

# Open407V-D Testing Guide

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## Preparation

### Basic settings of the experiment

- Programming Interface: SWD
- Serial port settings: Select a proper COM port, configure as follows:
  - Baud rate:115200;
  - Data bits:8;
  - Stop bits:1;
  - Parity bits: None;
  - Flow control: None
- Power supply: 5V power supply is required.
- Hardware Connection: For the tests that require the serial port converter for debugging, please connect the converter to the board via pin headers, and then connect it to PC through USB cable.

## ADC+DMA

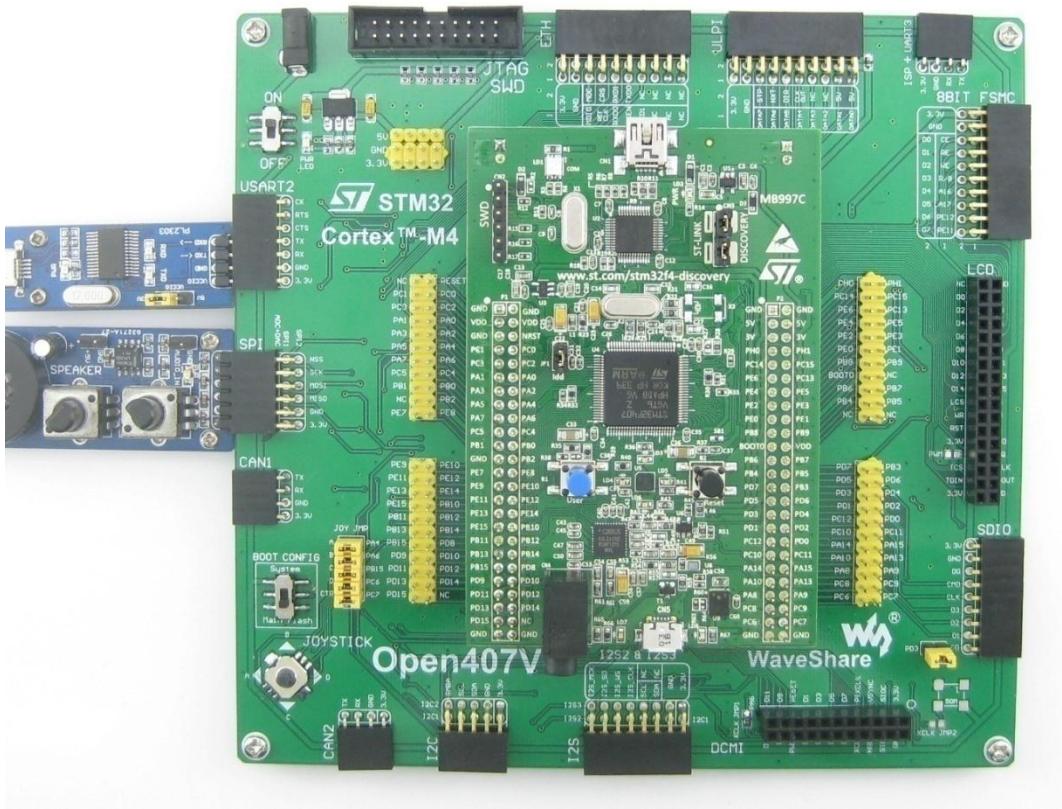
### Overview

ADC analog voltage acquisition demo

### Hardware Connection

- Connect the serial port converter to the board via USART2 interface.
- Connect the Analog Test Board to the board via SPI1 interface.

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant as adjusting the resistor on the module.

## CAN1 TO CAN2-Normal

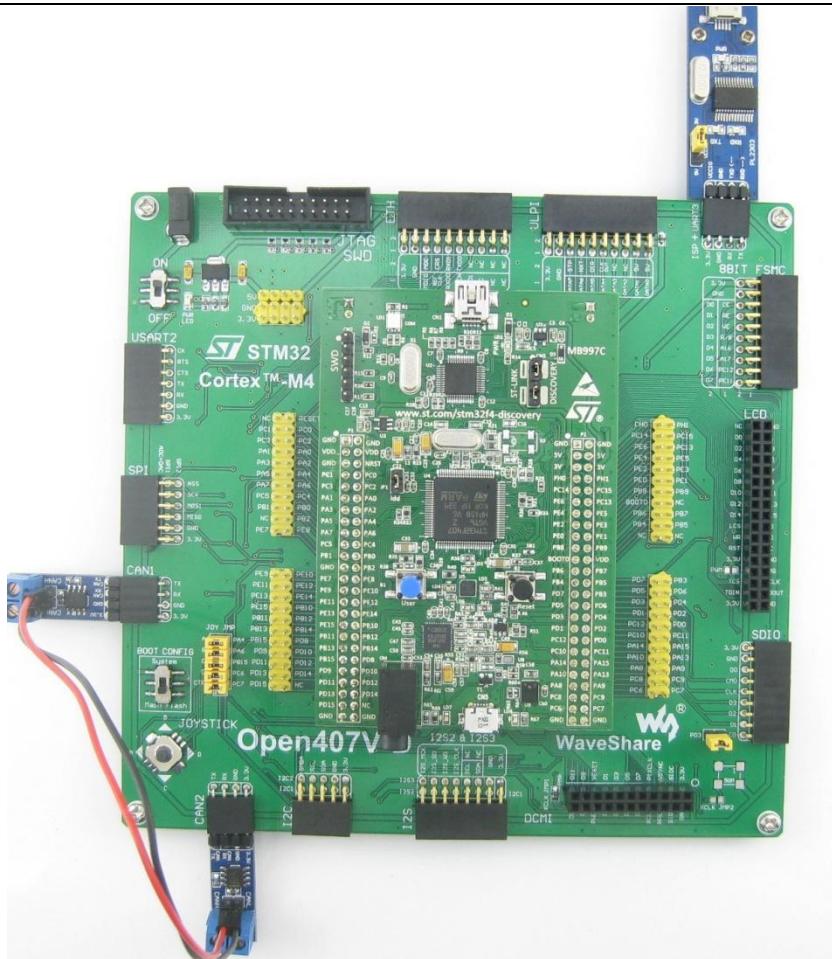
## Overview

CAN1 TO CAN2-Normal demo

## Hardware Connection

- Connect the serial port converter to the board via USART3.
- Two "SN65HVD230 CAN Board" are required for this test.
- Connect the two "CAN Board" to the onboard CAN1, CAN2 interface respectively.
- Connect the two "CAN Board" by jumper wires (CANH <-> CANH, CANL <-> CANL).

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Press the JOYSTICK and Check the results on the serial debugging assistant.

## DCMI\_OV7670

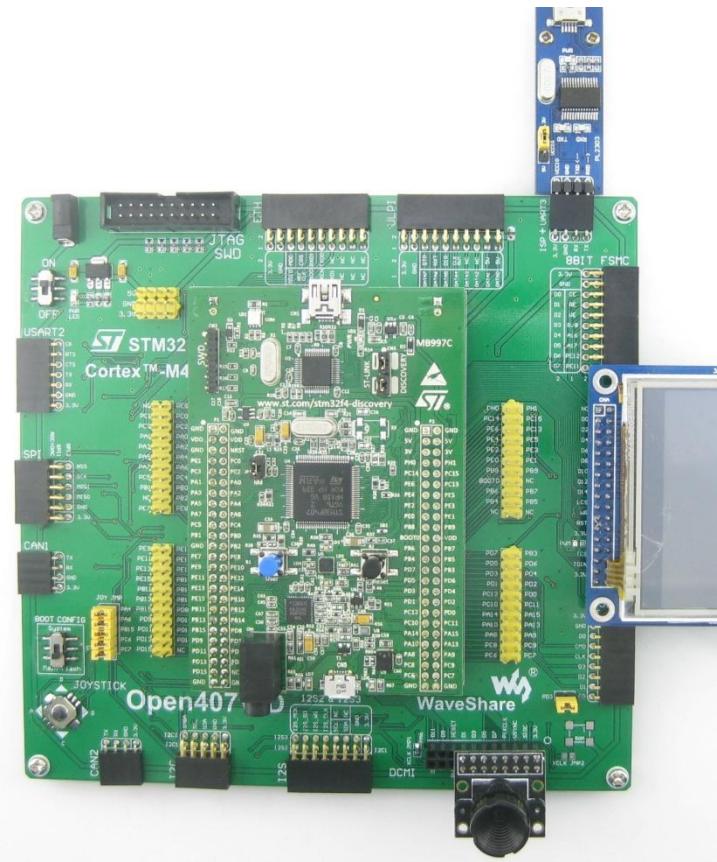
## Overview

OV7670 Digital camera data acquisition and display on the LCD

## Hardware Connection

- Connect the OV7670 Camera Board to the board via DCMI interface.
- Connect the serial port converter to the board via USART3.
- Connect the 3.2inch 320x240 Touch LCD (A) to the board via LCD interface.

As shown in the figure below:



## Operation and Result

Images acquired from the camera will be displayed on the LCD.

### DCMI\_OV9655

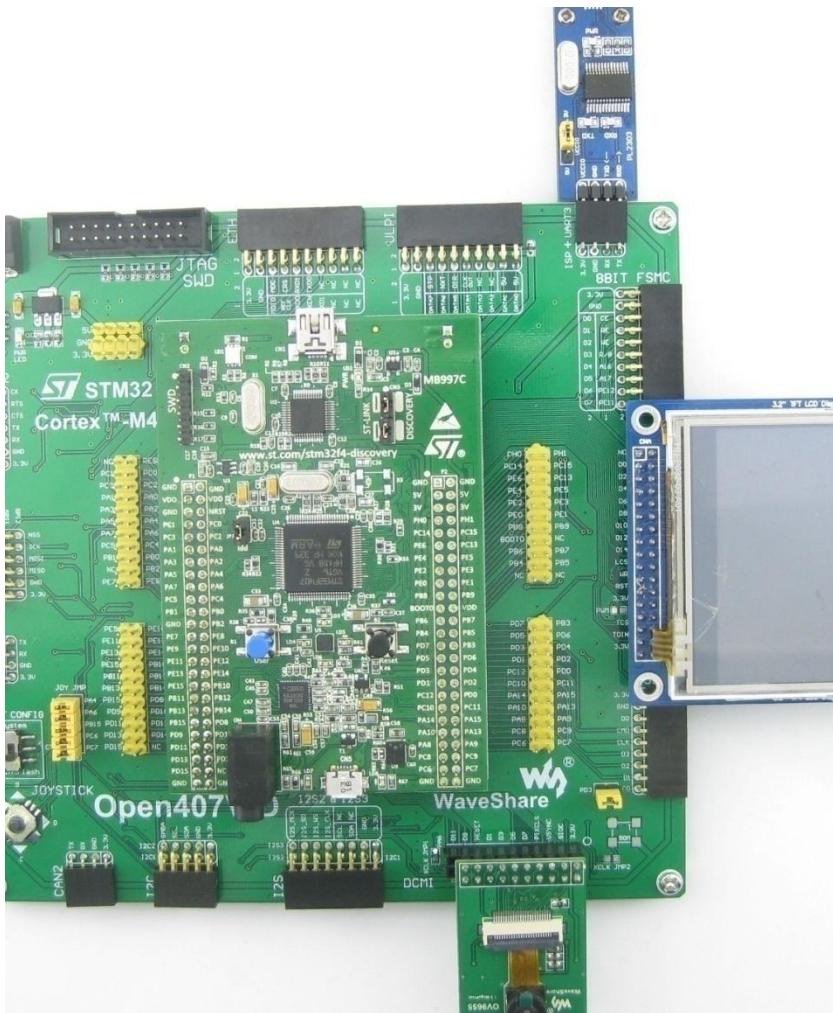
## Overview

OV9655 Digital camera data acquisition and display on the LCD

## Hardware Connection

- Connect the OV9655 Camera Board to the board via DCMI interface.
- Connect the serial port converter to the board via USART3 interface.
- Connect the 3.2inch 320x240 Touch LCD (A) to the board via LCD interface.

