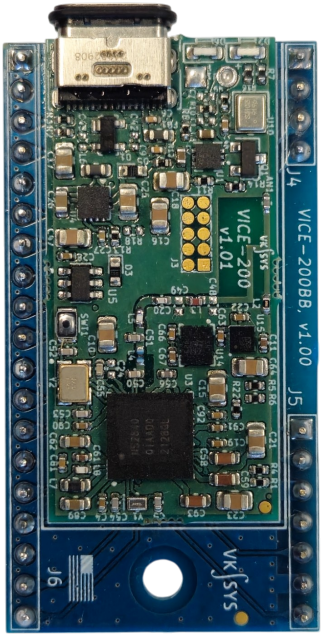
VICE-200BB USER MANUAL
UMV200BBD01



Introduction

The VICE-200 Breakout Board is designed to bridge the gap between prototyping and final product design. It provides a seamless transition from breadboard to circuit board, allowing for confident and efficient hardware development. The board offers access to the VICE-200 module's power electronics, USB-C connectivity for power and data, and all GPIO pins. It also includes mounting holes for easy prototyping and is compatible with standard 0.1" pin spacing breadboards.

Table of Contents

1 | Features

EOTAK has designed the VICE-200 Breakout Board to provide access to all features available on VICE-200.

- nRF52840 Arm® Cortex®-M4 32-bit processor with FPU, 64 MHz
- Sensors:
  - LSM6DSOX 6-DOF IMU
  - LIS2MDL Digital compass
  - Microphone
- Wireless connectivity:
  - Supports Bluetooth® Low Energy (BLE) for communication
  - Onboard antenna
- Power button
- Flexible power options:
  - USB-C
  - Battery input
  - Integrated battery charger supports single-cell LiPo batteries
- Access to JTAG/SWD pads for compatible programmers
- Compact design: Measures 18.669 x 38.862 mm (0.735 x 1.530 in.)
- Prototyping: Facilitates efficient transition from breadboard to PCB design.
- Breadboard compatible: 0.1" pin spacing for easy integration with breadboards.
- Mounting: Includes mounting holes for secure prototyping.

2 | Development Environment

VKIS Provides common options for developing and building binary files for VICE-200. For support packages to develop using GCC-based IDE's or Aruduino IDE, please visit the VKIS GitHub page: github.com/VKIntegratedSyst

3 | Quick Start

The VICE-200 Breakout Board is designed to bridge the gap between prototyping and final product design. It provides a low cost and seamless transition from breadboard to circuit board, allowing for confident and efficient hardware development with the VICE-200 module.

For more information on the VICE-200 module and to access the demonstration software, visit the EOTAK webpage.

Before installing and using the product, accept the Evaluation Product License Agreement that can be found on the terms and conditions page here: eotak.com/faq

