Product Name: IPTV Set-top box

Model No.: MAG425A, IM4410; IM4410 VI; IM4410 VO; MAG424; MAG424 VI; MAG424 VO; MAG424A; MAG424A VI; MAG424A VO IM4410w3; IM4410w3 VI; IM4410w3 VO; MAG424Aw3; MAG424Aw3 VI; MAG424Aw3 VO; MAG424w3; MAG424w3 VI; MAG424w3 VO

FCC ID: 2AUIR-IM010BXXX1

RF Exposure Evaluation

1.1 RF Exposure Compliance Requirement

1.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—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

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2)

Where

Pd = power density in mW/cm2

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 id 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.

1.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

1.1.3 EUT RF Exposure Evaluation

Antenna Gain: 2.66dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.000 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

2.4G WIFI: 802.11n20

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm^2)	Limit	Result
Highest	2462	17.70	58.88	0.022	1.0	PASS

Note: Refer to report No. BLA-EMC-201909-A0402 for EUT test Max Conducted Peak Output Power value. The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation Requirement