

ShopBot MCU and Control Card Pinouts**[RED = mods from V201 to V204/9]**

| =====HISTORICAL===== | | (J1) | | | =====CURRENT===== | | | | |
|----------------------|-----------------|----------------------|---------------|---------------------|---------------------------|-----------|-----|-----------|--|
| XPLOR | Dallas DS89C4x0 | 37 Pin Connex | Name | Handling | -----Silab C8051F120----- | | pin | Type | Comments |
| +9 | | 19 | | | V201 | V204/9 | | | |
| +9 | | 37 | | | --- | --- | | | |
| +9 | | 18 | | | --- | --- | | | |
| +9 | | 36 | | | --- | --- | | | |
| PC0 | P2.5 | 17 | Xdir | buf | P4.0 | P4.0 | 98 | O | {6-Axis Direction Bus |
| PC1 | P2.6 | 35 | Ydir | buf | P4.1 | P4.1 | 97 | O | |
| PC2 | P2.7 | 16 | Zdir | buf | P4.2 | P4.2 | 96 | O | |
| PC3 | P3.4 | 34 | Adir | buf | P4.3 | P4.3 | 95 | O | |
| PB0 | P3.5 | 15 | Bdir | buf | P4.4 | P4.4 | 94 | O | |
| | | | Cdir | buf | | (P4.5) | 93 | O | {adding 6th axis to connector} |
| PB1 | P2.0 | 33 | xStep | buf | P5.0 | P5.0 | 88 | O | {6-Axis Step Bus |
| PB2 | P2.1 | 14 | yStep | buf | P5.1 | P5.1 | 87 | O | |
| PB3 | P2.2 | 32 | zStep | buf | P5.2 | P5.2 | 86 | O | |
| PB4 | P2.3 | 13 | aStep | buf | P5.3 | P5.3 | 85 | O | |
| PB5 | P2.4 | 31 | bStep | buf | P5.4 | P5.4 | 84 | O | |
| | | | cStep | buf | | (P5.5) | 83 | O | {adding 6th axis to connector} |
| PB6 | P3.3 | 12 | Speed-X | buf | P3.0 | P3.0 | 54 | O | |
| PB7 | | 30 | ENABLE | buf | P3.1 | P3.1 | 53 | O | |
| P1.0 | P1.0 | 11 | Input 5 | r/c + iso int board | P6.0 | P6.0 | 80 | I | |
| P1.1 | P1.1 | 29 | Input 6 | r/c + iso int board | P6.1 | P6.1 | 79 | I | |
| P1.2 | P1.2 | 10 | Input 7 | r/c + iso int board | P6.2 | P6.2 | 78 | I | |
| P1.3 | P1.3 | 28 | Input 8 | r/c + iso int board | P6.3 | P6.3 | 77 | I | |
| P1.4 | P1.4 | 9 | Input 1 | r/c + iso int board | P6.4 | P6.4 | 76 | I | |
| P1.5 | P1.5 | 27 | Input 2 | r/c + iso int board | P6.5 | P6.5 | 75 | I | |
| P1.6 | P1.6 | 8 | Input 3 | r/c + iso int board | P6.6 | P6.6 | 74 | I | |
| P1.7 | P1.7 | 26 | Input 4 | r/c + iso int board | P6.7 | P6.7 | 73 | I | |
| P3.2 | P3.2 | 7 | ALARM | r/c | P3.2 | P3.2 | 52 | I | |
| P3.3 | P3.3 | 25 | test?? | | ---- | P3.3 | 51 | I | {??not implemented yet; this potential test input moved to |
| P3.4 | P3.4 | 6 | Cdir | buf | ---- | P4.5 | 93 | O | {pin location for 6th axis dir; from above} |
| P3.5 | P3.5 | 24 | cStep | buf | ---- | P5.5 | 83 | O | {pin location for 6th axis step; from above} |
| RxD(inv) | RxD(inv) | 5 | | | ---- | ---- | | | |
| RxT(inv) | RxT(inv) | 23 | | | ---- | ---- | | | |
| Vcc +5 | Vcc +5 | 4 | power | bypass cap | Vcc +5 | Vcc +5 | | | |
| Vcc +5 | Vcc +5 | 22 | power | bypass cap | Vcc +5 | Vcc +5 | | | |
| Vcc +5 | Vcc +5 | 3 | power | bypass cap | Vcc +5 | Vcc +5 | | | |
