

Test report No:
NIE: 66381REM.001A1

Test report

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

(*) Identification of item tested	Receiver
(*) Trademark	JCM TECHNOLOGIES, S.A.
(*) Model and /or type reference	CONNECT4 CC; CONNECT CC-CAM; CONNECT CC-ACT; CONNECT CC-CIS
Other identification of the product	HW Version: 2000851_00 (S-CONNECT-MCH FC) SW Version: CONNECT_MCH_FC_01020000 FCC ID: U5Z-CONNECT4CC IC ID: 8572A-CONNECT4CC
(*) Features	Wiegand
Manufacturer	JCM TECHNOLOGIES, S.A. C/Costa d'en Paratge, 6B 08500, Vic, Barcelona
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (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  2021.04.20 18:10:39 +02'00'
Date of issue	2021-04-20
Report template No	FDT08_23 (*) "Data provided by the client"

Index

ACRONYMS3

COMPETENCES AND GUARANTEES3

GENERAL CONDITIONS4

UNCERTAINTY4

DATA PROVIDED BY THE CLIENT4

USAGE OF SAMPLES6

TEST SAMPLE DESCRIPTION7

IDENTIFICATION OF THE CLIENT8

TESTING PERIOD AND PLACE8

DOCUMENT HISTORY8

ENVIRONMENTAL CONDITIONS9

REMARKS AND COMMENTS10

TESTING VERDICTS10

LIST OF EQUIPMENT USED DURING THE TEST10

SUMMARY11

APPENDIX A: TEST RESULTS12

Acronyms

Acronym ID	Acronym Description
Avg	Radiated Average Level
Avg	Conducted Average Level
Az	Azimuth
CPL	Zones / Coupling Cables
Code	EMC Test Code
Freq	Frequency
Freq Rng	Frequency Range
H	Height
Line	Conducted Emissions - Tested Line
MP	Measurement Point
Max	Conducted Maximum Level
MaxPeak	Radiated Maximum Peak Level
OM	Operation Mode
Pol	Polarization
QuasiPeak	Conducted Quasi Peak Level
QuasiPeak	Radiated Quasi Peak Level
S/	Sample
V	Verdict
Volt Immunity Lvl	Voltage Immunity Severity Level
Volt Immunity Type	Voltage Immunity Type

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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Testing and Certification S.A.U.

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 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 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. Multiprotocol receiver with four channels, compatible with MOTION range transmitters. Codifies the transmitter signal in four different protocols according to its configuration: Wiegand 26 and Wiegand 37.

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.



Date: 09/02/2021
Contact Person: David Clos Bonet

JCM Technologies, S.A.
C/ Bisbe Morgades, 46
08500 VIC (SPAIN)
Tel. +34 93 883 32 31
www.jcm-tech.com

Statement from the applicant – Declaration:

Model name:

CONNECT4CC, CONNECT4CC-CAM, CONNECT4CC-ACT and CONNECT4CC-CIS

Models that are used in for applied standard test:

To whom it may concern,

This statement letter is to declare following products

CONNECT4CC, CONNECT4CC-CAM, CONNECT4CC-ACT and CONNECT4CC-CIS

These Model names and part numbers should be listed in test reports

These products have same electronics part, but below features are different between models:

Only change the customer logo and the product reference



Juan Capdevila Mas

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	66381_002	Test equipment	CONNECT CC FCC	---	2021-01-18	Element under test
S/01	66381_003	Device	---	---	2021-01-18	Auxiliary element
S/01	66381_004	AC/DC adapter	FW7333S/12	---	2021-01-18	Auxiliary element
S/01	66381_005	Remote controller	---	---	2021-01-18	Auxiliary element

Notes referenced to samples during the project.

Id	Note
S/01	N/A

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	Output CH1	Not specified	X				
	Output CH2	Not specified					
	Output CH3	Not specified					
	Output CH4	Not specified					
Supplementary information to the ports..... :	N/A						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:					
	☒	DC: 12 Vdc & 24 Vdc					
Rated Power	14 mA / 36 mA						
Clock frequencies..... :	13,45856 MHz						
Other parameters	Not provided data						
Software version	CONNECT_MCH_FC_01020000						
Hardware version	2000851_00 (S-CONNECT-MCH FC)						
Dimensions in cm (W x H x D)	63x74x25 mm						
Mounting position	X	Wall/Ceiling mounted equipment					
Modules/parts..... :	Module/parts of test item		Type	Manufacturer			
Accessories (not part of the test item)	Description		Type	Manufacturer			
	N/A						
Documents as provided by the applicant	Description		File name	Issue date			
	UM_3201601_CONNECT4 CC (User's manual)			13/01/2021			
	Technical description receiver CONNECT4 CC-CAM			13/01/2021			

