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Maximum Permissible Exposure Evaluation

FCC ID: 2AGKB-KA1235

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)

EUT Specification

Product Name	Android TV Box
Trade Mark	/
Model/Type reference	KA2
Listed Model(s)	KA1, KA1 PRO, KA2 PRO, KA3, KA3 PRO, KA5, KA5 PRO, KA6, OC-STB-01, OC-STB-02, OC-STB-03
Model Different:	All these models are identical in the same PCB, layout and electrical circuit, The difference is trade mark and appearance color.
Frequency band (Operating)	BT: 2402 MHz ~ 2480MHz WLAN: 2412MHz ~ 2462MHz RLAN: 5180MHz ~ 5240MHz 5745MHz ~ 5825MHz
Device category	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	BT: 1dBi WLAN Antenna 1 gain: 3.44dBi WLAN Antenna 2 gain: 3.62dBi WLAN Antenna 1 and 2 directional gain: 6.54dBi RLAN Antenna 1 gain: 3.18dBi RLAN Antenna 2 gain: 2.25dBi RLAN Antenna 1 and 2 directional gain: 5.74dBi
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

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1500-100000	--	--	1	30
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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

π = 3.1416

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

P_d the limit of MPE 1mW/cm². 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.

Measurement Result

Only show the value of the worst antenna

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
BLE	1	4.95	5±1	6	0.00100	1.000	PASS
GFSK	1	5.09	5±1	6	0.00100	1.000	PASS
π /4-DQPSK	1	7.09	7±1	8	0.00158	1.000	PASS
8-DPSK	1	7.57	7±1	8	0.00158	1.000	PASS
802.11b	3.62	17.50	17±1	18	0.02889	1.000	PASS
802.11g	3.44	16.88	17±1	18	0.02772	1.000	PASS
802.11n(HT20)	6.54	16.71	17±1	18	0.05659	1.000	PASS
802.11n(HT40)	6.54	16.55	17±1	18	0.05659	1.000	PASS
802.11a	2.25	17.95	18±1	19	0.02653	1.000	PASS
802.11n(HT20)	5.74	16.66	17±1	18	0.04707	1.000	PASS
802.11ac(VHT20)	5.74	16.59	17±1	18	0.04707	1.000	PASS
802.11n(HT40)	5.74	16.14	16±1	17	0.03739	1.000	PASS
802.11ac(VHT40)	5.74	16.11	16±1	17	0.03739	1.000	PASS
802.11ac(VHT80)	5.74	15.60	16±1	17	0.03739	1.000	PASS

The WLAN and BT can transmit simultaneously

WLAN Power density at 20cm (mW/cm ²)	BT Power density at 20cm (mW/cm ²)	Total Power density at 20cm	Power density Limits	Verdict
0.05659	0.00158	0.05817	1	PASS

Total E-field strength = ((E-field strength)/ (Limit) + (E-field strength)/ (Limit)...) ≤ 1

Note:

1. For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****