

TEST REPORT

Product Name : 4K AndroidTV Set Top Box
Brand Mark : Claro
Model No. : DV8935
FCC ID : 2AW68-C8935
Report Number : BLA-EMC-202209-A5507
Date of Sample Receipt : 2022/9/23
Date of Test : 2022/10/16 to 2022/11/14
Date of Issue : 2022/11/30
Test Standard : 47 CFR Part 1.1307, Part 1.1310
Test Result : Pass

Prepared for:

Shenzhen SDMC Technology Co.,Ltd.

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Prepared by:

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Date:

2022/11/30



REPORT REVISE RECORD

Version No.	Date	Description
00	2022/11/30	Original

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1 TEST summary

Test item	Test Requirement	Test Method	Class/Severity	Result
RF Exposure	47 CFR Part 1.1307 47 CFR Part 1.1310	CFR 47 Part 1.1310	CFR 47 Part 1.1310	PASS

2 General information

Applicant	Shenzhen SDMC Technology Co.,Ltd.
Address	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen,
Manufacturer	Shenzhen SDMC Technology Co.,Ltd.
Address	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen,
Product Name	4K AndroidTV Set Top Box
Test Model No.	DV8935

3 General description of EUT

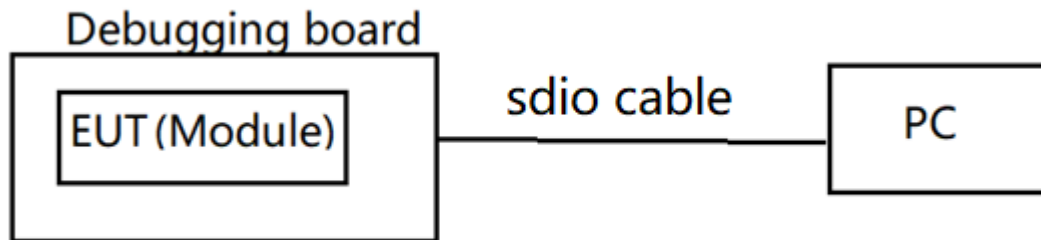
Hardware Version	V1
Software Version	Android 10
Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Type:	PCB Antenna
Antenna Gain:	1.7dBi (Provided by antenna specification)

Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Type:	PCB Antenna
Antenna Gain:	1.7dBi (Provided by antenna specification)

Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	PCB Antenna
Antenna Gain:	Antenna 1: 3.19dBi Antenna 2: 3.09dBi (Provided by antenna specification)

Operation Frequency:	Band 1 : 5180MHz-5240MHz; Band 2:5260MHz~5320MHz Band 3: 5500MHz~5700MHz; Band 4 : 5745MHz-5825MHz
Channel numbers:	Band 1: 802.11a/802.11n(HT20)/802.11ac(HT20): 4, 802.11n(HT40)/802.11ac(HT40):2, 802.11ac(HT80): 1 Band 2: 802.11a/802.11n(HT20)/802.11ac(HT20): 4, 802.11n(HT40)/802.11ac(HT40):2, 802.11ac(HT80): 1 Band 3: 802.11a/802.11n(HT20)/802.11ac(HT20): 11, 802.11n(HT40)/802.11ac(HT40):5, 802.11ac(HT80): 3 Band 4: 802.11a/802.11n(HT20)/802.11ac(HT20): 5, 802.11n(HT40)/802.11ac(HT40): 2, 802.11ac(HT80): 1
Channel separation:	802.11a/n/ac(HT20): 20MHz, 802.11n/ac(HT40): 40MHz, 802.11ac(HT80): 80MHz
Modulation technology: (IEEE 802.11a/n/ac)	BPSK, QPSK, 16-QAM, 64-QAM, 256QAM
Data speed(IEEE 802.11a)	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n/ac):	Up to 866.7Mbps
Antenna Type:	PCB antenna
Antenna gain:	Antenna 1: 3.24dBi; Antenna 2: 3.50dBi (Provided by antenna specification)
Note:	Antenna number: 2 SISO mode: 802.11a/802.11n(HT20)/ 802.11n(HT40)/ 802.11ac(HT20)/ 802.11ac(HT40)/ 802.11ac(HT80) MIMO mode: 802.11n(HT20)/ 802.11n(HT40)/ 802.11ac(HT20)/ 802.11ac(HT40)/ 802.11ac(HT80) Directional gain = $10 \log[(10^{\text{ANT1}}/20 + 10^{\text{ANT2}}/20)^2 / N_{\text{ANT}}]$ dBi = $10 \log[(10^{3.19}/20 + 10^{3.09}/20)^2 / 2]$ = 6.38dBi

4 BLOCK diagram OF EUT connection



5 Laboratory Location

All tests were performed at:
BlueAsia Technical Services(Shenzhen) Co.,Ltd.
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Guangdong ,China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

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6 RF Exposure Compliance Requirement

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

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 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.

6.2 Test Procedure

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

6.3 EUT RF Exposure Evaluation

Antenna Gain: 3.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.5 dBi in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

BLE 1M:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2480	5.18	3.296	0.00147	1.0	PASS

BLE 2M:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2480	4.787	3.011	0.00134	1.0	PASS

BT(GFSK):

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2480	5.323	3.406	0.00152	1.0	PASS

2.4G WIFI 802.11n20:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2412	19.852	96.650	0.04305	1.0	PASS

5G WIFI 802.11ac80:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
5320	19.176	82.718	0.03684	1.0	PASS

Note: Refer to report No. BLA-EMC-202209-A5502/03/04/05 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

----END OF REPORT----

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