



Test report No:
 NIE: 60375REM.001

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-16 Edition) & ICES-003 Issue 6 (Updated 04-2017)

(*) Identification of item tested	LTE Module CATM and NB-IOT
(*) Trademark	Telit
(*) Model and /or type reference tested	ME910C1-WW
Other identification of the product	FCC ID: RI7ME910C1WW IC: 5131A-ME910C1WW IMEI TAC: 35308109
(*) Features	LTE CATM/NB-IOT /Quad Band 2G
Manufacturer	Telit Communications S.p.A Via Stazione di Prosecco 5/B, 34010 Sgonico, Trieste - ITALY
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition) & ICES-003 (Updated 04-2017)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC LAB Manager
Date of issue	2019-06-21
Report template No	FDT08_22 (*) "Data provided by the client"

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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 a FCC recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report, FCC designation number ES0004.

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.
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 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 conducted disturbance characteristics of EUT from 150kHz to 30 MHz is $I = \pm 3,9$ dB for quasi-peak measurements, $I = \pm 3,2$ dB for average 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 $I = \pm 4,9$ 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 26 GHz is $I = \pm 2,6$ dB for peaks and average measurements ($k = 2$)

Data provided by the client

The sample consists of a LTE module CAT M and NB-IOT with 2G Fallback.

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.

Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
60375B/001	Module	ME910C1-WW	IMEI: 35308109	2019-02-07
60375B/003	LTE antenna	---	---	2019-02-07

Auxiliary elements used with the tested sample:

Control N°	Description	Model	Serial N°	Date of reception
60375B/002	EVK Board	---	---	2019-02-07

Test sample description

Ports..... :	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded		
	Not provided data			<input type="checkbox"/>	<input type="checkbox"/>		
				<input type="checkbox"/>	<input type="checkbox"/>		
				<input type="checkbox"/>	<input type="checkbox"/>		
				<input type="checkbox"/>	<input type="checkbox"/>		
				<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :	Not provided data						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 3.8Vdc.					
<input type="checkbox"/>	DC:						
Rated Power	Not provided data						
Clock frequencies	Not provided data						
Other parameters..... :	Not provided data						
Software version	M0B.800004						
Hardware version..... :	0.0						
Dimensions in mm (W x H x D).... :	Not provided data						
Mounting position..... :	<input type="checkbox"/>	Table top equipment					
	<input type="checkbox"/>	Wall/Ceiling mounted equipment					
	<input type="checkbox"/>	Floor standing equipment					
	<input type="checkbox"/>	Hand-held equipment					
	<input checked="" type="checkbox"/>	Other: Module					
Modules/parts	Module/parts of test item	Type			Manufacturer		
	Not provided data						

Accessories (not part of the test item)	Description	Type	Manufacturer
	Not provided data		
Documents as provided by the applicant.....	Description	File name	Issue date
	Not provided data		

Identification of the client

TELIT COMMUNICATIONS
 Via Stazione di Prosecco 5/B, 34010 Sgonico,
 Trieste – ITALY.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2019-02-07
Date (finish)	2019-02-08

Document history

Report number	Date	Description
60375REM.001	2019-06-21	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. = 860 mbar Max. = 1060 mbar

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. = 860 mbar Max. = 1060 mbar

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. = 860 mbar Max. = 1060 mbar

Remarks and comments

The test have been performed by the technical personnel: Jesús García & Lorena Oviedo.

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

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission. Electromagnetic field measure (30 KHz – 1000 MHz)	P	---
Radiated emission. Electromagnetic field measure (1 GHz – 18 GHz)	P	---
Continuous conducted emission (150 KHz – 30 MHz)	N/A	(1)
<u>Supplymentary information and remarks:</u>		
(1) Equipment DC powered. Test applicable only in AC port.		

