

MINI UPS V2.0

Power failure module

User Manual



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BIGTREE-TECH.COM

VERSION BETA 1.0

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Product Introduction

BigTree Technology Co., Ltd. developed this power failure module to detect a power failure during printing and ensuring the print can be resumed after power is returns.

Board specifications

- 1) Size: 50 x 32.5mm
- 2) Input voltage: min. 10V DC, max.12V DC
- 3) Max. current: 25A

Wiring



The green connector should be connected to a 12V power supply.

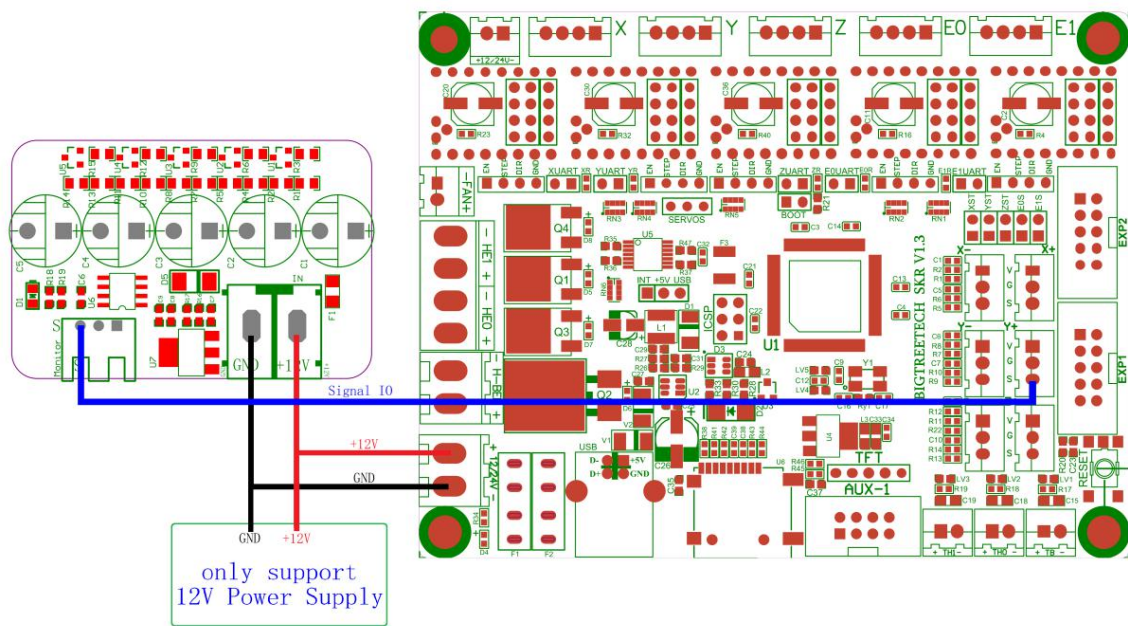
The white connector should be connected to any of the endstops or other suitable port.

Note:

The module can only work normally at 12V voltage, when the working voltage is higher than 13V, the module will be burnt out.

The module outputs a low level when it is working normally, and outputs a high level when it detects a power failure(<10V power input).

Connect to BIGTREETECH SKR V1.3



Firmware

Download the Marlin 2.0:

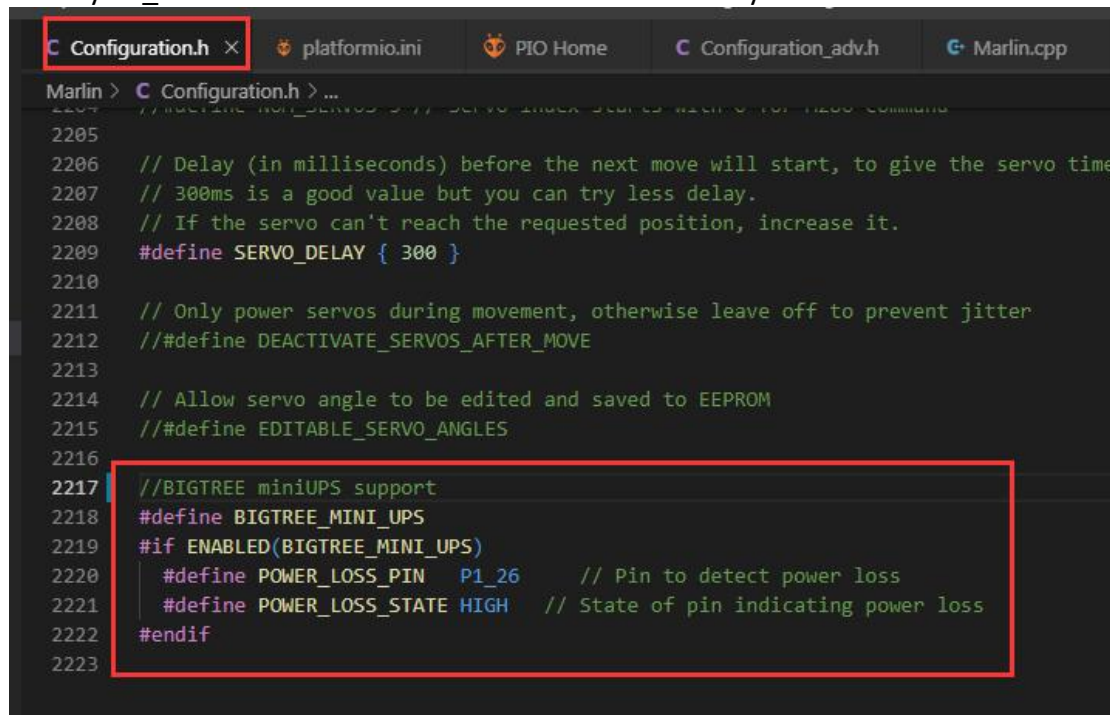
<https://github.com/bigtreetech/Marlin/tree/marlin-2.0-mini-ups>

Please modify the parameters according to the printer and then add the function of this power failure module.

BIGTREETECH touchscreen series:

The BIGTREETECH touchscreen series have the function of saving print progress, just add BIGTREE_MINI_UPS support in the file configuration.h, the picture as shown below.

