

MIDAS

DISPLAYS

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MIDAS Development Kit

MDT0700A11OS-RGB2HDMI-KIT1



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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 or other compatible devices (see chapter 3.2).

1.1. Components included (parts list)

- MDT0700A11OS-RGB (display)
- MDIB-11
- HDMI cable
- Application Note (this document)
- RPI config (see chapter 3.1)



FIGURE 1 - MDIB-11 (LEFT) & HDMI CABLE (RIGHT)

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 picture below:

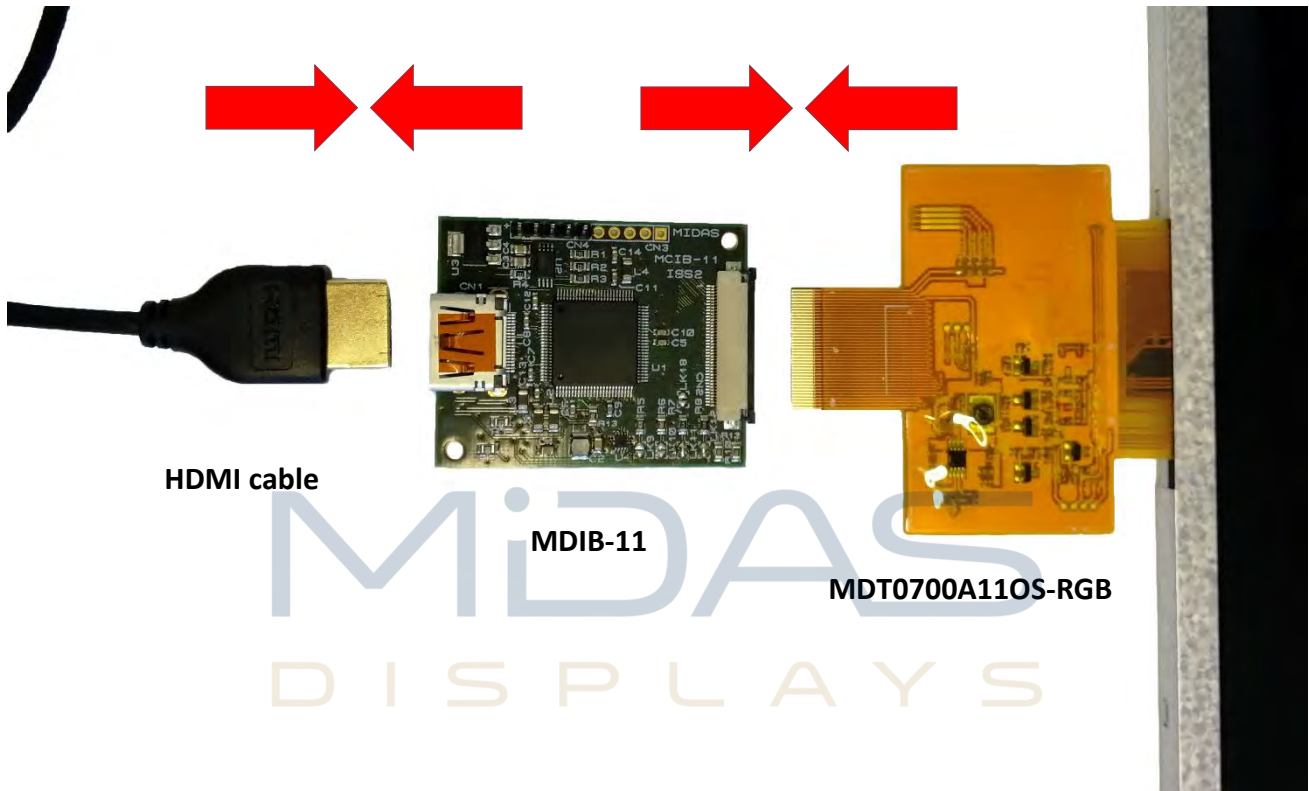


FIGURE 2 - CONNECTING IT ALL TOGETHER

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After you connect the MDIB-11 with the display and HDMI cable, connect the other end of the HDMI cable to a Raspberry Pi or other device¹ of your choice that has a HDMI interface. **IMPORTANT:** please make sure you connect the FFC the correct way round, otherwise you could damage the display. Both the board and FFC/FPC are labelled with “1” for pin 1, indicating which side to connect them.

