



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

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR241200497503

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RF EXPOSURE EVALUATION REPORT

Application No.: SZCR2412004975AT
Applicant: UAB Teltonika Networks
Address of Applicant: K. Baršausko st. 66, LT-51436, Kaunas, 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, Molėtai, Lithuania
Equipment Under Test (EUT):
EUT Name: 5G RedCap Router
Model No.: RUT271
Trade Mark: TELTONIKA
FCC ID: 2AET4RUT271
Standard(s) : FCC Rules 47 CFR §2.1091
FCC Rules 47 CFR §1.1310
KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Receipt: 2024-12-31
Date of Evaluation: 2025-01-10 to 2025-03-15
Date of Issue: 2025-03-20

Evaluation Result:	Pass*
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* 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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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-03-20		Original

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



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3 General Information

3.1 General Description of E.U.T.

Product Type:	<input type="checkbox"/> Portable device
	<input checked="" type="checkbox"/> Mobile device
	<input type="checkbox"/> Fixed device

3.2 Details of E.U.T.

Power supply:	Power by switching adapter Adapter 1 Model No.: ASSA107W-090100 Input: AC 100-240V, 50/60Hz, 0.45A Output: DC 9.0V, 1.0A, 9.0W Adapter 2 Model No.: ASSA107A-090100 Input: AC 100-240V, 50/60Hz, 0.45A Output: DC 9.0V, 1.0A, 9.0W		
Cable(s):	DC cable from Adapter 200cm unshielded LAN cable 154cm unshielded 1 pcs WIFI antenna 9.5cm shielded 2 pcs Mobile antenna 9.5cm 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 (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)		
Channel Spacing:	5MHz		
Number of Channels:	802.11b/g/n(HT20): 11, 802.11n(HT40):7		
Antenna Type:	SMA Dipole Antenna		
Antenna Gain:	4.81dBi		
For LTE/NR (Contains FCC ID: XMR2024RG255CGL):			
Characteristics	Description		
Radio System Type	<input checked="" type="checkbox"/> LTE		
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM		
Supported Frequency Range	Band	TX	RX
	LTE Band 2	1850 to 1910 MHz	1930 to 1990 MHz



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	LTE Band 4	1710 to 1755 MHz			2110 to 2155 MHz	
	LTE Band 5	824 to 849 MHz			869 to 894 MHz	
	LTE Band 7	2500 to 2570 MHz			2620 to 2690 MHz	
	LTE Band 12	699 to 716 MHz			729 to 746 MHz	
	LTE Band 13	777 to 787 MHz			746 to 756 MHz	
	LTE Band 14	788 to 798 MHz			758 to 768 MHz	
	LTE Band 17	704 to 716 MHz			734 to 746 MHz	
	LTE Band 25	1850 to 1915MHz			1930 to 1995 MHz	
	LTE Band 26 (814 to 824 MHz)	814 to 824MHz			859 to 869 MHz	
	LTE Band 26 (824 to 849 MHz)	824 to 849 MHz			869 to 894 MHz	
	LTE Band 30	2305 to 2315 MHz			2350 to 2360 MHz	
	LTE Band 38	2570 to 2620 MHz			2570 to 2620 MHz	
	LTE Band 41	2496 to 2690MHz			2496 to 2690MHz	
	LTE Band 42	3450 to 3550 MHz			3450 to 3550 MHz	
	LTE Band 42_ Part96	3550 to 3600 MHz			3550 to 3600 MHz	
	LTE Band 43	3700 to 3800 MHz			3700 to 3800 MHz	
	LTE Band 43_ Part96	3600 to 3700 MHz			3600 to 3700 MHz	
	LTE Band 48	3550 to 3700 MHz			3550 to 3700 MHz	
	LTE Band 66	1710 to 1780 MHz			2110 to 2200 MHz	
	LTE Band 70	1695 to 1710 MHz			1995 to 2020 MHz	
	LTE Band 71	663 to 698 MHz			617 to 652 MHz	
Supported Channel Bandwidth	LTE Band 2	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
		<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz			
	LTE Band 4	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
		<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz			
	LTE Band 5	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
	LTE Band 7	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz	
	LTE Band 12	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
	LTE Band 13	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz			
	LTE Band 14	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz			



