

1 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-15000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

www.tw.sgs.com

Member of SGS Group

1.2 Antenna Designation

Antenna gain has been evaluated in 2.4GHz as below, the worst is used for MPE calculation.

Antenna Type	Supplier	Antenna Model No.	Freq. (MHz)	Transmitter Chain	Peak Antenna Gain (dBi)	MIMO Antenna Gain (dBi)	Worst Antenna Gain
External Di-pole antenna	LARSEN	R380500314	2.4GHz	Ch 0 & Ch 1	1.6	4.61	
	LAIRD	WTS 2450	2.4GHz	Ch 0 & Ch 1	2.1	5.11	V
Internal Printed Antenna	N/A	N/A	2.4GHz	Ch0	1.1	4.98	
	N/A	N/A	2.4GHz	Ch1	2.7		

Antenna gain has been evaluated in 5GHz as below, the worst is used for MPE calculation.

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Transmitter Chain	Peak Antenna Gain (dBi)	MIMO Antenna Gain (dBi)	Worst Antenna Gain
External di-pole antenna	LARSEN	R380500314	5150~5250	Ch 0 & Ch 1	5	8.01	V
			5250~5350	Ch 0 & Ch 1	5	8.01	V
			5470~5725	Ch 0 & Ch 1	5	8.01	V
			5725~5850	Ch 0 & Ch 1	5	8.01	V
	LAIRD	WTS 2450	5150~5250	Ch 0 & Ch 1	2.6	5.61	
			5250~5350	Ch 0 & Ch 1	2.6	5.61	
			5470~5725	Ch 0 & Ch 1	2.6	5.61	
			5725~5850	Ch 0 & Ch 1	3.4	6.41	
Internal Printed Antenna	N/A	N/A	5150~5250	Ch 0	4.7	7.56	
			5250~5350	Ch 0	4.6	7.66	
			5470~5725	Ch 0	4.8	7.86	
			5725~5850	Ch 0	4.7	7.08	
			5150~5250	Ch 1	4.4	7.56	
			5250~5350	Ch 1	4.7	7.66	
			5470~5725	Ch 1	4.9	7.86	
			5725~5850	Ch 1	3.4	7.08	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

www.tw.sgs.com

Member of SGS Group

1.3 Maximum Permissible Exposure (MPE) Evaluation

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

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

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. out-put Power EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail
BT	2402	20	4.4	2.1	4.47	0.001	1.000	Pass
WLAN 2.4G	2402	20	23.33	5.11	698.23	0.139	1.000	Pass
WLAN 5G	5180	20	21.27	8.01	847.23	0.169	1.000	Pass

Operation Mode	Power Density (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit	Σ(E-Field Strength / Limit)	Pass / Fail
BT	0.001	1.00	0.001	0.3085	Pass
WLAN 2.4G	0.139	1.00	0.139		
WLAN 5G	0.169	1.00	0.169		

~ End of Report ~

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd.

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

www.tw.sgs.com

Member of SGS Group