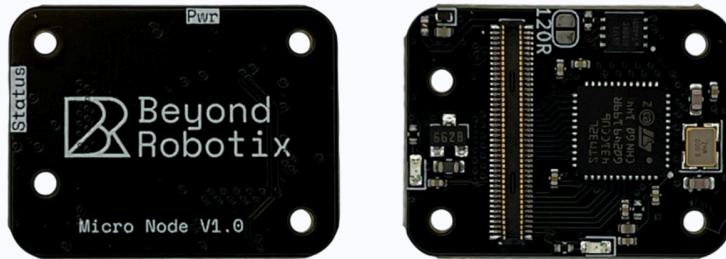


## CAN NODE SYSTEM



# Micro Node

Rapidly integrate a compact CAN enabled STM32 processor



Micro Node

The Beyond Robotix Micro Node allows you to create production grade PCBs without needing to worry about the complicated bit. Put the board to board connector on your project, wire in a sensor, a connector and now you have a CAN enabled project.

We do Quality Assurance and software upload, meaning you just have to screw the board down to your project.

## Store



### Micro CAN Node

Beyond Robotix



### Micro CAN Node Development Set

Beyond Robotix



## Specifications

- Dimensions: 26 × 20 mm
- Mass: 2.2 g
- Power Consumption: 30 mA (40 mA peak) at 5V
- STM32L431CCU6 Processor with 256 KB of flash
- 200mA LDO
- Short Circuit Protection - 1 A Input Fuse

- Reverse Polarity Protection - Input Diode
- Optional 120 ohm termination resistor via solder pad
- Status LED
- High reliability connector & mechanical fixing
- Screw heads accessible from the top of the board
- AP periph firmware support
- Arduino DroneCAN support

# Pinout

The Micro Node requires the **DF40C-80DS-0.4V(51)** connector to be on the carrier board.



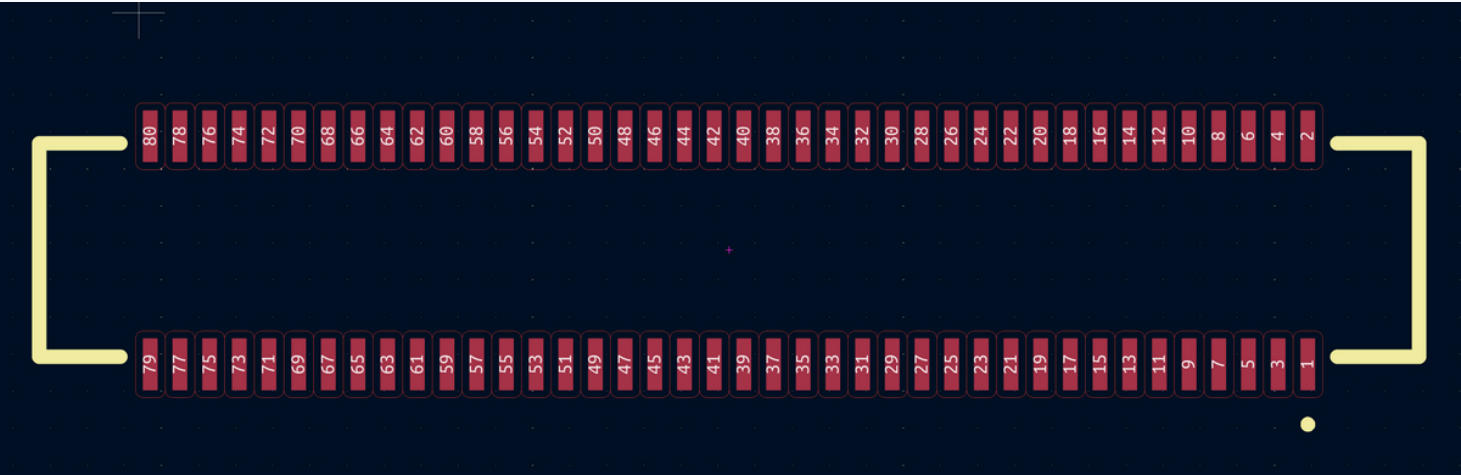
Hirose Electric DF40C-80DS-0.4V(51)  
Mouser Electronics



CAN node carrier board connector

The equivalent JLCPCB component is C312960

The footprint can be downloaded from the mouser page. Be sure to use this one! Pin numbers can be different on different footprints for the same part. We learnt the hard way.



Footprint pinout mapping. 1 bottom right, 2 top right.

You'll notice our connector has far many more pins than the STM32 has outputs, we've chosen this due to stock availability, as well as we'll be able to use this same connector on future projects on STMs with higher pin counts.