| G | G | 21 | G | | G | G | | | |
| G | G | 2 | G | | G | G | | | |
| G | G | 20 | G | | G | G | | | |
| G | G | 1 | G | | G | G | | | |
| | | (J2) | | | | | | | |
| | | Header J2 | | | | | | | {header now contains all standard OUTPUT lines} |
| +9 | +9 | 1 | | | ---- | ---- | | | |
| Vcc +5 | Vcc +5 | 2 | power | | Vcc +5 | Vcc +5 | | | |
| PC4 | ---- | 3 | Output 9 | buf | P3.6 | P3.4 | 50 | O | {4x additional outputs} |
| PC5 | ---- | 4 | Output 10 | buf | P3.3 | P3.5 | 49 | O | {...future use as spindle and ATC controls} |
| PC6 | ---- | 5 | Output 11 | buf | P3.4 | P3.6 | 48 | O | |
| PC7 | ---- | 6 | Output 12 | buf | P3.5 | P3.7 | 47 | O | |
| PA0 | P0.0 | 7 | Output 1 | buf | P7.0 | P7.0 | 72 | O | |
| PA1 | P0.1 | 8 | Output 2 | buf | P7.1 | P7.1 | 71 | O | |
| PA2 | P0.2 | 9 | Output 3 | buf | P7.2 | P7.2 | 70 | O | |
| PA3 | P0.3 | 10 | Output 4 | buf | P7.3 | P7.3 | 69 | O | |
| PA4 | P0.4 | 11 | Output 5 | buf | P7.4 | P7.4 | 68 | O | |
| PA5 | P0.5 | 12 | Output 6 | buf | P7.5 | P7.5 | 67 | O | |
| PA6 | P0.6 | 13 | Output 7 | buf | P7.6 | P7.6 | 66 | O | |
| PA7 | P0.7 | 14 | Output 8 | buf | P7.7 | P7.7 | 65 | O | |
| G | G | 15 | G | | G | G | | | |
| G | G | 16 | G | | G | G | | | |
| | | (J6) | | | | | | | |
| | | Header J6 | | | | | | | |
| | | 1 | power | | | Vcc +5 | | | |
| | | 2 | Input 9 | r/c + iso int board | | P2.0 | | I | {4x additional inputs} |
| | | 3 | Input 10 | r/c + iso int board | | P2.1 | | I | |
| | | 4 | Input 11 | r/c + iso int board | | P2.2 | | I | |
| | | 5 | Input 12 | r/c + iso int board | | P2.3 | | I | |
| | | 6 | (out) | buf | | P2.7 | | O | {4x additional outputs; planned as AlarmCLR and Indexer |
| | | 7 | (out) | buf | | P2.6 | | O | {... NOTE: these all have buffer chips so now must be out |
| | | 8 | (out) | buf | | P2.5 | | O | |
| | | 9 | (out) | buf | | P2.4 | | O | |
| | | 10 | G | | | G | | | |
| | | 11 | PWM0 | buf | | PWM0/P0.6 | | O | {laser}{3D printer heater} |
| | | 12 | PWM1 | buf | | PWM1/P0.7 | | O | {3D printer heater} |
| | | 13,15,17,19 | G | | | | | | |
| | | 14 | ANIN1 | r/c | | ANIN0.0 | | AnalogIN | {temp control} |
| | | 16 | ANIN2 | r/c | | ANIN0.1 | | AnalogIN | {temp control} |
| | | 18 | AOUT1 | drv | | DAC.0 | | AnalogOUT | |
| | | 20 | AOUT2 | drv | | DAC.1 | | AnalogOUT | |
| | | | MON5V | +5v supply | | ANIN0.2 | | AnalogIN | {to MONITOR 5v Supply Level} |
| | | from USB | | | | | | | |
| | to 5v Supply | | Power ON ? | | | GPIO 0 | | I | {to check power to MCU} |
| | to MCU | | Trigger RESET | | | GPIO 1 | | O | {to RESET if problem*} |
| | opt pin | | | | | GPIO 2 | | - | |
| | opt pin | | | | | GPIO 3 | | - | |

*after full isolation on 208 boards; disconnecting USB would trigger reset; FIXED on last 25 208's and from 209 on