

## Driver Modes

### TMC 2208 STEP/DIR Mode

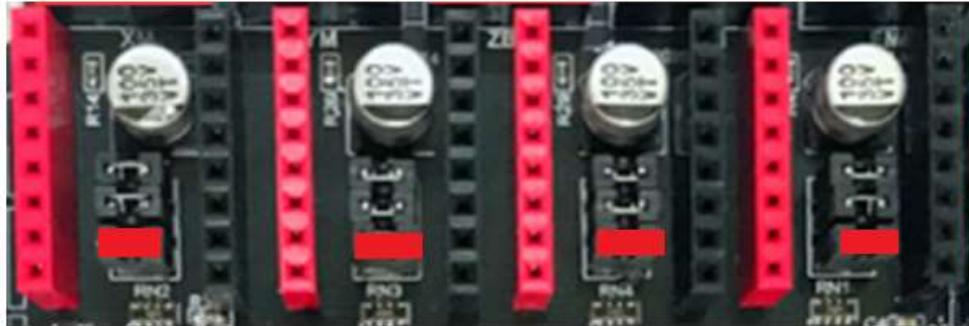
By default, the SKR mini v1.1 board is configured for STEP/DIR mode this mode needs all of the pins are closed. For Example



## TMC 2208 UART Mode

UART offers a mode where better control of the drivers, allowing the user to set motor current, set steps and more.

Configure the board as shown below



**Remove Pin Jumpers marked in RED**

You then need to make the following adjustments to your Marlin 2.0 configuration to enable UART Mode

In the Board Pins header File

**pins\_BTT\_SKR\_MINI\_V1\_1.h**

```
//  
// TMC2208 UART  
//  
// Pins for TMC2208 UART  
#define X_PIN_UART PC10  
#define Y_PIN_UART PC11  
#define Z_PIN_UART PC12  
#define E0_PIN_UART PC14  
  
#if HAS_DRIVER(TMC2208)  
  #define X_SERIAL_TX_PIN X_PIN_UART  
  #define X_SERIAL_RX_PIN X_PIN_UART  
  #define Y_SERIAL_TX_PIN Y_PIN_UART  
  #define Y_SERIAL_RX_PIN Y_PIN_UART  
  #define Z_SERIAL_TX_PIN Z_PIN_UART  
  #define Z_SERIAL_RX_PIN Z_PIN_UART  
  #define E0_SERIAL_TX_PIN E0_PIN_UART  
  #define E0_SERIAL_RX_PIN E0_PIN_UART  
#endif
```

## Configuration.h

You need to set the driver type in the Configuration.h file

```
#define X_DRIVER_TYPE  TMC2208

#define Y_DRIVER_TYPE  TMC2208
#define Z_DRIVER_TYPE  TMC2208
//#define X2_DRIVER_TYPE  A4988
//#define Y2_DRIVER_TYPE  A4988
//#define Z2_DRIVER_TYPE  A4988
//#define Z3_DRIVER_TYPE  A4988
#define E0_DRIVER_TYPE  TMC2208
```

Further Links and Information on UART

### Testing:

To test that all is well send M122 to board and you should see ok, if you see LOW or HIGH you have a signalling issue.

### Troubleshooting:

[Teaching Tech's TMC2208 update and troubleshooting video](#)

### Official Documentation

[TMC2208 v3.0 Documentation](#)

### Community Links

[Issue in tracker for UART](#) - Issue tracking the UART mode and the general lack of documentation on it.

[TMC2208 UART on BigTreeTech/BIQU SKR V1.1 and V1.3 Controllers](#) - This Blog has some great general information.

### Special Thanks to:

Special thanks to the following github users for their direction and contribution to this guide.

[rhialto56](#)

[kristapsdravnieks](#)