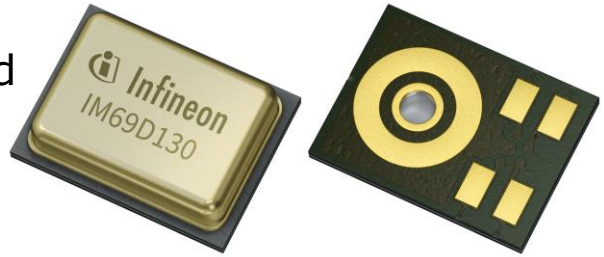
IM69D130 Microphone Shield2Go

Quick Start
V1.0.1

Introduction

The IM69D130 MEMS microphone is designed for applications where low self-noise (high SNR), wide dynamic range, low distortions and a high acoustic overload point is required. Infineon's Dual Backplate MEMS technology is based on a miniaturized symmetrical microphone design, similar as utilized in studio condenser microphones, and results in high linearity of the output signal within a dynamic range of 105 dB. The microphone distortion does not exceed 1% even at sound pressure levels of 128 dBSPL. The flat frequency response (28 Hz low-frequency roll-off) and tight manufacturing tolerance result in close phase matching of the microphones, which is important for multi-microphone (array) applications.
With its low equivalent noise floor of 25 dBSPL (SNR 69 dB(A)) the microphone is no longer the limiting factor in the audio signal chain and enables higher performance of voice recognition algorithms. The digital microphone ASIC contains an extremely low-noise preamplifier and a high-performance sigma-delta ADC. Different power modes can be selected in order to suit specific current consumption requirements.

Each IM69D130 microphone is calibrated with an advanced Infineon calibration algorithm, resulting in small sensitivity tolerances (± 1 dB). The phase response is tightly matched (± 2°) between microphones, in order to support beamforming applications.



Link to Datasheet and Product Page

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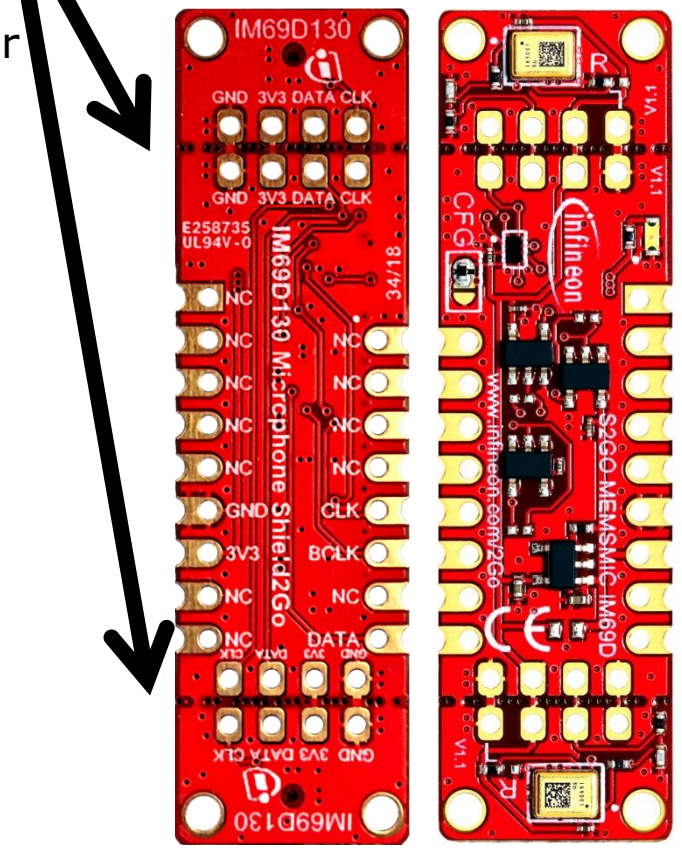
Evaluation Board Notes

Information

- Supply voltage is typ. 3.3 V for any pin, please refer to IM69D130 datasheet for more details about maximum ratings of the IM69D130 microphone itself (if microphone parts are broken off)
- Pin out on top and bottom is directly connected to the pins of the IM69D130 with channel select L/R if broken off
- If microphone parts are broken off, all pins of the IM69D130 except the SELECT one (preselected via 0 Ohm resistors) are available
- Software compatible with Arduino and examples fully integrated into the Arduino IDE
- Sales Name S2GO MEMSMIC IM69 and OPN S2GOMEMSMICIM69DTOBO1

