



MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Standard Applicable 1.1

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	Electric Field	Magnetic Field	Power Density	Averaging Time		
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(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	1	1	F/1500	30		
1500-15000	/	/	1.0	30		

F = frequency in MHz

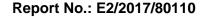
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SGS Taiwan Ltd.

^{* =} Plane-wave equipment power density





1.2 Maximum Permissible Exposure (MPE) Evaluation

802.1	802.11b Aux1						
СН	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit		RESULT	
1	2412	1	12.76	1 Watt =	30.00	dBm	PASS
6	2437	1	13.03	1 Watt =	30.00	dBm	PASS
11	2462	1	13.40	1 Watt =	30.00	dBm	PASS

MPE Prediction (802.11b 2412~2462)

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

Max. output power including tune-up tolerancel:	13.40	(dBm)
Max. output power including tune-up tolerancel:	21.877616	(mW)
Duty cycle:	98.86	(%)
Maximum Pav :	21.628211	(mW)
Peak Antenna gain (Maximum):	4.06	(dBi)
Peak Antenna gain (linear):	2.5468303	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:		(MHz)
wipe limit for uncontrolled exposure at prediction frequency:		(mW/cm2)
Power density at predication frequency at 20 (cm)	0.011	(mW/cm2)
	*	

Measurement Result

The predicted power density level at 20 cm is 0.011 mW/cm2.

This is below the uncontrolled exposure limit of 1 mW/cm2 at 2462MHz.

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1.3 Maximum Permissible Exposure (MPE) Evaluation

802.1	802.11g Aux1							
СН	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit		RESULT		
1	2412	6	11.81	1 Watt =	30.00	dBm	PASS	
6	2437	6	11.89	1 Watt =	30.00	dBm	PASS	
11	2462	6	11.97	1 Watt =	30.00	dBm	PASS	

MPE Prediction (802.11g 2412~2462)

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

Max. output power including tune-up tolerancel:	11.97	(dBm)
Max. output power including tune-up tolerancel:	15.739829	(mW)
Duty cycle:	93.39	(%)
Maximum Pav :	14.699426	(mW)
Peak Antenna gain (Maximum):	4.06	(dBi)
Peak Antenna gain (linear):	2.5468303	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:		(MHz)
ivipe limit for uncontrolled exposure at prediction frequency:	I I	(mW/cm2)
Power density at predication frequency at 20 (cm)	0.007	(mW/cm2)
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Measurement Result

The predicted power density level at 20 cm is 0.007 mW/cm2.

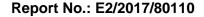
This is below the uncontrolled exposure limit of 1 mW/cm2 at 2462MHz.

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1.4 Maximum Permissible Exposure (MPE) Evaluation

802.11n_HT20M Aux1							
СН	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)			RESULT	
1	2412	MCS0	10.89	1 Watt =	30.00	dBm	PASS
6	2437	MCS0	10.94	1 Watt =	30.00	dBm	PASS
11	2462	MCS0	10.98	1 Watt =	30.00	dBm	PASS

MPE Prediction (802.11n20 2412~2462)

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

Max. output power including tune-up tolerance:	10.98	(dBm)
Max. output power including tune-up tolerancel:	12.531412	(mW)
Duty cycle:	92.62	(%)
Maximum Pav :	11.606594	(mW)
Peak Antenna gain (Maximum):	4.06	(dBi)
Peak Antenna gain (linear):	2.5468303	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:		(MHz)
ivipe limit for uncontrolled exposure at prediction frequency:		(mW/cm2)
Power density at predication frequency at 20 (cm)	0.006	(mW/cm2)
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Measurement Result

The predicted power density level at 20 cm is 0.006 mW/cm2.

This is below the uncontrolled exposure limit of 1 mW/cm2 at 2462MHz.

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