



# Bump Bar (PB20) Reference Guide

03-25-2025

V1.1

## Preface

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### TECHNICAL SUPPORT CONTACT INFORMATION

Phone: (877) 859-0099

Email: [support@pax.us](mailto:support@pax.us)

URL: [www.pax.us](http://www.pax.us)

## Revision History

Date	Version	Description
05-16-2024	v1.0	Initial release.
03-25-2025	v1.1	Removed line in Communications Setup and removed Wi-Fi Acronym

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## 1. Introduction

This guide covers the PB20 Bump Bar, the industry's first configurable keyboard that applies advanced magnetic keys and the only bump bar in the market with a scroll knob. The PB20 features a smooth aluminum housing and a sealed cover to enhance its dustproof and waterproof capabilities. With the innovative keyboard and durable construction, we were able to achieve an estimated 50 million click lifespan on the keyboard and an IP65 rating, surpassing the specs of competitors.

### 1.1 Purpose

This reference guide provides information about:

- Hardware Functionality
- Installation
- Communications
- Answers to frequently asked questions

### 1.2 Intended Audience

This guide is intended for use by:

- Software engineers who develop and maintain the payment application designs for the US payment card industry.
- Sales Executives and Support who sell and support the device.
- Independent Sales Organizations who sell devices and conduct end user device training.

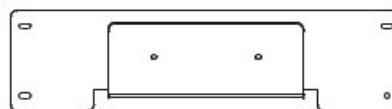
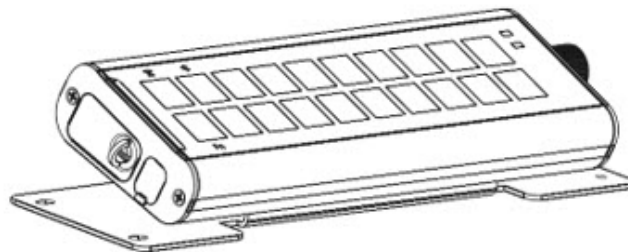
## 1.3 Acronyms and Terms

Acronym	Definition
<b>Bluetooth®</b>	The <i>Bluetooth®</i> word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by PAX Technology, Inc. is under license. Other trademarks and trade names are those of their respective owners.
<b>BLE</b>	Bluetooth® Low Energy

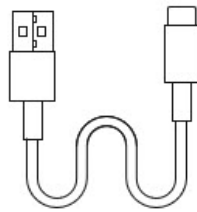
## 2. Bump Bar (PB20) Box Contents

The Bump Bar (PB20) box includes:

- 1 - PB20 Bump Bar device
- 1 - PB20 Mounting Bracket
- 2 - AA Batteries (Alkaline)
- 1 - 2.4G Dongle
- 1- USB Cable
- 1 - Legend Label Sheet (PAX Print)
- 1 - Legend Label Sheet (Blank)
- 2 - M4x8 Screws
- 4 - ST4x12 Screws
- 1 - QR Code which can be scanned to access the Quick Setup Guide at [pax.us](https://pax.us)



PB20 Mounting Bracket





### 3. PB20 Order


All devices are ordered by part number. For PB20, the most recent (current) revision number associated with that part number is provided when ordered.

**Please Note:**

- Each part number can be internally associated with multiple revision numbers, and, in turn, the revision number associated with the part number will define the operating system version and supporting configuration files that are pre-loaded onto the device during manufacturing.

#### 3.1 Part Number and Part Number Description

Part number information is provided below for orderable PB20. Descriptions and images of the box contents and part numbers are included to clarify what is included in each box.

Part Number	Description	Image
PB20-G00-1E0	<b>PB20</b>  Aluminum housing, supports both wired (USB) and wireless connectivity (Bluetooth BLE or 2.4 dongle), powered by USB or 2 Alkaline AA batteries.	

##### 3.1.1 PART NUMBER BREAKDOWN

Each character in the part number, which reads from left to right, has a value and a description.

**Please Note:** For an in-depth breakdown of part numbers, please see the Part Number Breakdown page located in Confluence.

