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# **Adafruit HID Library Documentation**

***Release 1.0***

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## Contents

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<b>1 Dependencies</b>	<b>3</b>
<b>2 Usage Example</b>	<b>5</b>
<b>3 Contributing</b>	<b>9</b>
<b>4 Documentation</b>	<b>11</b>
<b>5 Table of Contents</b>	<b>13</b>
5.1 Simple test .....	13
5.2 adafruit_hid.keyboard.Keyboard .....	16
5.3 adafruit_hid.keycode.Keycode .....	17
5.4 adafruit_hid.keyboard_layout_us.KeyboardLayoutUS .....	23
5.5 adafruit_hid.mouse.Mouse .....	24
5.6 adafruit_hid.consumer_control.ConsumerControl .....	25
5.7 adafruit_hid.consumer_control_code.ConsumerControlCode .....	26
5.8 adafruit_hid.gamepad.Gamepad .....	27
<b>6 Indices and tables</b>	<b>29</b>
<b>Python Module Index</b>	<b>31</b>
<b>Index</b>	<b>33</b>



This driver simulates USB HID devices. Currently keyboard and mouse are implemented.



# CHAPTER 1

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## Dependencies

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This driver depends on:

- Adafruit CircuitPython

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the Adafruit library and driver bundle.



# CHAPTER 2

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## Usage Example

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The `Keyboard` class sends keypress reports for a USB keyboard device to the host.

The `Keycode` class defines USB HID keycodes to send using `Keyboard`.

```
from adafruit_hid.keyboard import Keyboard
from adafruit_hid.keycode import Keycode

# Set up a keyboard device.
kbd = Keyboard()

# Type lowercase 'a'. Presses the 'a' key and releases it.
kbd.send(Keycode.A)

# Type capital 'A'.
kbd.send(Keycode.SHIFT, Keycode.A)

# Type control-x.
kbd.send(Keycode.CONTROL, Keycode.X)

# You can also control press and release actions separately.
kbd.press(Keycode.CONTROL, Keycode.X)
kbd.release_all()

# Press and hold the shifted '1' key to get '!' (exclamation mark).
kbd.press(Keycode.SHIFT, Keycode.ONE)
# Release the ONE key and send another report.
kbd.release(Keycode.ONE)
# Press shifted '2' to get '@'.
kbd.press(Keycode.TWO)
# Release all keys.
kbd.release_all()
```

The `KeyboardLayoutUS` sends ASCII characters using keypresses. It assumes the host is set to accept keypresses from a US keyboard.

If the host is expecting a non-US keyboard, the character to key mapping provided by `KeyboardLayoutUS` will

not always be correct. Different keypresses will be needed in some cases. For instance, to type an 'A' on a French keyboard (AZERTY instead of QWERTY), Keycode.Q should be pressed.

Currently this package provides only KeyboardLayoutUS. More KeyboardLayout classes could be added to handle non-US keyboards and the different input methods provided by various operating systems.

```
from adafruit_hid.keyboard import Keyboard
from adafruit_hid.keyboard_layout_us import KeyboardLayoutUS

kbd = Keyboard()
layout = KeyboardLayoutUS(kbd)

# Type 'abc' followed by Enter (a newline).
layout.write('abc\n')

# Get the keycodes needed to type a '$'.
# The method will return (Keycode.SHIFT, Keycode.FOUR).
keycodes = layout.keycodes('$')
```

The Mouse class simulates a three-button mouse with a scroll wheel.

```
from adafruit_hid.mouse import Mouse

m = Mouse()

# Click the left mouse button.
m.click(Mouse.LEFT_BUTTON)

# Move the mouse diagonally to the upper left.
m.move(-100, -100, 0)

# Roll the mouse wheel away from the user one unit.
# Amount scrolled depends on the host.
m.move(0, 0, -1)

# Keyword arguments may also be used. Omitted arguments default to 0.
m.move(x=-100, y=-100)
m.move(wheel=-1)

# Move the mouse while holding down the left button. (click-drag).
m.press(Mouse.LEFT_BUTTON)
m.move(x=50, y=20)
m.release_all()      # or m.release(Mouse.LEFT_BUTTON)
```

The ConsumerControl class emulates consumer control devices such as remote controls, or the multimedia keys on certain keyboards.

*New in CircuitPython 3.0.*

```
from adafruit_hid.consumer_control import ConsumerControl
from adafruit_hid.consumer_control_code import ConsumerControlCode

cc = ConsumerControl()

# Raise volume.
cc.send(ConsumerControlCode.VOLUME_INCREMENT)

# Pause or resume playback.
cc.send(ConsumerControlCode.PLAY_PAUSE)
```

The Gamepad class emulates a two-joystick gamepad with 16 buttons.

*New in CircuitPython 3.0.*

```
from adafruit_hid.gamepad import Gamepad

gp = Gamepad()

# Click gamepad buttons.
gp.click_buttons(1, 7)

# Move joysticks.
gp.move_joysticks(x=2, y=0, z=-20)
```



# CHAPTER 3

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## Contributing

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Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.



