

# SofTec Microsystems IDB-ST52F514 Evaluation Board For STMicroelectronics ST FIVE 508 FLASH Family

## User's Manual

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### 1. Introduction

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#### Overview

The IDB-ST52F514 Evaluation Board demonstrates the capabilities of the ST FIVE 508 FLASH family of microcontrollers. The IDB-ST52F514 Evaluation Board can be used as a standalone application or with an emulator system, such as inDART-STX, through an ISP connection.

#### Board Features

The IDB-ST52F514 Evaluation Board has the following hardware features:



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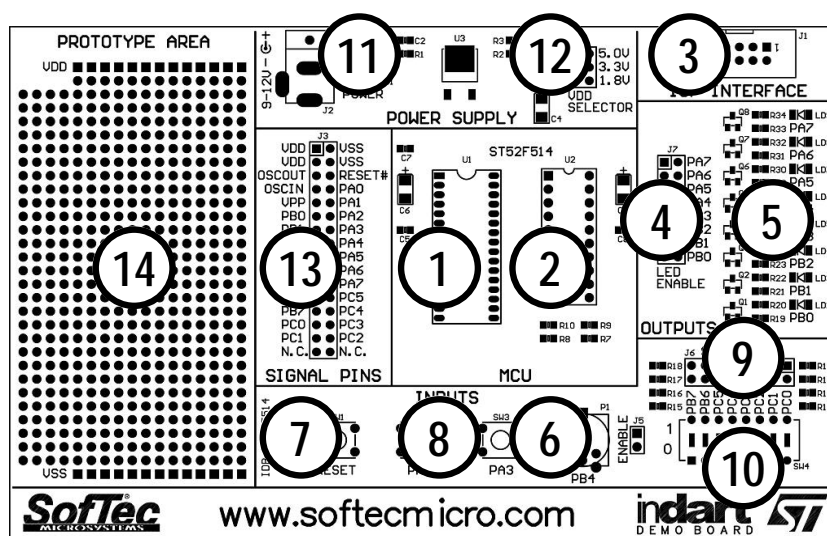
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1. A microcontroller belonging to the ST FIVE 508 FLASH family, either in SDIP32 or DIP20 package, already programmed with a demo application;
2. Two sockets (to accommodate SDIP32 and DIP20 devices);
3. An ISP connector;
4. Eight jumpers to connect/disconnect each of the eight LEDs to/from their respective Port A and Port B pins;
5. Eight high-efficiency (low-current) LEDs connected to Port A and Port B;
6. A potentiometer, together with a jumper to connect/disconnect it to/from PB4;
7. A push-button switch connected to RESET;
8. Two push-button switches connected to PA2 and PA3, respectively;
9. Eight jumpers to connect/disconnect each of the eight DIP-switches to/from their respective Port B and Port C pins;
10. Eight general-purpose DIP-switches connected to Port B and Port C;
11. A connector for a 9-12-V, 200-mA (unregulated) power supply;
12. Three jumpers to select the microcontroller  $V_{DD}$  voltage: 1.8 V, 3.3 V or 5.0 V (the 1.8 V setting only works with low-power devices);
13. A connector area to access the I/O pins of the microcontroller for expansion prototyping;
14. A prototyping area.



The IDB-ST52F514 Demo Board

## Supported Devices

The IDB-ST52F514 Evaluation Board supports the following devices:

- ST52F500;
- ST52F503;
- ST52F510;
- ST52F513;
- ST52F514;
- And any future pin-to-pin compatible device.

## Recommended Reading

- ST FIVE 508 family microcontroller datasheets;
- inDART-STX User's Manual.

## 2. Getting Started

### Overview

The IDB-ST52F514 Evaluation Board may be used as a standalone application or with an ISP-based emulator/programmer (host mode).

### Standalone Mode

The IDB-ST52F514 Evaluation Board comes with the microcontroller pre-programmed with a sample application. Before to try out the sample application, you must verify that the board's jumpers are set correctly.

- Make sure that the "VDD SELECTOR" (J4) jumper selects the appropriate voltage. Unless you are using a low-voltage device, leave the jumper to the "5.0V" position.
- Make sure that all of the "LED ENABLE" jumpers (J7) and the "POTENTIOMETER ENABLE" jumper (J5) are inserted.
- Make sure that all of the "SW ENABLE" jumpers (J6) are inserted.
- Make sure that the pre-programmed sample device is in the appropriate socket on the board. Finally, power up the board.

The power connector accepts 9-12 V DC, 200-mA wall plug-in power supply with a 2.1 mm pin and sleeve plug with positive in the center and sleeve as ground.

Upon powering up the board, the green "POWER" LED turns on.

You can now try out the sample application:

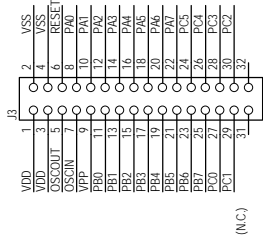
- By changing the DIP-switches status, the LEDs turn on or off accordingly;
- By holding down the PA3 push-button, all of the LEDs turn on;
- By holding down the PA2 push-button and rotating the potentiometer, you affect the results of the A/D conversion, and the value of each conversion is displayed (in a linear bar fashion) on the LEDs. Please note that, on devices which do not feature the A/D peripheral, the potentiometer acts like an on/off switch: when the voltage is below the PB4 input threshold the LEDs are turned off; when the voltage is above the PB4 input threshold the LEDs are turned on.

