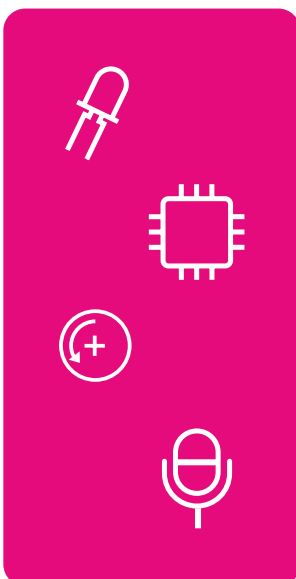**CALLIOPE**

PRODUCT INFORMATION

The Calliope mini is a microcontroller that operates as a teaching tool in the school education of children from third grade on - usually under the supervision of an adult.

The Calliope mini proves that everyone can code - and with a lot of fun. Getting started is easy and children, teachers and parents can get going without any previous knowledge. From the first self-programmed application to self-propelled robots to wirelessly communicating Calliope mini swarms: with just a few clicks, you can design your own programs for the microprocessor on a connected computer or tabet to bring the Calliope mini to life.

THE CALLIOPE MINI

In addition to 25 red and one RGB LED and two programmable buttons, the board contains an absolute orientation sensor (measurement of angular rate, acceleration and geomagnetic fields) as well as a radio module that allows the Calliope mini to communicate with other Calliope mini. The board can be programmed via a computer using free editors, e.g. Open Roberta Lab from the Fraunhofer Gesellschaft. Apps can also be used to transfer programs via bluetooth. The board comes with five pre-installed programs, all of which are explained in a small booklet. Additionally, there is a battery holder and a USB cable included to connect to a computer.

CALLIOPE

CALLIOPE MINI - CLASSROOM SET

The classroom set includes 25 Calliope mini and contains 25 individual sets as well as additional accessories such as crocodile clips, copper tape, LEDs, 25 student workbooks and a teacher's guide.

Size and weight

Dimensions (W x L x H):
45 x 54 x 10 cm | 17.8 x 21.3 x 3.9"
Weight with contents: 4 kg (8.8 lbs)

25 Calliope mini

CALLIOPE

CERTIFICATIONS AND SAFETY INSTRUCTIONS

The Calliope mini is a teaching tool that is primarily used under the supervision of adults in school.
The Calliope mini has been positively tested according to the product safety standard EN60950-1 or EN62368-1.

Please observe the following instructions:

The USB port must only be connected to a computer.
Always disconnect the computer when not in use. The Calliope mini
should never be operated simultaneously with USB and battery! If the Calliope mini is connected to the computer, the battery holder must not be connected to the mini or the battery holder must be switched off (switch to "off")! In battery mode the Calliope mini may only be operated with batteries of type AAA or LR03 (battery compartment). The voltage applied to the Calliope mini must never exceed 3.3 volts. When using battery holders without an on/off switch please remove the batteries or disconnect the battery holder from the mini. The external motor support may only be operated with a 9V battery (or 6LR61). Operation with rechargeable batteries is not permitted.

During operation, only touch the outer ends and buttons. Small parts must be kept away from small children / toddlers.

Information on connecting external electronic components:

5 mA maximum per connection
15 mA maximum load (all connections together)
100 mA maximum when connected to border contacts (+/-), supply of max. 3.3V

Please use a resistor with at least 220Ω when connecting an LED.

If the Calliope mini overheats, immediately disconnect it from the power supply and stop using it. If you have any problems with the Calliope mini, please contact us, e.g. at: service@calliope.cc

Further important information, certification data and contact addresses can be found at:
https://calliope.cc/safety-advice

For future use, keep this document in a safe place.

DATA SHEET: CALLIOPE MINI

Nordic nRF51822 Multi-protocol Bluetooth® 4.0 low energy/2.4GHz RF SoC

      32-bit ARM Cortex M0 processor (16MHz)

      16kB RAM

      256kB Flash

accelerometer, gyroscope, magnetometer (Bosch BMX055)

5x5 LED matrix display

DC motor driver (TI DRV8837)

Piezo-speaker

MEMS microphone

programmable RGB LED (WS2812b)

2 programmable buttons

Serial interface (USB + configurable ports)

PWM output

4 banana connectors

banana connectors für 3.3V (output)

4 analog inputs

8-11 Input/output connections (depending on software configuration)

SPI + I2C

USB Micro B connection (programming and power supply)

JST battery connection (3.3V)

2 Grove connectors (I2C + serial/analog)

CALLIOPE

TECHNICAL DATA - CONNECTIONS

max. 100mA power usage

GND
+3v3

GND
+3v3
SDA C18
SCL C19
A BUTTON
P0 C0

C21 MIC
C16 RX
C17 TX
+3v3
GND
B BUTTON
C3 P3

A0
A1
A
B
0
3

i
5mA per connection
15mA maximum load

When connecting an LED to
a pin please use a
220Ω resistor.

CALLIOPE mini

P1 C1
1
2
C2 P2

GND B* GND GND
       A*   VM*

*B-MOTOR B | A-MOTOR A | VM-MAX 9V

+3v3	C1	C3	C5	C7	C9	GND	C11	C13	C15	C17	C19	GND
GND	C0	C2	C4	C6	C8	GND	C10	C12	C14	C16	C18	+3v3

DIGITAL   ANALOG   TOUCH