## 4. Technical Details and Specifications

The technical details and specifications for the PB20 are listed in the following table.

Feature	Description
<b>Buttons</b>	10 x 2, 20-Key membrane 50 Million Pushes
<b>Housing</b>	Aluminum; resistant to extreme temperatures, water and grease
<b>Communications</b>	Bluetooth® (BLE), 2.4G Dongle, or Wired USB-C
<b>Indicator</b>	1 status LED light (Y/G/B), 1 Low Battery Level alarm LED light (Red)
<b>Audio</b>	On-board Buzzer
<b>Accessories</b>	Bracket
<b>Physical</b>	263 x 80 x 34mm, 607g
<b>Ports</b>	Battery, USB Type-C
<b>Power Supply</b>	USB or 2 AA Batteries (Alkaline)
<b>IP Rating</b>	IP65   ESD: 6KV contact, 12KV Air

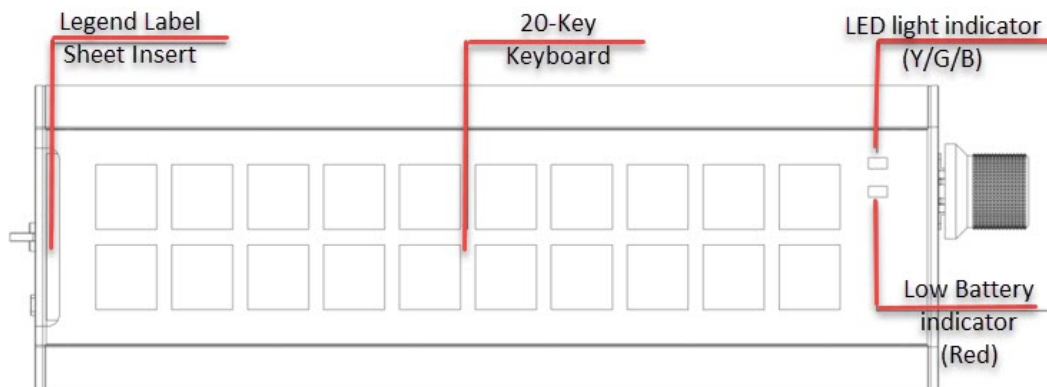
## 5. PB20 Hardware Overview

The following section provides information on the PB20's hardware functionalities.

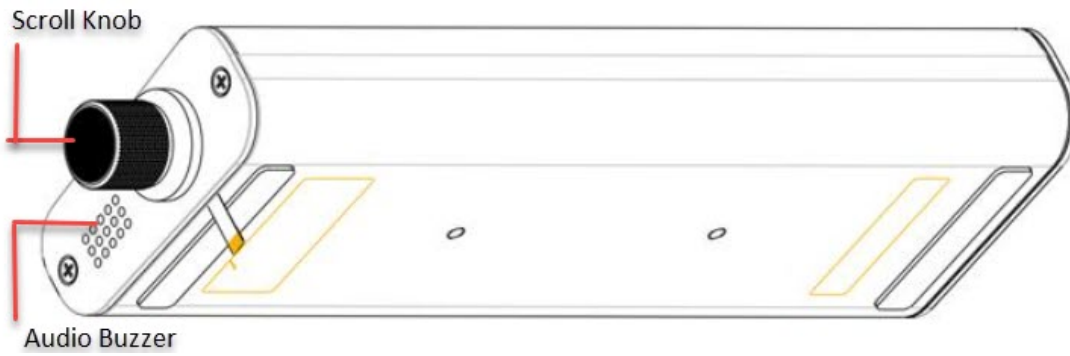
### 5.1 PB20 Side Views

The following images point out the various hardware features of the PB20.

