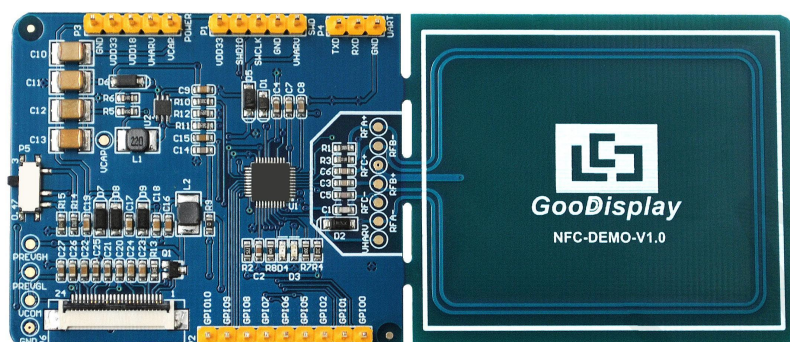




NFC Development Kit

Product Specifications



Customer	Standard
Description	NFC Development Kit
Model Name	DENFC-M01
Date	2021/04/15
Revision	1.0

	Design Engineering		
	Approval	Check	Design
			

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1. Overview

This development kit can help developers complete projects that need NFC communication to drive e-paper displays faster and more smoothly.

It supports driving Good-Display's black-white e-paper display and three-color (black,white and red/Yellow) e-paper display:1.54", 2.13", 2.6", 2.7", 2.9", 3.71" and 4.2".

DENFC-M01 development kit includes main control part and NFC antenna.

2. Mechanical Specifications

Parameter	Specification
Model	DENFC-M01
Platform	Keil
Dimension	105mm x 45mm (DENFC-M01)
Power Interface	Direct current power supply or NFC power for mobile phones
Sample Code	Available (please contact sales)
Operating Temp.	-20°C ~+70°C
Main Function	Learn to drive e-paper display; Test and evaluate e-paper display; For secondary development.
Additional Function	NFC communication indication, data transmission indication

