

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

FCC ID: 2BEVQWF-001

EUT Specification

| | |
|---------------------------------------|--|
| EUT | Wireless HDMI Display Adapter |
| Model Number | WF-001 |
| Rating | DC 5V |
| Frequency band (Operating) | <input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input checked="" type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz |
| Device category | <input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) |
| Exposure classification | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²) |
| Antenna diversity | <input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity |
| Max. output power (peak power) | IEEE 802.11b: 16.39 dBm IEEE 802.11g: 15.65dBm IEEE 802.11n-HT20: 15.88dBm 5180 MHz to 5240 MHz: 12.68dBm |
| Antenna gain (Max) | 2.4GHz WIFI: 3.04dBi 5.8G WIFI:2.22dBi |
| Evaluation applied | <input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation |

Limits for Maximum Permissible Exposure(MPE)

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm ²) | Average Time |
|--|------------------------------|------------------------------|------------------------------------|--------------|
| (A) Limits for Occupational/Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/Uncontrol Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100000 | -- | -- | 1 | 30 |

Friis transmission formula: $Pd = \frac{P_{out} * G}{4 * \pi * R^2}$

Where

Pd = Power density in mW/cm^2 , P_{out} = output power to antenna in Mw

G = gain of antenna in linear scale, $\pi = 3.1416$

R = distance between observation point and center of the radiator in $cm = 20cm$

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

2.4GHz WIFI:

| Operation Mode | Channel Number | Channel Frequency (MHz) | Measurement Level (dBm) | Limit (dBm) | Verdict |
|----------------|----------------|-------------------------|-------------------------|-------------|---------|
| 802.11b | 1 | 2412 | 16.12 | 30 | PASS |
| | 6 | 2437 | 16.32 | 30 | PASS |
| | 11 | 2462 | 16.39 | 30 | PASS |
| 802.11g | 1 | 2412 | 15.48 | 30 | PASS |
| | 6 | 2437 | 15.62 | 30 | PASS |
| | 11 | 2462 | 15.65 | 30 | PASS |
| 802.11n (HT20) | 1 | 2412 | 15.68 | 30 | PASS |
| | 6 | 2437 | 15.80 | 30 | PASS |
| | 11 | 2462 | 15.88 | 30 | PASS |

| Operating Mode | Test Channel | Tune up tolerance (dBm) | Max tune up conducted power(dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/ cm2) | Power density Limits (mW/ cm2) |
|----------------|--------------|-------------------------|----------------------------------|------------------------|-----------------|---------------------|---------------------------------|--------------------------------|
| 802.11b | 1 | 16±1 | 17 | 50.119 | 3.04 | 2.014 | 0.020078 | 1 |
| | 6 | 16±1 | 17 | 50.119 | 3.04 | 2.014 | 0.020078 | 1 |
| | 11 | 16±1 | 17 | 50.119 | 3.04 | 2.014 | 0.020078 | 1 |
| 802.11g | 1 | 15±1 | 16 | 50.119 | 3.04 | 2.014 | 0.015949 | 1 |
| | 6 | 16±1 | 17 | 50.119 | 3.04 | 2.014 | 0.020078 | 1 |
| | 11 | 16±1 | 17 | 50.119 | 3.04 | 2.014 | 0.020078 | 1 |
| 802.11n (HT20) | 1 | 16±1 | 17 | 39.811 | 3.04 | 2.014 | 0.020078 | 1 |
| | 6 | 16±1 | 17 | 39.811 | 3.04 | 2.014 | 0.020078 | 1 |
| | 11 | 16±1 | 17 | 31.623 | 3.04 | 2.014 | 0.020078 | 1 |

5.8GHz WIFI:

UNII-1:

| Operation Mode | Channel Number | Channel Frequency (MHz) | Measurement Level (dBm) | Limit (dBm) | Verdict |
|----------------|----------------|-------------------------|-------------------------|-------------|---------|
| | | | Ant1 | | |
| 802.11a | 36 | 5180 | 11.86 | 24 | PASS |
| | 40 | 5200 | 10.97 | 24 | PASS |
| | 48 | 5240 | 11.58 | 24 | PASS |
| 11n HT20 | 36 | 5180 | 12.68 | 24 | PASS |
| | 40 | 5200 | 12.57 | 24 | PASS |
| | 48 | 5240 | 12.27 | 24 | PASS |

| Operating Mode | Test Channel | Tune up tolerance (dBm) | Max tune up conducted power(dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/cm ²) | Power density Limits (mW/cm ²) |
|----------------|--------------|-------------------------|----------------------------------|------------------------|-----------------|---------------------|---|--|
| 802.11a | 36 | 12±1 | 13 | 19.953 | 2.22 | 1.667 | 0.006618 | 1 |
| | 40 | 11±1 | 12 | 15.849 | 2.22 | 1.667 | 0.005257 | 1 |
| | 48 | 12±1 | 13 | 19.953 | 2.22 | 1.667 | 0.006618 | 1 |
| 802.11n HT20 | 36 | 13±1 | 14 | 25.119 | 2.22 | 1.667 | 0.008332 | 1 |
| | 40 | 13±1 | 14 | 25.119 | 2.22 | 1.667 | 0.008332 | 1 |
| | 48 | 12±1 | 13 | 19.953 | 2.22 | 1.667 | 0.006618 | 1 |

The Product unsupported at the same time to Transmitting. According to KDB 447498, and no simultaneous SAR measurement is required.

Signature:



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