# CHAPTER 4

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## Documentation

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For information on building library documentation, please check out [this guide](#).



# CHAPTER 5

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## Table of Contents

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### 5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/hid\_keyboard\_shortcuts.py

```
1 import time
2 import board
3 import digitalio
4 from adafruit_hid.keyboard import Keyboard
5 from adafruit_hid keycode import Keycode
6 import usb_hid
7
8 kbd = Keyboard(usb_hid.devices)
9
10 # define buttons. these can be any physical switches/buttons, but the values
11 # here work out-of-the-box with a CircuitPlayground Express' A and B buttons.
12 swap = digitalio.DigitalInOut(board.D4)
13 swap.direction = digitalio.Direction.INPUT
14 swap.pull = digitalio.Pull.DOWN
15
16 search = digitalio.DigitalInOut(board.D5)
17 search.direction = digitalio.Direction.INPUT
18 search.pull = digitalio.Pull.DOWN
19
20 while True:
21     # press ALT+TAB to swap windows
22     if swap.value:
23         kbd.send(Keycode.ALT, Keycode.TAB)
24
25     # press CTRL+K, which in a web browser will open the search dialog
26     elif search.value:
27         kbd.send(Keycode.CONTROL, Keycode.K)
```

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```
28  
29     time.sleep(0.1)
```

Listing 2: examples/hid\_simpletest.py

```
1 import time  
2 import board  
3 import digitalio  
4 import usb_hid  
5 from adafruit_hid.mouse import Mouse  
6  
7 mouse = Mouse(usb_hid.devices)  
8  
9 # define buttons. these can be any physical switches/buttons, but the values  
10 # here work out-of-the-box with a CircuitPlayground Express' A and B buttons.  
11 up = digitalio.DigitalInOut(board.D4)  
12 up.direction = digitalio.Direction.INPUT  
13 up.pull = digitalio.Pull.DOWN  
14  
15 down = digitalio.DigitalInOut(board.D5)  
16 down.direction = digitalio.Direction.INPUT  
17 down.pull = digitalio.Pull.DOWN  
18  
19 while True:  
20     # scroll up one unit (varies with host/OS)  
21     if up.value:  
22         mouse.move(wheel=1)  
23  
24     # scroll down one unit (varies with host/OS)  
25     elif down.value:  
26         mouse.move(wheel=-1)  
27  
28     time.sleep(0.1)
```

Listing 3: examples/hid\_simple\_gamepad.py

```
1 import board  
2 import digitalio  
3 import analogio  
4 import usb_hid  
5  
6 from adafruit_hid.gamepad import Gamepad  
7  
8 gp = Gamepad(usb_hid.devices)  
9  
10 # Create some buttons. The physical buttons are connected  
11 # to ground on one side and these and these pins on the other.  
12 button_pins = (board.D2, board.D3, board.D4, board.D5)  
13  
14 # Map the buttons to button numbers on the Gamepad.  
15 # gamepad_buttons[i] will send that button number when buttons[i]  
16 # is pushed.  
17 gamepad_buttons = (1, 2, 8, 15)  
18  
19 buttons = [digitalio.DigitalInOut(pin) for pin in button_pins]  
20 for button in buttons:
```

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```

21     button.direction = digitalio.Direction.INPUT
22     button.pull = digitalio.Pull.UP
23
24 # Connect an analog two-axis joystick to A4 and A5.
25 ax = analogio.AnalogIn(board.A4)
26 ay = analogio.AnalogIn(board.A5)
27
28 # Equivalent of Arduino's map() function.
29 def range_map(x, in_min, in_max, out_min, out_max):
30     return (x - in_min) * (out_max - out_min) // (in_max - in_min) + out_min
31
32
33 while True:
34     # Buttons are grounded when pressed (.value = False).
35     for i, button in enumerate(buttons):
36         gamepad_button_num = gamepad_buttons[i]
37         if button.value:
38             gp.release_buttons(gamepad_button_num)
39             print(" release", gamepad_button_num, end="")
40         else:
41             gp.press_buttons(gamepad_button_num)
42             print(" press", gamepad_button_num, end="")
43
44     # Convert range[0, 65535] to -127 to 127
45     gp.move_joysticks(
46         x=range_map(ax.value, 0, 65535, -127, 127),
47         y=range_map(ay.value, 0, 65535, -127, 127),
48     )
49     print(" x", ax.value, "y", ay.value)

```

Listing 4: examples/hid\_joywing\_gamepad.py

```

1 # Use Joy FeatherWing to drive Gamepad.
2
3 import time
4
5 import board
6 import busio
7 from micropython import const
8 import adafruit_seesaw
9 from adafruit_hid.gamepad import Gamepad
10 import usb_hid
11
12
13 def range_map(value, in_min, in_max, out_min, out_max):
14     return (value - in_min) * (out_max - out_min) // (in_max - in_min) + out_min
15
16
17 BUTTON_RIGHT = const(6)
18 BUTTON_DOWN = const(7)
19 BUTTON_LEFT = const(9)
20 BUTTON_UP = const(10)
21 BUTTON_SEL = const(14)
22 button_mask = const(
23     (1 << BUTTON_RIGHT)
24     | (1 << BUTTON_DOWN)

