MIDAS Development Kit

MDT0700A0OSC-PAR-KIT1
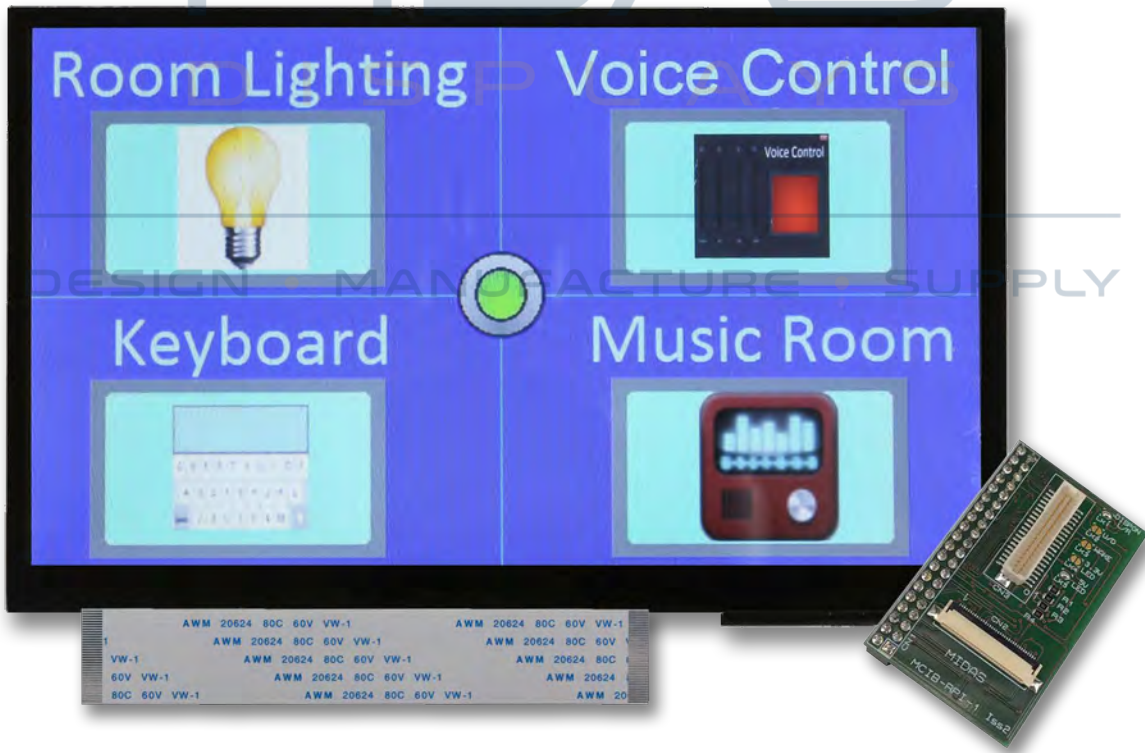
Document history

Issue #	Author/ Editor	Issue Date	Changes to this document.
Preliminary	IA	23/05/2019	Document Commenced
1.0	IA	29/05/2019	First Release

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1. Introduction

Just as the name suggests, the MIDAS Starter Kit is here to get you started with your project using our range of products. Our starter components included with this kit will make it easier to connect and setup the display with a Raspberry Pi.

1.1. Components included (parts list)

- MDT0700A0OSC-PAR (display)
- 36-way FFC (0.5m pitch)
- MDIB-RPI-1
- Application Note (this document)
- Datasheet for MDIB-RPI-1
- Datasheet for FT5306 touch controller

