HUADA SEMICONDUCTOR

HC32F460 EVB INTRODUCTION

Application Development Department

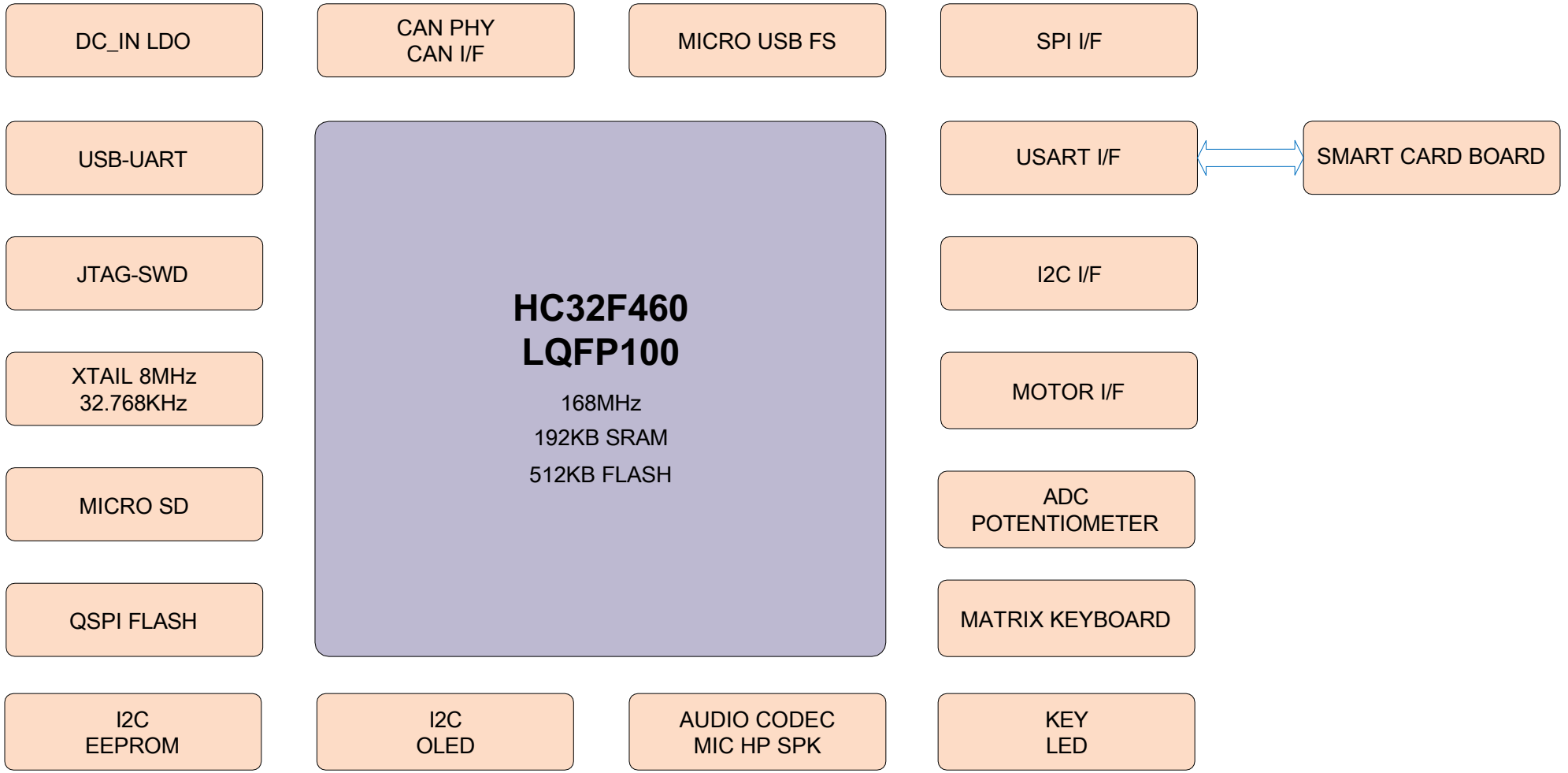
3/7/2019

CEC 中国电子

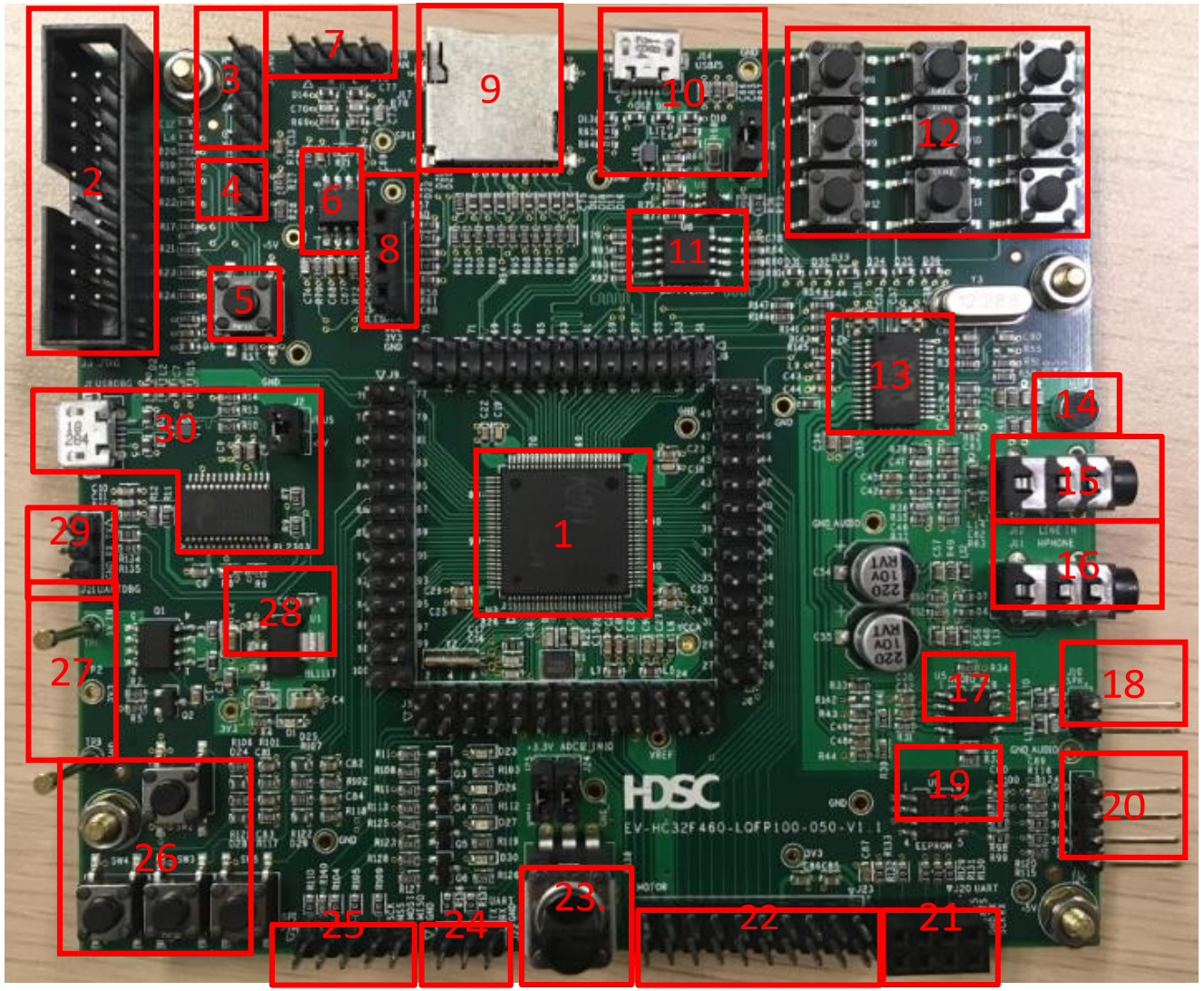
When using this development board:

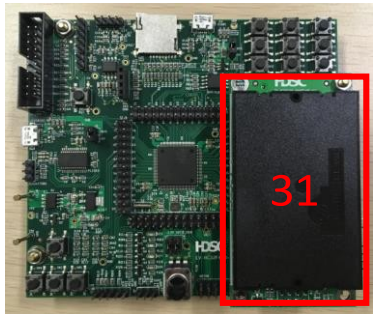
- In general (e.g. when using IAR, KEIL debugging), please remove the MD Pin (J7) jumper cap and short the MD (J7) only when using ISP function.
- When using the ADC to sample the potentiometer, you need to short J24, J25.