```

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```

25     | (1 << BUTTON_LEFT)
26     | (1 << BUTTON_UP)
27     | (1 << BUTTON_SEL)
28 )
29
30 i2c = busio.I2C(board.SCL, board.SDA)
31
32 ss = adafruit_seesaw.Seesaw(i2c)
33
34 ss.pin_mode_bulk(button_mask, ss.INPUT_PULLUP)
35
36 last_game_x = 0
37 last_game_y = 0
38
39 g = Gamepad(usb_hid.devices)
40
41 while True:
42     x = ss.analog_read(2)
43     y = ss.analog_read(3)
44
45     game_x = range_map(x, 0, 1023, -127, 127)
46     game_y = range_map(y, 0, 1023, -127, 127)
47     if last_game_x != game_x or last_game_y != game_y:
48         last_game_x = game_x
49         last_game_y = game_y
50         print(game_x, game_y)
51         g.move_joysticks(x=game_x, y=game_y)
52
53     buttons = (BUTTON_RIGHT, BUTTON_DOWN, BUTTON_LEFT, BUTTON_UP, BUTTON_SEL)
54     button_state = [False] * len(buttons)
55     for i, button in enumerate(buttons):
56         buttons = ss.digital_read_bulk(button_mask)
57         if not (buttons & (1 << button) and not button_state[i]):
58             g.press_buttons(i + 1)
59             print("Press", i + 1)
60             button_state[i] = True
61         elif button_state[i]:
62             g.release_buttons(i + 1)
63             print("Release", i + 1)
64             button_state[i] = False
65
66     time.sleep(0.01)

```

## 5.2 adafruit\_hid.keyboard.Keyboard

- Author(s): Scott Shawcroft, Dan Halbert

**class** adafruit\_hid.keyboard.Keyboard(*devices*)  
Send HID keyboard reports.

**press**(\*keycodes)  
Send a report indicating that the given keys have been pressed.

**Parameters** **keycodes** – Press these keycodes all at once.

**Raises** **ValueError** – if more than six regular keys are pressed.

Keycodes may be modifiers or regular keys. No more than six regular keys may be pressed simultaneously.

Examples:

```
from adafruit_hid keycode import Keycode

# Press ctrl-x.
kbd.press(Keycode.LEFT_CONTROL, Keycode.X)

# Or, more conveniently, use the CONTROL alias for LEFT_CONTROL:
kbd.press(Keycode.CONTROL, Keycode.X)

# Press a, b, c keys all at once.
kbd.press(Keycode.A, Keycode.B, Keycode.C)
```

### **release (\*keycodes)**

Send a USB HID report indicating that the given keys have been released.

**Parameters keycodes** – Release these keycodes all at once.

If a keycode to be released was not pressed, it is ignored.

Example:

```
# release SHIFT key
kbd.release(Keycode.SHIFT)
```

### **release\_all ()**

Release all pressed keys.

### **send (\*keycodes)**

Press the given keycodes and then release all pressed keys.

**Parameters keycodes** – keycodes to send together

## 5.3 `adafruit_hid.keycode.Keycode`

- Author(s): Scott Shawcroft, Dan Halbert

### **class adafruit\_hid.keycode.Keycode**

USB HID Keycode constants.

This list is modeled after the names for USB keycodes defined in [https://www.usb.org/sites/default/files/documents/hut1\\_12v2.pdf#page=53](https://www.usb.org/sites/default/files/documents/hut1_12v2.pdf#page=53). This list does not include every single code, but does include all the keys on a regular PC or Mac keyboard.

Remember that keycodes are the names for key *positions* on a US keyboard, and may not correspond to the character that you mean to send if you want to emulate non-US keyboard. For instance, on a French keyboard (AZERTY instead of QWERTY), the keycode for ‘q’ is used to indicate an ‘a’. Likewise, ‘y’ represents ‘z’ on a German keyboard. This is historical: the idea was that the keycaps could be changed without changing the keycodes sent, so that different firmware was not needed for different variations of a keyboard.

#### **A = 4**

a and A

#### **ALT = 226**

Alias for LEFT\_ALT; Alt is also known as Option (Mac)

#### **APPLICATION = 101**

Application: also known as the Menu key (Windows)

**B = 5**  
b and B

**BACKSLASH = 49**  
\ and |

**BACKSPACE = 42**  
Delete backward (Backspace)

**C = 6**  
c and C

**CAPS\_LOCK = 57**  
Caps Lock

**COMMA = 54**  
, and <

**COMMAND = 227**  
Labeled as Command on Mac keyboards, with a clover glyph

**CONTROL = 224**  
Alias for LEFT\_CONTROL

**D = 7**  
d and D

**DELETE = 76**  
Delete forward

**DOWN\_ARROW = 81**  
Move the cursor down

**E = 8**  
e and E

**EIGHT = 37**  
8 and \*

**END = 77**  
End (often moves to end of line)

**ENTER = 40**  
Enter (Return)

**EQUALS = 46**  
=` and ``+

**ESCAPE = 41**  
Escape

**F = 9**  
f and F

**F1 = 58**  
Function key F1

**F10 = 67**  
Function key F10

**F11 = 68**  
Function key F11

