



FCC LISTED, REGISTRATION
NUMBER: 2764.01

ISED LISTED REGISTRATION
NUMBER: 23595-1

Test report No:
2386ERM.002

Test report

FCC Rules and Regulations CFR 47, Part 96, Subpart 47

Identification of item tested	3G/LTE module
Trademark	TELIT
Model and /or type reference	LM960
Other identification of the product	FCC ID: R17LM960 IC ID: 5131A-LM960
Features	PCI Express Mini Card, LTE CAT.18
Manufacturer	TELIT COMMUNICATION S.P.A VIALE STAZIONE DI PROSECCO 5/B TRIESTE, 34010, ITALY
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 96.47
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager
Date of issue	12-14-2018
Report template No	FDT08_21

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Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. 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 Certification at the time of performance of the test.

DEKRA Certification Inc. 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 Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Certification internal document PODT000.

	Frequency (MHz)	U(k=2)	Units
Radiated emission	30 - 6000	5.44	dB
	1000-18000	2.92	dB
	18000-40000	2.15	dB

Data provided by the client

3G/LTE module

DEKRA 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
2386.06	Telit LTE module	LM960	359390090002124	12/04/2018

1. Sample S/01 has undergone following test(s):

Conducted tests indicated in appendix A.

Accessories used along with S/01

Control N°	Description	Model	Serial N°	Date of reception
2386.01	Cradle	N/A	CS1742E-A18000024	12/04/2018
2386.03	Power Adapter	N/A	N/A	12/04/2018

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	Primary port 0 for LB/MB	38 mm	☐	☐	☐		
	Primary port 1 for HB/UHB	38 mm	☒	☐	☐		
	Secondary port for LB/MB/GNSS	38 mm	☐	☐	☐		
	Primary port 1 for HB/UHB	38 mm	☒	☐	☐		
	GNSS port	50 mm	☒	☐	☐		
			☐	☐	☐		
Supplementary information to the ports..... :	MHF4 type connectors on LM960 board, SMA type connectors on test board (Refer to attached doc.) 						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3.1 ~ 3.6 V, typ 3.3 V					
	☐	DC:					
Rated Power	0.142 W						
Clock frequencies	38.4 MHz						
Other parameters.....	Data not provided						
Software version	Data not provided						
Hardware version.....	1.0						

Dimensions in cm (W x H x D).....:	51.0 x 30.0 x 2.7 mm		
Mounting position.....:	☐	Table top equipment	
	☐	Wall/Ceiling mounted equipment	
	☐	Floor standing equipment	
	☐	Hand-held equipment	
	☒	Other: Variable equipment	
Modules/parts	Module/parts of test item	Type	Manufacturer
	<i>Data not provided</i>		
Accessories (not part of the test item)	Description	Type	Manufacturer
	<i>Data not provided</i>		
Documents as provided by the applicant.....:	Description	File name	Issue date
	LM960_HW_Use_Guide	LM960_HW_User_Guide_R03	2018-12-06

⁽³⁾ Only for Medical Equipment

Copy of marking plate:



Identification of the client

TELIT COMMUNICATION S.P.A
VIALE STAZIONE DI PROSECCO 5/B TRIESTE, 34010, ITALY

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	12-13-2018
Date (finish)	12-13-2018

Document history

Report number	Date	Description
2386ERM.002	12-17-2018	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 tests have been performed by the technical personnel: Koji Nishimoto.

Testing verdicts

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

Summary

Emission Test			
Report Section	Requirement – Test case	Verdict	Remark
A.1.	End User Device additional requirement	P	N/A
<u>Supplementary information and remarks:</u>			
1) None			

List of equipment used during the test

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
0018	Spectrum Analyzer	Keysight	N9010	2017/12	2018/12

Appendix A: Test results

Appendix A Content

A.1. END USER DEVICE ADDITIONAL REQUIREMENT.....12

A.1. END USER DEVICE ADDITIONAL REQUIREMENT

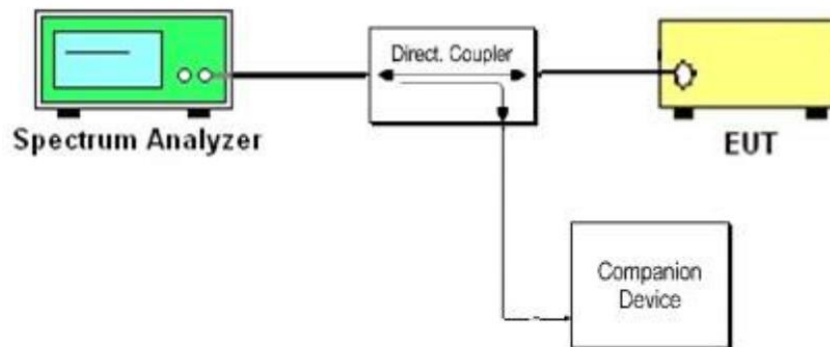
LIMITS:	Product standard :	FCC CFR 47, Part 96, Subpart 47
	Test standard :	KDB 940660 D01 Part 96 CBRS Eqpt v01 / WINFF-TS-0122-V1.0.0 CBRS CBSD Test Specification

FCC Part 96.47

(a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

(1) An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

TEST SETUP



The companion device is certified CBRS (FCC ID: ARA-CMP1K3X96). Where the companion Device connection with EUT is by radiated method.