System Block Diagram



Module Description





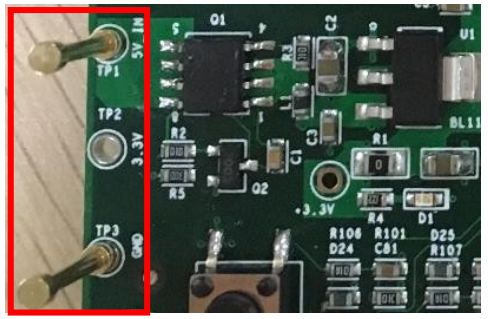
1. HC32F460
2. JTAG
3. SWD
4. MODE PIN
5. RESET
6. CAN PHY
7. CAN I/F
8. OLED I/F
9. Micro SD
10. USB FS
11. QSPI FLASH
12. Matrix Keyboard
13. AUDIO CODEC
14.
15. LINE IN
16. HPHONE
17. AUDIO PA
18. SPEAKER
19. EEPROM
20. I2C I/F
21. USART
22. Motor Control
23. Potentiometer
24.
25. SPI
26. KEYs
27. DC IN
28. LDO
29. UART
30. USB-UART
31. USB debug
32. SMART CARD

Platform power supply

EVB can be powered in 3 ways

1. **DC IN**

- Direct power supply via TP1 (5V) and TP3 (GND)

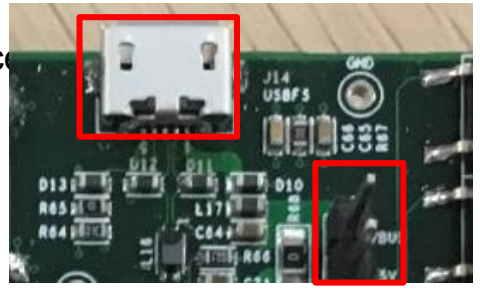


2. **USB-UART (J1)**

- Use Mircro USB cable to supply power through J1, jump cap J2 needs to be s

3. **USB-Device (J14)**

- Power supply via J14 (Micro USB Cable) when using the MCU as a USB-Devic
  The jump cap J15 needs to be shorted.

