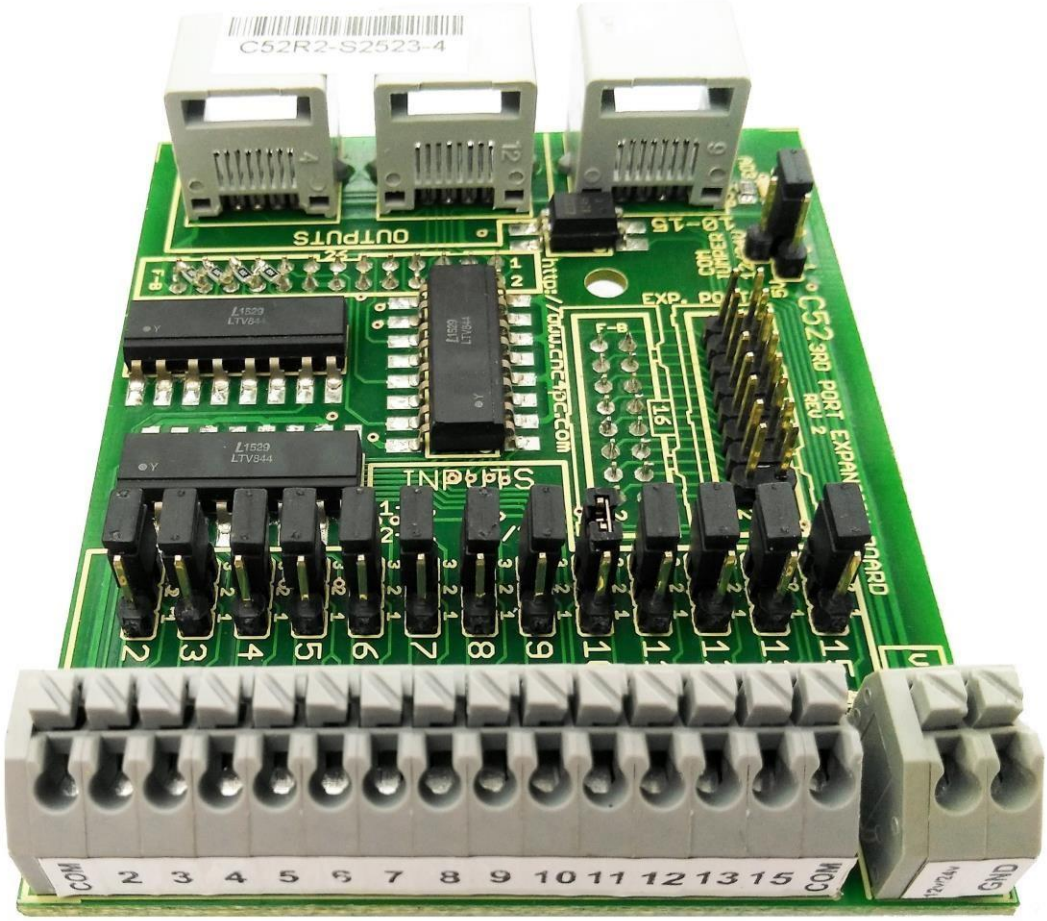
CNC4PC

Integration Solutions for CNC Projects

# USER'S MANUAL VER.2.2

# C52- ESS THIRD PORT EXPANSION BOARD Rev. 2




JUNE, 2019

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## 1. OVERVIEW

This card provides an easy way of interfacing your inputs and outputs from your Ethernet Smooth Stepper third port. It provides terminals for the connections and conditions the signals for use in CNC applications. You can connect other boards using the standard RJ45 cables.