FIGURE 1 – DISPLAY, MDIB-RPI AND 36-W FFC

2. How to connect

Our hardware is designed to be "plug & play" meaning that you simply need to plug the components together as shown in the following steps.
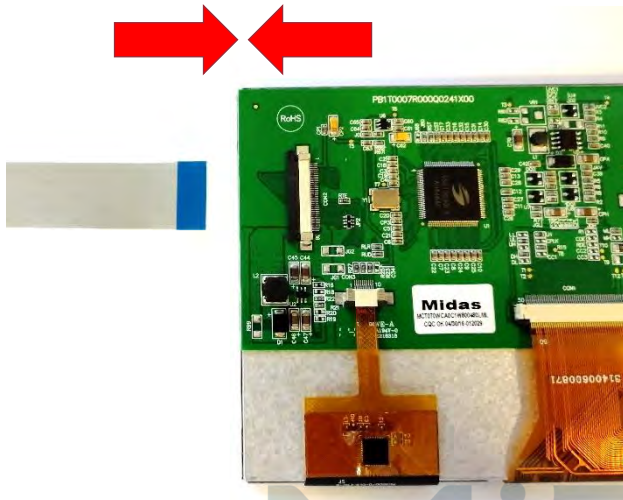

FIGURE 2 - CONNECT DISPLAY

STEP 1

Connect the 36-way FFC cable to the 36-way connector at the back of the display, with the blue label facing up, as shown in Figure 2 (left).

STEP 2

Connect the 36-way FFC cable to the MIDAS-RPI board, as shown in Figure 3 (right). Make sure this time you have the blue label facing down on the board.

FIGURE 3 - CONNECT MIDAS-RPI

STEP 3

Plug the MIDAS-RPI board on the GPIO pins of the Raspberry Pi using the 40-way pin header.
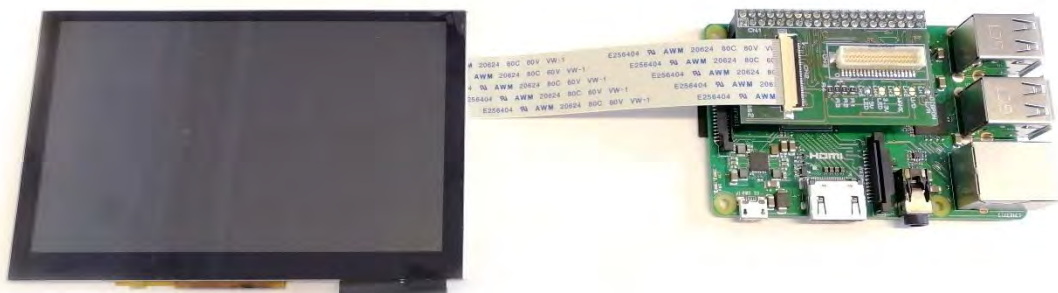

FIGURE 4 - PUTTING IT ALL TOGETHER

Please note that the Raspberry Pi is not supplied with this kit. We recommend to use Raspberry Pi 3 Model B or B+ or Raspberry Pi 3 Model A+. The kit is also compatible with older versions of Raspberry Pi (those with a 40-pin GPIO connector), but performance is not guaranteed.

3. Other configurations

Apart from setting up the hardware, you will need to do some software configurations for the display to work. Our display uses the SSD1963 controller IC which offers better graphics handling and more control over the display. With an SSD1963 you can design a graphical user interface (GUI) with buttons, sliders and other interactive features, but first you will need to initialise it by sending commands/data to its registers. (*We will be adding more information on the initialisation code soon.*)

Using an IDE (integrated development environment) such as Geany, which is usually pre-installed in the standard Raspberry Pi OS (Raspbian), you can write an application that will configure the display and produce the GUI. There are many other development options you could use for building an application and using the display, but with our kit you will not need to worry about the hardware.

The MCIB-RPI-1 can also handle the capacitive touch features of the MDT0700A0OSC-PAR display, using the GPIO pins 3, 5, 13 and 22 of the Raspberry Pi. (*See datasheet for MCIB-RPI-1.*) These pins will give you access to the FT5306 capacitive touch controller, which is built into the display, and will allow you to control it using I^2C interface. However you will still need to write a small application or script for reading the touches, which should work as part of your main application/project. (*See datasheet for FT5306. Note: we will be adding more information on this soon.*)

4. Troubleshooting

Please ensure that you follow all the instructions correctly. If you are still having trouble getting you display to work, then feel free to contact us (details on the front cover page). Our offices are open on usual business times Mon-Fri between 8:30-17:00 except Christmas and Bank Holidays.

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