

Dongguan Togran Electronics Technology Co.,LTD

File Name: LK150D wireless Keyboard Spec

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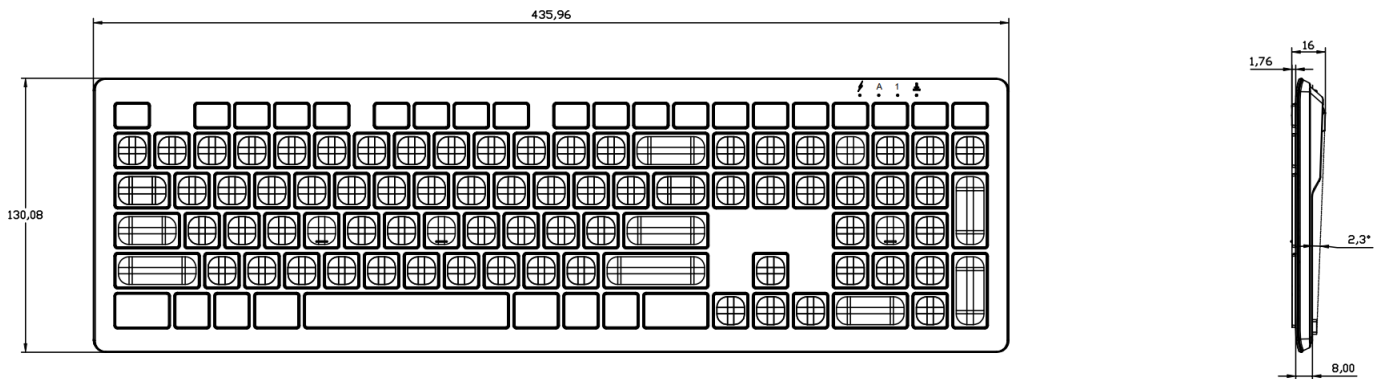
Revision History

Date	version	page	Revised page	Description		
2023-10-05	A0			Start of the document, first release		
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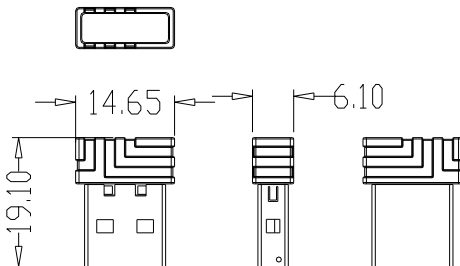
1 Introduction

This document contains a functional and performance specification of the Wireless USB slim Keyboard. 2.4G compatible with Win XP, Win Vista, Win7, Win8, Win8.1, Win10, Win11 and other operating systems.

Transmitter:



Receiver:



2 Physical Specification

● Dimension

Transmitter:

Height:	$16.0 \pm 0.5\text{mm}$
Length:	$436.0 \pm 0.5\text{mm}$
Width:	$130.0 \pm 0.5\text{mm}$

Receiver:

Height:	$6.0 \pm 0.5\text{mm}$
Length:	$19.0 \pm 0.5\text{mm}$
Width:	$15.0 \pm 0.5\text{mm}$

● Weight: approx. $540 \pm 50\text{g}$.

3 Mechanical Characteristics

3.1 Keyboard color

- Top case torgan black (According to customer requirements)
- Bottom case torgan black (According to customer requirements)

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- Keypad1# togran black(According to customer requirements)
- Keypad2# togran gray (According to customer requirements)
- LED lens transparency clear
- Legend printing Pantone white/305C for Fn+ key
- LED indicator icon Pantone 403C

3.2 Key switch

- Operating force of Keys: 65 ± 15 gf
- Total travel 1.5 ± 0.3 mm
- Click ratio >40%
- Bounce 5ms

3.3 Keyboard material

- Top case ABS or HIPS
- Bottom case ABS or HIPS
- Keypad1# ABS
- Keypad2# ABS
- LED lens transparency PC
- Mid-board transparency PC
- Scissors POM
- Rubber dome Silicone
- Foot (turn) ABS+TPE
- Foot Silicone

4 Radio Characteristics:

4.1 Transmitter

- Rating: 5V=500mA (with DC 3.7V, 350mAh battery inside)
- Frequency: 2.40~2.48 GHz.
- Working channel:16 channel
- Power consume: Key working <10mA ; (Suspend I) <0.1mA ; (Suspend II) <0.02mA
- Working distance: >10Metre

4.2 Receiver

- System interface: USB port of PC.
- Supply voltage: 4.75V±10%
- Working Power consumption: 30 mA (Max)
- Frequency: 2.40~2.48GHz.
- Working channel : 16 channel

5 Important Components

- Receiver : IC: TLSR8373A
- Transmitter : IC: EP2T42F40ER(TLSR8373C)

6 Environment

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6.1 Operating Temperature and Humidity

Temperature: -5°C to 45°C

Humidity: 85% RH or less

6.2 Storage Temperature and Humidity

Temperature: -15 °C to 65°C

Humidity: 85% RH or less

7 Reliability Specifications

7.1 Key Life Test

Switching speed: 30 cycles/min.