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	LTE Band 17	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz		
	LTE Band 25	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz
		<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz		
	LTE Band 26(814-824)	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz
	LTE Band 26(824-849)	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz
		<input checked="" type="checkbox"/> 15 MHz			
	LTE Band30	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz		
	LTE Band38	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	LTE Band41	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	LTE Band42	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	LTE Band43	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	LTE Band48	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	LTE Band66	<input checked="" type="checkbox"/> 1.4 MHz	<input checked="" type="checkbox"/> 3 MHz	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz
		<input checked="" type="checkbox"/> 15MHz	<input checked="" type="checkbox"/> 20MHz		
	LTE Band70	<input checked="" type="checkbox"/> 5MHz	<input checked="" type="checkbox"/> 10MHz	<input checked="" type="checkbox"/> 15MHz	
	LTE Band71	<input checked="" type="checkbox"/> 5MHz	<input checked="" type="checkbox"/> 10MHz	<input checked="" type="checkbox"/> 15MHz	<input checked="" type="checkbox"/> 20MHz
HPUE Power Class:	Class 3 Class 2: LTE Band 38, 41, 42, 43				
Antenna Type:	R-SMA Dipole Antenna				
Antenna Gain:	4dBi Note: The antenna gain provided by the manufacturer.				
Radio System Type	<input checked="" type="checkbox"/> SA <input type="checkbox"/> NSA				
Modulation Type	DFT-s-Pi/2-BPSK, DFT-s-QPSK, DFT-s-16QAM, DFT-s-64QAM, DFT-s-256QAM, CP-QPSK, CP-16QAM, CP-64QAM, CP-256QAM				
Supported Frequency Range	Band	TX		RX	
	NR Band n2	1850 to 1910 MHz		1930 to 1990 MHz	
	NR Band n5	824 to 849 MHz		869 to 894 MHz	
	NR Band n7	2500 to 2570 MHz		2620 to 2690 MHz	
	NR Band n12	699 to 716 MHz		729 to 746 MHz	
	NR Band n13	777 to 787 MHz		746 to 756 MHz	
	NR Band n14	788 to 798 MHz		758 to 768 MHz	
	NR Band n25	1850 to 1915MHz		1930 to 1995 MHz	
	NR Band n26	814 to 824MHz		859 to 869 MHz	



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	(814 to 824 MHz)			
	NR Band n26 (824 to 849 MHz)	824 to 849 MHz	869 to 894 MHz	
	NR Band n30	2305 to 2315 MHz	2350 to 2360 MHz	
	NR Band n38	2570 to 2620 MHz	2570 to 2620 MHz	
	NR Band n41	2496 to 2690 MHz	2496 to 2690 MHz	
	NR Band n66	1710 to 1780 MHz	2110 to 2200 MHz	
	NR Band n70	1695 to 1710 MHz	1995 to 2020 MHz	
	NR Band n71	663 to 698 MHz	617 to 652 MHz	
	NR Band n77	3700 to 3980 MHz	3700 to 3980 MHz	
		3450 to 3550 MHz	3450 to 3550 MHz	
	NR Band n78	3700 to 3800 MHz	3700 to 3800 MHz	
		3450 to 3550 MHz	3450 to 3550 MHz	
Supported Channel Bandwidth	NR Band n2	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz
	NR Band n5	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz
	NR Band n7	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz
	NR Band n12	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz
	NR Band n13	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
	NR Band n14	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
	NR Band n25	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz
	NR Band n26 (814 to 824 MHz)	SCS 15kHz:		
		<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	
	NR Band n26	SCS 15kHz:		



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	(824 to 849 MHz)	<input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	NR Band n30	SCS 15kHz: <input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz		
	NR Band n38	SCS 30kHz: <input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz	
	NR Band n41	SCS 30kHz: <input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz	
	NR Band n66	SCS 15kHz: <input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	NR Band n70	SCS 15kHz: <input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	
	NR Band n71	SCS 15kHz: <input checked="" type="checkbox"/> 5 MHz	<input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz
	NR Band n77	SCS 30kHz <input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz	
	NR Band n78	SCS 30kHz <input checked="" type="checkbox"/> 10 MHz	<input checked="" type="checkbox"/> 15 MHz	<input checked="" type="checkbox"/> 20 MHz	
HPUE Power Class:	Class 3 Class 2: NR Band 38, 41, 77, 78				
Antenna Type:	R-SMA Dipole Antenna				
Antenna Gain:	Max. 4dBi Note: The antenna gain is provided by the manufacturer.				

