REPORT No. : SZ17040257S01

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	Xiamen Candour Co.,Ltd
PRODUCT NAME	:	TVBOX
MODEL NAME	:	R92
TRADE NAME	:	SAMMIX
BRAND NAME	:	SAMMIX
FCC ID	:	2ALOI-R92
STANDARD(S)	:	47CFR 2.1091 KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE	:	2017-06-06

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2017-06-06	First edition

TEST REPORT DECLARATION

Applicant	Xiamen Candour Co.,Ltd
Applicant Address	19/F,C&D International Building.,No.1699 East Huandao Road, Xiamen 361008, China
Manufacturer	Xiamen Candour Co.,Ltd
Manufacturer Address	19/F,C&D International Building.,No.1699 East Huandao Road, Xiamen 361008, China
Product Name	TVBOX
Model Name	R92
Brand Name	SAMMIX
HW Version	MYROPE_S_V2.0
SW Version	V01_160301_CTA
Test Standards	47CFR 2.1091; KDB 447498 D01 General RF Exposure Guidance v06
Issue Date	2017-06-06
SAR Evaluation	Not Required

Tested by : Peng Fuwei

Peng Fuwei (Test engineer)

Approved by : Peng Huarui

Peng Huarui (Supervisor)

1. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

1.1. Identification of Applicant

Company Name:	Xiamen Candour Co.,Ltd
Address:	19/F,C&D International Building.,No.1699 East Huandao Road, Xiamen 361008, China

1.2. Identification of Manufacturer

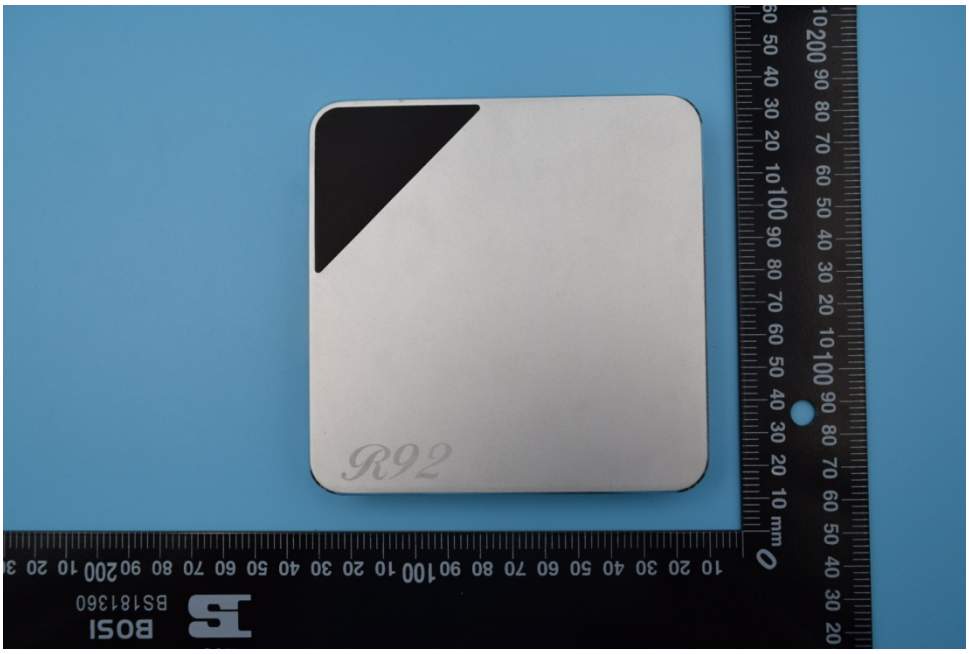
Company Name:	Xiamen Candour Co.,Ltd
Address:	19/F,C&D International Building.,No.1699 East Huandao Road, Xiamen 361008, China

1.3. Equipment Under Test (EUT)

Model Name:	R92
Trade Name:	SAMMIX
Brand Name:	SAMMIX
Hardware Version:	MYROPE_S_V2.0
Software Version:	V01_160301_CTA
Frequency Bands:	WLAN 2.4GHz Band:2412-2462MHz; WLAN 5GHz Band:5180-5825MHz Bluetooth:2402-2480MHz
Modulation Mode:	802.11b: DSSS ; 802.11a/ac/g/n: OFDM; Bluetooth 2.1+EDR: GFSK/π/4-DQPSK/8-DPSK; Bluetooth4.0: GFSK;
Antenna Type:	FPC Antenna
Antenna Gain:	1.6 dBi

