ELI70-CR Quick Start Guide

Future Designs, Inc.
Your Development Partner
996 A Cleaner Way, Huntsville, AL 35805

1. Introduction

About ELI

FDI introduced ELI® as a solution to the common customer problems of adding LCD interface to computing platforms such as the BeagleBone Black, Raspberry Pi and other popular Single Board Computers (SBC's). ELI is designed, manufactured and tested here in the US, by FDI's skilled production team, and every unit is fully supported by our US based team of engineers and technical specialists.

ELI Compatibility

ELI is designed to play nicely with most products and this list shows some of the more popular units that have been tested and confirmed to work with ELI.

ELI should also work with almost any SBC that has an HDMI or DVI output, so don't fret if your unit isn't shown on the list above. If you want to know for sure, just drop us an email at support@teamfdi.com, and list the specific P/N or model for your SBC and our Product Support Team will check it out and let you know.

Quick Start Guide Video

If you would prefer to "watch" the Quick Start Video, rather than "read" the Quick Start Guide then please check out this link for the same information in a friendly video format.

2. Connecting your ELI70-CR

First let's get familiar with your ELI unit and then we will get it up and running to verify basic functionality.

In most applications ELI requires just three basic connections:

1. An HDMI Cable with a Type A Male end for video
2. A USB cable with Mini USB type B for the touch screen
3. 12V DC power input

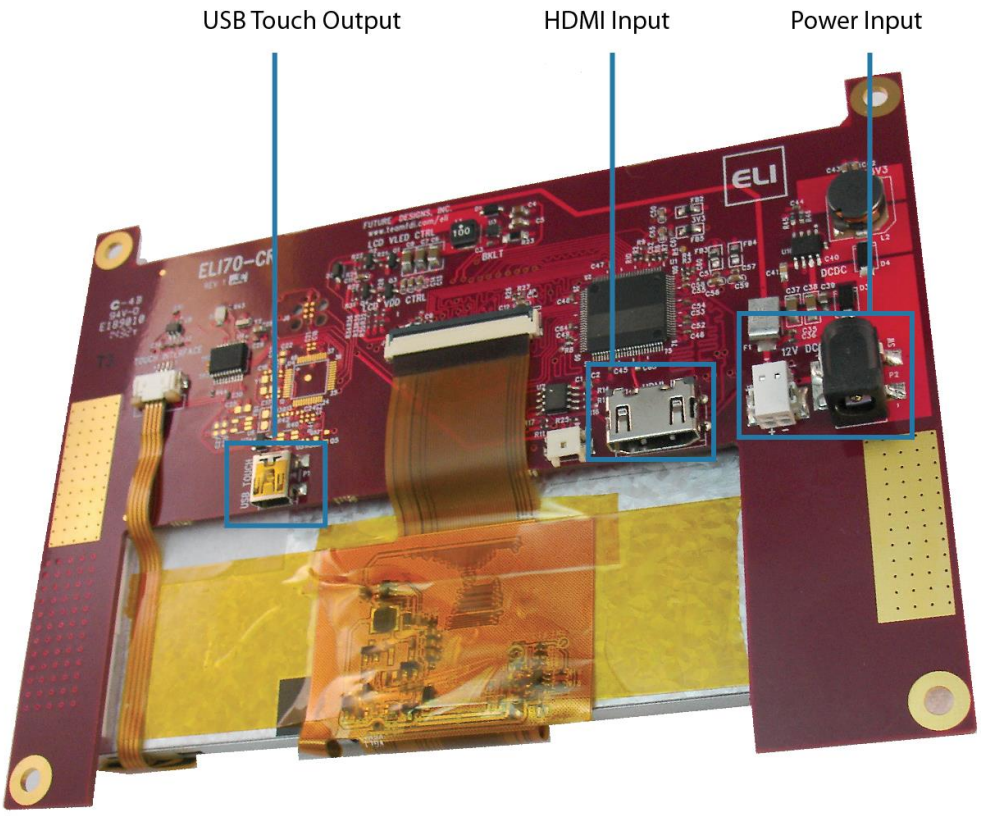
For specific information on connectors for individual SBCs, see our SBC Users Manuals here.

