

User Guide Standards

MeeNote Evaluation Kit



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MeeNote EVK operation SOP

1 Introduction

The MeeNote evaluation kit supports to drive Kaleido plus color ePaper displays with touch and front light functions. This article will provide detailed information on how to use the MeeNote evaluation kit to drive a Kaleido plus color ePaper panel.

MeeNote driving board	Kaleido plus color ePaper displays module	Accessories
		Adaptor board for 6" touch×1
		Adaptor board for 6" front light×1
	6" ePaper Display	Adaptor board for 6" EPD (45pin to 34pin)×1
	(SC1452-FOA)	8 pin FFC×1
Driving board		12 pin FFC×1
(EPD 25V, TP 3.3V)		45 pin FFC×1
		Adaptor board for 7.8" touch×1
	7.8" ePaper Display	Adaptor board for 7.8" front light×1
	(SC1452-GHA)	8 pin FFC×1
		12 pin FFC×1

The MeeNote evaluation kit can support

Before starting any operations, please make sure that the following components are ready.

(1) MeeNote evaluation kit with 6" EPD module (SC1452-FOA)

Main Board



MeeNote driving board (EPD 25V, TP 3.3V)×1

Accessories



Adaptor board for 6" touch×1





Adaptor board for 6" $\ensuremath{\mathsf{EPD}}{\times}1$



12 Pin FFC for touch panel $\times 1$

45 Pin FFC for 6" EPD×1

EPD module



6" Kaleido plus color ePaper display (SC1452-FOA)

(2) MeeNote evaluation kit with 7.8" EPD module (SC1452-GHA)

Main Board



MeeNote driving board (EPD 25V, TP 3.3V) × 1

Accessories



Adaptor board for 7.8" touch ×1



Adaptor board for 7.8" front light × 1

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8 Pin FFC for front light × 1



12 Pin FFC for touch panel ×1



7.8" Kaleido plus color ePaper display (SC1452-GHA)

2 Hardware Setup Guide

This section describes the hardware setup procedures of the MeeNote evaluation kit for Kaleido plus color ePaper display.

(1) Hardware requirements for driving Kaleido plus color ePaper display

You need one of 6" or 7.8" MeeNote EVK kit packages, and a DC power source of 4.2V (it can be a battery pack or a DC power supply) and desktop computer or laptop equipped with Windows OS (DC power source and computers are not included in the MeeNote EVK packages).



MeeNote evaluation kit With 6" Kaleido plus color EPD panel



MeeNote evaluation kit With 7.8" Kaleido plus color EPD panel

	Minimum PC Requirements					
	CPU	Pentium III 800 MHz or higher				
44431	RAM	128MB or higher				
at	OS	Windows 10				
	Interface	USB 2.0 port or higher version				
EXCLUSION REPORT OF						

Windows PC (Prepare by customer)





Battery box (not included in the package, to be prepared by user)

18650 Battery (not included in the package, to be prepared by user)

(2) Connect method of MeeNote kit with Kaleido plus color ePaper display

Connecting the MeeNote evaluation board with Kaleido plus color ePaper display as shown in figure 2.1.



Figure 2.1

Connecting the 4.2V battery pack or 4.2V power source as shown in figure 2.2.a below. Front light control method is shown in figure 2.2.b. Power key control method (press to boot up, long press 5 sec to shutdown) is shown in figure 2.2.c.



Figure 2.2.a



Figure 2.2.b



Figure 2.2.c

After connecting all the boards and accessories, your evaluation kits should look like Figure 2.3 depending on the package you choose.

Please be noted that when connecting the EVK, always remember to connect the power source first before connecting the USB to the computer.



Figure 2.3

LED indicator status is shown as figure 2.4.



Figure 2.4

3 How to Demo the Picture

(1) Recommend picture format

The picture is recommended in BMP (24bit) or JPG (24bit) format and size needs to fit the resolution of 7.8" Kaleido plus color ePaper display SC1452-GHA [1404(H) \times 1872(V)] or 6" Kaleido plus color ePaper display SC1452-FOA [1072(H) \times 1448(V)]

(2) Operating procedures

Make sure MeeNote kit 6"/7.8" EPD and PC are connected properly.

