

## 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: 2AQKA-E20G

### EUT Specification

EUT	Wifi Digital Photo Frame
<b>Frequency band (Operating)</b>	<input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input checked="" type="checkbox"/> Others: FDD Band II: 1852.40MHz~1907.60MHz FDD Band V: 826.40MHz~846.60MHz FDD Band 2: 1850.7 MHz – 1909.3 MHz FDD Band 4: 1710.7 MHz – 1754.3 MHz FDD Band 12: 699.7 MHz – 715.3 MHz
<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 checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Antenna gain (Max)</b>	FDD Band II: 3 dBi (Provided by customer) FDD Band V: 3 dBi (Provided by customer) FDD Band 2: 3 dBi (Provided by customer) FDD Band 4: 3 dBi (Provided by customer) FDD Band 12: 3 dBi (Provided by customer)
<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<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.

### Max Measurement Result

Operating Mode	Measured Power	Tune up tolerance	Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits (mW/cm <sup>2</sup> )
	(dBm)	(dBm)	(dBm)	(dBi)	(mW/ cm <sup>2</sup> )	
WCDMA b2	22.36	22.36 ±1	23.36	3	0.0860	1
WCDMA b5	22.81	22.81 ±1	23.81	3	0.0954	0.5509
LTE BAND 2	24.04	24.04 ±1	25.04	3	0.1267	1
LTE BAND 4	24.86	24.86 ±1	25.86	3	0.1530	1
LTE BAND 12	25.39	25.39 ±1	26.39	3	0.1729	0.4665

**Result:** No Standalone SAR test is required.