



# RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

## EUT Specification

Product Name	:	Show Home App 300L Ultimate Light
Model Name	:	SL90
FCC ID	:	OXGSL90
Operating frequency	:	2412-2462MHz
Numbers of Channel	:	11 Channels
Type of Modulation	:	802.11b: DSSS(DBPSK/DQPSK/CCK) 802.11g/n: OFDM(BPSK/QPSK/16QAM/64QAM)
Antenna installation	:	Internal PCB Antenna
Antenna Gain	:	1dBi
Power supply	:	For Adapter: Model: XY36S-2401500L-UO Input: AC 120V, 50/60Hz, 1.0A Max Output: DC 24V, 1.5A
Device category	:	Mobile (>20cm separation)



Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm <sup>2</sup> )	Average Time
<b>(A) Limits for Occupational/Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

**Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$**

Where

$P_d$ = Power density in mW/cm<sup>2</sup>

$P_{out}$ =output power to antenna in Mw

G= gain of antenna in linear scale

$\pi$ =3.1416

R= distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.



## Measurement Result

Modulation	Maximum Peak Output Power (dBm)		
	Low Channel	Middle Channel	High Channel
802.11b	13.26	12.62	11.05
802.11g	14.02	13.14	12.18
802.11n-HT20	14.58	13.29	12.23

Operating Mode	Test Channel	Tune up tolerance (dBm)	Max tune up conducted power(dBm)	Output Peak power (mW)	Ant. Gain (dBi)	Ant. Gain (numeric)	Power density at 20cm (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
802.11b	1	13±1	14	25.12	1	1.259	0.006291	1
	6	14±1	15	31.62	1	1.259	0.007920	1
	11	14±1	15	31.62	1	1.259	0.007920	1
802.11g	1	12±1	13	19.95	1	1.259	0.004997	1
	6	13±1	14	25.12	1	1.259	0.006291	1
	11	13±1	14	25.12	1	1.259	0.006291	1
802.11n-H T20	1	11±1	12	15.85	1	1.259	0.003969	1
	6	12±1	13	19.95	1	1.259	0.004997	1
	11	12±1	13	19.95	1	1.259	0.004997	1

Signature

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