MAKING. CODING. FUN.

THESE PARTS ARE NEEDED:

Battery holder

USB cable

AAA
AAA

2x Batteries

USB

RESET

−

+

A0

A1

A

B

LAGESENSOR

LAUTSPRECHER

RGB LED

CALLIOPE mini

PROZESSOR

BATTERIE

0

3

1

2
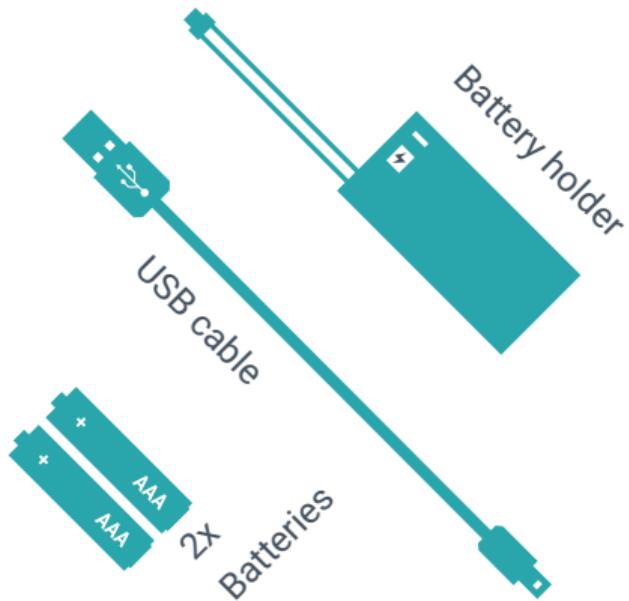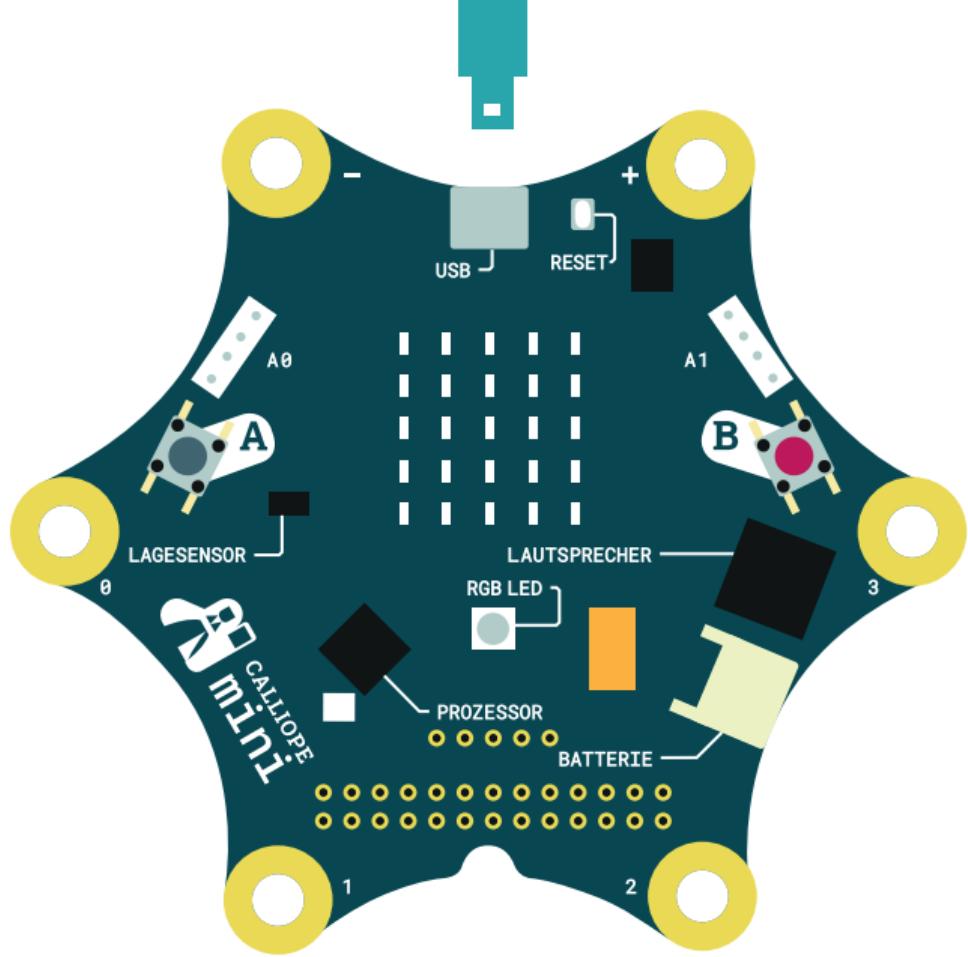
DESIGN THE DIGITAL WORLD WITH CALLIOPE MINI

