PINE64 PPHONE-KEYBRD Phone Keyboard User Manual

PINE64 PPHONE

USER MANUAL
QUICK START GUIDE

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Cautions
Before using the device please read this manual carefully.
Notes for safe operation:

- The PinePhone keyboard should be charged using a 15W (5V 3A) USB-PD power adapter. Charging at a higher voltage may result in damage to the keyboard and the Pine Phone.
- Charge the PinePhone only via the keyboard's USB-C port. When coupled with the keyboard, the PinePhone's USB-C is to be used solely for data and peripherals. Under no circumstances should the keyboard and PinePhone be charged simultaneously by their respective USB-C ports.

- The device should never be operated with an external temperature lower than -20°C or higher than 40°C. Batteries should not be charged when the external temperature is 0°C or lower.
- Do not puncture, disassemble, strike or squeeze the battery. Old batteries need to be disposed of in accordance with local regulations (see section 2.1).
- Do not expose the device to direct sunlight, water or high levels of humidity.
- Comply with local regulations pertaining to using mobile devices. This extends to and includes the use of the device in public spaces when operating motor vehicles and heavy machinery.

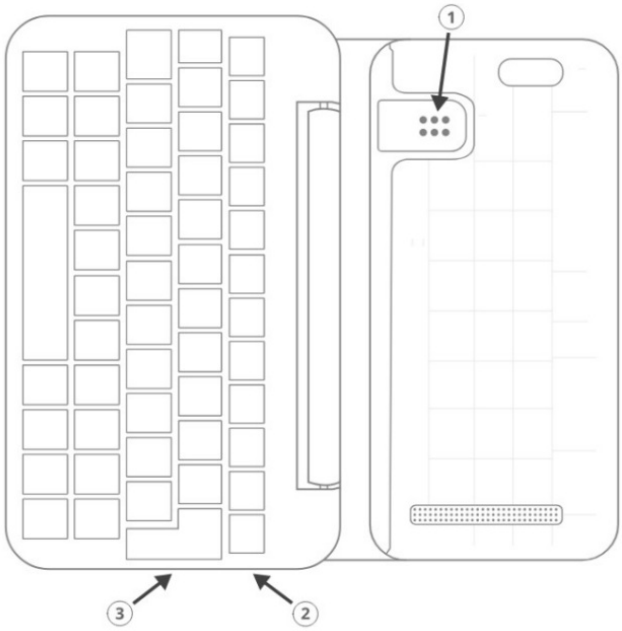
2.1 Recycling of components and batteries

Recycling of the keyboard and its components should be done according to local regulations. This may require you to dispose of the entire device or its parts at a local recycling center or at a designated container. Please consult local legislation for details.
Batteries should never, under any circumstances, be disposed of with general household waste (as indicated by the crossed-out bin symbol below). The end-user is legally obliged to return used batteries. Batteries can be returned to us to be disposed of. The batteries are to be returned to the sender – for more information contact us at **info@pine64.org**.

Getting started

3.1 Mounting the keyboard

Power OFF your PinePhone and remove the back case. To remove the back case of the PinePhone use your fingernail or another soft object to pry up the back case. A notch to easily remove the cover is located at the bottom left of the PinePhone with the back cover facing the user.



Open and place the keyboard flat on a hard surface with the hinge fully extended. Proceed to insert the PinePhone into the keyboard at an angle of approx. 15 degrees. Make sure that the PinePhone's pogo pins and the corresponding pads on the keyboard are aligned. The leading edge with volume and power buttons should make contact first. Firmly press the PinePhone into place. Multiple clicks should be heard as the two snap into place.
The PinePhone can be removed from the keyboard easily using a notch similar to the one found on the back case. The notch is located at the bottom of the leading edge with the power and volume buttons.

3.2 Keyboard and internal battery operation

The keyboard will function automatically once a PinePhone running a compatible operating system is mounted. For alterations to physical layout and firmware see sections 4.1 and 5.1 respectively.
The keyboard features an in-built 6000mAh battery. The battery can be turned ON/OFF using the button on the right leading edge of the keyboard. A short button press activates the internal battery while a long (15 seconds)