## 2. FEATURES

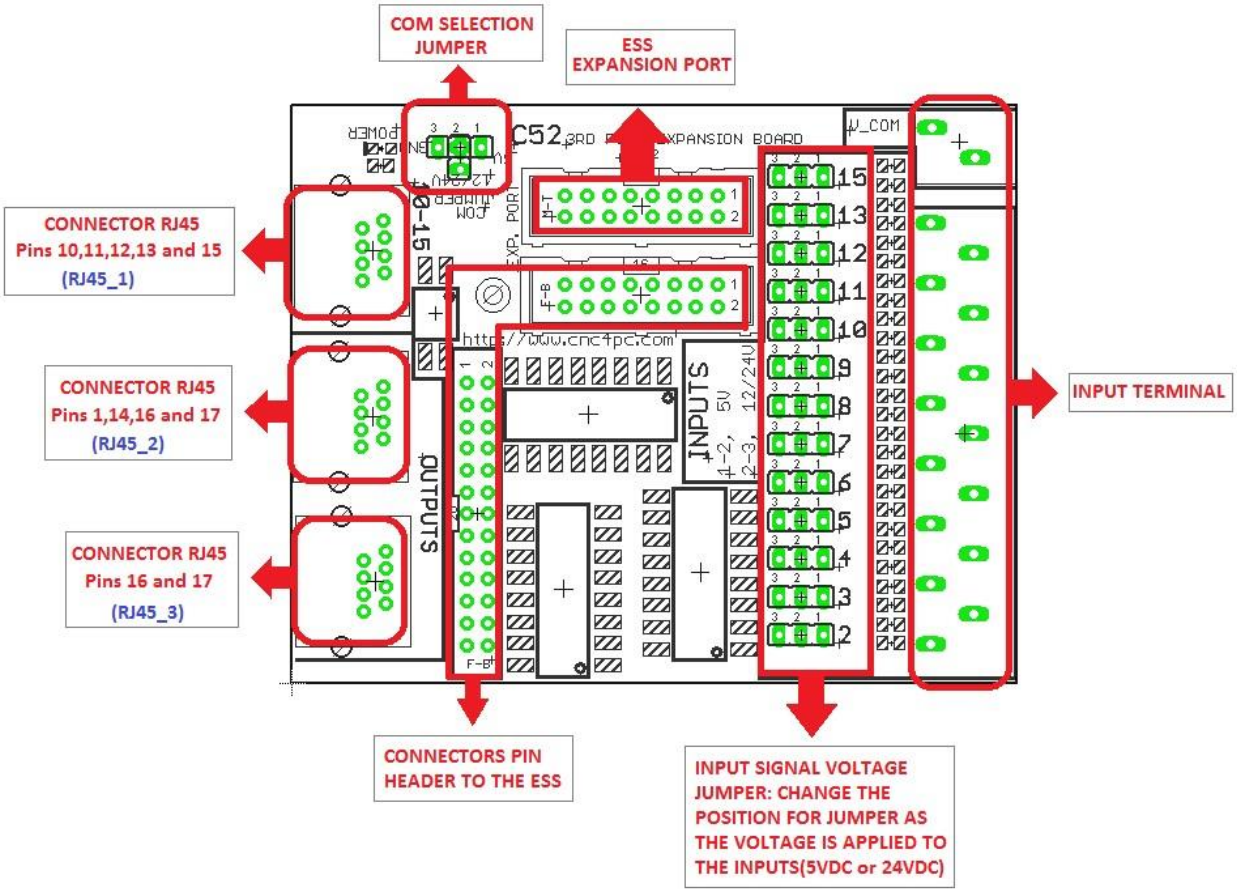
- **RJ45 connectors for all I/Os.** Only standard networks cables needed to make all the connections.
- **Common selection for inputs.** Includes jumpers to select the best input configuration for your application.
- **Opt -isolated inputs.**
- **Output pins 1, 14, 16, 17.**
- **Input pins 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 15.**
- **Input and output pins with close by ground or +5vdc connections**

## 3. I/O SPECIFICATIONS

| OPTOISOLATED DIGITAL INPUT SPECIFICATIONS | |
|---|---|
| **On-state voltage range** | 3 to 5V DC |
| **Maximum off-state voltage** | 0.8V |
| **Maximum operation frequency** | 4 MHz |
| **Typical signal delay** | Less than 500uS |

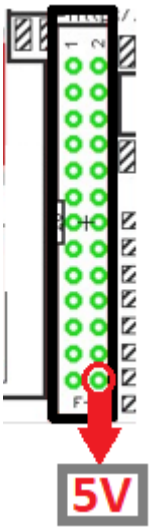
| DIGITAL OUTPUT SPECIFICATIONS | |
|---|---|
| **Maximum output voltage** | (5V power supply voltage) + 0.5V |
| **Typical output current** | 24mA |
| **Maximum off-state voltage** | 0.44 V |
| **Maximum operation frequency** | 4 MHz |
| **Typical signal delay** | 10 nS |

