RF EXPOSURE EVALUATION

EUT Specification

EUT	10.1-inch Digital Picture Frame
Model Number	RPF010101
FCC ID	2BNB7RPF010101
Antenna Gain	2.0dBi
Operation Frequency	2412 MHz to 2462 MHz
Modulation	802.11b: DSSS(DBPSK/DQPSK/CCK) 802.11g/n: OFDM(BPSK/QPSK/16QAM/64QAM)
Power Supply	AC 120V/60Hz
Max. output power	IEEE 802.11b: 18.19 dBm IEEE 802.11g: 21.59 dBm IEEE 802.11n-HT20: 21.6 dBm

Test Requirement:

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)

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= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

R= distance between observation point and center of the radiator in cm=20cm

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Antenna gain: 2.0dBi

WIFI:

Mode	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain （Numeric）	Evaluation result (mW/cm^2)	Power density Limits (mW/cm^2)
802.11b	2412	18.19	18±1	19	1.58	0.024968	1
	2437	18.11	18±1	19	1.58	0.024968	1
	2462	17.9	18±1	19	1.58	0.024968	1
802.11g	2412	21.59	22±1	23	1.58	0.062717	1
	2437	21.53	22±1	23	1.58	0.062717	1
	2462	21.52	22±1	23	1.58	0.062717	1
802.11n HT20	2412	21.5	22±1	23	1.58	0.062717	1
	2437	21.6	22±1	23	1.58	0.062717	1
	2462	21.39	21±1	22	1.58	0.049818	1

Signature:

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