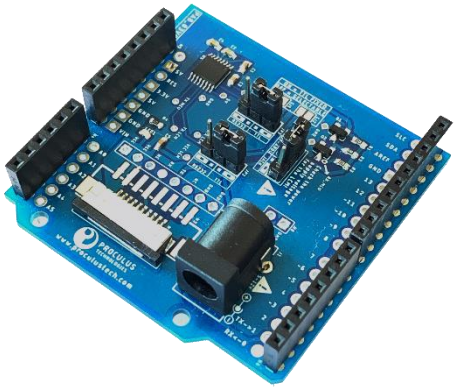
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+39 0332 1888005

PAB_03V01

Arduino Shield



Description

Proculus Accessory Board Model 03 (PAB_03) is an Arduino Shield for UnicView AD LCMs.

It's used to connect an LCM Display into an Arduino board quickly and reliably.

PAB_03 is provided in different variants, each with the adequate connectors for your application.

Note: PAB_03 is best used in conjunction with **UnicView AD.ino**, our Arduino code library for UnicView AD LCMs.

Features

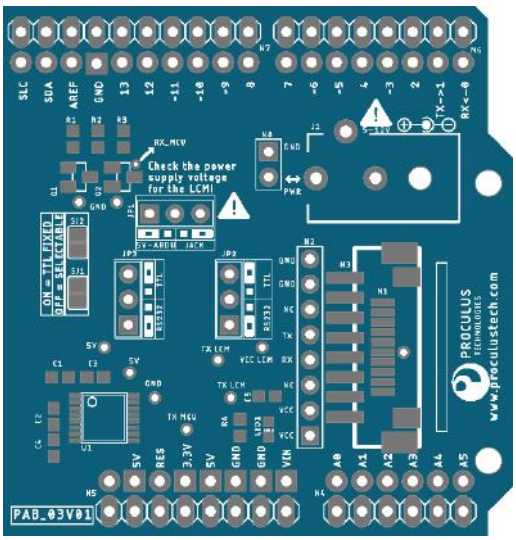
- Selectable LCM power supply.
- Compatible with RS232 and TTL/CMOS levels.
- Fully compatible with Arduino Uno and Mega pinouts.
- Orderable in several different connector options.

Applications

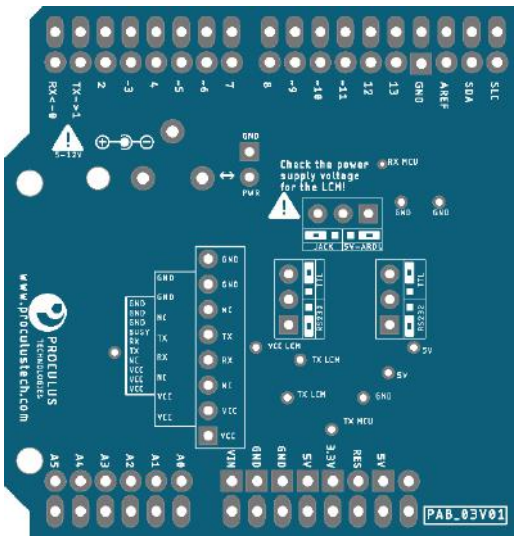
- Rapid development.
- Prototyping.
- Common Arduino projects.

Appearance

Top View



Bottom View



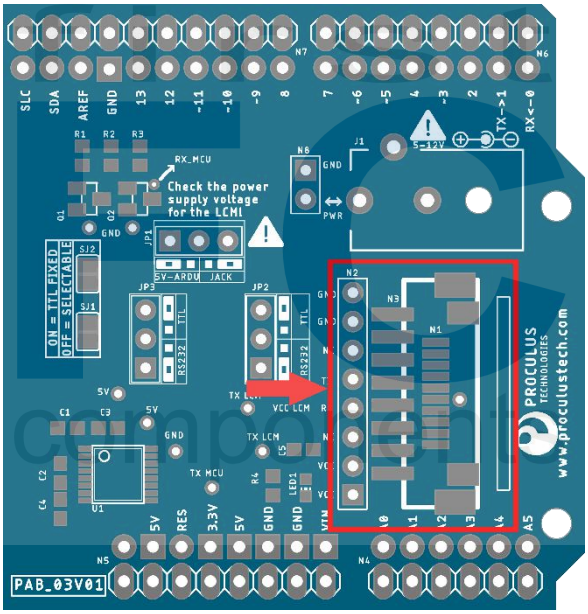
Pinout

N1, N2 and N3 Connectors Signal Description

These are the LCM connectors. Only one type of connector is usually soldered.