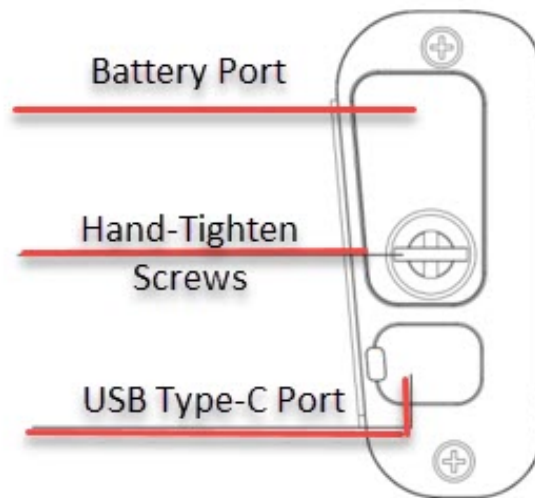
#### 5.1.1 FRONT VIEW



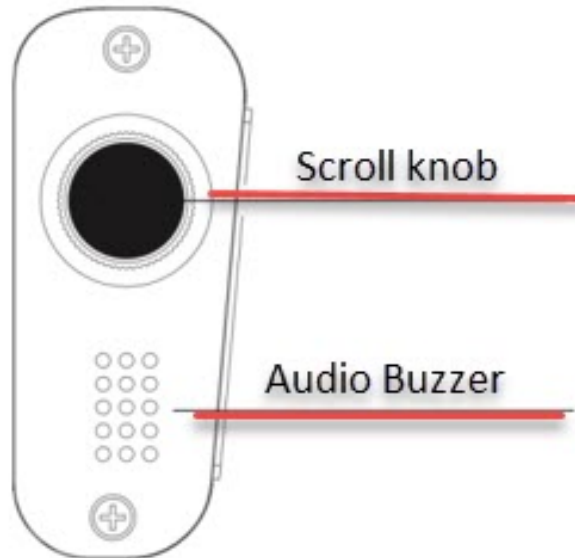
### 5.1.2 BACK VIEW



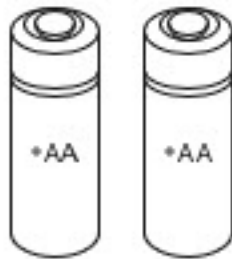
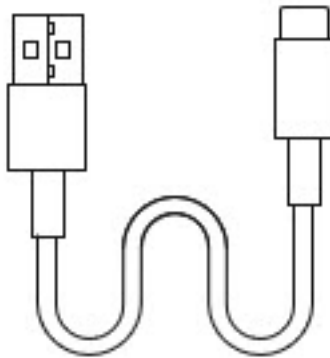
### 5.1.3 LEFT SIDE VIEW



### 5.1.4 RIGHT SIDE VIEW



### 5.2 AC Power Connection



#### WARNING

The PB20 AC power connection can only support an approved DC5V 300mA(max) PAX power supply. Using a third-party power supply and/or a power supply with incorrect voltage and amperage could damage the device and void its warranty.

## 5.3 PB20 Identification

This section provides information on device identification numbers and where to locate them.

### 5.3.1 SERIAL NUMBER LOCATION

The PB20 serial number is located on a sticker on the back of the device. Additionally, the same sticker appears on the outside of the device box.



### 5.3.2 REVISION NUMBER LOCATION

The PB20 revision number, when applicable, is located on a sticker on the back of the device. Additionally, the same sticker appears on the outside of the device box.



### 5.3.3 PART NUMBER LOCATION

The PB20 part number is located on a sticker on the back of the device. Additionally, the same sticker appears on the outside of the device box.





### 5.4 PB20 Warranty

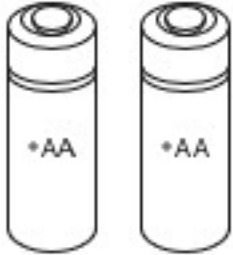
All PAX devices include a standard warranty from date of purchase. For a list of associated device RMA fees and other FAQs, please see the [PAX RMA Portal](#).