Operating force of Key: 65gf

Operating cycles: 5,000,000 cycles

Judging Criteria : No functional defect should be found for the switch actuation.

7.2 High Temperature Test

Temperature: 60±2°C

Storage time: 96 hours.

After this test the mouse shall be left in room temperature for 1 hour.

Judging Criteria : No functional defect should be found.

7.3 Low Temperature Test

Temperature: -15±2°C

Storage time: 96 hours

After this test the mouse shall be left in room temperature for 1 hour.

Judging Criteria : No functional defect should be found.

7.4 Moisture Test

Temperature: 40±2°C

Humidity: 90~95% R.H.

Storage time: 96 hours.

After this test the mouse shall be left in room temperature for 1 hour.

Judging Criteria : No functional defect should be found.

7.5 Heat Cycle Test

Temperature: -15±2°C for 1 hour and then 60±2°C for 1 hour

Storage time: 5 cycles.

After this test the mouse shall be left in room temperature for 1 hour.

Judging Criteria : No functional defect should be found.

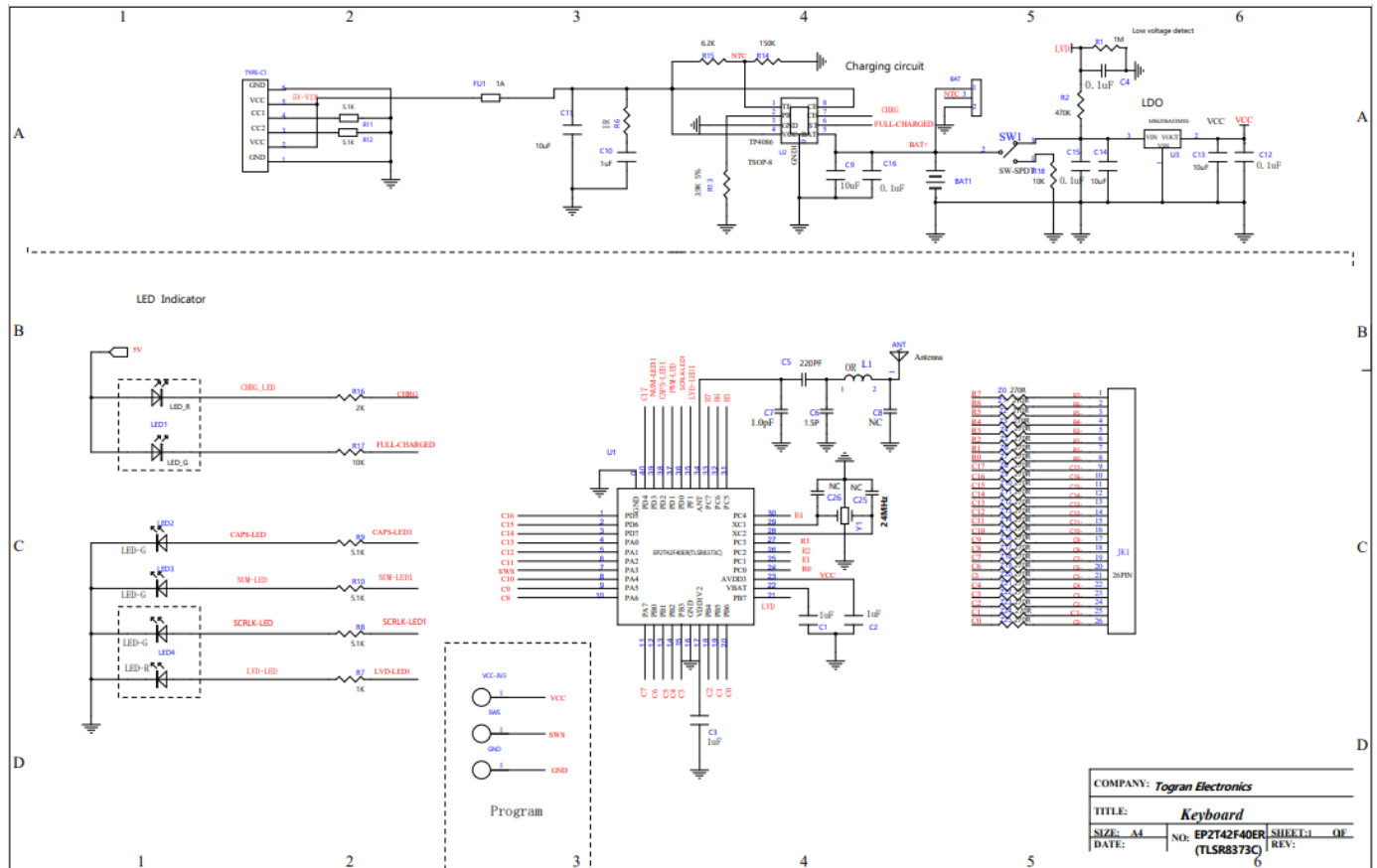
8 Agency Certifications

FCC CLASS B PART15

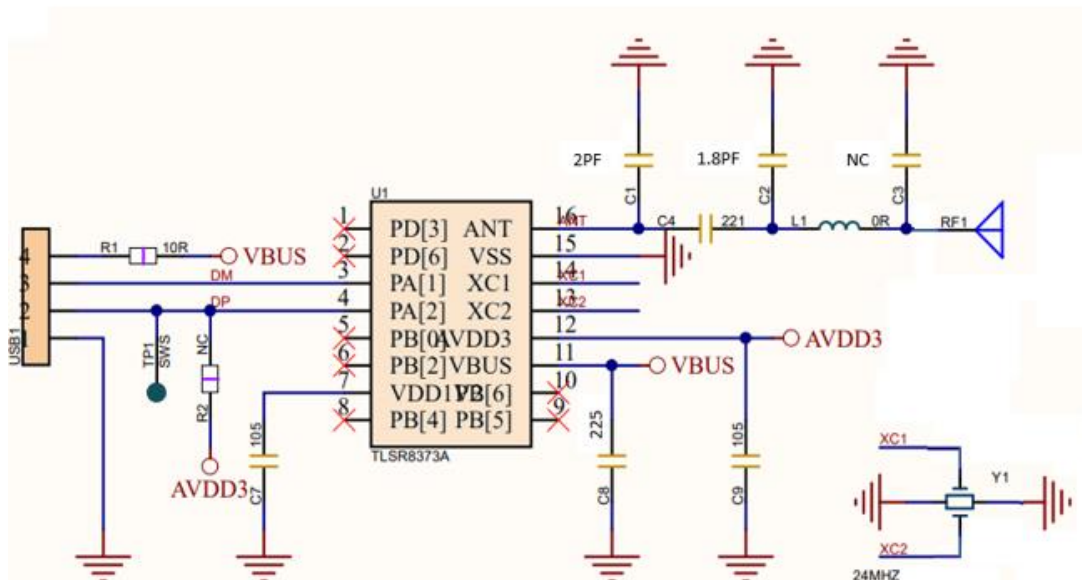
CE

9 Schematic

Transmitter:



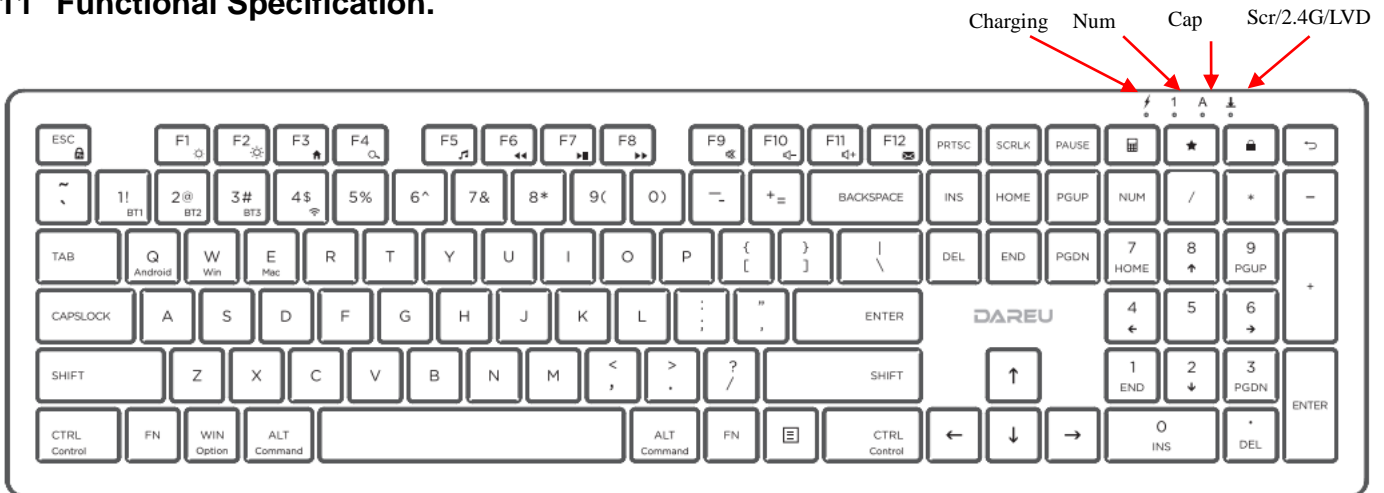
Receiver:



10 Application Matrix.

	R0 P20	R1 P21	R2 P22	R3 P23	R4 P24	R5 P25	R6 P26	R7 P27
C0 P15	Z	1(!)	POWER	Prev Track	Alt-R	Next Track	Sleep	WAKE UP
C1 P35	C	3(#)	€	Volume+	Volume-	WWW refresh	Ctrl-R	WWW favorite
C2 P36	V	5%	F5	WWW back	Alt-L	WWW Forward	WWW STOP	WWW search
C3 P37	ENTER	6^	F6			Shift-L	¥	G
C4 P00	F	F3	PAUSE		M		Ctrl-L	MAIL
C5 P01	K56	4(\$)	SPACE	Win-L	WWW Home	131	132	133
C6 P02	K14	F4	A	Calculator		K150	K151	WIN_R
C7 P03	F7	~(˘)	S	Y	P	7(&)	B	
C8 P11	F8	-_	Tab	U	[{	8*	H	N
C9 P14	F9	=+	D	I]}	9(" "	FN
C10 P12	F11	F1	W	PRINT	HOME	DEL	Insert	. (>)
C11 P10	F12	L	E	SCROLL LOCK	END	Page Up	Page Down	/?
C12 P13	F10	F2	Q	0	\	0()	K42	, (<)
C13 P07	APP	;;	↑	NUM LOCK	7(K)	4(K)	1(K)	K45
C14 P06	ESC	K	←	/(K)	8(K)	5(K)	2(K)	0(K)
C15 P05	R	J	↓	*(K)	9(K)	6(K)	3(K)	.(K)
C16 P04	T	Back Spack	→	_(K)	+(K)	K107	Enter(K)	CAPS LOCK
C17 P16	X	2(@)	MyPC	Play/Pause	Media	Shift-R	Media Mute	Media Stop

11 Functional Specification.



1. LED Indicator:

Item	Indicator	Icon	Color	Definition
1	Charging		Red	Red always on when charging.
			Green	Green always on when fully charged.
2	Num lock		Green	Green indicator is on.
3	Caps lock		Green	Green indicator is on.
4	Scroll lock		Green	Green indicator is on.
	2.4G		Flash red	When the 2.4G is pairing, the indicator flashes red quickly. After pairing successfully. The light goes out.
	LVD		Flash red	The indicator flashes red slowly when the battery is low.

2. Multimedia function

Fn+Q: Switch to Android, **Fn+W:** Switch to Windows, **Fn+E:** Switch to Mac.

FN+ESC:FN Lock, **FN+F1:** Screen brightness decrease, **FN+F2:** Screen brightness increase, **FN+F3:** homepage,

FN+F4:Search, **FN+F5:**music, **FN+F6:** Pretrack, **FN+F7:** Play/Pause, **FN+F8:** Next track, **FN+F9:** mute, **FN+F10:**

volume-, **FN+F11:** volume+, **FN+F12:** E-mail.

3. Hotkey



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4. 2.4G forced pairing instructions

Press FN+2.4G to Switch to 2.4G mode, and then Press and hold FN+2.4G for more than 3 seconds to enter the pairing state, and the red LED flashes quickly(the pairing time is 20 seconds), insert USB Dongle within 20 seconds, let keyboard close to the Dongle, LED will be on for 2 seconds and then turn off, means that 2.4G pairing is successful.

FCC STATEMENT:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.