4 | Hardware Layout and Configuration

4.1 | Pinout

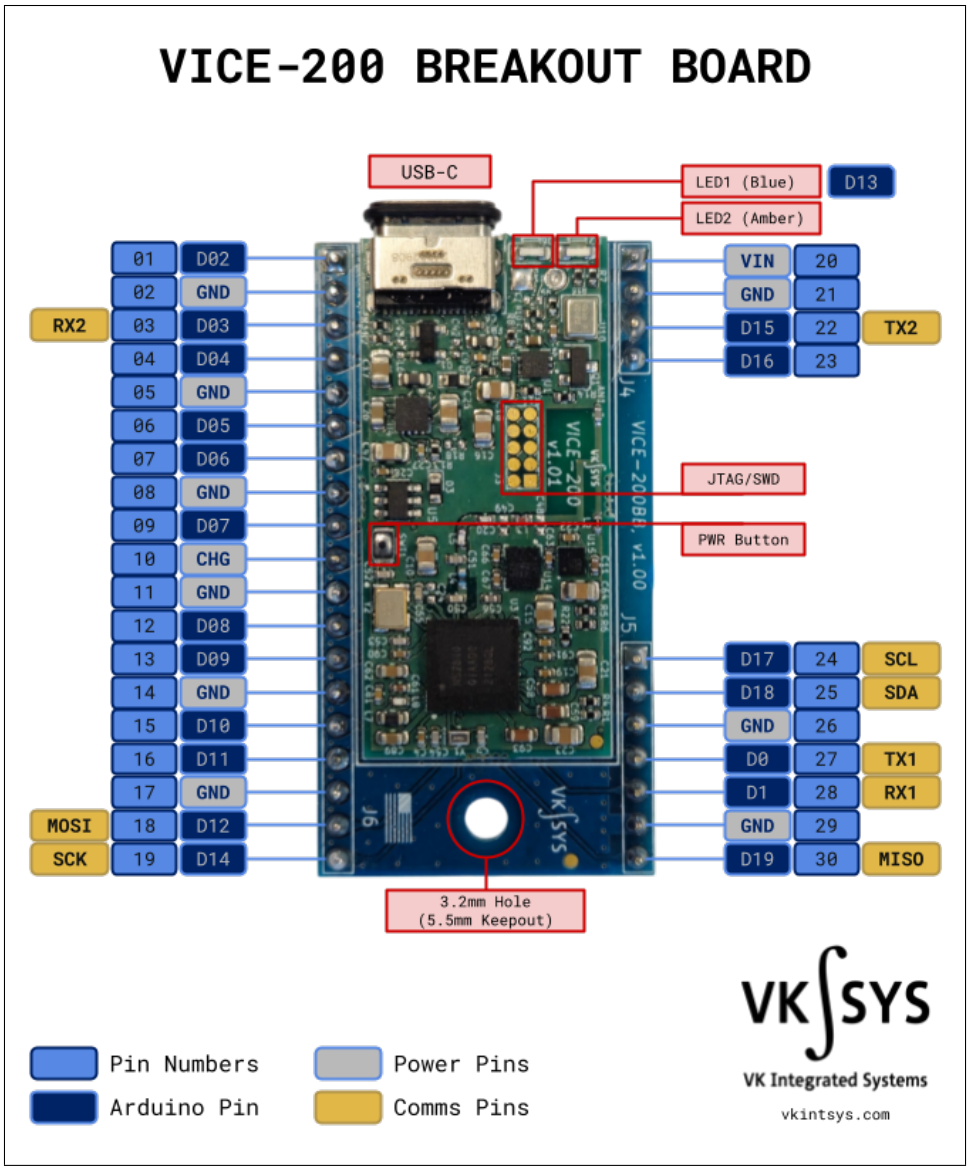


Figure 4.1.1: VICE-200 Breakout Board Pinout

The 4.1.1 shows pins, USB-C connector, LEDs and power button locations. The table 4.1.1 describes each pin function for VICE-200 breakout board.

Table 4.1.1: Pin Descriptions

Pin	Arduino Pin	Function	Description
1	D02	NC	
2	N/A	GND	
3	D03	RX2	
4	D04	GPIO	
5	N/A	GND	
6	D05	NC	
7	D06	NC	
8	N/A	GND	
9	D07	NC	
10	N/A	CHG	Charger enabled by default. Pull HIGH to disable battery charger.
11	N/A	GND	
12	D08	GPIO	
13	D09	NC	
14	N/A	GND	
15	D10	GPIO	
16	D11	GPIO	
17	N/A	GND	
18	D12	MOSI	
19	D14	SCK	
20	N/A	VIN	VDD, power supply, 2.7V to 5.5V
21	N/A	GND	
22	D15	TX2	
23	D16	GPIO	
24	D17	SCL	
25	D18	SDA	
26	N/A	GND	
27	D00	TX1	
28	D01	RX1	
29	N/A	GND	
30	D19	MISO	
N/A	D13	LED1	

4.2 | Power Supply and Power Selection

The power supply is provided either by the host PC through the USB-C cable, or by an external source. Table 4.2.2 describes the power pins and operation.

Table 4.2.1: Power Supply

Pin	Function	Description	Min.	Typ.	Max.
2	GND	VSS			
5	GND	VSS			
8	GND	VSS			
10	CHG	Charger enabled by default. Pull HIGH to disable battery charger.		VDD	
11	GND	VSS			
14	GND	VSS			
17	GND	VSS			
20	VIN	VDD, power supply, 2.7V to 5.5V	2.7V	3.3V	5.5V
21	GND	VSS			
26	GND	VSS			
29	GND	VSS			

4.2.1 | Battery Power

VICE-200 can be powered by a battery connected to the breakout board VIN pin, provided the voltage is within the acceptable range of 2.7-5.5V. Battery charging is enabled by default and VICE-200 is capable of charging single cell LiPo batteries.

4.2.2 | External Power Inputs

Regulated power supply may be provided to the VIN pin from an external source. Note, however VICE-200 breakout board pin 10 (CHG) must be driven LOW.

