RF EXPOSURE EVALUATION REPORT

FCC ID	:	**2ARGE-7432**
Equipment	:	**Digital Media Receiver**
Model Name	:	**O2T2V3**
Applicant	:	**Flake LLC** **4321 W. College Avenue; Suite 200** **Appleton, Wisconsin 54914**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

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.

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

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FA1N2620	Rev. 01	Initial issue of report	Jan. 18, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Digital Media Receiver
Model Name	O2T2V3
FCC ID	2ARGE-7432
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.5GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5855 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz Zigbee: 2405 MHz ~ 2475 MHz
Mode	WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE Zigbee: OQPSK

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

<Non-beamforming mode>

Mode		Maximum Average Power (dBm)
2.4GHz WLAN	802.11b	21.5
	802.11g	21
	802.11n-HT20	21
5GHz WLAN	802.11a	21
	802.11n-HT20	21
	802.11n-HT40	21.5
	802.11ac-VHT20	21
	802.11ac-VHT40	21
	802.11ac-VHT80	21
Bluetooth		8.5
Zigbee		16

<Beamforming mode>

Mode		Maximum Average Power (dBm)
5GHz WLAN	802.11ac-VHT20	17
	802.11ac-VHT40	17
	802.11ac-VHT80	17.5

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

<Non-beamforming mode>

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
2.4GHz WLAN	4.60	21.50	26.100	0.407	407.380	0.081	1.000	0.081
5GHz WLAN	5.70	21.50	27.200	0.525	524.807	0.104	1.000	0.104
Bluetooth	5.10	8.50	13.600	0.023	22.909	0.005	1.000	0.005
Zigbee	4.90	16.00	20.900	0.123	123.027	0.024	1.000	0.024

<Beamforming mode>

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	8.51	17.50	26.010	0.399	399.025	0.079	1.000	0.079

Note:

1 For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

2 This device supports Beamforming for WLAN 5GHz VHT20/VHT40/VHT80 only; therefore, in the table above which consider maximum directional 8.51dBi for WLAN 5GHz Beamforming mode.

2.4GHz WLAN Power Density / Limit	5GHz WLAN Power Density / Limit	Bluetooth Power Density / Limit	Zigbee Power Density / Limit	Σ(Power Density / Limit)
0.081	0.104	0.005	0.024	0.214

Note:

1. Σ(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+Zigbee.
2. Considering the all of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 4 collocated transmitters is compliant

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.