DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

Test report No:
72872REM.001

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)

(*) Identification of item tested	Central Unit 2 - LatAm variant
(*) Trademark	Verisure
(*) Model and /or type reference	GW-CU2L
Other identification of the product	FCC ID: 2A93W-GW-CU2L IC: Data not provided
(*) Features	HW version: A5 SW version: 1.8.26 Features: Central processing, Ethernet, Wi-Fi, Cellular, DECT, ISM
Manufacturer	Verisure Sàrl Chemin Jean-Baptiste Vandelle 3 1290 Versoix (Switzerland)
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez EMC Consumer & RF Lab. Manager  Firmado digitalmente por Jose Manuel Gómez Galván
Date of issue	2023-04-13
Report template No	FDT08_24 (*) “Data provided by the client”

Index

Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng	Frequency Range
Line	Conducted Emissions - Tested Line
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.

DEKRA Testing and Certification S.A.U. is an FCC-recognized accredited testing laboratory with the appropriate scope of accreditation that covers the performed tests in this report, FCC designation number ES0004.

DEKRA Testing and Certification S.A.U. is an ISED recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, with the appropriate scope of accreditation that covers the performed tests in this report.

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.

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 conducted disturbance characteristics of EUT from 150 kHz to 30 MHz is I = ± 3,9 dB for quasi-peak measurements, I = ± 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 I = ± 4,9 dB for quasi-peak measurements, I = ± 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 26 GHz is I = ± 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 Central Unit 2 - LatAm variant, a Central Unit of the alarm suite. It acts as the main hub and gateway.
3. Equipment supports frequency sharing techniques.

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 Nº	Date of Reception	Application
S/01	72872C_14.1	Central unit 2	GW-CU2L	26UA DDJY	2022-12-12	Element Under Test
S/01	72872C_39.1	AC/DC adapter	AA18A-120GVS1	--	2022-12-22	Element Under Test

Notes referenced to samples during the project.

Test sample description

<table>
<tr><td rowspan="4">Ports…… :</td><td colspan="2" rowspan="2">Port name and description</td><td colspan="4">Cable</td></tr>
<tr><td>Specified max length [m]</td><td>Attached during test</td><td>Shielded</td><td>Coupled to patient(3)</td></tr>
<tr><td colspan="2">RJ45 Ethernet socket</td><td>.....</td><td>[X]</td><td>[ ]</td><td>[ ]</td></tr>
<tr><td colspan="2">DC power barrel jack</td><td>.....</td><td>[X]</td><td>[ ]</td><td>[ ]</td></tr>
<tr><td colspan="2">.....</td><td>.....</td><td>[ ]</td><td>[ ]</td><td>[ ]</td></tr>
<tr><td>Supplementary information to the ports…… :</td><td colspan="6">Insertion loss for semi-rigids for conducted testing: 0.5-1.5GHz: 0.1 dB; 1.5-3.5GHz: 0.2dB; 3.5-5.5GHz: 0.3dB; 5.5-6.5GHz: 0.5dB.</td></tr>
<tr><td rowspan="5">Rated power supply .....:</td><td colspan="2" rowspan="2">Voltage and Frequency</td><td colspan="5">Reference poles</td></tr>
<tr><td>L1</td><td>L2</td><td>L3</td><td>N</td><td>PE</td></tr>
<tr><td>[ ]</td><td>AC: .....</td><td>[ ]</td><td>[ ]</td><td>[ ]</td><td>[ ]</td><td>[ ]</td></tr>
<tr><td>[X]</td><td>AC: 100-240Vac @ 50-60 Hz</td><td>[ ]</td><td>[ ]</td><td>[ ]</td><td>[ ]</td><td>[ ]</td></tr>
<tr><td>[ ]</td><td colspan="5">DC: 12-14.5V 1.5A</td></tr>
<tr><td>[ ]</td><td colspan="5">DC: .....</td></tr>
<tr><td>Rated Power .....:</td><td colspan="6">18 W</td></tr>
<tr><td>Clock frequencies.....:</td><td colspan="6">32.786 kHz, 13.824 MHz, 24 MHz, 25 MHz, 26 MHz, 37.4 MHz (+ frequencies derived)</td></tr>
<tr><td>Other parameters .....:</td><td colspan="6">.....</td></tr>
<tr><td>Software version .....:</td><td colspan="6">1.8.26</td></tr>
<tr><td>Hardware version .....:</td><td colspan="6">A5</td></tr>
<tr><td>Dimensions in cm (W x H x D) ....:</td><td colspan="6">17.4 x 10.5 x 3</td></tr>
<tr><td rowspan="5">Mounting position .....:</td><td>[ ]</td><td colspan="5">Table top equipment</td></tr>
<tr><td>[X]</td><td colspan="5">Wall/Ceiling mounted equipment</td></tr>
<tr><td>[ ]</td><td colspan="5">Floor standing equipment</td></tr>
<tr><td>[ ]</td><td colspan="5">Hand-held equipment</td></tr>
<tr><td>[ ]</td><td colspan="5">Other: .....</td></tr>
</table>