As shown in the figure below:



## Operation and Result

Images acquired from the camera will be displayed on the LCD.

## I2C

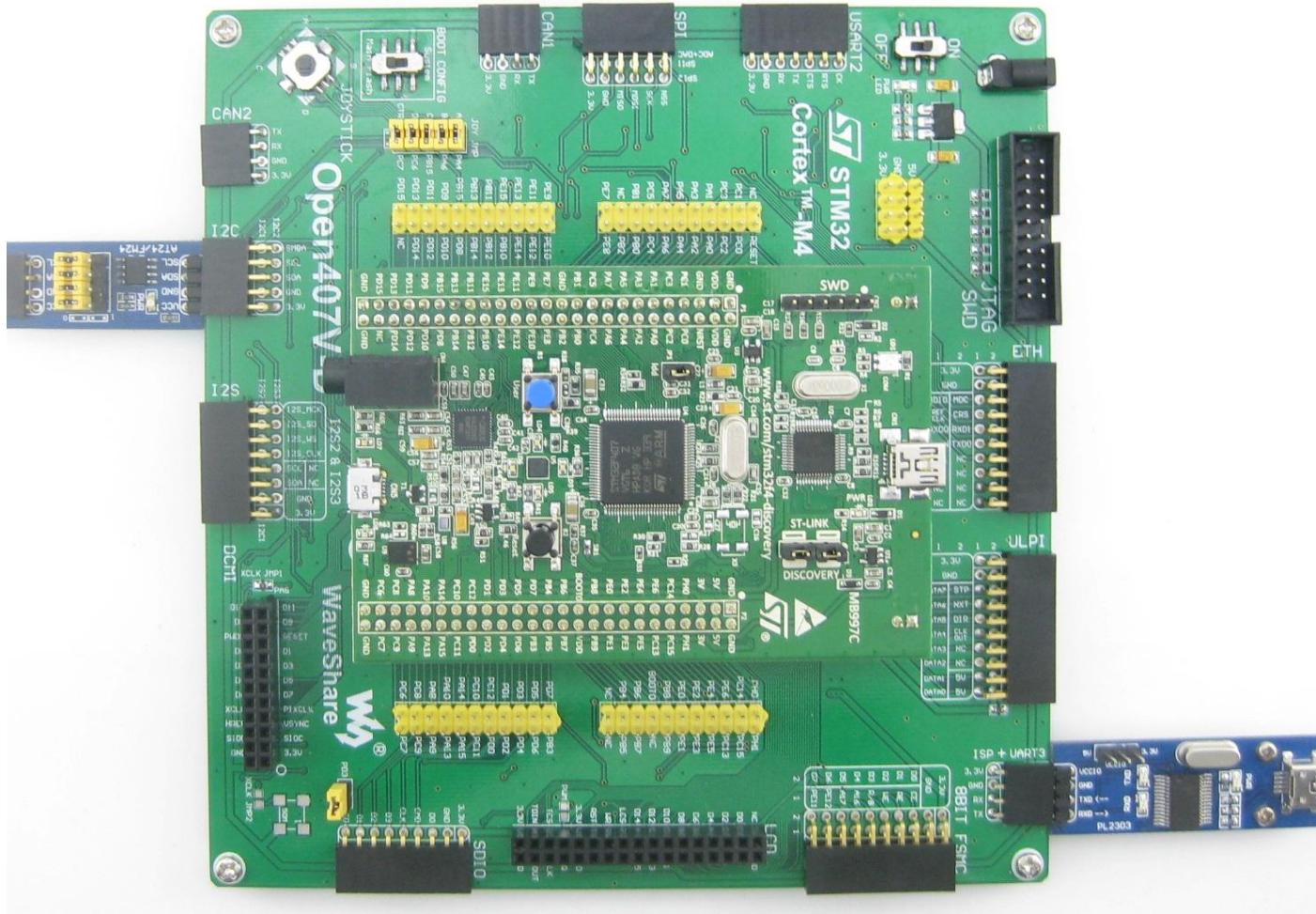
### Overview

I2C EEPROM demo

### Hardware Connection

- Connect the serial port converter to the board via USART3 interface.
- Connect the AT24CXX EEPROM Board to the board via I2Cx interface (I2C1 or I2C2, depending on the software configuration).

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

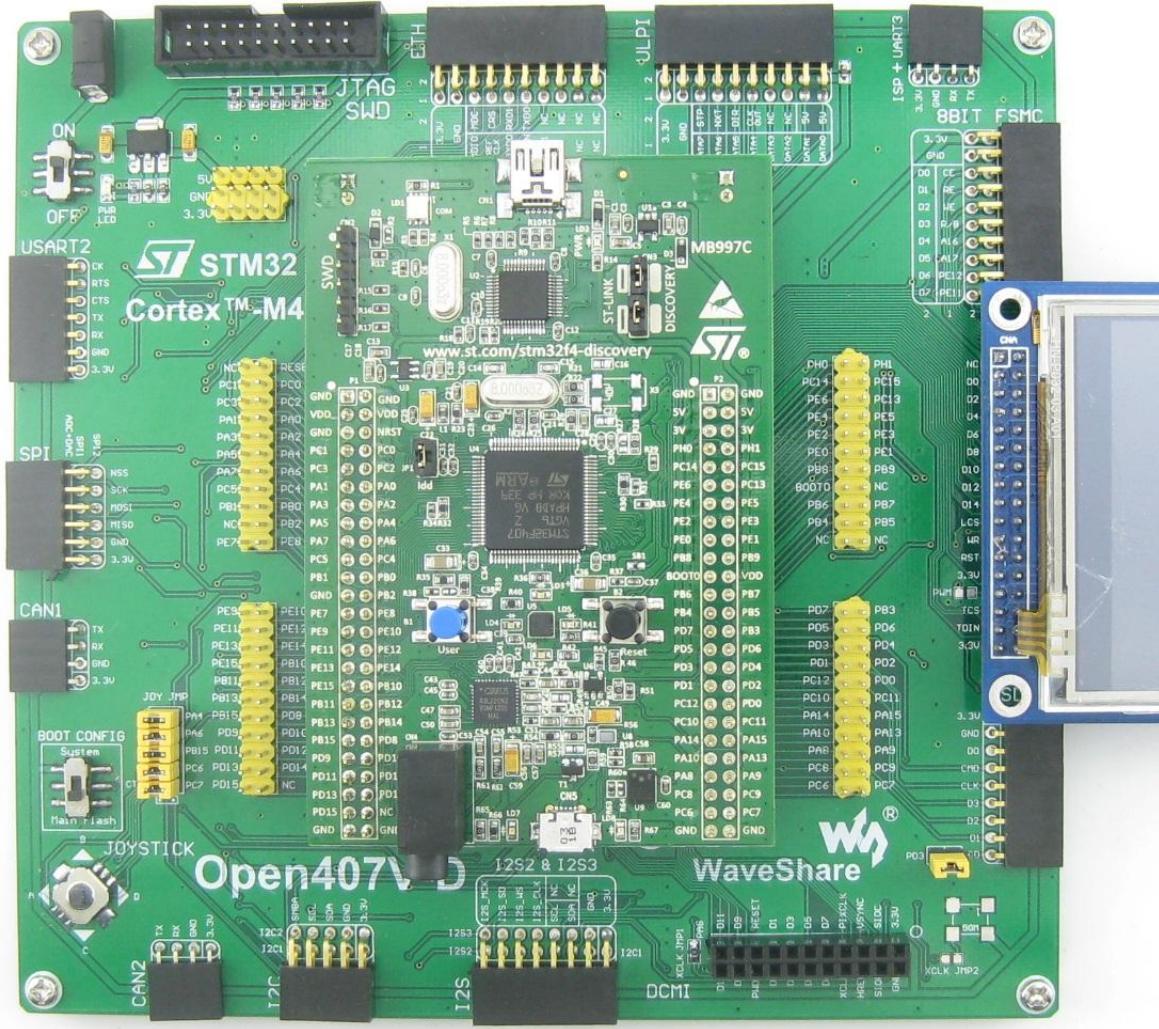
## LCD-HY32D\_FSMC

## Overview

LCD display demo

## Hardware Connection

- Connect the 3.2inch 320x240 Touch LCD (A) via LCD Interface to the board. As shown in the figure below:



## Operation and Result

Information will be displayed on the LCD.