#### WARNING

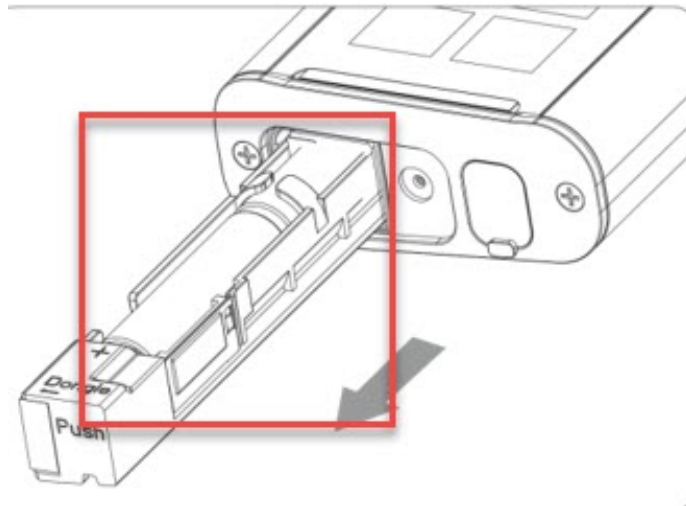
The warranty period for devices and associated equipment begin from the date PAX sold the device to the distributor, not the current device owner's date of purchase from the distributor.

## 5.5 Battery Information

The following table lists battery specifications for the PB20.

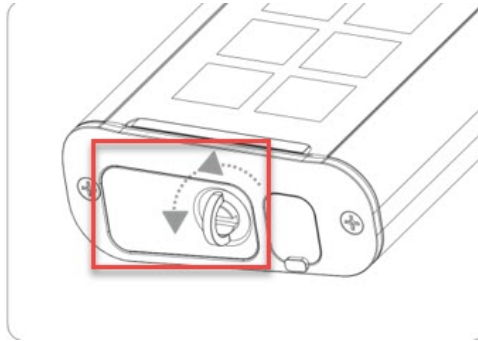
Part Number	Specs	Image
N/A	2 AA Alkaline batteries	

### 5.5.1 BATTERY LOCATION

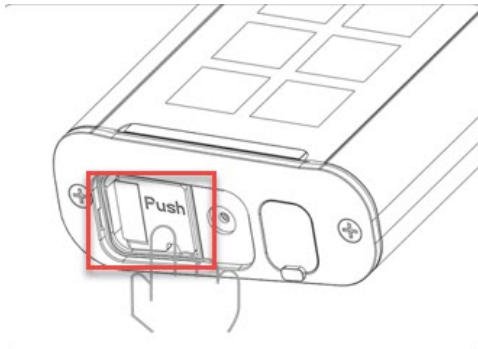


### 5.5.2 REMOVING BATTERY

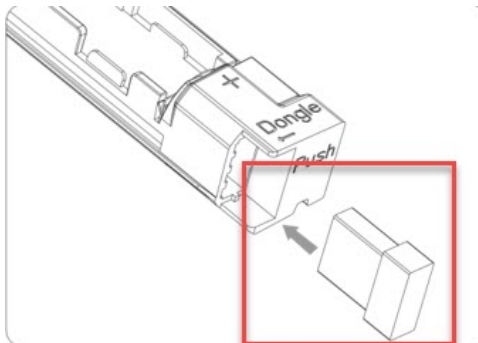
1. Rotate hand-tighten screw counter-clockwise to open the battery and dongle compartment cover.



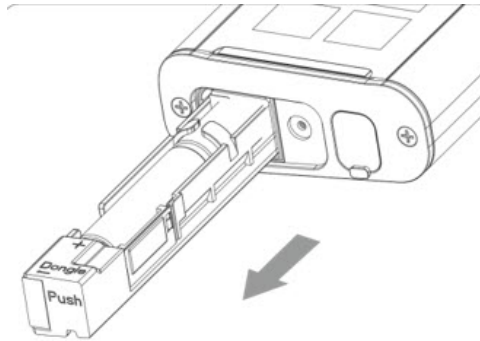
2. Push for ejection.