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	Wall bracket	.....	Verisure
	Power supply	.....	Phihong
Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	Aux. test computer	.....	Raspberry Pi
Documents as provided by the applicant.....:	Description	File name	Issue date
	---	.....	.....

(3) Only for Medical Equipment

Identification of the client

ESML SD IBERIA HOLDING SA
Calle Priegola, 2, Pozuelo de Alarcon, 28224 , Madrid, Spain

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-01-03
Date (finish)	2023-01-05

Document history

Report number	Date	Description
72872REM.001	2023-04-13	First release

Environmental conditions

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

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

Remarks and comments

The tests have been performed by the technical personnel: Carlos Haro López.

Testing verdicts

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

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
6064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	FRANKONIA	N/A
6329	SHIELDED ROOM	---	FRANKONIA	N/A
6132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2023-04-05
6126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2023-04-05
8866	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2023-09-21
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	EST LINDGREN	2024-09-15
4612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2024-07-13
9360	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2023-05-11
4848	MEASUREMENT SOFTWARE EMC/RF	EMC32	ROHDE AND SCHWARZ	N/A
7771	TRANSIENT LIMITER 10dB N CONNECTOR	VTSD 9561-F	SCHWARZBECK	2024-04-14
6204	THREE-PHASE ARTIFICIAL NETWORK 32A	PMM L3-32	NARDA	2023-11-17

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC 47 CFR Part 15B	RE Radiated emission. Electromagnetic field measure	Pass	
FCC 47 CFR Part 15B	CE Continuous conducted emission	Pass	
Supplementary information and remarks: None			

Appendix A: Test results

Appendix A content

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. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz
OM/02	EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi in communication mode, Cellular 2G GPRS1900MHz TCH Mode, DECT ON, ISM in communication mode. Power supply 115Vac @ 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 CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	RE Radiated emission.
	ANSI C63.4 (2014)	CE Continuous conducted emission

Test Cases Details

FCC 47 CFR Part 15B

RE Radiated emission. Electromagnetic field measure

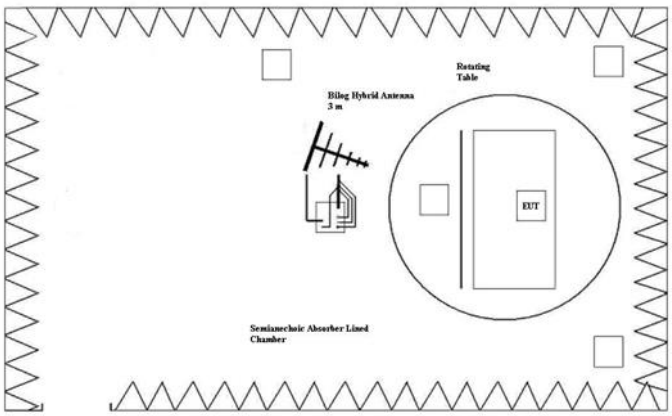
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-21 Edition), Secs. 15.109 & ICES-003 Issue 7 (October 2020)