## Nand Flash\_PCB0

## Overview

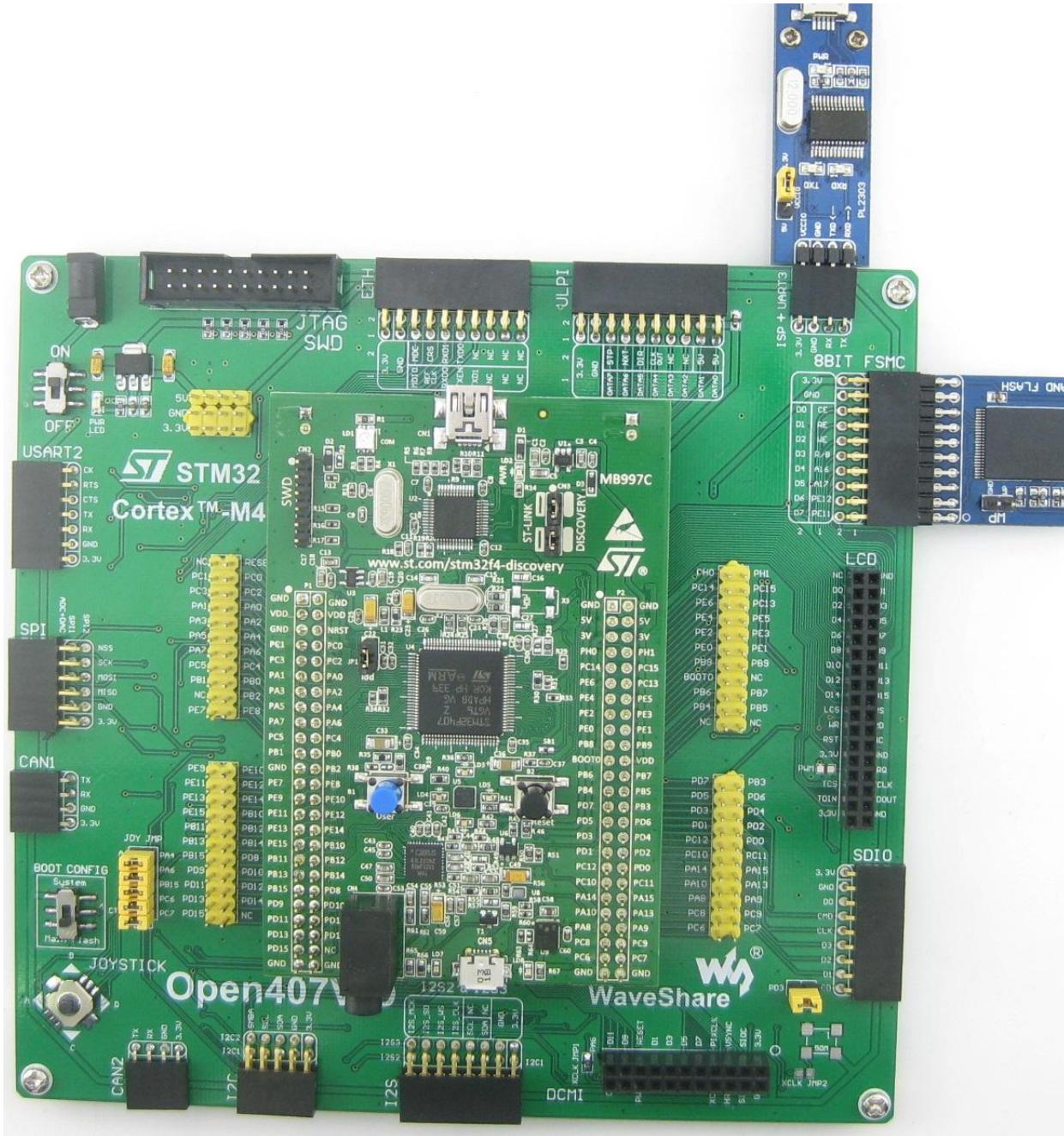
Nand Flash\_PCB0 demo

## Hardware Connection

- Connect the K9F1G08U0C NandFlash Board (K9F1G08U0C PCB0 onboard) to the board via 8BIT FSMC interface.

- Connect the serial port converter to the board via USART3.

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

## Nand Flash\_SCB0

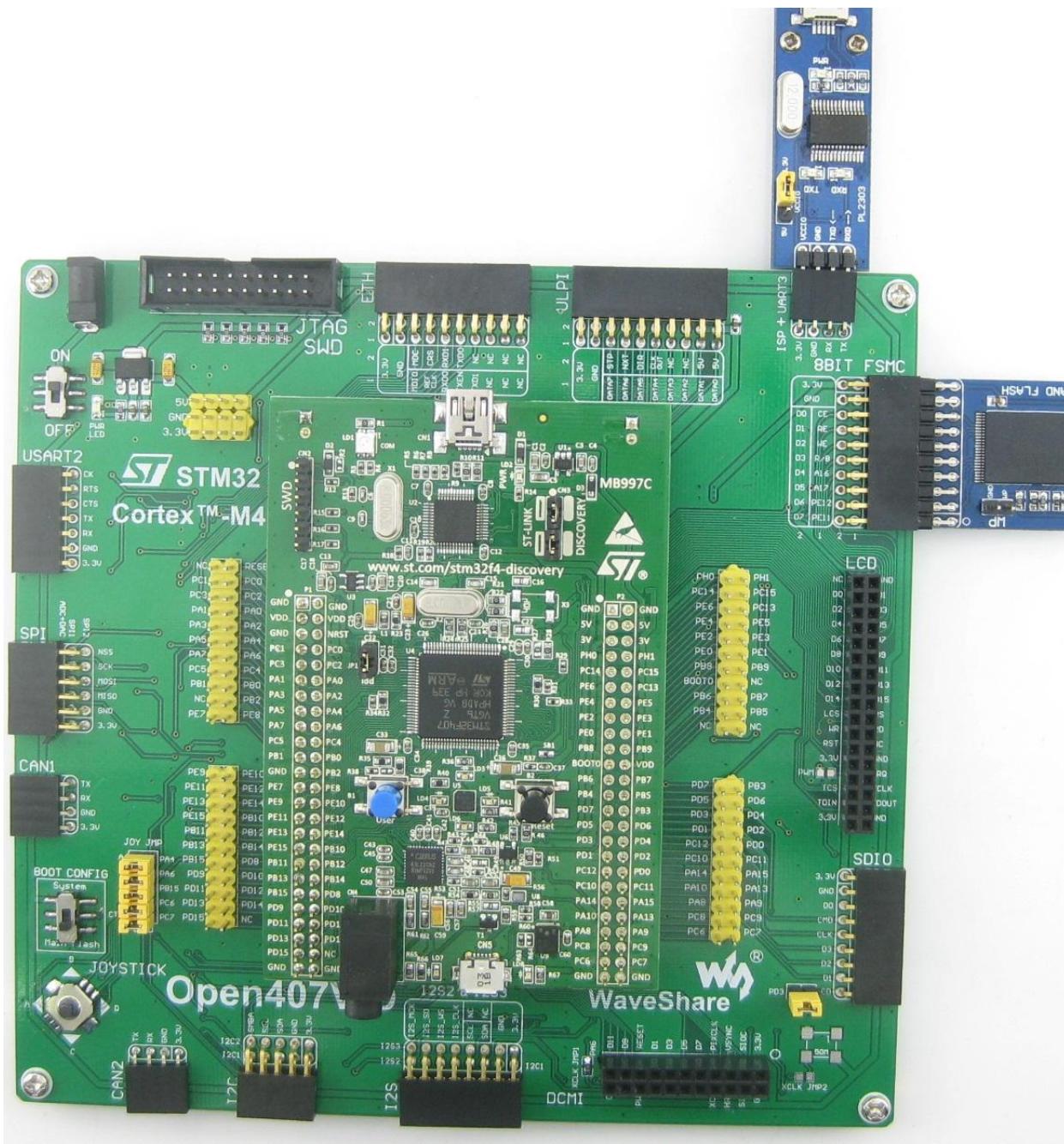
### Overview

Nand Flash\_SCB0 demo

### Hardware Connection

- Connect the NandFlash Board (A) (K9F1G08U0D SCB0 onboard) to the board via 8BIT FSMC interface.
- Connect the serial port converter to the board via USART3.

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

## SD\_FatFS

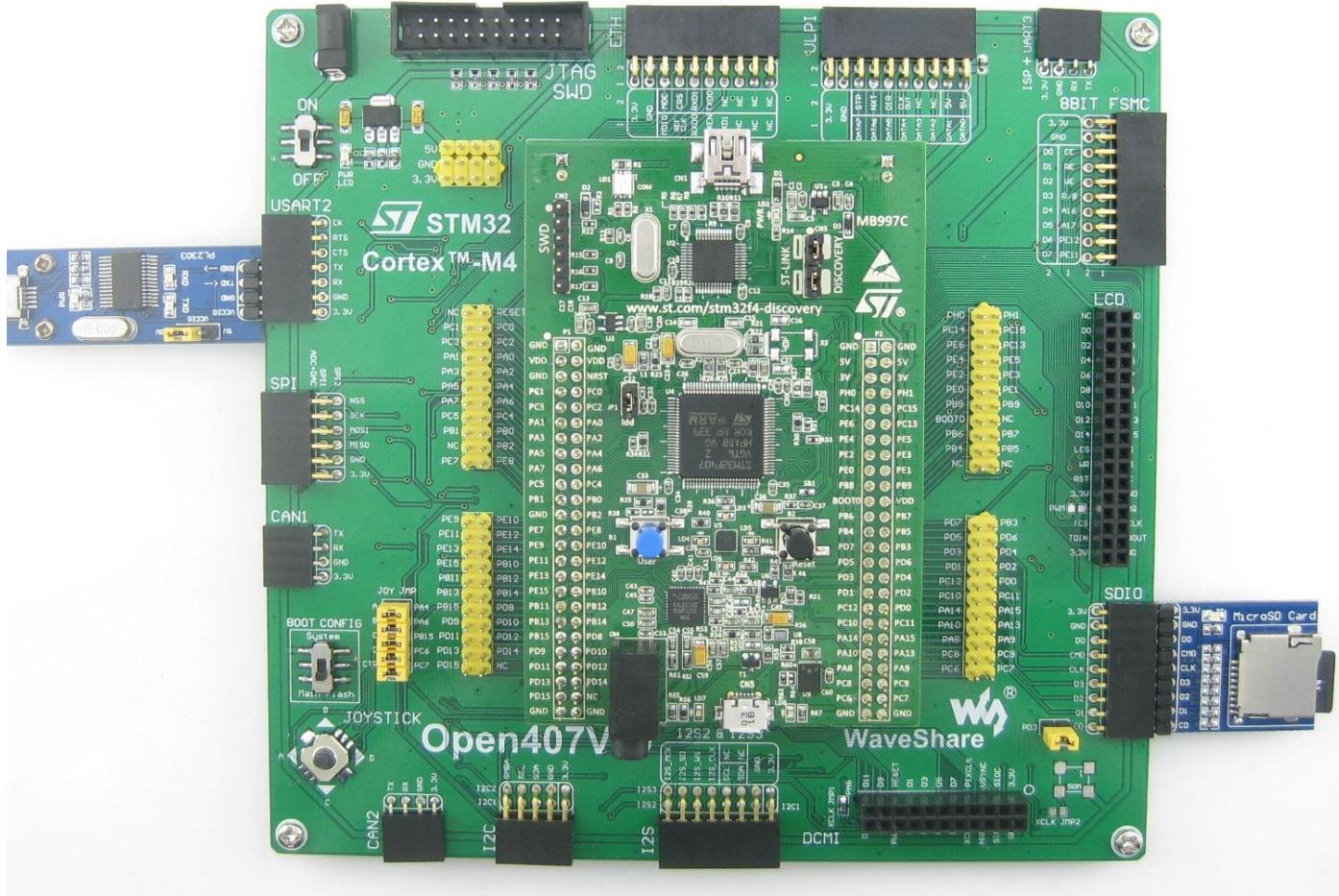
## Overview

SDIO interface+ FatFS demo

## Hardware Connection

- Connect the Micro SD Storage Board (with SD card) to the board via SDIO interface.
- Connect the serial port converter to the board via USART2 interface.