Breakable



Ensure that no voltage applied to any of the pins exceeds the absolute maximum rating of the IM69D130 of 4 V

Link to Board Page

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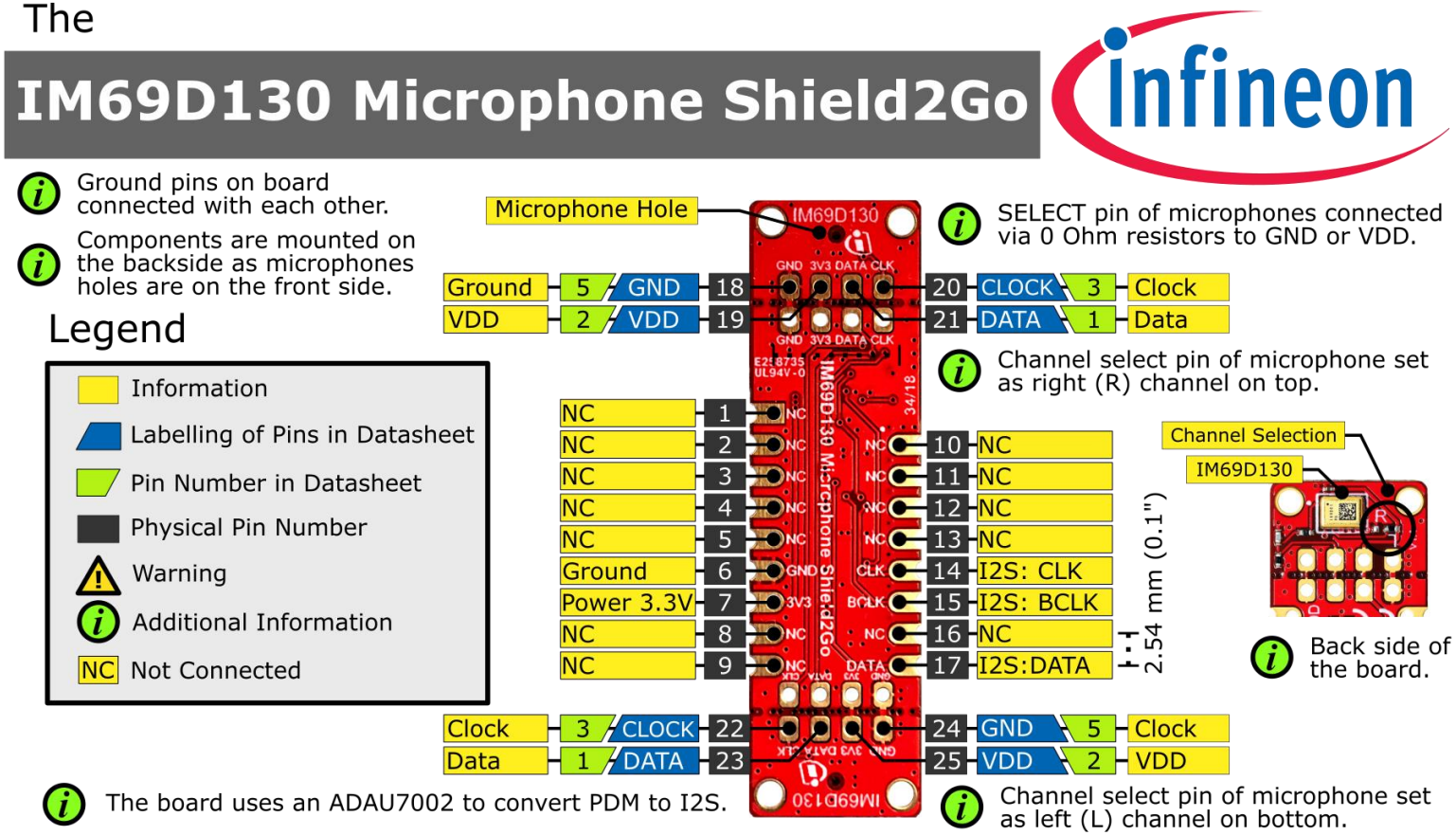
Evaluation Board PCB Details