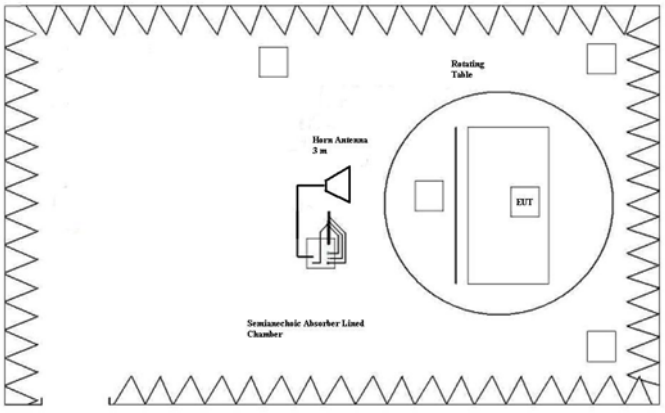
Frequency range (MHz)	FCC Part 15B		ICES-003 Issue 7		FCC Part 15B & ICES-003 Issue 7	
	QP Limit for 3 m		QP Limit for 3 m		PK Limit for 3 m	AVG Limit for 3 m
	(μV/m)	(dBμV/m)	(μV/m)	(dBμV/m)	(dBμV/m)	(dBμV/m)
30 to 88	100	40	100	40	---	---
88 to 216	150	43.5	150	43.5	---	---
216 to 230	200	46	200	46	---	---
230 to 960	200	46	224	47		
960 to 1000	500	54	500	54	---	---
Above 1000	---	---	---	---	74	54

Limits according to FCC Part 15B, are equal or more stringent than those of ICES-003 Issue 7.

Setup for measurements



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

Results

S/	OM	Code	Freq Rng (MHz)	V
01	OM/01	RE0101LR	[30, 1000]	P
01	OM/01	RE0101HR1	[1000, 17000]	P
01	OM/01	RE0101HR2	[17000, 26000]	P

Verdict

Pass

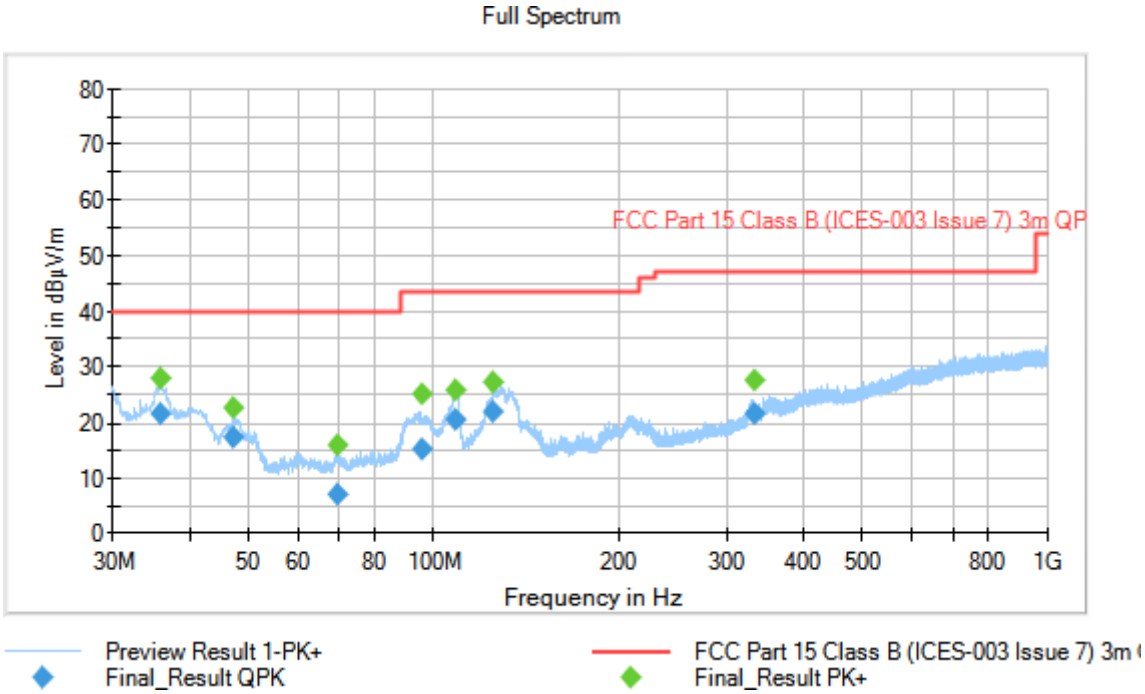
Attachments

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

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz

Images:



Tables:

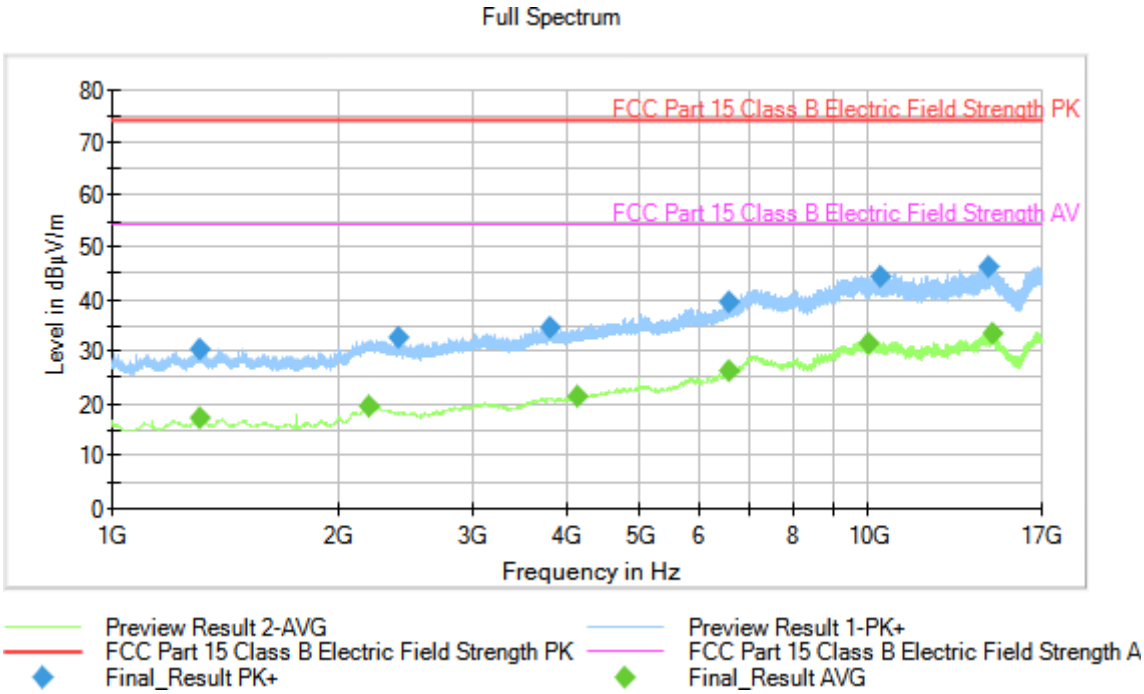
Frequency(MHz)	QuasiPeak(dBµV/m)	MaxPeak(dBµV/m)	Limit(dBµV/m)	Margin(dB)	Height(cm)	Pol	Azimuth(deg)
35.754000	---	27.84	---	---	100.0	V	27.0
35.754000	21.65	---	40.00	18.35	100.0	V	27.0
47.210000	---	22.76	---	---	114.0	V	171.0
47.210000	17.36	---	40.00	22.64	114.0	V	171.0
69.827000	7.05	---	40.00	32.95	135.0	V	169.0
69.827000	---	15.88	---	---	135.0	V	169.0
95.770000	---	25.24	---	---	344.0	V	-119.0
95.770000	15.07	---	43.52	28.45	344.0	V	-119.0
108.369000	---	25.71	---	---	146.0	V	124.0
108.369000	20.62	---	43.52	22.90	146.0	V	124.0
125.038000	22.00	---	43.52	21.52	114.0	V	-157.0
125.038000	---	27.15	---	---	114.0	V	-157.0
332.114000	---	27.73	---	---	100.0	H	-140.0
332.114000	21.51	---	47.00	25.49	100.0	H	-140.0

EMC Test Code = RE0101HR1 Frequency Range MHz = [1000, 17000]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz

Images:



Tables:

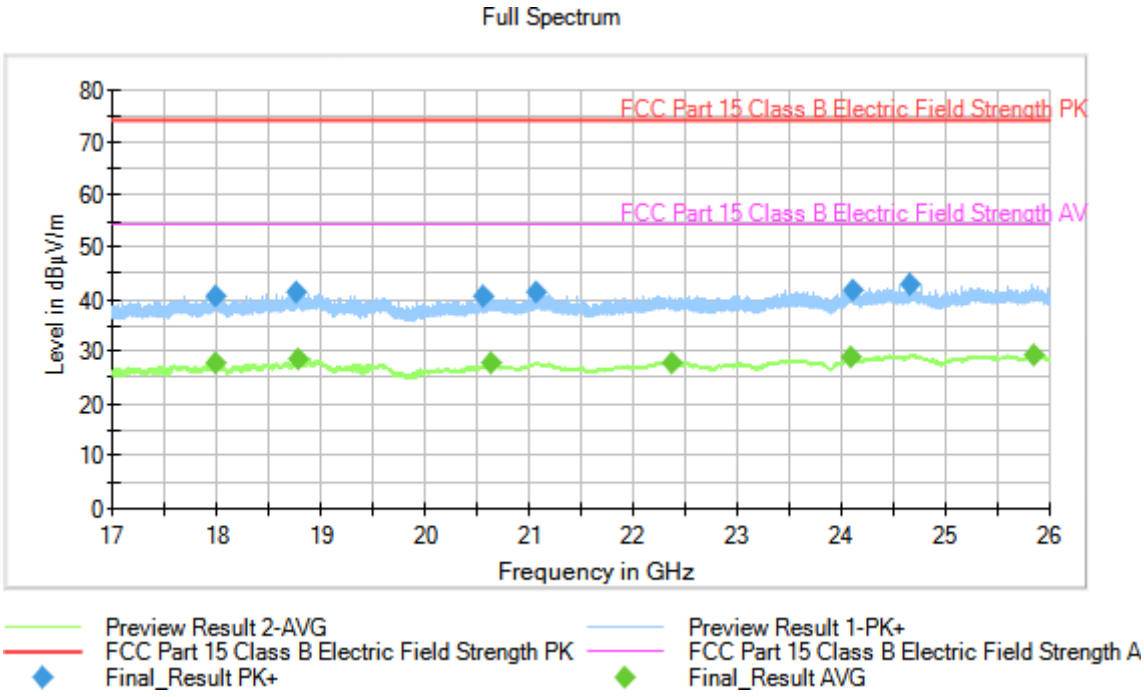
Frequency(MHz)	MaxPeak(dBµV/m)	Average(dBµV/m)	Limit(dBµV/m)	Margin(dB)
1299.500000	30.39	---	73.97	43.58
1300.000000	---	17.15	53.97	36.82
2183.250000	---	19.37	53.97	34.60
2394.000000	32.51	---	73.97	41.46
3797.250000	34.64	---	73.97	39.33
4122.250000	---	21.28	53.97	32.69
6540.750000	39.28	---	73.97	34.69
6555.750000	---	26.26	53.97	27.71
9999.750000	---	31.69	53.97	22.28
10413.250000	44.47	---	73.97	29.50
14466.500000	46.35	---	73.97	27.62
14660.500000	---	33.45	53.97	20.52

EMC Test Code = RE0101HR2 Frequency Range MHz = [17000, 26000]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz

Images:



Tables:

Frequency(MHz)	MaxPeak(dBµV/m)	Average(dBµV/m)	Limit(dBµV/m)	Margin(dB)
17983.500000	---	27.84	53.97	26.13
17983.500000	40.71	---	73.97	33.26
18763.750000	41.43	---	73.97	32.54
18781.250000	---	28.51	53.97	25.46
20549.250000	40.64	---	73.97	33.33
20624.750000	---	27.61	53.97	26.36
21056.500000	41.27	---	73.97	32.70
22364.500000	---	27.86	53.97	26.11
24098.500000	---	29.02	53.97	24.95
24117.500000	41.56	---	73.97	32.41
24654.500000	42.83	---	73.97	31.14
25850.500000	---	29.27	53.97	24.70

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 (10-1-21 Edition), Secs. 15.107 & ICES-003 Issue 6 (April 2020), in the frequency range 0,15 to 30 MHz, for Class B equipment was:

Frequency range	Limit (dBµV)	
(MHz)	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	V
01	OM/01	CE0101L1	[0.15, 30]	L1	P
01	OM/01	CE01010N	[0.15, 30]	N	P
01	OM/02	CE01020N	[0.15, 30]	L1	P
01	OM/02	CE01020N	[0.15, 30]	N	P

Verdict

Pass

Attachments

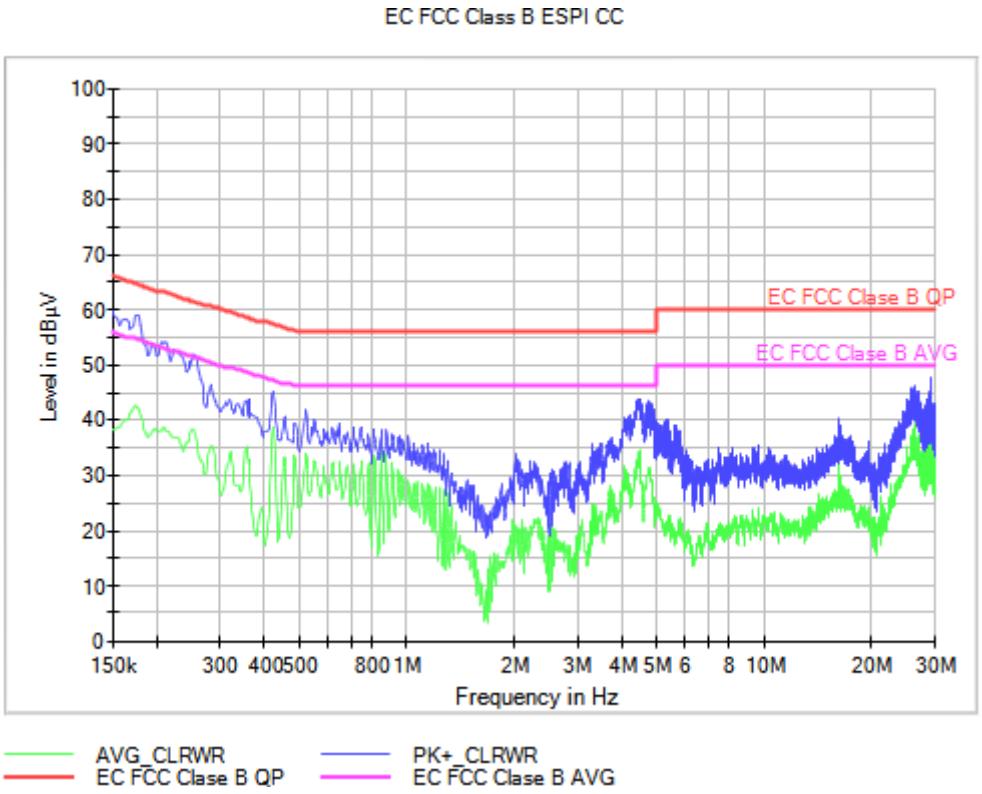
EMC Test Code = CE0101L1 Frequency Range MHz = [0.15, 30]

Conducted Emissions - Tested Line = L1

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz. Phase wire noise.

Images:



Tables:

Frequency(MHz)	PK+_CLRWR(dBµV)	AVG_CLRWR(dBµV)
0.150000	59.8	38.4

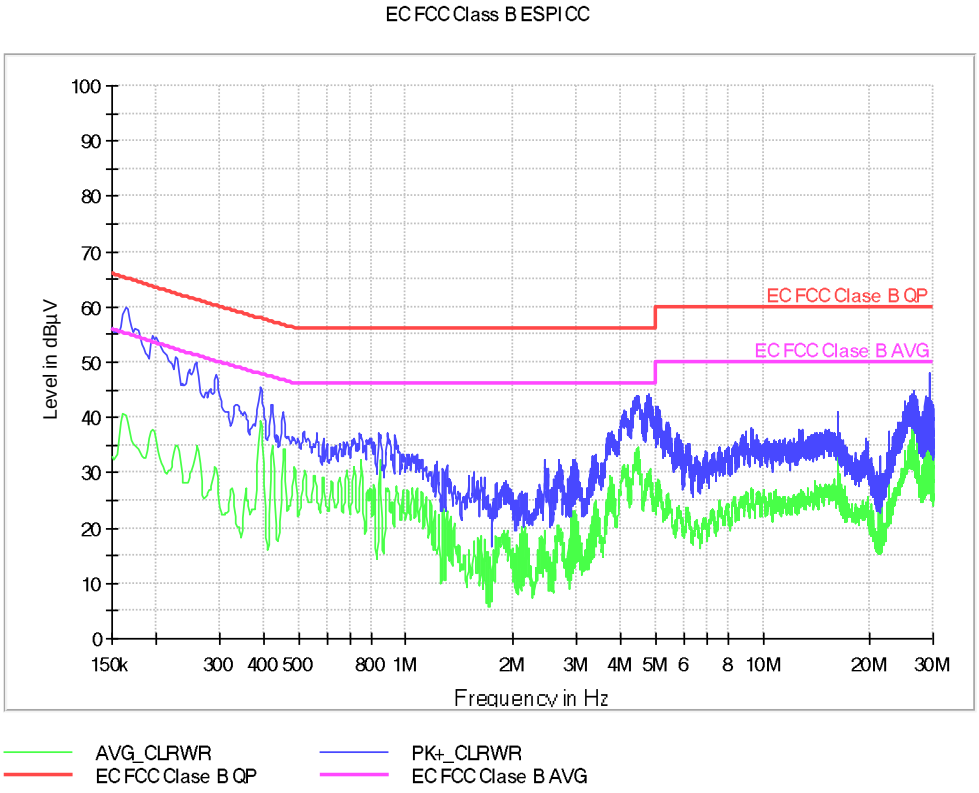
EMC Test Code = CE01010N Frequency Range MHz = [0.15, 30]

Conducted Emissions - Tested Line = 0N

Sample ID: S/01

Operation Mode: OM/01. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi OFF, Cellular searching network, DECT OFF, ISM OFF. Power supply 115Vac @ 60Hz. Neutral wire noise.

Images:



Tables:

Frequency(MHz)	PK+_CLRWR(dBµV)	AVG_CLRWR(dBµV)
0.163500	60.1	40.4

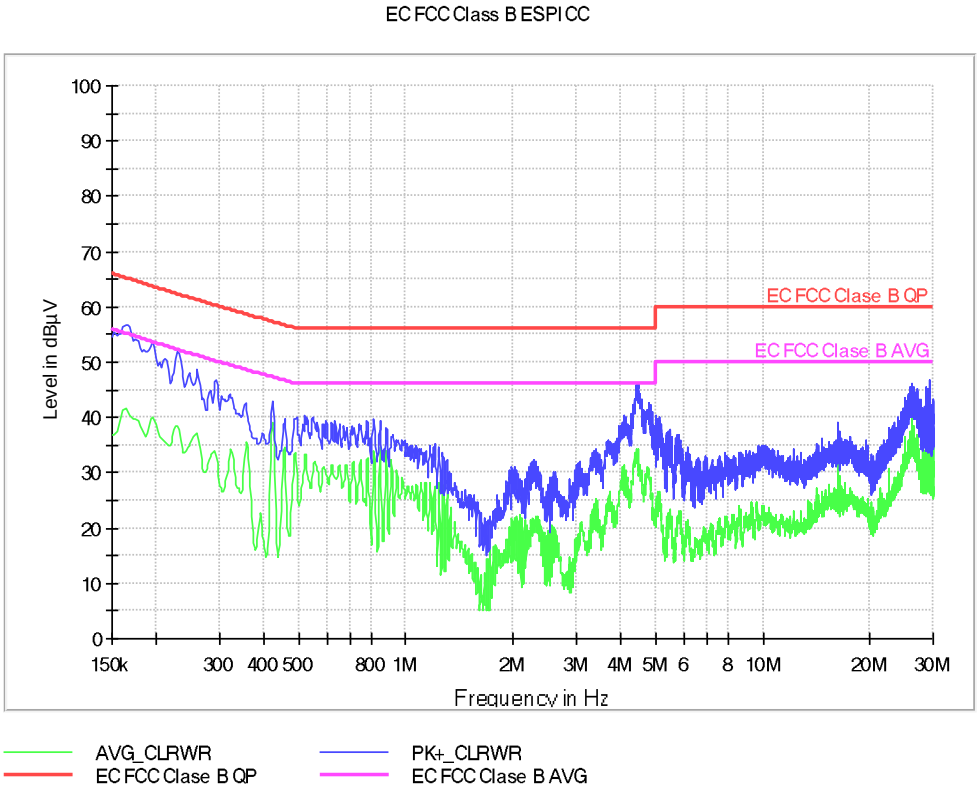
EMC Test Code = CE0102L1 Frequency Range MHz = [0.15, 30]