```
F12 = 69
    Function key F12

F13 = 104
    Function key F13 (Mac)

F14 = 105
    Function key F14 (Mac)

F15 = 106
    Function key F15 (Mac)

F16 = 107
    Function key F16 (Mac)

F17 = 108
    Function key F17 (Mac)

F18 = 109
    Function key F18 (Mac)

F19 = 110
    Function key F19 (Mac)

F2 = 59
    Function key F2

F3 = 60
    Function key F3

F4 = 61
    Function key F4

F5 = 62
    Function key F5

F6 = 63
    Function key F6

F7 = 64
    Function key F7

F8 = 65
    Function key F8

F9 = 66
    Function key F9

FIVE = 34
    5 and %

FORWARD_SLASH = 56
    / and ?

FOUR = 33
    4 and $

G = 10
    g and G

GRAVE_ACCENT = 53
    ` and ~
```

**GUI = 227**  
Alias for LEFT\_GUI; GUI is also known as the Windows key, Command (Mac), or Meta

**H = 11**  
h and H

**HOME = 74**  
Home (often moves to beginning of line)

**I = 12**  
i and I

**INSERT = 73**  
Insert

**J = 13**  
j and J

**K = 14**  
k and K

**KEYPAD\_ASTERISK = 85**  
Keypad \*

**KEYPAD\_BACKSLASH = 100**  
Keypad \ and | (Non-US)

**KEYPAD\_EIGHT = 96**  
Keypad 8 and Up Arrow

**KEYPAD\_ENTER = 88**  
Keypad Enter

**KEYPAD\_EQUALS = 103**  
Keypad = (Mac)

**KEYPAD\_FIVE = 93**  
Keypad 5

**KEYPAD\_FORWARD\_SLASH = 84**  
Keypad /

**KEYPAD\_FOUR = 92**  
Keypad 4 and Left Arrow

**KEYPAD\_MINUS = 86**  
Keyapd -

**KEYPAD\_NINE = 97**  
Keypad 9 and PgUp

**KEYPAD\_NUMLOCK = 83**  
Num Lock (Clear on Mac)

**KEYPAD\_ONE = 89**  
Keypad 1 and End

**KEYPAD\_PERIOD = 99**  
Keypad . and Del

**KEYPAD\_PLUS = 87**  
Keypad +

---

**KEYPAD\_SEVEN = 95**  
Keypad 7 and Home

**KEYPAD\_SIX = 94**  
Keypad 6 and Right Arrow

**KEYPAD\_THREE = 91**  
Keypad 3 and PgDn

**KEYPAD\_TWO = 90**  
Keypad 2 and Down Arrow

**KEYPAD\_ZERO = 98**  
Keypad 0 and Ins

**L = 15**  
l and L

**LEFT\_ALT = 226**  
Alt modifier left of the spacebar

**LEFT\_ARROW = 80**  
Move the cursor left

**LEFT\_BRACKET = 47**  
[ and {

**LEFT\_CONTROL = 224**  
Control modifier left of the spacebar

**LEFT\_GUI = 227**  
GUI modifier left of the spacebar

**LEFT\_SHIFT = 225**  
Shift modifier left of the spacebar

**M = 16**  
m and M

**MINUS = 45**  
-` and ``\_-

**N = 17**  
n and N

**NINE = 38**  
9 and (

**O = 18**  
o and O

**ONE = 30**  
1 and !

**OPTION = 226**  
Labeled as Option on some Mac keyboards

**P = 19**  
p and P

**PAGE\_DOWN = 78**  
Go forward one page

**PAGE\_UP** = 75  
Go back one page

**PAUSE** = 72  
Pause (Break)

**PERIOD** = 55  
. and >

**POUND** = 50  
# and ~ (Non-US keyboard)

**POWER** = 102  
Power (Mac)

**PRINT\_SCREEN** = 70  
Print Screen (SysRq)

**Q** = 20  
q and Q

**QUOTE** = 52  
' and "

**R** = 21  
r and R

**RETURN** = 40  
Alias for ENTER

**RIGHT\_ALT** = 230  
Alt modifier right of the spacebar

**RIGHT\_ARROW** = 79  
Move the cursor right

**RIGHT\_BRACKET** = 48  
] and }

**RIGHT\_CONTROL** = 228  
Control modifier right of the spacebar

**RIGHT\_GUI** = 231  
GUI modifier right of the spacebar

**RIGHT\_SHIFT** = 229  
Shift modifier right of the spacebar

**S** = 22  
s and S

**SCROLL\_LOCK** = 71  
Scroll Lock

**SEMICOLON** = 51  
; and :

**SEVEN** = 36  
7 and &

**SHIFT** = 225  
Alias for LEFT\_SHIFT

**SIX** = 35  
6 and ^

**SPACE** = 44  
Alias for SPACEBAR

**SPACEBAR** = 44  
Spacebar

**T** = 23  
t and T

**TAB** = 43  
Tab and Backtab

**THREE** = 32  
3 and #

**TWO** = 31  
2 and @

**U** = 24  
u and U

**UP\_ARROW** = 82  
Move the cursor up

**V** = 25  
v and V

**W** = 26  
w and W

**WINDOWS** = 227  
Labeled with a Windows logo on Windows keyboards

**X** = 27  
x and X

**Y** = 28  
y and Y

**Z** = 29  
z and Z

**ZERO** = 39  
0 and )

**classmethod modifier\_bit(keycode)**  
Return the modifer bit to be set in an HID keycode report if this is a modifier key; otherwise return 0.

## 5.4 adafruit\_hid.keyboard\_layout\_us.KeyboardLayoutUS

- Author(s): Dan Halbert

**class** adafruit\_hid.keyboard\_layout\_us.**KeyboardLayoutUS**(*keyboard*)  
Map ASCII characters to appropriate keypresses on a standard US PC keyboard.

Non-ASCII characters and most control characters will raise an exception.

**keycodes(char)**  
Return a tuple of keycodes needed to type the given character.

**Parameters** `char` (*str of length one.*) – A single ASCII character in a string.

**Returns** tuple of Keycode keycodes.

**Raises** `ValueError` – if `char` is not ASCII or there is no keycode for it.

Examples:

```
# Returns (Keycode.TAB, )
keycodes(' ')
# Returns (Keycode.A, )
keycode('a')
# Returns (Keycode.SHIFT, Keycode.A)
keycode('A')
# Raises ValueError because it's a accented e and is not ASCII
keycode('é')
```

### `write(string)`

Type the string by pressing and releasing keys on my keyboard.

**Parameters** `string` – A string of ASCII characters.

**Raises** `ValueError` – if any of the characters are not ASCII or have no keycode (such as some control characters).

Example:

```
# Write abc followed by Enter to the keyboard
layout.write('abc\n')
```

## 5.5 adafruit\_hid.mouse.Mouse

- Author(s): Dan Halbert

### `class adafruit_hid.mouse.Mouse(devices)`

Send USB HID mouse reports.

#### `LEFT_BUTTON = 1`

Left mouse button.

#### `MIDDLE_BUTTON = 4`

Middle mouse button.

#### `RIGHT_BUTTON = 2`

Right mouse button.

### `click(buttons)`

Press and release the given mouse buttons.

**Parameters** `buttons` – a bitwise-or'd combination of `LEFT_BUTTON`, `MIDDLE_BUTTON`, and `RIGHT_BUTTON`.

Examples:

```
# Click the left button.
m.click(Mouse.LEFT_BUTTON)

# Double-click the left button.
m.click(Mouse.LEFT_BUTTON)
m.click(Mouse.LEFT_BUTTON)
```

**move** (*x=0, y=0, wheel=0*)

Move the mouse and turn the wheel as directed.

**Parameters**

- **x** – Move the mouse along the x axis. Negative is to the left, positive is to the right.
- **y** – Move the mouse along the y axis. Negative is upwards on the display, positive is downwards.
- **wheel** – Rotate the wheel this amount. Negative is toward the user, positive is away from the user. The scrolling effect depends on the host.

Examples:

```
# Move 100 to the left. Do not move up and down. Do not roll the scroll wheel.
m.move(-100, 0, 0)
# Same, with keyword arguments.
m.move(x=-100)

# Move diagonally to the upper right.
m.move(50, 20)
# Same.
m.move(x=50, y=-20)

# Roll the mouse wheel away from the user.
m.move(wheel=1)
```

**press** (*buttons*)

Press the given mouse buttons.

**Parameters buttons** – a bitwise-or'd combination of LEFT\_BUTTON, MIDDLE\_BUTTON, and RIGHT\_BUTTON.

Examples:

```
# Press the left button.
m.press(Mouse.LEFT_BUTTON)

# Press the left and right buttons simultaneously.
m.press(Mouse.LEFT_BUTTON | Mouse.RIGHT_BUTTON)
```

**release** (*buttons*)

Release the given mouse buttons.

**Parameters buttons** – a bitwise-or'd combination of LEFT\_BUTTON, MIDDLE\_BUTTON, and RIGHT\_BUTTON.

**release\_all** ()

Release all the mouse buttons.

## 5.6 adafruit\_hid.consumer\_control.ConsumerControl

- Author(s): Dan Halbert

**class** adafruit\_hid.consumer\_control.ConsumerControl (*devices*)

Send ConsumerControl code reports, used by multimedia keyboards, remote controls, etc.

**send** (*consumer\_code*)

Send a report to do the specified consumer control action, and then stop the action (so it will not repeat).

Parameters `consumer_code` – a 16-bit consumer control code.

Examples:

```
from adafruit_hid.consumer_control_code import ConsumerControlCode

# Raise volume.
consumer_control.send(ConsumerControlCode.VOLUME_INCREMENT)

# Advance to next track (song).
consumer_control.send(ConsumerControlCode.SCAN_NEXT_TRACK)
```

## 5.7 `adafruit_hid.consumer_control_code.ConsumerControlCode`

- Author(s): Dan Halbert

