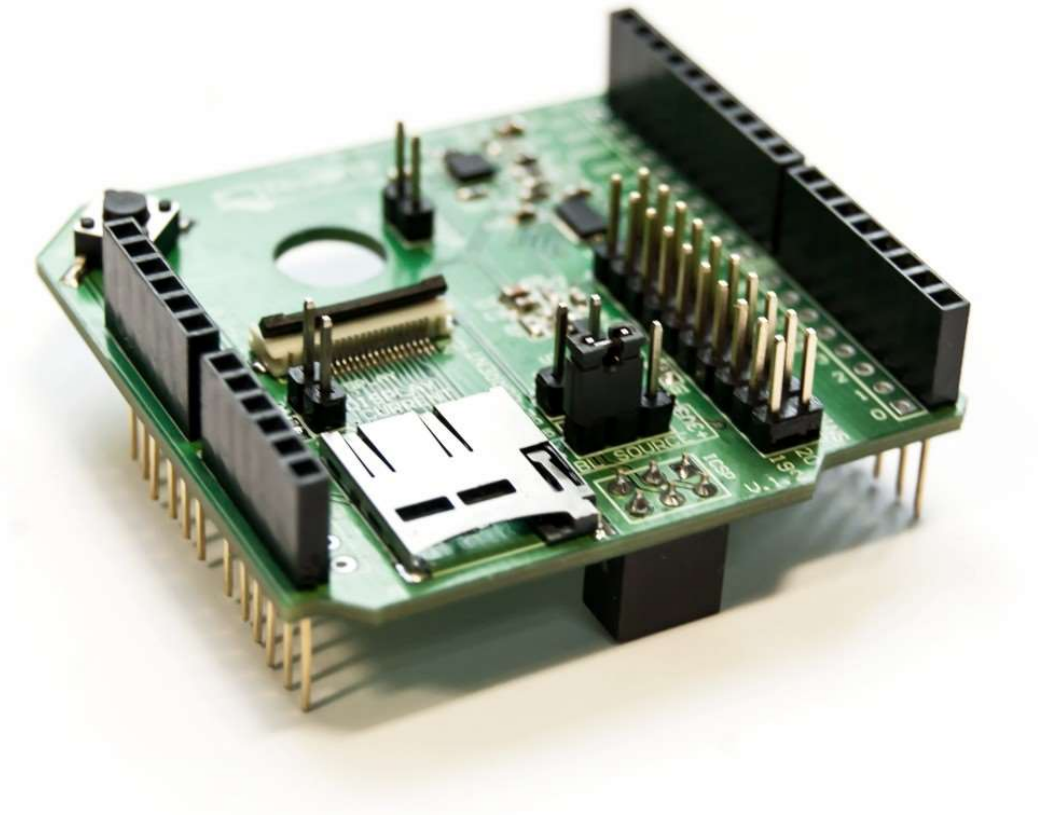
Arduino Riverdi TFT shield Beginner Guide

Riverdi

our pixels behave

# Arduino Riverdi TFT shield

## Beginner Guide



# REVISION RECORD

| REVNO. | REVDATE | CONTENTS | REMARKS |
|---|---|---|---|
| 1.0 | 2016-06-30 | Initial Release | |
| 1.1 | 2016-08-08 | Added Initialization Chapter | |
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# 1 Getting Started

To start programing your display with Arduino Riverdi shield you need few basic components:

- Arduino Riverdi TFT shield
- Arduino Board
- 20 pin 0.5 mm FFC
- TFT display with FT8xx chip
- Micro USB connector which works as 5V power supply and data connector for your PC

assembled as shown in the picture below.

