



## Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-6334/18-01-06 MPE (FCC\_IC)

Certification numbers and labeling requirements	
FCC ID	AHV-CPAC1054
IC number	10111A-CPAC1054
HVIN (Hardware Version Identification Number)	CPAC-1054
PMN (Product Marketing Name)	CPAC-1054
FVIN (Firmware Version Identification Number)	1.0.0
HMN (Host Marketing Name)	-/-

This report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

### Document authorised:



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### EUT technologies:

Technologies:	Max. power conducted:	Max. antenna gain:	Min. pathloss:	result for
<b>WLAN</b> 5250 MHz to 5350MHz & 5470MHz to 5725MHz	12.9 dBm (AVG)	Measured :5.3 dBi	-- (if applicable)	FCC
	12.7 dBm (AVG)	Measured :5.3 dBi	-- (if applicable)	IC

**NOTE:** Worst case result see CTC advanced test report 1-6334/18-01-03

### Prediction of MPE limit at given distance - FCC

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

where: S = Power density  
 P = Power input to the antenna  
 G = Antenna gain  
 R = Distance to the center of radiation of the antenna  
 PG = Output Power including antenna gain

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
300 -1500	f/1500	30
<b>1500 - 100000</b>	<b>1.0</b>	30

where f = Frequency (MHz)

Prediction: worst case

	Technology	WLAN
	Frequency	5700 MHz
P	Declared max power input to the antenna	12.9 dBm
R	Distance	20 cm
G	Antenna gain	5.3 dBi
S	MPE limit for uncontrolled exposure	1.0000 mW/cm <sup>2</sup>
	<b>Calculated Power density:</b>	0.0132 mW/cm <sup>2</sup>
	<b>Calculated percentage of limit:</b>	1.32%

**This prediction demonstrates the following:**

The power density levels for FCC at a distance of 20 cm are below the maximum levels allowed by regulations.

### Prediction of MPE limit at given distance - IC

RSS-102, Issue 5, 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  $4.49/f^{0.5} \text{ W}$  (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  $1.31 \times 10^{-2} f^{0.6834} \text{ W}$  (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).

Prediction: worst case

		5 GHz
	Technology	WLAN
	Frequency	5700 MHz
P	Max power input to the antenna	12.7 dBm
R	Distance	20 cm
G	Antenna gain	5.3 dBi
	<b>Maximum EIRP</b>	63.1 mW
	<b>Exclusion Limit from above:</b>	4.83 W
	<b>Calculated percentage of limit:</b>	1.31%

**Conclusion:** RF exposure evaluation is not required.

For applications where minimum distance to radiating element is 20cm Annex C of RSS-102 should be filled out.