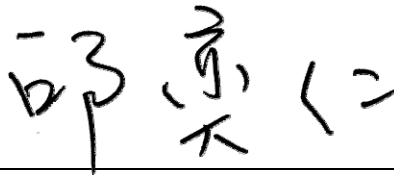


MPE REPORT

案 號： 1905C079
產 品 名 稱： AX1500 Wi-Fi 6 路由器
型 號： Archer AX10
申 請 廠 商（ 名 稱 ）： 聯洲國際有限公司
申 請 廠 商（ 地 址 ）： 新北市板橋區中山路一段 156 號 13 樓

According to : LP0002 第 5.20.2 節

報告簽署人：



發 行 日 期： 108 年 08 月 06 日

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

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

Table for Filed Antenna:

For 2.4G:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		3101502558	Dipole	Weld	3.82
2		3101502557	Dipole	Weld	3.82

Note: This EUT supports CDD, and all antennas have the same gain,

Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows:

For power spectral density measurements, $N_{ANT} = 2$, $N_{SS} = 1$.

So Directional gain = $G_{ANT} + \text{Array Gain} = 10 \log (N_{ANT} / N_{SS}) \text{ dB} = 3.82 + 10 \log (2/1) \text{ dB} = 6.83$.

Then, the power density limit is $8 - (6.83 - 6) = 7.17$.

For power measurements, Array Gain = 0 dB ($N_{ANT} \leq 4$), so the Directional gain = 3.82.

For 5G:

Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Ant.
1		3101502560	I-PEX	N/A	4.37	UNII-1
2		3101502559	I-PEX	N/A	4.37	UNII-1
1		3101502560	I-PEX	N/A	5.80	UNII-3
2		3101502559	I-PEX	N/A	5.80	UNII-3

Note: 1. This EUT supports CDD, and all antennas have the same gain,

Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows:

For UNII-1 Non-Beamforming function,

For power spectral density measurements, $N_{ANT} = 2$, $N_{SS} = 1$.

So Directional gain = $G_{ANT} + \text{Array Gain} = 10 \log (N_{ANT} / N_{SS}) \text{ dB} = 4.37 + 10 \log (2/1) \text{ dB} = 7.38$. Then, the power spectral density limit is $17 - 7.38 + 6 = 15.62$.

For power measurements, Array Gain = 0 dB ($N_{ANT} \leq 4$), so the Directional gain = 4.37.

For UNII-3 Non-Beamforming function,

For power spectral density measurements, $N_{ANT} = 2$, $N_{SS} = 1$.

So Directional gain = $G_{ANT} + \text{Array Gain} = 10 \log (N_{ANT} / N_{SS}) \text{ dB} = 5.80 + 10 \log (2/1) \text{ dB} = 8.81$. Then, the power spectral density limit is $30 - 8.81 + 6 = 27.19$.

For power measurements, Array Gain = 0 dB ($N_{ANT} \leq 4$), so the Directional gain = 5.80.

2. For UNII-1 Beamforming function, Beamforming Gain: 3.00 dB.

So Directional gain = $4.37 + 3.00 = 7.37$. Then, output power limit is $30 - 7.37 + 6 = 28.63$, the power density limit is $17 - 7.37 + 6 = 15.63$.

For UNII-3 Beamforming function, Beamforming Gain: 3.00 dB.

So Directional gain = $5.80 + 3.00 = 8.80$. Then, output power limit is $30 - 8.80 + 6 = 27.20$, the power density limit is $30 - 8.80 + 6 = 27.20$.

TEST RESULTS:

For 2.4GHz

測試頻道: IEEE 802.11n(HT20)

測試模式: 發射

檢測器: RMS

測試日期: 108/06/22

環境溫度: 23°C

環境濕度: 64%

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3.82	2.4099	22.90	194.9845	0.09352988	1	Complies

For 5GHz

Non-Beamforming

For UNII-1

測試頻道: IEEE 802.11a

測試模式: 發射

檢測器: RMS

測試日期: 108/06/22

環境溫度: 23°C

環境濕度: 64%

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
4.37	2.7353	26.02	399.9447	0.21774609	1	Complies

For UNII-3

測試頻道: IEEE 802.11ax (HE40)

測試模式: 發射

檢測器: RMS

測試日期: 108/06/22

環境溫度: 23°C

環境濕度: 64%

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5.80	3.8019	26.28	424.6196	0.32132933	1	Complies

Beamforming

For UNII-1

測試頻道: IEEE 802.11n (HT20)

測試模式: 發射

檢測器: RMS

測試日期: 108/06/22

環境溫度: 23°C

環境濕度: 64%

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
7.37	5.4576	26.06	403.6454	0.43848059	1	Complies

For UNII-3

測試頻道: IEEE 802.11n (HT20)

測試模式: 發射

檢測器: RMS

測試日期: 108/06/22

環境溫度: 23°C

環境濕度: 64%

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
8.80	7.5858	25.96	394.4573	0.59559408	1	Complies

Note: The evaluated distance is 20cm.

結束