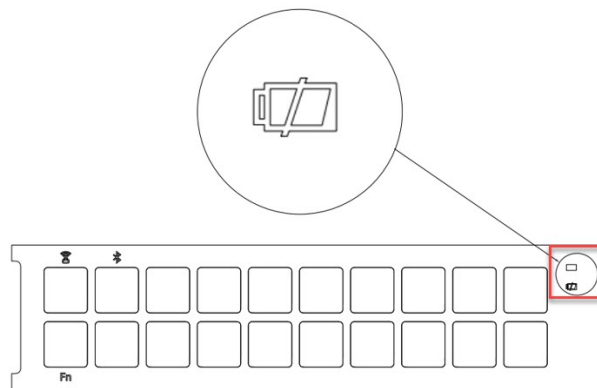
3. Take out the compartment.



4. Pull out the dongle component.



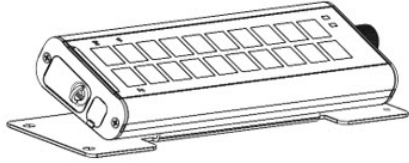
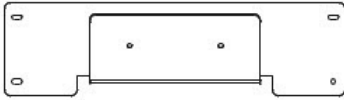

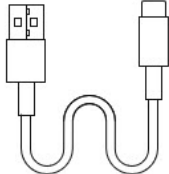


### 5 .5.2.1 Battery Charging Indicator


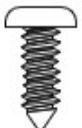
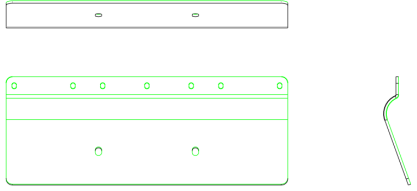


1. When the battery voltage drops to 2.2V, the LED indicator turns red and keeps blinking.
2. When the battery voltage drops to 2.0V or under, the red indicator light stays on without blinking.

## 5.6 PB20 Accessories

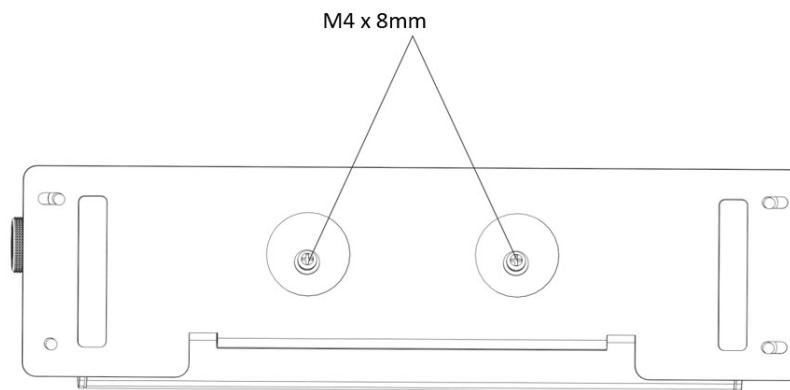
Below are PB20 accessories, their descriptions, and their part numbers for ordering purposes. Please note that standard accessories are included in the box while optional accessories must be ordered separately.

Part Number(s)	Type	Description	Drawing
<b>Accessory PN:</b> PB20-G00-1E0	Standard	PB20 Bump Bar Device	
<b>Accessory PN:</b> 200205060000038	Standard	PB20 Mounting Bracket - Metal Based Fixing Bracket (AL5052, Aluminum Alloy V-Bending, Machined)	
<b>Accessory PN:</b> 200299000000493	Standard	2.4 Dongle - Receiver NANO-2.4G Dongle-TLSR8355-2402MHz-2480MHz-zksc	
<b>Accessory PN:</b> 200204030000553	Standard	USB Cable - Standard A-type turning head Type C male black USB cable - 1800±30mm- HORNMIC	
<b>Accessory PN:</b> 200318000001016	Optional	Legend Label Sheet (PAX Print) - PB20 PAX scheme insert	
<b>Accessory PN:</b> 200318000001043	Standard	Legend Label Sheet (Blank) - PB20 blank insert	

