Kitronik Alarm Clock Kit with ZIP Halo HD for micro:bit

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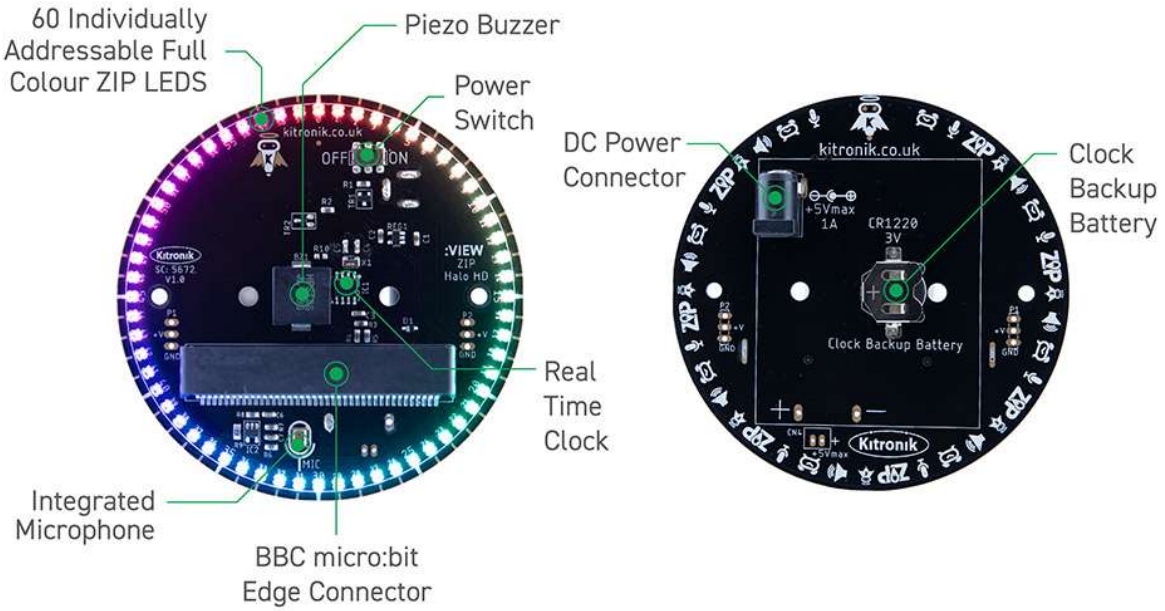

KITRONIK ALARM CLOCK KIT:

The Kitronik Alarm Clock Kit with ZIP Halo HD for microbit provides a fun introduction to features of Halo HD. This kit features a modified version of Halo HD, all of the parts required to build the clock, and also power accessories. To get you started we have included an easy to follow tutorial book which will guide you through building your clock & checking all the LEDs are working correctly with some test code. Once this is done, we can then move online for some further tutorials within MakeCode.

The Kitronik Alarm Clock Kit with ZIP Halo HD for micro:bit features a modified version of Halo HD. This modified version is only available via this kit. The changes are as follows; power is now provided via a 2.1mm barrel jack connection and there is also a coin cell holder fitted to the rear of the board. When a 1220 coin cell battery is inserted, it will then provide power to the RTC chip when no power is being supplied to Halo HD. This ensures that you only have to set up the time for your project once. The maths would suggest that the coin cell can last for up to 2 years in this application, though real-world experiences may vary.

ZIP HALO HD FOR MICROBIT:

The Kitronik Halo HD board for the BBC micro:bit incorporates 60 individually addressable full-colour ZIP LEDs. It also breaks out P1 and P2 to a standard 0.1” footprint, it features a MEMS microphone for detection of sound, and a piezo buzzer to play sound. If that weren't enough, it also features an onboard real-time clock (RTC) controlled by I2C lines from the microbit. The board also has M3 mounting holes for a more sturdy project. We think you'll agree, the board is loaded with useful features. It doesn't stop there.