```
class adafruit_hid.consumer_control_code.ConsumerControlCode
    USB HID Consumer Control Device constants.
```

This list includes a few common consumer control codes from [http://www.usb.org/developers/hidpage/Hut1\\_12v2.pdf#page=75](http://www.usb.org/developers/hidpage/Hut1_12v2.pdf#page=75).

*New in CircuitPython 3.0.*

```
EJECT = 184
    Eject

FAST_FORWARD = 179
    Fast Forward

MUTE = 226
    Mute

PLAY_PAUSE = 205
    Play/Pause toggle

RECORD = 178
    Record

REWIND = 180
    Rewind

SCAN_NEXT_TRACK = 181
    Skip to next track

SCAN_PREVIOUS_TRACK = 182
    Go back to previous track

STOP = 183
    Stop

VOLUME_DECREMENT = 234
    Decrease volume

VOLUME_INCREMENT = 233
    Increase volume
```

## 5.8 adafruit\_hid.gamepad.Gamepad

- Author(s): Dan Halbert

**class** adafruit\_hid.gamepad.Gamepad(*devices*)

Emulate a generic gamepad controller with 16 buttons, numbered 1-16, and two joysticks, one controlling x` and ``y values, and the other controlling z and r\_z (z rotation or Rz) values.

The joystick values could be interpreted differently by the receiving program: those are just the names used here. The joystick values are in the range -127 to 127.

**click\_buttons**(\**buttons*)

Press and release the given buttons.

**move\_joysticks**(*x=None*, *y=None*, *z=None*, *r\_z=None*)

Set and send the given joystick values. The joysticks will remain set with the given values until changed

One joystick provides x and y values, and the other provides z and r\_z (z rotation). Any values left as None will not be changed.

All values must be in the range -127 to 127 inclusive.

Examples:

```
# Change x and y values only.
gp.move_joysticks(x=100, y=-50)