Pin Number	AP_Periph function	STM/Physical
1		GND

2		GND
6		+3.3V
7		CAN_H
9		CAN_L
15		+5V
16		+5V
32		PB12
33	USART3_RX	PB11
34	SCL	PB13
35	USART3_TX	PB10
36	SDA	PB14
37	SPI1_CS2	PB2
38		PB15
39		PB1
40		PA8
41		PB0
42		PA9
43	SPI1_MOSI	PA7
44		PA10
45		PA6
46		PA11
47	SPI_SCK	PA5
48		PA11
49	SPI_CS1	PA4
50	SWD	PA13
51	USART2_RX	PA3
53	USART2_TX	PA2
55		PA1
57		PA0

59		NRST
66	SWC	PA14
68		PA15
70	SPI1_MISO	PB4
72		PB5
74	USART1_TX	PB6
76	USART1_RX	PB7
78		BOOT0
79		GND


## Standoffs

The design requires 4x M1.6, 1.5mm standoffs. An example of these is the 9774015633R from Wurth Elektronik.



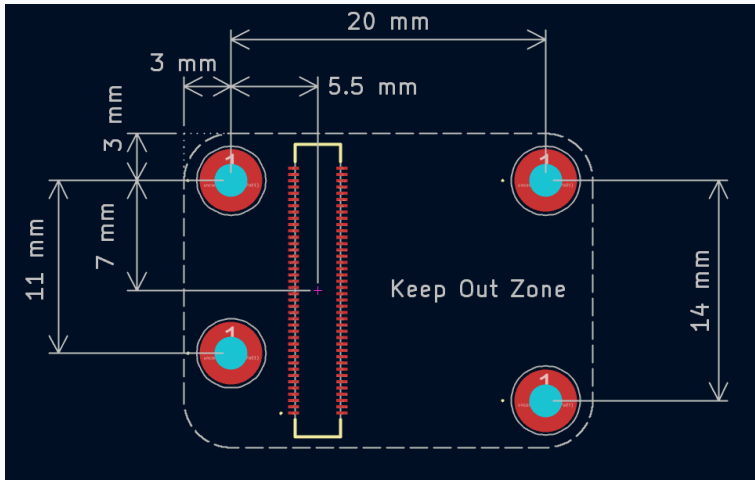
Wurth Elektronik 9774015633R  
Mouser Electronics

>

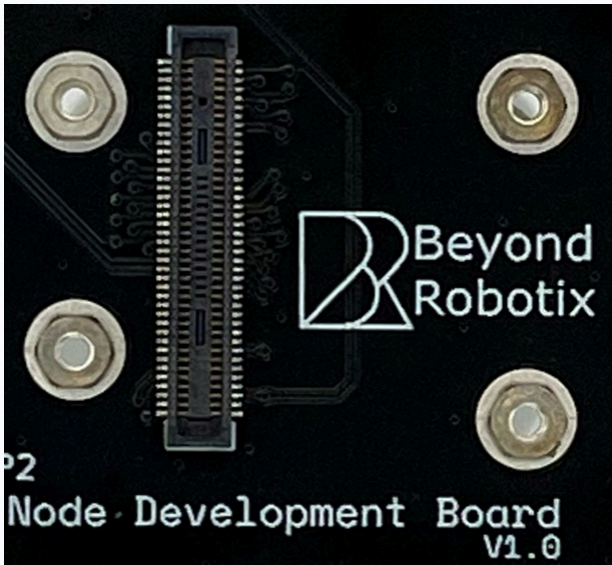

The equivalent JLCPCB component is C2928168

## Connector position drawing

This drawing is for the hole and connector positions for the **carrier board**, not the node itself.



