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**Test Model:** DCH-G601

**Received Date:** Mar. 07, 2018

**Test Date:** Mar. 19, 2018

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**Applicant:** D-Link Corporation

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**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

Issue No.	Description	Date Issued
SA180307E03A	Original release.	Apr. 24, 2018

## 1 Certificate of Conformity

**Product:** LTE Bluetooth Hub

**Brand:** D-Link

**Test Model:** DCH-G601

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** Mar. 19, 2018

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Wendy Wu , **Date:** Apr. 24, 2018  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Apr. 24, 2018  
May Chen / Manager

## 2 RF Exposure

### 2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
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

f = Frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

<b>WLAN &amp; Bluetooth</b>						
Ant No.	Model	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type	
1	290-20327	1.6	2.4~2.4835	PIFA	NA	
2	C037-511302-A	4.55	2.4~2.4835	PIFA	NA	
Note: Ant No. 2 was selected as representative antenna for the final test.						
<b>WWAN</b>						
Ant No.	Model	Antenna Gain (dBi)	Frequency rang	Antenna type	Connector type	*Cable Length (mm)
1 (Aux)	290-328	0.15	699~894MHz	PCB	i-pex(MHF)	88.7
		5.58	1.71~2.16GHz			
2 (Main)	290-329	0.39	699~894MHz	PCB	i-pex(MHF)	43.7
		4.38	1.71~2.16GHz			
Note: The WWAN mode will fix transmission on Antenna No.: 2.						

## 2.5 Calculation Result of Maximum Conducted Power

### WLAN

Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	70.795	4.55	20	0.04015	1

### BT-EDR

Frequency (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	18.621	4.55	20	0.01056	1

### BT-LE

Frequency (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	18.621	4.55	20	0.01056	1

### 3G/LTE (LTE Band 4)

Frequency (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
1710-1755	316.228	4.38	20	0.17248	1

**NOTE:** 1. This power include tune-up tolerance range that specified in DCH-G601 Tune Up power table

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### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + 3G/LTE =  $0.04015 / 1 + 0.17248 / 1 = 0.21263$

Bluetooth + 3G/LTE =  $0.01056 / 1 + 0.17248 / 1 = 0.18304$

**Therefore the maximum calculations of above situations are less than the "1" limit.**