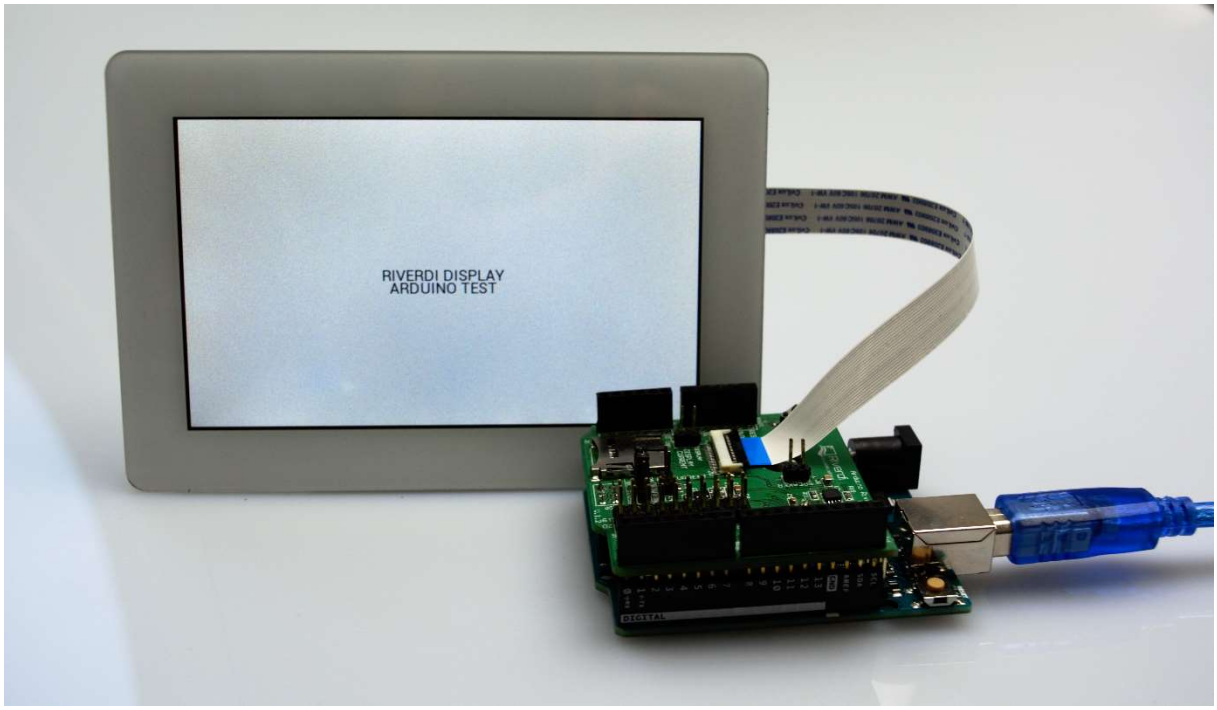


*Figure 1 Ready to work board.*

You will also need an IDE from Arduino and project file from Riverdi website.

Arduino IDE http://www.arduino.org/downloads

Project files https://riverdi.com/product/arduino-riverdi-tft-shield/

# 2 Installing and setting Arduino IDE

## 2.1 Obtaining required software.

To install Arduino IDE, download IDE .exe or .zip file from http://www.arduino.org/downloads and follow official guide from Arduino website.

Second part consists of installing Riverdi project file stored in .zip format and called Arduino Library that can be found here: https://riverdi.com/product/arduino-riverdi-tft-shield/. You need to extract it to chosen location.

## 2.2 Connecting your board

After sucesfull instalation, you need to connect Arduino board to your PC via USB cabel. Windows should auto detect the device and install drivers whether necessary. If you encounter some problem, consult official guide: http://www.arduino.org/learning/getting-started

The last step is to show your IDE what type of board you have and where is it connected. To do that go to **Tools > Board** and choose your arduino board (fig.2). Then choose **Port** and select connected device (fig.3).