Conducted Emissions - Tested Line = L1

Sample ID: S/01

Operation Mode: OM/02. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi in communication mode, Cellular 2G GPRS1900MHz TCH Mode, DECT ON, ISM in communication mode. Power supply 115Vac @ 60Hz. Phase wire noise

Images:



Tables:

Frequency(MHz)	PK+_CLRWR(dBµV)	AVG_CLRWR(dBµV)
0.163500	56.8	41.6

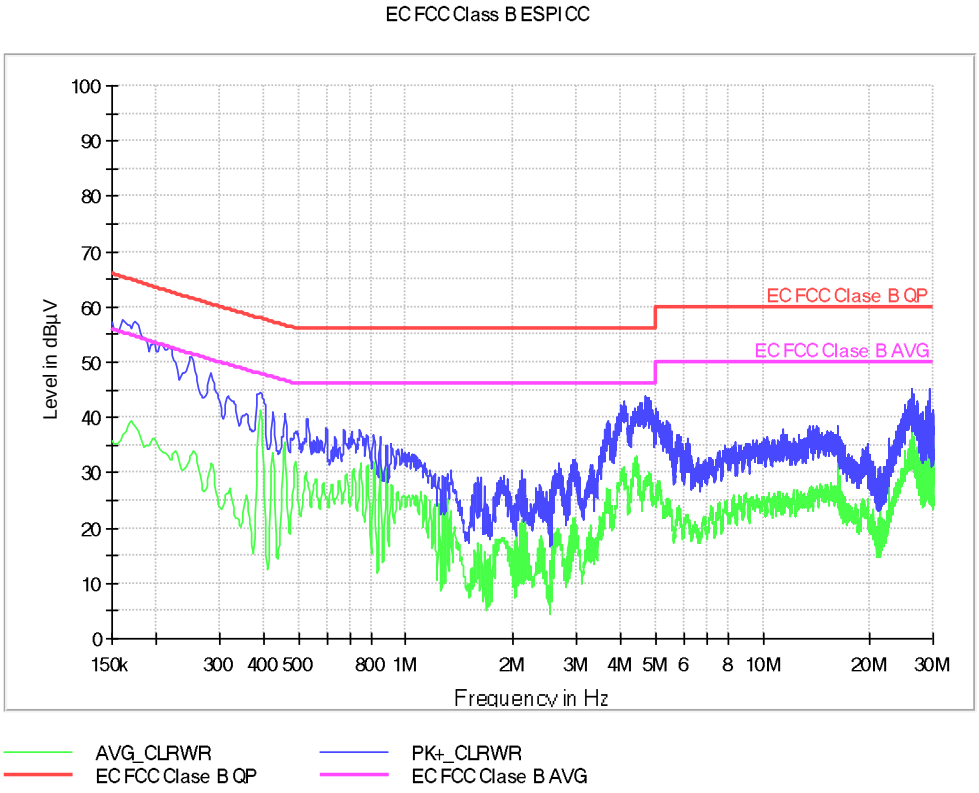
EMC Test Code = CE01020N Frequency Range MHz = [0.15, 30]

Conducted Emissions - Tested Line = N

Sample ID: S/01

Operation Mode: OM/02. EUT ON. Central Unit acts as the main hub and gateway, central processing. Ethernet in traffic mode, Wi-Fi in communication mode, Cellular 2G GPRS1900MHz TCH Mode, DECT ON, ISM in communication mode. Power supply 115Vac @ 60Hz. Neutral wire noise

Images:



Tables:

Frequency(MHz)	PK+_CLRWR(dBµV)	AVG_CLRWR(dBµV)
0.161250	57.6	36.7