3Dプリンタ自作中に使う画像

▌メートル・ウイット並目ネジ

呼び	ピッチ	外径 d	有効径 d_2	谷径 d_1	ボルトB寸法	ボルトC寸法	ボルトK寸法	有効断面積	ナットB1寸法	ナットC1寸法	ナットK1寸法
M5	0.80mm	5.0mm	4.480mm	4.134mm	8mm	9.2mm	3.5mm	14.2mm²	8mm	9.2mm	4.0mm
M6	1.00mm	6.0mm	5.350mm	4.917mm	10mm	11.5mm	4.0mm	20.1mm²	10mm	11.5mm	5.0mm
M8	1.25mm	8.0mm	7.188mm	6.647mm	13mm	15.0mm	5.5mm	36.6mm²	13mm	15.0mm	6.5mm
M10	1.50mm	10.0mm	9.026mm	8.376mm	17mm	19.6mm	7.0mm	58.0mm²	17mm	19.6mm	8.0mm
M12	1.75mm	12.0mm	10.863mm	10.106mm	19mm	21.9mm	8.0mm	84.3mm²	19mm	21.9mm	10.0mm
M16	2.00mm	16.0mm	14.701mm	13.835mm	24mm	27.7mm	10.0mm	157.0mm²	24mm	27.7mm	13.0mm
M20	2.50mm	20.0mm	18.376mm	17.294mm	30mm	34.6mm	13.0mm	245.0mm²	30mm	34.6mm	16.0mm
M22	2.50mm	22.0mm	20.376mm	19.294mm	32mm	37.0mm	14.0mm	303.0mm²	32mm	37.0mm	18.0mm
M24	3.00mm	24.0mm	22.051mm	20.752mm	36mm	41.6mm	15.0mm	353.0mm²	36mm	41.6mm	19.0mm
M30	3.50mm	30.0mm	27.727mm	26.211mm	46mm	53.1mm	19.0mm	561.0mm²	46mm	53.1mm	24.0mm
M36	4.00mm	36.0mm	33.402mm	31.670mm	55mm	63.5mm	23.0mm	817.0mm²	55mm	63.5mm	29.0mm

W5/16	1.4111mm	7.938mm	7.021mm	6.411mm	14mm	16.2mm	5.5mm	33.2mm²	14mm	16.2mm	7.0mm
W3/8	1.5875mm	9.525mm	8.494mm	7.805mm	17mm	19.6mm	6.0mm	49.1mm²	17mm	19.6mm	8.0mm
W7/16	1.8143mm	11.112mm	9.934mm	9.149mm	19mm	21.9mm	8.0mm	67.4mm²	19mm	21.9mm	9.0mm
W1/2	1.9538mm	12.700mm	11.430mm	10.584mm	21mm	24.2mm	9.0mm	87.4mm²	21mm	24.2mm	10.0mm
W5/8	2.3091mm	15.875mm	14.376mm	13.376mm	26mm	30.0mm	11.0mm	143.9mm²	26mm	30.0mm	13.0mm
W1	3.1750mm	25.400mm	23.338mm	21.963mm	41mm	47.3mm	18.0mm	387.0mm²	41mm	47.3mm	20.0mm

▌高力六角ボルト

呼び	ピッチ	外径 d	有効径 d_2	谷径 d_1	ボルトB寸法	ボルトC寸法	ボルトK寸法	有効断面積	ナットB1寸法	ナットC1寸法	ナットK1寸法
M12	1.75mm	12.0mm	10.863mm	10.106mm	22mm	25.4mm	8.0mm	84.3mm²	22mm	25.4mm	12.0mm
M16	2.00mm	16.0mm	14.701mm	13.835mm	27mm	31.2mm	10.0mm	157.0mm²	27mm	31.2mm	16.0mm
M20	2.50mm	20.0mm	18.376mm	17.294mm	32mm	37.0mm	13.0mm	245.0mm²	32mm	37.0mm	20.0mm
M22	2.50mm	22.0mm	20.376mm	19.294mm	36mm	41.6mm	14.0mm	303.0mm²	36mm	41.6mm	22.0mm
M24	3.00mm	24.0mm	22.051mm	20.752mm	41mm	47.3mm	15.0mm	353.0mm²	41mm	47.3mm	24.0mm
M30	3.50mm	30.0mm	27.727mm	26.211mm	50mm	57.7mm	19.0mm	561.0mm²	50mm	57.7mm	30.0mm

