Getting started with SPC563M-DISP discovery board

Introduction

The SPC563M-DISP is an evaluation tool supporting STMicroelectronics SPC56 M Line microcontrollers.

The discovery board SPC563M-DISP is based on SPC563M64L7, a 32-bit Power Architecture® Book E compliant e200z335 CPU core with 1.5Mbyte on-chip in an LQFP176 package.

Figure 1. SPC563M-DISP Discovery Plus board with SPC563M64L7
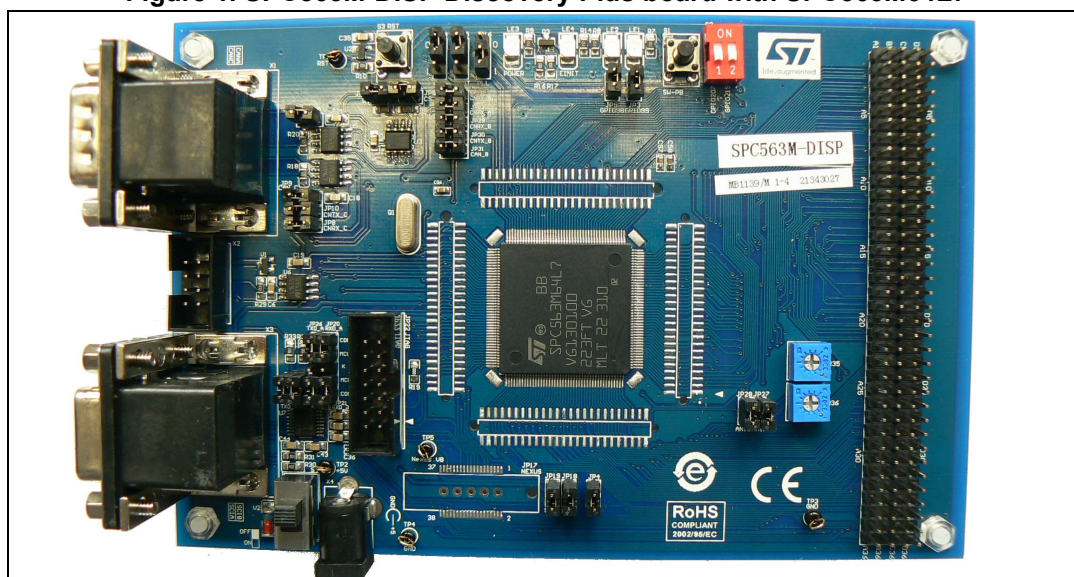
The numerous interfaces including CAN/SCI/K-LINE/DSPI/GPIO make the SPC56M-DISP an excellent starter kit for customer quick evaluation and project development.

The SPC56 M family is designed to address cost sensitive powertrain and transmission applications.

The SPC56 M line key functionality is time processing units (eTPU) a coprocessor to create events in sync with internal or external signals without flooding the CPU with interrupt to serve. SPC5Studio is available for download www.st.com/spc5studio.

SPC5Studio comes with HighTec GNU "C" compiler free fully featured 30-day trial version. An E2E community is available on ST web: https://my.st.com/public/STe2ecommunities/mcu.

The PCB, all components and all HW parts meet requirements of the applicable RoHS directives.

Contents

1 Getting started

1.1 Delivery checklist

The SPC56M-Discovery kit contains the following items:

- #1 SPC563M-DISP evaluation board
- #1 Power supply (output $5V_{DC}$, the center pin is positive)

The jumpers allow configuring the board to enable features and different flash modalities.

1.2 Setting up hardware and connections

To set up the hardware follow this procedure:

1. Remove the board and the PSU from the protective plastic envelopes
2. Check the SPC563M-DISP board; the jumpers are already configured. Set the main switch (S4) OFF position.
3. Connect the PSU to the mains. Note: a main plug adapter[a] can be used to connect the PSU mains Europlug to your local main socket.
4. Plug the PSU cable in the X4 connector (+$5V_{DC}$ input)
5. Set switch S4(ON)
6. The board is now supplied and ready to be used and programmed
7. The LED LE3 (red) confirms +5V supply is present
8. The demonstration code starts[b]; the user LEDs LE1 and LE2 are blinking and they are showing the microcontroller is working properly.

The jumpers configuration can be modified to configure the peripherals or to enable functions. Before modifying the HW or any jumpers, it is mandatory to switch off the board. The configuration will be valid after the board is switched on.

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a. The mains adapter is not included in the kit.

b. The demo software has been loaded during the test board procedure.

2 How to connect SPC563M-DISP to a programmer/debugger

The following procedure describes how to connect and flash the microcontroller to a programmer/debugger.

2.1 How to connect an adapter to the JTAG connector

The following procedure describes how to connect to, flash and debug the microcontroller using the JTAG. The procedure describes how to connect the PLS USB-JTAG adapter:

1. Turn off the board (Switch S4="OFF")
2. Connect the USB cable to the adapter
3. Plug the USB cable to the PC (port USB 2.0 or higher)
4. Plug the adapter 14pins female connector (2x7pin) in JP22 connector
5. Turn on the board (Switch S4="ON")
6. The board is ready to be programmed with the user software

Appendix A   General handling precautions

The following precautions are recommended when using the SPC563M-DISP board:

- Do not modify or manipulate the board when the DC supply is connected to the board
- Any equipment or tool used for any manipulation of the semiconductor devices or board modification should be shielded and connected to ground
- The connectors and cables should be plugged and removed when the board is off
- Do not supply the board with a DC source higher than 5V or with reverse polarity. It is recommended to use anti-static tools

Revision history

Table 1. Document revision history

Date	Revision	Changes
09-Dec-2013	1	Initial release.
05-Sep-2017	2	Deleted *section 3 How to develop, program and compile a project using SPC5studio* and *Appendix B Reference document*.

IMPORTANT NOTICE – PLEASE READ CAREFULLY