# Reset all joystick values to center position.
gp.move_joysticks(0, 0, 0, 0)
```

**press\_buttons**(\**buttons*)

Press and hold the given buttons.

**release\_all\_buttons**()

Release all the buttons.

**release\_buttons**(\**buttons*)

Release the given buttons.

**reset\_all**()

Release all buttons and set joysticks to zero.



# CHAPTER 6

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## Indices and tables

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- genindex
- modindex
- search



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## Python Module Index

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### a

adafruit\_hid.consumer\_control, 25  
adafruit\_hid.consumer\_control\_code, 26  
adafruit\_hid.gamepad, 26  
adafruit\_hid.keyboard, 16  
adafruit\_hid.keyboard\_layout\_us, 23  
adafruit\_hid.keycode, 17  
adafruit\_hid.mouse, 24



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## Index

---

### A

A (*adafruit\_hid keycode.Keycode attribute*), 17  
adafruit\_hid.consumer\_control (*module*), 25  
adafruit\_hid.consumer\_control\_code (*module*), 26  
adafruit\_hid.gamepad (*module*), 26  
adafruit\_hid.keyboard (*module*), 16  
adafruit\_hid.keyboard\_layout\_us (*module*), 23  
adafruit\_hid.keycode (*module*), 17  
adafruit\_hid.mouse (*module*), 24  
ALT (*adafruit\_hid keycode.Keycode attribute*), 17  
APPLICATION (*adafruit\_hid keycode.Keycode attribute*), 17

### B

B (*adafruit\_hid keycode.Keycode attribute*), 18  
BACKSLASH (*adafruit\_hid keycode.Keycode attribute*), 18  
BACKSPACE (*adafruit\_hid keycode.Keycode attribute*), 18

### C

C (*adafruit\_hid keycode.Keycode attribute*), 18  
CAPS\_LOCK (*adafruit\_hid keycode.Keycode attribute*), 18  
click () (*adafruit\_hid mouse.Mouse method*), 24  
click\_buttons () (*adafruit\_hid gamepad.Gamepad method*), 27  
COMMA (*adafruit\_hid keycode.Keycode attribute*), 18  
COMMAND (*adafruit\_hid keycode.Keycode attribute*), 18  
ConsumerControl (*class* in *adafruit\_hid consumer\_control*), 25  
ConsumerControlCode (*class* in *adafruit\_hid consumer\_control\_code*), 26  
CONTROL (*adafruit\_hid keycode.Keycode attribute*), 18

### D

D (*adafruit\_hid keycode.Keycode attribute*), 18

DELETE (*adafruit\_hid keycode.Keycode attribute*), 18  
DOWN\_ARROW (*adafruit\_hid keycode.Keycode attribute*), 18

### E

E (*adafruit\_hid keycode.Keycode attribute*), 18  
EIGHT (*adafruit\_hid keycode.Keycode attribute*), 18  
EJECT (*adafruit\_hid consumer\_control\_code.ConsumerControlCode attribute*), 26  
END (*adafruit\_hid keycode.Keycode attribute*), 18  
ENTER (*adafruit\_hid keycode.Keycode attribute*), 18  
EQUALS (*adafruit\_hid keycode.Keycode attribute*), 18  
ESCAPE (*adafruit\_hid keycode.Keycode attribute*), 18

### F

F (*adafruit\_hid keycode.Keycode attribute*), 18  
F1 (*adafruit\_hid keycode.Keycode attribute*), 18  
F10 (*adafruit\_hid keycode.Keycode attribute*), 18  
F11 (*adafruit\_hid keycode.Keycode attribute*), 18  
F12 (*adafruit\_hid keycode.Keycode attribute*), 18  
F13 (*adafruit\_hid keycode.Keycode attribute*), 19  
F14 (*adafruit\_hid keycode.Keycode attribute*), 19  
F15 (*adafruit\_hid keycode.Keycode attribute*), 19  
F16 (*adafruit\_hid keycode.Keycode attribute*), 19  
F17 (*adafruit\_hid keycode.Keycode attribute*), 19  
F18 (*adafruit\_hid keycode.Keycode attribute*), 19  
F19 (*adafruit\_hid keycode.Keycode attribute*), 19  
F2 (*adafruit\_hid keycode.Keycode attribute*), 19  
F3 (*adafruit\_hid keycode.Keycode attribute*), 19  
F4 (*adafruit\_hid keycode.Keycode attribute*), 19  
F5 (*adafruit\_hid keycode.Keycode attribute*), 19  
F6 (*adafruit\_hid keycode.Keycode attribute*), 19  
F7 (*adafruit\_hid keycode.Keycode attribute*), 19  
F8 (*adafruit\_hid keycode.Keycode attribute*), 19  
F9 (*adafruit\_hid keycode.Keycode attribute*), 19  
FAST\_FORWARD (*adafruit\_hid consumer\_control\_code.ConsumerControlCode attribute*), 26  
FIVE (*adafruit\_hid keycode.Keycode attribute*), 19  
FORWARD\_SLASH (*adafruit\_hid keycode.Keycode attribute*), 19

FOUR (*adafruit\_hid keycode.Keycode attribute*), 19

## G

G (*adafruit\_hid keycode.Keycode attribute*), 19

Gamepad (*class in adafruit\_hid.gamepad*), 27

GRAVE\_ACCEENT (*adafruit\_hid keycode.Keycode attribute*), 19

GUI (*adafruit\_hid keycode.Keycode attribute*), 19

## H

H (*adafruit\_hid keycode.Keycode attribute*), 20

HOME (*adafruit\_hid keycode.Keycode attribute*), 20

## I

I (*adafruit\_hid keycode.Keycode attribute*), 20

INSERT (*adafruit\_hid keycode.Keycode attribute*), 20

## J

J (*adafruit\_hid keycode.Keycode attribute*), 20

## K

K (*adafruit\_hid keycode.Keycode attribute*), 20

Keyboard (*class in adafruit\_hid.keyboard*), 16

KeyboardLayoutUS (*class adafruit\_hid.keyboard\_layout\_us*), 23

KeyCode (*class in adafruit\_hid keycode*), 17

keycodes () (*adafruit\_hid.keyboard\_layout\_us.KeyboardLayoutUS method*), 23

KEYPAD\_ASTERISK (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_BACKSLASH (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_EIGHT (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_ENTER (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_EQUALS (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_FIVE (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_FORWARD\_SLASH (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_FOUR (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_MINUS (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_NINE (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_NUMLOCK (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_ONE (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_PERIOD (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_PLUS (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_SEVEN (*adafruit\_hid keycode.Keycode attribute*), 20

