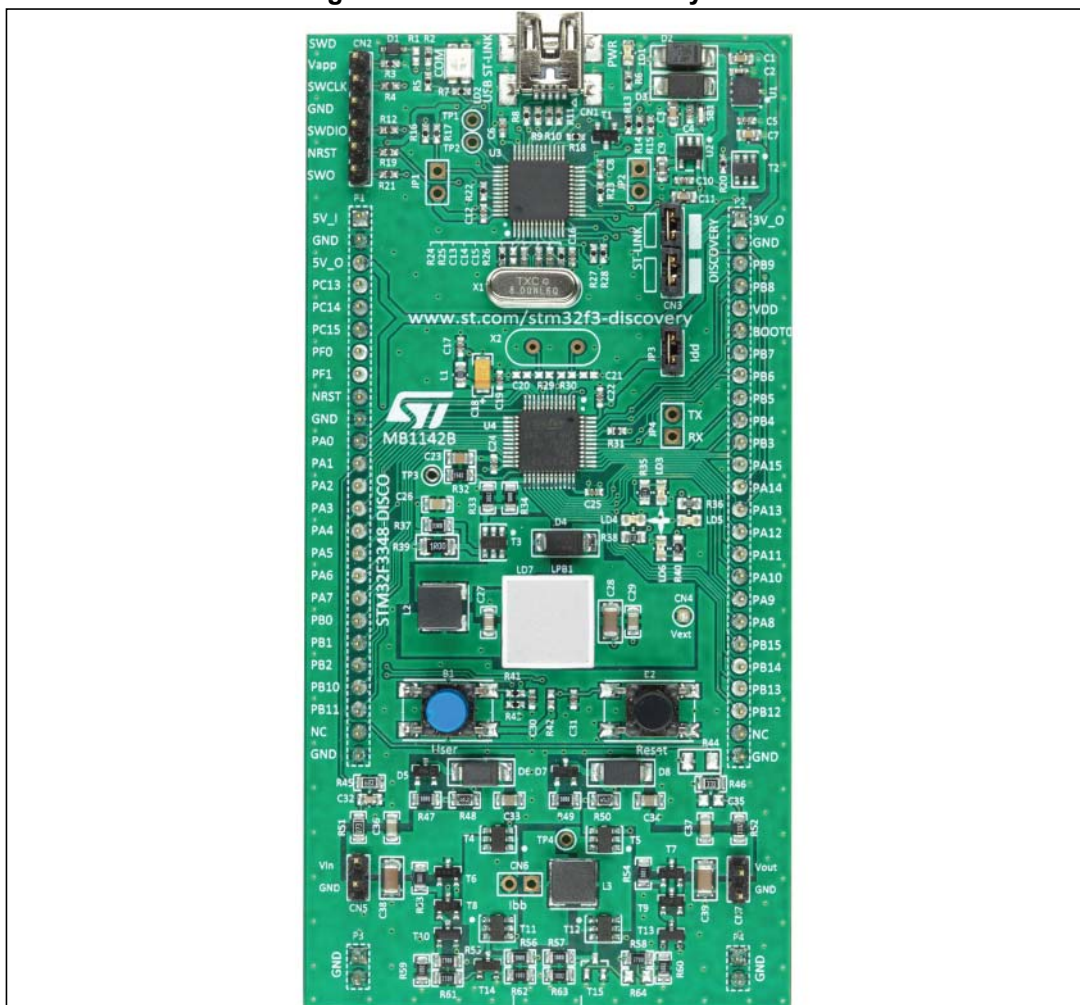Getting started with STM32F334 Discovery kit

Introduction

This document describes the software, firmware environment and development recommendations required to build an application around the STM32F334 Discovery kit.

The STM32F334 Discovery kit (32F3348DISCOVERY) is a low-cost and easy-to-use development kit to quickly evaluate and start a development with an STM32F3 series ARM® 32-bit Cortex®-M4 high-performance microcontroller. Before installing and using the product, please accept the Evaluation Product License Agreement available at www.st.com/epla.

For more information on the STM32F334 Discovery kit visit www.st.com/stm32f3-discovery.

Figure 1. STM32F334 Discovery board

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1   References

- STM32F333x4, STM32F333x6, STM32F333x8 Datasheet: ARM® Cortex®-M4 32-bit MCU with FPU, up to 64 KBytes of Flash, 16 KBytes of SRAM, 2 ADCs, 3 DAC channels, 3 comp., 1 PGA, 10-ch. high-resolution timer.
- RM0364 - Reference manual - STM32F334xx advanced ARM®-based 32-bit MCUs.
- Forum user question / discussion available at my.st.com
- UM1735 STM32F334 discovery board.
- UM1736 Getting Started with STM32F334 discovery software development tools.