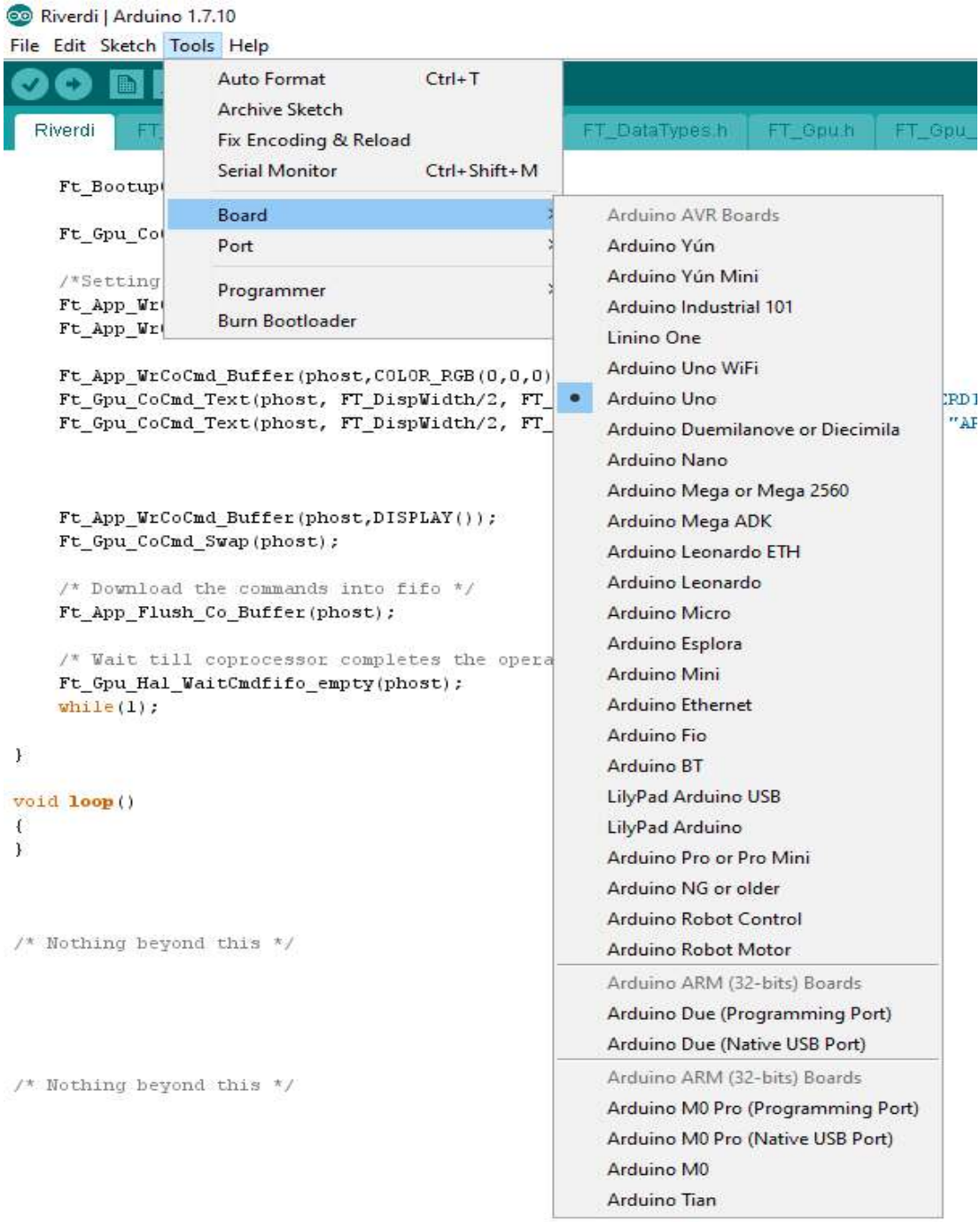


*Figure 2 Choosing your board.*

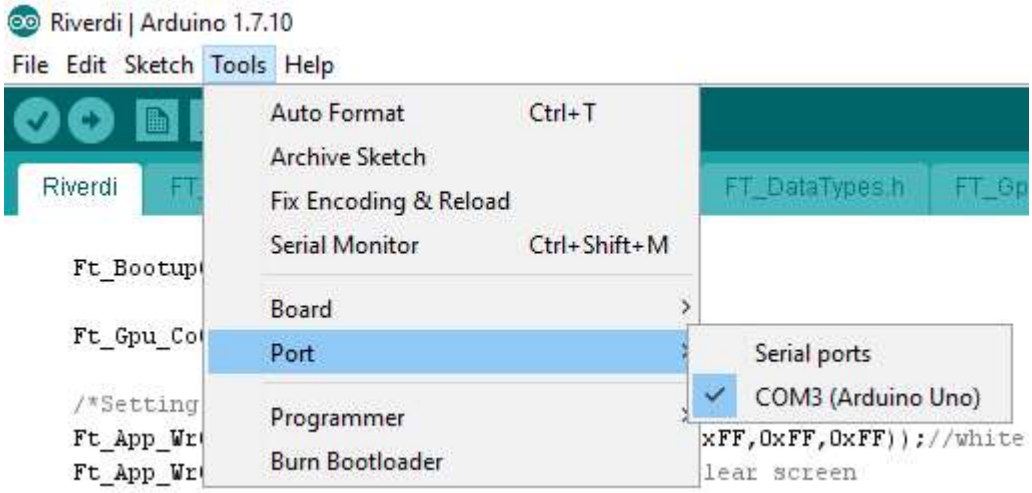


*Figure 3 Setting a connection with board.*

# 3 Working with Riverdi software.

## 3.1 Installing Riverdi software on board

To check connection between Arduino Riverdi TFT shield and TFT module simply you have to install Riverdi project on your Arduino board. Go to folder where you extracted .zip file and click twice on Riverdi.ino. Alternative way is to open project from IDE. To do that click **file > Open** and choose a correct path to extracted file Riverdi.ino. (fig. 5)