KEYPAD\_SIX (*adafruit\_hid keycode.Keycode attribute*), 21

KEYPAD\_THREE (*adafruit\_hid keycode.Keycode attribute*), 21

KEYPAD\_TWO (*adafruit\_hid keycode.Keycode attribute*), 21

KEYPAD\_ZERO (*adafruit\_hid keycode.Keycode attribute*), 21

## L

L (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_ALT (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_ARROW (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_BRACKET (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_BUTTON (*adafruit\_hid.mouse.Mouse attribute*), 24

in

LEFT\_CONTROL (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_GUI (*adafruit\_hid keycode.Keycode attribute*), 21

LEFT\_SHIFT (*adafruit\_hid keycode.Keycode attribute*), 21

## M

M (*adafruit\_hid keycode.Keycode attribute*), 21

MIDDLE\_BUTTON (*adafruit\_hid.mouse.Mouse attribute*), 24

MINUS (*adafruit\_hid keycode.Keycode attribute*), 21

modifier\_bit () (*adafruit\_hid keycode.Keycode class method*), 23

Mouse (*class in adafruit\_hid.mouse*), 24

move () (*adafruit\_hid.mouse.Mouse method*), 24

move\_joysticks () (*adafruit\_hid.gamepad.Gamepad method*), 27

MUTE (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26

## N

N (*adafruit\_hid keycode.Keycode attribute*), 21

NINE (*adafruit\_hid keycode.Keycode attribute*), 21

## O

O (*adafruit\_hid keycode.Keycode attribute*), 21

ONE (*adafruit\_hid keycode.Keycode attribute*), 21

OPTION (*adafruit\_hid keycode.Keycode attribute*), 21

**P**

P (*adafruit\_hid keycode.Keycode attribute*), 21  
 PAGE\_DOWN (*adafruit\_hid keycode.Keycode attribute*), 21  
 PAGE\_UP (*adafruit\_hid keycode.Keycode attribute*), 21  
 PAUSE (*adafruit\_hid keycode.Keycode attribute*), 22  
 PERIOD (*adafruit\_hid keycode.Keycode attribute*), 22  
 PLAY\_PAUSE (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 POUND (*adafruit\_hid keycode.Keycode attribute*), 22  
 POWER (*adafruit\_hid keycode.Keycode attribute*), 22  
 press () (*adafruit\_hid.keyboard.Keyboard method*), 16  
 press () (*adafruit\_hid.mouse.Mouse method*), 25  
 press\_buttons () (*adafruit\_hid.gamepad.Gamepad method*), 27  
 PRINT\_SCREEN (*adafruit\_hid keycode.Keycode attribute*), 22

**Q**

Q (*adafruit\_hid keycode.Keycode attribute*), 22  
 QUOTE (*adafruit\_hid keycode.Keycode attribute*), 22

**R**

R (*adafruit\_hid keycode.Keycode attribute*), 22  
 RECORD (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 release () (*adafruit\_hid.keyboard.Keyboard method*), 17  
 release () (*adafruit\_hid.mouse.Mouse method*), 25  
 release\_all () (*adafruit\_hid.keyboard.Keyboard method*), 17  
 release\_all () (*adafruit\_hid.mouse.Mouse method*), 25  
 release\_all\_buttons () (*adafruit\_hid.gamepad.Gamepad method*), 27  
 release\_buttons () (*adafruit\_hid.gamepad.Gamepad method*), 27  
 reset\_all () (*adafruit\_hid.gamepad.Gamepad method*), 27  
 RETURN (*adafruit\_hid keycode.Keycode attribute*), 22  
 REWIND (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 RIGHT\_ALT (*adafruit\_hid keycode.Keycode attribute*), 22  
 RIGHT\_ARROW (*adafruit\_hid keycode.Keycode attribute*), 22  
 RIGHT\_BRACKET (*adafruit\_hid keycode.Keycode attribute*), 22  
 RIGHT\_BUTTON (*adafruit\_hid.mouse.Mouse attribute*), 24  
 RIGHT\_CONTROL (*adafruit\_hid keycode.Keycode attribute*), 22

RIGHT\_GUI (*adafruit\_hid keycode.Keycode attribute*), 22  
 RIGHT\_SHIFT (*adafruit\_hid keycode.Keycode attribute*), 22

**S**

S (*adafruit\_hid keycode.Keycode attribute*), 22  
 SCAN\_NEXT\_TRACK (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 SCAN\_PREVIOUS\_TRACK (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 SCROLL\_LOCK (*adafruit\_hid keycode.Keycode attribute*), 22  
 SEMICOLON (*adafruit\_hid keycode.Keycode attribute*), 22  
 send () (*adafruit\_hid.consumer\_control.ConsumerControl method*), 25  
 send () (*adafruit\_hid.keyboard.Keyboard method*), 17  
 SEVEN (*adafruit\_hid keycode.Keycode attribute*), 22  
 SHIFT (*adafruit\_hid keycode.Keycode attribute*), 22  
 SIX (*adafruit\_hid keycode.Keycode attribute*), 22  
 SPACE (*adafruit\_hid keycode.Keycode attribute*), 23  
 SPACEBAR (*adafruit\_hid keycode.Keycode attribute*), 23  
 STOP\_CODE (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26

**T**

T (*adafruit\_hid keycode.Keycode attribute*), 23  
 TAB (*adafruit\_hid keycode.Keycode attribute*), 23  
 THREE (*adafruit\_hid keycode.Keycode attribute*), 23  
 TWO (*adafruit\_hid keycode.Keycode attribute*), 23

**U**

U (*adafruit\_hid keycode.Keycode attribute*), 23  
 UP\_ARROW (*adafruit\_hid keycode.Keycode attribute*), 23

**V**

V (*adafruit\_hid keycode.Keycode attribute*), 23  
 VOLUME\_DECREMENT (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26  
 VOLUME\_INCREMENT (*adafruit\_hid.consumer\_control\_code.ConsumerControlCode attribute*), 26

**W**

W (*adafruit\_hid keycode.Keycode attribute*), 23  
 WINDOWS (*adafruit\_hid keycode.Keycode attribute*), 23  
 write () (*adafruit\_hid.keyboard\_layout\_us.KeyboardLayoutUS method*), 24

**X**

X (*adafruit\_hid keycode.Keycode attribute*), 23

**Y**

`Y` (*adafruit\_hid keycode.Keycode attribute*), [23](#)

**Z**

`Z` (*adafruit\_hid keycode.Keycode attribute*), [23](#)

`ZERO` (*adafruit\_hid keycode.Keycode attribute*), [23](#)