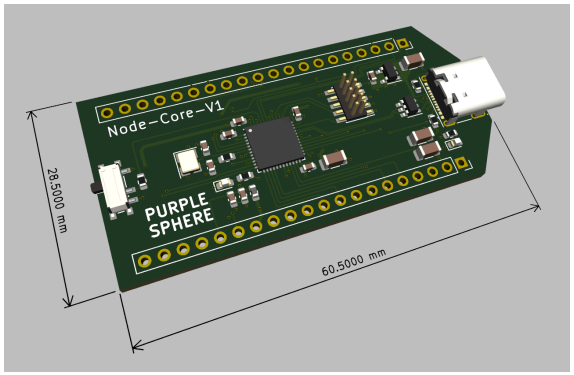
Purple Sphere

NCV1-1.2 : AUG 2024

Quick Start User Guide : Node-Core-V1

The Node-Core-V1 is supplied pre-programmed with the 'Hello World Blinky' firmware. Therefore start by connecting your Board into a USB-C lead. You should then see the BLUE power LED light up next to the USB-C connector along with the BLUE User LED (PA0) Blinking showing that the board is working.

If you have your USB-C lead connected to your PC then open a serial terminal program (Like Putty) with the settings to Baud 9600, 8 Bit, No Parity and 1 Stop bit. For the COM port check your comupters Device Connections (Device Manager on Windows). You will then recive a constant stream of 'Hello World' text.



Key Features

- STM32F412CGU6
- ARM Cortex M4 CPU
- 1024K Flash Memory
- 256K RAM
- UART, I2C, SPI, ADC etc
- UART over USB
- 100Mhz max Clock Speed
- 16Mhz External Clock
- SWD Programing Interface
- Arduino Compatible Pinout*
- 40 Pin DIP Package

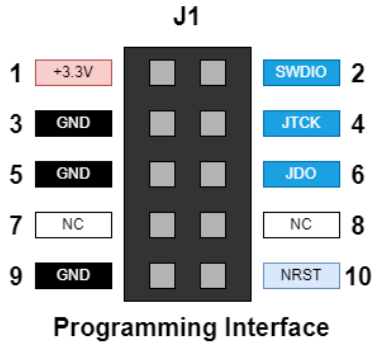
Writing you own firmware

First visit the Purple Sphere web site and down load the Node-Core-V1 programmers Kick Start package. This includes all the design files you will need in PDF format along with a copy of the Hello World source code, Binary and ST CUBE IDE Project Files. These include a .ION file pre-configured to match the pinout found on the oppersite page. Its then recommended to follow the ST tuttorials for the Cube IDE and try rebuilding the Hello World project for yourself.

Programming is achived via the SWD compatible programming port (J1) and allows direct interfacing with the ST-LINK programmers (See next page). Alternativly you can use the Purple Sphere Programming kit that include a low cost compatible ST-LINK programmer, Adaptor cable, USB Cable and 1.27mm ribbon cable that can also be used with other ST-LINK compatible connections. If you have ordered the Purple Sphere Programming kit see the details supplied with it or the full user guide at the Purple Sphere webside.

Arduino Pinout

The Board has been designed to follow the Arduino pinout found on boards like the NANO. The key difference are that the NCV1 come in a wider 40 pin package compared to the narrow 30 pin on the NANO for example. However the order of the pins make it simple to upgrade while bringing addtional output. On the page opporsite the comparison can be seen and users should read the full user guide found at www.PurpleSphere.com along with the avalible schematics.



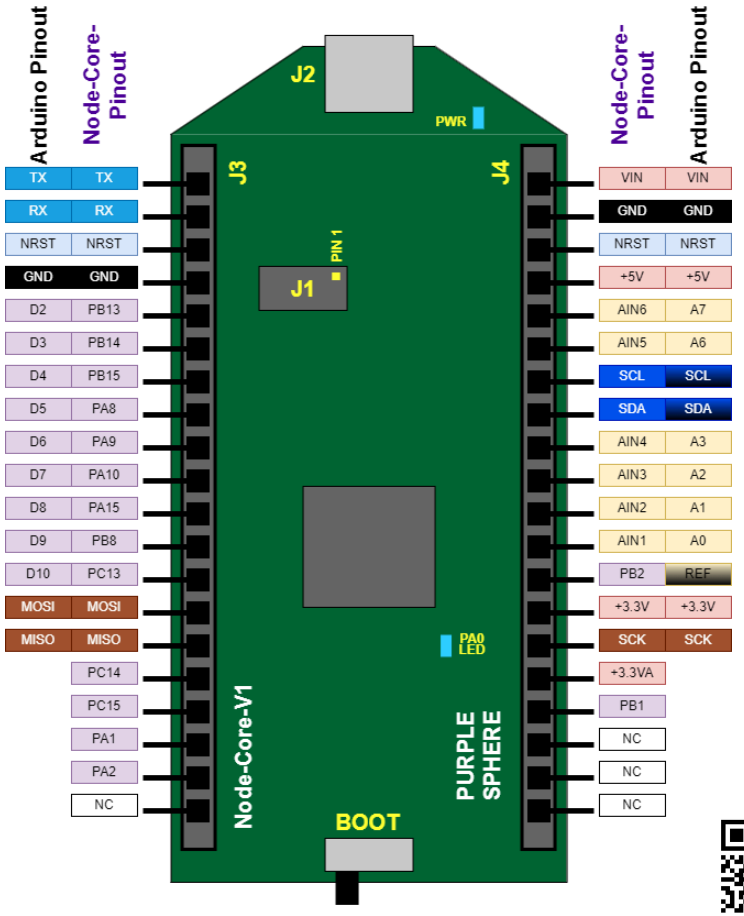
Programming Interface

Programming:

The Board includes a 10 ways 1.27mm pitch header that can be connected directly to a ST-LINK V2 or V3.

Before plugging in the cable please check to location of pin 1.

The Board should be powered via the USB (J2) connection as the +3.3V (pin 1) is to power the ST-LINK internat drivers during programming.



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