3. Functions

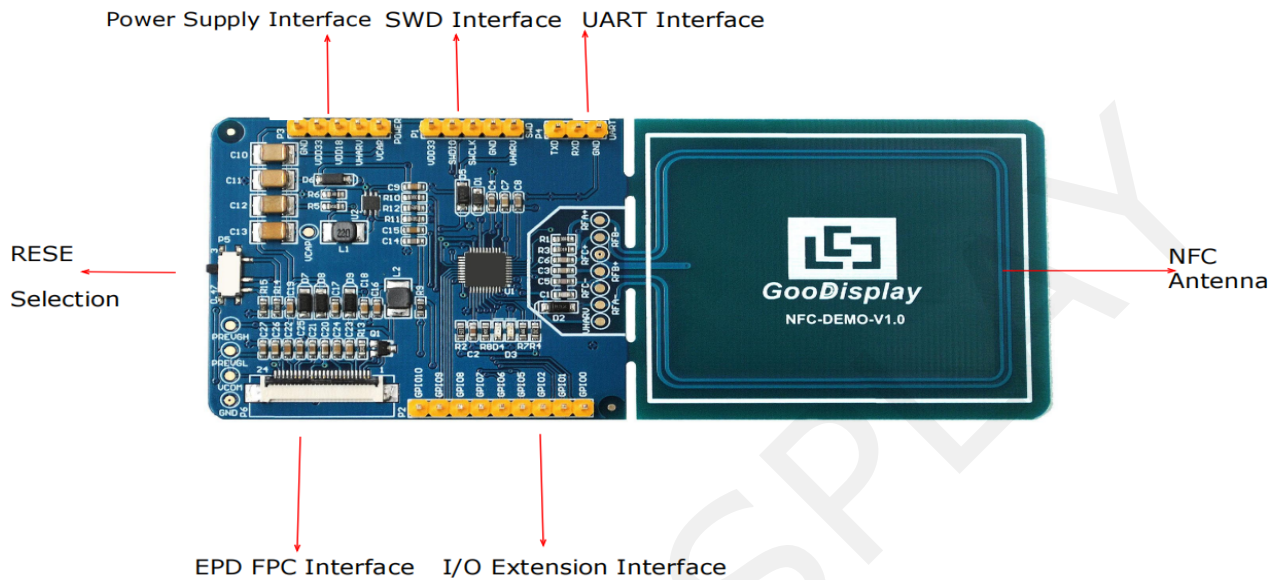


Figure 1: DENFC-MO1 Functions

1. Power Supply Module

The input voltage of circuit board is DC3.3V, powered by external direct current. VDD33 interface is needed when operating the EPD.

Note: Directly using 5V power supply can cause MCU fault.

2. Communication Section

This development kit uses NFC antenna for mobile communication.

3. IO Extension

The I/O port of STM32 has been led out for developing.

4. Indicator

This development kit is equipped with D3 and D4 indicators to show NFC communication state in real time. D4 on stands for NFC device approaching the board; D3 on stands for NFC data exchange is undergoing.

5. Resistor Selection

P5 is the switch for RESE resistor for user convenience in testing changing EPDs with different ICs.

4. Connection and RESE Resistor Selection

6. Connection of EPD with Development Kit

Connect EPD's FPC as shown in figure 2 to DENFC-M01's FPC (Note the direction of EPD's connection)

