



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250800366005

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RF EXPOSURE EVALUATION REPORT

Application No.: SZCR2508003660TL
Applicant: UAB Teltonika Networks
Address of Applicant: K. Barsausko st. 66, Kaunas LT-51436 Lithuania
Manufacturer: TELTONIKA NETWORKS, UAB
Address of Manufacturer: K. Baršausko st. 66, LT-51436, Kaunas, Lithuania
Factory: TELTONIKA EMS, UAB
Address of Factory: Paluokesos st. 11, LT-33133, Moletai, Lithuania
Equipment Under Test (EUT):
EUT Name: Dual 5G Router
Model No.: RUTM52
Trade Mark: TELTONIKA
FCC ID: 2AET4RUTM52
Standard(s) : FCC Rules 47 CFR §2.1091
KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Receipt: 2025-08-19
Date of Evaluation: 2025-08-24 to 2025-09-22
Date of Issue: 2025-09-28

Evaluation Result:

Pass*

* In the configuration evaluated, the EUT complied with the standards specified above.

Kenx. Xu

Keny Xu

EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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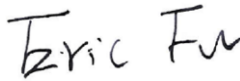
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-09-28		Original

Authorized for issue by:				
				
		Charlie Dai/Project Engineer		
				
		Eric Fu/Reviewer		



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3 General Information

3.1 General Description of E.U.T.

Product Type:	☐ Portable device
	☒ Mobile device
	☐ Fixed device

3.2 Details of E.U.T.

Power supply:	Power by switching adapter Adapter Model No.: ASSA13A-120150 Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12V, 1.5A, 18.0W
Cable(s):	DC cable from Adapter 200cm unshielded LAN cable 150cm unshielded 2 pcs WiFi antenna 150cm shielded 8 pcs Mobile antenna 9.5cm shielded 1 pcs GNSS antenna 300cm shielded
For 2.4G WIFI:	
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;802.11n(HT40):2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (DBPSK, DQPSK, CCK); 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Number of Channels:	802.11b/g/n(HT20):11;802.11n(HT40):7
Channel Spacing:	5MHz
Antenna Type:	RP-SMA Connector
Antenna Gain:	ANT 1 & ANT 2: 3.0dBi
For 5G WIFI:	
Operation Frequency/Number of channels (20MHz):	U-NII-1: 5180-5240MHz (4 Channels); U-NII-2A: 5260-5320MHz (4 Channels); U-NII-2C: 5500-5700MHz (11 Channels); U-NII-3: 5745-5825MHz (5 Channels)
Operation Frequency/Number of channels/(40MHz):	U-NII-1: 5190-5230MHz (2 Channels); U-NII-2A: 5270-5310MHz (2 Channels); U-NII-2C: 5510-5670MHz (5 Channels); U-NII-3: 5755-5795MHz (2 Channels)
Operation Frequency/Number of channels (80MHz):	U-NII-1: 5210MHz (1 Channel); U-NII-2A: 5290MHz (1 Channels); U-NII-2C: 5530-5610MHz (2 Channels); U-NII-3: 5775MHz (1 Channel)
Modulation Type:	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)

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Channel Spacing:	802.11a/n/ac 20: 20MHz; 802.11n/ac 40: 40MHz; 802.11ac 80: 80MHz;
DFS Function:	Master
TPC Function:	Support TPC function
Antenna Type:	RP-SMA Connector
Antenna Gain:	ANT 1 & ANT 2: 3.0dBi

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

3.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	



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3.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd.

Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

3.6 Deviation from Standards

None

3.7 Abnormalities from Standard Conditions

None



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4 FCC Radiofrequency radiation exposure limits

According to ANSI/IEEE C95.1-1992, the criteria listed in table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310

TABLE 1 TO § 1.1310(E)(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)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f ²)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824/f	2.19/f	*(180/f ²)	<30
30–300	27.5	0.073	0.2	<30
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

5 Measurement and Calculation

5.1 Maximum transmit power

For WIFI:

Antenna Gain: 3.0dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Mode	DG (dBi)	Max.Power	EIRP (dBm)	EIRP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio
2.4G WIFI	3	13.41	16.41	43.75221052	20	0.00870421	1	0.0087042
5G WIFI	3	15.66	18.66	73.45138682	20	0.01461265	1	0.0146127

Note: Refer to report No. SZCR250800366002, SZCR250800366003 for EUT test Max Power Value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

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For WCDMA/LTE/NR (Contains FCC ID: XMR2023RG520NNA)

Mode	Gain (dBi)	Max. Conducted Power (dBm)	Max.Power (dBm)	EIRP (mW)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio
LTE/NR Band 2	1.37	25	26.37	433.5108784	20	0.08624405	1	0.086244
LTE Band 4	1.37	25	26.37	433.5108784	20	0.08624405	1	0.086244
LTE/NR Band 5	1.18	25	26.18	414.9540426	20	0.08255229	0.549	0.1503685
LTE/NR Band 7	2.07	25	27.07	509.3308711	20	0.10132792	1	0.1013279
LTE/NR Band 12	1.18	25	26.18	414.9540426	20	0.08255229	0.466	0.1771508
LTE/NR Band 13	1.18	25	26.18	414.9540426	20	0.08255229	0.518	0.1593674
LTE/NR Band 14	1.18	25	26.18	414.9540426	20	0.08255229	0.525	0.1572425
LTE Band 17	1.18	25	26.18	414.9540426	20	0.08255229	0.469	0.1760177
LTE/NR Band 25	1.37	25	26.37	433.5108784	20	0.08624405	1	0.086244
LTE/NR Band 26	1.18	25	26.18	414.9540426	20	0.08255229	0.543	0.15203
LTE/NR Band 30	1.11	25	26.11	408.3193863	20	0.08123237	1	0.0812324
LTE/NR Band 38	2.07	28	30.07	1016.248693	20	0.20217578	1	0.2021758
LTE Band 41	2.07	28	30.07	1016.248693	20	0.20217578	1	0.2021758
NR Band 41	2.07	28	30.07	1016.248693	20	0.20217578	1	0.2021758
LTE/NR Band 48	0.58	22	22.58	181.1340093	20	0.03603538	1	0.0360354
LTE/NR Band 66	1.37	25	26.37	433.5108784	20	0.08624405	1	0.086244
LTE/NR Band 71	1.18	25	26.18	414.9540426	20	0.08255229	0.442	0.1867699
NR Band 77	0.58	28	28.58	721.1074792	20	0.14345944	1	0.1434594
NR Band 78	0.58	28	28.58	721.1074792	20	0.14345944	1	0.1434594

Note: The above power data is from the module report with FCC ID: XMR2023RG520NNA.



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Exposure condition for simultaneous transmission operations

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated_k term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1 \quad (C.1)$$

Remark:

a -number of fixed, mobile, or portable RF sources claiming exemption using the §1.1307(b)(3)(i)(B) formula for P_{th}, including existing exempt transmitters and those being added.

b -number of fixed, mobile, or portable RF sources claiming exemption using the applicable § 1.1307(b)(3)(i)(C) Table 1 formula for Threshold ERP, including existing exempt transmitters and those being added.

c -number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance.

P_i -the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

P_{th,i} -the exemption threshold power (P_{th}) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i.

ERP_j -the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j. ERP_{th,j}

-exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

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Evaluated_k -the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation.

Exposure Limit_k -either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable sources, as applicable

The Max. sum of the ratios = 2.4G WIFI+5G WIFI+LTE/NR= 0.009 +0.015+0.202 = 0.226 < 1

Therefore, the device is to qualify for simultaneous transmission SAR test exemption, the exemption report is in lieu of the SAR report.

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.



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6 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2508003660TL

-End of the Report-