Control Number	Description	Model	Manufacturer	Next Calibration
2942	EMI TEST RECEIVER 20Hz-40GHz	ESU40	ROHDE AND SCHWARZ	2020-06-19
3556	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	TR-72W	T&D	2019-04-11
4612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2021-06-14
6120	PRE-AMPLIFIER G>38dB 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2019-07-27
6196	PRE-AMPLIFIER G>55dB 1-18GHz	AMF-7D-01001800-22-10P	NARDA	2019-12-10
6815	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2022-02-01

Appendix A: Test results

APPENDIX A CONTENT

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DESCRIPTION OF THE OPERATION MODES

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. NB-IoT Band 12 in IDLE mode. Power supply: 3.8Vdc. (worst case)

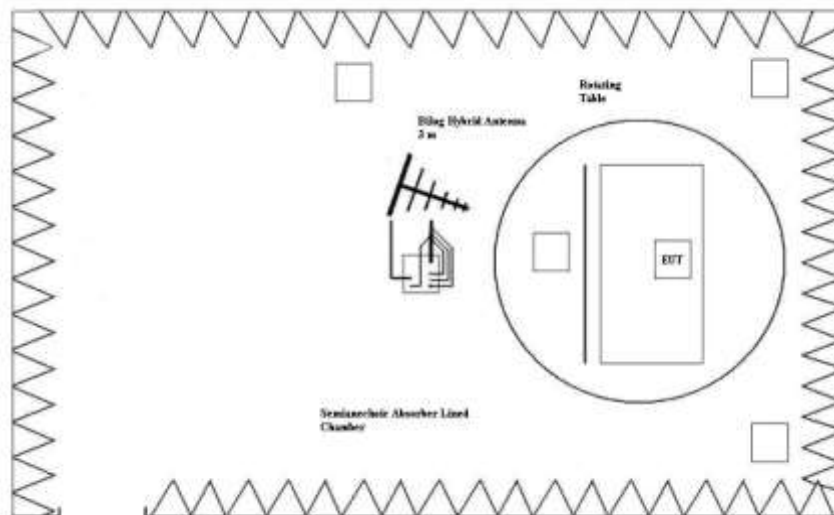
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition) & ICES-003 (Updated 04-2017)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition) & ICES-003 (Updated 04-2017)

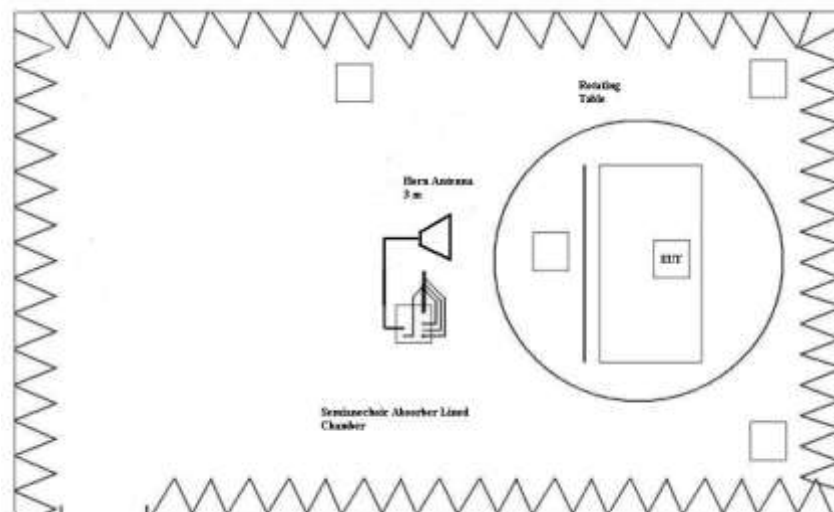
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2017) in the frequency range 30 MHz to 26 GHz for class B devices.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