▌ネジ部せん断の考え方

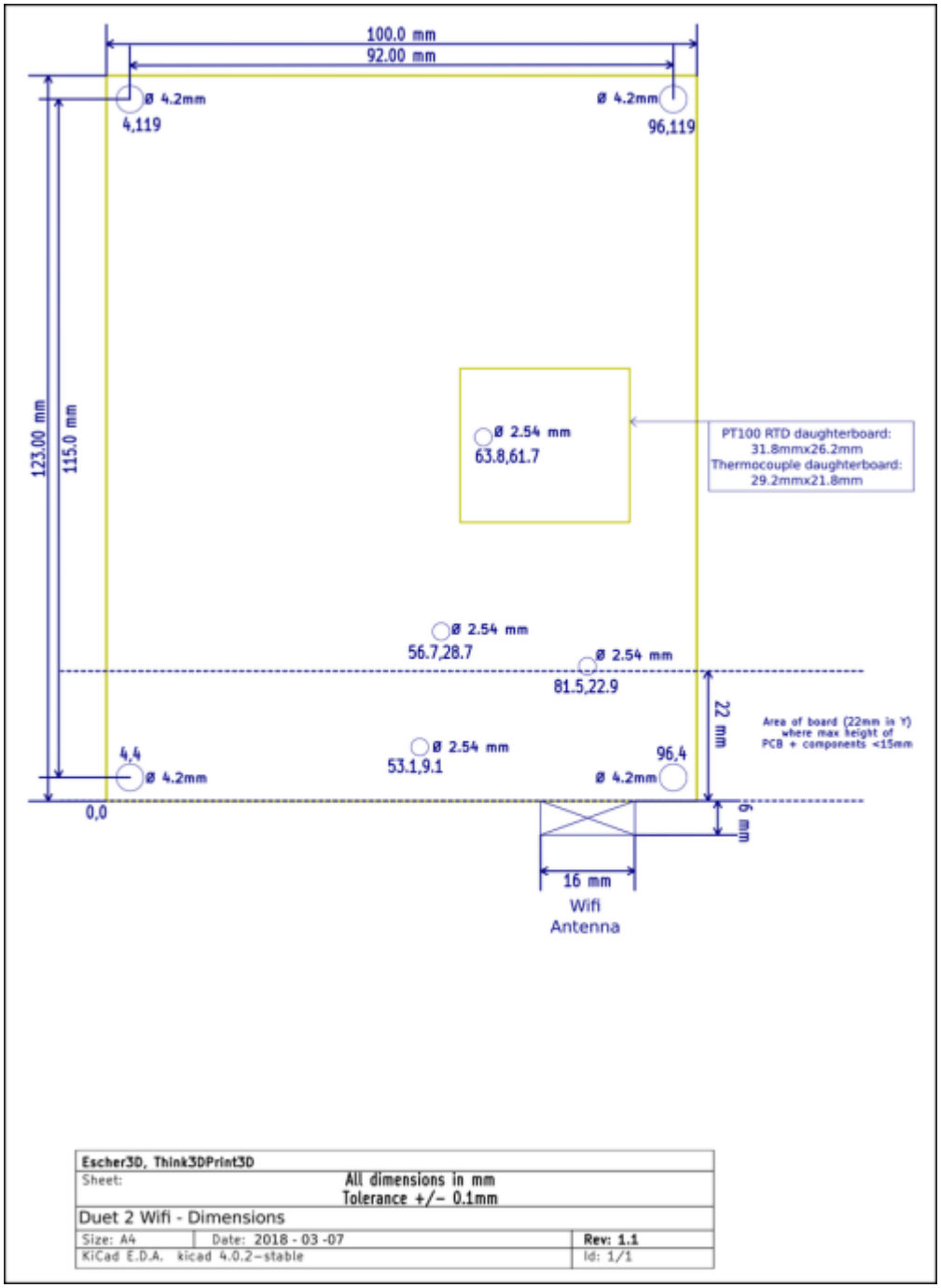
d：外　径
d_1：谷　径
d_2：有効径

せん断面積
$A_s=(d_2\cdot\pi/2)\times\ell$（ねじ込み長さ）
せん断応力度
$\sigma_s=T/A_s\leqq$許容せん断応力度σ_{sb}　T:引張力

Stepper Drivers Comparison						
Spec / Driver	a4988	MKS DRV8825	MKS LV8729	MKS TMC2208	MKS TMC2100	MKS TMC2130
Default Current	2a	1.3a	0.8a	0.7a	0.5a	0.76a
Default Vref	0.8v	0.65v	0.4v	1v	0.65v	1v
Max Current	2a	2.5a	1.5a	1.41a	1.2a	2a
Formula	i = Vref/0.8	i = Vref x 2	i=Vref/0.5	i=Vref/√2	i=Vref*1.9/2.5	i=Vref*1.9/2.5
Current Adjustment	add clockwise, decrease anticlockwise	add clockwise, decrease anticlockwise	add clockwise, decrease anticlockwise	add anticlockwise, decrease clockwise	add anticlockwise, decrease clockwise	add clockwise, decrease anticlockwise
Microstep	1, 1/2, 1/4, 1/8, 1/16	1, 1/2, 1/4, 1/8, 1/16, 1/32	1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128	1, 1/2, 1/4, 1/8, 1/16	1/16	1, 1/2, 1/4, 1/16, 1/256
Motor	8V-35V, <2A	8.2V-45V, <2.5A	6V—36V, <1.5a	4-35V, <1.4a	<1.2a	4.75V-46V, <2a
Feature	cheap	bigger current	silent, low heat	Noiseless, Smooth, low heat	Noiseless, Smooth	Noiseless, Smooth

