

RF Exposure Report

Report No.: SA170428E06D

FCC ID: RI7LN940A

Test Model: LN940A9

Received Date: Apr. 28, 2017

Test Date: June 23, 2017

Issued Date: Feb. 01, 2018

Applicant: Telit Communications S.p.A.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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**FCC Registration /
Designation Number:** 723255 / TW2022

Test Lab (B): Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
SA170428E06D	Original release.	Feb. 01, 2018

1 Certificate of Conformity

Product: LTE Cat9 PCI Express M.2 Module

Brand: Telit

Test Model: LN940A9

Sample Status: ENGINEERING SAMPLE

Applicant: Telit Communications S.p.A.

Test Date: June 23, 2017

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Wendy Wu , **Date:** Feb. 01, 2018
Wendy Wu / Specialist

Approved by : May Chen , **Date:** Feb. 01, 2018
May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna NO.	Brand	Model	Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type	Cable Length
1	TongDa	T-543-8201115-2	3.08 4.74	791~960MHz 1447.9~1606MHz	PIFA	I-PEX MHF IV	100mm
2	TongDa	T-543-8201115-1	4.17	698~803MHz	PIFA	I-PEX MHF IV	100mm
3	TongDa	T-543-8201115-3	5.99	1710~2700MHz	PIFA	I-PEX MHF IV	100mm
4	HongBo	260-23671	-1.33	703-748MHz	PIFA	I-PEX MHF IV	315mm
			-3.23	815-830MHz			
			-3.37	832-862MHz			
			-2.27	824-849MHz			
			-3.11	880-915MHz			
			-4.15	1448-1463MHz			
			-0.64	1710-1785MHz			
			0.18	1850-1915MHz			
			0.57	1920-1980MHz			
	HongBo	260-23672	-3.71	758-803MHz	PIFA	I-PEX MHF IV	439mm
			-0.95	860-875MHz			
			-3.07	791-821MHz			
			-0.97	869-894MHz			
			-3.5	925-960MHz			
			-5.32	1496-1511MHz			
			-0.09	1805-1880MHz			
			0.16	1930-1995MHz			
			-0.8	2110-2170MHz			

Antenna NO.	Brand	Model	Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type	Cable Length
5	SPEED	F.0G.UH-6010-003-00	-2.81	703-748MHz	PIFA	I-PEX MHF IV	315mm
			-1.53	815-830MHz			
			-1.96	832-862MHz			
			-2.59	880-915MHz			
			-4.19	1448-1463MHz			
			1.23	1710-1785MHz			
			0.26	1850-1883MHz			
			1.16	1915-1980MHz			
	SPEED	F.0G.UH-6010-004-00	-2.67	758-803MHz	PIFA	I-PEX MHF IV	439mm
			-2.42	791-821MHz			
			-2.33	860-894MHz			
			-0.58	925-960MHz			
			-0.17	1496-1511MHz			
			0.83	1805-1880MHz			
			-2.72	1930-1995MHz			
			-1.67	2110-2170MHz			
6	HongBo	260-23675	-2.68	703-748MHz	PIFA	I-PEX MHF IV	363mm
			-0.88	815-830MHz			
			-1.66	832-862MHz			
			-1.23	824-849MHz			
			1.35	880-915MHz			
			0.8	1448-1463MHz			
			2.03	1710-1785MHz			
			2.02	1850-1915MHz			
	HongBo	260-23676	0.57	1920-1980MHz	PIFA	I-PEX MHF IV	522mm
			-2.86	758-803MHz			
			0.51	860-875MHz			
			-1.19	791-821MHz			
			0.48	869-894MHz			
			-2.29	925-960MHz			
			-4.52	1496-1511MHz			
			-0.09	1805-1880MHz			
			-0.22	1930-1995MHz			
			-0.42	2110-2170MHz			

Antenna NO.	Brand	Model	Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type	Cable Length
7	SPEED	F.0G.UH-6011-003-00	-3.21	703-748MHz	PIFA	I-PEX MHF IV	363mm
			-2.73	815-830MHz			
			-2.48	832-862MHz			
			-3.32	880-915MHz			
			-1.86	1448-1463MHz			
			-0.57	1710-1785MHz			
			-0.63	1850-1883MHz			
			0.44	1915-1980MHz			
	SPEED	F.0G.UH-6011-004-00	-4	758-803MHz	PIFA	I-PEX MHF IV	522mm
			-3.43	791-821MHz			
			-1.22	860-894MHz			
			-2.06	925-960MHz			
			-1.83	1496-1511MHz			
			0.48	1805-1880MHz			
			-0.2	1930-1995MHz			
			-2.87	2110-2170MHz			

Set 1~3 were chosen for final test.

2.5 Calculation Result

FCC Rule Parts	Mode	Frequency Range (MHz)		Max. Tune-up Power		Antenna Gain (dBi)	Power Density (mW/cm ²)	
		Start	Stop	(dBm)	(mW)		Vaule	Limit
22H	WCDMA Band 5	824	849	24	251.189	3.08	0.10156	0.54933
22H	LTE Band 5	824	849	24	251.189	3.08	0.10156	0.54933
22H	LTE Band 26	824	849	24	251.189	3.08	0.10156	0.54933
24E	WCDMA Band 2	1850	1910	25	316.228	5.99	0.24988	1
24E	LTE Band 2	1850	1910	25	316.228	5.99	0.24988	1
24E	LTE Band 25	1850	1915	25	316.228	5.99	0.24988	1
27	WCDMA Band 4	1710	1755	25	316.228	5.99	0.24988	1
27	LTE Band 4	1710	1755	25	316.228	5.99	0.24988	1
27	LTE Band 7	2500	2570	25	316.228	5.99	0.24988	1
27	LTE Band 12	698	716	24	251.189	4.17	0.13054	0.46533
27	LTE Band 13	777	787	24	251.189	4.17	0.13054	0.518
27	LTE Band 17	704	716	24	251.189	4.17	0.13054	0.46933
27	LTE Band 30	2305	2315	25	316.228	5.99	0.24988	1
27	LTE Band 38	2570	2620	25	316.228	5.99	0.24988	1
27	LTE Band 41	2496	2690	25	316.228	5.99	0.24988	1
27	LTE Band 66	1710	1780	25	316.228	5.99	0.24988	1
90	LTE Band 26	814	824	24	251.189	3.08	0.10156	0.54266

Note: 1. Limit of Power Density = F/1500 (For frequency below 1500MHz)

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