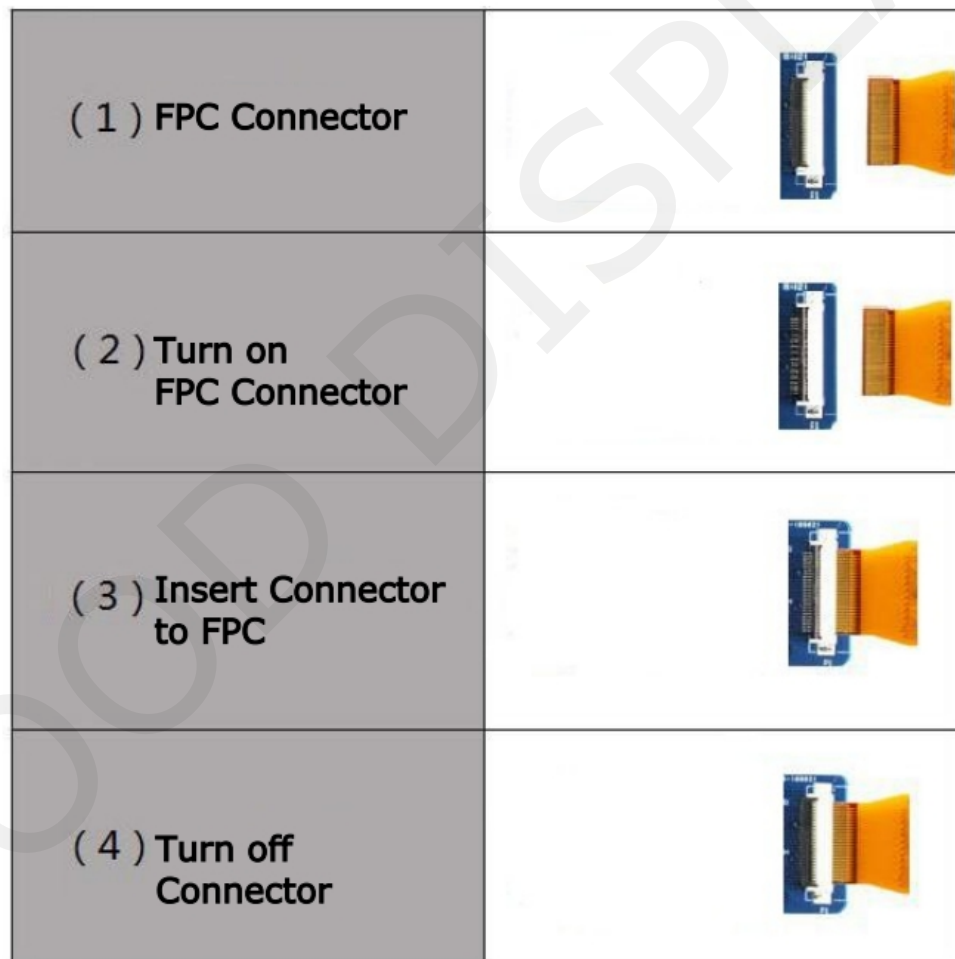


Figure 2 : Connection of EPD with DENFC-M01

2. RESE Resistor Selection of DENFC-M01 Development Kit

Different e-papers need to match different RESE resistors, a wrong RESE resistor will lead to EPD refresh fault.

1)When RESE is set to 0.47:

1.54" EPD: GDEW0154T8、GDEW0154T8D、GDEW0154I9F、
GDEW0154I9FD、GDEW0154M09、GDEW0154M10

2.13" EPD: GDEW0213T5、GDEW0213T5D、GDEW0213I5F、
GDEW0213I5FD、GDEH0213Z19、GDEW0213M21

2.6" EPD: GDEW026T0、GDEM0266T90、GDEM0266Z90

2.6" EPD: GDEW027W3、GDEW027C44

2.9" EPD: GDEW029T5、GDEW029T5D、GDEW029I6F、
GDEW029I6FD、GDEH029Z13、GDEW029M06

3.71" EPD: GDEW0371W7、GDEH037Z02

4.2" EPD: GDEW042T2、GDEH042Z21、
GDEW042M01

2)RESE dial to 3 :

1.54" EPD: GDEH0154D67、GDEY0154D67、GDEM0154E97LT

2.13" EPD: GDEH0213B73、GDEM0213B74、GDEY0213B74、
GDEH0213D30LT、GDEH0213Z98

2.9" EPD: GDEM029T94、GDEH029D57LT、GDEH029Z92

4.2" EPD: GDEH042Z96

5. Program Downloading

This development kit supports SWD mode to download.

1.SWD

ST-link emulator and Keil5 MCU development tool are needed.
Following steps are shown below:

1) As shown in Figure 3, the development board has reserved a four-wire SWD interface, which can be connected to the corresponding interface of the emulator through DuPont wire, and then the emulator can be connected to the computer.

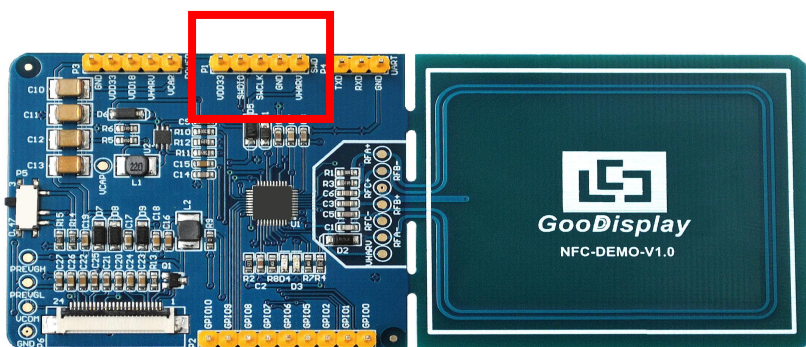


Figure 3 : SWD Interface

2) Flash file needs to be put under the root catalogue of Keil5 Download when first use as shown in figure 4. Then add these two models to the Keil5 Flash