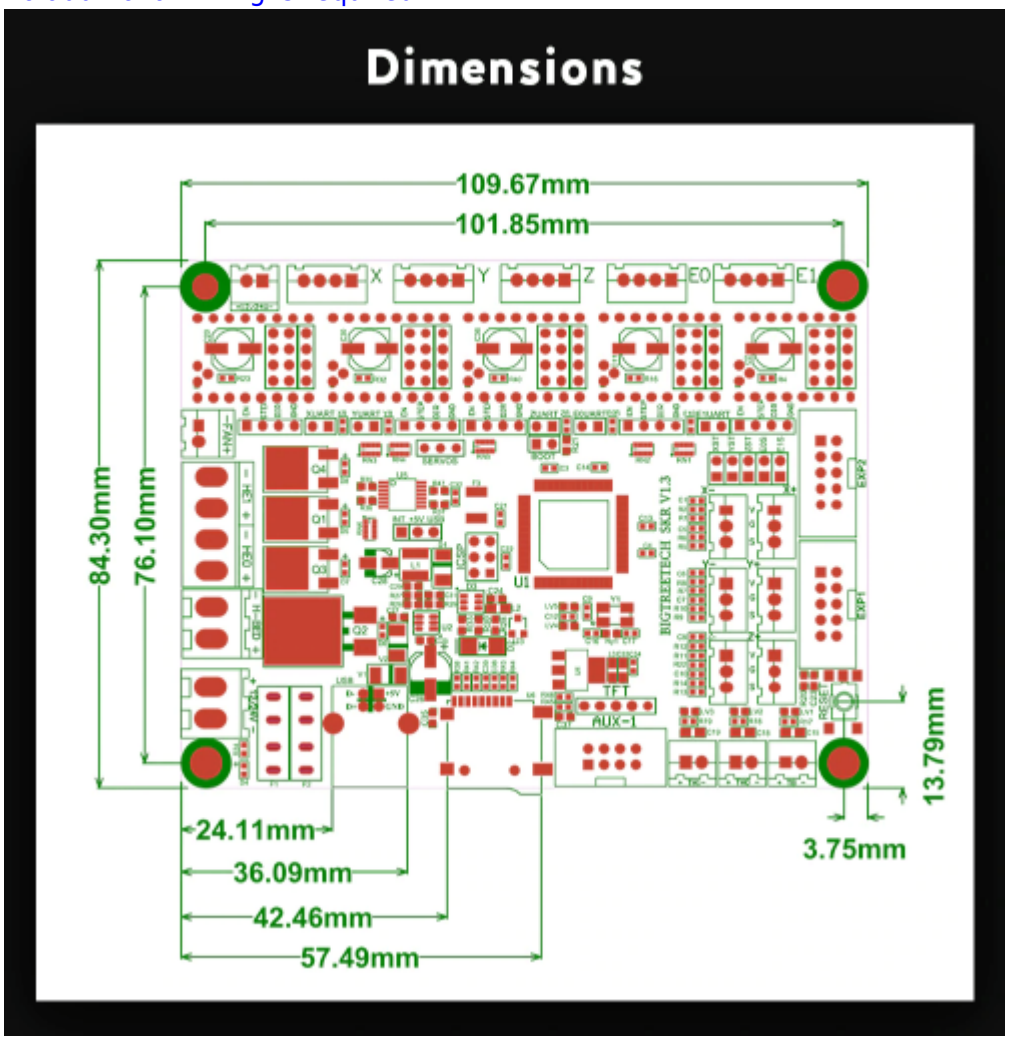
Cautions:Please power off and disconnect motor when plug or remove driver.

