Dagaya 2.0 makes it easy to control two bidirectional, high-power, brushed DC motors with any microcontroller or any other development board. The board includes 2 robust VNH5019 motor drivers from ST([VNH5019A-E datasheet](https://aptinex.com/wp-content/uploads/2017/10/en.CD002346231.pdf)), which is operating from 5.5 to 24 V and having the capability to deliver a continuous 12 A (30 A peak) per channel.

The VHN5019A-E is a full bridge motor driver intended for a wide range of automotive applications. The device incorporates a dual monolithic high-side drivers and two low-side switches. The high-side driver switch is designed using STMicroelectronics’ well known and proven proprietary VIPower® M0 technology that allows to efficiently integrate on the same die a true motor driver..

**Features**

* PCB Size : 60 mm x 58 mm
* Wide range of operational voltage : 5.5V – 24 V
* High output current : up to 12 A continuous (30 A maximum) per Channel
* Its is possible to combine the Outputs to a single channel to deliver up to 24 A continuous (60 A Maximum) to a single motor.
* Inputs : Both 5V and 3.3V Supported (logic high threshold : 2.1 V)
* PWM operation frequency :  up to 20 kHz,
* Current sense voltage output : approx. 140 mV/A ( proportional to motor current )
* Can be used with any microcontroller or other platform (Arduino, Raspberry Pi, PIC Microcontrollers Etc)
* Reverse-voltage protection :  to -16 V
* Robust drivers
* Can survive input voltages up to 41 V
* Under voltage and over voltage shutdown
* High-side and low-side thermal shutdown
* Short-to-ground and short-to-Vcc protection
* Cross-conduction protection
* Charge pump output for reverse polarity protection

**General Pin Diagram and basic connection diagram**

![Diagram, schematic

Description automatically generated]()

**Connection Diagram for bridging connections (Combining the two channels in to one) for driving higher loads**

![Diagram, schematic

Description automatically generated]()

**Interfacing with Arduino Uno**

![Graphical user interface

Description automatically generated]()