## 4. BOARD DESCRIPTION

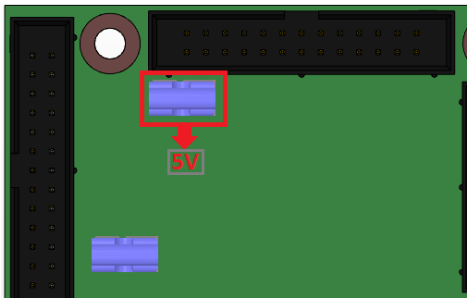


## 5. POWER PIN

This board is polarized by pin 26 of IDC26 with 5V, provided by the ESS

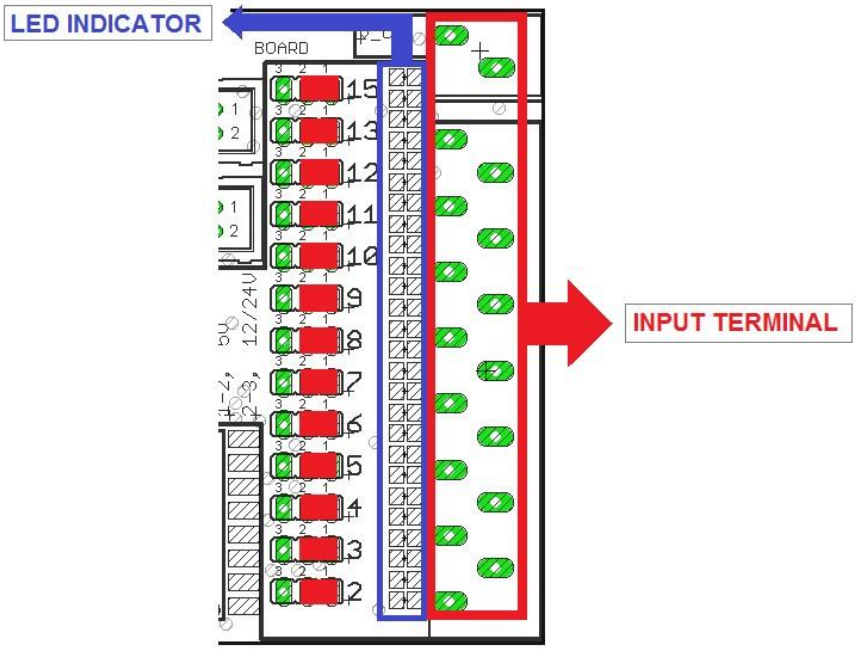



Note:
Make sure that the ESS jumper is on, as shown in the picture.

