



# **TEST REPORT**

**Report Number. :** 13426664-E4V3

**Applicant :** LOGITECH INC.  
7700 GATEWAY BLVD,  
NEWARK, CA 94560, U.S.A.

**Model :** VR0014

**FCC ID :** JNZVR0014

**EUT Description :** DOORBELL

**Test Standard(s) :** FCC 47 CFR PART 1 SUBPART I  
FCC 47 CFR PART 2 SUBPART J

**Date Of Issue:**  
October 21, 2020

**Prepared by:**  
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	10/7/2020	Initial Issue	--
V2	10/21/2020	Updated antenna name to address TCB's question.	Tina Chu
V3	10/21/2020	Updated average power	Tina Chu

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** LOGITECH INC.  
7700 GATEWAY BLVD,  
NEWARK, CA 94560, U.S.A.

**EUT DESCRIPTION:** DOORBELL

**MODEL:** VR0014

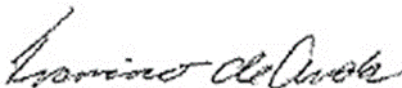
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR PART 1 SUBPART I & PART 2 SUBPART J	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For  
UL Verification Services Inc. By:



Francisco de Anda  
STAFF ENGINEER  
UL Verification Services Inc.

Prepared By:



Tina Chu  
SENIOR PROJECT ENGINEER  
UL Verification Services Inc.

## 2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 1.1310, 2.1091, 2.1093, KDB 447498 D01 v06, KDB 447498 D03 V01, IEEE Std C95.1-2005, IEEE Std C95.3-2002,

## 3. REFERENCES

All measurements were made as documented in test report UL Verification Services Inc. Document 13426664-E1 for operation in the 2.4 GHz band and UL Verification Services Inc. Document 13426664-E2 for operation in the 5 GHz bands.

Output power, Duty cycle and Antenna gain data is excerpted from the applicable test reports.

## 4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. Line conducted emissions were measured at 47658 Kato Road address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd
<input type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D	<input type="checkbox"/> Chamber I
<input type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E	<input type="checkbox"/> Chamber J
<input type="checkbox"/> Chamber C	<input type="checkbox"/> Chamber F	<input checked="" type="checkbox"/> Chamber K
	<input type="checkbox"/> Chamber G	<input type="checkbox"/> Chamber L
	<input type="checkbox"/> Chamber H	<input type="checkbox"/> Chamber M

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code: 2324B.

## 5. MAXIMUM PERMISSIBLE EXPOSURE (LIMITS AND EQUATIONS)

### 5.1. FCC RULES

§1.1310 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 §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

**TABLE 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> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

#### **Notes:**

- (1) Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
- (2) General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

## **5.2. EQUATIONS**

### **POWER DENSITY**

Power density is given by:

$$S = \text{EIRP} / (4 * \text{Pi} * D^2)$$

Where

S = Power density in mW/cm<sup>2</sup>

EIRP = Equivalent Isotropic Radiated Power in mW

D = Separation distance in cm

Power density in units of mW/cm<sup>2</sup> is converted to units of W/m<sup>2</sup> by multiplying by 10.

### **DISTANCE**

Distance is given by:

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power in mW

S = Power density in mW/cm<sup>2</sup>

### **SOURCE-BASED DUTY CYCLE**

Where applicable (for example, multi-slot cell phone applications) a duty cycle factor may be applied.

$$\text{Source-based time-averaged EIRP} = (\text{DC} / 100) * \text{EIRP}$$

Where

DC = Duty Cycle in %, as applicable

EIRP = Equivalent Isotropic Radiated Power in mW

## 6. RF EXPOSURE RESULTS

In the table(s) below, Power and Gain are entered in units of dBm and dBi respectively and conversions to linear forms are used for the calculations.

Multiple antennas									
Band	Mode	Antenna for MIMO	Separ. Dist. (cm)	Output AVG Power (dBm)	Ant. Gain (dBi)	Duty Cycle (%)	EIRP (mW)	FCC PD (mW/cm <sup>2</sup> )	FCC PD Limit (mW/cm <sup>2</sup> )
2.4 GHz	WLAN	1		20.50	-0.79	100.0	93.54		
2.4 GHz	WLAN	2		20.50	2.15	100.0	184.08		
Combined			20				277.62	0.06	1.00

Multiple antennas									
Band	Mode	Antenna for MIMO	Separ. Dist. (cm)	Output AVG Power (dBm)	Ant. Gain (dBi)	Duty Cycle (%)	EIRP (mW)	FCC PD (mW/cm <sup>2</sup> )	FCC PD Limit (mW/cm <sup>2</sup> )
5 GHz	WLAN	1		17.00	4.16	100.0	130.62		
5 GHz	WLAN	2		17.00	4.86	100.0	153.46		
Combined			20				284.08	0.06	1.00

Multiple antennas or colocated transmitters									
Band	Mode	Antenna for MIMO	FCC Limit (mW/cm <sup>2</sup> )	Output AVG Power (dBm)	Ant. Gain (dBi)	Duty Cycle (%)	EIRP (mW)	Separ. Distance FCC (cm)	
2.4 GHz	WLAN	1		20.50	-0.79	100.0	93.54		
2.4 GHz	WLAN	2		20.50	2.15	100.0	184.08		
Combined			1.00				277.62	4.70	

Multiple antennas or colocated transmitters									
Band	Mode	Antenna for MIMO	FCC Limit (mW/cm <sup>2</sup> )	Output AVG Power (dBm)	Ant. Gain (dBi)	Duty Cycle (%)	EIRP (mW)	Separ. Distance FCC (cm)	
5 GHz	WLAN	1		17.00	4.16	100.0	130.62		
5 GHz	WLAN	2		17.00	4.86	100.0	153.46		
Combined			1.00				284.08	4.76	



**Notes:**

- 1) The manufacturer configures output power so that the maximum power will never exceed the maximum power level measured.
- 2) The output power in the tables above is the maximum power per antenna among various channels and various modes within the specific band.
- 3) The antenna gain in the tables above is the maximum antenna gain among various channels within the specified band.

**END OF REPORT**