

STM32F407ZGT6 Black board connector layout

3D Printer RAMPS board for STM32F407ZGT6 Chinese black edition with Touch TFT ILI9341 320x240

Heating block

The diagram illustrates the heating block circuit. It features three heaters: HEATER_0, HEATER_1, and HEATER_B. Each heater is connected to a 74LVC125 octal monostable multivibrator (U1). The heaters are controlled by MOSFETs Q1, Q2, and Q3 (NTMF55C628) driven by the 74LVC125. The heaters are powered by a +24V supply through fuses F1, F2, and F3. A +5V supply is also shown connected to the heaters.

USB

The diagram shows the USB connection. The USB_DM and USB_DP pins are connected to the USB connector J45. The USB_DM pin is connected to the USB connector pin 2, and the USB_DP pin is connected to the USB connector pin 3. The USB connector is labeled J45 USB.

I2C

The diagram shows the I2C connection. The SCL and SDA pins are connected to the I2C connector J47. The SCL pin is connected to the I2C connector pin 3, and the SDA pin is connected to the I2C connector pin 4. The I2C connector is labeled J47 I2C.

UART

The diagram shows the UART connection. The RX and TX pins are connected to the UART connector J44. The RX pin is connected to the UART connector pin 3, and the TX pin is connected to the UART connector pin 4. The UART connector is labeled J44 COM.

SPI

The diagram shows the SPI connection. The SS1, SCK, MISO, and MOSI pins are connected to the SPI connector J48. The SS1 pin is connected to the SPI connector pin 3, the SCK pin is connected to the SPI connector pin 4, the MISO pin is connected to the SPI connector pin 5, and the MOSI pin is connected to the SPI connector pin 6. The SPI connector is labeled J48 SPI.

[illegible]

Power

Diagram showing power input (J54, J46) and output (+24V, +12V, +5V, +3.3V) connections. It includes a note: "If a 12 V power supply is used, the X02 regulator and related capacitors are not installed and the junction over X02 on the PCB is soldered".

Limit switches

Diagram showing limit switch connections (J14, J15, J16, J19, J20, J21) for X, Y, and Z axes, including X MIN, X MAX, Y MIN, Y MAX, Z MIN, and Z MAX.

Servos

Diagram showing servo connections (J53, J52, J51) for PowerSelect, SERVO0, and SERVO1.

SD Card

Diagram showing SD card connections (J50) for SDIO_D0, SDIO_DET, SDIO_D1, SDIO_CMD, SDIO_CMD +3.3V, SDIO_SCK, SDIO_D3, SDIO_D0, SDIO_D1, +3.3V, and SDIO_DET.

Thermistors

The diagram illustrates the wiring for four thermistor modules, each connected to a +3.3V supply and ground. The modules are labeled TEMP_0, TEMP_1, TEMP_B, and TEMP_C. Each module has two pins: pin 2 is connected to the +3.3V supply through a 4K7 resistor (R1, R2, R3, R4), and pin 1 is connected to ground through a 10uF 16V capacitor (C1, C2, C3, C4). The ground connection is labeled D5.0.

TEMP_0 J1 2 TEMP_0 0603 R1 4K7 → +3.3V
1 C1 10uF 16V
D5.0

TEMP_1 J2 2 TEMP_1 0603 R2 4K7 → +3.3V
1 C2 10uF 16V
D5.0

TEMP_B J3 2 TEMP_B 0603 R3 4K7 → +3.3V
1 C3 10uF 16V
D5.0

TEMP_C J4 2 TEMP_C 0603 R4 4K7 → +3.3V
1 C4 10uF 16V
D5.0

Fans

On the PCB can be m replacement: instead of this BUK9 DMN6040SSD = much SQ4946AEY = similar All FETs are to the 6 reserve, because power The important thing is Threshold Voltage is

The diagram illustrates the electrical connections for three fans (FAN2, FAN3, and FANO) using BUK9K17-60E MOSFETs. The power supply is connected to the MOSFETs via a J56 Power connector, providing +24V, +12V, and +5V. The MOSFETs are controlled by fan speed control signals (FAN2, FAN3, FANO) through 10K resistors (R12, R13, R10, R11, R16, R17). The MOSFETs are connected to the fans via J10, J9, J43, and J11 connectors. The MOSFETs are also connected to a common ground.

[illegible]