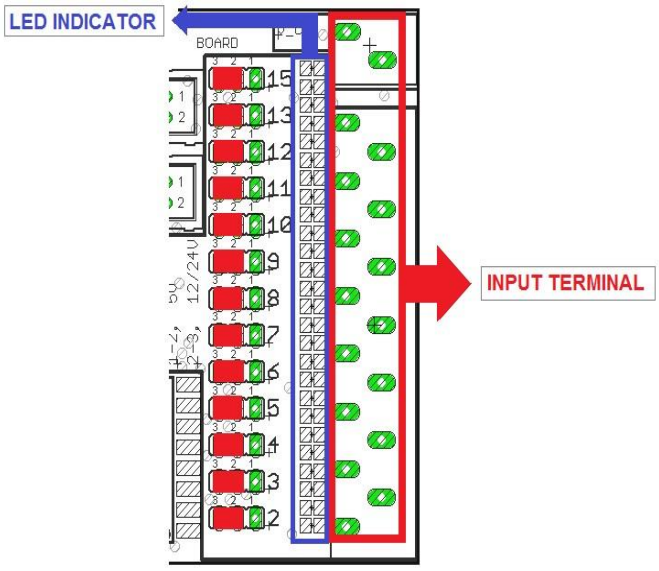


## 6. JUMPER SELECTION

6.1 Input 5V




6.2 Input 12V / 24V

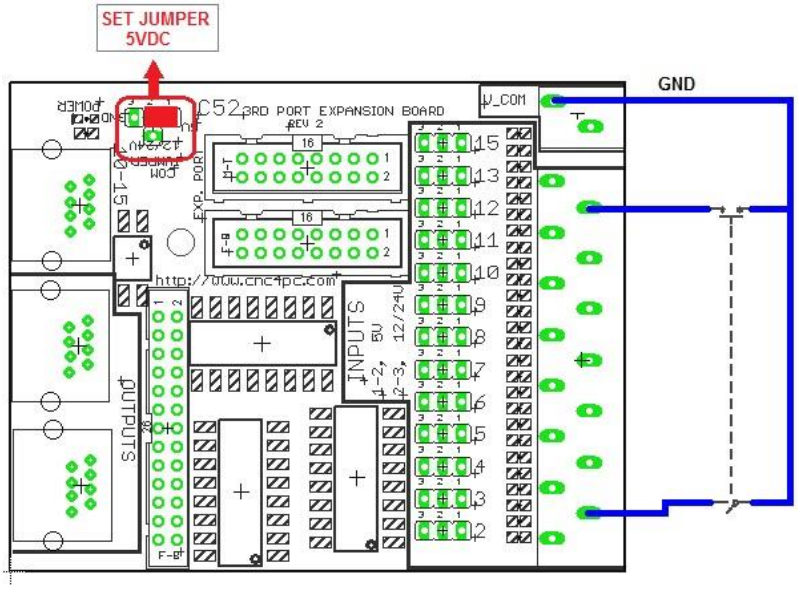


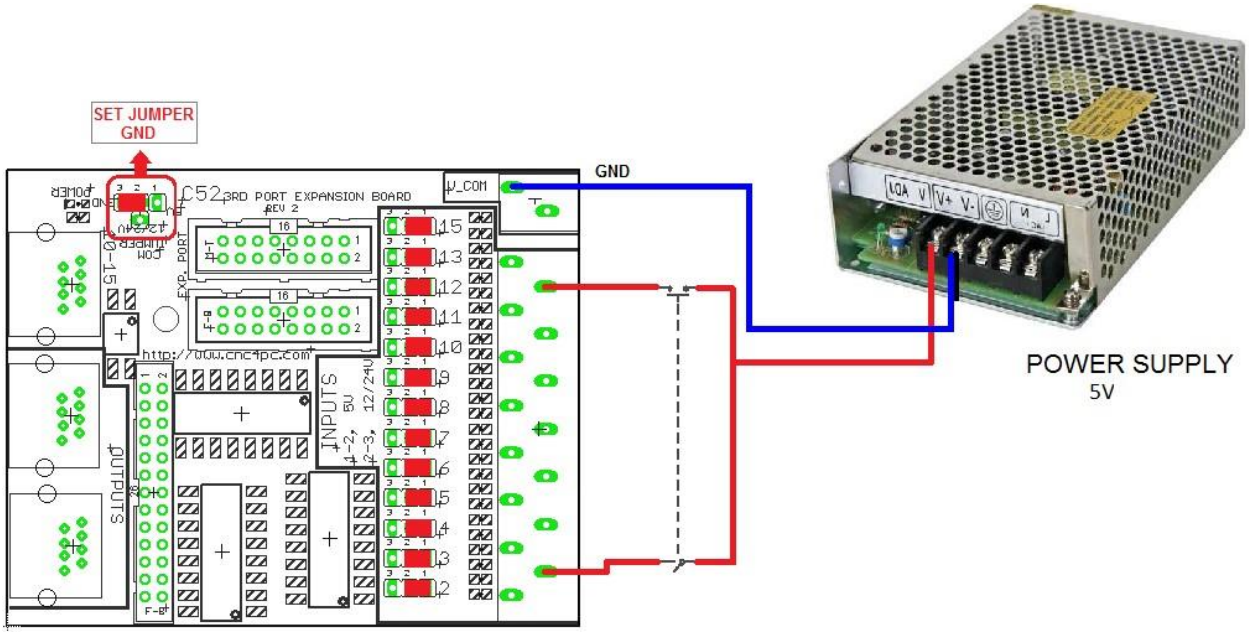
6.3 Select JUMPER COM for the inputs

Set the Jumper to COM = +5VDC, GND or 12VDC / 24VDC to determine the common for the input signals to be used.

