

# RF Exposure Evaluation Report

**Equipment** : Set Top Box  
**Brand Name** : DIRECTV  
**Model No.** : LHR01  
**FCC ID** : G95-LHR01  
**Standard** : 47 CFR Part 2.1091  
**Applicant** : Technicolor Connected Home USA LLC  
5030 Sugarloaf Parkway Building 6,  
Lawrenceville, GA, 30044 United States  
**Manufacturer** : Cal-Comp Electronics & Communications  
Company Limited  
No. 147, Sec. 3, Beishen Rd., Shengkeng  
Dist., 222 New Taipei City, TAIWAN

The product sample received on Oct. 26, 2017 and completely tested on Nov. 10, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit.

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Kevin Liang / Assistant Manager





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# 1 General Description

## 1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5700 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

## 1.2 Testing Location

Testing Location			
<input checked="" type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
<input type="checkbox"/>	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			



## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
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) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
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

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

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:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	T-EIRP (dBm)	T-EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;G1D	2.60	26.54	29.14	29.64	0.92045	20	0.18312	1.00000
2.4G;D1D	2.60	25.12	27.72	28.22	0.66374	20	0.13205	1.00000
5.2G;D1D	2.10	23.80	25.90	26.40	0.43652	20	0.08684	1.00000
5.3G;D1D	2.10	23.89	25.99	26.49	0.44566	20	0.08866	1.00000
5.6G;D1D	2.10	23.64	25.74	26.24	0.42073	20	0.08370	1.00000
5.8G;D1D	2.10	25.53	27.63	28.13	0.65013	20	0.12934	1.00000

T-EIRP(dBm) = Tune-up power(dB) + EIRP Power(dBm)