

FCC RF Exposure

EUT Description: Face Recognition Device

Model No.: H1689R

FCC ID: 2AWLQ-H1689R

Equipment type: Fixed Device

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

Where :

P_d = power density in mW/cm²,

P_{out} = output power to antenna in mW;

G = gain of antenna in linear scale,

π = 3.14;

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

P_d is the limit of MPE, 1 mW/cm². 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/ mW)	Antenna Gain(dBi)	Gain-numeral	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
802.11b	17.43/55.33	2.0	1.585	0.01745	1.0	Pass
802.11g	18.80/75.86	2.0	1.585	0.02392	1.0	Pass
802.11n(20)	18.70/74.13	2.0	1.585	0.02338	1.0	Pass

Turn-up power	
Mode	Peak power range(dBm)
WIFI	10.00-19.00

WIFI	Output power (dBm/ mW)	Antenna Gain(dBi)	Gain-numeral	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
	19.00/79.43	2.0	1.585	0.02405	1.0	Pass

Conclusion: No SAR is required