- Connect the 6"/7.8" Kaleido plus color ePaper display to the MeeNote evaluation kit (refer to Figure 2.1)
- The PC is connected to the MeeNote evaluation kit via a Micro-USB cable.
- Execute the "E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe" software select SC1452-FOA /SC1452-GHA and click the "connect" button to ensure that the software is successfully connected to the physical drive (refer to Figure 3.1)

<pre>im E_Ink_Tool_for_MeeNote_EVK_V.5.0.1.4</pre>	×
connect C Mono C SC1452-FOA C SC1452-GHA Generic Storage RamDisc 1.00	About OK Engineer Features Cancel
Searched 3 Disks in T 1000. CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L = 0x 0 FW Version = TF20210729-1220 Signature = 8957 Panel Width = 1448 Panel Height = 1072 Image Buffer Address = 0x36D720 Waveform: (8 Modes, 14 Temperature Segments)	Refresh Upgrade Firmware(*.bin) wbf Address(hex) Waveform(*.wbf) Auto Reset Display Mode Centralize SlideShow me Interval(Secs) Start Start
Success	Load Image and Display X Y Start Mode 0 0 2 Width Height End Mode 2
	AutoSet Open File EnClrWhite Set Full Panel Display

Figure 3.1

Update single picture to ePaper display

- Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe and select SC1452-FOA or SC1452-GHA (refer to Figure 3.2)
- Enable "AutoSet" and "Set full Panel" (step 1&2)
- Click "Open File.." to choose a picture (step 3&4)
- Set "Start mode" and "End mode" to 3 (step 5)
- Click "Display" button to show the selected picture on Kaleido plus color ePaper display (step 6)

Eink E_Ink_Tool_for_MeeNote_EVK_V.5.0.1.4	×
	About OK
connect C Mono C SC1452-FOA 🕫 SC1452-GHA	Engineer Features Cancel
Generic Storage RamDisc 1.00	_
Searched 3 Disks A	Refresh Upgrade © Firmware(*.bin) wbf Address(hex)
CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L = 0x 0 FW Version = TF20210729-1220 Everyte = 98077	
Signature = 6557 Panel Width = 1448 Panel Heinht = 1072	Display Mode Centralize
7.8in > SlideShowImages > ひ 複尋 SlideShowImages の	C SlideShow Time Interval (Secs) Start
	Load Image and Display X Y Start Mode
	0 0 2 Width Height Ind Mode 2
7.8inch_1872X1 404_1.bmp 47.8inch_1872X1 7.8inch_1872X1 404_2.bmp 404_3.bmp	Open File
* 「「1.8 inch_1872X1404_2.bmp >」 image files (*.bmp; *.jpg; *.rip >	EnClrWhite Set Full Panel 2
關歐(O) 取消	Display6
Clear	
tim E_Ink_Tool_for_MeeNote_EVK_V.5.0.1.4	×
connect C Mono C SC1452-FOA @ SC1452-GHA	AboutOK Engineer FeaturesCancel
Generic Storage RamDisc 1.00	
Searched 3 Disks	Refresh Upgrade
in T1000. CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L = 0x 0	C Waveform(*,wbf) 200000 Auto Reset
FW Version = TF20210729-1220 Signature = 8957 Panel Width = 1448	Display Mode
Panel Height = 1072 Image Buffer Address = 0x36D720 Waveform: (8 Modes, 14 Temperature Segments)	C MulEngine 2 T Repeat
EBD_Time - Color Decode Image File: D: \Project\MeeNote_EVK\7.8inch_Color\SlideShowImages\ srcImage\V: 1448	Start
srcImageH: 1072 Image Bits: 24 Image Pitch: -4344	Load Image and Display X Y Start Mode
Image src point addess: 0xA77FD88 Image dst point addess: 0x3701040 Panel Ture = FC078KH3	ju j0 j2 Width Height End Mode
Display time = 484 Display Status = 1	1448 1072 2
	Open File
Success	EnClrWhite 🔽 Set Full Panel
	Display

Figure 3.2 Update single picture to Kaleido plus color ePaper display

Update multiple pictures to ePaper display with slideshow

- Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe (refer to Figure 3.3)
- Upload all images under the folder name as "SlideShowImages"
- Select SC1452-FOA or SC1452-GHA and click the "connect" button (step 1)
- Set "Display Mode" and "Time Interval" (step 2&3)
- Enable "AutoSet" and "Set full Panel" (step 4&5)
- Select "SlideShow" option and click "Start" button (step 6&7)
- * Note: If the E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe put in a Demo AP folder, the SlideShowImages folder also needs under Demo AP folder.