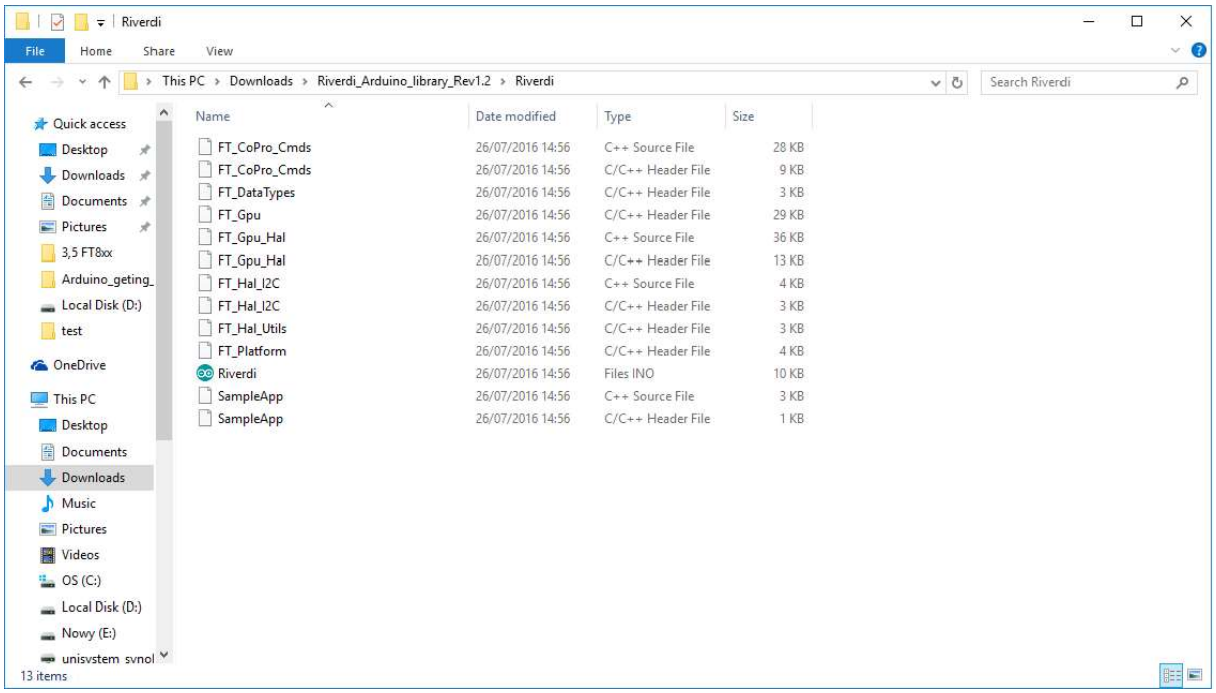


*Figure 4 Composition of packed software from riverdi.com*

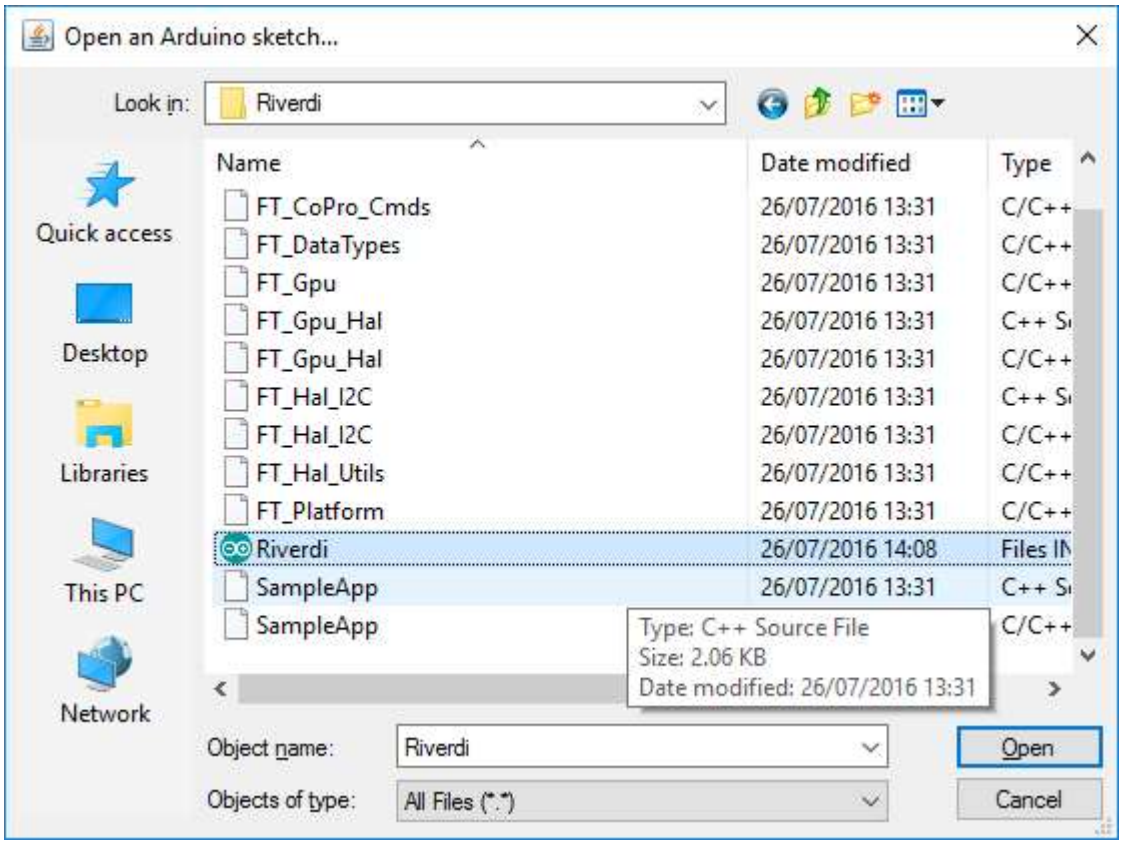


*Figure 5 Choosing path to .ino file*

You should get window with all file in that project. First thing is to choose the right initialization parameter. To do that go to FT_Platform.h and find the line:

```
/* Custom configuration set by the user */

#if (!defined(VM800P43_50) && !defined(VM800P35) &&!defined(VM801P43_50) &&!defined(VM800B43_50) &&!defined(VM800B35) &&!defined(VM801B43_50))

//#define DISPLAY_RESOLUTION_QVGA (1) //3.5"

//#define DISPLAY_RESOLUTION_WQVGA (1) //4.3"

#define DISPLAY_RESOLUTION_WVGA (1) //7.0"

//#define DISPLAY_RESOLUTION_HVGA_PORTRAIT (1)
```

Now you need to uncomment the right resolution for your screen and comment and obsolete one.

(To comment a line use "//" and to uncomment simply delete that characters).

Later you need to do the same with right controller of your display. Few lines later you will find:

```
/* Chip configuration specific macros */

//#define FT_800_ENABLE (1)

//#define FT_801_ENABLE (1)

//#define FT_810_ENABLE (1)
```

```
//#define FT_811_ENABLE                    (1)
//#define FT_812_ENABLE                    (1)
#define FT_813_ENABLE                      (1)
```

Chose right FT again by commenting and uncommenting. In case you are not sure what resolution or what FT controller you have just consult datasheet for appropriate module. Next step is to program your Arduino board.

To install program on Arduino, you need to compile project first. To do that, click Verify in top left corner. It will check your work for any mistakes. If you only open an existing project, there should be none. Later, when you will make some changes it will inform you if you do that in a correct way.

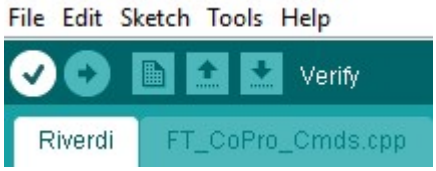


*Figure 6 Verify button.*

When IDE ends checking code, it will be compiled. Black box at the bottom of the window will inform you about progress (fig. 7).