Identification of the client

JCM TECHNOLOGIES, S.A.
C/Costa d'en Paratge, 6B
08500, Vic, Barcelona

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2021-02-02
Date (finish)	2021-02-03

Document history

Report number	Date	Description
66381REM.001	2021-03-09	First release
66381REM.001A1	2021-04-20	Second 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. = 20 % Max. = 75 %

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

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

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. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Lorena Oviedo & Carlos Haro.

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
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2021-07-31
6132	ETHERNET TEMPERATURE AND HUMIDITY SENSOR	HWg-STE	HW GROUP	2021-04-20
6126	ETHERNET TEMPERATURE AND HUMIDITY SENSOR	HWg-STE	HW GROUP	2021-04-17
6195	PRE-AMPLIFIER G>55dB 1-18GHz	AMF-7D-01001800-22-10P	NARDA	2021-05-19
4523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU 26	ROHDE AND SCHWARZ	2022-05-27
4612	HORN ANTENNA 1-18 GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2021-06-14
6064	SEMIANECHOIC CHAMBER ALC3	SAC-3	FRANKONIA	---
6329	SHIELDED CONTROL ROOM LOW RANGE ALC3	---	FRANKONIA	---
6205	THREE-PHASE ARTIFICIAL NETWORK 32A	PMM L3-32	NARDA	2021-12-11
5152	TRANSIENT LIMITER 10DB N CONNECTOR	VTSD 9561-F	SCHWARZBECK	2021-10-09
2942	EMI TEST RECEIVER 20Hz-40GHz	ESU40	ROHDE AND SCHWARZ	2021-09-17

Summary

Test Specification.	Requirement – Test case	Verdict	Remark
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Sec. 15.109 & ICES-003 Issue 7 (October 2020). ANSI C63.4 (2014)	Radiated emission	Pass	---
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Secs. 15.107 and 15.207 & ICES-003 Issue 7 (October 2020) ANSI C63.4 (2014)	Conducted emission	Pass	---
N/A			

Appendix A: Test results

Appendix A content

DESCRIPTION OF THE OPERATION MODES	14
TEST STANDARDS VERSION APPLIED	14
TEST CASES DETAILS	15
RE RADIATED EMISSION.....	15
CE CONDUCTED EMISSION.....	15

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. Configuration Wiegand 26 active. Power supply: 12Vdc (worst case).

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 y C (10-1-19 Edition) Sec 15.109 & ICES-003 & Issue 7 (October 2020).	ANSI C63.4 (2014)	Radiated emission
FCC CFR 47, Part 15, Subpart B y C (10-1-19 Edition) Sec 15.107 & 15.207 & ICES-003 Issue 7 (October 2020).	ANSI C63.4 (2014)	Conducted emission

Test Cases Details

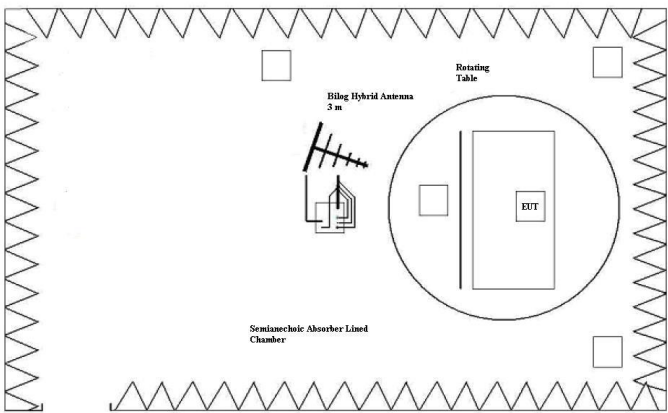
FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) &
ICES-003 Issue 7 (October 2020)
RE Radiated emission