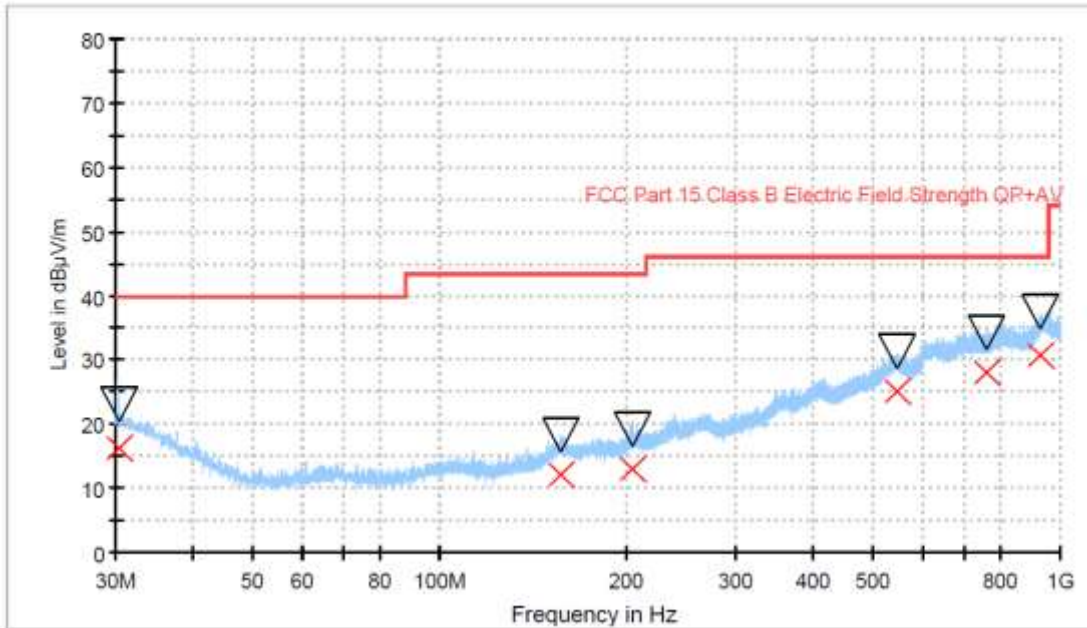
TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1_H	Range: 1 GHz - 18 GHz. Horizontal polarization.	P
CR0101HR1_V	Range: 1 GHz - 18 GHz. Vertical polarization.	P
CR0101HR1_H	Range: 18 GHz - 26 GHz. Horizontal polarization.	P
CR0101HR1_V	Range: 18 GHz - 26 GHz. Vertical polarization.	P

Radiated Emission. CR0101LR

Project: 60375REM.001
 Company: TELIT COMMUNICATIONS S.P.A.
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. LTE OFF. Power Supply: 3.8 Vdc.

Full Spectrum



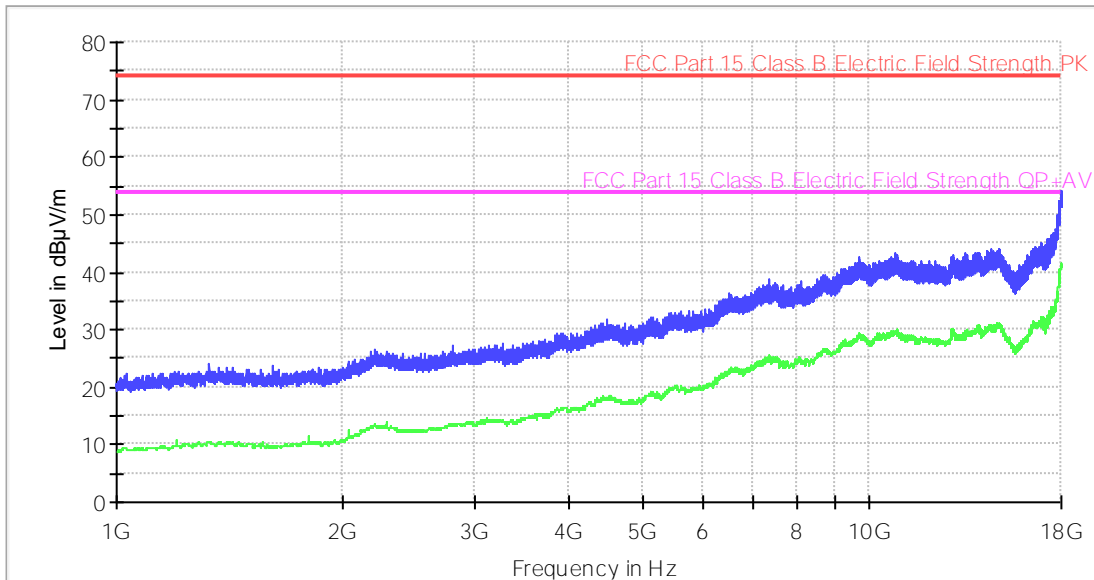
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.510450	16.15	22.88	40.00	23.85	223.0	V	-128.0
156.842500	12.01	18.16	43.50	31.49	101.0	V	56.0
204.092500	12.96	19.29	43.50	30.54	184.0	V	-169.0
545.222500	25.02	31.26	46.00	20.98	168.0	V	149.0
763.597500	28.16	34.12	46.00	17.84	330.0	H	-60.0
929.280000	30.65	37.45	46.00	15.35	285.0	H	39.0

