RF EXPOSURE EVALUATION REPORT

FCC ID	:	2ALWB-7232
Equipment	:	Digital Media Receiver
Model Name	:	XC56PY
Applicant	:	S&R Land LLC 4000 S. Faber Place Drive, Suite 300 Charleston, South Carolina 29405
Standard	:	47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA740606-08	Rev. 01	Initial issue of report	Sep. 28, 2020

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Digital Media Receiver
Model Name	XC56PY
FCC ID	2ALWB-7232
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
Remark: 1. Added WLAN 5.3GHz/5.6GHz, WLAN 2.4GHz / 5.2GHz / 5.8GHz WLAN & Bluetooth RF Exposure can be referred to Sporton Report No.: FA940606-01.	

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

	Mode	Channel	Frequency (MHz)	Ant 1 Tune-up Limit	Ant 2 Tune-up Limit
5.3GHz WLAN	802.11a 6Mbps	52	5260	21.50	20.00
		56	5280	21.50	20.00
		60	5300	21.50	20.00
		64	5320	17.00	16.00
	802.11n-HT20 MCS0	52	5260	21.00	20.00
		56	5280	21.00	20.00
		60	5300	21.00	20.00
		64	5320	16.00	16.50
	802.11n-HT40 MCS0	54	5270	20.00	19.00
		62	5310	12.50	10.00

	Mode	Channel	Frequency (MHz)	Ant 1 Tune-up Limit	Ant 2 Tune-up Limit
5.6GHz WLAN	802.11a 6Mbps	100	5500	17.50	16.50
		116	5580	20.50	19.50
		124	5620	20.50	19.50
		132	5660	20.50	19.50
		140	5700	16.00	15.00
		144	5720	20.50	18.50
	802.11n-HT20 MCS0	100	5500	17.00	16.50
		116	5580	20.50	19.50
		124	5620	20.50	19.50
		132	5660	20.50	19.50
		140	5700	15.00	14.00
		144	5720	19.50	18.50
	802.11n-HT40 MCS0	102	5510	13.50	12.50
		110	5550	19.50	19.50
		126	5630	19.50	19.50
		134	5670	17.00	16.50
		142	5710	20.50	18.50

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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/f2)	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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
5GHz WLAN	5.60	21.50	27.100	0.513	512.861	0.102	1.000	0.102

4.2. Collocated Power Density Calculation

WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ(Power Density / Limit) of WLAN+Bluetooth
0.102	0.002	0.104

Note:

1. For 2.4GHz WLAN / 5.2GHz / 5.8GHz WLAN & Bluetooth standalone power density calculation can refer to Sporton RF Exposure Evaluation Original Report, Report No: FA940606-01.
1. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WLAN + Bluetooth.
2. Considering the WLAN module collocation with the Bluetooth, transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.