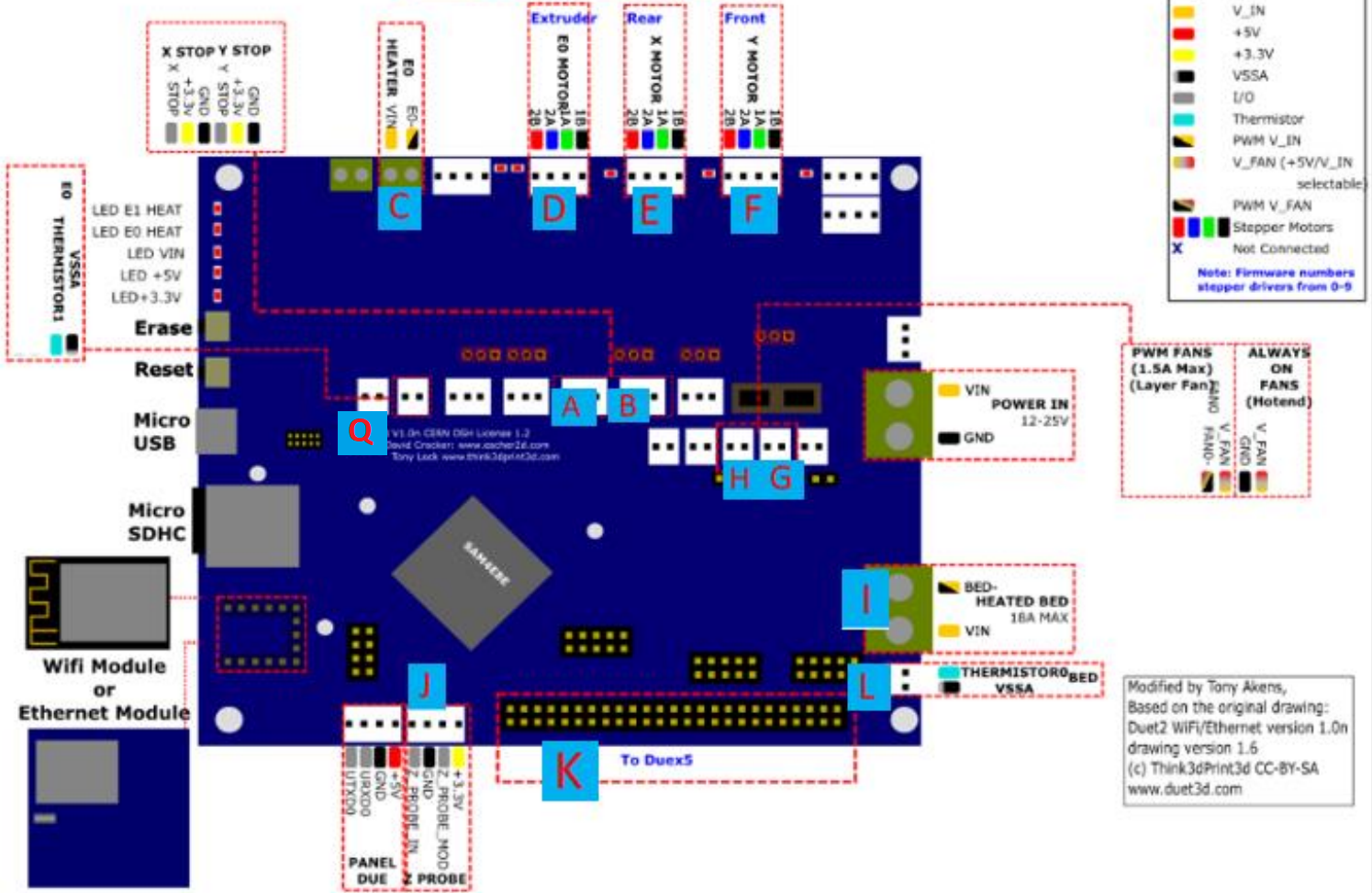# Railcore II wiring diagram

Duet Wifi / Duet Ethernet Connections
v1.0, v1.01, v1.02, v1.03

WARNING, REMOVE POWER BEFORE PLUGGING OR UNPLUGGING STEPPER MOTORS
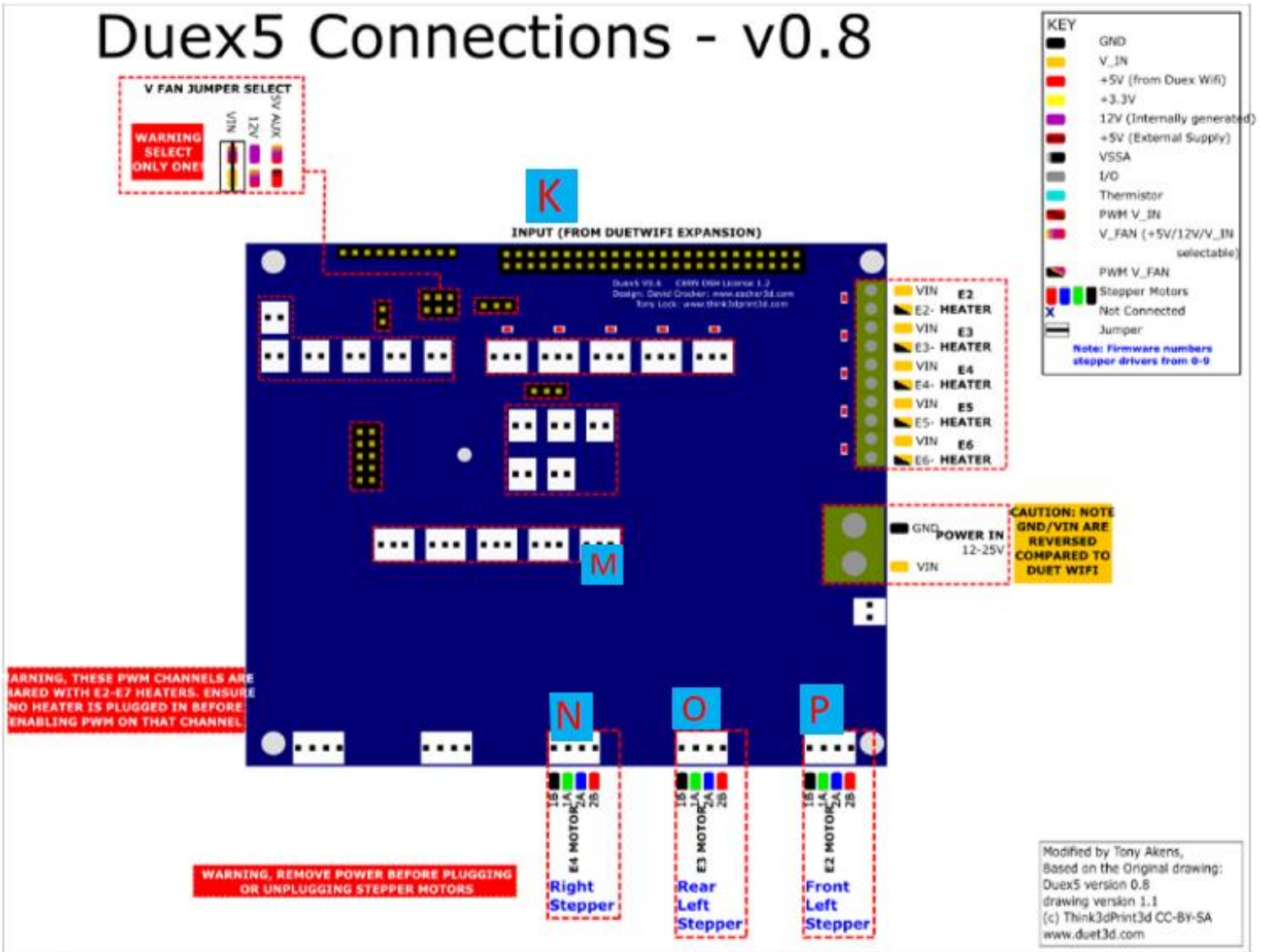

KEY

GND	⬛
V_IN	🟧
+5V	🟥
+3.3V	🟨
VSSA	
I/O	
Thermistor	
PWM V_IN	
V_FAN (+5V/V_IN selectable)	
PWM V_FAN	
Stepper Motors	
Not Connected	X

Note: Firmware numbers stepper drivers from 0-9

Modified by Tony Akens,
Based on the original drawing:
Duet2 WiFi/Ethernet version 1.0n
drawing version 1.6
(c) Think3dPrint3d CC-BY-SA
www.duet3d.com

A — A-Connect X-Stop here

B — B-Connect Y-Stop here

C — C-Connect HotEnd Heater here

D — D-Connect Extruder motor here

E — E-Connect Right Side Rear (X) motor here

F — F-Connect Right Side Front (Y) motor here

G — G-Connect Hotend FAN here

H — H-Connect HotEnd Blower FAN here

I — I-Connect Heated Bed here

J — J-Connect Bltouch two wire leads here (note polarity) Use left most pins

K — K-Connect Duex5 ribbon cable here.. Tuck under/in between boards.

