RF EXPOSURE EVALUATION REPORT

FCC ID	:	**2AS3Y-6275**
Equipment	:	**Digital Media Receiver**
Model Name	:	**R9P2A5**
Applicant	:	**Engineering Cowboys US LLC 7 Skyline Drive, 3rd Floor, Hawthorne, New York, 10532, USA**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated in accordance with 47 CFR Part 2.1091 for the device and pass the limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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.

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
FA930103-01	Rev. 01	Initial issue of report	Jul. 16, 2019

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Digital Media Receiver
Model Name	R9P2A5
FCC ID	2AS3Y-6275
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	WLAN: 802.11a/b/g/n/ac HT20 / HT40 / VHT20 / VHT40 / VHT80 Bluetooth BR/EDR/LE

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

Band / Mode	Tune-Up Limit			
	BR / EDR			v5.0 LE
	1M	2M	3M	GFSK
Bluetooth	11.5	11.5	12	9.5

	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit
2.4GHz WLAN	802.11b	CH 1	2412	1Mbps	19.00
		CH 6	2437		19.00
		CH 11	2462		19.00
		CH 12	2467		18.00
		CH13	2472		13.50
	802.11g	CH 1	2412	6Mbps	18.00
		CH 6	2437		19.50
		CH 11	2462		16.50
		CH 12	2467		13.50
		CH13	2472		12.50
	802.11n-HT20	CH 1	2412	MCS0	16.50
		CH 6	2437		18.50
		CH 11	2462		15.00
		CH 12	2467		13.00
		CH13	2472		11.50

	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit
5.2GHz WLAN	802.11a	CH 36	5180	6Mbps	15.50
		CH 44	5220		15.50
		CH 48	5240		16.00
	802.11n-HT20	CH 36	5180	MCS0	16.00
		CH 44	5220		16.00
		CH 48	5240		16.00
	802.11n-HT40	CH 38	5190	MCS0	16.00
		CH 46	5230		16.00
	802.11ac-VHT20	CH 36	5180	MCS0	16.00
		CH 44	5220		16.00
		CH 48	5240		16.00
	802.11ac-VHT40	CH 38	5190	MCS0	16.00
		CH 46	5230		15.50
	802.11ac-VHT80	CH 42	5210	MCS0	13.50

	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit
5.3GHz WLAN	802.11a	CH 52	5260	6Mbps	16.00
		CH 60	5300		16.00
		CH 64	5320		16.00
	802.11n-HT20	CH 52	5260	MCS0	16.00
		CH 60	5300		16.00
		CH 64	5320		16.00
	802.11n-HT40	CH 54	5270	MCS0	16.00
		CH 62	5310		16.00
	802.11ac-VHT20	CH 52	5260	MCS0	16.00
		CH 60	5300		16.00
		CH 64	5320		16.00
	802.11ac-VHT40	CH 54	5270	MCS0	16.00
		CH 62	5310		16.00
	802.11ac-VHT80	CH 58	5290	MCS0	15.50

	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit
5.5GHz WLAN	802.11a	CH 100	5500	6Mbps	16.00
		CH 116	5580		16.00
		CH 140	5700		16.00
		CH 144	5720		16.00
	802.11n-HT20	CH 100	5500	MCS0	16.00
		CH 116	5580		16.00
		CH 140	5700		16.00
		CH 144	5720		16.00
	802.11n-HT40	CH 102	5510	MCS0	15.00
		CH 110	5550		16.00
		CH 134	5670		16.00
		CH 142	5710		16.00
	802.11ac-VHT20	CH 100	5500	MCS0	16.00
		CH 116	5580		16.00
		CH 140	5700		16.00
		CH 144	5720		16.00
	802.11ac-VHT40	CH 102	5510	MCS0	15.00
		CH 110	5550		15.50
		CH 134	5670		16.00
		CH 142	5710		16.00
	802.11ac-VHT80	CH 106	5530	MCS0	13.50
		CH 122	5610		16.00
		CH 138	5690		16.00

	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit
5.8GHz WLAN	802.11a	CH 149	5745	MCS0	16.00
		CH 157	5785		16.00
		CH 165	5825		16.00
	802.11n-HT20	CH 149	5745	MCS0	16.00
		CH 157	5785		16.00
		CH 165	5825		16.00
	802.11n-HT40	CH 151	5755	MCS0	16.00
		CH 159	5795		16.00
	802.11ac-VHT20	CH 149	5745	MCS0	16.00
		CH 157	5785		15.50
		CH 165	5825		16.00
	802.11ac-VHT40	CH 151	5755	MCS0	16.00
		CH 159	5795		15.50
	802.11ac-VHT80	CH 155	5775	MCS0	16.00

3. RF Exposure Limit Introduction

ISED has adopted the RF field strength limits established in Health Canada's RF exposure guideline. The limits are shown in Table 4 below per RSS-102.

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
$0.003\text{-}10^{21}$	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142f^{0.3417}$	$0.008335f^{0.3417}$	$0.02619f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158f^{0.5}$	$4.21 \times 10^{-4}f^{0.5}$	$6.67 \times 10^{-5}f$	$616000/f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

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:

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

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	Frequency (MHz)	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	2412.0	4.37	19.50	23.870	0.244	243.781	0.049	1.000	0.049
5GHz WLAN	5180.0	4.80	16.00	20.800	0.120	120.226	0.024	1.000	0.024
Bluetooth	2402.0	3.84	12.00	15.840	0.038	38.371	0.008	1.000	0.008

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

4.2. Collocated Power Density Calculation

WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ (Power Density / Limit) of WLAN+Bluetooth
0.049	0.008	0.057

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.
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.