The

IM69D130 Microphone Shield2Go



V1.0.0

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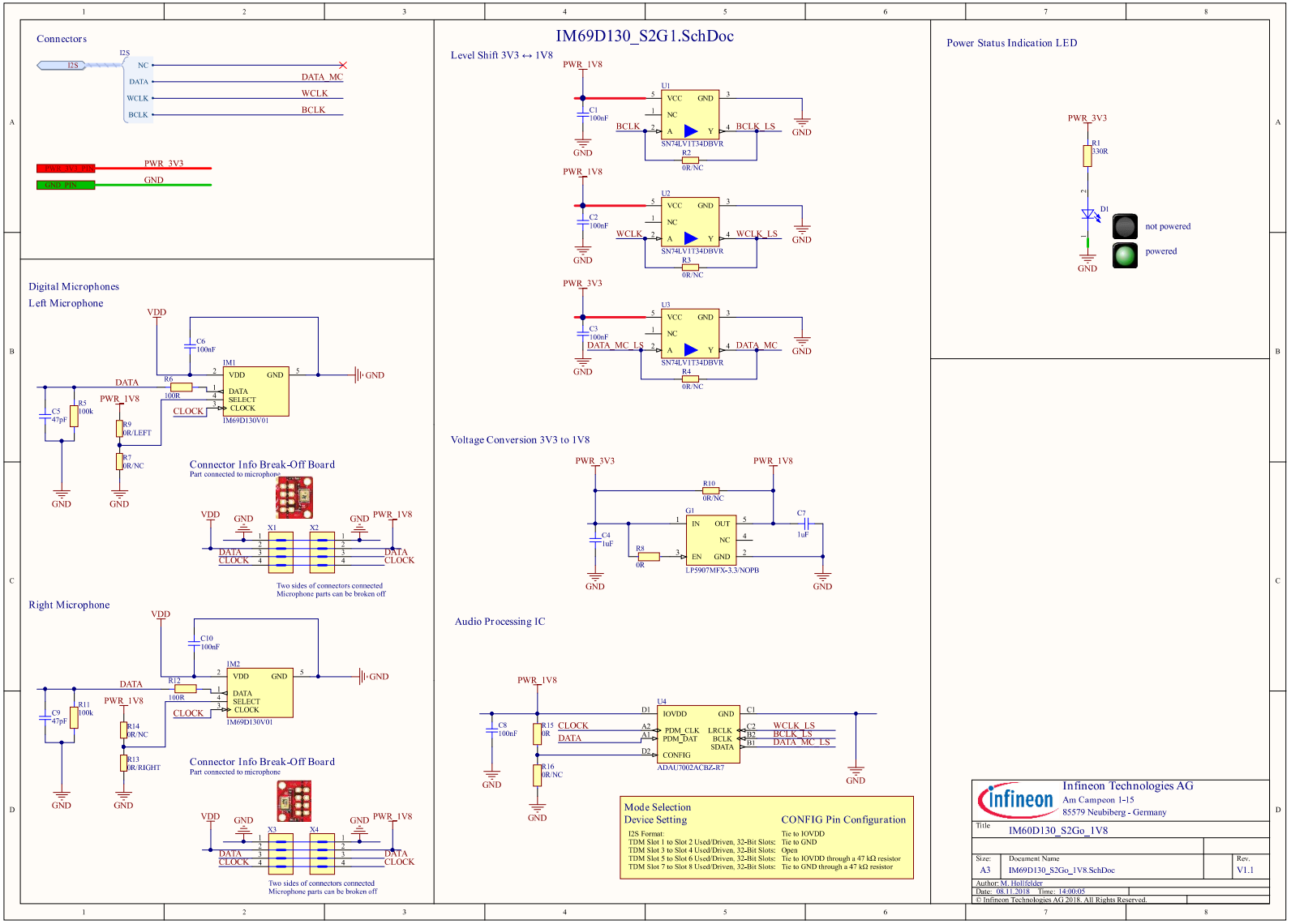
Evaluation Board Schematic



