Piano Module TTP229-LS for micro:bit

GB Operating instructions

Latest operating instructions

Download the latest operating instructions at www.conrad.com/downloads or scan the QR code shown. Follow the instructions on the website.

Delivery contents

• Piano Module TTP229-LS for micro:bit

Description

The micro:bit is a powerful, low-cost, fully programmable single board computer developed by the BBC. It was designed to encourage children to actively engage in technical activities such as programming and electronics.

It features a 5x5 LED matrix, two integrated buttons, a compass, an accelerometer and Bluetooth®.

It supports the graphical programming interface PXT (MakeCode). This can be used on Microsoft Windows®, MacOS, iOS, Android™ and many other operating systems without downloading an additional compiler.

The piano module is fully compatible with the micro:bit single board computer.

It features an integrated TTP229-LSF chip (capacitive touch sensor), 8 sensor piano keys, 4 WS2812 LEDs (digital RGB LEDs) and a passive buzzer.

In addition, the board also has 2x3 contacts on each side.

Left:

GND, 3V, micro:bit pin P8

Right:

GND, 3V, micro:bit pin P2

Further contacts are available on the top of the board for soldering pin or socket strips with a contact spacing of 2.54 mm.

One row of contacts contains a 3V voltage input/output and pins for SPI communication. The other row of contacts also contains a 3V voltage input/output, the micro:bit pin P12 and pins for I2C communication.

This makes it easy to connect other sensor modules to the micro:bit.

The top of the board features two 3.2 mm holes for securing the board in place.

Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

Product features

• 8x sensor piano keys
• 1x TTP229-LSF chip (capacitive touch sensor)
• 4x WS2812 digital RGB LEDs
• 1x passive buzzer
• 2x3 contacts on the sides for expansion
• 2x5 contacts for pin or socket strips
• 2x 3.2 mm holes for mounting
• Slot for micro:bit single board computer

Requirements

The following components are required to use the board:

• 1 micro:bit, e.g. Conrad item no.: 2253828

Operation

Insert the micro:bit into the slot provided on the circuit board. The 5x5 LED matrix and the piano markings must face towards you.

Connect the micro:bit to your computer.

Test program

You can graphically program the code below using the micro:bit MakeCode Editor:

» https://makecode.microbit.org/#editor

Then download the code and transfer it to the micro:bit. The exact procedure for programming and transferring the program to the micro:bit can be found in the micro:bit manual or online at:

» https://microbit.org

Download the sample program (microbit_piano.hex) (see QR code at the beginning of this manual).

Drag the file to MakeCode Editor (hold down the left mouse button and drag microbit_piano.hex into MakeCode Editor).

The program with the extensions will then be displayed in the program window as shown in the next diagram.

```
on start
  Set RGB LED Color
  LED1:  Set Color  red ▼
  LED2:  Set Color  red ▼
  LED3:  Set Color  red ▼
  LED4:  Set Color  red ▼
  pause (ms)  1000 ▼
  Set RGB LED Color
  LED1:  Set Color  green ▼
  LED2:  Set Color  green ▼
  LED3:  Set Color  green ▼
  LED4:  Set Color  green ▼
  pause (ms)  1000 ▼
  Set RGB LED Color
  LED1:  Set Color  blue ▼
  LED2:  Set Color  blue ▼
  LED3:  Set Color  blue ▼
  LED4:  Set Color  blue ▼
  pause (ms)  1000 ▼

forever
  Play Piano
```

Finally, transfer the program to your micro:bit.

Test

After starting the program, you can press (touch) the piano keys and start composing your own tunes. The RGB LEDs (LED1 to LED4) light up in colour as you press the keys. The example can be adapted as desired.

Disposal

Electronic devices are recyclable waste and must not be placed in household waste. At the end of its service life, dispose of the product in accordance with the applicable regulatory guidelines.

You thus fulfil your statutory obligations and contribute to protection of the environment.

Technical data

Power supply

Via micro:bit board..................................	5 V/DC
Externally via socket................................	3.3 V/DC
Piano board connections (sides)	3.3 V/DC
Piano board connections (top)................	3.3 V/DC
Dimensions (W x H x D)	55 x 10 x 124 mm
Weight	30 g