

USB Large Dome Button



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Introduction

The “USB Dome Button” is a large mushroom/ dome button that connects to a workstation or PC via a USB cable.

The USB Dome Button is recognized by the PC as a “Human Interface Device” (HID). Microsoft Windows and other operating systems have intrinsic support for HID. No drivers are necessary.

Specifically, the USB Dome Button implements a “keyboard” HID function, with only a single key. The key to transmit to the PC is configured via a configuration utility (see the section “Configuring the USB Button”). In the factory setting, the button transmits the key “1”.

Multiple USB Dome Buttons may be attached to a PC at the same time, with each button configured to transmit a different key code

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Connecting the USB Dome Button

The USB button has a “mini-B” style connector. Any cable with a mini-B plug can, in principle, be used. For a reliable and waterproof connection, however, a cable with a sealing screw locked connector is recommended. Suitable cables are available in lengths up to 4.5 meters.

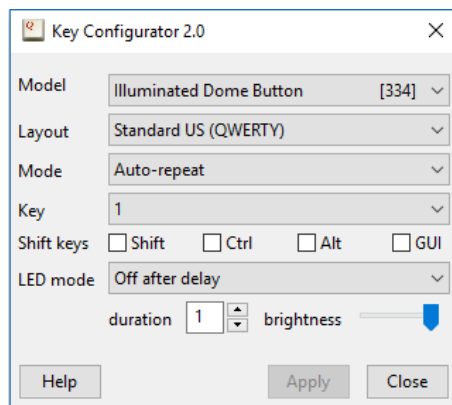


This device is intended to be used with USB hosts or USB hubs. Connecting the device to equipment that does not adhere to the USB standard may damage the device.

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Configuring the USB Dome Button

The configuration utility is available from <http://www.compuphase.com/usbkey/>.



The utility configures only a single button at a time. The serial number, at the right of the model name, shows which button is being configured. The last

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three digits of the serial number are also printed on the bottom of the USB button itself.

After changing the configuration, you must click on Apply to store the settings in the USB button.

If not using a US keyboard layout, please select the appropriate layout of the keyboard (QWERTY/AZERTY).

The mode can be “Auto-repeat”, “Pulse”, “Toggle key”, “Tap or Hold” or “Macro”.

In *auto-repeat* mode, the USB button sends a key-down message on a press and a key-up message on a release. When holding the button pressed, the key-down is repeated (just like a key repeats when you hold it down).

In *pulse* mode, the USB button sends a key-up message shortly after the key-down. The button therefore does not repeat.

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Toggle key mode is like *pulse mode*, but allows you to select two key codes instead of just a single one. These two codes are transmitted alternately. So the first press of the button transmits key 1, the second press transmits key 2, the third press transmits key 1 again, and so forth.

Tap or Hold mode also lets you define two keys. A short press (“tap”) transmits the first key. When the button is held down, the second key is transmitted after a time-out ($\frac{3}{4}$ second).

In *macro* mode, you can specify a sequence of keys to be transmitted. You can use this to start a command or launch an URL. For the syntax of macro mode, please see the help file in the application.

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Starting programs or commands

In Microsoft Windows, the  + R key combination shows the “Run” dialog. In “macro” mode, you can pop up this dialog with the key sequence “#R”. You can follow this by a command and then “{ENTER}” at the end to execute it. Other operating systems support similar functions, but may require a different key combination to pop up a “Run” dialog.

In addition, the USB Dome Button supports several consumer control functions, like play, pause and others. These require standard or pulse modes.

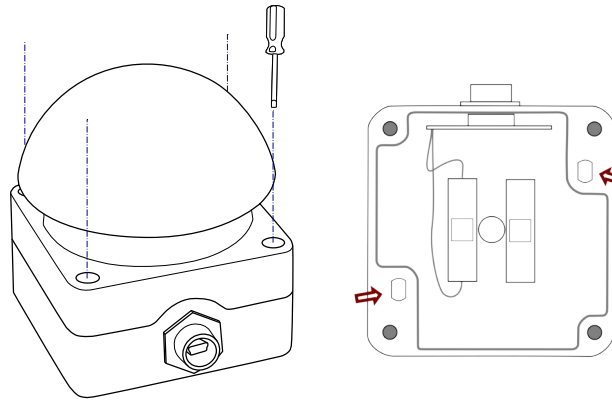
Temporary or permanent mount

The USB Dome Button has a 1/4-20 UNC thread for mounting on a (camera) tripod or a (microphone) stand.

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Alternatively, the base of the button has two mounting holes/slots for a permanent mounting. The mounting holes are suitable for 4 to 4.5 mm screws.

To get access to the two mounting holes in the base, the first step is to unscrew the top part of the button from the base.



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Controlling illumination

This section is only relevant for models with an illuminated dome.

A standard action for illumination can be configured with the Key Configurator tool. These are actions like on-off toggle, light up for several seconds, and blink. The ButtonLights utility allows more advanced control, including “lock-out” functionality for Quiz software. See <http://www.compuphase.com/usbkey/> for downloads.

For controlling the illumination from your own application, see the API descriptions in the Help file of the ButtonLights utility. The ButtonLights utility supports message passing, command line arguments and a HTTP network interface.

Note that the ButtonLights utility requires Microsoft Windows.

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Specifications

Mechanical

Dimensions.....Base: 85×85 mm, height: 45 mm, dome diameter: 94 mm; total height: 101 mm; USB connector protrudes the base by 11 mm.

Colour.....Base: black & grey; dome: red, black, yellow, green or white.

Mechanical lifespan.....> 10⁶ operations.

Protection level.....IEC/EN 60529: IP65, IP67

Actuation force.....20 to 25 N.

Operating conditions

Operating temperature...-25 °C to +40 °C.

Humidity.....5% to 95% non-condensing.

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Electronic interface

Operating voltage.....4.5 to 5.5 V/DC; USB-powered.
Current.....15 mA nominal; 115 mA nominal with LED illumination on (for models that include illumination).

Debounce criterion.....20 ms stable period.

Switch latency.....30 ms maximum, 15 ms average.

LED illumination.....12 LEDs; ≥ 470 mcd at a 120° viewing angle; only applicable for models that include illumination.

USB connector.....Mini-B, buccaneer (sealed IP68).

USB protocol.....USB 1.1 compatible (low-speed USB device).

Compatibility

Compatible with Microsoft Windows® XP and later, MacOS®, Linux and Android. No client-side software is needed. (Free configuration software requires Windows®, MacOS®, or Linux).

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Conformity

EMC.....Compliant with EU Directive 2004/108/EC: EN 55022 and EN 55024 + A1 (2001) + A2 (2003).

Electrical safety.....Compliant with EU Directive 2006/95/EC: EN 60950-21

RoHS.....Compliant with EU Directive 2002/95/EC.

Legal disclaimer

CompuPhase shall not be liable for the incidental or consequential losses or damage to tangible property, injury or death of a person in connection with the use of this device.

This device is intended to be connected to USB host devices or USB hubs. Connecting the device to equipment that does not adhere to the USB standard may damage the device.

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