2 Quick start

The STM32F334 Discovery kit demonstration software is already preloaded in the Flash memory on the board. The latest versions of the source code and associated documentation can be downloaded from www.st.com/stm32f3-discovery.

The following sections include step-by-step how to start using the STM32F334 Discovery board demonstration software.

2.1 Hardware requirements

The requirements to configure the STM32F334 Discovery board and start with the demonstration software are as follows:

- One 'USB type A to Mini-B' cable to power up the STM32F334 Discovery board from the USB ST-LINK (USB connector CN1)
- Check jumper positions on the board
    - CN3 ON (Discovery mode).
    - JP3 (I_{dd}) ON

Figure 2. Hardware environment
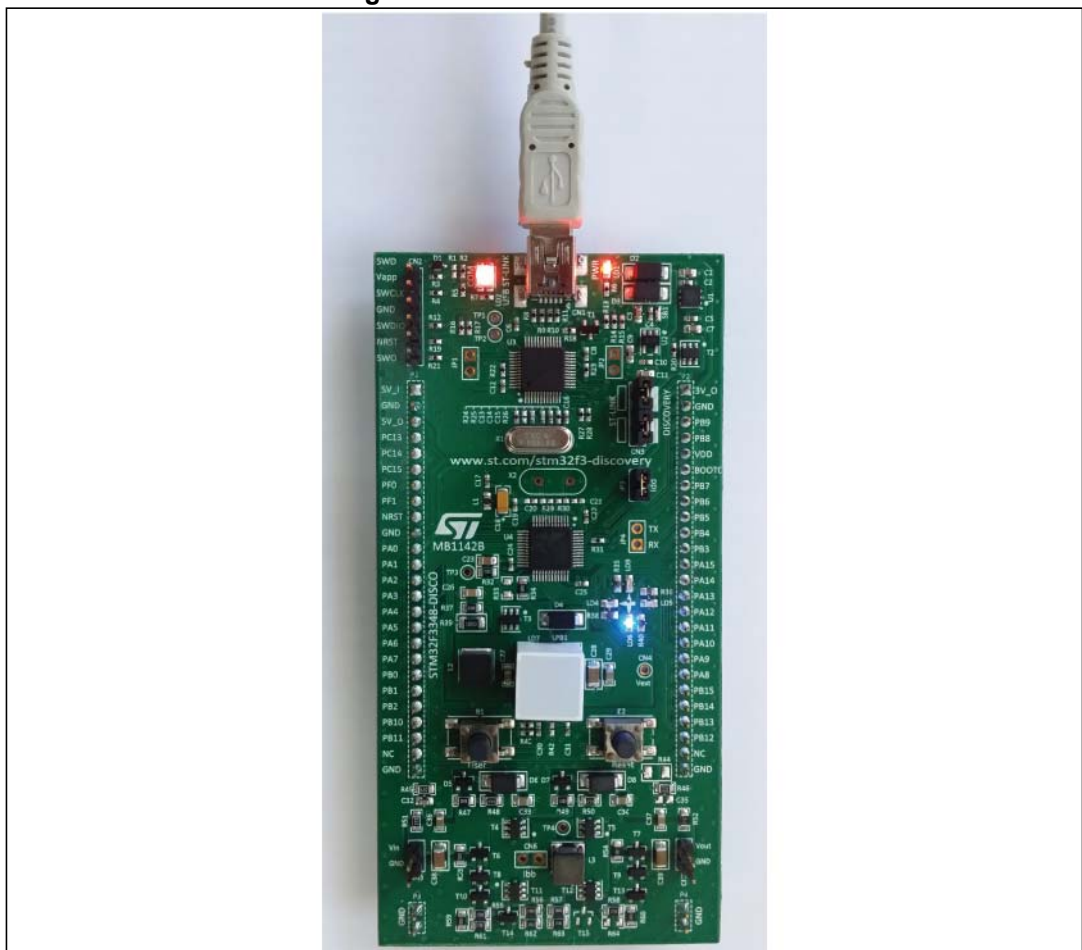
2.2 Running the pre-loaded demonstration software

Follow the sequence below to launch the pre-loaded demonstration application:

1. Connect the STM32F334 Discovery board (connector CN1) to a PC using the USB-type-A to Mini-B cable to power the board. The red LED LD1 (PWR) and LD3 (COM) light up, and fours LEDs (LD3, LD4, LD5 and LD6) blink continuously until button B1 is pressed.
2. Each click on user button B1 changes the executed function, follow the sequence below (Function1 to Function4) to launch the demo application:

Table 1. User button B1 functions

| Function	High brightness range	Signalling LED
1	Automatic dimmer (scans the entire brightness range)	LD3/LD6 indicates up/down variation
2	Flash mode ON	LD4/LD5 blinking
3	Mode OFF	LD3 to LD6 blinking
4	Manual dimmer (brightness adjusted by maintaining B1 pushed)	LD3/LD6 indicates up/down variation

3 Firmware package

To get started with the STM32F334 Discovery kit, a firmware package that contain a set of IPs examples and demonstration of some features are available at www.st.com/stm32f3-discovery.