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

## SDIO

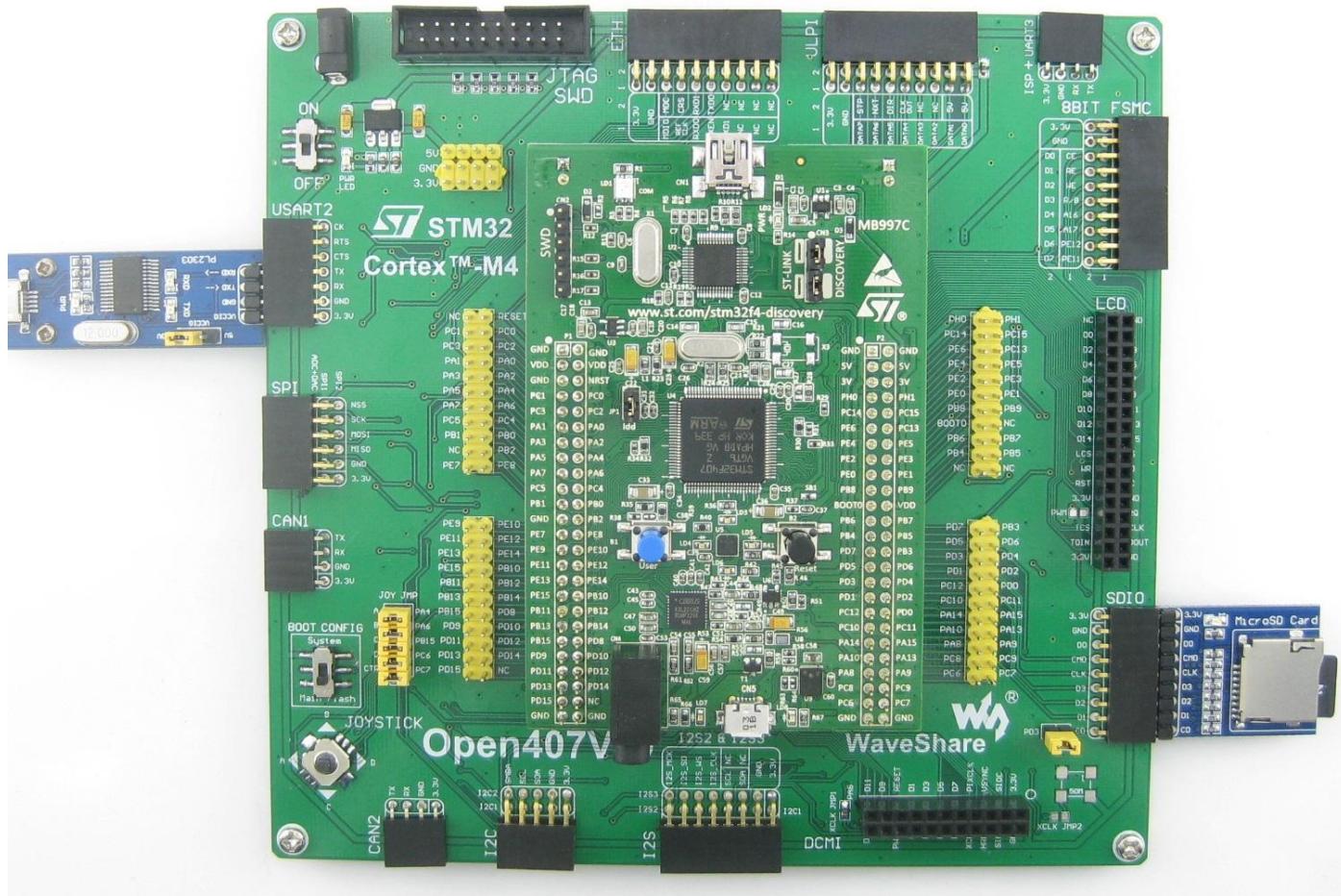
### Overview

SDIO interface demo

### Hardware Connection

- Connect the Micro SD Storage Board (with SD card) to the board via SDIO interface.
- Connect the serial port converter to the board via USART2 interface.

As shown in the figure below:



### Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

## SPI

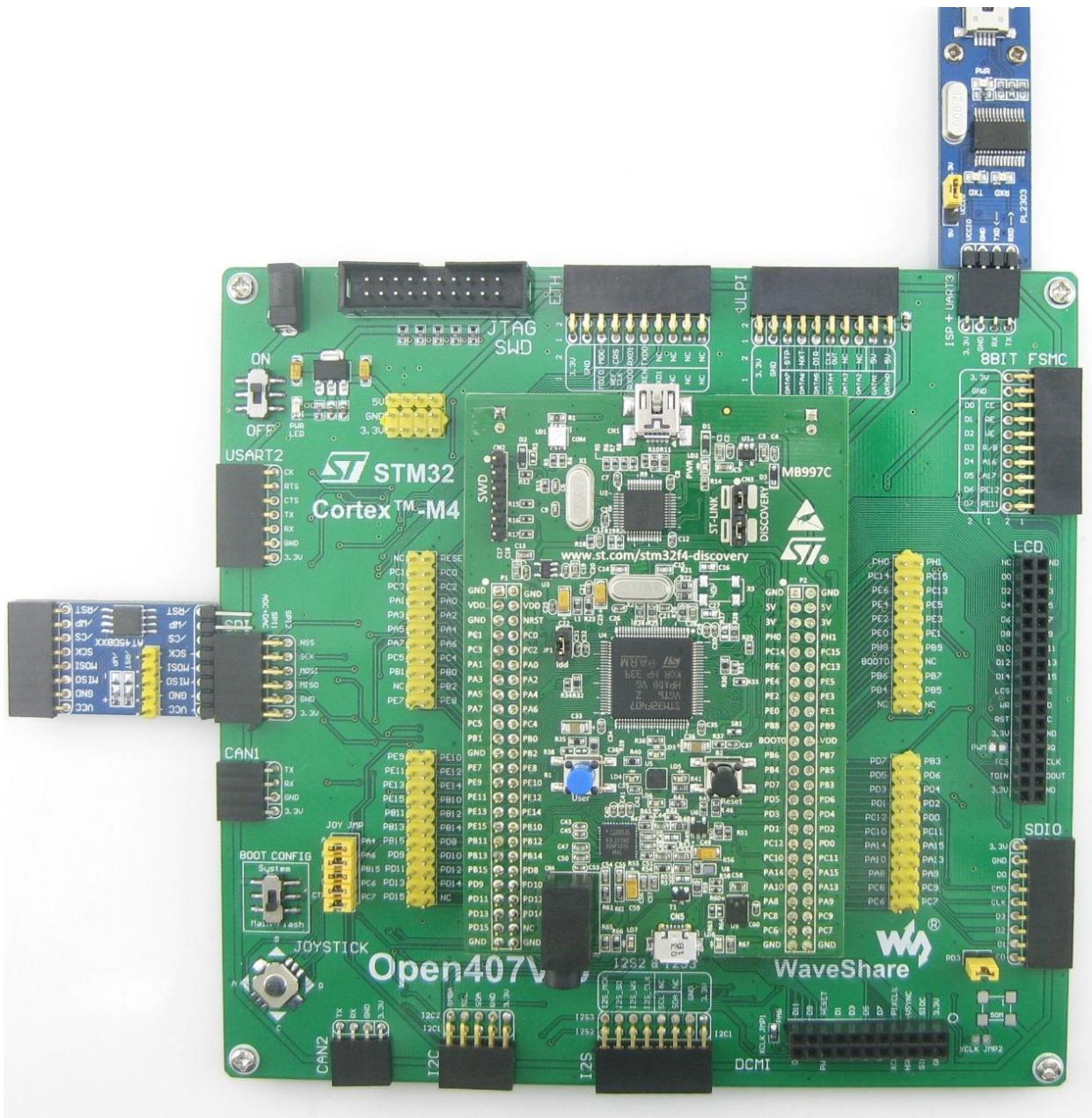
### Overview

SPI Flash demo

### Hardware Connection

- Connect the serial port converter to the board via USART3.
- Connect the AT45DBXX DataFlash Board to the board via SPIx interface.

As shown in the figure below:



## Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

## TouchPanel

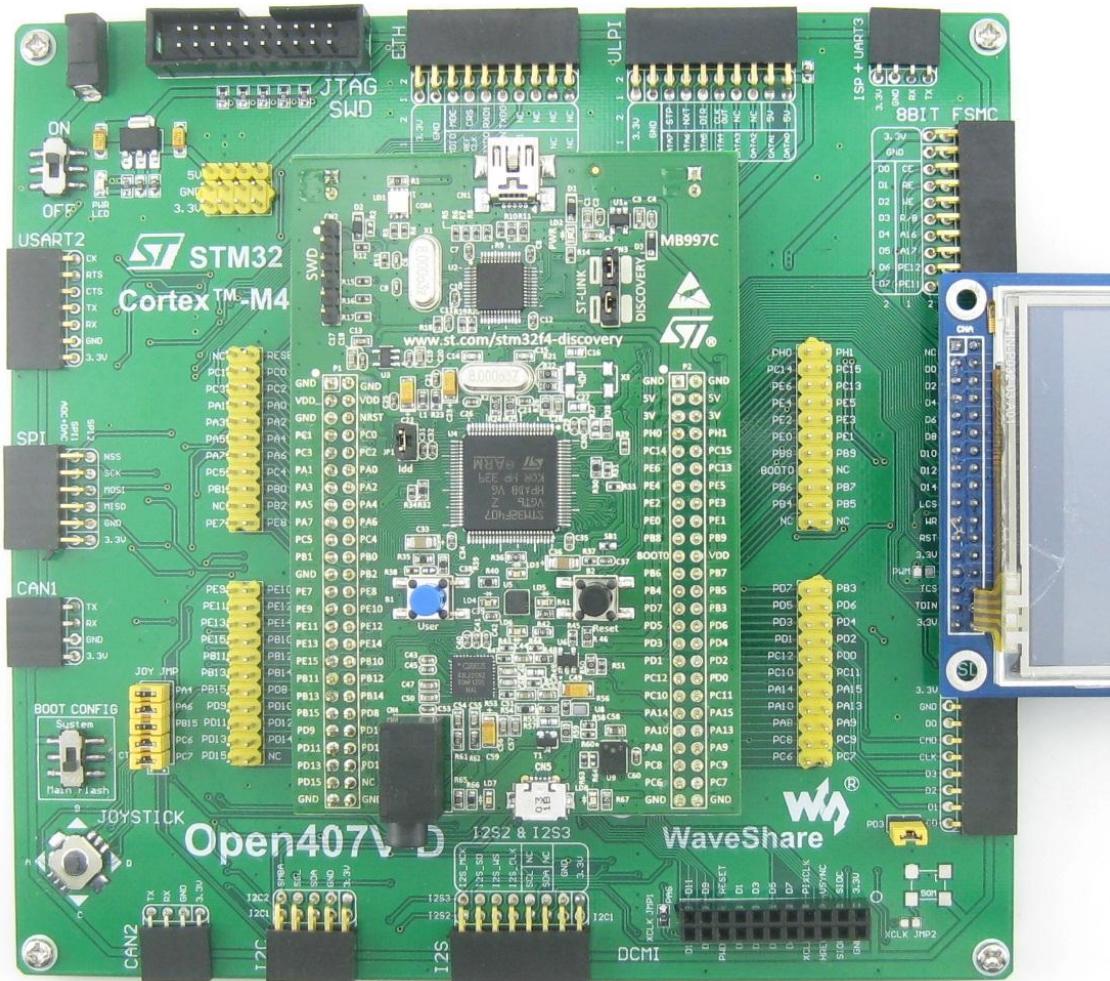
### Overview

LCD touch screen demo

### Hardware Connection

- Connect the 3.2inch 320x240 Touch LCD (A) to the board via LCD interface.

As shown in the figure below:



### Operation and Result

LCD touch screen function works, and allows writing and drawing on the LCD.