TEST PROCEDURE:	
------------------------	--

Following procedure can be done by applying WINNF-TS-0122-V1.0.0 CBRS CBSD Test Specification, use the certified Telrad CBSD (FCC ID: ARA-CMP1K3X96) as companion device to show compliance with Part 96.47 requirement for End User Device(EUD):

1. Setup WINNF.PT.C.HBT.1 with 3640 -3660 MHz & power level 16dBm/MHz
2. Enable AP service(CBSD) from Telrad management software
3. Check EUD Tx Frequency and power
4. Disable AP service from Telrad management software i.e. service stopped serving the EUD
 - a.Check EUD stops transmission within 10 seconds
5. Setup WINNF.PT.C.HBT.1 with 3670 -3690 MHz & power level 10dBm/MHz
6. Enable AP service(CBSD) from Telrad management software
7. Check EUD Tx Frequency and power
8. Disable AP service from Telrad management software i.e. service stopped serving the EUD
 - a.Check EUD stops transmission within 10 seconds

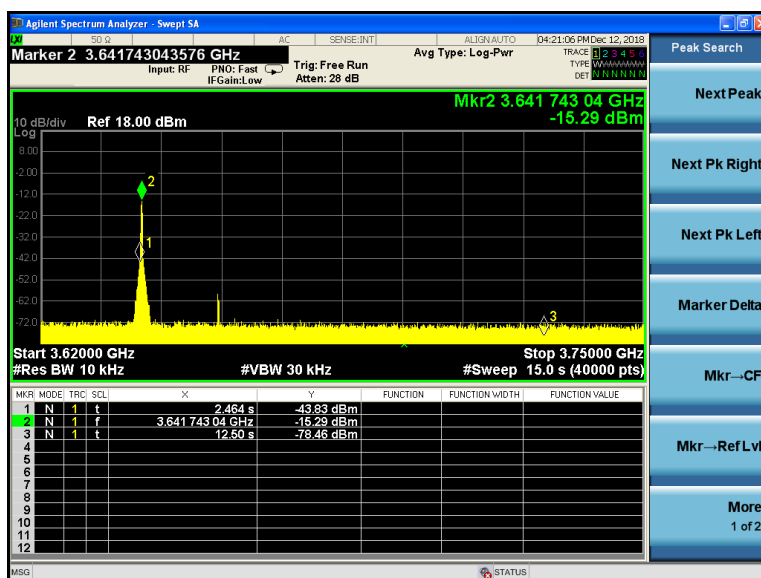
TEST SETUP (CONT.):

TESTED SAMPLES:

S/01

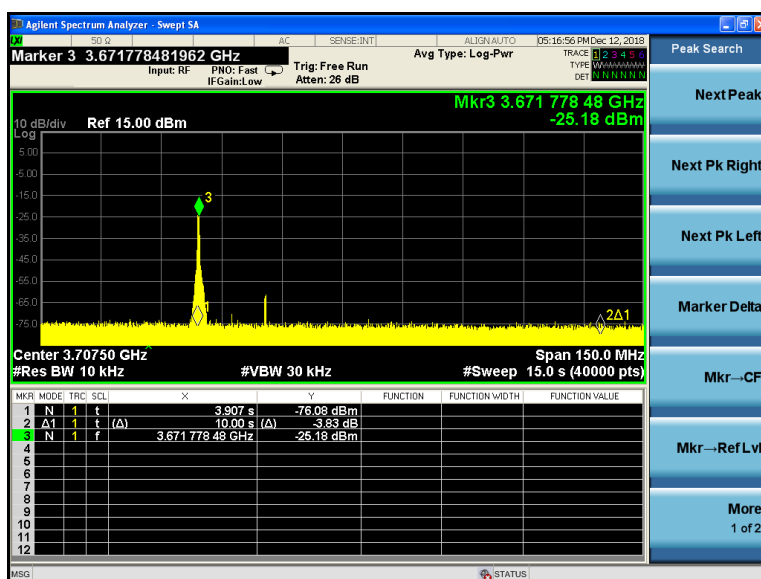
TEST RESULTS:

[Step 3 & 4]:



Result: As you can see the EUD changes its frequency and power and EUD stops transmission within 10 seconds of receiving instructions from the Telrad CBSD.

[Step 7 & 8]:



Result: As you can see the EUD changes its frequency and power and EUD stops transmission within 10 seconds of receiving instructions from the Telrad CBSD.