

1.1 適用標準：

依據國家通訊傳播委員會低功率射頻電機技術規範 5.20.2 節之規定，若受測物於正常操作模式下，其發射機距離人體 20 公分以上者，可測試最大暴露允許值（Maximum Permissible Exposure (MPE)）以證明其符合電波暴露量之要求。

限制如下：

(1) 職業性/可控制之暴露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (minutes)
0.3 - 3.0	614	1.63	*100	6
3 - 30	1842/f	4.89/f	*900/f ²	6
30 - 300	61.4	0.163	1.0	6
300 - 1,500	---	---	f/300	6
1,500 - 100,000	---	---	5.0	6

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

(2) 一般人/不可控制之暴露

頻率範圍 (MHz)	電場強度 (V/m)	磁場強度 (A/m)	功率密度 (mW/cm ²)	平均時間 (minutes)
0.3 - 3.0	614	1.63	*100	30
3 - 30	1842/f	4.89/f	*180/f ²	30
30 - 300	27.5	0.073	1.0	30
300 - 1,500	---	---	f/1500	30
1,500 - 100,000	---	---	1.0	30

註 1：標記*表平面波等效功率密度。

註 2：f 表測試頻率，單位：MHz。

Maximum Permissible Exposure (MPE) Evaluation

2.4GHz mode: BT

The worst case: BDR mode

Power measurement:

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)
Low	1.84	0.00153	1
Mid	1.72	0.00149	1
High	1.86	0.00154	1

Prediction of MPE limit at a given distance

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 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

Maximum output power at antenna input terminal:	1.86	(dBm)
Maximum output power at antenna input terminal:	1.534616983	(mW)
Tune-Up power Tolerance:	1	dB
Duty cycle:	100	(%)
Maximum Pav :	1.931968317	(mW)
Antenna gain (typical):	-1.5	(dBi)
Maximum antenna gain:	0.707945784	(numeric)
Prediction distance:	20	(cm)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 20 (cm)	0.0002722	(mW/cm ²)

Measurement Result:

The predicted power density level at 20 cm is 0.0002722 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm².

2.4GHz mode: Wifi

The worst case: 802.11g mode

Power measurement:

802.11g

Cable loss = 0	Output Power		Limit (dBm)
CH	Detector		
	PK	AV	
	(dBm)	(dBm)	
Low	11.20	0.94	30.00
Mid	11.72	1.47	
High	11.52	1.73	

Prediction of MPE limit at a given distance

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

$$S = \frac{P}{4\pi R^2}$$

Where: S = Power density

P = Power input to 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

Maximum output power at antenna input terminal:	11.72	(dBm)
Maximum output power at antenna input terminal:	14.85935642	(mW)
Tune-Up power Tolerance:	1	dB
Duty cycle:	100	(%)
Maximum Pav :	18.7068214	(mW)
Antenna gain (typical):	-1.5	(dBi)
Maximum antenna gain:	0.707945784	(numeric)
Prediction distance:	20	(cm)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 20 (cm)	0.0026360	(mW/cm ²)

Measurement Result:

The predicted power density level at 20 cm is 0.002636 mW/cm².. This is below the uncontrolled exposure limit of 1 mW/cm².

5725MHz – 5850MHz Mode:

The worst case of Average power a mode: refer to NCC test report for detail measurement date.

Power measurement:

2*2

Mode	Freq(MHz)	Output Chain (dBm)		Combine Output Power (dBm)	Limit(dBm)	Result
		Chain A	chain B			
N HT20	5745	5745	7.31	4.92	9.29	30
	5785	5785	5.88	5.35	8.63	30
	5825	5825	6.35	5.37	8.90	30

Prediction of MPE limit at a given distance

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 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

Maximum output power at antenna input terminal:	9.29	(dBm)
Maximum output power at antenna input terminal:	8.49180475	(mW)
Tune-Up power Tolerance:	1	dB
Duty cycle:	100	(%)
Maximum Pav :	10.69054879	(mW)
Antenna gain (typical):	-1.5	(dBi)
Maximum antenna gain:	0.707945784	(numeric)
Prediction distance:	20	(cm)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 20 (cm)	0.0015064	(mW/cm ²)

Measurement Result

The predicted power density level at 20 cm is 0.0015064 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm².

Simultaneous transmission mode

2.4GHz mode + (5725MHz – 5850MHz) Mode:

Prediction frequency:	2.4	(GHz)
Power density at predication frequency at 20 (cm)	0.0026360	(mW/cm ²)

Prediction frequency:	5	(GHz)
Power density at predication frequency at 20 (cm)	0.0015064	(mW/cm ²)
2.4GHz + 5GHz Power density at predication frequency at 20 (cm) distance	0.0041424	(mW/cm ²)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)

The predicted power density level at 20 cm is 0.0041424 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm².

~ End of Report ~