Limits of interference Class B

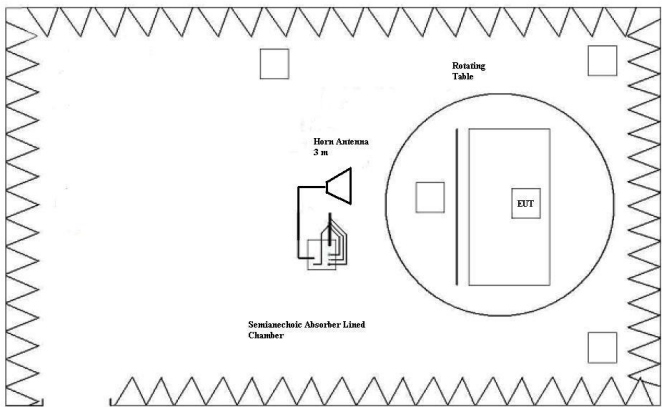
The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 Issue 7 (Updated 04-2020) Sec. 3.2.2

Table 2: Radiated emission limits

Frequency range (MHz)	FCC Part 15B Class B (3 m) Quasi-Peak (dBµV/m)	ICES-003 Issue 7 Limit for 3 m Quasi-Peak (dBµV/m)	FCC Part 15B & ICES-003 Issue 7	
			PK Limit for 3m (dBµV/m)	AVG Limit for 3m (dBµV/m)
30-88	40.0	40.0	---	---
88-216	43.5	43.5	---	---
216-230	46.0	46.0	---	---
230-960	46.0	47.0	---	---
960-1000	54.0	54.0	---	---
1 GHz – F _M	---	---	74	54



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

RESULTS

REmmnnRR	Description	Result
RE0101LR	Range: 30 MHz - 1000 MHz.	P
RE0101HR	Range: 1 GHz - 12.75 GHz.	P

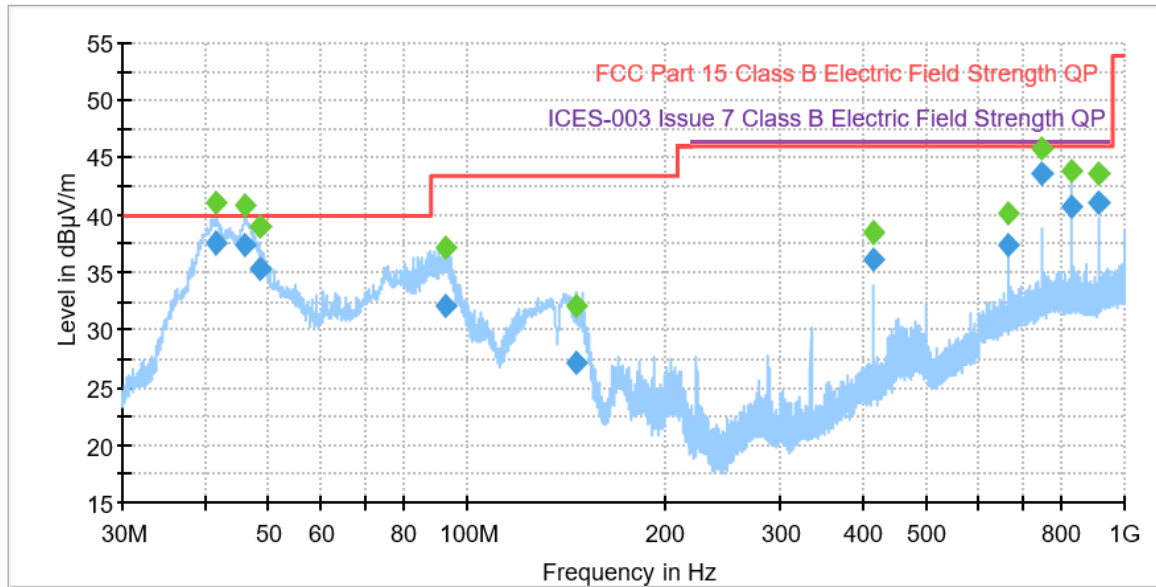
mm: Sample number; nn: Operation mode; RR: Measurement range.