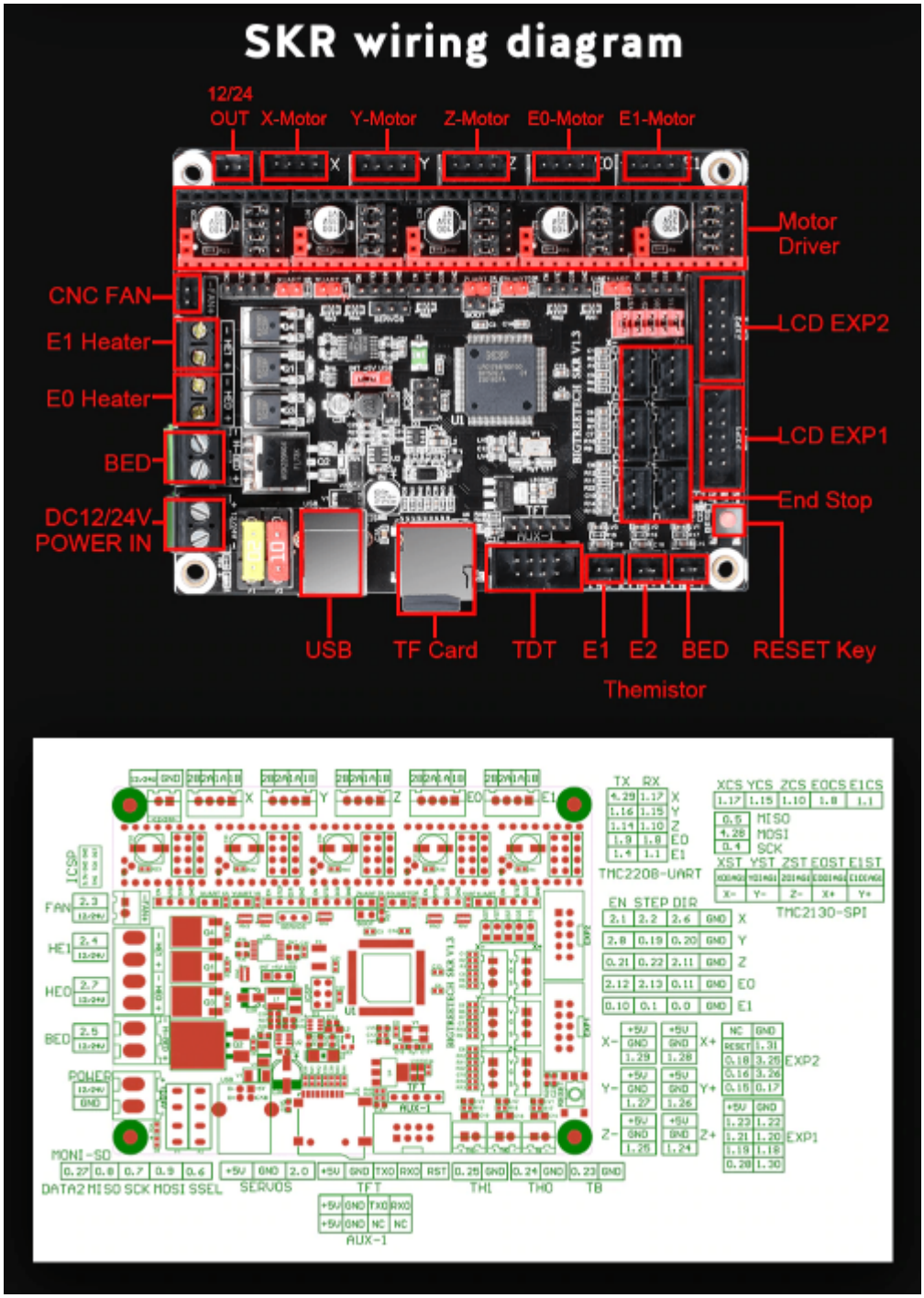
Duet 2 Wifi



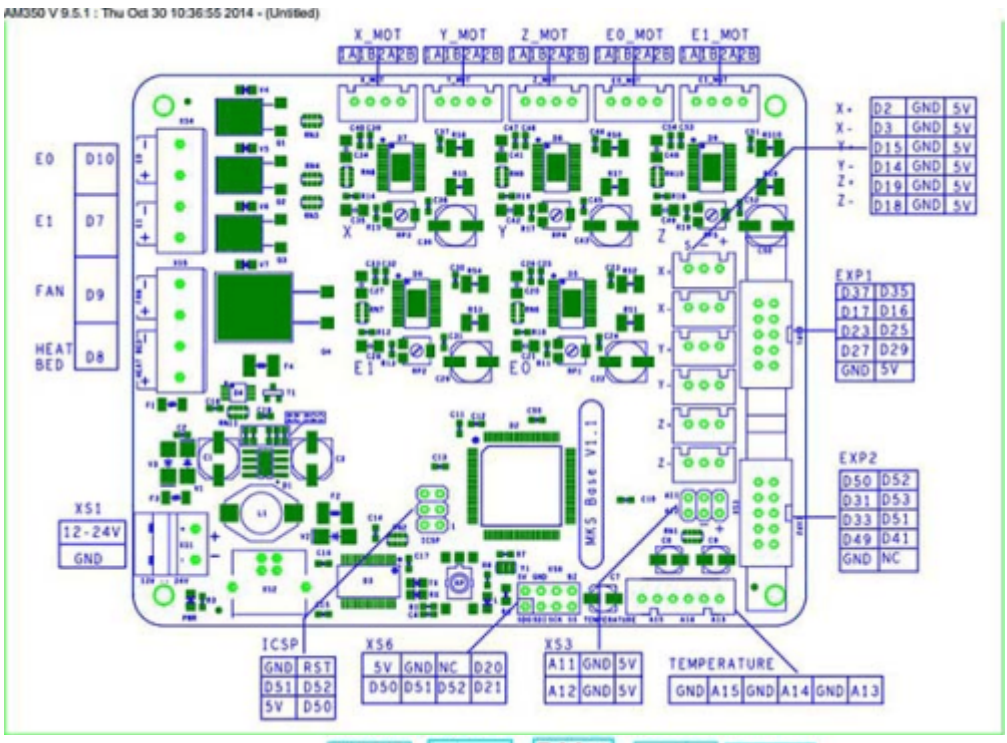
Bigtreetech Skr 1.3

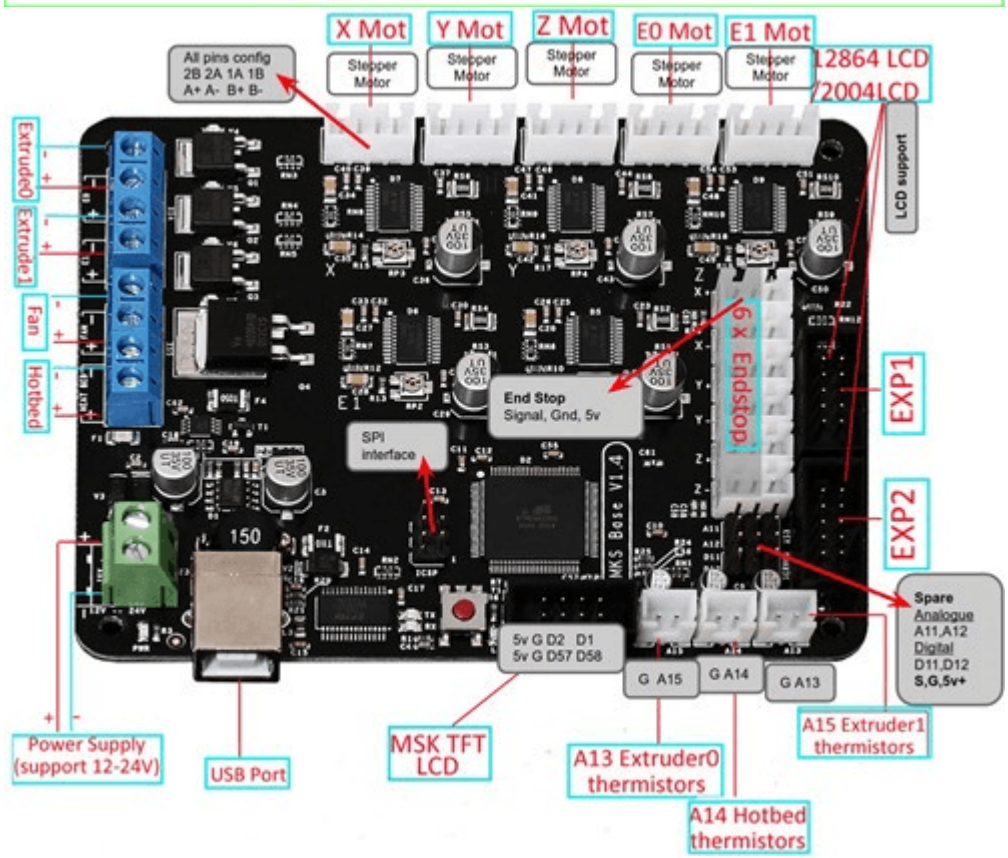
GitHub - bigtreetech/BIGTREETECH-SKR-V1.3: 32bit board with LPC1768, support marlin2.0 and smoothieware, support lcd2004/12864, On-board TMC2130 SPI interface and TMC2208 UART interface no additional wiring is required