Table 4.2.2: Charger Function

Pin	State	Description
VIN	HIGH	Battery charger disabled.
VIN	LOW	Default. Battery charger enabled.

4.3 | LEDs

There are two LEDs on VICE-200 as described in 4.3.1.

Table 4.3.1: LED Function

LED	Color	Description
LED1	Blue	User controlled, shared functionality as Bluetooth LED. Connected to Arduino Pin D13.
LED2	Amber	When Charging and USB-C is connected, LED2 lights up. Once charging is complete LED2 is off. NOTE: if CHG is HIGH, disabling battery charger, then LED2 is On when USB-C is connected.

4.4 | Push-Buttons

There is one power button that disables power to the VICE-200 processor and sensors. Battery charging is NOT affected by the power button.

4.5 | Mechanical Drawings

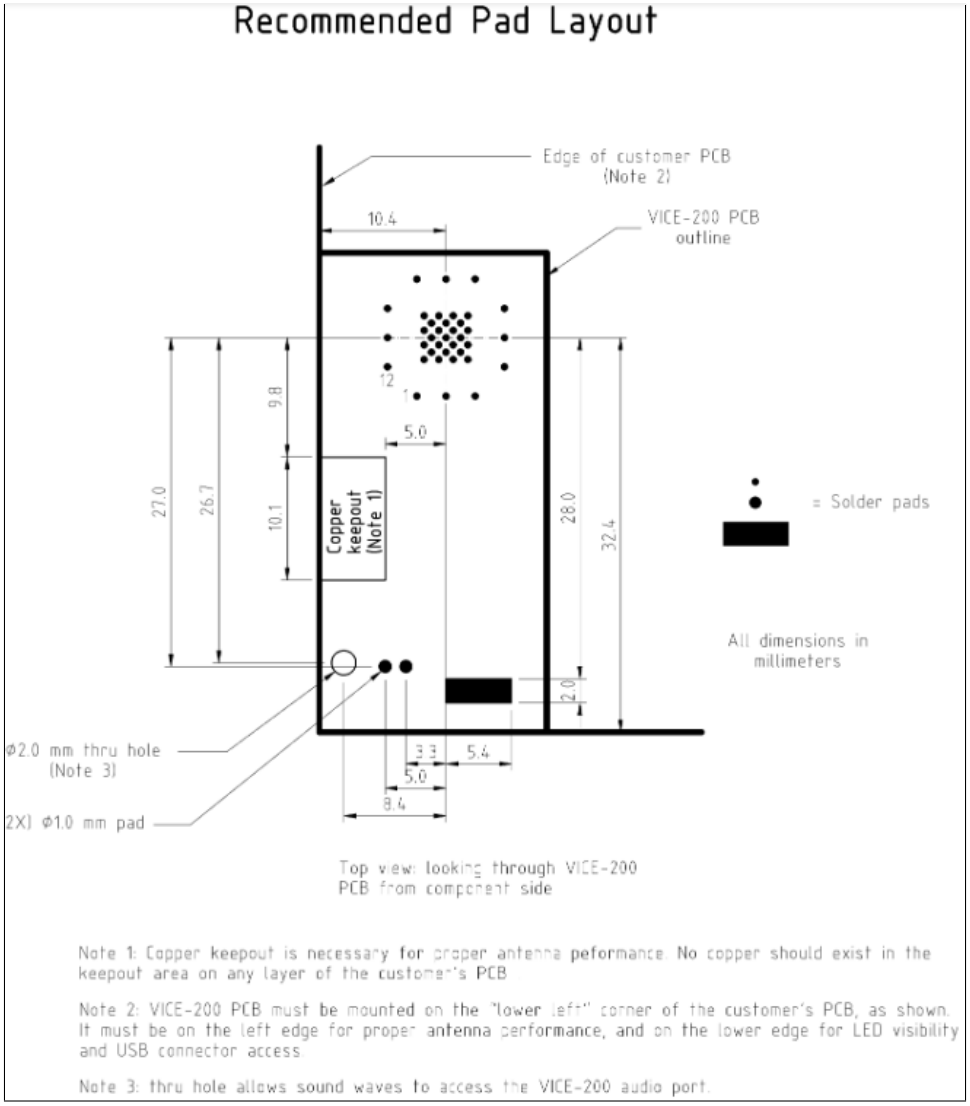


Figure 4.5.1: VICE-200 PCB Layout

A | Revision Table

Table A.0.1: Revision Table

Revision	Date	Description
1	12/23/2024	Initial Creation.
2	12/28/2024	HW layout section added.