

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: 2ALU5G402RX

EUT Specification

EUT	4K HDMI Extender Wireless Transmitter
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☒ WLAN: 5.18GHz ~ 5.24GHz ☒ WLAN: 5.745GHz ~ 5.825GHz ☐ Others:
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others _____
Exposure classification	☐ Occupational/Controlled exposure ☒ General Population/Uncontrolled exposure
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	WiFi 5.2G ANT1: 2.91dBi WiFi 5.2G ANT2: 2.5dBi WiFi 5.8G ANT1: 2.87dBi WiFi 5.8G ANT2: 2.6dBi
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	30
1500-100000	--	--	1	30

Friis transmission 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

$\pi = 3.1416$

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

P_d the limit of MPE. 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 (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/ cm ²)	Power density Limits (mW/cm ²)
WiFi 5.2G ANT1	14.62	14.62 ±1	15.62	2.91	0.0142	1
WiFi 5.2G ANT2	13.81	13.81 ±1	14.81	2.5	0.0107	1
WiFi 5.8G ANT1	10.29	10.29 ±1	11.29	2.87	0.0052	1
WiFi 5.8G ANT2	9.29	9.29 ±1	10.29	2.6	0.0039	1
WiFi 5.2G MIMO	16.62	16.62 ±1	17.62	5.72	0.0429	1
WiFi 5.8G MIMO	12.45	12.45 ±1	13.45	5.75	0.0166	1

Result: No Standalone SAR test is required.