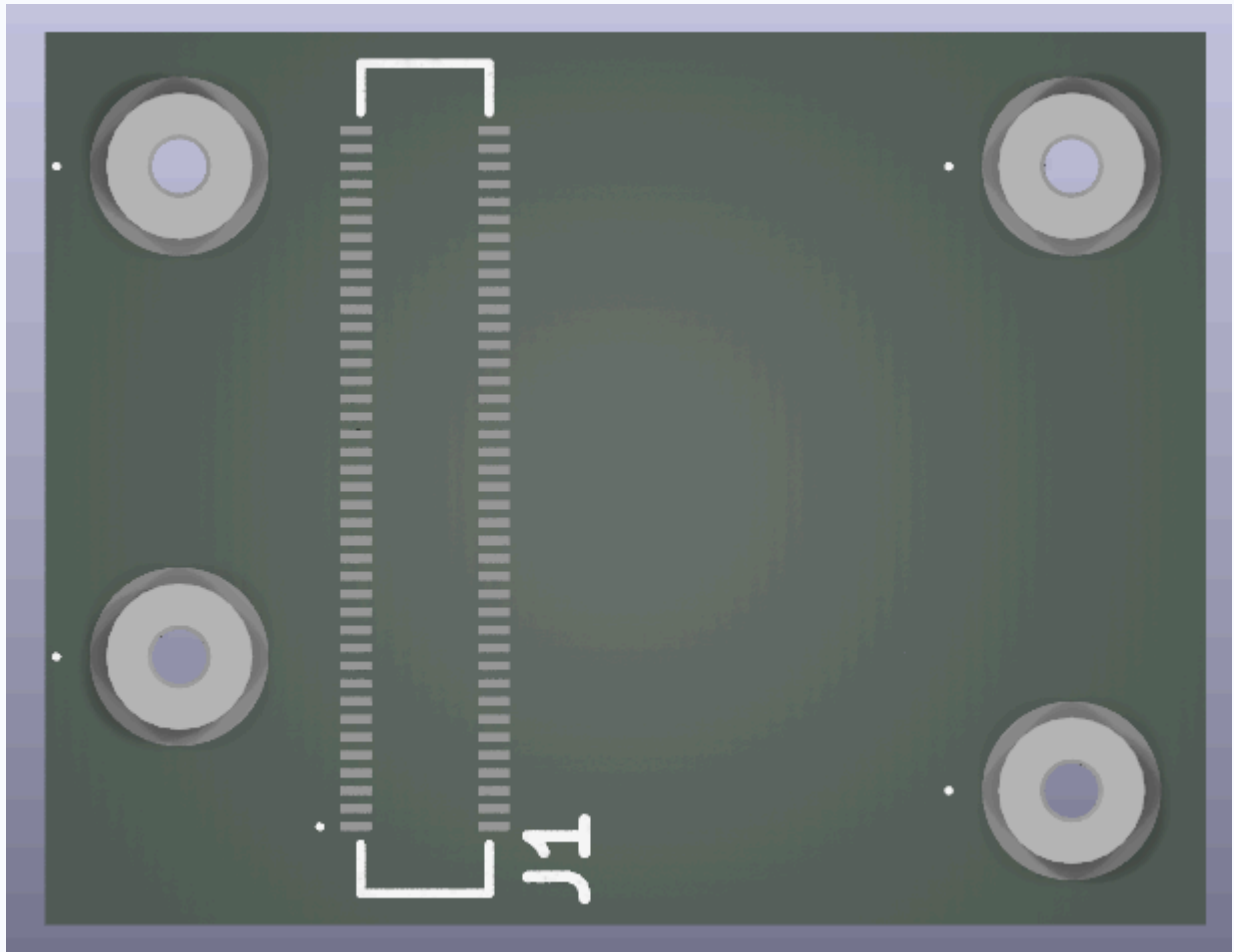
Layout with Dimensions



Example layout on Node Development Board V1.0

# Template

A Kicad template file with required libraries can be used as a starting point to make a custom carrier board.



246KB

Micro Node Carrier Template Rev A.zip  
archive

## Software

### Arduino DroneCAN

We wrote an Arduino library for using DroneCAN on this Node out of the box!

You can integrate your sensor how you like with minimal code. Includes bootloader support so your apps can be updated over CAN.



Arduino DroneCAN



### AP\_Periph

We support AP\_Periph based firmware's for our CAN node. The Nodes ship with a generic AP\_periph firmware by default.



AP Periph



## Custom Firmware

We can flash a custom/specific firmware for your order on your request. Contact us for custom firmware to be written at ***admin@beyondrobotix.com***

We have experience integrating virtually every type of sensor into communicating with Ardupilot or PX4, for example fuel flow sensors, ultrasound sensors, GNSS receivers, magnetometers, pressure transducers, power monitors and many more. It is also possible to adapt the output of the Micro Node to send PWM, GPIO, CAN, Serial, I2C and SPI.

## Environmental

Based on environmental ratings for the components and board manufacturer statements. Not a tested figure by Beyond Robotix.

The boards can be conformally coated on request. If environmental considerations are a requirement for your project, contact us at ***admin@beyondrobotix.com*** for further insight and options.

- Temperature > -20 °C to 85 °C ambient temperature

## QA Testing

We test every board we dispatch. Our process is:

- Mount the node to a test carrier
- Upload testing firmware
- Our software checks every pin is functioning as expected
- Upload customer firmware
- Check node status can be seen through CAN interface (if applicable)
- Package for dispatch



Previous

Next



Node Development Board

Arduino DroneCAN

Last updated 9 days ago