Bring your Calliope mini to life.
You can invent games, send secret messages, compose music and build robots!

Create the first projects for your mini computer using simple programming blocks. It's as easy as pie: Just put the blocks together and you'll have your first program only a few clicks later.

What your Calliope mini can do:

Your **Calliope mini** contains an LED grid with five red lights, a microphone, a speaker, a multicolor RGB LED that can show all colors, a motion sensor, touch sensitive pins and two buttons (A+B). Furthermore, the **mini** can measure temperature and brightness and connect to other **Calliope minis** using a radio protocol. You can connect motors and additional sensors and program your mini via Bluetooth.

LET'S GO

Before you can start you have to **hook up the Calliope mini to a power source.** Carefully plug in the battery holder included or connect to a computer via USB.

You are welcomed by a short **demo sequence** which helps you getting used to the buttons and the basic functions.

There are some applications pre-installed on the Calliope mini so you can **try it right away** without connecting it to the computer.

Press the buttons **A and B** simultaneously to start the menu. The LED display shows the number 1. **Choose an exercise** between 1 and 5 by switching up with B and switching down with A.

Lightly shake the Calliope mini to start the chosen exercise. **Let's go!**

1 CALLIOPE-MINI-ORACLE

Ask your Calliope mini a question and it will give you the answer.

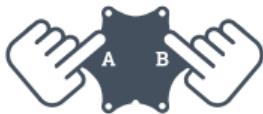You only need **button A** for this exercise.

Ask your **Calliope mini a simple question** that can be answered with **Yes** or **No**.

Press **button A** on your **Calliope mini**.

The **Calliope mini will then return an answer**. For no the **Calliope mini** will show: 🙁 for yes: 🙂 !

Press **button A and B simultaneously** to go back to the menu. You can choose another exercise there.

2 ROCK, PAPER, SCISSORS

Who will be the champion of 'rock, paper, scissors and well' ? Use the motion sensor of your **Calliope mini** and you will find out.

Put the board into your hand and **shake it lightly**.
One out of four symbols will randomly appear on the **LED display**.

Your counterpart shakes another **Calliope mini** at the same time or uses his or her own hand and chooses between **one of these four** symbols:

SCISSORS   ROCK   PAPER   WELL

The ranking of the symbols is as following:

Well beats scissors and rock; rock beats scissors;
scissors beat paper; paper beats rock and well.

Whoever gets three points first is the winner!

3 SIMPLE MULTIPLICATION

Your **Calliope mini** challenges you with a random exercise from **simple multiplication**.

Press **button A** on your **Calliope mini** to see the first factor.

Then press **button B** to see the second factor.

Now it's up to you: Calculate the result in your head. If you want to know whether your answer is right, shake your **Calliope mini** to see the result.
Test your knowledge about simple multiplication and become a math pro!

4 NOISE-O-METER

Your **Calliope mini** reacts on sound differently. Try being loud and then being quiet.

The microphone measures the environment volume. The LED display shows the noise level
.

If it's quiet, the RGB-LED flashes **green**. In case it's loud the RGB-LED flashes **red**.