L — L-Connect Bed Thermister here

Q — Q -Hotend (E0) Thermister here

V3.0 Updated by Steven London
June 26st 2019
For the RailCore II 300ZL and ZLT community

Duex5 Connections - v0.8

V FAN JUMPER SELECT

WARNING SELECT ONLY ONE!

VIN / 12V / 5V AUX

K

INPUT (FROM DUETWIFI EXPANSION)

Duex5 V0.6   CERN OHir License 1.2
Design: David Crocker: www.escher3d.com
Tony Lock: www.think3dprint3d.com

VIN   E2
E2- HEATER
VIN   E3
E3- HEATER
VIN   E4
E4- HEATER
VIN   E5
E5- HEATER
VIN   E6
E6- HEATER

GND
POWER IN
12-25V
VIN

CAUTION: NOTE GND/VIN ARE REVERSED COMPARED TO DUET WIFI

M

WARNING, THESE PWM CHANNELS ARE SHARED WITH E2-E7 HEATERS. ENSURE NO HEATER IS PLUGGED IN BEFORE ENABLING PWM ON THAT CHANNEL.

N   **O**   **P**

1B 1A 2A 2B

E4 MOTOR   E3 MOTOR   E2 MOTOR

Right Stepper   **Rear Left Stepper**   **Front Left Stepper**

WARNING, REMOVE POWER BEFORE PLUGGING OR UNPLUGGING STEPPER MOTORS

Modified by Tony Akens,
Based on the Original drawing:
Duex5 version 0.8
drawing version 1.1
(c) Think3dPrint3d CC-BY-SA
www.duet3d.com

KEY

■	GND
■	V_IN
■	+5V (from Duex Wifi)
■	+3.3V
■	12V (Internally generated)
■	+5V (External Supply)
■	VSSA
■	I/O
■	Thermistor
■	PWM V_IN
■	V_FAN (+5V/12V/V_IN selectable)
■	PWM V_FAN
■■■■	Stepper Motors
X	Not Connected
■	Jumper

Note: Firmware numbers stepper drivers from 0-9

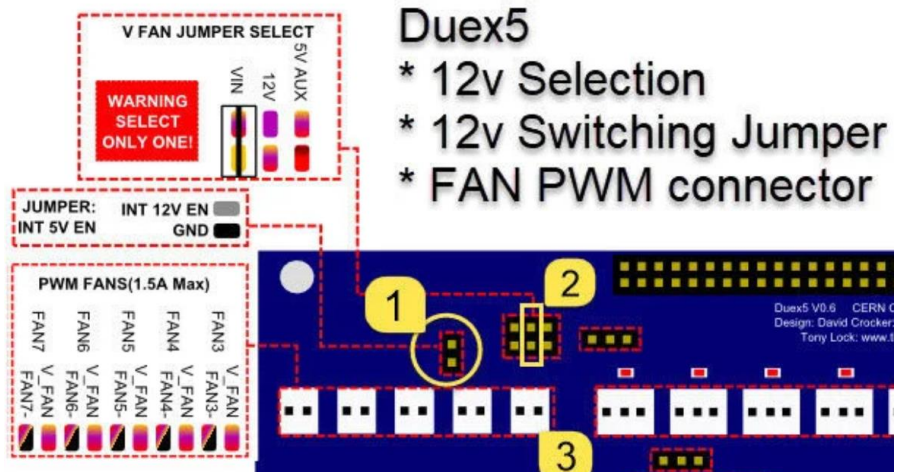| **K**	K-Connect Duex5 ribbon cable here.. Tuck under/in between boards.	**N**	Z-Stepper motor (right side motor)
		O	Z-Stepper motor (Rear left motor)
M	Three wire cable from Bltouch (brown on right side)	**P**	Z-Stepper motor (Front left motor)

