

MPE REPORT

案 號： 1909C126
產 品 名 稱： AC1200 無線 MU-MIMO Gigabit 嵌牆式基地台
型 號： tp-link
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：



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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 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	2.68
2	N/A	N/A	PCB	N/A	2.83

Note:

This EUT supports CDD, and antenna gains are not equal, so Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi, that is Directional gain = $10\log[(10^{2.68/20} + 10^{2.83/20})^2 / 2]$ dBi = 5.77.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	2.44
2	N/A	N/A	PCB	N/A	2.94

This EUT supports CDD, and antenna gains are not equal, so.

(1) For Non Beamforming Function:

Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$ dBi, that is Directional gain = $10\log[(10^{2.44/20} + 10^{2.94/20})^2 / 2]$ dBi = 5.70.

(2) For With Beamforming Function:

Beamforming Gain: 3 dB. So Directional gain = 2.94 + 3 = 5.94.

TEST RESULTS:

For 2.4GHz:

測試頻道: IEEE 802.11n (HT40)

測試模式: 發射

檢測器: RMS

測試日期: 108/09/30

環境溫度: 24°C

環境濕度: 60%

Directional gain (dBi)	Directional Gain (numeric)	Max. Average Output Power (dBm)	Max. Average Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
5.77	3.7757	23.06	202.3019	0.15204	1	Complies

For 5GHz Non Beamforming

測試頻道: IEEE 802.11ac (VHT40) /
5.2 GHz 頻帶

測試模式: 發射

檢測器: RMS

測試日期: 108/09/30

環境溫度: 24°C

環境濕度: 60%

Directional gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
5.70	3.7154	23.40	218.7762	0.16179	1	Complies

測試頻道: IEEE 802.11ac (VHT20) /
5.8 GHz 頻帶

測試模式: 發射

檢測器: RMS

測試日期: 108/09/30

環境溫度: 24°C

環境濕度: 60%

Directional gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
5.70	3.7154	23.40	218.7762	0.16179	1	Complies

For 5GHz With Beamforming

測試頻道: IEEE 802.11ac (VHT20) /
5.2 GHz 頻帶

測試模式: 發射

檢 測 器: RMS

測試日期: 108/09/30

環境溫度: 24°C

環境濕度: 60%

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
5.94	3.9264	23.36	216.7704	0.16941	1	Complies

測試頻道: IEEE 802.11ac (VHT20) /
5.8 GHz 頻帶

測試模式: 發射

檢 測 器: RMS

測試日期: 108/09/30

環境溫度: 24°C

環境濕度: 60%

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
5.94	3.9264	23.35	216.2719	0.16902	1	Complies

Note: The evaluated distance is 20cm.

結束