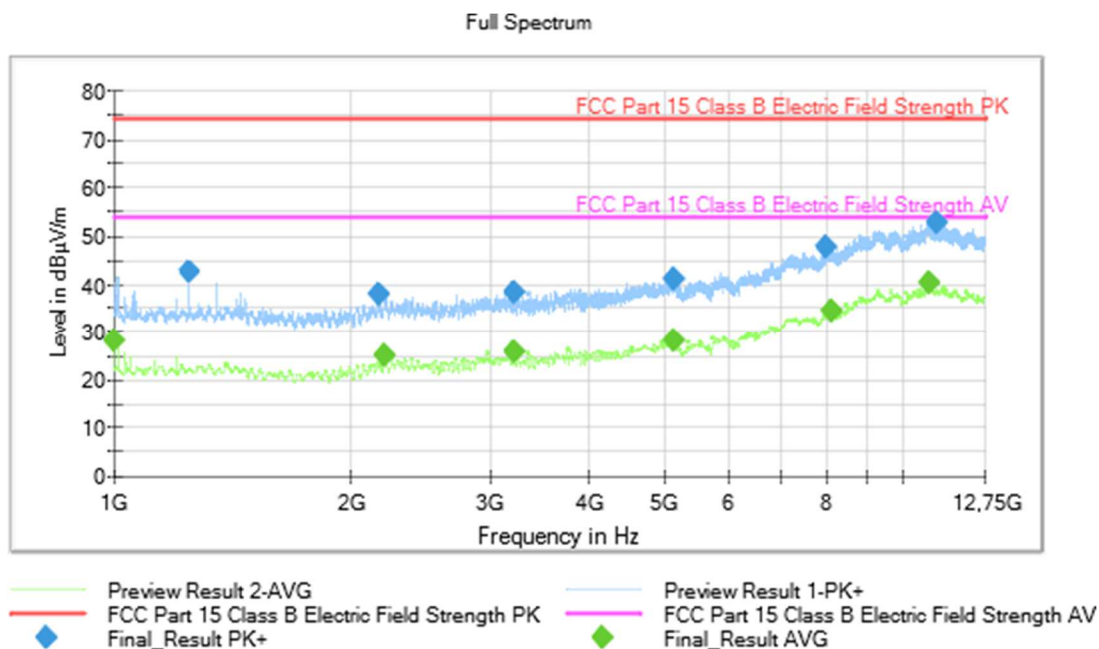
Frequency(MHz)	QuasiPeak(dBµV/m)	MaxPeak(dBµV/m)	Limit(dBµV/m)	Margin(dB)	Height(cm)	Pol	Azimuth(deg)
30.560340	13.30	---	40.00	26.70	236.0	V	267.0
30.560340	---	22.33	---	---	236.0	V	267.0
38.373000	---	24.00	---	---	264.0	V	348.0
38.373000	18.48	---	40.00	21.52	264.0	V	348.0
91.131000	25.82	---	43.52	17.70	110.0	V	58.0
91.131000	---	29.01	---	---	110.0	V	58.0
690.249000	---	31.01	---	---	234.0	H	114.0
690.249000	22.71	---	46.00	23.29	234.0	H	114.0
845.099000	22.81	---	46.00	23.19	293.0	H	161.0
845.099000	---	31.15	---	---	293.0	H	161.0
944.511000	24.07	---	46.00	21.93	289.0	V	204.0
944.511000	---	31.98	---	---	289.0	V	204.0

EMC Test Code = RE0101HR, Frequency Range MHz = [1000, 12750]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Charging station in idle mode and charging smartwatch. Power supply: 110 Vac..

Images:



Documents:

Frequency(MHz)	MaxPeak(dBµV/m)	Average(dBµV/m)	Limit(dBµV/m)	Margin(dB)
1000.000000	---	28.03	53.97	25.94
1243.200000	42.36	---	73.97	31.61
2169.200000	37.77	---	73.97	36.20
2206.400000	---	24.92	53.97	29.05
3211.200000	---	25.75	53.97	28.22
3212.800000	38.41	---	73.97	35.56
5120.000000	---	28.08	53.97	25.89
5121.200000	41.03	---	73.97	32.94
8008.400000	47.68	---	73.97	26.29
8117.200000	---	34.42	53.97	19.55
10795.600000	---	40.07	53.97	13.90
11053.200000	52.82	---	73.97	21.15