XM
YM
ZMA
ZMB
E0M
E1M
FAN4 12/24 V DC
Z Sockets Wired in Parallel
FAN3 12/24 V DC
2B 2A 1A 1B
X-M
Y-M
Z-M
E0-M
E1-M
VM GND 2B 2A 1A 1B VIO GND
END STOP
DIAG PIN
DIAG
NC
12 ~ 24V
MS1
MS2
MS3
RST&SLP
EN MOSI M1 SCK M2 CS M3 MISO RST CLK SLP STEP DIR
X-CLS
Y-CLS
Z-CLS
E0-CLS
E1-CLS
DCIN 3.3V GND EN STP DIR
+ HE1 -
12/24 V DC
PB4
+ HE0 -
PB3
FAN2 PB5
FAN1 PB6
FAN0 PB7
SPI/UART
M1 M2 M3
3.3 VDC
RST SLEEP
+5V
VDD
USB
Powered By PWR_IN
Powered By USB
STM32F407VGT6
https://www.st.com/resource/en/datasheet/dm00037051.pdf
https://www.st.com/resource/en/datasheet/stm32f429ng.pdf
STM32F429VGT6
BIGTREETECH
Web: www.biqu3d.com
Version: SKR 2
X-STOP
5V GND PC1
E0DET
5V GND PC2
Y-STOP
5V GND PC3
E1DET
5V GND PA0
Z-STOP
5V GND PC0
PWRDET
5V GND PC15
EXP2
NC GND
RESET PC4
PA7 PB2
PA4 PE7
PA5 PA6
EXP1
5V GND
PE13 PE12
PE11 PE10
PE9 PB1
PB0 PC5
GND
PWR_IN
(DCIN)
12 ~ 24 V DC
[V_in] (24 VDC)
POWER_IN
POWER_IN FUSE
10
15
HB POWER FUSE
REDESIGNED PIN MAP BY GadgetAngel
GadgetAngel
+ HEATED BED
HBED
PD7
GND
OUTPUT ONLY
+ HOT BED OUT -
BIGTREETECH®
USB 2.0 Type B Connector
WIFI Socket
Micro SD Card Reader
MicroSD card
U-Disk USB 2.0 Type A Connector
PWR Selection Header
WIFI/U-Disk SELECT Header
(P2)
WIFI/U-Disk SELECT Header
3.3 V SWDIO GND SWCLK RESET
3.3 V PA13 GND PA14 NRST
SWD
Neopixel
GND PE6 5V
RGB
GND 5V PE5
SERVOS
GND PE4
Probe
TFT
5V GND PA9 PA10 RST
TX1 RX1
I2C
SCL1 SDA1 GND 5V
PB8 PB9 GND 5V
RESET
PS-ON
PE8 GND
TB
GND PA1
TH0
GND PA2
TH1
GND PA3
10 For logic, fans, hotend heaters and stepper motor drivers.
15 For the heated bed.
EN STEP DIR CS
X-M PE3 PE2 PE1 PE0
Y-M PD6 PD5 PD4 PD3
Z-M PD1 PA15 PA8 PD0
E0-M PC7 PD15 PD14 PC6
E1-M PD13 PD11 PD10 PD12
WIFI
(BIGTREETECH ESP8266 module or BTT ESP-07S module)
GND 3.3 VDC
(CS2) PB12 PB15(MOSI2)
NC PB14 (MISO2)
PB10 PB13 (CLK2)
PB11 NC
NC NC
(TX3) PD8 NC
(RX3) PD9 PC14
BTT ESP-07 Module
BIGTREETECH ESP8266 Module
Marlin setup for SKR 2 having STM32F407ZG MCU:
Marlin 2.0.x Firmware Changes:
In Platformio.ini file change: default_envs = BIGTREE_SKR_2
In Configuration.h file change:
#define SERIAL_PORT -1
#define SERIAL_PORT_2 1
#define MOTHERBOARD BOARD_BTT_SKR_V2_0_REV_B
Note: Serial Port definitions in Marlin 2.0.x for this Board:
-1: USB Port; 1: UART Port;
3: WIFI Socket;
Marlin setup for SKR 2 having STM32F429ZG MCU:
Marlin 2.0.x Firmware Changes:
In Platformio.ini file change: default_envs = BIGTREE_SKR_2_F429
In Configuration.h file change:
#define SERIAL_PORT -1
#define SERIAL_PORT_2 1
#define MOTHERBOARD BOARD_BTT_SKR_V2_0_REV_B
Note: Serial Port definitions in Marlin 2.0.x for this Board:
-1: USB Port; 1: UART Port;
3: WIFI Socket;
UART
(CS)
X-M: PE0
Y-M: PD3
Z-M: PD0
E0-M: PC6
E1-M: PD12
Columns: 1 2 3
Only one (1) Jumper is needed for this mode. Jumper located in row MS3 and columns 1 & 2.