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Arduino IDE

Arduino is a hardware-software prototyping environment IDE developed by arduino.cc:

- Installation Details for Windows:
  Click here
- Installation Details for Linux:
  Click here
- Installation Details for Mac OS:
  Click here
- Installation Details for Portable IDE:
  Click here

Arduino Quick Start

- What is Arduino? Click here
- Extended information about the Arduino environment. Click here
- How to import libraries? Click here
- How to install additional boards? Click here
- Problems related to Arduino? Click here for troubleshooting

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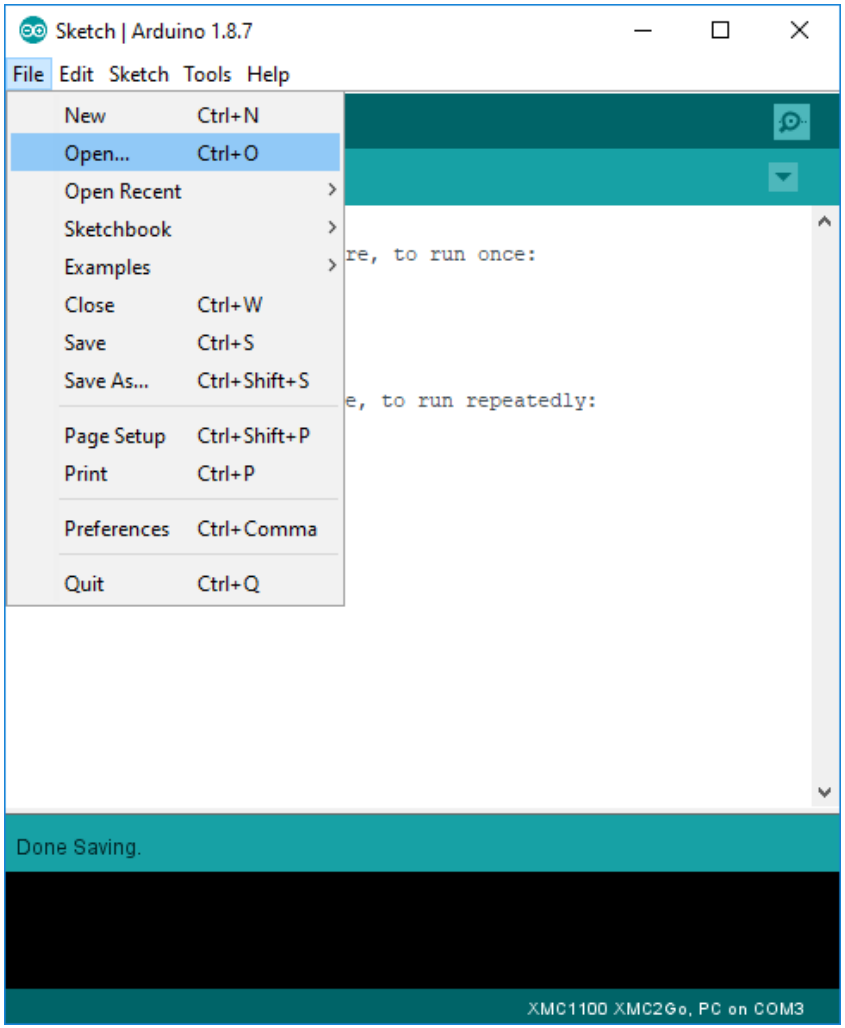
Generic examples for IM69D130 for Arduino

Notes

- Download the examples from the repository here
- Download the repository and store the files at a place of your choice
- Open the Arduino IDE
- Navigate to *File – Open*
- Open one of the *.ino* files of the downloaded examples
- Additional notes for installation can be found in the GitHub repository in the README.md



https://github.com/Infineon/IM69D130-Microphone-Shield2Go/

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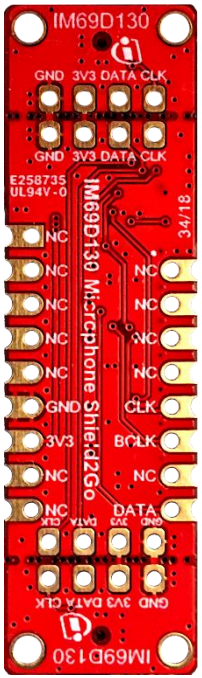
Example with XMC 2Go

