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：**2ACWIWG43UX410**

EUT Specification

EUT	LED TV
Frequency band (Operating)	☒WLAN: 2.412GHz ~ 2.462GHz ☐WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐WLAN: 5.745GHz ~ 5825GHz ☐Others
Device category	☐Portable (<20cm separation) ☒Mobile (>20cm separation) ☐Others ___
Exposure classification	☐Occupational/Controlled exposure (S = 5mW/cm2) ☒General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☐Single antenna ☒Multiple antennas ☐Tx diversity ☐Rx diversity ☐Tx/Rx diversity
Max. output power	17.12dBm for 802.11b; 14.69dBm for 802.11g; 11.09dBm for 802.11n(HT20); 9.76dBm for 802.11n(HT40);
Antenna gain (Max)	4.0dBi (for per antenna port Max) 7.01dBi for MIMO(Ant1+Ant2 Directional Gain)
Evaluation applied	☒MPE Evaluation ☐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^2)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	**--**	**--**	**F/300**	**6**
1500-100000	**--**	**--**	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	**--**	**--**	**F/1500**	**6**
1500-100000	**--**	**--**	**1**	**30**

Friis transmission formula: Pd=(Pout*G)\(4*pi*R2)

Where
Pd= Power density in mW/cm^2, Pout=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
Pd the limit of MPE, 1mW/cm2. 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	15.49	16.02	--	30	PASS
	6	2437	**17.12**	15.88	--	30	PASS
	11	2462	15.59	15.36	--	30	PASS
802.11g	1	2412	14.69	13.91	--	30	PASS
	6	2437	13.92	14.41	--	30	PASS
	11	2462	13.12	12.20	--	30	PASS
802.11n (HT20)	1	2412	10.02	11.09	13.60	28.99	PASS
	6	2437	9.11	9.33	12.26	28.99	PASS
	11	2462	10.05	8.94	12.54	28.99	PASS
802.11n (HT40)	3	2422	8.36	9.76	12.13	28.99	PASS
	6	2437	7.42	8.77	11.16	28.99	PASS
	9	2452	7.22	7.61	10.43	28.99	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/ cm2)	Power density Limits (mW/ cm2)
802.11b	1	15±1	16	39.811	4	2.512	0.019894	1
	6	17±1	18	63.096	4	2.512	0.031530	1
	11	16±1	17	50.119	4	2.512	0.025045	1
802.11g	1	15±1	16	39.811	4	2.512	0.019894	1
	6	14±1	15	31.623	4	2.512	0.015803	1
	11	13±1	14	25.119	4	2.512	0.012552	1
802.11n	1	10±1	11	12.589	4	2.512	0.006291	1
(HT20)	6	9±1	10	10.000	4	2.512	0.004997	1
	11	10±1	11	12.589	4	2.512	0.006291	1
802.11n	3	8±1	9	7.943	4	2.512	0.003969	1
(HT40)	6	7±1	8	6.310	4	2.512	0.003153	1
	9	7±1	8	6.310	4	2.512	0.003153	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/ cm2)	Power density Limits (mW/ cm2)
802.11b	1	16±1	17	50.119	4	2.512	0.025045	1
	6	16±1	17	50.119	4	2.512	0.025045	1
	11	15±1	16	39.811	4	2.512	0.019894	1
802.11g	1	14±1	15	31.623	4	2.512	0.015803	1
	6	14±1	15	31.623	4	2.512	0.015803	1
	11	12±1	13	19.953	4	2.512	0.009971	1
802.11n	1	11±1	12	15.849	4	2.512	0.007920	1
(HT20)	6	9±1	10	10.000	4	2.512	0.004997	1
	11	9±1	10	10.000	4	2.512	0.004997	1
802.11n	3	10±1	11	12.589	4	2.512	0.006291	1
(HT40)	6	9±1	10	10.000	4	2.512	0.004997	1
	9	8±1	9	7.943	4	2.512	0.003969	1

MPE Result:

Operation Mode	Channel Number	Channel Frequency (MHz)	Power density at 20cm (mW/ cm^2)			Power density Limits (mW/cm^2)
			Ant1	Ant2	Sum	
802.11b	1	2412	0.019894		--	1
	6	2437	0.031530	0.025045	--	1
	11	2462	0.025045	0.025045	--	1
802.11g	1	2412	0.019894	0.019894	--	1
	6	2437	0.015803	0.015803	--	1
	11	2462	0.012552	0.015803	--	1
802.11n (HT20)	1	2412	0.006291	0.009971	0.016262	1
	6	2437	0.004997	0.00792	0.012917	1
	11	2462	0.006291	0.004997	0.011288	1
802.11n (HT40)	3	2422	0.003969	0.004997	0.008966	1
	6	2437	0.003153	0.006291	0.009444	1
	9	2452	0.003153	0.004997	0.008150	1

Signature:

Print: Lisa Wang
Title: Manager
Date: 2018-06-05