All other features of the modified versions of Halo HD remain identical to the original. Kitronik has created custom blocks for the ZIP Halo HD for use with MakeCode. To add these blocks; Under the “Advanced” section click on “Extensions”. In the next window search for “Halo HD”. Then, click on the tile to import it into MakeCode. You will see that the blocks are split across three categories; ZIP LEDs, Microphone and Clock. For those requiring more of a challenge, the Alarm Clock Kit kit can also be coded with MicroPython.

ONLINE RESOURCES:

Kitronik has also produced 4 tutorials for you to explore once you've finished the supplied booklet. The tutorials are in two formats, as downloadable PDFs and also as tutorials embedded in the MakeCode editor. You can find the links to all at the bottom of this page. Kitronik has also produced some example MicroPython code that covers how to code a basic clock. You will find a link to the MicroPython code GitHub repository at the foot of this page.

POWERING THE ALARM CLOCK KIT:

The ZIP Halo HD supplied with this kit is powered via a 2.1mm Barrel jack connection. The kit is supplied with a 3 x AA Battery Cage with Lead and 2.1mm DC jack. The adapter cable is for use with a separate power supply (not included). A regulated supply is produced on the board which is then fed into the 3V and GND connections to power the connected BBC micro:bit, removing the need to power the BBC micro:bit separately. Halo HD has also been fitted with an ON/OFF switch to maximise battery life. Switch it off when not in use and the onboard coin cell will keep the memory of the RTC chip alive.

NOTE:

- The BBC micro:bit is NOT included in this kit. The featured bundle is an Alarm Clock Kit plus BBC micro:bit.
- No soldering is required.
- Some quick and simple mechanical assembly is required for the stand.
- Ensure that when using a power supply that it is rated for at least 1A and 5V, many modern phone chargers will be suitable for this application.
- Full instructions for assembly, coding and also usage are detailed in the supplied booklet.

Kitronik Alarm Clock Kit Features:

- The Kitronik Alarm Clock Kit with ZIP Halo HD for microbit provides a great introduction to features of Halo HD.
- Learn how to create and then to code exciting projects that explore time, light and sound.
- The kit is backed up by a range of fun tutorials that introduce you to the exciting features of the Alarm Clock Kit.
- All of the tutorials and subsequent resources are free and with no signups needed.
- There is no soldering required and the mechanical assembly is quick and also super simple.
- The board features CR1220 3V coin cell battery holder that acts as a clock battery backup for the RTC chip when a battery is inserted.
- The maths suggests that the backup battery can last for up to 2 years. Experiences may vary from battery to battery and also situation to situation.

ZIP Halo HD for microbit Features:

- The board features 60 individually addressable full-colour ZIP LEDs.
- P1 and P2 are broken out to a standard 0.1” footprint.
- It's wired for sound with a MEMS microphone and a piezo buzzer.

- It has an onboard Real-time clock (RTC) controlled by I2C lines.
- The onboard microbit edge connector provides a plug and play environment!.
- The On/off switch helps you maximise battery life, CR1220 3V coin cell will then protect the RTCs memory.
- Code it with MakeCode using Kitronik custom blocks inside the MakeCode editor.
- It can also be coded with MicroPython. A link to an example can be found in the list of resources.
- M3 Mounting holes, for more secure projects.

Contents:

- 1 x Kitronik Halo HD for BBC micro:bit.
- 4 x 8mm M3 machine screws.
- 1 x Set of laser cut Perspex stand parts.
- 1 x CR1220 3V coin cell battery.
- 2 x Plastic spacers.
- 3 x AA Battery Cage with Lead and 2.1mm DC jack
- A USB-B to 2.1mm jack cable, rated for 5V, 1.5A.
- Getting started booklet.
- A plastic reusable shipping and storage container.

Dimensions:

- ZIP Halo HD Diameter: 87mm.
- M3 Mounting Holes Spacing (Center to Center): 68.4mm.