Note: Certain SBCs such as the BeagleBone Black will boot up and drive ELI without any software changes, using these steps. Others may require a few modifications, which are listed in the SBC Manuals above.

1. Connect the HDMI cable and USB cable from your SBC to the ELI70-CR board,
2. Connect the USB Touch Output to your SBC with the Mini USB to USB cable. **(See Figure on next page.)**
3. Apply Power to the ELI board with a 12VDC +/- 5% 2.0A power supply such as the Digi-key PN: T1071-P5P-ND or Mouser PN: 552-PSA-24A-120-R **(See Figure on next page.)**
4. Power on your SBC.
5. The ELI screen should power on and show the basic boot image for your SBC.
6. This confirms proper connectivity and basic operation of the ELI and SBC.

That's it! Your ELI70-CR is ready!

ELI70-CR Connections



Power may be supplied either via the 2-pin terminal block J8 or via the 2.1mm power jack P2 (center positive)

3. Technical Specifications

- Screen Size: 7.0 inches (diagonal)
- Display Technology: a-Si TFT LCD
- Resolution: 800 x 480 (WVGA)
- Brightness: 280 cd/m2 (typ)
- Contrast Ratio: 500 : 1 (typ)
- Aspect Ratio: Wide 15:9
- Interface Input Mode: HDMI / DVI
- Colors: 16.7M (24 bit)
- Horizontal Viewing Angle: 70° L/R
- Vertical Viewing Angle: 60° U / 70° D
- Surface: Anti-glare
- Reverse Scan: U/D, L/R
- Touch Screen: 4-wire Resistive
- Touch Screen Interface: USB Device
- Touch Panel Hardness: >3H
- Touch Panel Force: 100gF (max)
- Active Area: 154.08 (W) x 85.92 (H) mm
- Response Time: 25ms (typ)
- Backlight: 24 LED (3S x 8P)
- Backlight Life: 20K hours (typ)
- Backlight Power Consumption: 1.55W (typ)
- Operating Temperature: -20° to 70° C
- Storage Temperature: -30° to 80° C
- Input Voltage: +12VDC ±5%
- Power Consumption: 400mA @ 12V (typ)
- RoHS Compliant: Yes
- Dimensions: 164.9 (W) x 100.0 (H) x 22.6 (D) mm
- Mounting: #8 screw mounts in 4 corners
- Weight: 255 grams

4. Mechanical Specifications

- Tape used for the LCD to PCB Attachment: 3M VHB 4959 ½" width
- 4 screw holes on the ELI70-CR accept up to #8 size screws for mounting into an enclosure
- All 4 screw holes connect to the system ground directly.
- The exposed ground pads may be used to connect the ELI70_CR PCP directly to the LCD using copper or aluminum foil tape to meet ESD requirements.

