

Aspire		Mach 3						Bradley Hanson 2/19/2019													
Design	Post Processor	Configuration Page					Plug-in Control	Parallel Ports				See Note 3		PMDX-126				Connected to			
		Motor Outputs	Input Signals	Output Signals	Slave Axis	Spindle Setup		Type	Used	Port	PC Pin	J	Pins	PMDX-126 Signal	Jack	Label	Pin				
M03 & M05				Output #1 to Port 1 Pin 1		Link Spindle Relay control to Output #1		Output	Yes	1	1	16	1	Relay Control and Connector J6	J6	1	2	Router Power	K1 relay	AC power comes in and out for Elec box for laser power	
X - axis	Assign axis Step and Dir to Port and Pin						Output	Yes	1	2	16	2	Output signals to connectors J1 through J4 and J19. J19 connects to PMDX-135 mother board	J4	2	2	X Axis	Dir	PMDX-135 connects directly to GeckoDrive G201X Driver for X, Y, Z and A Axis		
							Output	Yes	1	3	16	3		J4	3	3	X Axis	Step			
Y - axis							Output	Yes	1	4	16	4		J3	5	2	Y Axis	Dir			
							Output	Yes	1	5	16	5		J3	5	3	Y Axis	Step			
Z - axis							Output	Yes	1	6	16	6		J2	6	2	Z Axis	Dir			
							Output	Yes	1	7	16	7		J2	7	3	Z Axis	Step			
X - axis					Slave A to X		Output	Yes	1	8	16	8	J1	8	2	A Axis	Dir				
							Output	Yes	1	9	16	9	J1	9	3	A Axis	Step				
			Assign Limit sensors, e-stop and z probe to Ports and Pins				Input	Yes	1	10	16	10	E-stop input to PC				Estop		Estop button on front panel		
							Input	Yes	1	11	16	11	Status Input from J12	J12	11	3	X++, --. & Home		Pepperl + Fuchs proximity switch		
							Input	Yes	1	12	16	12	Status Input from J12	J12	12	5	Y++, --. & Home		Pepperl + Fuchs proximity switch		
							Input	Yes	1	13	16	13	Status Input from J12	J12	13	7	Z Axis touch plate		Touch Plate		
				Output #2 to Port 1 Pin 14			Output			1	14	16	14	Control Output	J6	14	3				
			Same as above				Input	Yes	1	15	16	15	Status Input from J12	J12	15	9	A++, --. & Home		Pepperl + Fuchs proximity switch		
C - axis Rotary	Same as above						Output	Yes	1	16	16	16	Control Output	J6	16	4	4th Axis Step		Wired from terminal blocks on PMDX-126 to GeckoDrive G201X Driver for C		
							Output	Yes	1	17	16	17	Control Output	J6	17	5	4th Axis Dir				
										1	18-25	16	Gnd	PC Ground							
							Output			2	1	17	1	Control Output to J5	J5	A	2				
										2	2-9	17	3 - 17 odd	No Connection on PMDX -126							
							Input			2	10	17	19	Status Input from J13	J13	K	2				
							Input			2	11	17	21	Status Input from J11	J11	E	3				
							Input			2	12	17	23	Status Input from J11	J11	F	5				
							Input			2	13	17	25	Status Input from J11	J11	G	7				
Engrave Tool Path	See Note 1			Output #3 to Port 2 Pin 14		Links Output #3 to M11P3 and M10P3 Commands	Output	Yes	2	14	17	2	Control Output	J5	B	3	Laser Enable	See Note 4	"Enable" on DAC_PWM Board or H2 + on Jtech laser driver board		
							Input			2	15	17	4	Status Input from J11	J11	H	9				
B - axis	Same as above						Output	Yes	2	16	17	6	Control Output	J5	C	4	Laser Step	See Note 2	"Step" on DAC_PWM Board		
							Output	Yes	2	17	17	8	Control Output	J5	D	5	Laser Dir		"Dir" on DAC_PWM Board		
										2	18-25	17	10-24 Even	PC Ground							

Notes

1	The Aspire Post Processor put in M11P3 M10P3 commands. M11P3 enables the laser and M10P3 disables the laser for real time control. The M11P3 command are appended to any "First Feed rate" move. The P10P3 command is appended to any Rapid move. So it is the transitions from Rapid to Feed rate moves that turn the laser on and off. These command are configured in the correct output in the ESS Gadget configuration in MACH3
2	B axis used to drive PWM function of PicConvert (DAC+PWM) Converter Board to control laser intensity
3	J16 and J17 are header connectors on PMDX-126 for the parallel ports that connect to the Ethernet Smooth Stepper card
4	Relay on CNC front panel used to selected between CW (Continues Wave) mode and PMW (Pulse Width Modulation) mode. IN CW mode the laser on and off and the laser is always max power. In PWM mode the DAC board sets the power level of the laser based on the B axis position. In both cases the M11P3 and M10P3 command put in the code by the Aspire post processor turn the laser on and off.