



Maximum Permissible Exposure Evaluation

FCC ID: 2BCSZ-CPEL128

1. Client Information

Applicant	:	IPlumVPN B.V
Address	:	Zodiakplein 44 2516 CD The Hague, Netherlands
Manufacturer	:	IPlumVPN B.V
Address	:	Zodiakplein 44 2516 CD The Hague, Netherlands

2. General Description of EUT

EUT Name	:	Capri
Models No.	:	CP-EL128
Model Different	:	----
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels 802.11n(HT40): 7 channels
	Antenna Gain:	1.16dBi PCB Antenna
Power Rating	:	Input:DC 5V
Software Version	:	N/A
Hardware Version	:	N/A
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the evaluation report used the EUT(HC-C-202308-0125-02-01-2#).

MPE Calculations for WIFI

1. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

2. Exposure Evaluation:

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: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna

3. Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0 .

This means that:

$$\sum \text{ of MPE ratios } \leq 1.0$$

4. Test Result:

2.4G WiFi

Test Mode	Ant.	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]	Limit (mW/ cm ²)
11B-SISO	Ant1	14.81	14±1	15	1.16	20	0.0082	1
	Ant2	14.80	14±1	15	1.16	20	0.0082	1
11G-SISO	Ant1	14.18	14±1	15	1.16	20	0.0082	1
	Ant2	13.79	13±1	14	1.16	20	0.0065	1
11N20-MIMO	Ant1	11.18	11±1	12	1.16	20	0.0041	1
	Ant2	11.37	11±1	12	1.16	20	0.0041	1
11N40-MIMO	Ant1	10.11	10±1	11	1.16	20	0.0033	1
	Ant2	10.61	10±1	11	1.16	20	0.0033	1

Maximum Simultaneous transmission MPE Ratios for 2.4GHz WiFi.

Maximum MPE ratio Ant1	Maximum MPE ratio Ant2	ΣMPE	Limit	Results
0.0082	0.0082	0.0164	1.0	PASS



5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz and Bluetooth LE

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.0164 < \text{limit } 1\text{mW} / \text{cm}^2$. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

6. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----END OF REPORT-----

