Updated 3/25/13 (V204-V210 functionally similar; *Full Isolation from 208; @end of 208, USB protected from reset on withdrawal; 210 P2.7,2.6 Changed to Input

ShopBot MCU and Control Card Pinouts

[RED = mods from V201 to V204/9]
[BLUE = Mods to V210]

(J1)			==========CURRENT==========				
37 Pin Connex	**Name**	Handling	|----------Silab C8051F120----------|				Comments
			V201	V204/9/10	pin	Type	
19			---	---			
37			---	---			
18			---	---			
36			---	---			
17	Xdir	buf	P4.0	P4.0	98	O	6-Axis Direction Bus
35	Ydir	buf	P4.1	P4.1	97	O	
16	Zdir	buf	P4.2	P4.2	96	O	
34	Adir	buf	P4.3	P4.3	95	O	
15	Bdir	buf	P4.4	P4.4	94	O	
	Cdir	buf		(P4.5	93	O)	{adding 6th axis to connector}
33	xStep	buf	P5.0	P5.0	88	O	6-Axis Step Bus
14	yStep	buf	P5.1	P5.1	87	O	
32	zStep	buf	P5.2	P5.2	86	O	
13	aStep	buf	P5.3	P5.3	85	O	
31	bStep	buf	P5.4	P5.4	84	O	
	cStep	buf		(P5.5	83	O)	{adding 6th axis to connector}
12	Speed-X	buf	P3.0	P3.0	54	O	
30	ENABLE	buf	P3.1	P3.1	53	O	
11	Input 5	r/c + iso int board	P6.0	P6.0	80	I	
29	Input 6	r/c + iso int board	P6.1	P6.1	79	I	
10	Input 7	r/c + iso int board	P6.2	P6.2	78	I	
28	Input 8	r/c + iso int board	P6.3	P6.3	77	I	
9	Input 1	r/c + iso int board	P6.4	P6.4	76	I	
27	Input 2	r/c + iso int board	P6.5	P6.5	75	I	
8	Input 3	r/c + iso int board	P6.6	P6.6	74	I	
26	Input 4	r/c + iso int board	P6.7	P6.7	73	I	
7	ALARM	r/c	P3.2	P3.2	52	I	
25	test??		-----	P3.3	51	I	{??not implemented yet; this potential test input moved to
6	Cdir	buf	-----	P4.5	93	O	{pin location for 6th axis dir; from above}
24	cStep	buf	-----	P5.5	83	O	{pin location for 6th axis step; from above}
5			-----	-----			
23			-----	-----			
4	power	bypass cap	Vcc +5	Vcc +5			
22	power	bypass cap	Vcc +5	Vcc +5			
3	power	bypass cap	Vcc +5	Vcc +5			
21			G	G			
2			G	G			
20			G	G			
1			G	G			

(J2)							
Header J2							{header now contains all standard OUTPUT lines}
1			-----	-----			
2	power		Vcc +5	Vcc +5			
3	Output 9	buf	P3.6	P3.4	50	O	{4x additional outputs}
4	Output 10	buf	P3.3	P3.5	49	O	{…future use as spindle and ATC controls}
5	Output 11	buf	P3.4	P3.6	48	O	
6	Output 12	buf	P3.5	P3.7	47	O	
7	Output 1	buf	P7.0	P7.0	72	O	
8	Output 2	buf	P7.1	P7.1	71	O	
9	Output 3	buf	P7.2	P7.2	70	O	
10	Output 4	buf	P7.3	P7.3	69	O	
11	Output 5	buf	P7.4	P7.4	68	O	
12	Output 6	buf	P7.5	P7.5	67	O	
13	Output 7	buf	P7.6	P7.6	66	O	
14	Output 8	buf	P7.7	P7.7	65	O	
15	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	Input 13	r/c + iso int board		P2.7		I	{P2.7, 2.6 converted to r/c inputs in V210}
7	Input 14	r/c + iso int board		P2.6		I	
8	Output 13	buf		P2.5		O	{P2.5, 2.4 considered generic outputs V210}
9	Output 14	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				GPIO PINs on CP2103 (addressed via PC software)			
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