VERDICT

Pass

Project: 66381REM.001
Company: JCM TECHNOLOGIES, S.A.
Sample: S/01
Operation mode: 01
Graphical code: RE0101LR
Description: EUT ON. Configuration Wiegand 26 active. Power supply: 12Vdc
Verdict: Passed

Full Spectrum



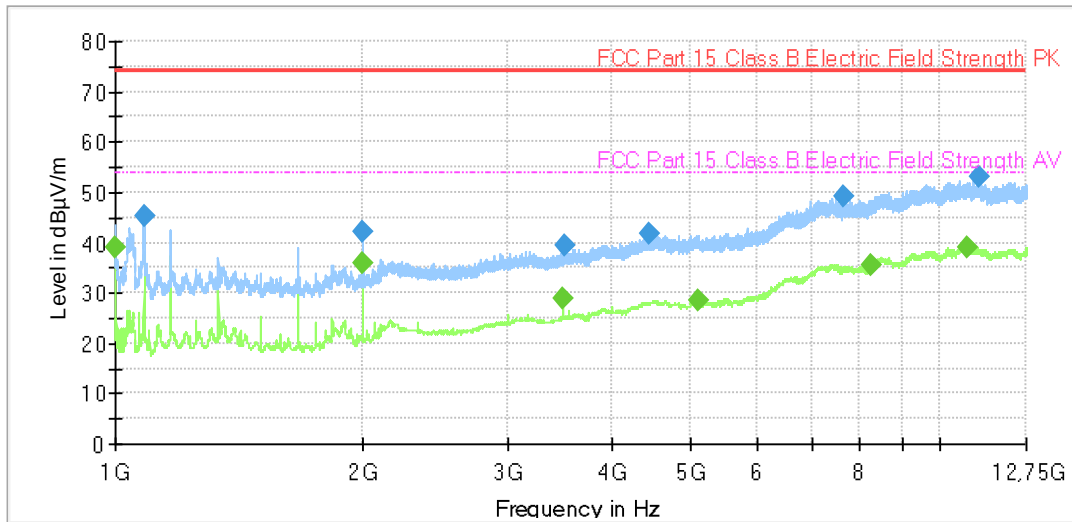
Preview Result 1-PK+
Final_Result QPK
FCC Part 15 Class B Electric Field Strength QP
Final_Result PK+
ICES-003 Issue 7 Class B Electric Field Strength QP

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
41.377000	---	41.10	---	---	100.0	V	-8.0
41.377000	37.52	---	40.00	2.48	100.0	V	-8.0
46.026000	---	40.86	---	---	114.0	V	-54.0
46.026000	37.41	---	40.00	2.59	114.0	V	-54.0
48.528000	35.35	---	40.00	4.65	122.0	V	3.0
48.528000	---	39.06	---	---	122.0	V	3.0
93.069000	32.05	---	40.00	7.95	122.0	V	-30.0
93.069000	---	37.17	---	---	122.0	V	-30.0
146.402000	---	32.03	---	---	100.0	V	129.0
146.402000	27.10	---	40.00	12.90	100.0	V	129.0
416.660000	36.13	---	47.00	10.87	100.0	H	-101.0
416.660000	---	38.45	---	---	100.0	H	-101.0
666.662000	37.33	---	47.00	9.67	222.0	V	-34.0
666.662000	---	40.20	---	---	222.0	V	-34.0
749.992000	---	45.85	---	---	115.0	V	-172.0
749.992000	43.64	---	47.00	3.36	115.0	V	-172.0
833.331000	40.73	---	47.00	6.27	128.0	V	8.0
833.331000	---	43.75	---	---	128.0	V	8.0
916.679000	---	43.68	---	---	126.0	V	-13.0
916.679000	41.01	---	47.00	5.99	126.0	V	-13.0

Project: 66381REM.001
Company: JCM TECHNOLOGIES, S.A.
Sample: S/01
Operation mode: 01
Graphical code: RE0101HR
Description: EUT ON. Configuration Wiegand 26 active. Power supply: 12Vdc
Verdict: Passed

Full Spectrum



Preview Result 2-AVG
FCC Part 15 Class B Electric Field Strength PK
Final_Result PK+
Preview Result 1-PK+
FCC Part 15 Class B Electric Field Strength A
Final_Result AVG

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1000.000000	---	38.98	53.97	14.99
1083.200000	45.33	---	73.97	28.64
2000.000000	---	36.07	53.97	17.90
2000.000000	42.05	---	73.97	31.92
3500.000000	---	28.73	53.97	25.24
3512.000000	39.26	---	73.97	34.71
4442.000000	41.63	---	73.97	32.34
5090.000000	---	28.65	53.97	25.32
7651.200000	48.98	---	73.97	24.99
8274.000000	---	35.63	53.97	18.34
10843.200000	---	39.11	53.97	14.86
11197.600000	52.90	---	73.97	21.07

FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 7 (October 2020) & ANSI C63.4 – 2014 CE Conducted emission

Conducted emissions on power leads. Limits of interference Class B

The applied limit for continuous conducted emissions in power leads, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Sec. 15.107 & ICES-003 Issue 7 (October 2020) Sec.3.2.1 for Class B equipment was:

Frequency range (MHz)	Limit (dBμV)	
	Quasi-Peak	Average
0,15 to 0,5	66 – 56 ⁽¹⁾	56 – 46 ⁽¹⁾
0,5 to 5	56	46
5 to 30	60	50
(1) The level decreases linearly with the logarithm of the frequency.		