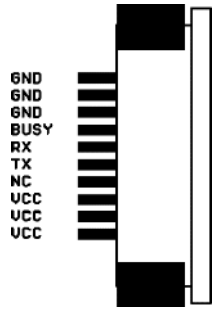
Signal	Details
VCC(1)	LCM Supply Voltage
GND	Common Supply Ground
TX(2)(3)	TX (from the board). Connects to the LCM's RX
RX(2)(3)	RX (from the board). Connects to the LCM's TX
NC	Not Connected. Do not use this pin
BUSY	Not used on AD LCMs. Do not use this pin

Note 1: From Arduino Board (5V) or external power supply (5V - 12V). See section "Power Supply" for more information.
Note 2: Supports **RS232** or **TTL/CMOS** levels. See section "Jumper Description" for more information.
Note 3: See section "Serial Communication" for more information on UART connections.



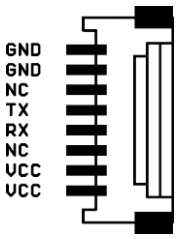
N1 - FFC (Flat Flexible Cable) Connector

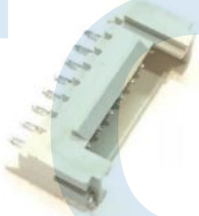
⚠	Caution	The FFC Cable contacts should be facing down (towards the board), with the blue tape facing up (away from the board).



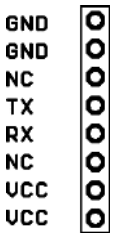


N3 - Ribbon Connector





N2 - Pin Header Connector



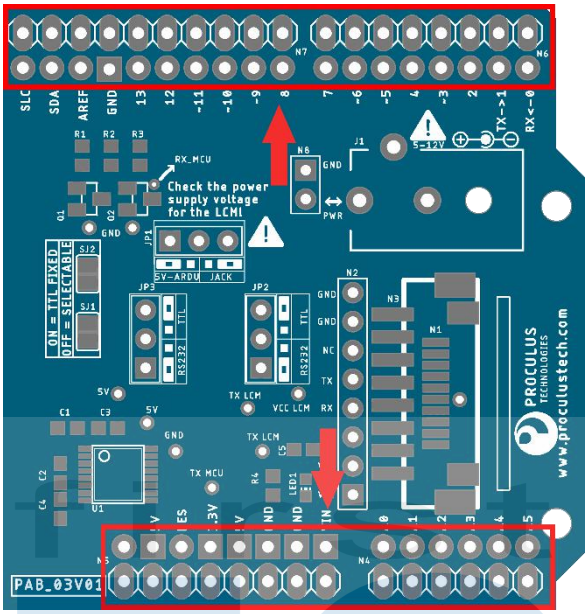


No Connector

No connectors available.	Wires can be soldered to the Pin Header empty through-holes.

N4, N5, N6 and N7 Headers

These pin headers are connected directly to the Arduino board headers and share all its features.

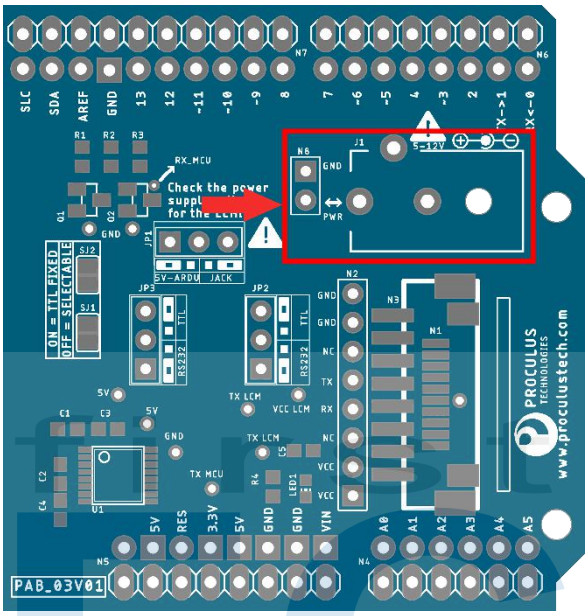


FC components

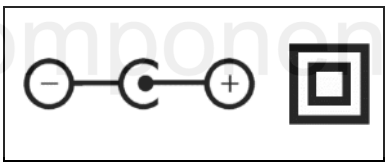
External Power (J1 and N8)

External power supply plug for the LCM. Used to supply voltage to the LCM when **more than 5V or 200mA** is required to power the LCM. The power is supplied by the **PWR signal**.

