



# RF EXPOSURE EVALUATION REPORT

**FCC ID** : 2ALBL-1731  
**Equipment** : HDMI Digital Media Receiver  
**Model Name** : LDC9WZ  
**Applicant** : Gillon UK LLC  
106 E. Sixth Street, Suite 900, Austin, Texas 78701  
**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.

Approved by: Jones Tsai / Manager

**SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory**

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### History of this test report

Report No.	Version	Description	Issued Date
FA730732-04	Rev. 01	Initial issue of report	May 18, 2018



**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	HDMI Digital Media Receiver
Model Name	LDC9WZ
FCC ID	2ALBL-1731
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	802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
<b>Remark:</b> 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description. 2. Enable 5.3GHz/5.5GHz WLAN operation to added RF exposure evaluation.	

**Reviewed by: Eric Huang**

**Report Producer: Daisy Peng**

**2. Maximum RF average output power among production units**

	Mode	Channel	Frequency (MHz)	Average Power (dBm)		
				ANT 1	ANT 2	ANT 1+2
5.3GHz WLAN	802.11a 6Mbps	52	5260	11.50	11.50	14.50
		56	5280	11.50	11.50	14.50
		60	5300	11.50	11.50	14.50
		64	5320	11.50	11.50	14.50
	802.11n-HT20 MCS0	52	5260	11.50	11.50	14.50
		56	5280	11.50	11.50	14.50
		60	5300	11.50	11.50	14.50
		64	5320	11.50	11.50	14.50
	802.11n-HT40 MCS0	54	5270	11.50	11.50	14.50
		62	5310	11.50	11.50	14.50
	802.11ac-VHT20 MCS0	52	5260	11.50	11.50	14.50
		56	5280	11.50	11.50	14.50
		60	5300	11.50	11.50	14.50
		64	5320	11.50	11.50	14.50
	802.11ac-VHT40 MCS0	54	5270	11.50	11.50	14.50
		62	5310	11.50	11.50	14.50
802.11ac-VHT80 MCS0	58	5290	11.50	11.50	14.50	



5.5GHz WLAN	Mode	Channel	Frequency (MHz)	Average Power (dBm)		
				ANT 1	ANT 1	ANT 1
802.11a 6Mbps		100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		144	5720	11.50	11.50	14.50
802.11n-HT20 MCS0		100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		144	5720	11.50	11.50	14.50
802.11n-HT40 MCS0		102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
		142	5710	11.50	11.50	14.50
802.11ac-VHT20 MCS0		100	5500	11.50	11.50	14.50
		116	5580	11.50	11.50	14.50
		124	5620	11.50	11.50	14.50
		132	5660	11.50	11.50	14.50
		144	5720	11.50	11.50	14.50
802.11ac-VHT40 MCS0		102	5510	11.50	11.50	14.50
		110	5550	11.50	11.50	14.50
		126	5630	11.50	11.50	14.50
		134	5670	11.50	11.50	14.50
		142	5710	11.50	11.50	14.50
802.11ac-VHT80 MCS0		106	5530	11.50	11.50	14.50
		122	5610	11.50	11.50	14.50
		138	5690	11.50	11.50	14.50



### 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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

Table with 10 columns: 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. Rows include 5GHz WLAN Ant 1, 5GHz WLAN Ant 2, and 5GHz WLAN Ant 1+2.

Note:

- 1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band
2. In the above table have assessed 5GHz WLAN by referring to their maximum antenna gain and maximum power.

Table with 3 columns: Maximum WLAN Power Density / Limit, Bluetooth Power Density / Limit, and Sigma(Power Density / Limit) of WLAN+Bluetooth. Values are 0.024, 0.006, and 0.03 respectively.

Note:

- 1. WLAN and Bluetooth can transmit simultaneously and the Bluetooth results is referred to Sporton RF Exposure Evaluation Original Report, FCC ID: 2ALBL-1731, Report No: FA730732-01
2. Sigma(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.
3. 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.