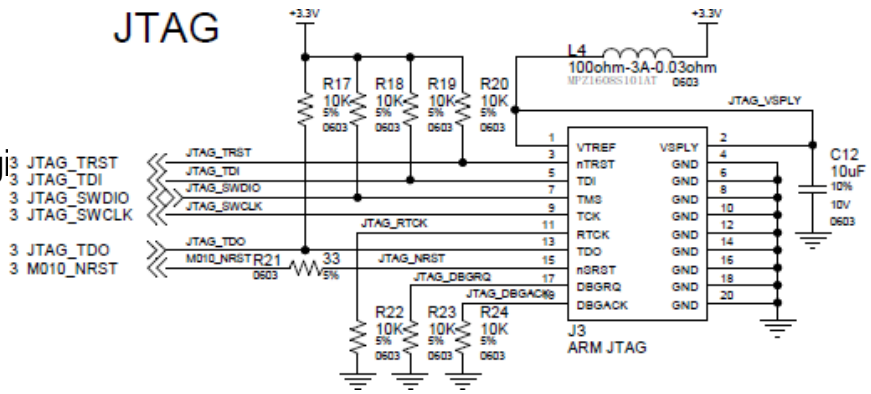


Debugging Interface

Three debugging interfaces

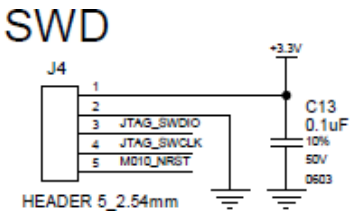
1. **JTAG**

- J3, the standard JTAG interface circuit, support JTAG debuggi



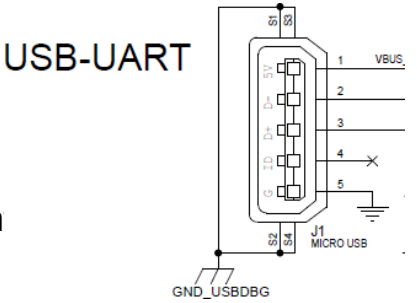
2. **SWD**

- J4, 5-wire SWD debug interface, support SWD debug



3. **UART**

- J1, USB-UART circuit, connected to MCU's UART, can print debug in



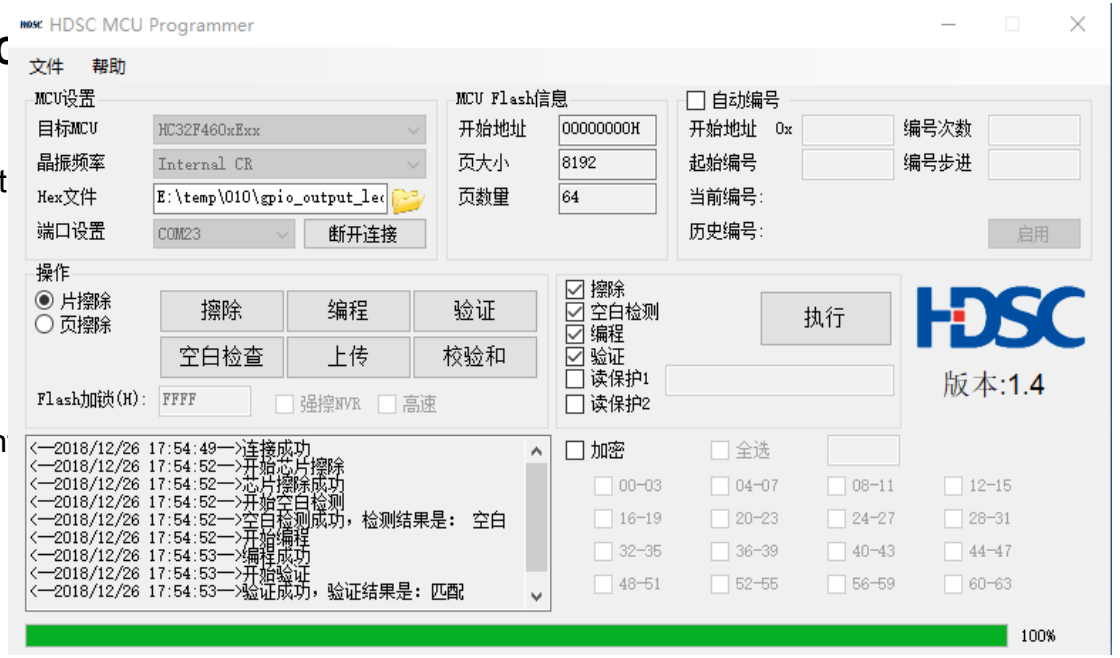
ISP programming

The upper computer ISP tool, which can program the MC

- Short J7 to pull down MD Pin
- Uart connection: GND, RX, TX are connected to J4 pin 2, 3, 4 respect

GND	J4 GND
RX	J4 DIO
TX	J4 CLK

- Short J2, then supply power to EVB via J1
- After power on, short press the Reset button (SW1) to put the MCU in
- Open 'ISP_develop.exe' (as shown on the right)
  - Target MCU - HC32F460xExx
  - Crystal Frequency - Fixed to Internal CR
  - Hex file - Target file
  - Port settings - depending on the COM port recognized by the PC



- Click 'Connect'
- When the connection is successful, the corresponding prompt will appear in the lower half of the message box
- Click 'Execute' and wait until the progress bar shows 100%, indicating that the code download is complete
- Disconnect the MD (J7), press the Reset button (SW1) briefly and the application will start running.

Development Kit Description

```
HC32F460_SDK_V1.0.0
├  HC32F460 EVB Introduction.pdf                                  -->| HC32F460评估板说明
├─仿真器
│      CDC_Drivers.zip                                           -->| HDSC仿真器驱动
│      Cortex-M仿真器用户手册Rev1.0.pdf                          -->| HDSC仿真器用户手册
├─最小开发工程模板
│      hc32f460_template_v1.0.1.zip                              -->| 各型号最小开发工程模板
├─硬件Demo板参考原理图
│      EV-HC32F460-LQFP100-050-V12_SCH_20190111.pdf              -->| HC32F460评估板主板原理图
│      EV_HC32F460_SmartCard_V12_SCH_20180108.pdf                -->| 智能卡座板原理图
├─编程工具
│      (EXE)HDSC MCU Programmer V1.4.zip                         -->| 在线编程PC软件
├─集成开发环境支持包
│  └─HC32F460_IDE_v1.0.0
│      ├─IAR_IDE                                                 -->| IAR配置文件
│      └─MDK_IDE                                                 -->| MDK Pack包
└─驱动库及样例
       hc32f46x_ddl_v1.0.3.zip                                   -->| HC32F460设备驱动库及样例
```

