

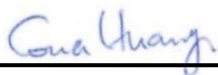
RF EXPOSURE EVALUATION REPORT

FCC ID : 2AWNP-AP20-48
Equipment : 5G AP-Indoor (B48+n48)
Brand Name : Celona
Model Name : AP20-48
Applicant : Celona Inc.
900 E. Hamilton Avenue,
Suite 200,CAMPBELL,CA
95008. United States.
Manufacturer : Celona Inc.
900 E. Hamilton Avenue,
Suite 200,CAMPBELL,CA
95008. United States.
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA311121	Rev. 01	Initial issue of report	Jun. 23, 2023

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	5G AP-Indoor (B48+n48)
Brand Name	Celona
Model Name	AP20-48
FCC ID	2AWNP-AP20-48
Wireless Technology and Frequency Range	LTE Band 48: 3550 MHz ~ 3700 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz
Mode	LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: QPSK/64QAM/256QAM
EUT Stage	Identical Prototype

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

Radio Tech	Band Number	Maximum Average Power (dBm)			Maximum EIRP / 10MHz(dBm)
		Ant 0	Ant 1	Ant 0+1	
LTE	B48	22.5	22.5	25.5	28.63
5GNR	n48	23.5	23.5	26.5	28.69

Radio Tech	Band Number	Maximum Average Power (dBm)			Maximum EIRP / 10MHz(dBm)
		Ant 2	Ant 3	Ant 2+3	
LTE	B48	22.0	22.0	25.0	28.70

3. Determination of exemption

Per 1.1307(b)(3), (i) For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th} \text{ (mW)} = ERP_{20cm} (d / 20)^x \text{ for distance } d \leq 20cm$$

$$P_{th} \text{ (mW)} = ERP_{20cm} \text{ for distance } 20cm < d \leq 40cm$$

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

$$ERP_{20cm} \text{ (mW)} \begin{array}{ll} 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz:} & 2040 f \\ 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz:} & 3060 \end{array}$$

- (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	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

4. RF Exposure Evaluation

4.1. Standalone assessment

General Note:

1. P_i is mean 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
2. P_{th} is mean the exemption threshold power (P_{th}) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i .
3. In this report was used Part1.1307(b)(3)(i)(B) perform RF Exposure evaluation
4. The distance of 20cm is for this device
5. The sum of the ratios of the applicable terms for MPE-based and MPE shall be less than 1, to determine LTE + NR simultaneous transmission exposure compliance.

Band	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Maximum Total EIRP (dBm)	Maximum EIRP / 10MHz (dBm)	Maximum Total ERP (dBm)	Maximum Total EIRP (mW)	Maximum Total ERP (mW)	P_i (dBm)	P_i (mW)	Part1.1307 option(b) Threshold (mW)	Part1.1307 option(b) P_i/P_{th}
LTE Band 48	6.59	25.50	32.1	28.63	29.94	1618.08	986.28	29.94	986.28	3060.000	0.322
5G NR n48	6.59	26.50	33.1	28.69	30.94	2037.04	1241.65	30.94	1241.65	3060.000	0.406

Maximum LTE P_i/P_{th} Ratio	Maximum 5G NR P_i/P_{th} Ratio	Σ (P_i/P_{th} Ratio) of LTE + 5G NR
0.322	0.406	0.728

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.