



**RADIO TEST REPORT**

Report No: STS2107141H01

Issued for

Telit Communications S.p.A.

Viale Stazione di Prosecco 5/b Trieste 34010 Italy

<b>Product Name:</b>	SE150A4-NA
<b>Brand Name:</b>	Telit
<b>Model Name:</b>	SE150A4-NA
<b>Series Model:</b>	N/A
<b>FCC ID:</b>	RI7SE150A4NA
<b>Test Standard:</b>	FCC 47CFR §2.1091

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### Test Report Certification

**Applicant's Name**..... : Telit Communications S.p.A.  
Address ..... : Viale Stazione di Prosecco 5/b Trieste 34010 Italy  
**Manufacturer's Name** ..... : Telit Communications S.p.A.  
Address ..... : Viale Stazione di Prosecco 5/b Trieste 34010 Italy

**Product Description**

Product Name..... : SE150A4-NA  
Brand Name ..... : Telit  
Model Name ..... : SE150A4-NA  
Series Model..... : N/A

**Standards** ..... : FCC 47CFR §2.1091

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**Date of Test**.....:

Date of receipt of test item ..... : 20 July 2021  
Date (s) of performance of tests ..... : 20 July 2021 ~ 09 Aug. 2021  
Date of Issue..... : 09 Aug. 2021  
Test Result..... : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	09 Aug. 2021	STS2107141H01	ALL	Initial Issue





### 1. GENERAL INFORMATION

#### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	SE150A4-NA
Brand Name	Telit
Model Name	SE150A4-NA
Series Model	N/A
Model Difference	N/A
Product Description	<p>The EUT is SE150A4-NA</p> <p>Operation Frequency:</p> <p>WCDMA 1900: 1850 MHz ~1910MHz  WCDMA 1700: 1710 MHz ~1755MHz  WCDMA 850: 824 MHz ~849MHz  LTE Band 2:1850~1910MHz  LTE Band 4:1710~1755MHz  LTE Band 5:824~849MHz  LTE Band 7:2500~2570MHz  LTE Band 12:699~716MHz  LTE Band 13:777~787MHz  LTE Band 14:788~798MHz  LTE Band 17:704~716MHz  LTE Band 25:1850~1915MHz  LTE Band 26:814~849MHz  LTE Band 41:2555~2655MHz  LTE Band 66:1710~1780MHz  LTE Band 71:663~698MHz  BT/BLE: 2402~2480MHz  2.4G WLAN:  802.11b/g/n 20: 2412~2462 MHz  802.11n(40MHz):2422~2452MHz  5G WLAN:  802.11a/n (20MHz): 5180~5240MHz  802.11n(40MHz):5190~53100MHz  802.11a/n (20MHz): 5260~5320MHz  802.11n (40MHz):5270~5310MHz  802.11a/n (20MHz): 5500~5700MHz  802.11n(40MHz):5510~5670MHz  802.11a/n (20MHz): 5745~5825MHz  802.11n (40MHz):5755~5795MHz</p>



	Modulation Type:	WCDMA: QPSK; HSDPA:QPSK/16QAM; HSUPA:BPSK LTE: QPSK /16QAM BT/BLE: GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8DPSK(3Mbps) 2.4G WLAN: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 5G WLAN: 802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	WCDMA 850: 0.64dBi, WCDMA1900: 1.87dBi, WCDMA1700: 3.12dBi B2/B25:1.87dBi, B4/B66:3.12dBi, B5:0.91dBi, B7:1.55dBi, B12/ B17:0.95dBi, B13:2.23dBi, B14:2.18dBi,; B26:1.40dBi, B71:-0.48dBi, B41:3.20dBi BT/BLE 2.4G WLAN: 3.39dBi 5G WLAN: 2.1dBi
	Antenna Designation:	External Antenna
Rating	Input: 3.8V	
Hardware version number	V1.01	
Software version number	MOM.100001	

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



## 2. FCC 47CFR §2.1091 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula:  $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