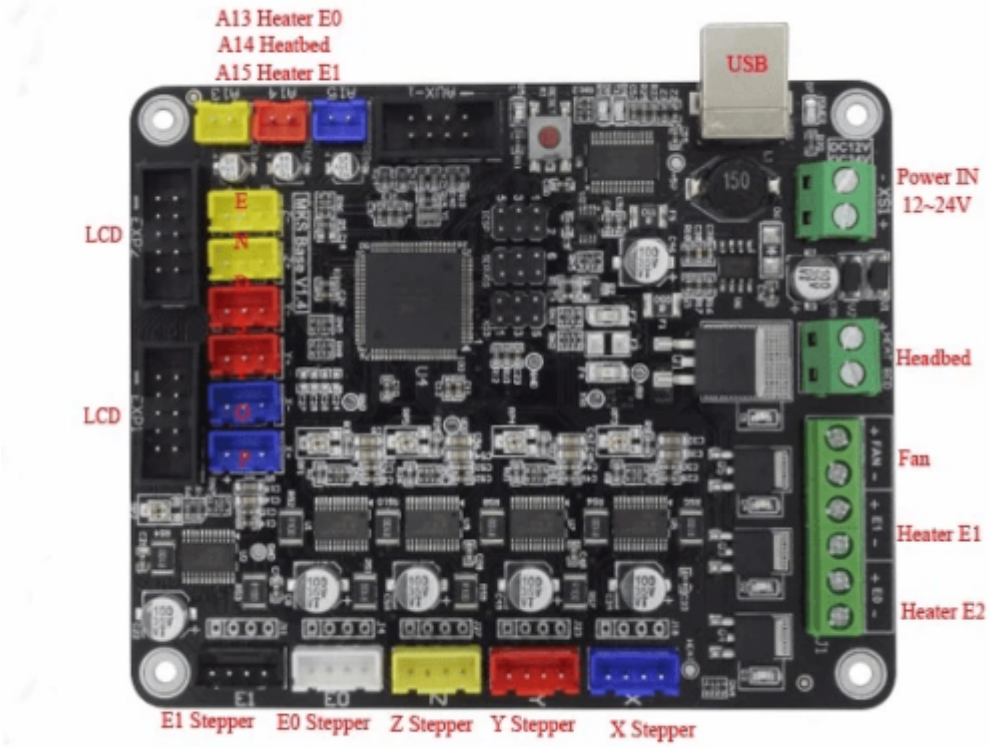


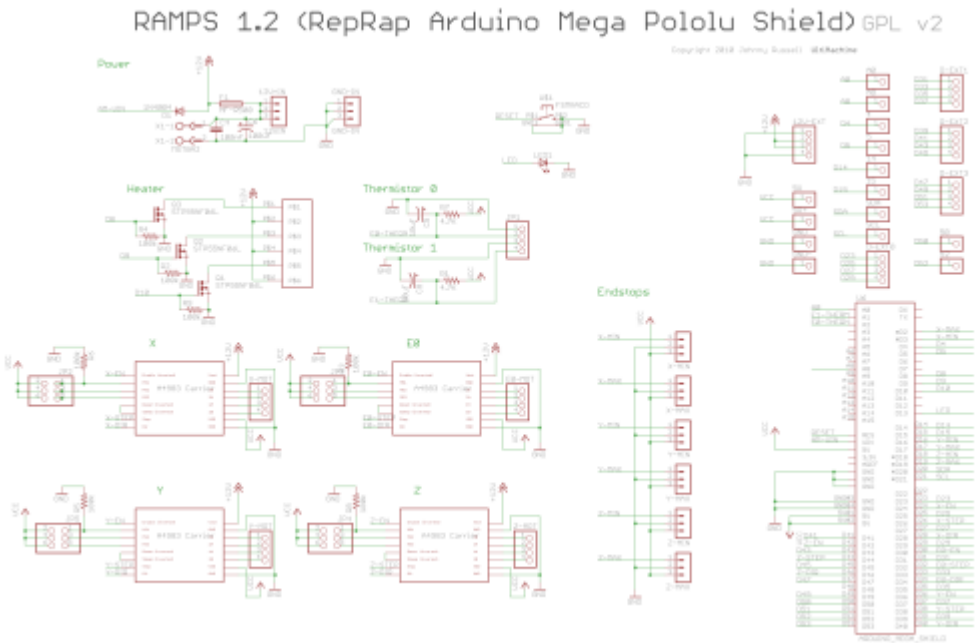

SKR wiring diagram
12/24
OUT
X-Motor
Y-Motor
Z-Motor
E0-Motor
E1-Motor
Motor Driver
CNC FAN
E1 Heater
E0 Heater
BED
DC12/24V POWER IN
LCD EXP2
LCD EXP1
End Stop
USB
TF Card
TDT
E1
E2
BED
RESET Key
Themistor

MKS Base

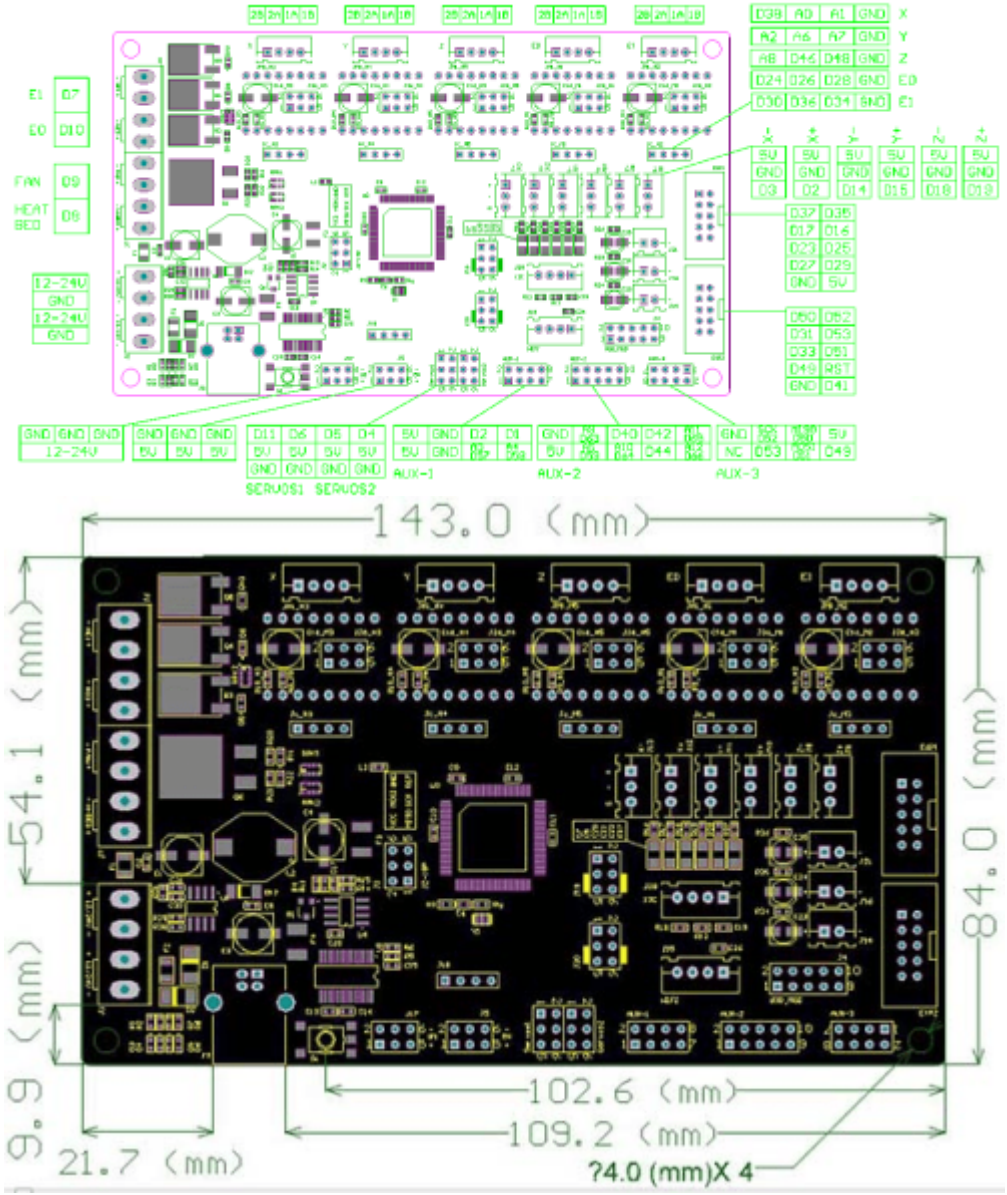

AM350 V 9.5.1 : Thu Oct 30 10:36:55 2014 - (Untitled)
X_MOT
Y_MOT
Z_MOT
E0_MOT
E1_MOT
EXP1
EXP2
MKS Base V1.1
XS1
12-24V
GND
ICSP
XS6
XS3
TEMPERATURE


X Mot
Y Mot
Z Mot
E0 Mot
E1 Mot
Stepper Motor
All pins config
2B 2A 1A 1B
A+ A- B+ B-
12864 LCD
/2004LCD
LCD support
Extrude0
Extrude1
Fan
Hotbed
6 x Endstop
End Stop
Signal, Gnd, 5v
SPI interface
MKS Base V1.4
EXP1
EXP2
Spare
Analogue
A11,A12
Digital
D11,D12
S,G,5v+
5v G D2 D1
5v G D57 D58
G A15
G A14
G A13
Power Supply
(support 12-24V)
USB Port
MSK TFT
LCD
A13 Extruder0
thermistors
A14 Hotbed
thermistors
A15 Extruder1
thermistors