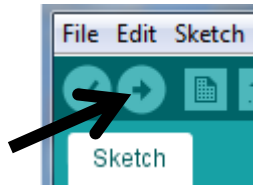
Notes

- The Shield2Go form factor of the Shield2Go evaluation board is directly compatible with the XMC 2Go board
- Stack the IM69D130 Microphone Shield2Go board on top of the XMC 2Go as shown in the picture
- The additional pin on the left-top side (designated with NC) is left floating
- Using the XMC-for-Arduino Arduino integration, the Arduino examples for the IM69D130 can be directly used



Steps

- Open one of the examples for the IM69D130 from *File – Open* and select as board *XMC1100 XMC2Go*
- Connect the stacked boards to the PC and press the *Upload* button
- Select the related COM port from *Tools – Port* and open the serial monitor or plotter with the set baud rate (see sketch/code with Serial.begin(<BAUDRATE>);)



https://github.com/Infineon/XMC-for-Arduino
https://github.com/Infineon/IM69D130-Microphone-Shield2Go/

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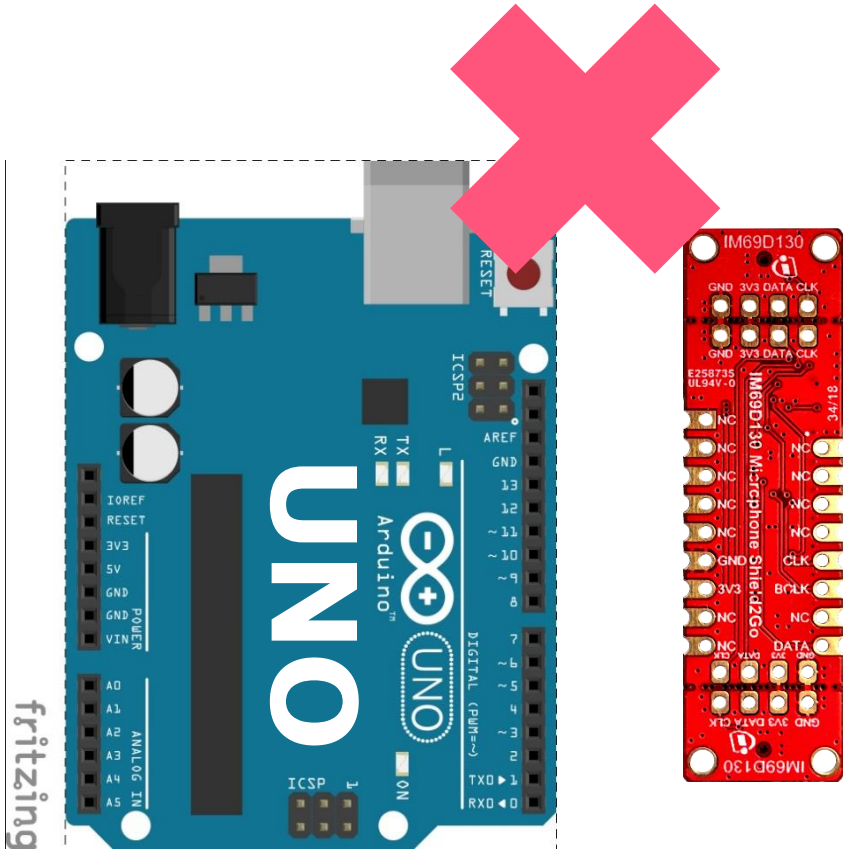
Important Warning

Important Warnings

- The board has a typical rating of 3.3 V
- The IM69D130 Microphone Shield2Go cannot only be used if the respective microcontroller supports I2S protocol
- Third party boards with 5 V logic cannot be connected to the IM69D130 Microphone Shield2Go board directly, even if the power is connected to the 3.3 V pin as the interface lines, e.g. CLK/DATA, will still be driven by 5 V
- Arduino UNO does not support I2S
- Please use appropriate level shifting for these boards



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