

NFC Development Kit







Product Specifications



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

D	esign Engineerin	g
Approval	Check	Design
宝刘 印玉	いなき	之刘昭

No.18, Zhonghua W Road ,Dalian, 116033, CHINA Tel: +86-411-84619565 Fax: +86-411-84619585-810 Email: info@good-display.com Website: www.good-display.com



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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-MO1 development kit includes main control part and NFC antenna.

Specification Parameter Model DENFC-M01 Platform Keil 105mm x 45mm (DENFC-MO1) Dimension Direct current power supply or **Power Interface** NFC power for mobile phones Available (please contact sales) Sample Code -20°C ~+70°C Operating Temp. Learn to drive e-paper display; Main Function Test and evaluate e-paper display; For secondary development. NFC communication indication, data Additional Function transmission indication

2. Mechanical Specifications

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)

(1) FPC Connector	
(2) Turn on FPC Connector	
(3) Insert Connector to FPC	
(4) Turn off Connector	

Figure 2 : Connection of EPD with DENFC-M01

2.RESE Resisitor 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 Keil5Download when first use as shwon in figure 4.Then add these two models to the Keil5 Flash

Download. GD021S.FLM

ad.	GD021S_TAG_1920B.FLM	
本	地磁盘 (D:) ▶ Keil_v5 ▶ ARM ▶ Fla	ash 🕨 👻 🗸
碇	文件夹	
•	名称	修改日期
L	AM29x800DBx2.FLX	2015/7/22 9:48
L	FlashOS	2015/7/22 9:48
	GD021S.FLM	2019/11/11 15:2
	GD021S_TAG_1920B.FLM	2020/3/5 10:48
	PROPERTIESA A FLAM	2015 (7/22.0.40

Figure 4 : Flash File Address

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

🕌 APP	2020/12/14 15:27	文件夾	
)) code.hex	2020/12/14 14:14	文件夹	
퉬 Listings	2020/12/14 14:14	文件夹	
Objects	2021/1/22 10:06	文件夹	
🕌 RTE	2020/12/14 14:14	文件夹	
EventRecorderStub.scvd	2020/8/7 15:14	SCVD 文件	1 KB
JLinkLog	2021/1/22 15:41	文本文档	97 KB
JLinkSettings	2019/8/20 17:25	配置设置	1 KB
M0_SOC.uvguix.Administrator	2021/3/26 16:17	ADMINISTRATO	140 KB
M0_SOC.uvguix.CD_Chen	2019/8/20 17:25	CD_CHEN 文件	176 KB
M0_SOC.uvguix.cdche	2020/3/5 10:54	CDCHE 文件	91 KB
M0_SOC.uvguix.chivotech-001	2020/6/17 10:25	CHIVOTECH-001	176 KB
M0_SOC.uvguix.ljz	2020/8/7 15:31	LJZ 文件	93 KB
M0_SOC.uvguix.lvjiazhen	2020/8/12 9:12	LVJIAZHEN 文件	91 KB
M0_SOC.uvguix.Mars	2019/9/25 10:54	MARS 文件	171 KB
M0_SOC.uvoptx	2021/3/26 16:17	UVOPTX 文件	17 KB
M0_SOC	2021/1/22 14:24	礦ision5 Project	22 KB



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	Software Packs	
Vendor:	ARM	Software Pack
Device:	ARMCM0	Pack: ARM.CMSIS.4.5.0
Toolset:	ARM	URL: http://www.keil.com/pack/
Caracha		_
Search:	1	
	ARM Cortex M0 ARMCM0 ARM Cortex M0 plus ARM Cortex M3 ARM Cortex M4 ARM Cortex M7	offers significant benefits to developers, including: - simple, easy-to-use programmers model - highly efficient ultra-low power operation - excellent code density - deterministic, high-performance interrupt handling - upward compatibility with the rest of the Cortex-M processor family.

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.

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C Use Simulator	ith restrictions	Settings	G Use: S	T-Link Debugger	▼ Settings
Limit Speed to Real-1	Time		A	Itera Blaster Cortex Debugg	er 🔺
Load Application at S Initialization File:	itartup 🔽 Run to	main()	I Load S J. Initializatiq U	ignum Systems JTAGjet LINK / J-TRACE Cortex LINK Pro Cortex Debugger	p main()
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Breakpoints Watch Windows Memory Display	Toolbox Performance Analyze System Viewer	9 7	I▼ Brt Fr P I▼ Wate I▼ Mem	MSIS-DAP Debugger ast Models Debugger EMicro Debugger on winadws ory Display V System	+ n Viewer
Breakpoints Watch Windows Memory Display CPU DLL: Param SARMCM3.DLL	Toolbox Toolbox Performance Analyze System Viewer Eter:	Я [.]	Driver DLL:	MSIS-DAP Debugger ast Models Debugger Efficito Debugger in windows ony Display v System Parameter:	
Breakpoints Watch Windows Memory Display CPU DLL: Param SARMCM3.DLL Dialog DLL: Param	Toolbox Toolbox Performance Analyze V System Viewer eter: eter:	9F	Driver DLL: SARMCM3 Dialog DLL:	MSIS-DAP Debugger ast Models Debugger Efficient Debugger en windows ony Display v System Parameter: DLL Parameter:	• Newer

Figure 7 : Emulator Model Selection



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