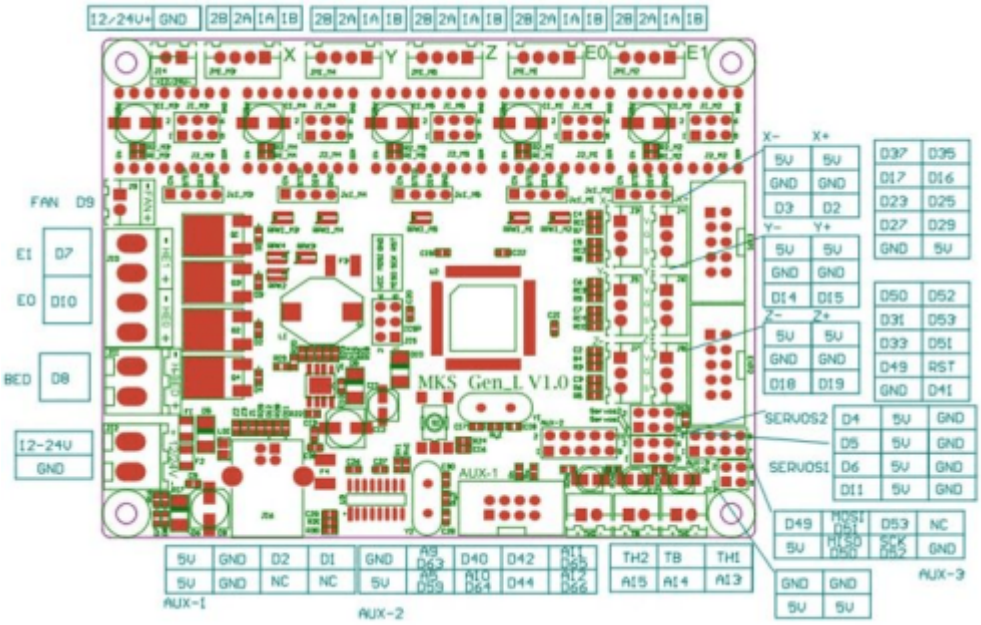

A13 Heater E0
A14 Heatbed
A15 Heater E1
USB
Power IN
12~24V
LCD
LCD
Headbed
Fan
Heater E1
Heater E2
E1 Stepper
E0 Stepper
Z Stepper
Y Stepper
X Stepper


RAMPS 1.2 (RepRap Arduino Mega Pololu Shield) GPL v2
Power
Heater
Thermistor 0
Thermistor 1
Endstops
X
E0
Y
Z