Voltage range: 5V to 12V (please verify your LCM's supply voltage before connecting the power).



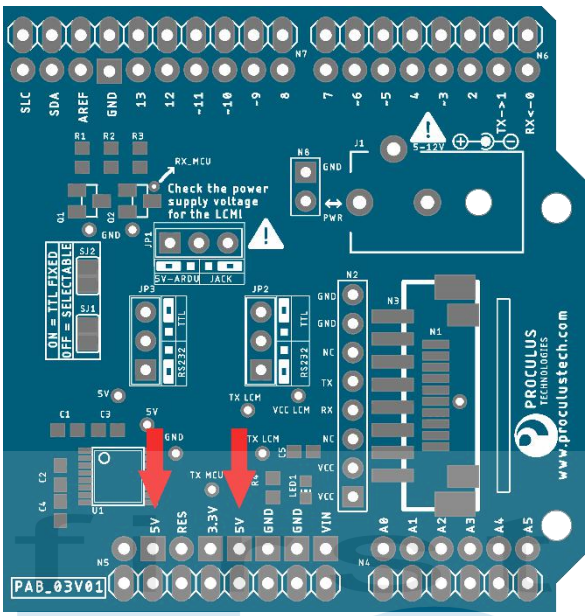
N8 is an unpopulated **2-pin header**. **J1** is a center positive **J4 Jack**. Please only use insulated and center positive power supplies, identified by these symbols:



⚠	Warning	Verify the correct LCM power supply voltage before turning the power on.

Arduino Power (5V Pin)

The Arduino board can supply power to the LCM when **5V and less than 200mA** are required to power the LCM. The power is supplied by Arduino's **5V Pin**.



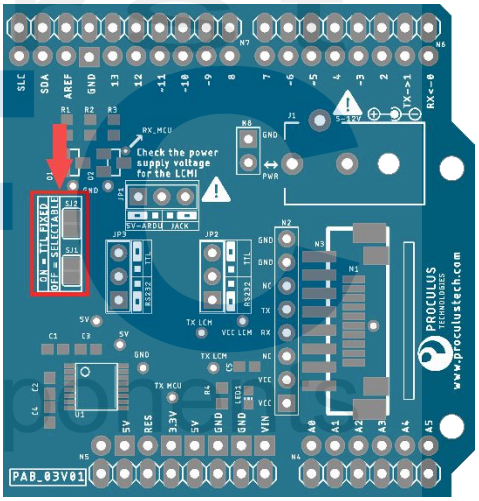
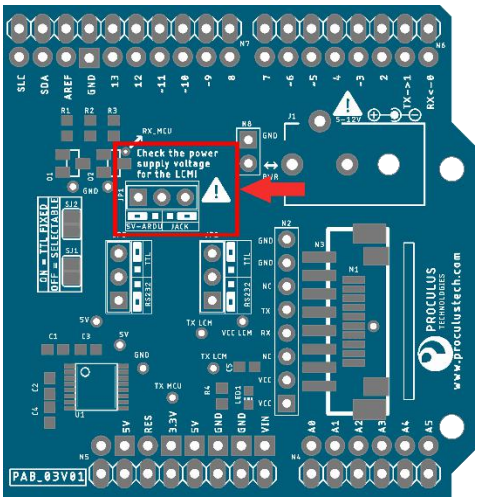
FC components