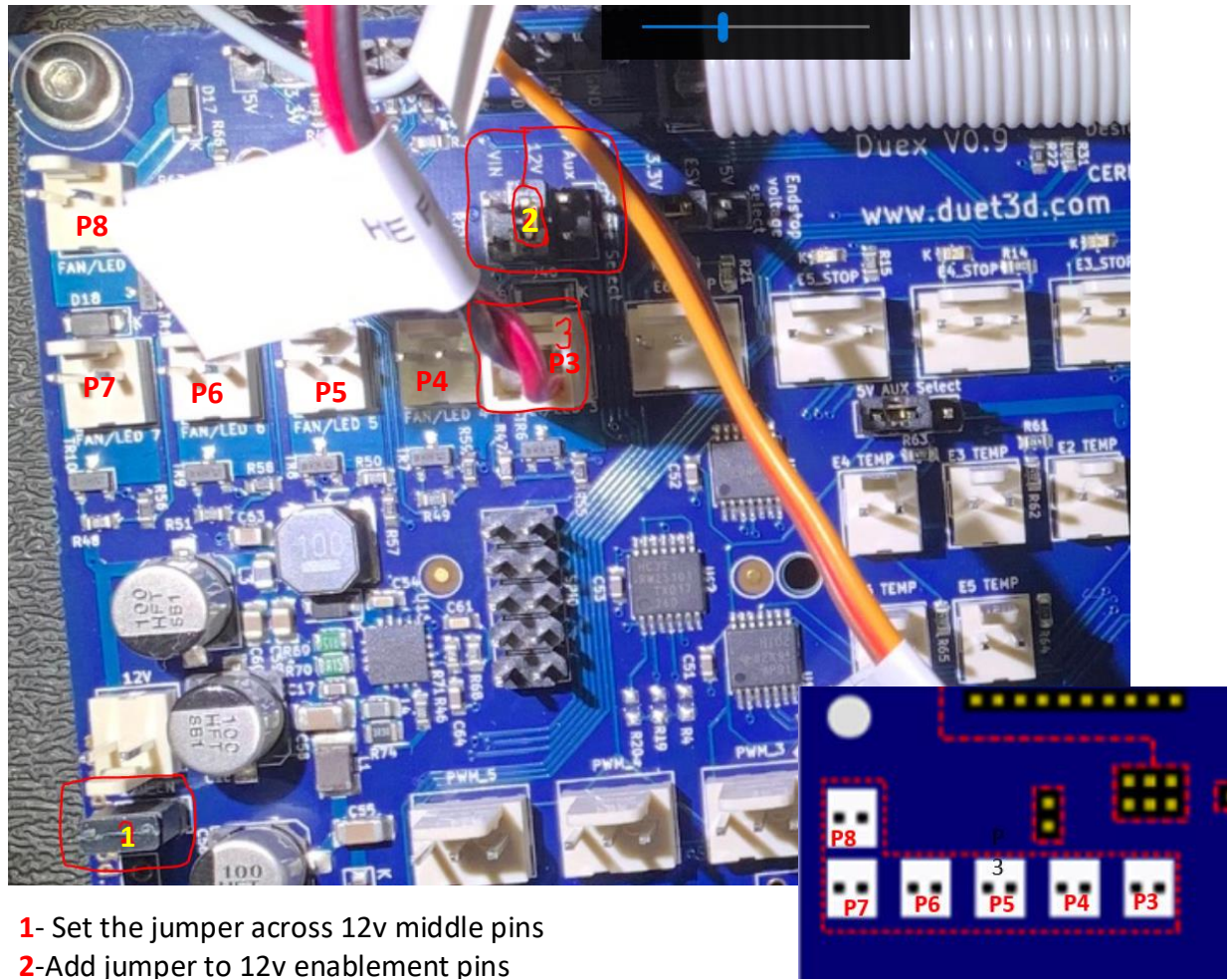To enable 12v ports for use with 12v FANS, LED's:

12v-1
12v-2
12v-3

Note: on the 0.9 version of Duet5, the 12v switch #1 may be on the left side further down the board. See next page for detailed picture and G-code command.

V FAN JUMPER SELECT

WARNING SELECT ONLY ONE!

VIN / 12V / 5V AUX

JUMPER: INT 12V EN
INT 5V EN   GND

PWM FANS(1.5A Max)

FAN7 FAN6 FAN5 FAN4 FAN3
V_FAN7- V_FAN6 V_FAN5 V_FAN4 V_FAN3

Duex5
* 12v Selection
* 12v Switching Jumper
* FAN PWM connector

1   **2**

Duex5 V0.6   CERN C
Design: David Crocker
Tony Lock: www.l

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Page 2 of 3

12v power steps needed for FANS and LED's

1- Set the jumper across 12v middle pins
2-Add jumper to 12v enablement pins
3-Plug in your FAN/LED and make note of the port number stenciled on the board. Available ports are **P3, P4, P5, P6, P7 & P8**. Adjust your M106 command according to the port you use.

You will need to supply the jumper for #2 in the above version of the board as there is no extra one provided.

Once the 12v pins have been enabled, use this Gcode:
M106 Px Sy   Where x is the port number and y is a value 1-255. Some fans may need 255 to be Full ON. Use S0 to turn off. Some Fans and some LED's may tolerate less than full (1-255) Diming of LED's and less FAN power is definitely a 'Your Mileage May Vary'. Example g-code:

```
    M106 P3 S255   ; turn port 3 full on.
    M106 P3 S0     ; turn port 3 off.
                   ; note:  Using values between 0 and 255 may not
necessarily work for your 12v item. Some items don't like partial
voltage.  Most LED's do respond well to partial power.
```