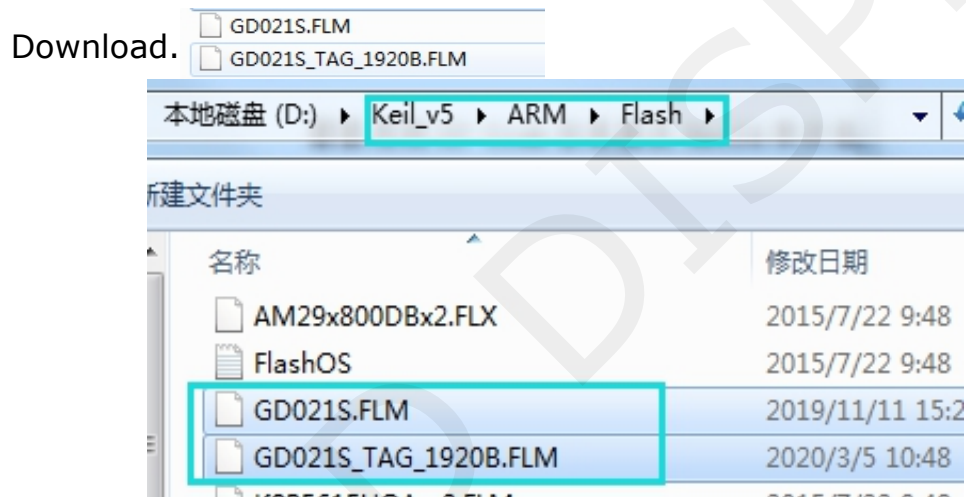


Figure 4 : Flash File Address

3) Use Keil5 to open the M0_SOC project file in driver program documents as shown in figure 5.

