

# FCC RF Exposure

EUT Description: SMART TV BOX

Model No.: X9, X9 II

FCC ID: 2AGN7-X9

## 1. Limits

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)

### 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> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) 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 <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F = frequency in MHz

Formula:  $Pd = (P_{out} * G) / (4 * \pi * r^2)$

Where :

Pd = power density in mW/cm<sup>2</sup>,

P<sub>out</sub> = output power to antenna in mW;

G = gain of antenna in linear scale,

$\pi = 3.14$ ;

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

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

## 2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

## 3. Test Result of RF Exposure Evaluation

	Output power (dBm/W)	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
802.11b	16.60/0.0457	0	0.0090	1.0	Pass
802.11g	15.24/0.0334	0	0.0066	1.0	Pass
802.11n(HT20)	15.20/0.0331	0	0.0065	1.0	Pass
802.11n(HT40)	12.50/0.0177	0	0.0035	1.0	Pass