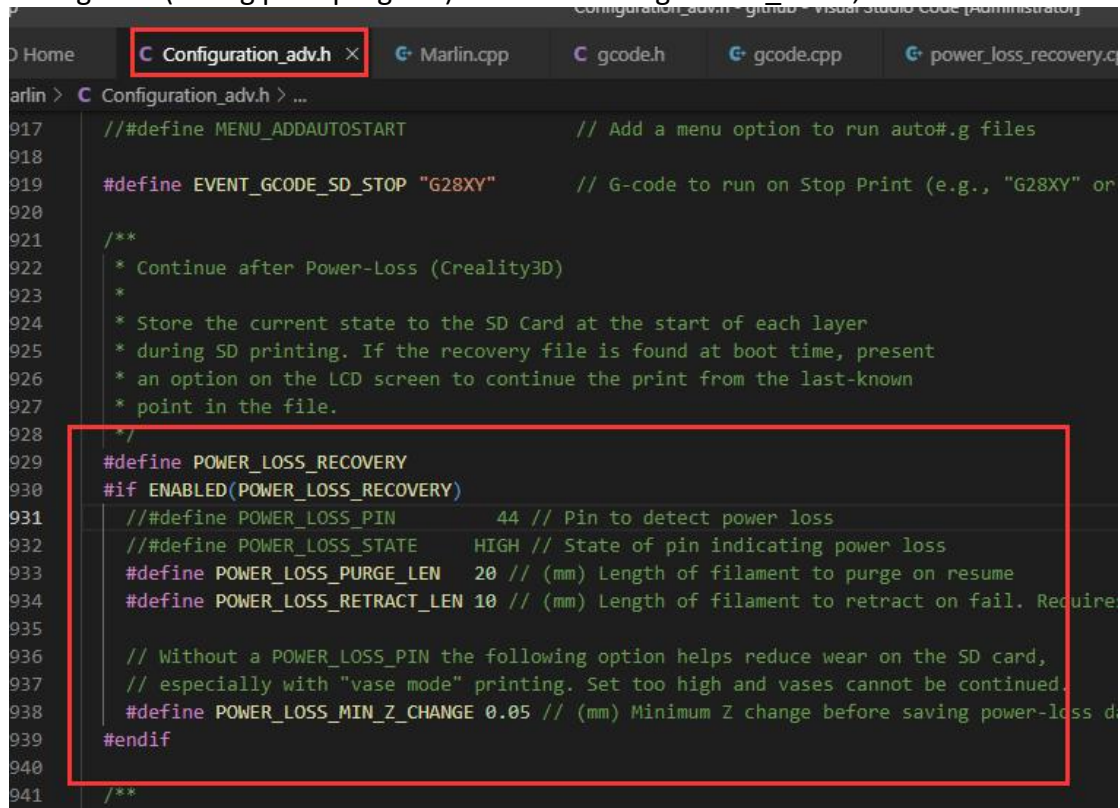
The POWER_LOSS_PIN in the figure is the GPIO port to which the module is connected. Modify P1_26 to the GPIO to which the module is actually connected.



```
Marlin > C Configuration.h > ...
2205
2206 // Delay (in milliseconds) before the next move will start, to give the servo time
2207 // 300ms is a good value but you can try less delay.
2208 // If the servo can't reach the requested position, increase it.
2209 #define SERVO_DELAY { 300 }
2210
2211 // Only power servos during movement, otherwise leave off to prevent jitter
2212 //#define DEACTIVATE_SERVOS_AFTER_MOVE
2213
2214 // Allow servo angle to be edited and saved to EEPROM
2215 //#define EDITABLE_SERVO_ANGLES
2216
2217 //BIGTREE miniUPS support
2218 #define BIGTREE_MINI_UPS
2219 #if ENABLED(BIGTREE_MINI_UPS)
2220   #define POWER_LOSS_PIN P1_26 // Pin to detect power loss
2221   #define POWER_LOSS_STATE HIGH // State of pin indicating power loss
2222 #endif
2223
```


Reprap LCD12864/LCD2004/CR10_STOCKDISPLAY:

If user uses a Reprap LCD12864/LCD2004 or other similar display, you will also need to enable saving data (saving print progress) in the file configuration_adv.h, as shown below



```
917 // #define MENU_ADDAUTOSTART // Add a menu option to run auto#.g files
918
919 #define EVENT_GCODE_SD_STOP "G28XY" // G-code to run on Stop Print (e.g., "G28XY" or
920
921 /**
922  * Continue after Power-Loss (Creality3D)
923  *
924  * Store the current state to the SD Card at the start of each layer
925  * during SD printing. If the recovery file is found at boot time, present
926  * an option on the LCD screen to continue the print from the last-known
927  * point in the file.
928  */
929 #define POWER_LOSS_RECOVERY
930 #if ENABLED(POWER_LOSS_RECOVERY)
931 // #define POWER_LOSS_PIN 44 // Pin to detect power loss
932 // #define POWER_LOSS_STATE HIGH // State of pin indicating power loss
933 #define POWER_LOSS_PURGE_LEN 20 // (mm) Length of filament to purge on resume
934 #define POWER_LOSS_RETRACT_LEN 10 // (mm) Length of filament to retract on fail. Requires
935
936 // Without a POWER_LOSS_PIN the following option helps reduce wear on the SD card,
937 // especially with "vase mode" printing. Set too high and vases cannot be continued.
938 #define POWER_LOSS_MIN_Z_CHANGE 0.05 // (mm) Minimum Z change before saving power-loss d
939 #endif
940
941 /**
```