

ISED CABid: ES1909
Lab. Company Number: 4621A

Test report No:
75462RRF.001

Test Report

USA FCC Part 22

CANADA RSS-132

(*) Identification of item tested	LTE Cat-4
(*) Trademark	Sequans Communications
(*) Model and /or type reference	CA410
Other identification of the product	FCC ID: 2AAGMCA410A IC: 12732A-CA410A
(*) Features	LTE Cat-4 HW version: V1 SW version: LR4.1.6.0-CBRSA-59334
Applicant	SEQUANS COMMUNICATIONS 55 Boulevard Charles de Gaulle, 92700 Colombes, France
Test method requested, standard	USA FCC Part 22 (10-1-21 Edition). CANADA RSS-132 Issue 4, Jan. 2023. ANSI C63.26-2015. KDB 971168 D01 Power Meas License Digital Systems v03r01, April. 2018.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager  Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456) Fecha: 2023.10.24 08:40:33 +02'00'
Date of issue	2023-10-24
Report template No	FDT08_24 (*) "Data provided by the client"

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Appendix A: Test results for FCC 22 / RSS-1328

Competences and guarantees

DEKRA Testing and Certification 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 is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification 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 has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification 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 at the time of performance of the test.

DEKRA Testing and Certification 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.

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 model CA410 is ideal for adding LTE connectivity to electronics devices for industrial Internet of Things (IoT), Machine-to-Machine (M2M) and broadband consumer applications. CA410 is compliant with CBRS networks operating on LTE band 48 in USA, with US B8 – known as Anterix band - and with other US MNO bands: bands 2/4/5/12/13/66 as well as Firstnet LTE band 14 and band 26 used in private networks.

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.

- Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
75462C/012 *	LTE Cat-4	CA410-EVK	FOX-23-26-0658	25-07-2023
75462C/017	USB Cable	-	-	25-07-2023
75462C/022 **	LTE Cat-4	CA410-EVK	FOX-23-26-0647	20-09-2023

Sample S/01 has undergone the following test(s): The conducted tests indicated in Appendix A.

* : EUT used in all the conducted tests but the Occupied Bandwidth test.

** : EUT used in the Occupied Bandwidth test.

- Sample S/02 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
76162C/001	Testing Box	CA410-EVK	FOX-23-34-0682	11-09-2023
76162C/002	Testing Box	CA410-EVK	FOX-23-34-0683	11-09-2023
75462C/003	Antenna	-	-	25-07-2023
75462C/004	Antenna	-	-	25-07-2023

Sample S/02 has undergone the following test(s): The radiated tests indicated in Appendix A.

Test sample description

Ports.....:	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	USB	-	☒	☐	☐		
Supplementary information to the ports.....:	-						
Rated power supply	Voltage and Frequency		Reference poles				
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3.2V Min, 3.3V Typ, 4.6V Max					
Rated Power..... :	-						
Clock frequencies..... :	-						
Other parameters	-						
Software version..... :	-						
Hardware version	-						
Dimensions in cm (W x H x D) ... :	-						
Mounting position	☒	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
	USB Cable		USB	-
	Antenna		Antenna	-
Documents as provided by the applicant :	Description		File name	Issue date
	-		-	-

Identification of the client

SEQUANS COMMUNICATIONS
55 Boulevard Charles de Gaulle, 92700, Colombes, France

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-09-14
Date (finish)	2023-09-21

Document history

Report number	Date	Description
75462RRF.001	2023-10-24	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. = 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: Ireneo Bibang, Rafael Fernández, Pablo Redondo, Carmen Vázquez, Francisco López.

Used instrumentation:

Control No.	Equipment	Next Calibration
8002	Climatic Chamber BINDER MK 56	2024-03
6157	Signal and Spectrum Analyzer 10 Hz - 40 GHz ROHDE AND SCHWARZ FSV40	2023-10
9229	Wideband Radio Communication Tester ROHDE AND SCHWARZ CMW500	2024-06
6794	Shielded Room ETS LINDGREN S101	N/A
7798	EMC/RF Testing SW ROHDE AND SCHWARZ WMS32	N/A
6791	Semianechoic Absorber Lined Chamber ETS LINDGREN FACT 3 200 STP	N/A
6792	Shielded Room ETS LINDGREN S101	N/A
6143	Biconical/Log Antenna 30 MHz - 6 GHz ETS LINDGREN 3142E	2023-10
4612	Horn Antenna 1-18 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120 D	2024-07
3783	RF Preamplifier G>30dB, 1-18GHz BONN ELEKTRONIK BLMA 0118-3A	2023-12
6142	RF Preamplifier, G>38dB 30MHz-6GHz BONN ELEKTRONIK BLNA 0360-01N	2024-06
7817	EMI Test Receiver 2 Hz - 44 GHz, ROHDE AND SCHWARZ ESW44	2023-12
6667	Wideband Radio Communication Tester ROHDE AND SCHWARZ CMW500	2024-06
4848	EMC/RF Testing SW ROHDE AND SCHWARZ EMC32	N/A

Testing verdicts

Not Applicable:	N/A
Pass:	P
Fail:	F
Not Measured:	N/M

Summary

Appendix A: LTE Cat-4 Band 26.

FCC PART 22 / RSS-132 PARAGRAPH		
Requirement – Test case	Verdict	Remark
FCC 22.913 / RSS-132 5.4: RF Output Power	P	
FCC 2.1047 / RSS-132 5.2: Modulation Characteristics	P	
FCC 22.355 / RSS-132 5.3: Frequency Stability	P	
FCC 2.1049: Occupied Bandwidth	P	
FCC 22.917 / RSS-132 5.5: Spurious Emissions at Antenna Terminals	P	
FCC 22.917 / RSS-132 5.5: Spurious Emissions at Antenna Terminals at Block Edges	P	
FCC 22.917 / RSS-132 5.5: Radiated Emissions	P	
<u>Supplementary information and remarks:</u>		
None.		