### Host Mode

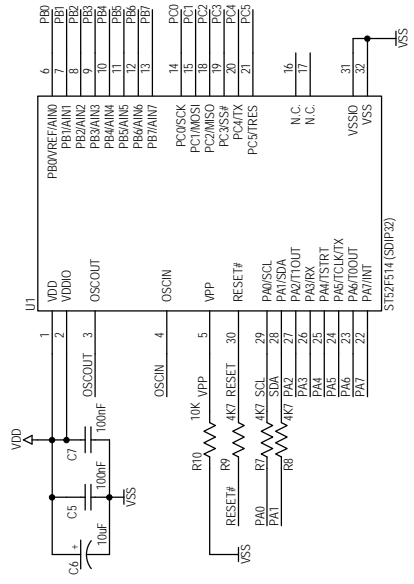
The IDB-ST52F514 Evaluation Board can be used in conjunction with a ISP-based emulator/programmer, such as SofTec Microsystems' inDART-STX In-Circuit Debugger/Programmer.

If you use the evaluation board with SofTec Microsystems' inDART-STX, a sample application similar to that described in the previous section can be executed in "Host" mode, where the program execution is controlled by the host PC. You can use the PC, additionally, to debug the application by, for example, execute the program step by step and watching how the microcontroller registers vary, by using the

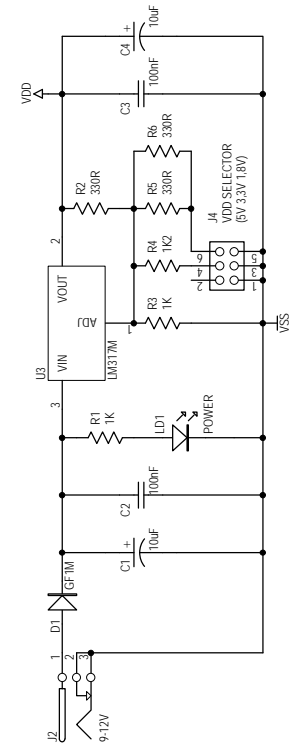
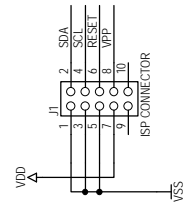
STMicroelectronics Visual FIVE IDE provided with inDART-STX. Please refer to the inDART-STX user's manual for a step-by-step tutorial.



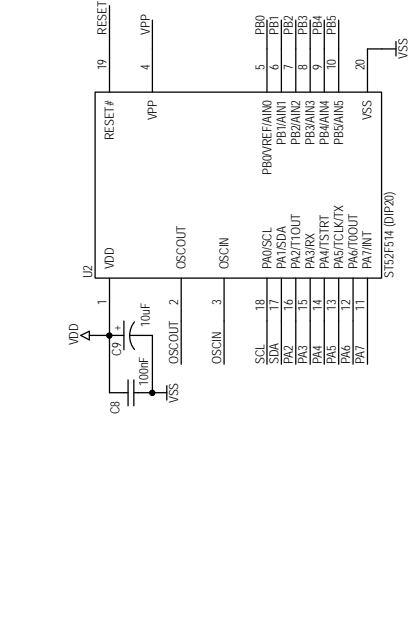
**SIGNAL PINS**



**ISP INTERFACE**

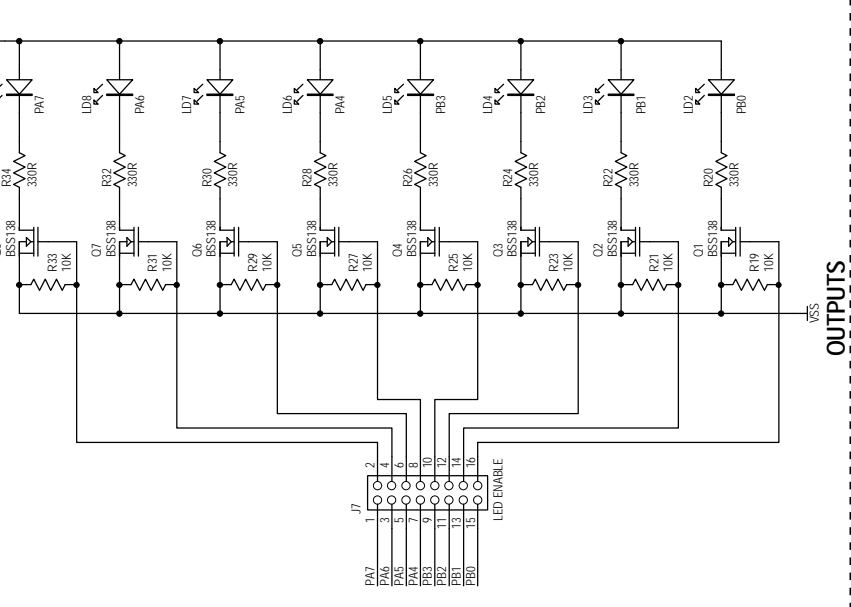
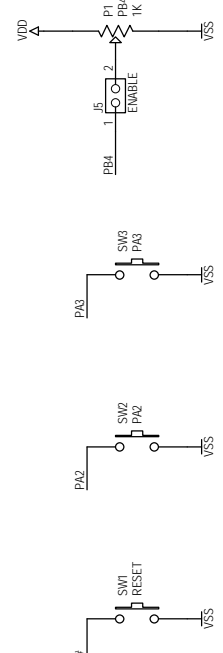


**POWER SUPPLY**



**MCU**

**INPUTS**



**OUTPUTS**