### 2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

### 2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



## 2.5 TEST RESULT

Turn up

Mode	Detector	Turn up Power
WCDMA 1900	AV	25±1dBm
WCDMA 1700	AV	25±1dBm
WCDMA 850	AV	25±1dBm
LTE Band 2	AV	23±1dBm
LTE Band 4	AV	23±1dBm
LTE Band 5	AV	23±1dBm
LTE Band 7	AV	23±1dBm
LTE Band 12	AV	23±1dBm
LTE Band 13	AV	23±1dBm
LTE Band 14	AV	23±1dBm
LTE Band 17	AV	24±1dBm
LTE Band 25	AV	23±1dBm
LTE Band 26	AV	23±1dBm
LTE Band 41	AV	23±1dBm
LTE Band 66	AV	23±1dBm
LTE Band 71	AV	23±1dBm
GFSK	AV	4±1dBm
GFSK(BLE)	AV	-1±1dBm
2.4G WIFI(802.11n40)	AV	10±1dBm
5.2G WIFI(802.11n40)	AV	8±1dBm
5.3G WIFI(802.11a20)	AV	8±1dBm
5.6G WIFI(802.11n40)	AV	9±1dBm
5.8G WIFI(802.11a20)	AV	9±1dBm





Protocol	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain (dBi)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/c m <sup>2</sup> )	Result
WCDMA 1900	26	398.11	1.87	1.538	0.1218	1.000	Pass
WCDMA 1700	26	398.11	3.12	2.051	0.1625	1.000	Pass
WCDMA 850	26	398.11	0.64	1.159	0.0918	0.558	Pass
LTE Band 2	24	251.19	1.87	1.538	0.0769	1.000	Pass
LTE Band 4	24	251.19	3.12	2.051	0.1025	1.000	Pass
LTE Band 5	24	251.19	0.91	1.233	0.0616	0.558	Pass
LTE Band 7	24	251.19	1.55	1.429	0.0714	1.000	Pass
LTE Band 12	24	251.19	0.95	1.245	0.0622	0.474	Pass
LTE Band 13	24	251.19	2.23	1.671	0.0835	0.521	Pass
LTE Band 14	24	251.19	2.18	1.652	0.0826	0.529	Pass
LTE Band 17	25	316.23	0.95	1.245	0.0783	0.474	Pass
LTE Band 25	24	251.19	1.87	1.538	0.0769	1.000	Pass
LTE Band 26	24	251.19	1.4	1.380	0.0690	0.561	Pass
LTE Band 41	24	251.19	3.2	2.089	0.1044	1.000	Pass
LTE Band 66	24	251.19	3.12	2.051	0.1025	1.000	Pass
LTE Band 71	24	251.19	-0.48	0.895	0.0447	0.459	Pass
GFSK	5	3.1623	3.39	2.183	0.0014	1	Pass
GFSK(BLE)	0	1.0000	3.39	2.183	0.0004	1	Pass
2.4G WIFI(802.11n40)	11	12.5893	3.39	2.183	0.0055	1	Pass
5.2G WIFI(802.11n40)	9	7.9433	2.1	1.622	0.0026	1	Pass
5.3G WIFI(802.11a20)	9	7.9433	2.1	1.622	0.0026	1	Pass
5.6G WIFI(802.11n40)	10	10.0000	2.1	1.622	0.0032	1	Pass
5.8G WIFI(802.11a20)	10	10.0000	2.1	1.622	0.0032	1	Pass

**Multiple Evaluation**

$$\text{WIFI/1+WCDMA/1}=(0.0055/1)+(0.1625/1)=0.168 < 1$$

$$\text{BTI/1+WCDMA/1}=(0.0014/1)+(0.1625/1)=0.1639 < 1$$

$$\text{WIFI/1+LTE/1}=(0.0055/1)+(0.1025/1)=0.1080 < 1$$

$$\text{BTI/1+LTE/1}=(0.0014/1)+(0.1025/1)=0.1039 < 1$$

The Bluetooth and WLAN can't simultaneous transmission at the same time.

※※※※※END OF THE REPORT※※※※※