

## 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)

FCC ID: **2AMYC-SC-43UK700N**

### EUT Specification

<b>EUT</b>	<b>LED TV</b>
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz <input type="checkbox"/> Others
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max. output power</b>	16.97dBm for 802.11b; 15.19dBm for 802.11g; 12.31dBm for 802.11n(HT20); 10.52dBm for 802.11n(HT40);
<b>Antenna gain (Max)</b>	2.24dBi ( for per antenna port Max) 5.25dBi for MIMO(Ant1+Ant2 Directional Gain)
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

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: $P_d = \frac{P_{out} * G}{4 * \pi * R^2}$

Where

$P_d$  = Power density in  $mW/cm^2$ ,  $P_{out}$  = 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,  $1mW/cm^2$ . 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

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Level (dBm)			Limit (dBm)	Verdict
			Ant1	Ant2	Sum		
802.11b	1	2412	16.37	16.22	--	30	PASS
	6	2437	<b>16.97</b>	16.78	--	30	PASS
	11	2462	16.26	16.24	--	30	PASS
802.11g	1	2412	15.12	14.21	--	30	PASS
	6	2437	15.09	15.19	--	30	PASS
	11	2462	14.53	13.30	--	30	PASS
802.11n (HT20)	1	2412	11.39	12.31	14.88	30	PASS
	6	2437	10.44	11.87	14.22	30	PASS
	11	2462	9.98	9.32	12.67	30	PASS
802.11n (HT40)	3	2422	9.16	10.52	12.90	30	PASS
	6	2437	8.21	10.17	12.31	30	PASS
	9	2452	9.07	9.14	12.12	30	PASS

Antenna 1

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	16±1	17	50.12	2.24	1.675	0.0167015	1
	6	17±1	18	63.10	2.24	1.675	0.0210268	1
	11	16±1	17	50.12	2.24	1.675	0.0167015	1
802.11g	1	15±1	16	39.81	2.24	1.675	0.0132659	1
	6	15±1	16	39.81	2.24	1.675	0.0132659	1
	11	15±1	16	39.81	2.24	1.675	0.0132659	1
802.11n (H20)	1	11±1	12	15.85	2.24	1.675	0.0052817	1
	6	10±1	11	12.59	2.24	1.675	0.0041954	1
	11	10±1	11	12.59	2.24	1.675	0.0041954	1
802.11n (H40)	3	9±1	10	10	2.24	1.675	0.0033323	1
	6	8±1	9	7.94	2.24	1.675	0.0026458	1
	9	9±1	10	10	2.24	1.675	0.0033323	1

Antenna 2:

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	16±1	17	50.12	2.24	1.675	0.0167015	1
	6	17±1	18	63.10	2.24	1.675	0.0210268	1
	11	16±1	17	50.12	2.24	1.675	0.0167015	1
802.11g	1	14±1	15	31.62	2.24	1.675	0.0105367	1
	6	15±1	16	39.81	2.24	1.675	0.0132659	1
	11	13±1	14	25.12	2.24	1.675	0.0083707	1
802.11n (HT20)	1	12±1	13	19.95	2.24	1.675	0.0066479	1
	6	12±1	13	19.95	2.24	1.675	0.0066479	1
	11	9±1	10	10	2.24	1.675	0.0033323	1
802.11n (HT40)	3	11±1	12	15.85	2.24	1.675	0.0052817	1
	6	10±1	11	12.59	2.24	1.675	0.0041954	1
	9	9±1	10	10	2.24	1.675	0.0033323	1

MPE Result:

Operation Mode	Channel Number	Channel Frequency (MHz)	Power density at 20cm (mW/ cm <sup>2</sup> )			Power density Limits (mW/cm <sup>2</sup> )	Verdict
			Ant1	Ant2	Sum		
802.11b	1	2412	0.0167015	0.0167015	--	1	PASS
	6	2437	0.0210268	0.0210268	--	1	PASS
	11	2462	0.0167015	0.0167015	--	1	PASS
802.11g	1	2412	0.0132659	0.0105367	--	1	PASS
	6	2437	0.0132659	0.0132659	--	1	PASS
	11	2462	0.0132659	0.0083707	--	1	PASS
802.11n (HT20)	1	2412	0.0052817	0.0066479	0.0119296	1	PASS
	6	2437	0.0041954	0.0066479	0.0108433	1	PASS
	11	2462	0.0041954	0.0033323	0.0075277	1	PASS
802.11n (HT40)	3	2422	0.0033323	0.0052817	0.008614	1	PASS
	6	2437	0.0026458	0.0041954	0.0068412	1	PASS
	9	2452	0.0033323	0.0033323	0.0066646	1	PASS

Signature:



Print: Lisa Wang

Title: Manager

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