Don Addon 7 RGB to STM32 Evaluation Board Whitepaper

Don Addon 7 RGB

General Description

Rev. 1.3

2021-04-16

REVISION RECORD

REVNO.	REVDATE	CONTENTS	REMARKS
1.0	2021-02-17	Initial Release	
1.1	2021-03-06	Second version	
1.2	2021-03-02	Pictures updated	
1.3	2021-04-16	Document adjusted into standard template	

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INTRODUCTION

The aim of this document is to present the general idea and functions of the device presented. Don Addon 7 RGB is a hardware connection between Riverdi STM32 Evaluation Board and the TFT display, turning three separate items into one working unit.

1 General description

This add-on board is the hardware interfacing device that provides the necessary connection between TFT and EVAL_MAIN board.

Because of the rich offer of TFT modules from Riverdi and the necessity to ensure seamless cooperation between different TFT modules and ONE type of EVAL_MAIN board, there must be different, customized versions of add-on boards, to make it possible to use many modules differing in size, signal connectors and mechanical builds, together with ONE universal controller – EVAL_MAIN.

One of the purposes for building EVAL add-ons was to put developers' world in order.

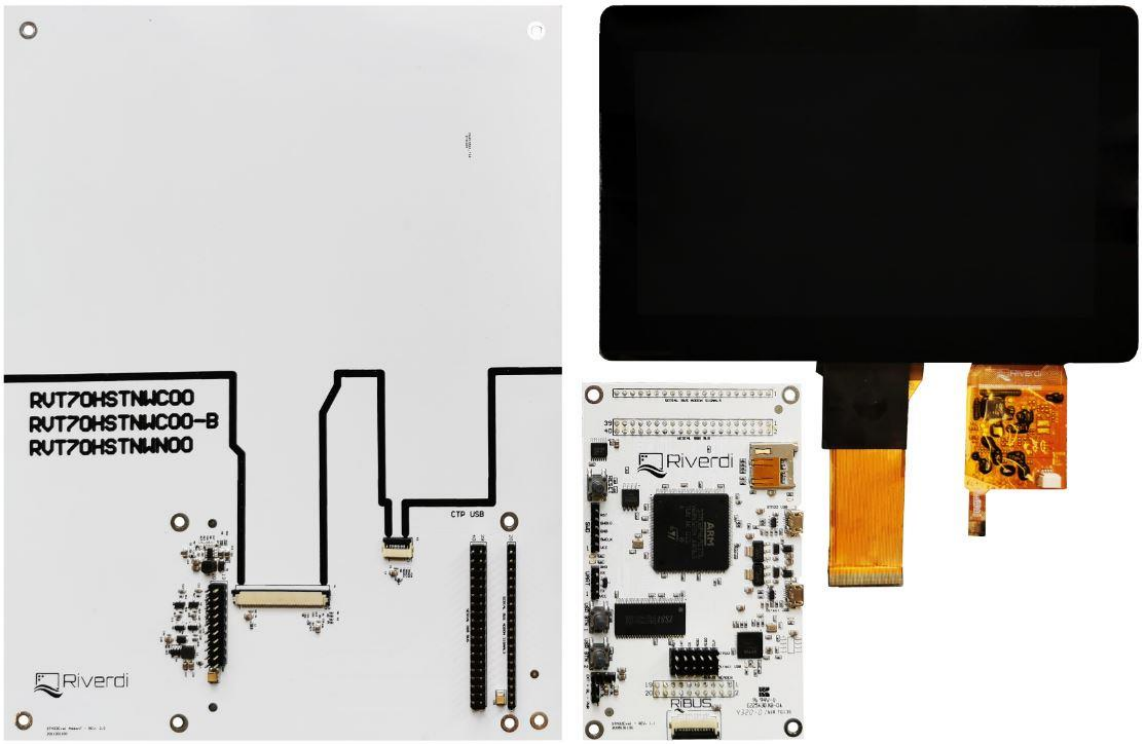
Another one was to prepare and demonstrate the working TFT modules at various presentations and exhibitions.

2 Mechanical functions

1. The add-on board is a stable mechanical base for three components:
   - EVAL_MAIN board,
   - 7.0" RGB TFT display
   - Add-on board itself

   Mechanical stability of the above devices fixed together protects delicate TFT connectors against breaking, tearing off and wearing out due to frequent connecting and disconnecting.

The picture below shows all three listed components separately, before being assembled into one unit:



The picture below shows the same three components assembled and connected into one device:

2. The add-on board is designed in a way that allows the use of all three in horizontal and vertical positions.

   The horizontal position is particularly useful during development. It gives a secure access to EVAL_MAIN measuring terminals and other circuitry points desired by a developer.

   The vertical position allows for hanging the entire working unit on a vertical post for exhibiting purposes and for drawing visitors' attention.

   A TFT module is fastened to the add-on board with velcro tapes in four places; close to the module's corners. Using velcro tapes between the add-on board and the TFT ensures:

   - Relatively high fastening strength that makes sure the TFT connectors are safe from mechanical damage in both positions (horizontal and vertical),
   - Relative ease of changing the TFT modules whenever necessary.

3 Electrical functions

1. The add-on board generates all the voltages necessary for the TFT display to operate properly.
2. The add-on board generates the power necessary for backlight in the TFT module to operate properly.

4 SUMMARY

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