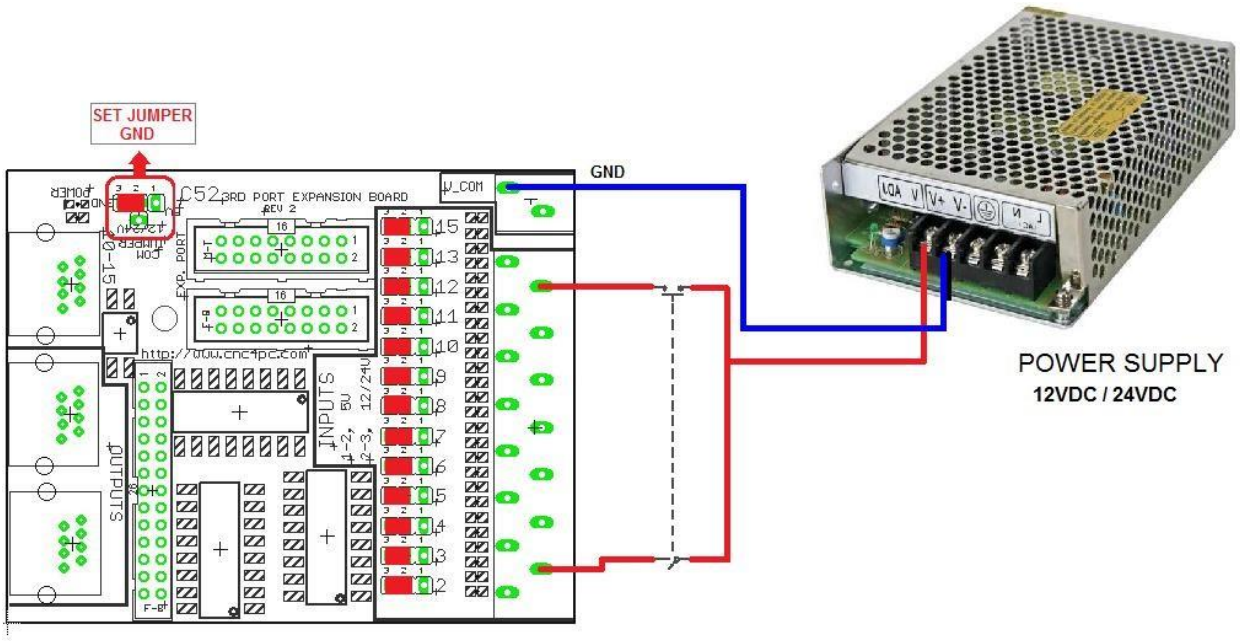
**COM = 5V**

**COM = GND with 5V**

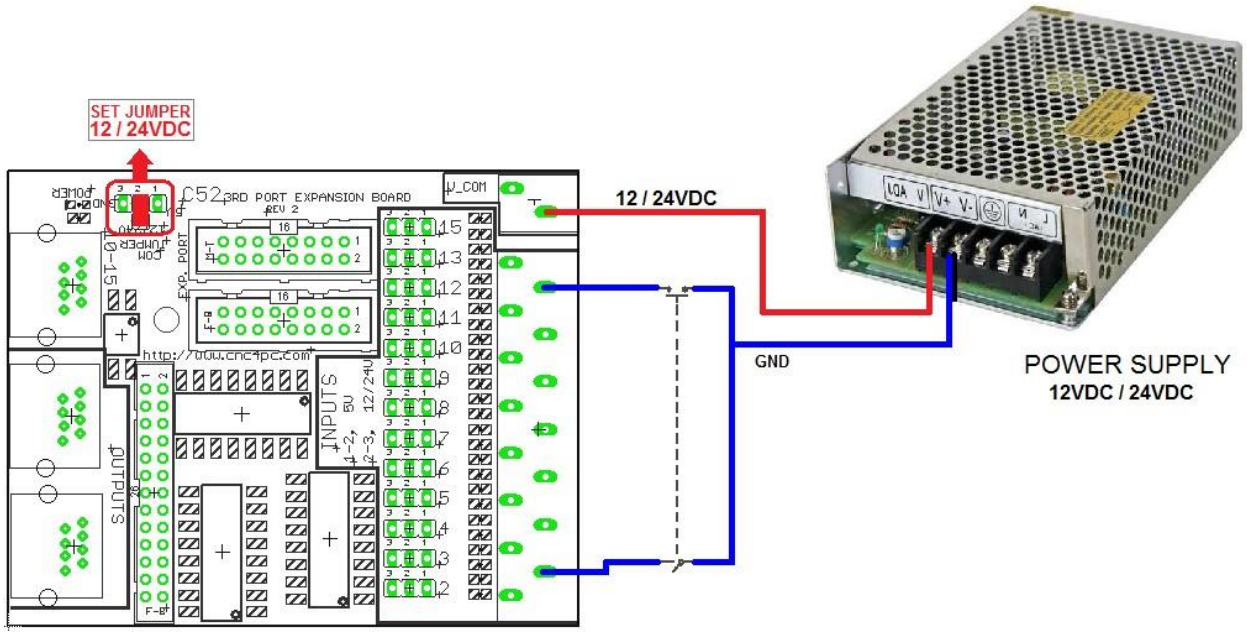


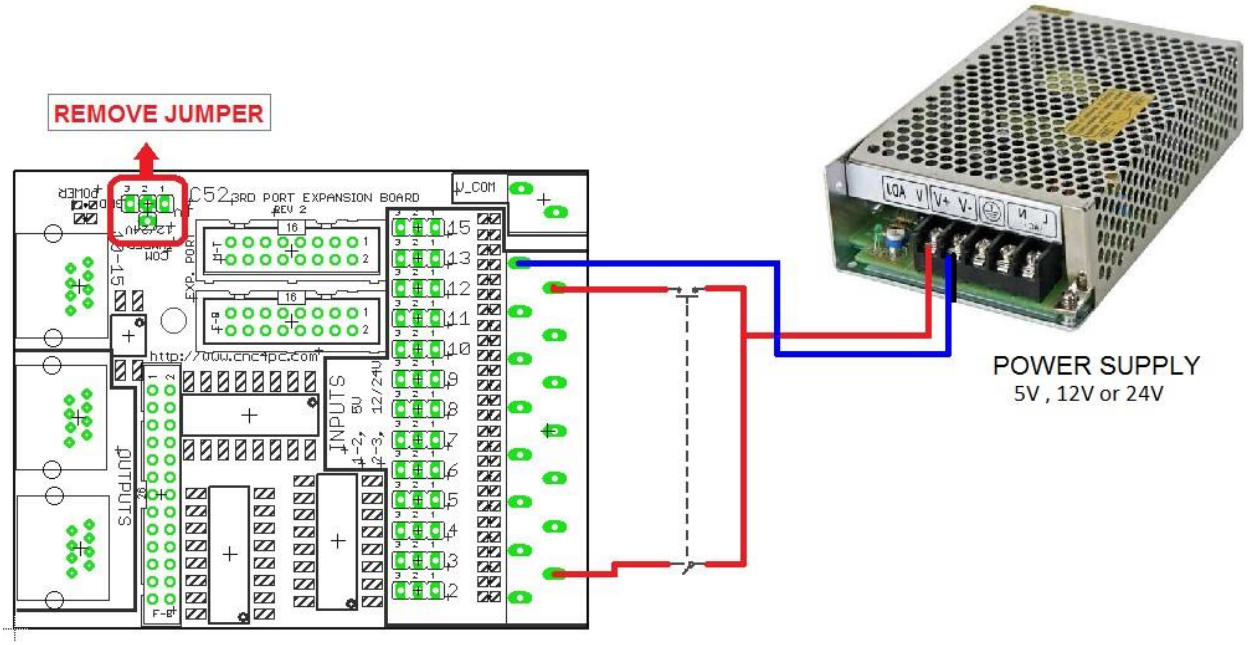

**COM = GND with 12VDC / 24VDC**


SET JUMPER
GND
GND
POWER SUPPLY
12VDC / 24VDC

**COM = 12V / 24V**




6.4 Isolate Input



# 7. PINOUT

## 7.1 Connectors RJ45

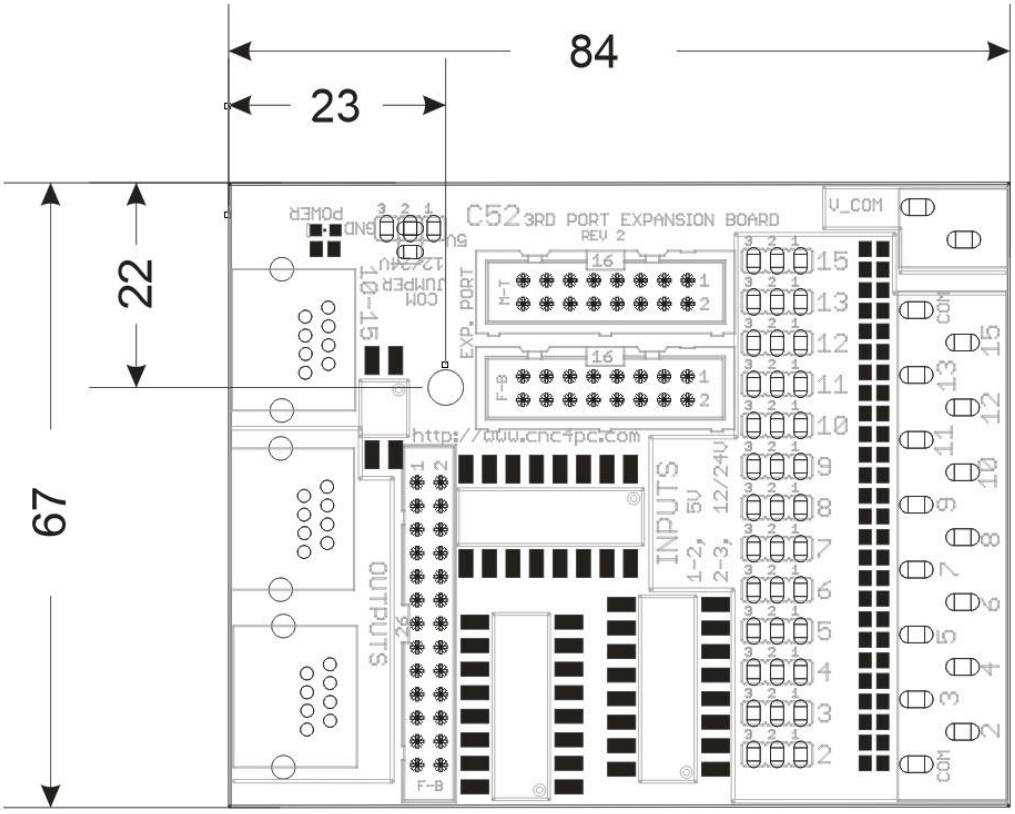
This board supports only TTL +5VDC signals. Table below shows the supported connections for each RJ45.

| RJ45_1 | | RJ45_2 | | RJ45_3 | |
|---|---|---|---|---|---|
