RF EXPOSURE EVALUATION REPORT

FCC ID	:	**2AP64-2872**
Equipment	:	**Digital Media Receiver**
Model Name	:	**C1125P**
Applicant	:	**Gargantuan LLC 303 North Glenoaks Blvd., Ste 200 Burbank, CA 91502**
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 variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Jones Tsai

Approved by: Jones Tsai / Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA840308-01	Rev. 01	Initial issue of report	Aug. 15, 2018

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Digital Media Receiver
Model Name	C1125P
FCC ID	2AP64-2872
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	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: Eric Huang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

2.1. When in normal operation

Bluetooth	Average Power (dBm)				
	BR / EDR			v5.0 BLE	
	1Mbps	2Mbps	3Mbps	1M	2M
ANT 1	5.5	5.5	5.5	5.5	5.5
ANT 2	7.5	7.5	7.5	7.5	7.5

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-up Limit	Tune-up Limit
2.4GHz WLAN	802.11b	CH 1	2412	1Mbps	20.0	19.5
		CH 6	2437		20.0	19.5
		CH 11	2462		20.0	19.5
		CH 12	2467		15.0	17.0
		CH 13	2472		13.0	14.5
	802.11g	CH 1	2412	6Mbps	15.5	17.0
		CH 6	2437		17.0	18.5
		CH 10	2457			18.0
		CH 11	2462		15.0	15.0
		CH 12	2467		11.0	12.0
		CH 13	2472		9.5	9.0
	802.11n-HT20	CH 1	2412	MCS0	15.0	15.0
		CH 2	2417			18.5
		CH 6	2437		17.5	19.0
		CH 10	2457		17.0	17.5
		CH 11	2462		13.5	14.0
		CH 12	2467		11.0	11.5
		CH 13	2472		9.5	9.0

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit	Tune-Up Limit
5.2GHz WLAN	802.11a	CH 36	5180	6Mbps	19.5	19.5
		CH 44	5220		19.5	20.0
		CH 48	5240		19.5	20.0
	802.11n-HT20	CH 36	5180	MCS0	19.5	19.5
		CH 44	5220		19.5	19.5
		CH 48	5240		19.5	20.0
	802.11n-HT40	CH 38	5190	MCS0	15.5	15.0
		CH 46	5230		19.0	19.0
	802.11ac-VHT20	CH 36	5180	MCS0	19.0	19.5
		CH 44	5220		19.5	19.5
		CH 48	5240		19.5	19.5
	802.11ac-VHT40	CH 38	5190	MCS0	15.0	15.0
		CH 46	5230		18.5	19.0
	802.11ac-VHT80	CH 42	5210	MCS0	14.0	13.5

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit	Tune-Up Limit
5.8GHz WLAN	802.11a	CH 149	5745	MCS0	19.0	20.0
		CH 157	5785		19.0	20.0
		CH 165	5825		19.0	20.0
	802.11n-HT20	CH 149	5745	MCS0	19.0	19.0
		CH 157	5785		19.0	19.0
		CH 165	5825		19.0	19.5
	802.11n-HT40	CH 151	5755	MCS0	18.0	18.5
		CH 159	5795		18.0	18.0
	802.11ac-VHT20	CH 149	5745	MCS0	19.0	19.0
		CH 157	5785		19.0	19.0
		CH 165	5825		19.0	19.5
	802.11ac-VHT40	CH 151	5755	MCS0	18.0	18.5
		CH 159	5795		18.0	18.0
	802.11ac-VHT80	CH 155	5775	MCS0	17.0	17.5

2.2. When in co-location active

Bluetooth	Average Power (dBm)
	v5.0 BLE
	2M
ANT 1	5.5
ANT 2	7.5

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-up Limit	Tune-up Limit
2.4GHz WLAN	802.11b	CH 1	2412	1Mbps	20.0	19.5
		CH 11	2462		20.0	19.5
	802.11g	CH 1	2412	6Mbps	15.0	16.5
		CH 11	2462		15.0	15.0
	802.11n-HT20	CH 1	2412	MCS0	15.0	15.0
		CH 11	2462		13.5	14.0

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit	Tune-Up Limit
5.2GHz WLAN	802.11n-HT40	CH 38	5190	MCS0	14.0	15.0
		CH 46	5230		19.0	19.0
	802.11ac-VHT40	CH 38	5190	MCS0	14.0	15.0
		CH 46	5230		18.5	19.0
	802.11ac-VHT80	CH 42	5210	MCS0	14.0	13.5

	Transmitter Antenna				ANT 1	ANT 2
	Mode	Channel	Frequency (MHz)	Data Rate	Tune-Up Limit	Tune-Up Limit
5.8GHz WLAN	802.11n-HT40	CH 151	5755	MCS0	18.0	18.5
		CH 159	5795		18.0	18.0
	802.11ac-VHT40	CH 151	5755	MCS0	18.0	18.5
		CH 159	5795		18.0	18.0
	802.11ac-VHT80	CH 155	5775	MCS0	17.0	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. 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 Ant 1	2412.0	2.10	20.00	22.100	0.162	162.181	0.032	1.000	0.032
2.4GHz WLAN Ant 2	2412.0	1.90	19.50	21.400	0.138	138.038	0.027	1.000	0.027
5.2GHz WLAN Ant 1	5180.0	3.70	19.50	23.200	0.209	208.930	0.042	1.000	0.042
5.2GHz WLAN Ant 2	5180.0	3.50	20.00	23.500	0.224	223.872	0.045	1.000	0.045
5.8GHz WLAN Ant 1	5745.0	3.90	19.00	22.900	0.195	194.984	0.039	1.000	0.039
5.8GHz WLAN Ant 2	5745.0	4.00	20.00	24.000	0.251	251.189	0.050	1.000	0.050
Bluetooth Ant 1	2402.0	2.10	5.50	7.600	0.006	5.754	0.001	1.000	0.001
Bluetooth Ant 2	2402.0	1.90	7.50	9.400	0.009	8.710	0.002	1.000	0.002

Note:
1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. The maximum output power is used for above table calculation.

4.2. Collocated Power Density Calculation

WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ(Power Density / Limit) of WLAN+Bluetooth
0.050	0.002	0.052

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.