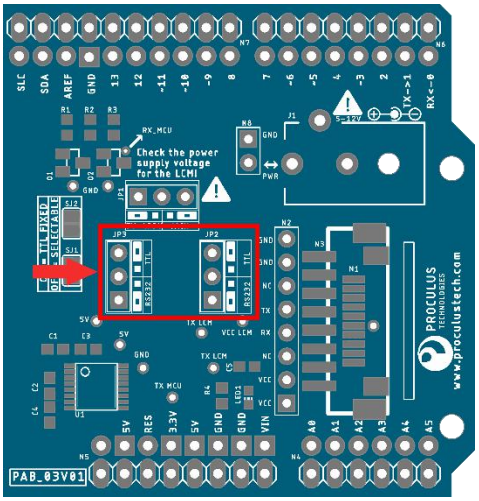
Jumper Description

This table describes all the jumper selectors on the PAB_03:

Jumper	Description	Usage
SJ1, SJ2	Not used	**Do not use** these solder jumpers
JP1	LCM Power Supply selection (**VCC signal**). See section "Power Supply" for more information.	**Right position:** LCM is powered from the external power supply (**PWR pin**) **Left position:** LCM is powered from the Arduino board's **5V pin**
JP2, JP3	LCM Communication Electrical Level selection (**TX and RX signals**)	**Bottom position:** LCM communication level is RS232 **Top position:** LCM communication level is TTL/CMOS

Jumper locations:

Jumper	Description
SJ1, SJ2	
JP1	

JP2, JP3	

first FC components

Serial Communication

The PAB_03 board has one LCM serial communication port (connectors N1, N2 and N3):

Port	Description	Details
LCM Port	**UART** communications with the LCM	• TTL/CMOS or RS232 (selectable). • The communication level and power supply should match the LCM connected to this Port.

Info Maximum baudrate: **921600**bps.

The serial lines from the LCM are connected to the Arduino board's TX and RX signals through an electronic buffer to avoid signal collision with the programmer circuit.

Power Supply

The PAB_03 board is powered from the **5V** pin. The LCM connected to PAB_03 can be powered either from the same 5V pin or from the Power Jack (using an external power supply).

Jumper JP1 Position	VCC Signal	Voltage Range	Max Current
5V-ARDU (left)	Connected to Arduino's **5V pin**	5V	200mA
JACK (right)	Connected to external power supply from J1 or N8 (**PWR pin**)	5V to 12V	2000mA

Warning Verify the correct LCM power supply voltage before turning the power on.

LED Indicators

PAB_03 has 1 LED status indicator:

LED	Function
1	**Solid red** when the LCM is powered-on (VCC signal is powered)

Programming the Arduino Board

If you connect a Proculus LCM Display directly into the Arduino board, it's usually not possible to program the Arduino, unless you remove the connections first.

Using the PAB_03 Shield, it's possible to **program the Arduino board without disconnecting** the LCM.

Info — If you disconnect the LCM from the PAB_03 Shield, it may be necessary to **disconnect the JP3 jumper** before programming the board.

Typical Applications

Note

PAB_03 is provided *as is* and doesn't necessarily comply to any certifications or standards. As such, we recommend PAB_03 to be used **only for development purposes**.

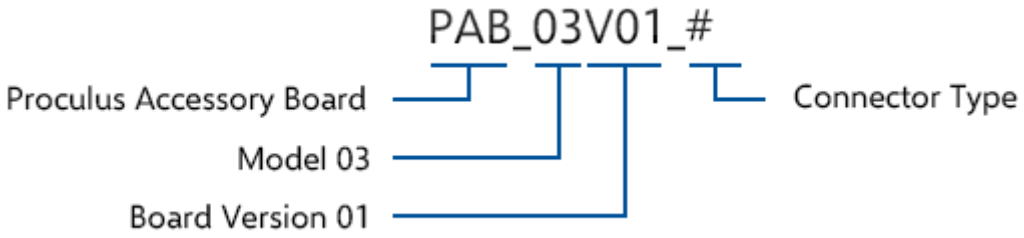
Ordering Information

Connector Types

The following table describes the available connectors and their respective symbols.