PIN-OUT of ESP8266 (ESP-12S) CHIP
ESP-12S PINOUT
2 - M3; M2 3 - M3; M2
1 - M2; M1 OR 2 - M2; M1
0 - M1; M0 1 - M1; M0
UART connector
NOTE: Power the Raspberry Pi with a separate 5V PSU.
"TFT connector" on the SKR 2 board is the 'UART Connector'.
5V PSU*
* Important: Connect the DC 0V (typically labelled V-) on all of your DC power supplies together to ensure they all have the same voltage reference. If this is not done then it may be difficult to diagnose issues (devices may not turn on or may be damaged due to exceeding voltage limits).
Connect the Raspberry Pi via UART
In order to use the only hardware serial port of the Raspberry Pi, you need to disable the console function and map the hardware serial port to GPIO14 and GPIO15.
You can refer here:
sudo raspi-config
=> Interfacing Option
=> Serial
=> NO
=> YES
sudo nano /boot/config.txt
=> add this line :
dtoverlay=pi3-disable-bt
=> then
sudo reboot
sudo nano /boot/cmdline.txt
=> remove the word phase
"console=serial0,115200" or
"console=ttyAMA0,115200"
sudo reboot
SPI
MOSI PE14
MISO PA14
SCK PE15
X-M_CS PE0
Y-M_CS PD3
Z-M_CS PD0
E0-M_CS PC6
E1-M_CS PD12
Columns: 1 2 3
Four (4) Jumpers are needed for this mode. Jumpers located in: rows MOSI, SCK, CS, MISO and columns 1 & 2.
STALLGUARD (Sensor-less Homing)
Place a Jumper across 'ENDSTOP PIN' & 'DIAG PIN' to enable sensorless homing.
VORON DESIGN
Where to place a Jumper to enable sensorless homing and where to remove a Jumper to disable sensorless homing:
These two PINs are used to enable sensorless homing (Diag Jumper).
If a Jumper is REMOVED from the two PINs then limit switches or endstops can be used (sensorless homing is disabled).
If a Jumper is present on the two PINs then limit switches or endstops CAN NOT be used (sensorless homing is enabled).
USB V 2.0 Type-B
USB-A_D+ PA12
USB-A_D- PA11
Note: If you are unsure about any of the information provided on this PIN Diagram, please ask for help from the 3D printer community, check the Processor's datasheet and the board's schematic diagram.
Due to the shortage of MCUs, SKR-2 has two versions: 1) STM32F407VGT6 and 2) STM32F429VGT6. You will need to check your board to see which MCU you have.
Klipper Building Options for the BTT SKR 2 using STM32F407 CPU:
Klipper Building Options for the BTT SKR 2 using STM32F429 CPU:
Klipper
How to Transfer the Klipper Firmware to BTT SKR 2:
OR
Micro SD Card Reader
TF-DA1 PC9
TF-DA0 PC8
TG-CK PC12
TF-CMD PD2
TF-DA3 PC11
TF-DA2 PC10