| **RJ45 PIN** | **P.P. PIN** | **RJ45 PIN** | **P.P. PIN** | **RJ45 PIN** | **P.P. PIN** |
| 1 | GND | 1 | GND | 1 | GND |
| 2 | 13 | 2 | 3_17 | 2 | Not Used |
| 3 | 12 | 3 | 3_16 | 3 | Not Used |
| 4 | 11 | 4 | 3_1 | 4 | 3_16 |
| 5 | 10 | 5 | 3_14 | 5 | 3_17 |
| 6 | 15 | 6 | Not Used | 6 | Not Used |
| 7 | 5V | 7 | 5V | 7 | 5V |
| 8 | Not Used | 8 | V_COM | 8 | V_COM |
| **Supported connection** | | **Supported connection** | | **Supported connection** | |
| C16, A32, C45 or A61 | | C47, C41, C6, C16, C36, C37, C15, C5, C8 or C9 | | C15, C8 or C9 | |

## 7.2 Using ESS expansion port.

This pin header is directly wired to the ESS Expansion Port Header for future expansion.

## 8 DIMENSIONS




All dimensions are in Millimeters.
Fixing holes (3.8mm)

## DISCLAIMER:

Use caution. CNC machines can be dangerous machines. Neither DUNCAN USA, LLC nor Arturo Duncan are liable for any accidents resulting from the improper use of these devices. This product is not a fail-safe device and it should not be used in life support systems or in other devices where its failure or possible erratic operation could cause property damage, bodily injury or loss of life.