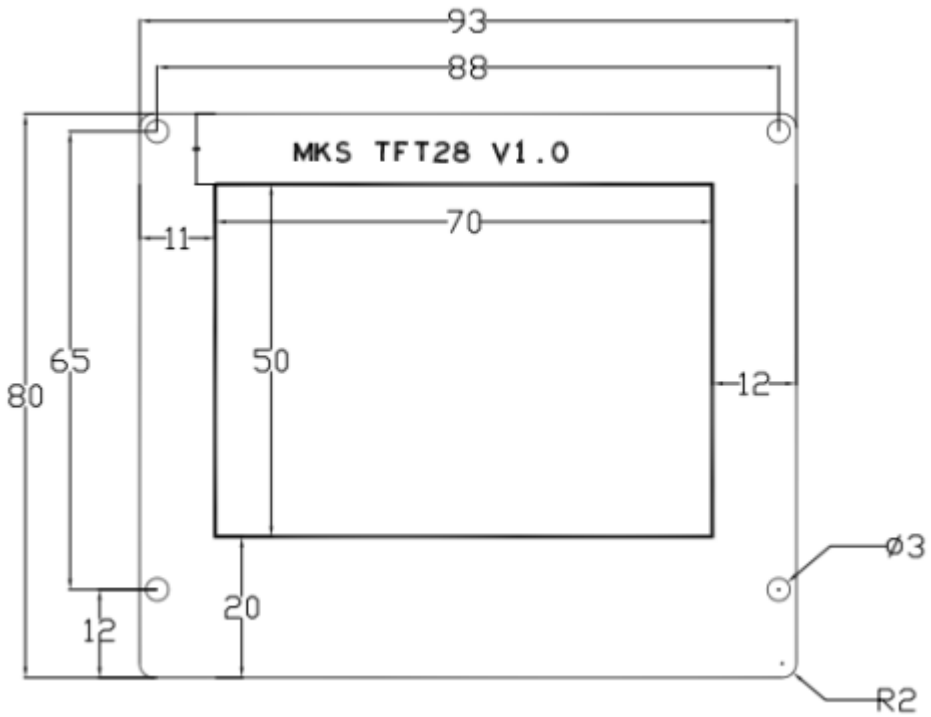
MKS GEN 1.4

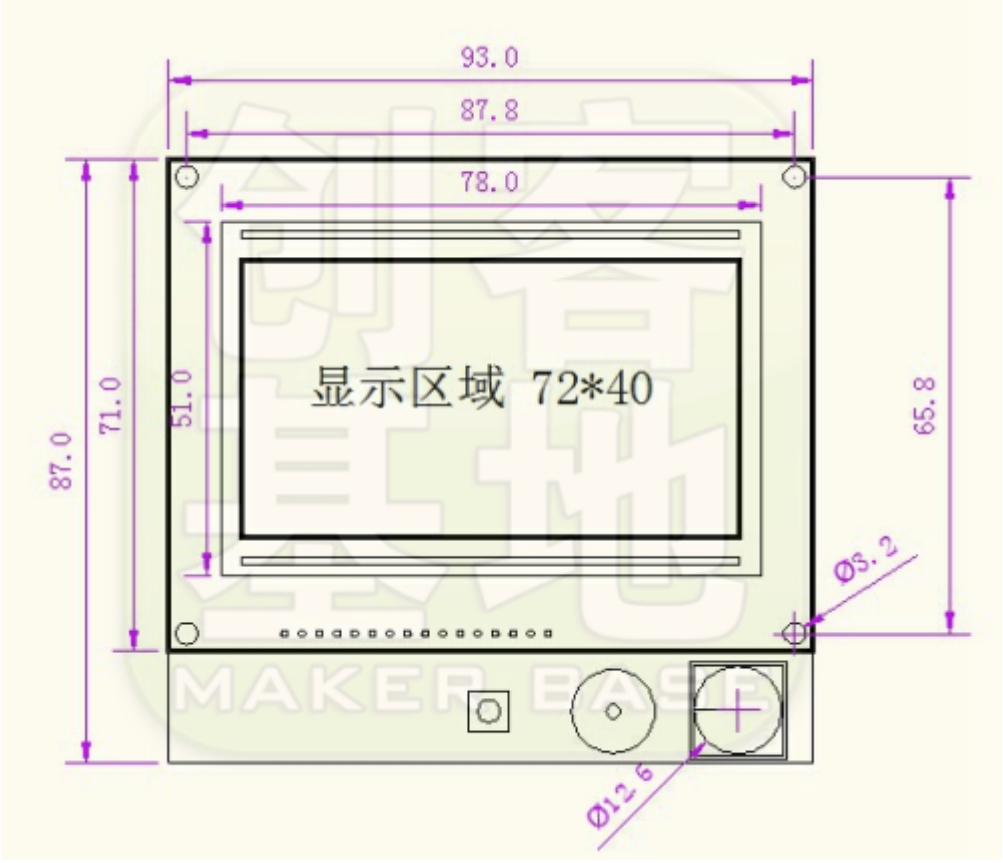

143.0 (mm)
54.1 (mm)
84.0 (mm)
9.9 (mm)
102.6 (mm)
109.2 (mm)
21.7 (mm)
?4.0 (mm)X 4
SERVOS1
SERVOS2
AUX-1
AUX-2
AUX-3

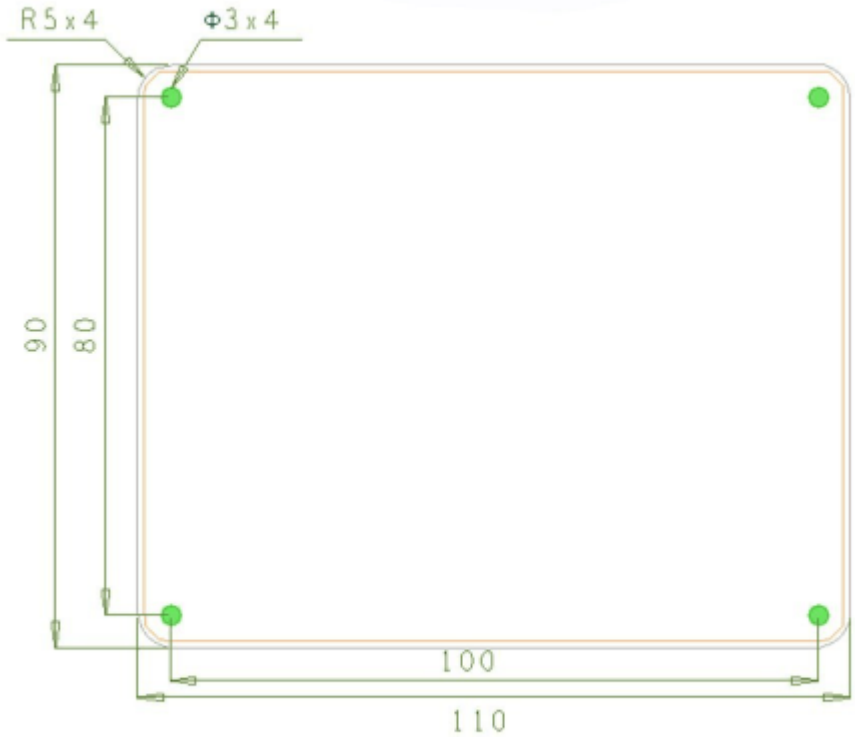
MKS GEN L 1.0


MKS Gen_L V1.0
X
Y
Z
E0
E1
FAN D9
E1 D7
E0 D10
BED D8
12-24V
GND
AUX-1
AUX-2
AUX-3
SERVOS2
SERVOS1

MKS TFT


93
88
MKS TFT28 V1.0
70
11
65
80
50
12
20
12
Ø3
R2


93.0
87.8
78.0
显示区域 72*40
87.0
71.0
51.0
65.8
Ø3.2
Ø12.6


R5x4
Φ3x4
90
80
100
110

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