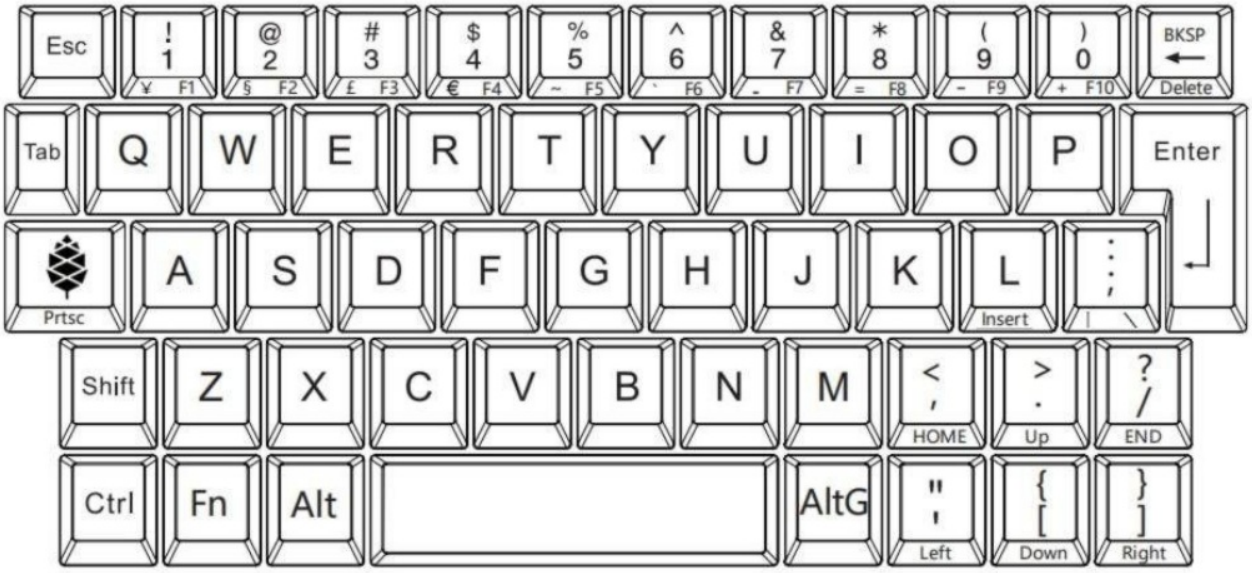
press deactivates it. Compatible operating systems display both the PinePhone's and keyboard's battery status. You should charge the PinePhone and the keyboard only using the USB-C port on the keyboard. The keyboard's USB-C port cannot be used for peripherals. The PinePhone's USB-C port remains operational when mounted in the keyboard and can be used for data and peripherals.

Hardware

Detailed keyboard specifications including schematics can be found on our Wiki:
https://wiki.pine64.org/wiki/PinePhoneKeyboard
Key hardware specifications:
Dimensions (closed): 161 x 95 x 21.5mm
Weights (without/with PinePhone mounted): ~ 191 / ~391 grams
Number of keys: 54 Number of rows: 5
Keyboard IC: EM85F684A 8-bit microcontroller with 256 bytes RAM, 2048/ bytes XRAM; 16kB for user's own firmware
Battery capacity: 6000mAh (22.2Wh 3.7V)
Charger Input: 5V, 3A (15W)
Charging and battery IC chip: IP5209 power management IC with charge indicate controller and boost converter

4.1 Keyboard layout and alterations

The keyboard features a default layout (pictured below) created and agreed upon by the community. The keyboard layout can be altered using software (see section 5.1) as well as by physically repositioning keycaps. All keycaps, with the exception of space and return keys, can be easily and safely relocated for alternative layouts corresponding to software settings.



Firmware

PinePhone's keyboard firmware was developed independently by Ondrej Jirman as a free-of-charge contribution to PINE64. The firmware source code is freely and publicly available and you can modify it, and the supporting utilities, using common FOSS tools.

5.1 Firmware and supporting utilities

The design of the firmware allows the keys, modifier keys, and their combinations to be handled in virtually unlimited ways, without a need to flash a customized version of the firmware. Mapping of keys is defined at runtime, using the supporting utilities, and is not hardcoded in the firmware. Different keyboard layouts can be loaded dynamically to support various use cases.
The repository that contains the source code of the firmware, supporting utilities and associated documentation is located at **https://xnux.eu/pinephone-keyboard/**.
You are welcome to contribute patches and improvements to the firmware and the supporting utilities. A summary of firmware development history is available at **https://xnux.eu/log/** alongside other development updates from the firmware author.
Much time and effort went into the development of this firmware. If you wish to send a token of appreciation or

support the development efforts in any way, please consider making a donation to the author via one of the methods listed at the bottom of this web page: **https://xnux.eu/contribute.html**.

5.2 Firmware License

Regulatory compliance

The PinePhone keyboard is CE and FCC-certified.

Documentation and contact information

Detailed hardware and software documentation can be located on our Wiki (**wiki.pine64.org**).
Contact Sale enquires: **sales@pine64.org**
Support: **support@pine64.org**
General inquiries: **info@pine64.org**

Documents / Resources

	PINE64 PPHONE-KEYBRD Phone Keyboard [pdf] User Manual PPHONE-KEYBRD, Phone Keyboard