3.1 Package description

The STM32F334 Discovery firmware applications and related documentations are provided in one single package and supplied in one single zip file. The extraction of the zip file generates one folder, STM32F3348-Discovery_FW_VX.Y.Z, which contains the following subfolders:

Figure 3. Firmware Package contents
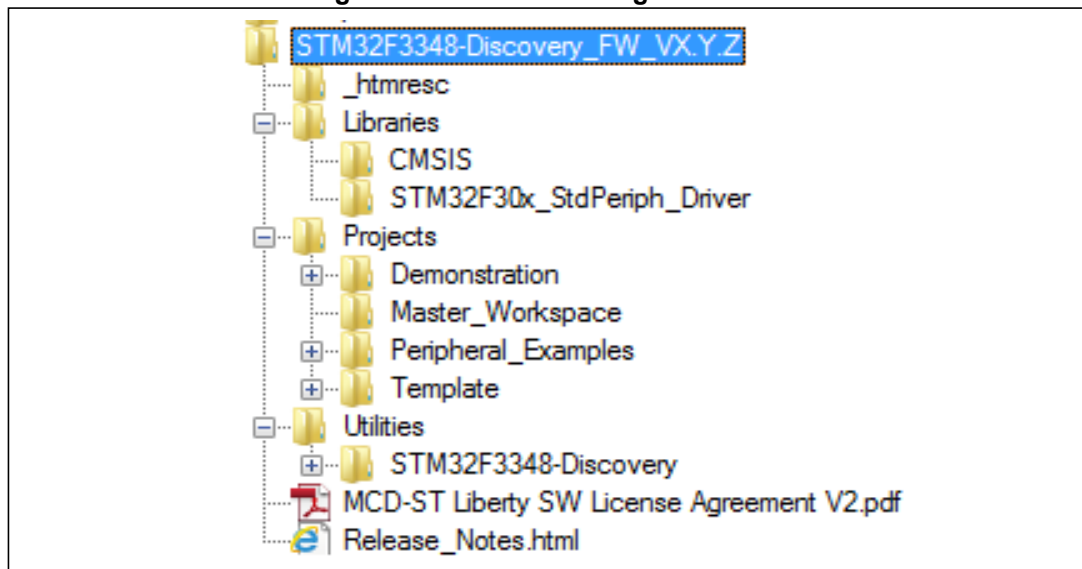
Libraries folder:

- **CMSIS** subfolder: Cortex-M4 CMSIS files
- **STM32F30x_StdPeriph_Driver** subfolder: standard peripherals drivers

Project folder:

- **Demonstration** subfolder: firmware of preloaded demo
- **Master_Workspace** subfolder: common project for all examples
- **Peripheral_Examples** subfolder: examples ready to run
- **Template** subfolder: pre-configured project templates

Utilities folder:

- STM32F3348-Discovery subfolder: for the abstraction layer of the supported board

3.2 Programming firmware application

3.2.1 IDE requirements

To start programming, user must:

- Install the preferred Integrated Development Environment (IDE).
- Install the ST-LINK/V2-1 driver from the ST web site.

Note: *Required information to download and install desired IDE and ST-LINK/V2-1 are detailed in Getting started with STM32F334 Discovery software development tools.*

3.2.2 Programming application

Several IP examples are provided with the firmware package (see Figure 3) under STM32F3348-Discovery_FW_VX.Y.Z /Projects/ and the user must use one of the three tool chains supported to program applications on the STM32F3348-DISCO board.

To program application the Template example, follow the sequence below:

1. Open application folder STM32F3348-Discovery_FW_VX.Y.Z /Projects/Template.
2. Select the desired IDE project (EWARM for IAR, MDK-ARM for Keil or TrueSTUDIO for Attolic)
3. Double click on the project file (for example: *Template.eww* for EWARM)
4. Rebuild all files: Project->Rebuild all
5. Load project image: Project->Debug
6. Run program: Debug->Go

The demo software, as well as other software examples that allow you to discover the STM32F3 series features are available at www.st.com/stm32f3-discovery.

4 Revision history

Table 2. Document revision history

Date	Revision	Changes
15-May-2014	1	initial release

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