



RF Exposure Report

IC ID: 2ACSY-AX821
FCC 47 CFR Part 15 Subpart C

Product : Hy-Fi Powerline Adapter

Trade Name : Neurona

Model Number : AX821

Issued for

Neurona LLC

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Issued by

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MPE Calculation

1. Antenna Gain:

PIFA Antenna: 2.4~2.5GHz: 3.0 dBi/ 5.15~5.85 GHz: 4.0 dBi

2. EUT Operation Condition:

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

3. Exposure Evaluation:

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

$$S = (P \cdot G) / (4\pi \cdot R^2)$$

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

4. Test Result:

2.4G BAND MPE Result						
Mode	N _{TX}	Frequency (MHz)	Power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
802.11b	1	2412	17.91	3.0	20	0.0245
802.11g	1	2412	16.88	3.0	20	0.0194
802.11n (HT20)	2	2412	16.87	3.0	20	0.0193
802.11n (HT40)	2	2437	17.61	3.0	20	0.0229

Note:

(1) N_{TX}= Number of Transmit Antennas

(2) RF Output power specifies that Maximum Conducted Peak Output Power.

5G BAND 1 MPE Result						
Mode	N _{TX}	Frequency (MHz)	Power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
802.11a	1	5240	14.71	4.0	20	0.0148
802.11n (HT20)	2	5240	14.62	4.0	20	0.0145
802.11n (HT40)	2	5230	14.01	4.0	20	0.0126

Note:

(3) N_{TX}= Number of Transmit Antennas

(4) RF Output power specifies that Maximum Conducted Peak Output Power.



5G BAND 4 MPE Result						
Mode	N _{TX}	Frequency (MHz)	Power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
802.11a	1	5785	15.31	4.0	20	0.0169
802.11n (HT20)	2	5785	15.37	4.0	20	0.0172
802.11n (HT40)	2	5755	14.73	4.0	20	0.0148

Note:

(5) N_{TX}= Number of Transmit Antennas

(6) RF Output power specifies that Maximum Conducted Peak Output Power.

5. Conclusion:

FCC and IC:

FCC: As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),
IC: As specified in 4.2 RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

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 WLAN 2.4G BAND and 5.8G Band

MPE limit S: 1 mW/ cm²

The MPE is calculated as $0.0222 \text{ mW/cm}^2 < \text{limit } 1 \text{ mW/cm}^2$. 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.