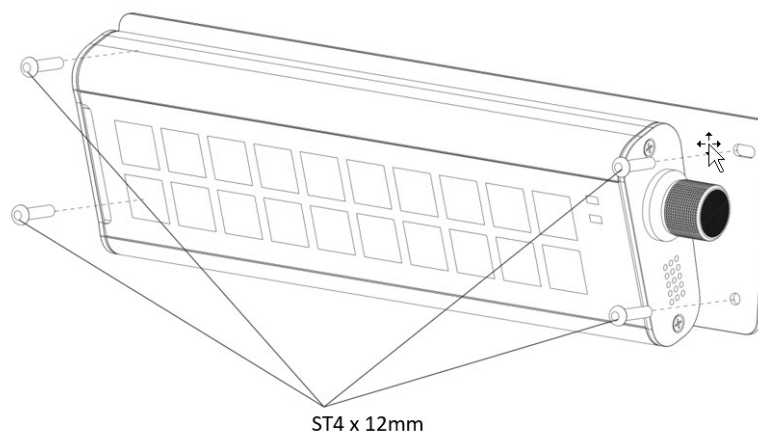
Part Number(s)	Type	Description	Drawing
<b>Accessory PN:</b> 200205010000345	Standard	M4x8 Screws - M4x8 Phillips Disc Head Dental Tape Spacer Screws (Silver? Stainless Iron)	
<b>Accessory PN:</b> 200205010000344	Standard	ST4x12 Screws - PWA4.0X12-Tip Cross Slot Black Round Head Self Tapping Screws	
<b>Accessory PN:</b> 600400000000168	Optional	PB20 to Elys Display Mount	

### 6. Installation

1. Attach the mounting bracket to the PB20 using the M4x8 screws:



2. Mount PB20 to the wall using the ST4x12 screws:



## 7. Basic Operating Instructions

This section provides information and step-by-step instructions for the PB20's basic operations.

### 7.1 Intended Use Case

The PB20 is intended for indoor use only.

IP/IK Rating	Operating Environment	Storage Environment
<b>IP65</b>  <b>Please Note:</b> <ul style="list-style-type: none"><li>IP/IK Ratings are done for devices with an outdoor use case only.</li><li>For formal test report, please see <a href="#">IP and IK Ratings Page</a> on Confluence.</li></ul>	<b>Temperature:</b> 0°C ~ 50°C (32°F ~ 122°F)  <b>Humidity:</b> 10% ~ 93% (without condensation)	<b>Temperature:</b> -20°C ~ 70°C (-4°F ~ 158°F)  <b>Humidity:</b> 10% ~ 93% (without condensation)

**Please Note:** Operating the device outside of its intended use case and operating environment for a prolonged period of time will void the device warranty and may result in reduced battery capacity.

### 7.2 PB20 Location

Position the PB20 on a counter-top, desktop, or tabletop. Keep the device away from direct sunlight, excessive dust, moisture, and heat. Avoid locating the device near electrical devices that might introduce interference such as microwave ovens and blow dryers.



## 7.3 Powering the Device ON/OFF

1. Device automatically turns on when USB cable is plugged in and connected to a host device that has power.

**Please Note:** Device will not turn off until power is lost or unplugged.

2. Device automatically turns on when AA batteries are inserted into battery compartment.

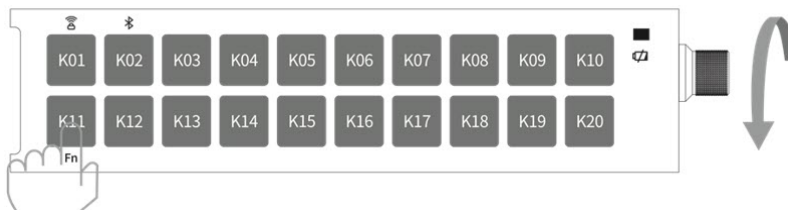
**Please Note:** Device goes into low power mode after 3 minutes of inactivity. Device will not fully turn off unless battery drains.

## 7.4 Restarting the Device

1. If device is powered via USB, unplug and plug it back in.
2. If device is powered via battery, remove the battery compartment and reinsert.