Connector	Symbol	Details
FFC (Flat Flexible Cable) Connector	F	10-pin, 1.0 mm pitch, Dual contact
Ribbon Cable Connector	R	8-pin, 2.0 mm pitch
Pin Header	P	8-pin, 2.56 mm pitch, Straight
No Connector	N	None

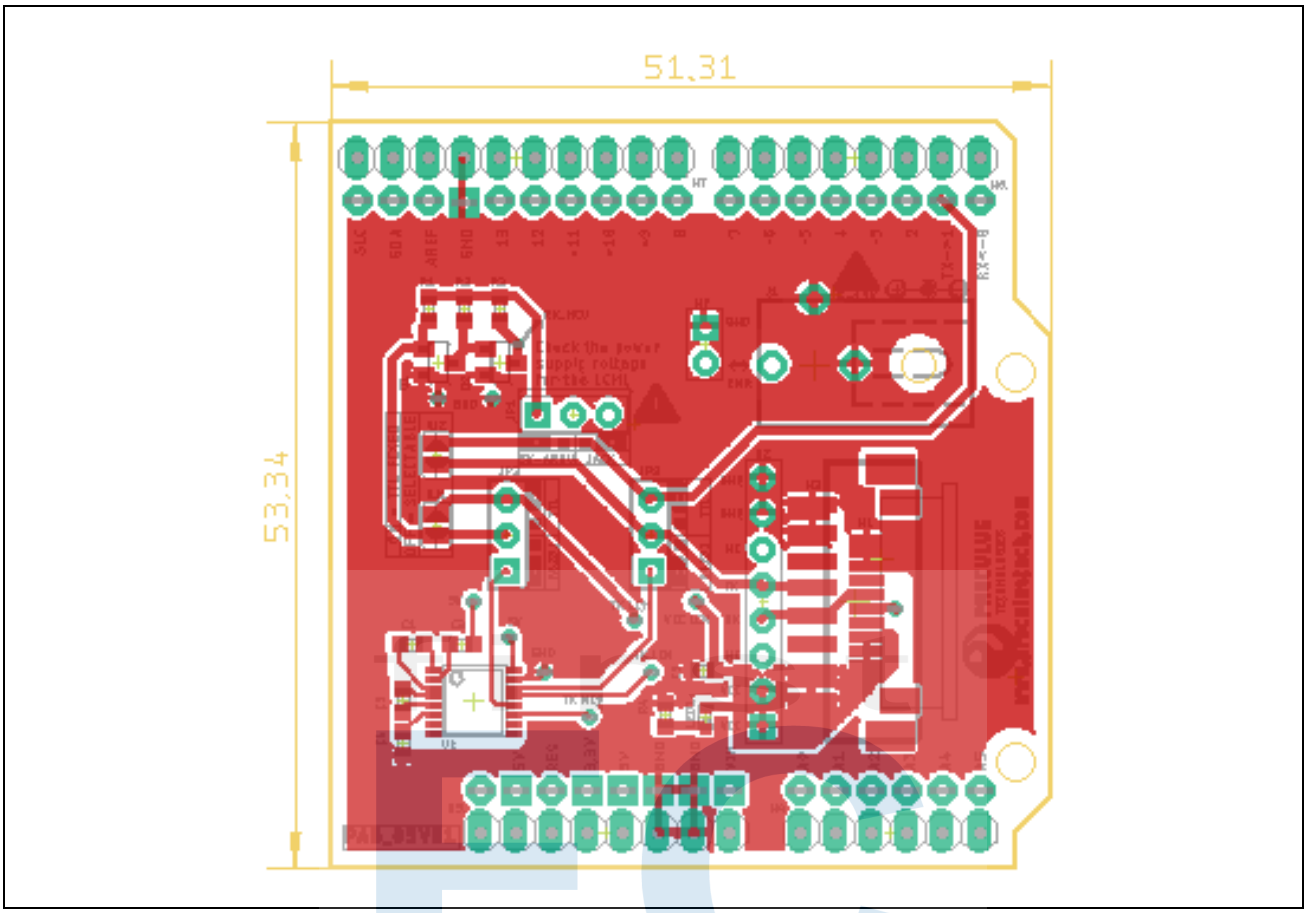
Part Number Selection



You can order PAB_03 in any configuration of pre-assembled connector types. The following table lists part numbers all available configurations:

Connector Type	Connector
PAB_03V01_F	FFC
PAB_03V01_R	Ribbon
PAB_03V01_P	Pin Header
PAB_03V01_N	No Connector

Mechanical Information



Dimensions are given in millimeters.

components

Revision History

Revision Number	Revision Date	Description	Pages Changed
1	July 2019	Initial release.	-

first FC components

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