5 CALLIOPE MINI IDENTIFIER

This program shows you the individual identification number of your **Calliope mini**. You need this pattern if you want to **connect your mini to a tablet or smartphone** and to transfer applications via Bluetooth.

You can find the instructions for this on our website **calliope.cc** in the menu **"Let's start"** clicking on **"First Steps"**.

To get back to the main menu just **press the white "Reset" button**. This will always **take you back to number 1**.

Now it's your turn!
Create your own code! You can choose between several editors you can use to control your **Calliope mini**. Find them on **calliope.cc** in the **"Let's start"** menu and program your **Calliope mini**. Try them all and find your favorite editor!

Do you want some inspiration for your next project? You can find examples and instructions on **calliope.cc** in the **"Examples"** section. Connect your **mini** with your computer using the **USB cable** or use a **smartphone/tablet** and connect via **Bluetooth**. You can transfer your program to the **mini** and try it right away. A detailed description

can be found in the section **"Let's start"** clicking on **"First Steps"**. This is also where we put the **"getting started"** program that was on your **mini** at the beginning.

There are no limits to your creativity. Explore the world of coding and making and **have fun with your very own Calliope mini!**

CALLIOPE

You can find more information on the **Calliope project** on our website. If you have any questions you can contact us directly: **info@calliope.cc**

Calliope gGmbH
Raumerstrasse 11
10437 Berlin
Germany

! **Please note the following information:**

The USB port should only be connected to a computer.
Disconnect from the computer if you're not using the device.
Calliope mini should never be powered by USB and battery at the same time. If the mini is connected to the computer the battery holder shouldn't be connected to the mini or the switch should be set to "Off".
Only type AAA batteries or LR03 (battery holder) should be used to power the mini. The voltage applied to the Calliope mini should never exceed 3.3 volts. Switch off the batter holder ("Off"), if you're not using the mini.
If you're using a battery holder without a switch take out the batteries or disconnect the battery holder from the mini.
This product should be operated in a well ventilated environment.
This product should be placed on a stable, flat non-conductive surface.
Do not expose to water, moisture or place on a conductive surface while in operation. Take care while handling to avoid mechanical or electrical damage. Avoid handling the printed circuit board while it is powered. Only handle by the edges to minimal the risk of electrostatic discharge damage.
The connection of incompatible devices to the GPIO connector may affect compliance and or result in damage to the unit and invalidate the warranty.
The external motor support may only be operated with a 9V battery (or 6LR61). The operation with rechargeable batteries is forbidden.
Only touch the outer areas and the buttons during use.
Small parts must be kept away from small children.
This is not a toy and should be used with a parental advisor or teacher!
If the Calliope mini gets hot, disconnect it from the power source immediately and stop using it. If you have problems with Calliope mini please contact us, for example using **service@calliope.cc**.
Additional important information, certification data and contacts can be found at **https://calliope.cc/en/safety-advice**

Please keep this booklet for further references and questions!

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:
The product comply with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Hardware: Nordic nRF51822 Multi-protocol Bluetooth® 4.0 low energy / 2.4GHz RF SoC, 32-bit ARM Cortex M0 processor (16MHz), 16kB RAM, 256kB Flash; NXP KL26z (USB and power supply)
5x5 LED matrix screen; 1 Programmable RGB LED (WS2812b)
Accelerometer, Gyroscope, Magnetometer (Bosch BMX055)
Piezo speaker; MEMS microphone
DC Motor Driver (TI DRV8837)
2 programmable buttons
Serial interface (USB + configurable ports)
USB Micro B connection (programming and power supply), JST battery connector (3.3V)
4 banana plug / crocodile clip connections, 4 analog inputs
8-11 Input / Output Connections (depending on software configuration)SPI + I2C; PWM output; Banana / crocodile clip connection for 3.3V (output)
2 I2C + serial / analog connectors (Grove)

FCC ID: 2AQMD-CALLIOPE-V13