China Certification ICT Co., Ltd (Dongguan)





Report No.: CR230314564-00A

China Certification ICT Co., Ltd (Dongguan)



4.8 Duty Cycle:

Serial Number:	23N0-1	Test Date:	2023/05/06
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	N/A

Environmental Conditions:								
Temperature: (℃)	26.2	Relative Humidity: (%)	70	ATM Pressure: (kPa)	100.6			

Test Equipment List and Details:

Manufacturer	Description	Model	Model Serial Number		Calibration Due Date	
R&S	Spectrum Analyzer	FSV40	101943	2022/07/25	2023/07/24	
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A	
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A	

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Test Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	Duty Factor (dB)			
802.11b	12.5362	/	Not constant	80	/			
802.11g	2.0000	/	Not constant	500	/			
802.11n ht20	5.5435	/	Not constant	180	/			
802.11n ht40	5.5072	/	Not constant	182	/			
802.11ax hew20	5.5362	/	Not constant	181	/			
802.11ax hew40	5.5797	/	Not constant	179	/			
Note: Test only was performed at Chain 0.								

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5. RF EXPOSURE EVALUATION

5.1 MPE-Based Exemption

5.1.1 Applicable Standard

According to §1.1307(b)(3)(i)

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP 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 (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)			
0.3-1.34	1,920 R ² .			
1.34-30	$3,450 \text{ R}^2/\text{f}^2.$			
30-300	3.83 R^2 .			
300-1,500	$0.0128 \text{ R}^2 \text{f}.$			
1,500-100,000	19.2R ² .			

5.1.2 Measurement Result

				Exemption ERP		Maximum			
Operation Modes	Frequency (MHz)	λ/2π (mm)	Distance (mm)	(mW)	(dBm)	Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	ERP (dBm)	MPE- Based Exemption
WLAN 2.4G	2412-2462	19.40	200	768	28.85	17.0	8.4	23.25	Compliant
WLAN 5.2G	5180-5240	9.12	200	768	28.85	13.0	9.1	19.95	Compliant
WLAN 5.3G	5260-5320	8.98	200	768	28.85	17.0	9.1	23.95	Compliant
WLAN 5.6G	5500-5720	8.35	200	768	28.85	14.5	9.1	21.45	Compliant
WLAN 5.8G	5745-5825	8.20	200	768	28.85	17.5	9.1	24.45	Compliant

Note:

The Maximum Conducted Power including Tune-up Tolerance was declared by manufacturer. The WLAN 2.4G/5G can't transmission simultaneously.

Result: The device compliant the MPE-Based Exemption at 20cm distances.

5.2 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

5.2.1 Applicable Standard

According to RSS-102 Clause 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where *f* is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Mode	Frequency (MHz)	Antenna Gain	Conducted output power including Tune-up Tolerance	EIRP		Exemption limits (mW)
		(dBi)	(dBm)	(dBm)	(mW)	
WLAN 2.4G	2412-2462	8.4	17.0	25.4	346.74	2684
WLAN 5.2G	5180-5240	9.1	13.0	22.1	162.18	4525
WLAN 5.3G	5260-5320	9.1	17.0	26.1	407.38	4573
WLAN 5.6G	5500-5720	9.1	14.5	23.6	229.09	4714
WLAN 5.8G	5745-5825	9.1	17.5	26.6	457.09	4857

Calculated Data:

Note:

The Maximum Conducted Power including Tune-up Tolerance was declared by manufacturer. The WLAN 2.4G/5G can't transmission simultaneously.

So the device is compliance exemption from Routine Evaluation Limits -RF exposure Evaluation.

Result: Compliance

==== END OF REPORT =====