1.3.1. Photographs of the EUT

1. EUT front view



2. EUT rear view

1.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	MYROPE_S_V2.0	V01_160301_CTA

1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	**47 CFR§2.1091**	Radiofrequency Radiation Exposure Evaluation: mobile devices
2	**KDB 447498 D01v06**	General RF Exposure Guidance

2. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term “fixed location” means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

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)
(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 * = Plane-wave equivalent power density

3. MEASUREMENT OF CONDUCTED OUTPUT POWER

1. Bluetooth Peak output power

Band	Channel	Output Power(dBm)		
		GFSK	π/4-DQPSK	8-DPSK
BT 2.1+EDR	0	7.18	3.77	4.01
	39	6.81	3.60	3.91
	78	6.68	3.02	3.28

Band	Channel	Frequency (MHz)	Output Power(dBm)
			GFSK
BT4.0	0	2402	6.62
	19	2440	6.82
	39	2480	7.03

2. Wi-Fi Average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			802.11b	802.11g	802.11n20
Wi-Fi 2.4GHz	1	2412	9.16	9.67	9.51
	6	2437	9.40	9.59	9.93
	11	2462	9.08	9.58	9.48

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11n40
Wi-Fi 2.4GHz	3	2422	9.00
	6	2437	8.99
	9	2452	9.16

Band	Channel	Frequency (MHz)	Output Power(dBm)	
			802.11a20 (OFDM)	802.11n20 (OFDM)
Wifi 5.2-5.3GHz	36	5180	7.68	7.71
	52	5260	8.25	8.25
	64	5320	8.52	8.35

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11n40 (OFDM)
Wifi 5.2-5.3GHz	38	5190	6.28
	54	5270	6.96
	62	5310	7.07

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11ac80 (OFDM)
Wifi 5.2-5.3GHz	42	5210	5.81
	58	5290	5.88

Band	Channel	Frequency (MHz)	Output Power(dBm)	
			802.11a20 (OFDM)	802.11n20 (OFDM)
Wi-Fi 5.5GHz	100	5500	8.48	8.23
	120	5600	8.75	8.22
	144	5720	8.20	8.13

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11n40 (OFDM)
Wi-Fi 5.5GHz	102	5510	7.11
	126	5630	7.40
	142	5710	6.99

3. WI-FI 5.8GHZ Average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)
			WI-FI 5.8GHz (OFDM)ac20
WI-FI 5.8GHz	149	5745	8.19
	161	5805	8.31
	165	5825	8.40
			WI-FI 5.8GHz (OFDM)ac40
	151	5755	5.03
	159	5795	5.21
			WI-FI 5.8GHz (OFDM)ac80
	155	5775	4.79

Band	Channel	Frequency (MHz)	Output Power(dBm)
			WI-FI 5.8GHz (OFDM)n20
WI-FI 5.8GHz	149	5745	8.15
	161	5805	8.11
	165	5825	8.32
			WI-FI 5.8GHz (OFDM)n40
	151	5755	6.80
	159	5795	7.02

4 RF EXPOSURE EVALUATION

Standalone transmission MPE evaluation

Bands	Frequency (MHz)	Antenna Gain (dBi)	Conducted Average Power (dBm)	Time-averaging EIRP (mW)	Power density (mW/cm²)	Limit for MPE (mW/cm²)
802.11b 2.4GHz	2437	1.6	9.93	15.89	0.063	1.0
802.11a 5G	5600	1.6	8.75	10.84	0.002	1.0
Bluetooth	2402	1.6	7.18	7.55	0.002	1.0

1. MPE calculation method

Power Density = EIRP/4πR²

Where: EIRP = P·G

P = Peak out power

G = Antenna gain

R = Separation distance (20cm)

ANNEX C GENERAL INFORMATION

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

***** END OF REPORT *****