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:

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

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

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

Test exemptions apply for devices used in general population/uncontrolled exposure environments, according to the SAR-based, or MPE-based exemption thresholds.

4.1 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of §1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1-mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph §1.1307(b)(3)(ii)(A).

The 1-mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

4.2 MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table B.1—Thresholds For Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	—	1.34	159 m	—	35.6 m	1,920 R ²
1.34	—	30	35.6 m	—	1.6 m	3,450 R ² /f ²
30	—	300	1.6 m	—	159 mm	3.83 R ²
300	—	1,500	159 mm	—	31.8 mm	0.0128 R ² f
1,500	—	100,000	31.8 mm	—	0.5 mm	19.2R ²
Subscripts L and H are low and high; λ is wavelength.						
From §1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

The table applies to any RF source (i.e. single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are

based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

For mobile devices that are not exempt per Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in §1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from §2.1091(c)(1); also in §1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

Limit calculation			
Frequency range	Frequency(MHz)	$R(\lambda/2\pi)(m)$	Threshold ERP(W)
300~1500MHz	915	0.0522	0.032
1500~100000MHz	2480	0.0193	0.007

4.3 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of $\lambda/4$.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.



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The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.



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The SAR-based exemption formula of §1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

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Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance(mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Limit calculation				
Frequency range(GHz)	Frequency(GHz)	X	Distance(cm)	Pth (mW)
0.3~1.5	0.915	1.474	0.5	8.133
1.5~6	2.48	1.905	0.5	2.717



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5 Measurement and Calculation

5.1 Maximum transmit power

For 2.4G WIFI:

Antenna Gain: 4.81dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency	Maximum Conducted Power [dBm]	Maximum EIRP [dBm]	Maximum Conducted Power (mW)	Maximum EIRP (mW)
2412	12.44	17.25	17.54	53.09

Note: Refer to report No. SZCR241200497502 for EUT test Max Power Value.

For LTE/NR:

Max. Antenna Gain: 4dBi

Worst condition Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
LTE/NR Band 71	665.5	4	25.00	26.85	34.77	0.1580	0.4437	11.92	8.48	8.48	Pass

Note: The EUT test Max Power Value refer to report for **LTE/NR (Contains FCC ID: XMR2024RG255CGL)**

5.2 RF Exposure Calculation

Remark: we used the maximum power between the conducted power and ERP/EIRP to perform RF exposure exemption evaluation.

For 2.4G WIFI:

The Max EIRP is 53.09mW. The best case gain of the antenna is 4.81dBi.

	Evaluation method	Exempt Limit(mW)	Verdict
<input type="checkbox"/>	Blanket 1 mW Blanket Exemption	1mW	N/A
<input type="checkbox"/>	MPE-based Exemption(ERP)	7mW(ERP)	N/A
<input checked="" type="checkbox"/>	SAR-based Exemption(P_{th})	3060mW	Yes

For LTE/NR:

The Max ERP is 484.17mW. The best case gain of the antenna is 4dBi.

	Evaluation method	Exempt Limit(mW)	Verdict
<input type="checkbox"/>	Blanket 1 mW Blanket Exemption	1mW	N/A
<input type="checkbox"/>	MPE-based Exemption(ERP)	7mW(ERP)	N/A
<input type="checkbox"/>	SAR-based Exemption(P_{th})	3060	N/A
<input checked="" type="checkbox"/>	SAR-based Exemption(P_{th})	2040f=1357.62mW	Yes

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 d_k term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

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

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 $\lambda/2\pi$, 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 = $53.09\text{mW}/3060\text{mW} + 484.17\text{mW}/1357.62\text{mW} = 0.374 < 1$

Therefore, the device is to qualify for simultaneous transmission 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 External and Internal Photos for SZCR2412004975AT

- End of the Report -