5. Power Specifications

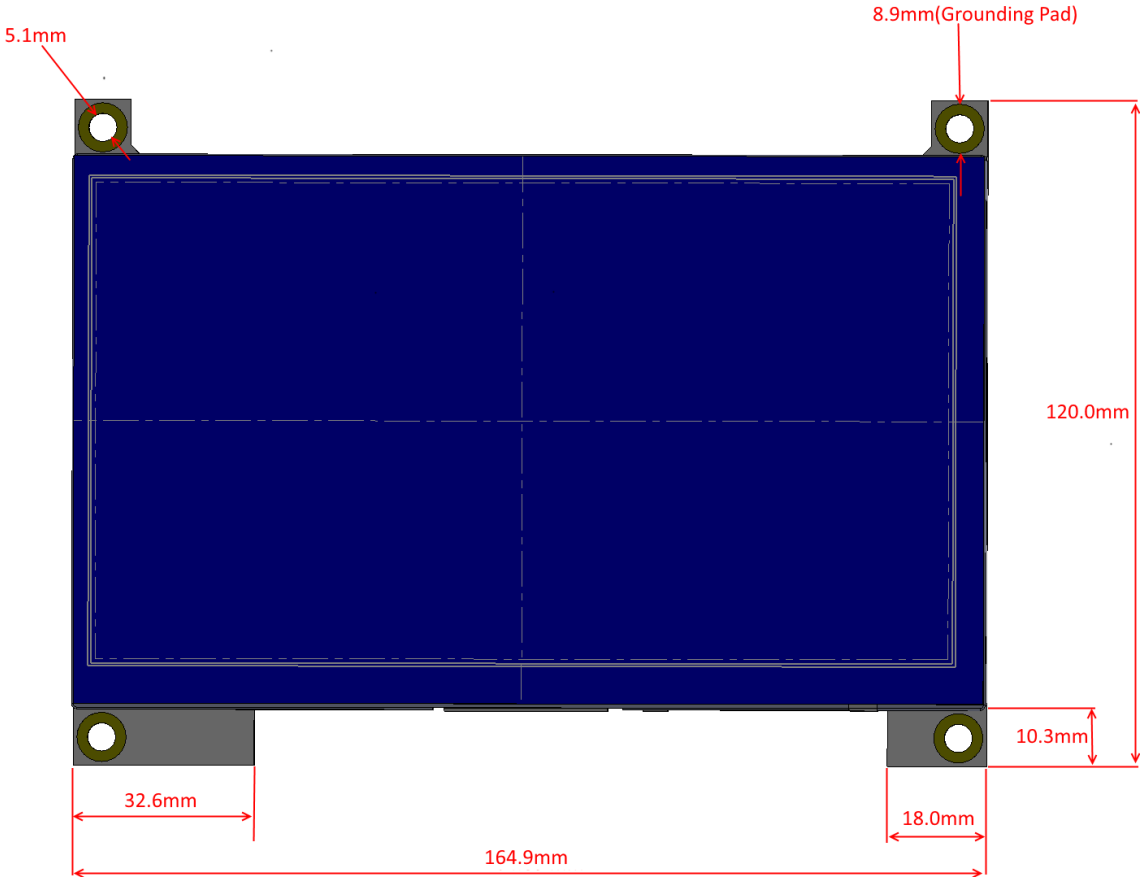
Let's talk more about the power requirements for this specific ELI unit. A 12 VDC + or - 5% power supply with a 2.0 Amp output will power any board from the ELI Family. This allows a common, off-the-shelf power supply such as the T1071-P5P-ND to be used for quick demos or prototyping across the entire ELI Family. However, for volume production applications, the input power can be optimized for your particular ELI unit. The ELI70-CR requires 400 mA.

6. EDID Specifications

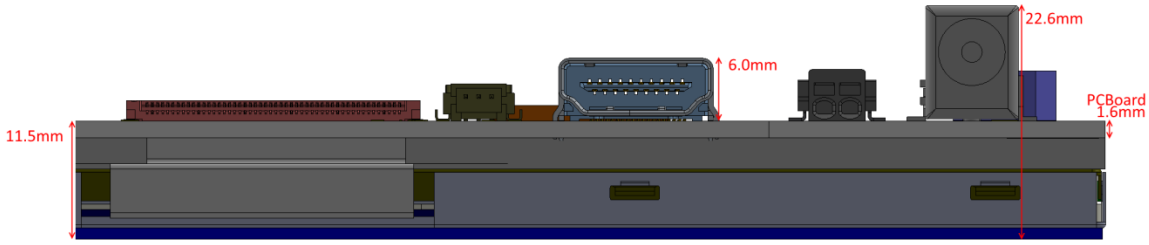
EDID – what is it and why is it important to ELI users? In simple terms, EDID is the data that is communicated by ELI over the HDMI interface back to your SBC, which allows the SBC to automatically configure the display timings and screen resolution for a particular ELI display. This capability is part of what makes the plug-and-play portion of ELI work right out of the box.

Extended Display Identification Data (**EDID**) is a data structure provided by a digital display such as ELI, to describe its capabilities to a video source, such as your SBC. EDID is defined by a standard published by the Video Electronics Standards Association (VESA). The EDID includes manufacturer name (FDI) and serial number, product type, timings supported by the display, display size, luminance data, etc. ELI uses v1.3 compatible EDID and HDMI data so it should work correctly with most other compatible video sources or SBC's.

7. Mechanical Views



Top-Down view with measurements



Partial Side View