## 7.5 Adjusting the Buzzer's Volume

1. Long press [Fn] key and rotate the knob on the side to adjust the volume.
2. Rotate the knob to the desire volume level: "high", "low," or "OFF".



## 7.6 Cleaning the Device

### WARNING

Do not use industrial strength or abrasive cleaner as it may damage or scratch the device.

- Do not immerse the device in water or liquid.
- Do not spray water or cleaner into the USB port.
- To clean the device, apply distilled water or mild glass cleaner onto a soft, lint-free cloth and gently wipe device.

### CAUTION

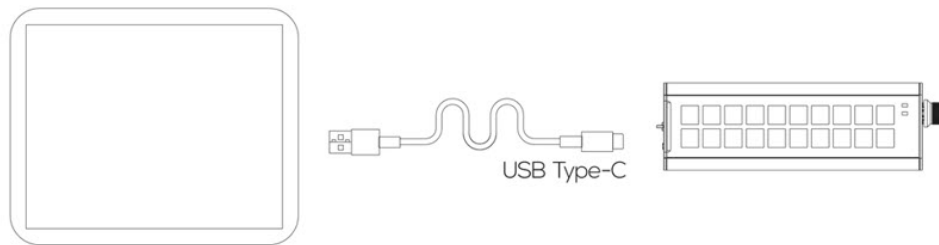
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

## 8. Communications Setup

PB20 supports both wired (USB) and wireless communication (Bluetooth BLE or 2.4 dongle). The following sections include step-by-step procedures for setting up each of these connectivity types.

### 8.1 USB Connection Setup

The PB20 supports USB connection setup.



1. Connect PB20 and the targeted device using the USB cable.
2. Once the connection is established, PB20 enters USB mode and the LED indicator light briefly turns green and then goes off.
3. Press PB20's keys and the corresponding mapped values/functions will take effect.
4. Rotate PB20's magnetic knob to scroll up and down the screen of the connected device.

#### Please Note:

- The color green is specifically used to indicate USB communication mode.
- USB mode has the highest priority. PB20 automatically switches to USB mode once a USB cable with power and data communication capabilities is plugged in, even if the device is initially in wireless mode.
- **Important Note:** Only USB mode supports the PB20 configuration and firmware update tools.

### 8.2 Bluetooth® Connection Setup

The PB20 supports Bluetooth® connection setup.