RESULTS

CCmmnnhh	Description	Result
CE01010N	Range: 150 kHz – 30 MHz. Neutral wire noise	P
CE0101L1	Range: 150 kHz – 30 MHz. Phase wire noise	P

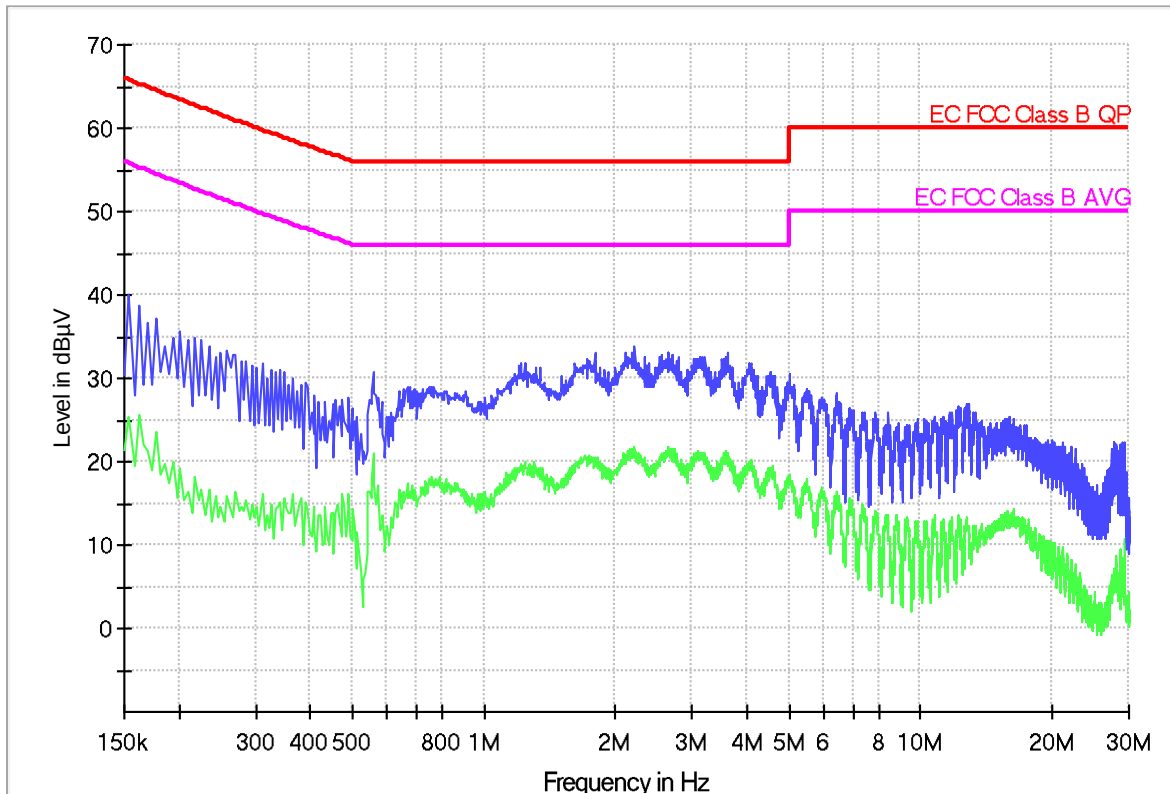
CEmmnnhh: CE: Conducted Emission; mm: Sample number; nn: Operation mode; hh: Wire

VERDICT

Pass

Project: 66381REM001
Company: JCM TECHNOLOGIES, S.A.
Sample: S/01
Operation mode: OM#01
Graphical code: CE0101N
Description: EUT ON. Configuration Wiegand 26 active. Power supply: 12Vdc by an auxiliary device powered at 115Vac. Neutral Wire Noise.
Verdict: Passed