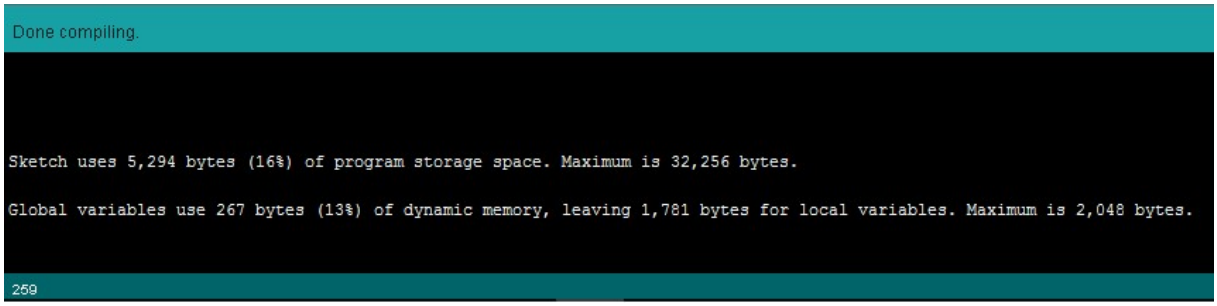


*Figure 7 Message after successful compilation.*

Next step is to send program to Arduino board. Click on button Upload next to Verify.

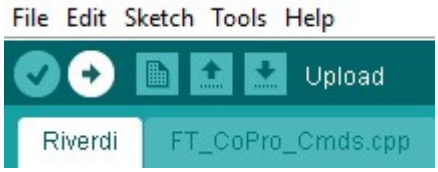


*Figure 8 Upload button.*

In case Arduino IDE could not connect to board you will get an error message similar to that in fig. 9.

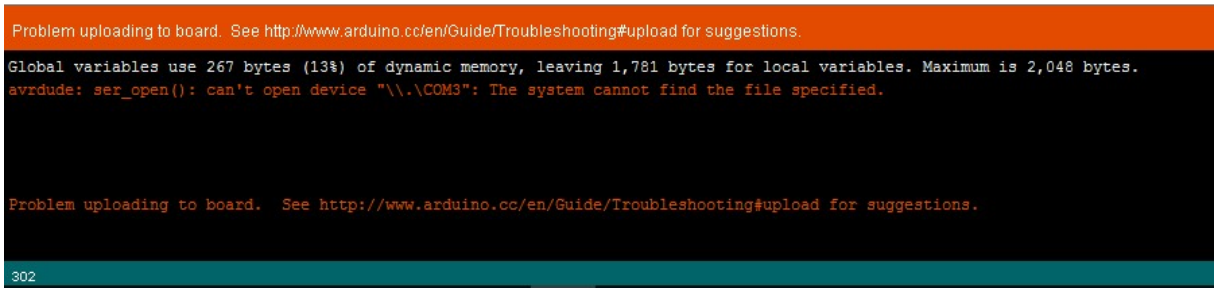


*Figure 9 Connection issue.*

Check again all actions in 2.2.

If everything was done correctly your display should show the same picture as TFT module on figure 1.

## 3.2 Basic modification.

This example will show you how to change background colour from white to Turquoise. Turquoise colour is represented in RGB by 30d5c8 each two symbols correspond in order too red, green and blue. You need to locate this line in Riverdi.ino file.

```
/*Setting first screen*/
 Ft_App_WrCoCmd_Buffer(phost,CLEAR_COLOR_RGB(0xFF,0xFF,0xFF)); //white color
 Ft_App_WrCoCmd_Buffer(phost,CLEAR(1,1,1)); //clear screen
```

First line sets a colour and second applies it to background. You need to change CLEAR_COLOR_RGB(0xFF,0xFF,0xFF) to CLEAR_COLOR_RGB(0x30,0xd5,0xc8). After changes, the whole section should look like this:

```
/*Setting first screen*/
 Ft_App_WrCoCmd_Buffer(phost,CLEAR_COLOR_RGB(0x30,0xd5,0xc8)); //white color
 Ft_App_WrCoCmd_Buffer(phost,CLEAR(1,1,1)); //clear screen
```

To do the last step, you need to verify and upload the same way as in point 3.1.

Outcome of implemented changes:


*Figure 10 Changed background.*

If your device didn't change background or displays something different, check if code in .ino file was adjusted as in example.