Microcontroller Interface PCB Testing

Monday, June 25, 2018 1:04 PM

PSU Testing

Test	Result
24V to GND >5kΩ	Pass
15V to GND >5kΩ	Pass
5V to GND >5kΩ	Pass
24V to 15V > 5kΩ	Pass
24V to 5V > 5kΩ	Pass
15V to 5V > 5kΩ	Pass
Measure V24V = 24V +/- 1.5V	Pass
Measure V15V = 15V +/- 1.5V	Pass
Measure V5V = 5V +/- 0.5V	Pass

Connector Continuity Testing

Test	Result
Resistance of <1Ω between each pin on each connector and corresponding trace/pin on PCB	Pass

Motor Driver Testing

Test	Result
Measure VCC = 15V on each half bridge driver	Pass (x6)
Measure Motor_V+ = 12V and Motor_V- = 12V when PWM duty = 50%	Pass (x3)
Measure Motor_V+ = 22V and Motor_V- = 1.2V when PWM duty = 95%	Pass (x3)
Measure Motor_V+ = 1.2V and Motor_V- = 22V when PWM duty = 5%	Pass (x3)
Measure Motor_V+ = 0V and Motor V_- = 0V when ~SD~ input is low (0V)	Pass (x3)

Limit Switch Testing

Test	Result
~SD~ output is low (0V) when any limit switch is pressed (i.e. shorted to GND)	Pass (x6)
~SD~ output is high (0V) when all limit switches are not pressed (i.e. pulled up to 5V)	Pass

Home Switch Testing

Test	Result
X-Axis home output is low when switch is not pressed (i.e. pulled up to 5V)	Pass

Y-Axis left home output is low when switch is not pressed (i.e. pulled up to 5V)	Pass
Y-Axis right home output is low when switch is not pressed (i.e. pulled up to 5V)	Pass
X-Axis home output is high when switch is pressed (i.e. shorted to GND)	Pass
Y-Axis left home output is high when switch is pressed (i.e. shorted to GND)	Pass
Y-Axis right home output is high when switch is pressed (i.e. shorted to GND)	Pass

Light Screen Testing

Test	**Result**
Measure IR LED output pulses at 56kHz +/- 2kHz	Pass (x6)
Measure IR_SNS_# = 0V when IR_SNS_IN_# is 5V	Pass (x6)
Measure IR_SNS_# = 5V when IR_SNS_IN_# is 0V	Pass (x6)