FCC Part 15 Class B



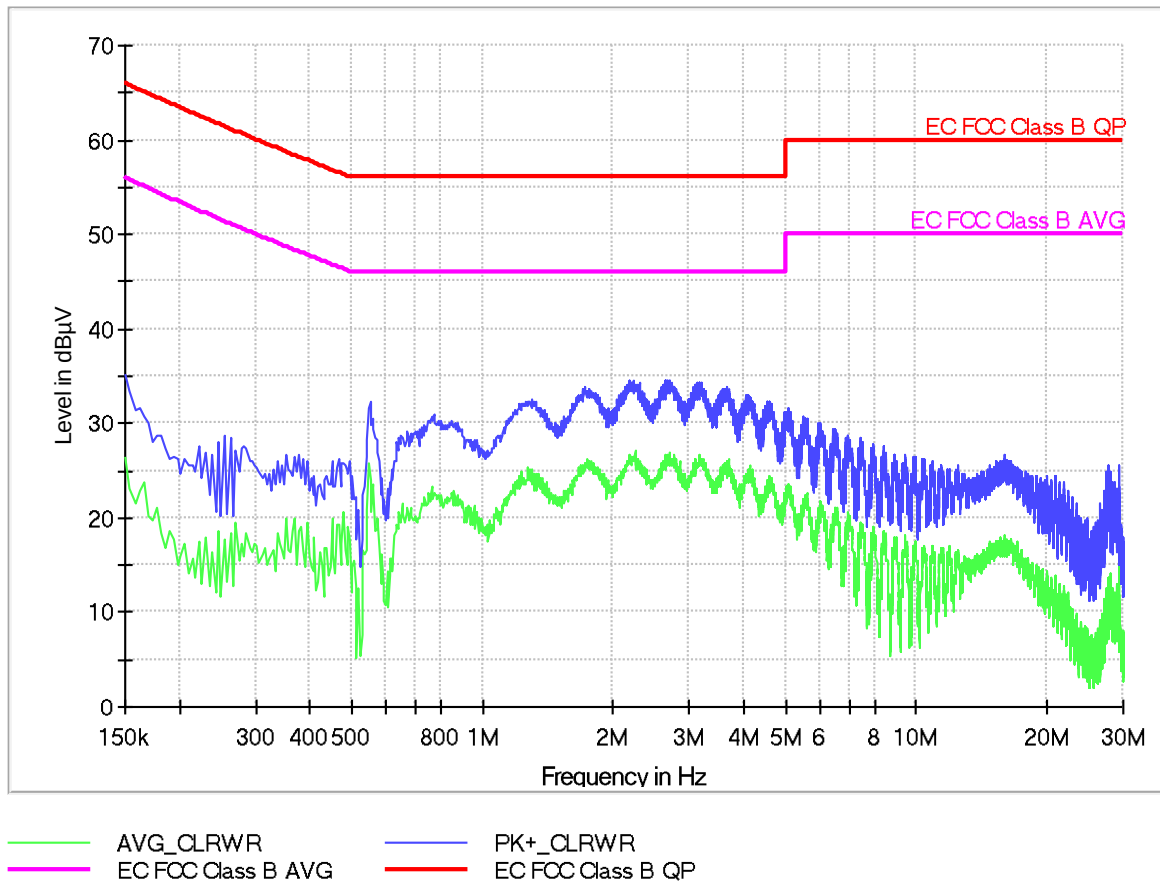
AVG_CLRWR PK+_CLRWR
EC FCC Class B AVG EC FCC Class B QP

Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV)	AVG_CLRWR (dBµV)
0.154000	39.9	25.4
0.258000	33.4	15.8
0.558000	30.8	20.9
1.214000	31.9	19.2
2.114000	33.0	20.7
2.218000	33.9	21.5
3.626000	33.0	20.9
6.454000	28.2	15.5
12.850000	27.0	12.0
18.374000	22.9	9.6

Project: 66381REM.001
Company: JCM TECHNOLOGIES, S.A..
Sample: S/01
Operation mode: OM#01
Graphical code: CE0101L1
Description: EUT ON. Configuration Wiegand 26 active. Power supply: 12Vdc by an auxiliary device powered at 115Vac. Line Wire Noise.
Verdict: Passed

FCC Part 15 Class B



Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV)	AVG_CLRWR (dBµV)
0.150000	35.1	26.6
0.262000	28.5	18.4
0.550000	32.3	23.9
1.238000	32.1	23.8
1.726000	33.9	25.4
2.642000	34.6	26.6
3.658000	33.8	25.9
6.494000	29.4	20.7
15.998000	26.7	16.8
29.234000	25.7	15.8