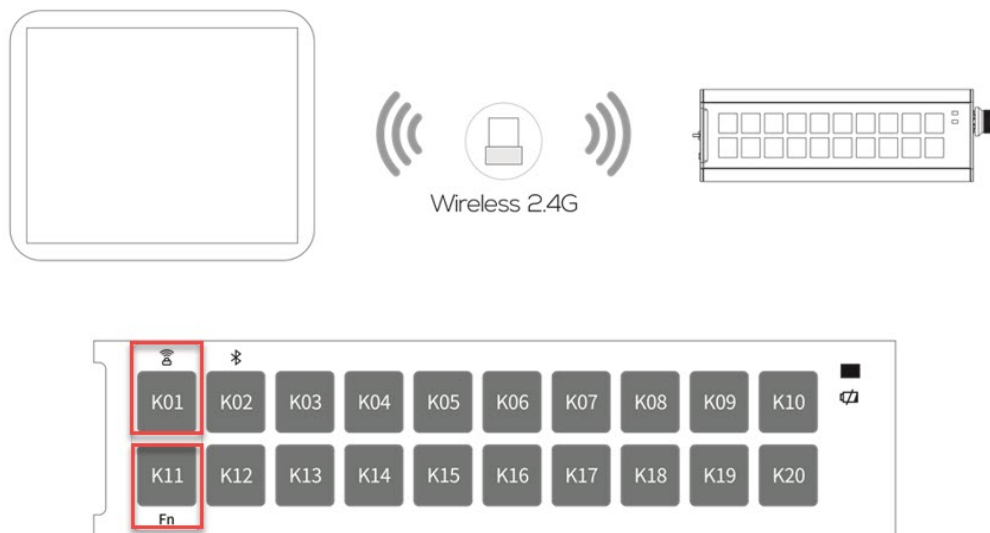


1. Ensure PB20 is battery-powered.
2. Unplug the USB cable if PB20 is already connected to other devices via USB.
3. PB20 should automatically enter wireless communication mode: **BLE** or 2.4G dongle.
4. Observe the status indicator light's color:
  - If **blue**, PB20 is in **BLE** mode.
  - If **yellow**, PB20 is in 2.4G dongle mode.
  - **To switch to BLE mode**, simultaneously short press [**Fn**] key and BLE key (circled in the drawing above). Once successfully entered BLE mode, the LED indicator light briefly turns blue and then goes off.
5. Pairing Bluetooth®:
  - PB20 automatically connects to the last paired device once entering BLE mode.
  - To change pairing, simultaneously long press [**Fn**] key and BLE key (for about 3 seconds). LED indicator turns blue and keeps blinking at 1.15s frequency, meaning PB20 is broadcasting signal for other devices to detect and establish a Bluetooth® connection.

- On the target pairing device, open up the Bluetooth® setting page and look for ID “PB20” and establish connection.
  - If the pairing is successful, the blue indicator light lights up for 3 seconds and then goes out.
6. Once the pairing times out after 60 seconds, the blue indicator light goes out.
  7. Under BLE mode, if no operation is done for 3 minutes, PB20 enters low-power mode. To re-enter running mode, press any keys to wake up the device.

### 8.3 2.4G Dongle Connection Setup

The PB20 supports 2.4G dongle connection setup.



1. Ensure PB20 is battery-powered.
2. Unplug the USB cable if PB20 is already connected to other devices via USB.
3. PB20 should automatically enter wireless communication mode: BLE or **2.4G dongle**.
4. Observe the status indicator light's color:
  - If **yellow**, PB20 is in **2.4G dongle** mode.
  - If blue, PB20 is in BLE mode.
  - **To switch to 2.4G dongle mode**, simultaneously short press [Fn] key and Wireless 2.4G key (circled in the drawing above). Once successfully entered 2.4G dongle mode, the LED indicator light briefly turns yellow and then goes off.
5. To establish connection, ensure PB20 enters 2.4G dongle mode and plug in the dongle to the target device's USB port (The pairing between dongle and PB20 has been done in factory).
6. Under 2.4G dongle mode, if no operation is done for 3 minutes, PB20 enters low-power mode. To re-enter running mode, press any keys to wake up the device.

## 9. Packaging

This section covers **PB20** packaging information.

### 9.1 Overpack Carton

- What are the PB20 overpack dimensions (LxWxH)?  
**Example:** 17 x 14 x 13 in (44 x 37 x 7 cm)
- What is the PB20 overpack shipping weight per box?  
**Example:** 16.53 lbs (7.5 kg)
- How many PB20 boxes fit into an overpack box?  
**Example:** 50

### 9.2 Device Box

- What are the PB20 box dimensions (LxWxH)?  
13.5 x 4 x 2.75 in (34.4 x 10.5 x 7 cm)
- How much does the PB20 box weigh?  
**Example:** 0.33 lbs (149.7 gm)

### 9.3 Protective Cardboard Inserts

Cardboard inserts inside the device box protect the PB20 during shipping. In addition, the device is enclosed in a plastic wrapper.

## 10. Frequently Asked Questions

This section provides answers to frequently asked questions.

### 1. Are the key buttons programmable?

Yes, the button outputs can be programmed as desired; they can even be programmed into macro keys.

### 2. Does it have a programming tool?

Yes, a configurator tool is downloadable from the PB20 webpage: <https://www.pax.us/support/documents/pb20-quick-setup-guide>

### 3. How does this communicate with a KDS?

There are three communication methods with the PB20: wired communication using USB, wireless communication with Bluetooth BLE, or 2.4G Dongle.

### 4. How long does the battery last?

The AA batteries are expected to last at least 3 months under normal daily usage.

### PAX Customer Support

For questions or help with the device installation please contact your service provider or PAX customer support.

support@pax.us  
(877) 859-0099  
www.pax.us

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