

Overview

MK4FQ is our new high performance 4-axis G Code controller with tight Raspberry PI integration. The MK4FQ has an ARM7 processor running at 168MHz for G Code translation and communication control and a second STM32F051 for high speed precision step generation.

The MKFQ is compatible with our existing family of bipolar drivers and a new high current 6A 45V driver (MM222).

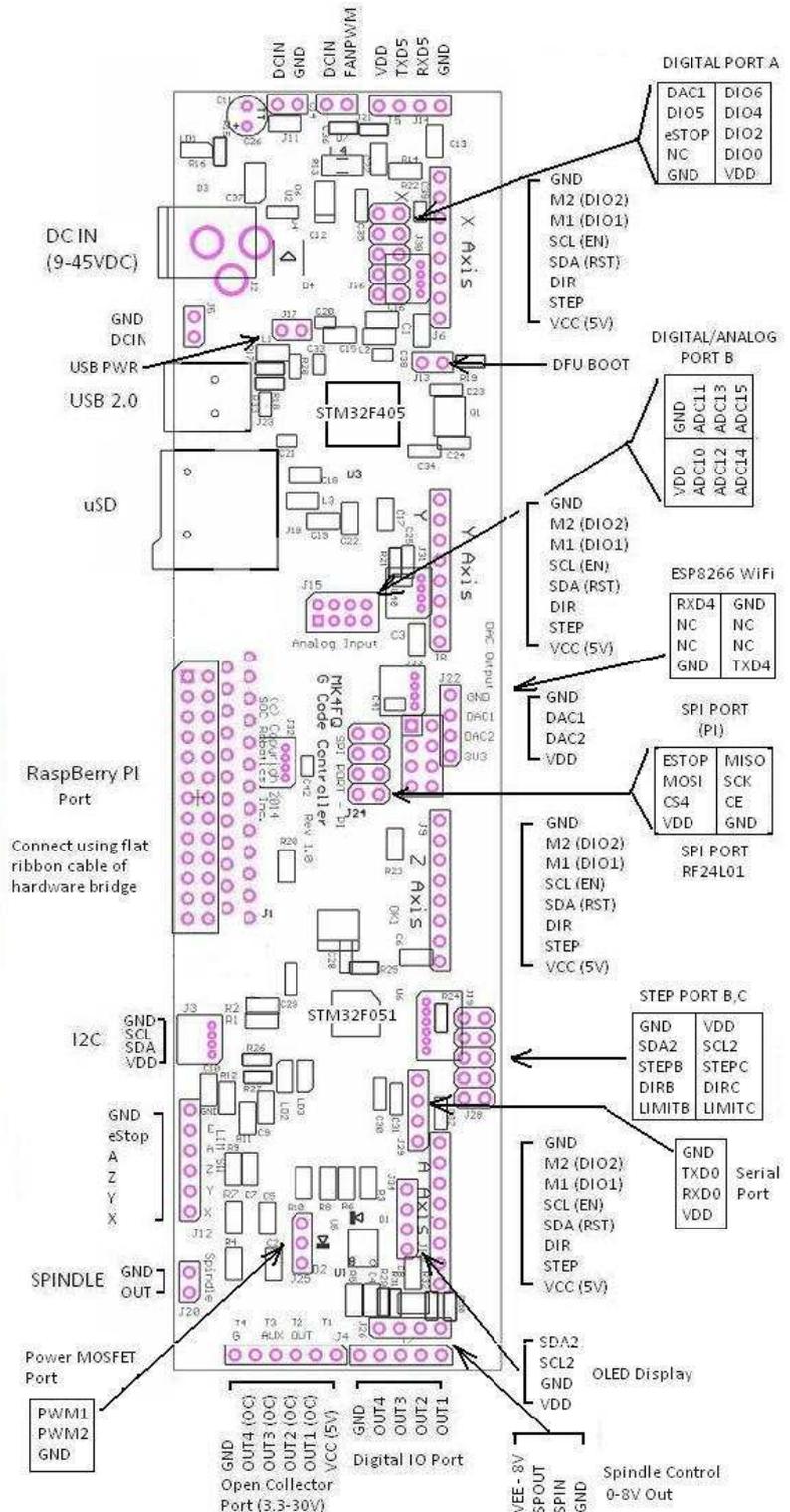
Features:

- Fast 168MHz 32bit ARM7 processor
STM32F405 with hardware FPU
- Step engine compressor based on STM32F051
- USB 2.0 interface with CDC COM serial
- Two wireless ports: RF24L01 and ESP8266 WiFi
- uSD adapter with support for up to 32G
- Supports MM160, MM166 or MM222 drivers
- 4 limit switch inputs plus eStop
- On chip DFU boot loader for software field upgrades
- Enable and reset set by software for each axis
- PWM fan control, digital IO
- Digital IO port
- UART interface port
- Two Power Mosfet outputs 35V, 2A
- Optical and analog spindle control outputs
- Raspberry PI direct connect providing uSD, Ethernet and/or WiFi connectivity
- Analog input port for joystick connection
- Speaker output for audio generation
- GStep support with integration to GStep Desktop
- Mach3 plug-in support
- GRBL and TinyG ports available
- Supports Quadrature inputs
- Parallel port interface for legacy configurations

The Raspberry PI 2 is a low cost (\$35.00) standalone 900MHz quad core computer running Linux that brings a rich set of connection options to the MK4FQ. By simplifying the software and hardware connection between the MK4FQ and PI a new realm of system applications become possible.

The MK4FQ runs an embedded G Code application called GStep. GStep accepts and executes G Code directly but also includes support for our Mach3 Plug-in. GStep handles linear and arc moves with full support for helical arc moves on any axis. Internally GStep is a 6-axis controller and will support two additional drivers by

MK4FQ Connector Pin Assignment



Raspberry Pi Support

The MK4FQ has a high speed SPI interface compatible with the Raspberry Pi SPI interface allowing tight integration between the two devices. The PI brings Linux functionality to the MK4FQ with all the flexible connection options that brings such as Ethernet, Wifi, HDMI, Joystick, video camera and keyboard integration. The SPI interface provides an ultrahigh speed (8Mbits/second) connection between the PI and MK4FQ. The PI with 700MHz ARM processor with 512Mbytes of SDRAM and uSD card slot with up to 32G operates as a high performance co-processor to the MK4FQ's 168MHz ARM7 processor. The two working together brings a rich set of application possibilities. The PI connects to the MK4FQ using a hardware bridge PCB or cable. The new PI 2 Quad Core brings even more capability. Two wireless ports on the board support the popular RF24L01 wireless module and new ESP8266 Serial WiFi module.

MK4FQ and Raspberry PI Integration