For more advanced options, the MDIB-11 can be set up for specific functions. For these options you will need a soldering iron, as the board is equipped with solder links that are used for making a selection. For example, the board supplies 5V to the display’s backlight from the HDMI port. If you wish to supply power to the display externally, you can un-solder Link 17 from the back of the MDIB-11. Please refer to the MDIB-11 datasheet for more details.

¹ Please be aware that this guide is for using Raspberry Pi with the Raspbian OS, so if you choose an alternative device or OS (operating system) you may need to use different configuration settings (see chapter 3.2).

3. Other configurations

Apart from setting up the hardware, you may need to do some software configurations for better compatibility. Typically displays with an RGB, LVDS or HDMI interface require specific timings for correctly displaying an image. These timings are usually configured and stored in an EDID file (usually found in desktop monitors). Our MDIB-11 boards are already programmed (flashed) with EDID settings, but sometimes the EDID may not be recognised by the device connected to the display, in which case additional settings will be required. Fortunately Raspberry Pi offers an easy solution to configure these settings, and that is through a configuration file called “config.txt” and we will discuss this below.

3.1. Raspberry Pi config file

The config.txt file is stored in the /boot directory on the Micro SD card, where the Raspbian OS (operating system) is stored. This file contains various lines of code/instructions for various configurations, including HDMI timings. Here you can manually customize the timings for the display that you want to use or you can simply use our pre-customized config.txt file (see figure 3).

You can download our config.txt file from here: www.Farnell.co.uk/.....



```
config.txt - Notepad
File Edit Format View Help

# uncomment to force a specific HDMI mode (this will force VGA)
#hdmi_group=1
#hdmi_mode=1

# uncomment to force a HDMI mode rather than DVI. This can make audio work in
# DMT (computer monitor) modes
#hdmi_drive=2

# uncomment to increase signal to HDMI, if you have interference, blanking, or
# no display
#config_hdmi_boost=4

# uncomment for composite PAL
#sdtv_mode=2

#uncomment to overclock the arm. 700 MHz is the default.
#arm_freq=800

# Uncomment some or all of these to enable the optional hardware interfaces
#dtparam=i2c_arm=on
#dtparam=i2s=on
#dtparam=spi=on

# Uncomment this to enable the lirc-rpi module
#dtoverlay=lirc-rpi

# Additional overlays and parameters are documented /boot/overlays/README

# Enable audio (loads snd_bcm2835)
dtparam=audio=on

##### MIDAS DISPLAY SETTINGS #####

# uncomment below to force a specific HDMI mode
hdmi_group=2
hdmi_mode=87

# uncomment below to set for 800 x 480 resolution
hdmi_cvt=800 480 60 6 0 0 0
```

FIGURE 3 - EXAMPLE OF A CONFIG FILE

If you download our config file, then simply use it to replace the current config file in the boot folder. Alternatively, if you choose to edit the file manually, you can just add the following lines of code at the end of the existing config.txt file.

```
hdmi_group=2
hdmi_mode=87
hdmi_cvt=800 480 60 6 0 0 0
```

Congratulations! You can now use the MDT0500DSH-RGB display with your Raspberry Pi.

For more information about the Raspberry Pi config settings please refer to the following website:

<https://www.raspberrypi.org/documentation/configuration/config-txt/video.md>

3.2. Alternative Solutions

Our kit is designed and tested to work with Raspberry Pi and Raspbian OS, but also offers compatibility for alternative solutions. If you are planning to use an alternative device or a different OS, then you may need to find similar settings. The most important configuration is to have the correct resolution set-up, which is usually defined along with the HDMI timings or in some display/monitor menu. The HDMI timings for this display can be found in the MIDAS Specification document (also available on Farnell).

If you still need more help for using an alternative device or OS, feel free to contact our technical support team and one of our engineers will guide you through a solution. In the future we hope to add more information on this guide for alternative solutions.

Other useful links:

- <https://wiki.ubuntu.com/X/Config/Resolution> For Ubuntu OS installed on Raspberry Pi.
- <https://elinux.org/RPiconfig> More information on RPi config.

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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