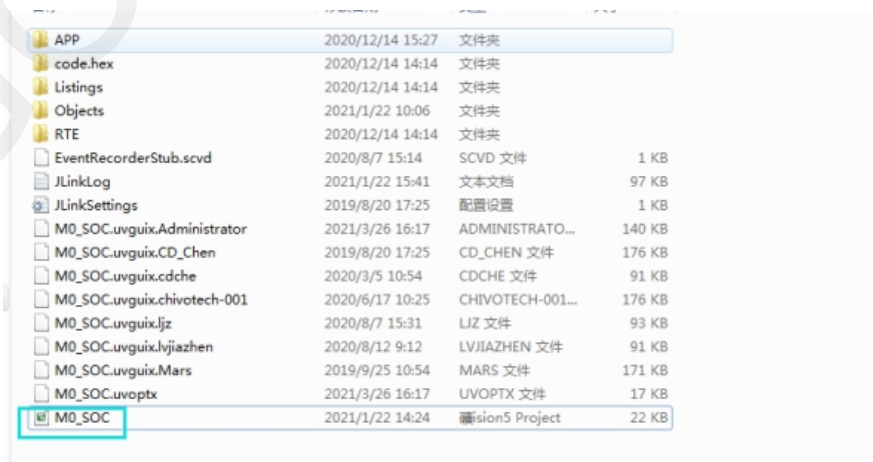


Figure 5 : Open the M0_SOC Project File

4) **Select MCU Model ARMCM0, see figure 6 below**

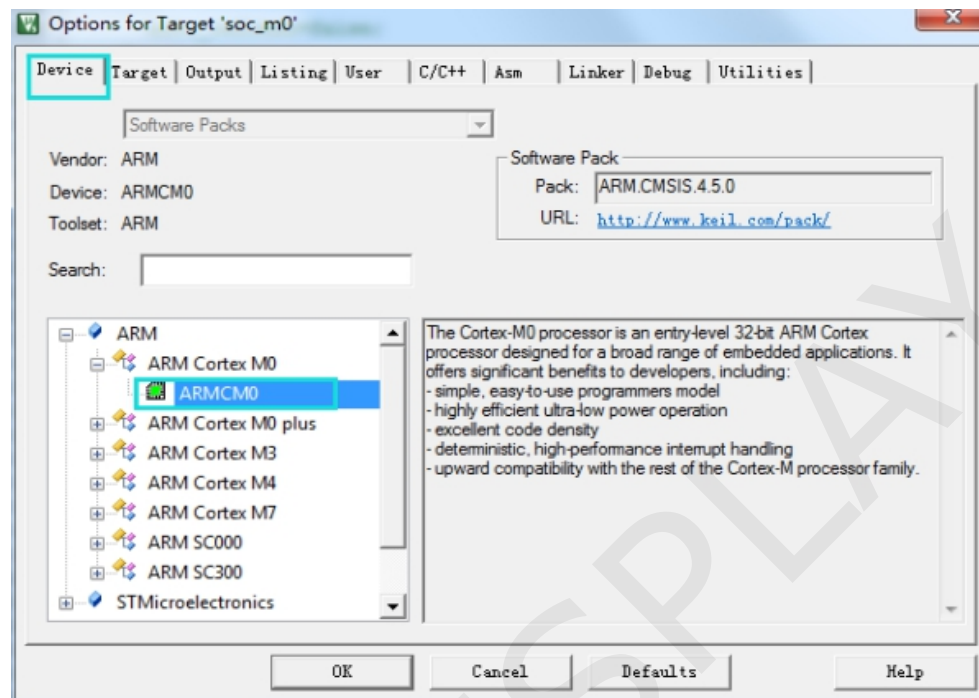



Figure 6 : MCU Model Selection

5) Keil5 toolbar shown as figure 8, click  when first using the emulator, dialog box as shown in figure 7 appears, select emulator model ST-link in Debug bar and click OK to confirm.

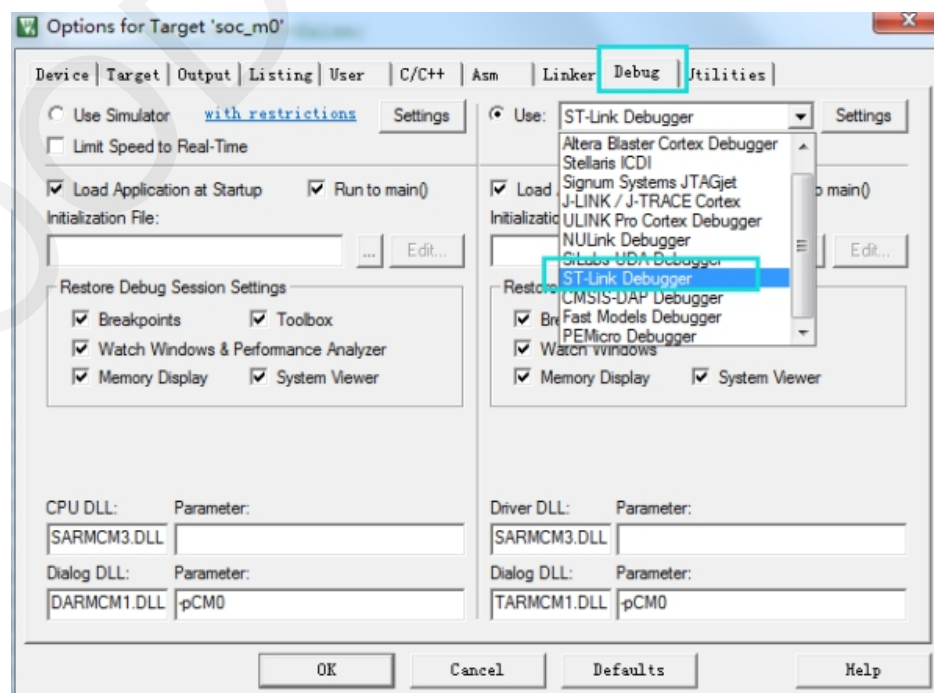


Figure 7 : Emulator Model Selection

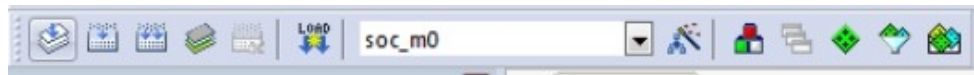




Figure 8 : Keil5 Toolbar

6) Click  in toolbar to compile programs.

7) Click  in toolbar to download programs.

Note: Instructions of program structure please see Readme in program pack.