Radiated Emission. CR0101HR1_H

Project: 60375REM.001
 Company: TELIT COMMUNICATION S.P.A.
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. LTE OFF. Power Supply: 3.8 Vdc. Horizontal polarization

ER EMI FCC 15 Class B (1-18GHz)



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

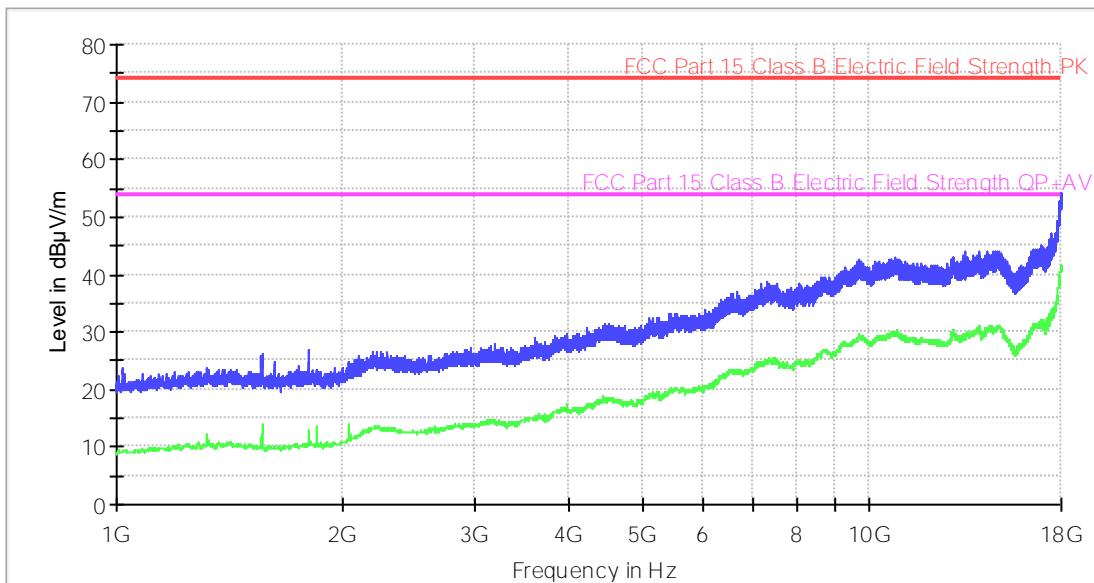
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
2202.800000	26.5	13.5
4396.400000	31.0	17.7
6065.200000	33.4	20.2
7355.600000	38.6	25.2
9399.200000	40.7	27.7
10830.400000	43.4	29.6
12880.400000	42.4	29.8
14487.200000	44.1	30.4
14872.000000	44.0	30.6
17948.800000	54.2	40.7

Radiated Emission. CR0101HR1_V

Project: 60375REM.001
 Company: TELIT COMMUNICATION S.P.A.
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. LTE OFF. Power Supply: 3.8 Vdc. Vertical polarization

ER EMI FCC 15 Class B (1-18GHz)



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1801.200000	26.7	11.0
4387.200000	30.8	17.8
6053.200000	34.0	20.2
7318.800000	38.7	25.1
9285.200000	41.3	27.9
10831.200000	42.9	29.8
12870.000000	42.6	30.0
13966.800000	44.1	30.8
14889.600000	44.2	31.1
17987.600000	54.1	41.2