Sample code description

This development kit provides the HC32F460 peripheral driver library and sample code

Drive path

... \hc32f46x_ddl\driver\src

... \hc32f46x_ddl\driver\inc

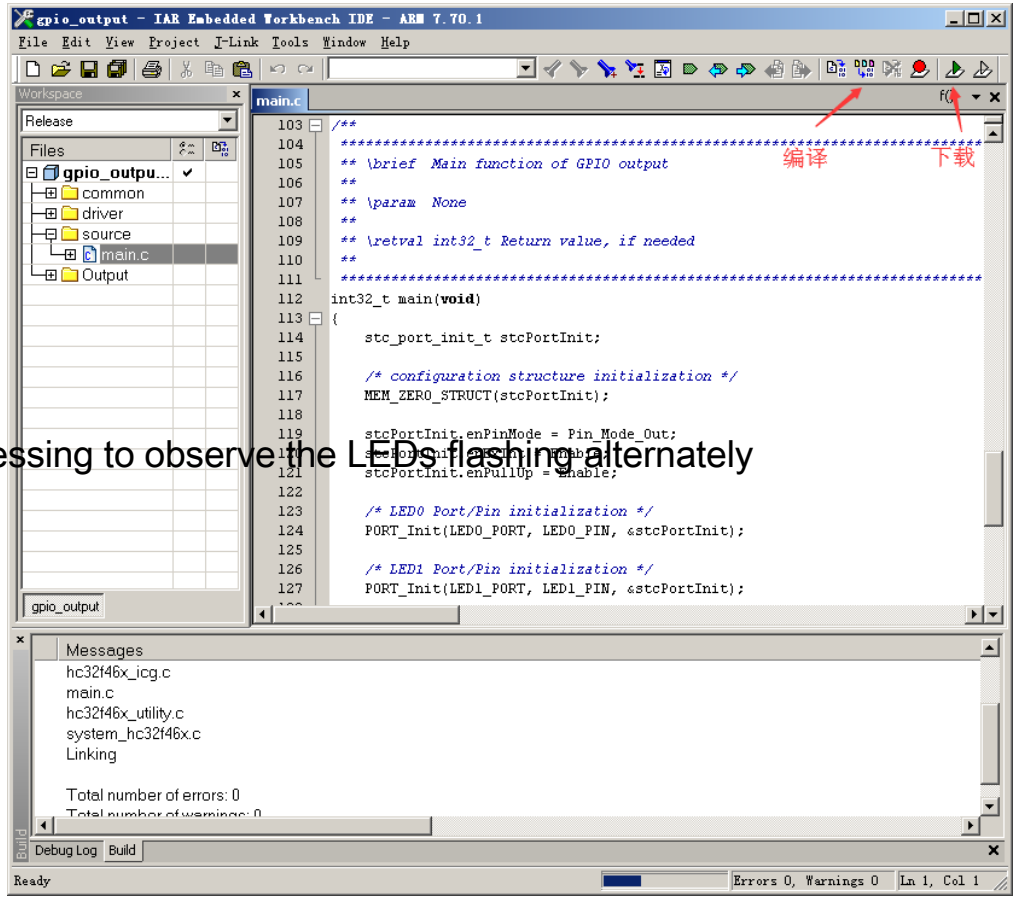
Sample paths (IAR and MDK projects)

. .hc32f46x_ddl\example

Sample code example

The following is an example of gpio_output

- Connect the emulator J-link to power the EVB
- Open project file
  ... \hc32f46x_ddl\example\gpio\gpio_output\EWARM\gpio_output.eww
- Compile → Download
- 'F5' running at full speed
- Confirm the operation of the sample code's GPIO output function by pressing to observe the LEDs flashing alternately



Other sample projects can be viewed by looking at '... Readme.txt under \hc32f46x_ddl\example\{module}\{function}\' path to understand its workflow and expected phenomena.

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Thanks!