## UcosII2.91+UCGUI3.90A

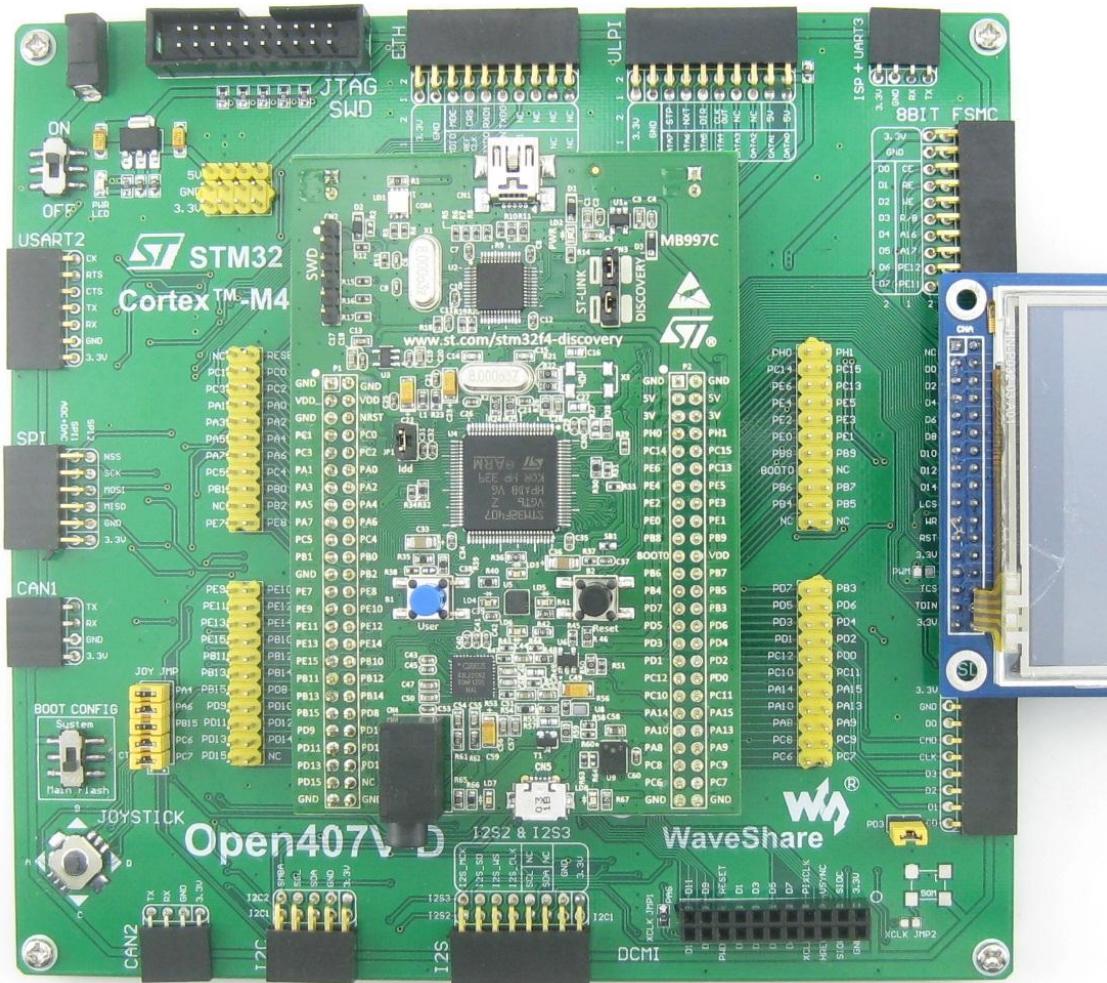
### Overview

UcosII2.91+UCGUI3.90A DEMO

### Hardware Connection

- Connect the 3.2inch 320x240 Touch LCD (A) to the board via LCD Interface.

As shown in the figure below:



### Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the uCOSView-V310G and LCD.

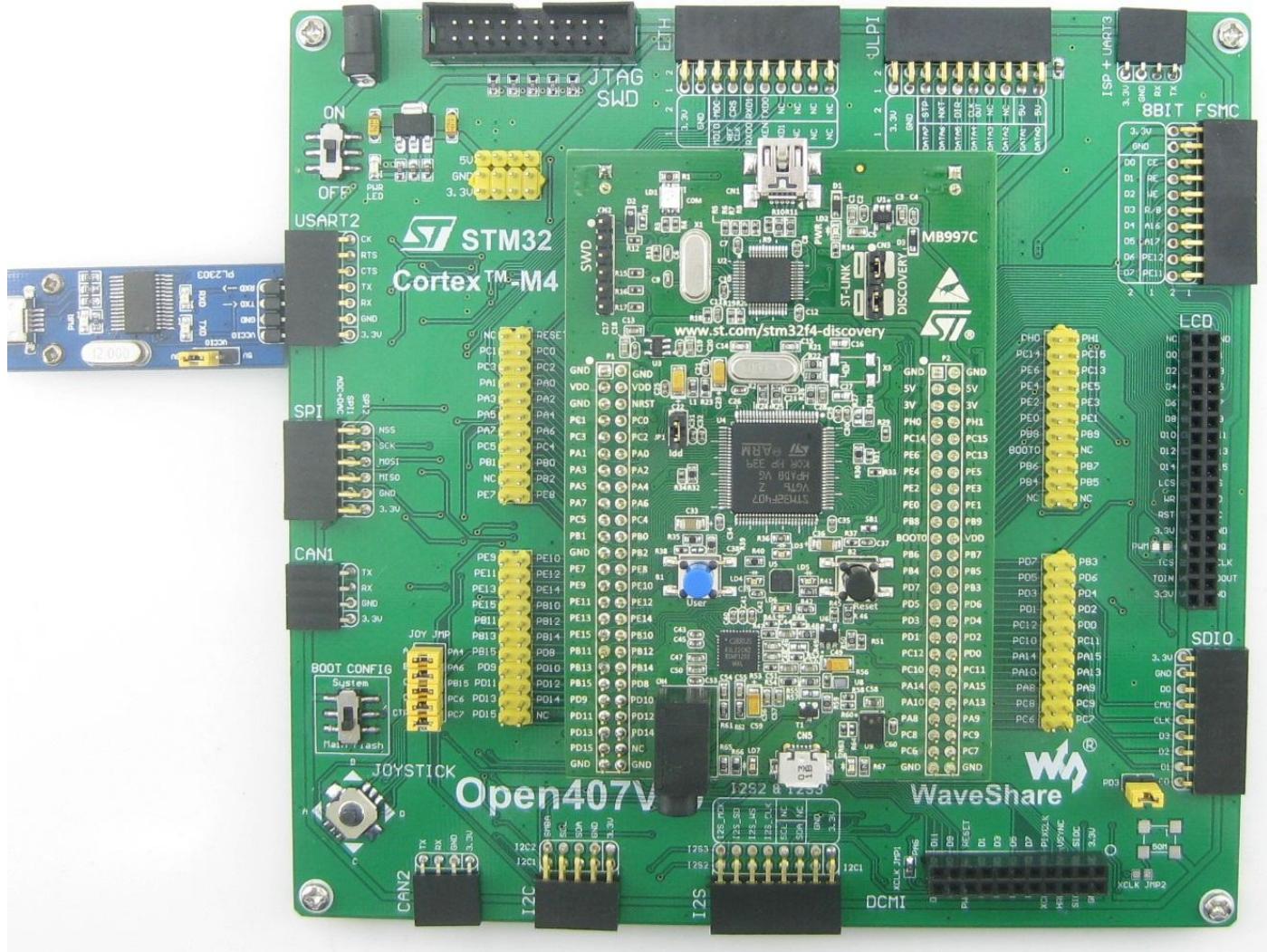
## USARTx\_pritf

### Overview

USART serial port demo

### Hardware Connection

- Connect the serial port converter to the board via USART2 Interface. As shown in the figure below:



### Operation and Result

Launch the serial debugging assistant, and configure it as described in chapter "Preparation".

Info/message will be displayed on the serial debugging assistant.

# I2S

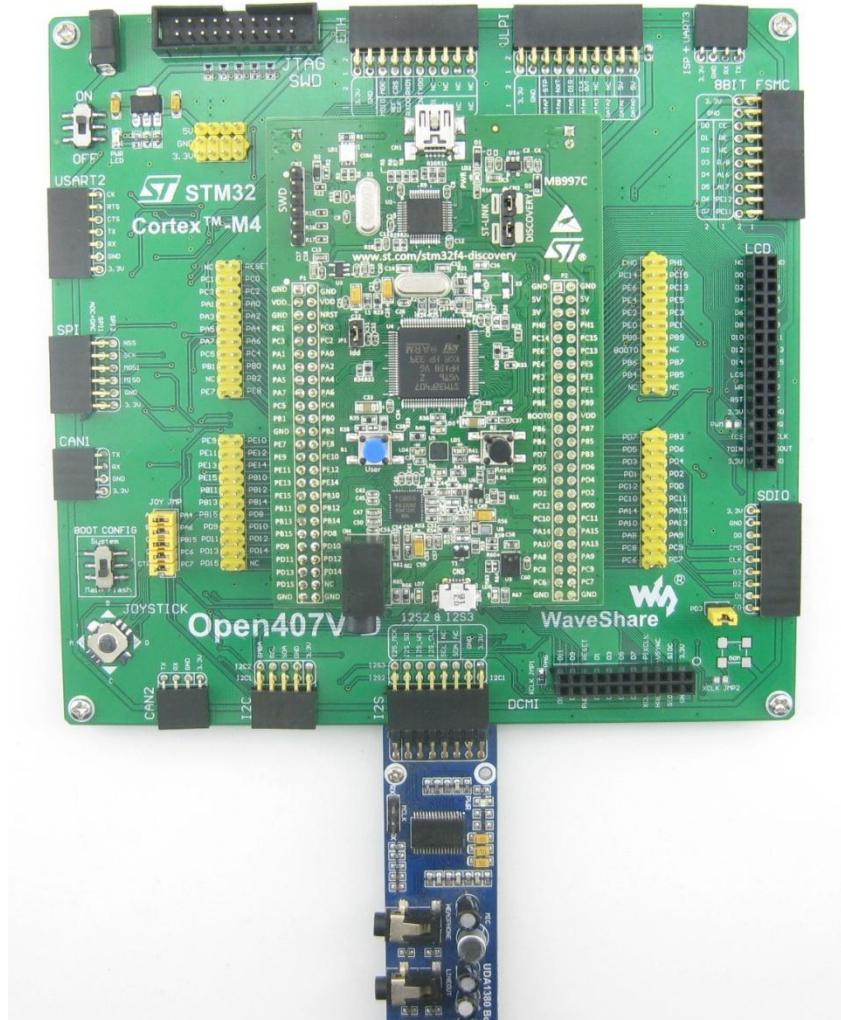
## Overview

I2S demo

### (1) MCU\_FLASH

#### Hardware Connection

- Connect the UDA1380 Board to the board via I2S interface. As shown in the figure below:



#### Operation and Result

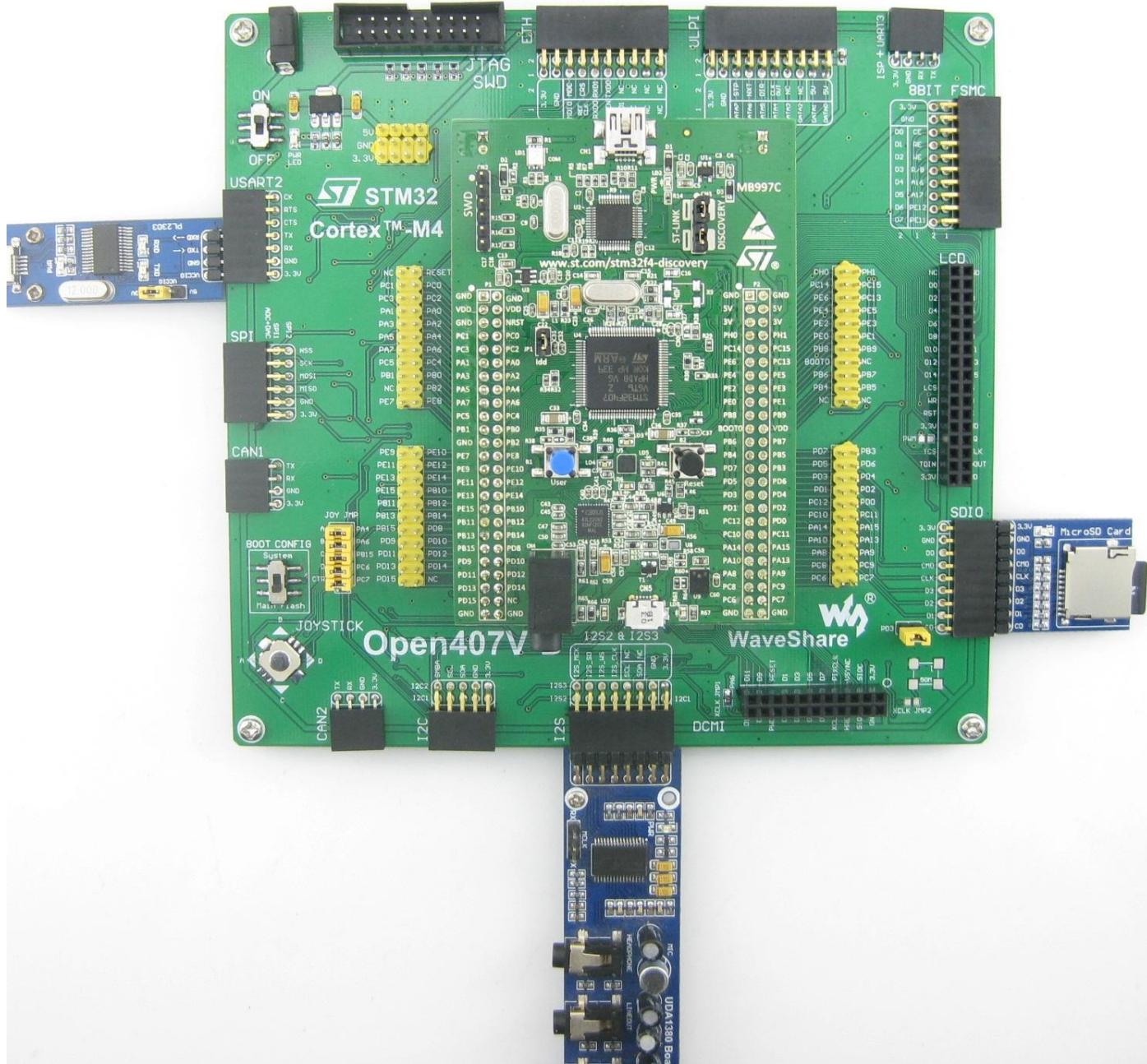
Put the headset to the HEADPHONE jack, then will hear the music stored in the MCU FLASH.

## (2) SD\_FatFS

### Hardware Connection

- Connect the UDA1380 Board to the board via I2S interface.
- Connect the Micro SD Storage Board (with SD Card) to the board via SDIO interface.
- Connect the serial port converter to the board via USART2.

As shown in the figure below:



## Operation and Result

- Put the audio file named "Audio.wav" on SD card root directory.
- Put the headset to the HEADPHONE jack.
- SD card audio file information displayed on the Serial debugging assistant.
- Headset will output the music named Audio.wav on SD card root directory.

## USB HS Example

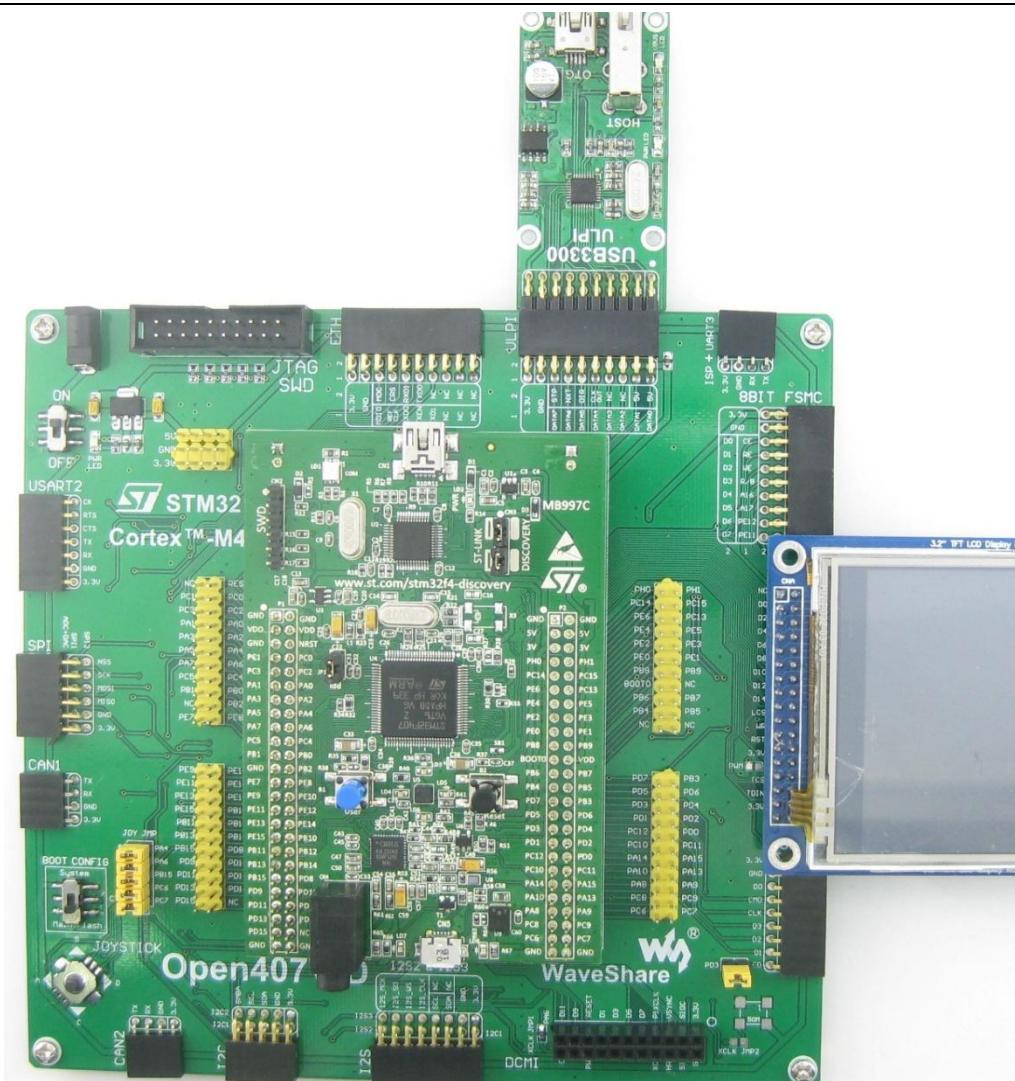
## Overview

USB HS demo

## Hardware Connection

- Connect the 3.2inch 320x240 Touch LCD (A) to the board via LCD interface.
- Connect the USB3300 USB HS Board to the board via ULPI interface.

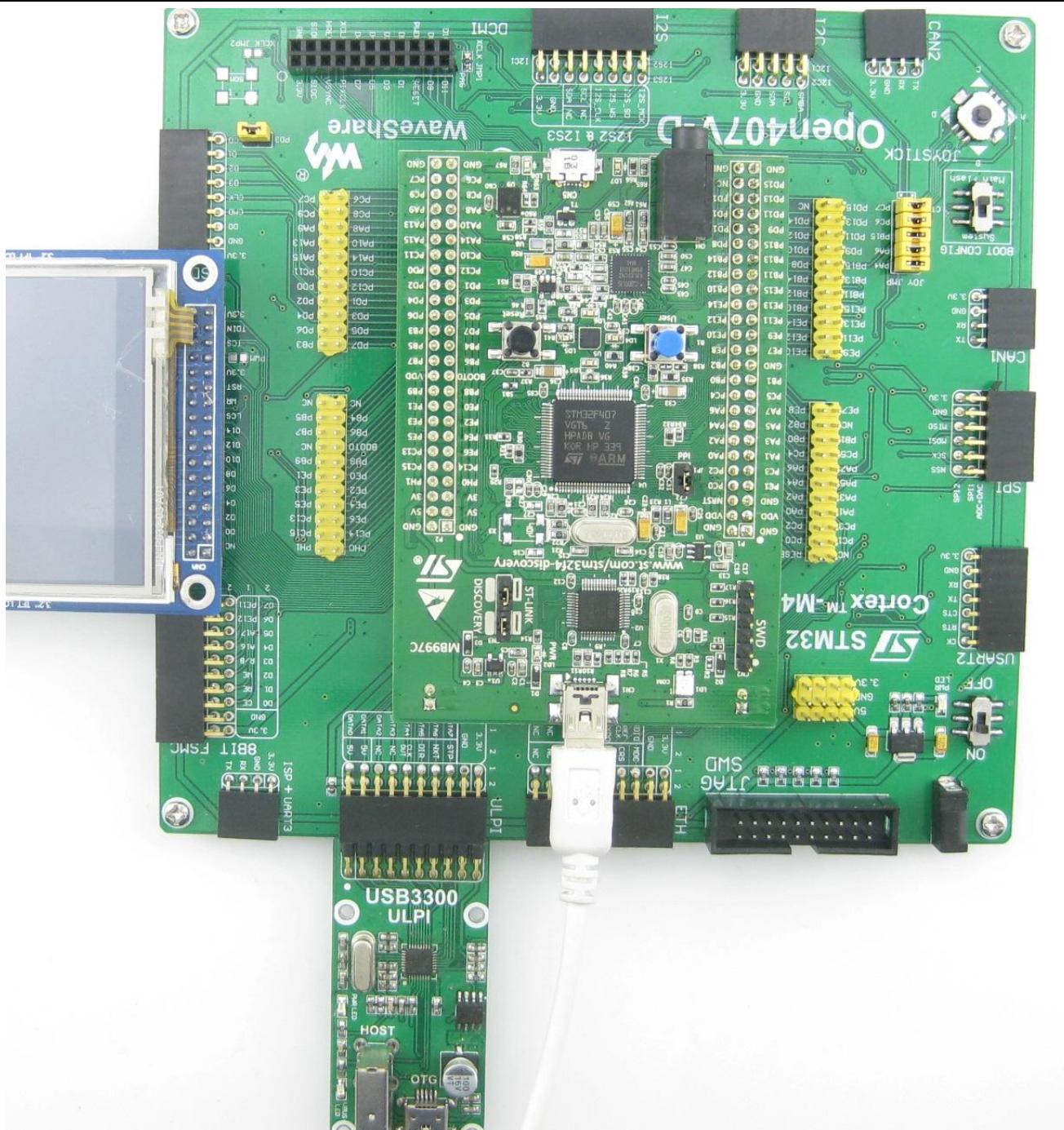
As shown in the figure below:



## (1) USB\_Device\_Examples--HID

### Hardware Connection

- Connect the PC and USB3300 USB HS Board OTG receptacle by USB cable. As shown in the figure below:



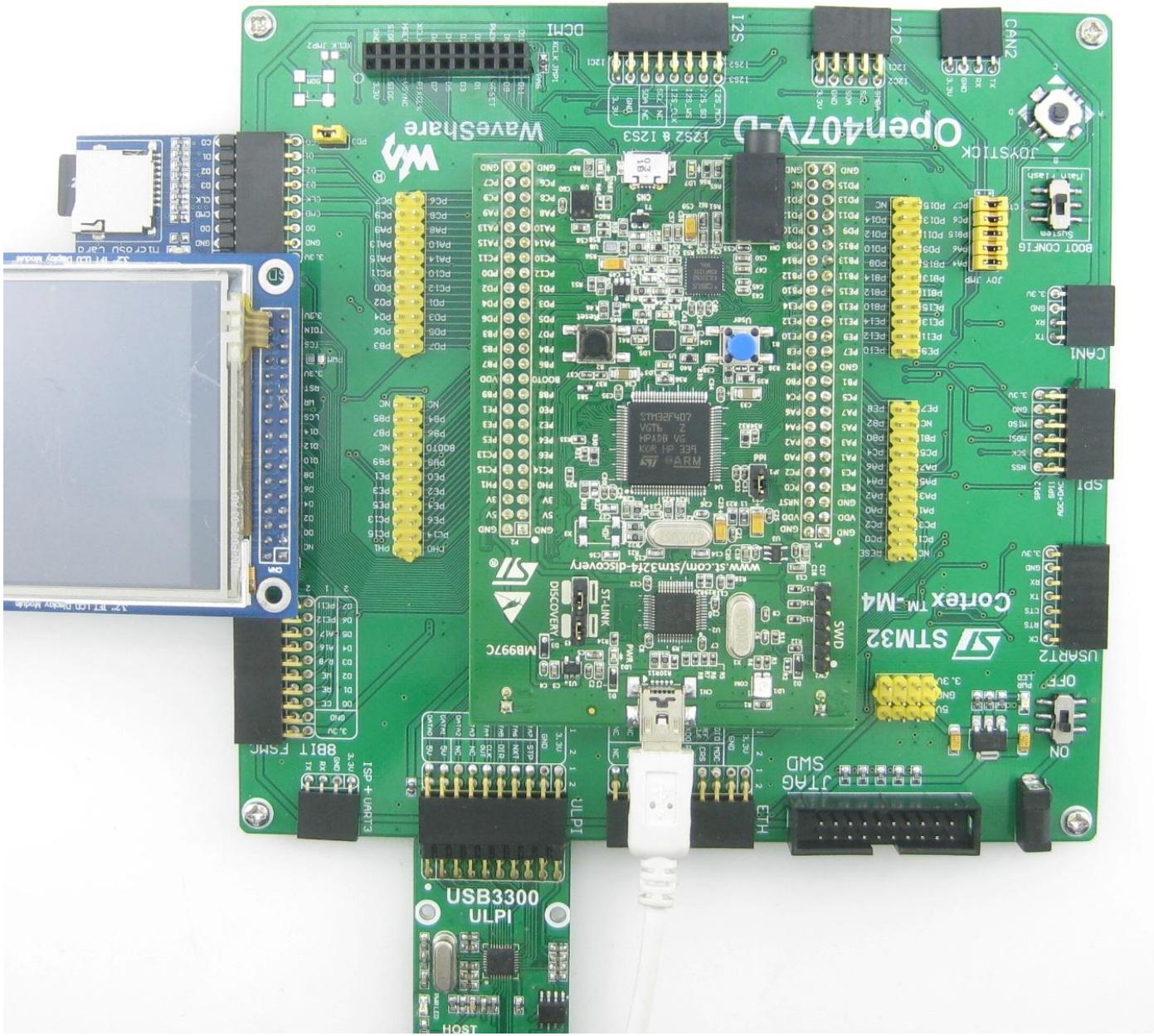
## Operation and Result

Message/info will be displayed on the LCD, and JOYSTICK can be used for simulating the mouse and controlling movement of the computer and mouse.

## (2) USB\_Device\_Examples--MSC

### Hardware Connection

- Connect the PC and USB3300 USB HS Board OTG receptacle by USB cable.
- Connect the Micro SD Storage Board (with SD card) to the board via SDIO interface, As shown in the figure below:



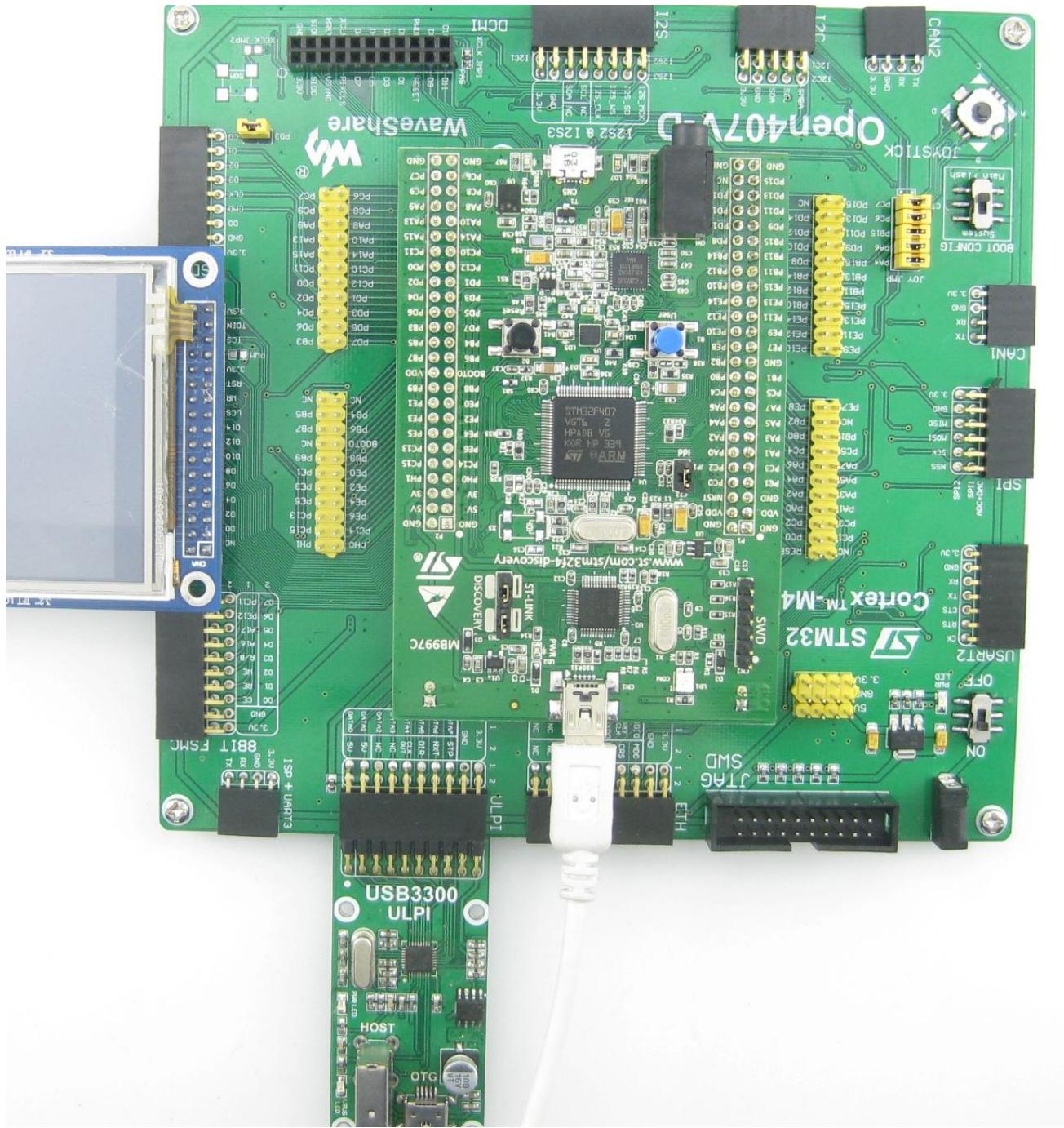
## Operation and Result

You should find the SD card as a removable storage device on the computer.

### (3) USB\_Device\_Examples--VCP

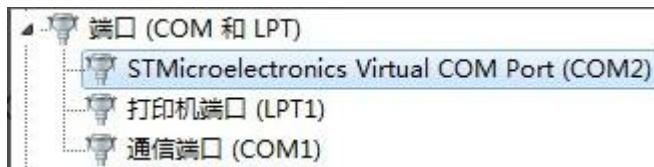
## Hardware Connection

- Connect the PC and the USB3300 USB HS Board OTG receptacle by USB cable, as shown in the figure below:



## Operation and Result

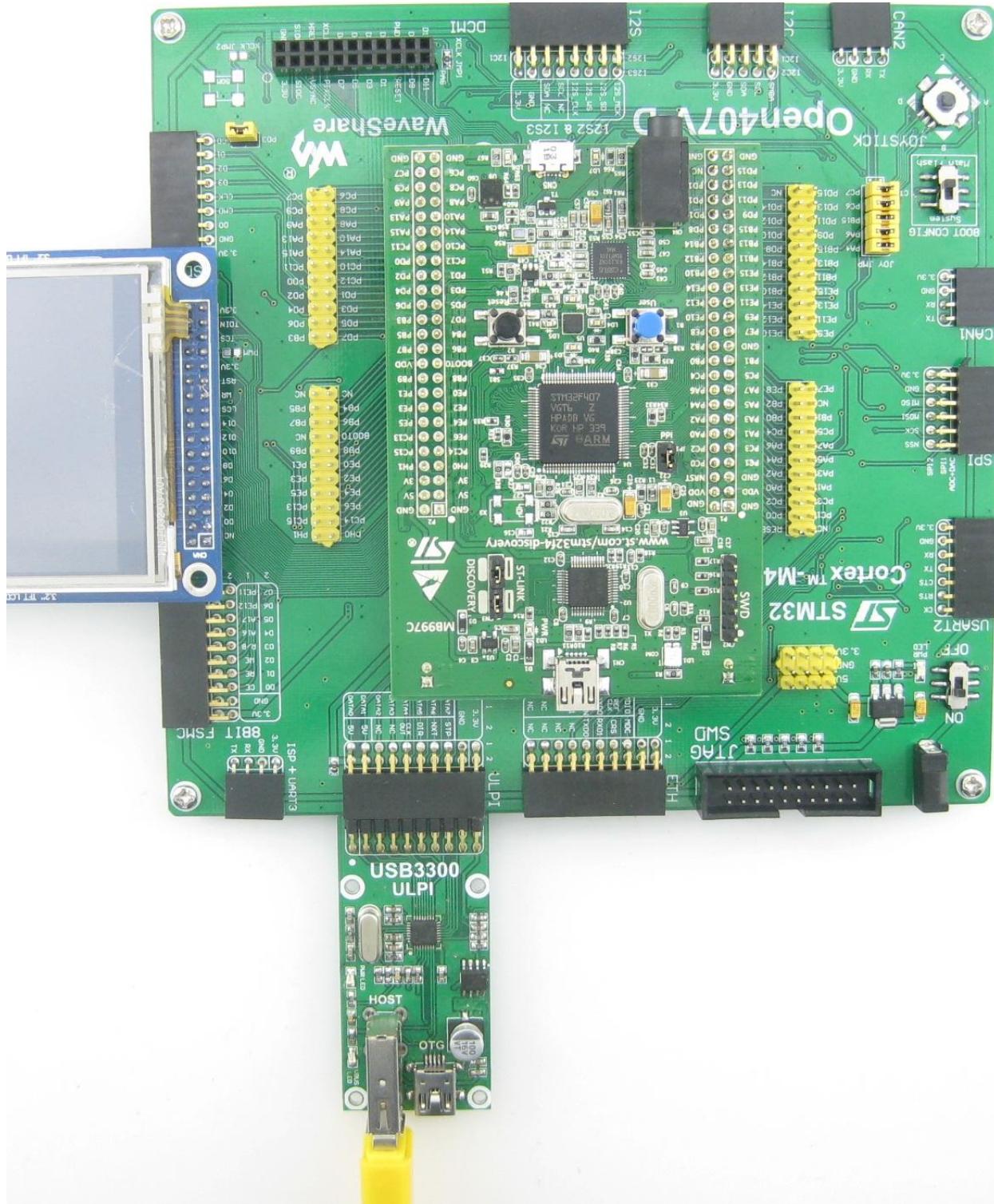
After installed the driver, a USB VCP (Virtual Com Port) exists on the PC. As shown in the figure below:



## (4) USB\_Host\_Examples--MSC

### Hardware Connection

- Connect a USB flash drive to the USB3300 USB HS Board HOST receptacle. As shown in the figure below:



## Operation and Result

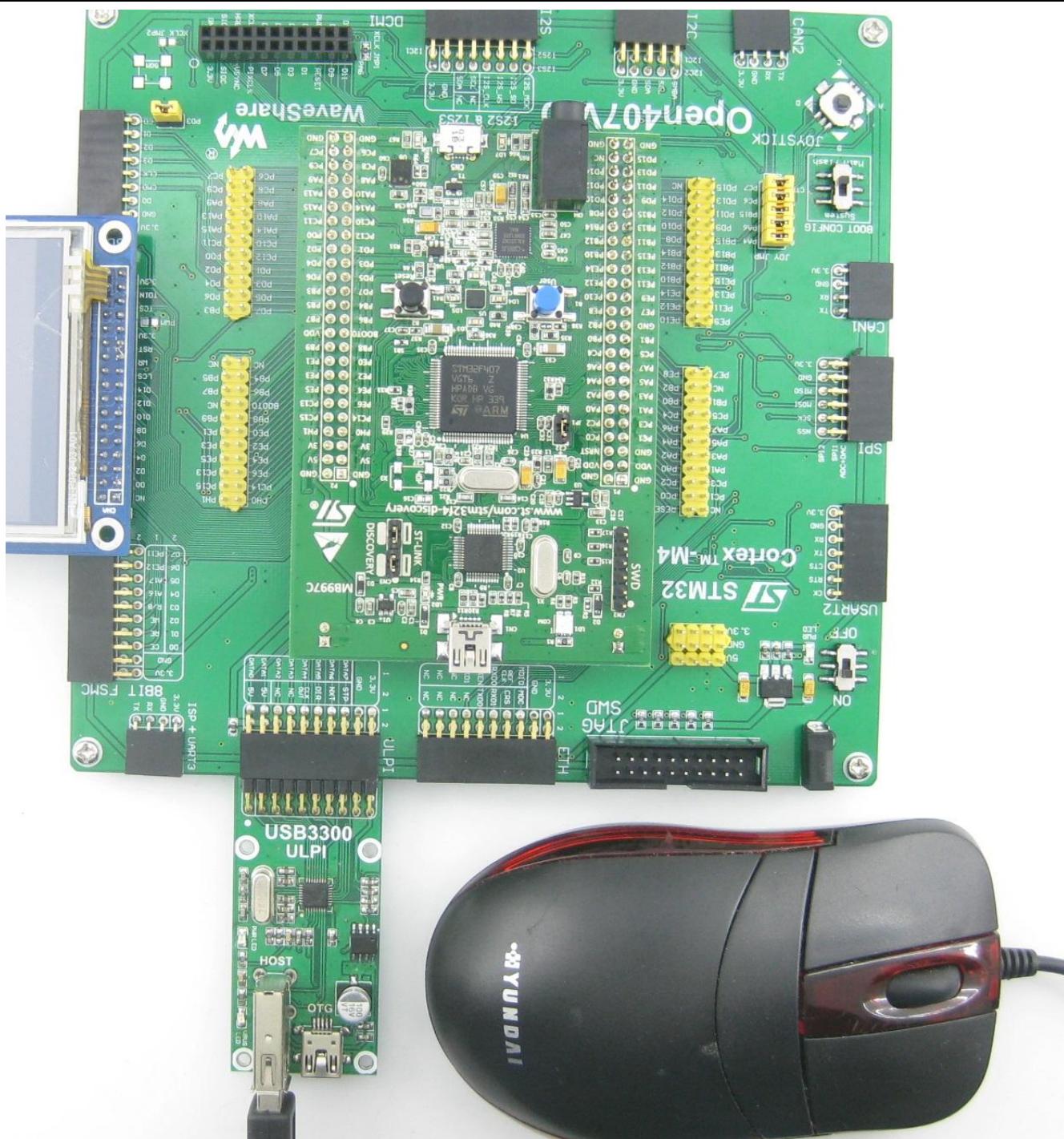
Message/info will be displayed on the LCD; the example code will place a TXT file into the USB Flash Drive, list the files in the USB Flash Drive, and display the picture.bmp.

## (5) USB\_Host\_Examples--HID

### Hardware Connection

- Connect a USB mouse or keyboard to the USB3300 USB HS Board HOST receptacle.

As shown in the figure below:



## Operation and Result

The mouse or keyboard will be detected:

- When identified as USB keyboard, the LCD will display the information input from the keyboard.
- When identified as USB mouse, the LCD will display the mouse current status.

## ETH

## Overview

Ethernet demo

## PC IP Setting

Configure the local connection of PC as follows:

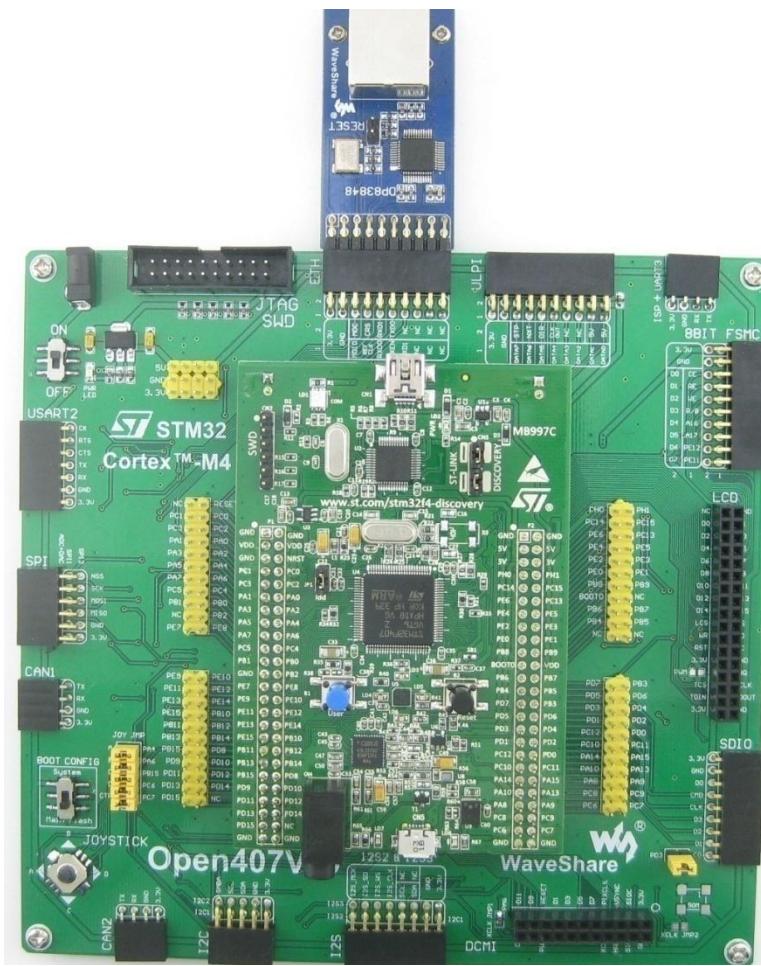
IP add: 192.168.1.11

NETMASK\_ADDR:255.255.255.0

GW\_ADDR:192.168.1.1

## Hardware Connection

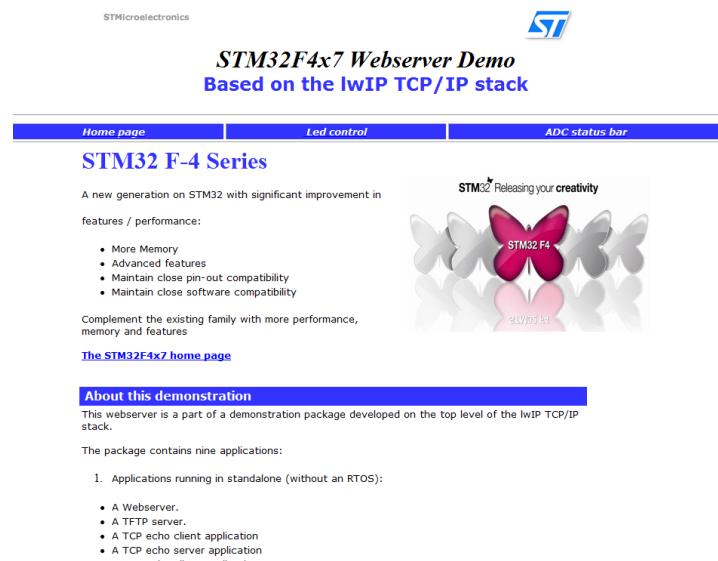
- Connect the DP83848 Ethernet Board to the board via ETH interface, then connect it to the PC through a straight-through Ethernet cable. As shown in the figure below:



## Operation and Result

Enter 192.168.1.103 in the Internet Explorer URL bar and then there will be a demo page.

As shown in the figure below:



STM32F4x7 Webserver Demo  
Based on the lwIP TCP/IP stack

Home page | Led control | ADC status bar

### STM32 F-4 Series

A new generation on STM32 with significant improvement in features / performance:

- More Memory
- Advanced features
- Maintain close pin-out compatibility
- Maintain close software compatibility

Complement the existing family with more performance, memory and features

[The STM32F4x7 home page](#)

**About this demonstration**  
This webserver is a part of a demonstration package developed on the top level of the lwIP TCP/IP stack.

The package contains nine applications:

1. Applications running in standalone (without an RTOS):
  - A Webserver.
  - A TFTP server.
  - A TCP echo client application
  - A TCP echo server application