Figure 3.3 Update multiple pictures to ePaper display

4 Appendix:

(1) How to minimize artifact

- Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe and select SC1452-FOA or SC1452-GHA (refer to Fig 3.4)
- Select "EnClrWhite" option
- Set "Start mode" and "End mode" to 2,
- Click "Display" button, ePaper display will show white picture. Repeat above steps if necessary. Unselect "EnClrWhite" option after done with minimizing artifact.

	About OK
connect C Mono C SC1452-FOA 🖲 SC1452-GHA	Engineer Features Cancel
Generic Storage RamDisc 1.00	
Searched 3 Disks in T1000. CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L = 0x 0 FW Version = TF20210729-1220	Refresh Upgrade Firmware(*.bin) wbf Address(hex) Waveform(*.wbf) Z00000 Auto Reset
Signature = 8957 Panel Width = 1448 Panel Height = 1072 Image Buffer Address = 0x360720 Waveform: (8 Modes, 14 Temperature Segments)	∩ MulEngine Display Mode □ Centralize ○ SlideShow Time Interval(Secs) □ Repeat 3 Start
	Load Image and Display X Y Start Mode 0 0 2 Width Height End Mode 1448 1072 2
	☐ AutoSet Open File 1 I F EnClrWhite IF Set Full Panel Display 3

Figure 3.4

- (2) How to upgrade firmware
- Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe (refer to Figure 3.5)
- Click the "connect" button (step 1)
- Choose "Firmware(*.bin) (step 2)
- Click "Refresh" and choose the FW you want to use. (step 3&4)
- Click "Upgrade" (step 5)
- If update is success, please re-plug the power adapter and USB cable (reset)

	About OK
1 Connect C Mono C SC1452-FOA @ SC1452-GHA	Engineer Features Cancel
Generic Storage RamDisc 1.00	TF_20210729-1220_dcf884c_7.8inch.bin
Searched 3 Disks in T1000. CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L= 0x 0 FW Version = TF20210729-1220 Signature = 8957 Panel Width = 1448 Panel Height = 1072 Image Buffer Address = 0x36D720 Waveform: (8 Modes, 14 Temperature Segments)	3 Refresh Upgrade 5 2 Firmware(*.bin) wbf Address(hex) Auto Reset Waveform(*.wbf) 200000 Auto Reset O Image: Start Repeat Start Start Load Image and Display Start Vidth Height End Mode Image Image AutoSet Open File Open File Image
	EnClrWhite Set Full Panel

Figure 3.5

(3) How to upgrade waveform

- Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4exe (refer to Figure 3.6)
- Click the "connect" button (step 1)
- Choose "waveform(*.wbf) (step 2)
- Click "Refresh" and "choose the waveform file you want to use. (step 3&4)
- Click "Upgrade" (step 5)
- If update is success, please re-plug the power adapter and USB cable (reset)

Eink E_Ink_Tool_for_MeeNote_EVK_V.5.0.1.4	×
1 C Mono C SC1452-FOA で SC1452-GHA	About OK Engineer Features Cancel
Generic Storage RamDisc 1.00	470_VSF001_HM5A01_EC078KH3U2_SC1452-GHA_TC.WBF
Searched 3 Disks in T1000. CFA Image Buffer Address H = 0x 0 CFA Image Buffer Address L = 0x 0 FW Version = TF20210729-1220 Signature = 8957	3 Refresh C Firmware(* bin) wbf Address(hex) 2- • Waveform(*.wbf) 200000
Panel Width = 1448 Panel Height = 1072 Image Buffer Address = 0x36D720 Waveform: (8 Modes, 14 Temperature Segments)	C MulEngine Interval(Secs)
	Load Image and Display X Y Start Mode 0 0 2 Width Height End Mode 2
	T AutoSet
	Open File
	EnClrWhite Set Full Panel
	Display
Clear	

Figure 3.6

(4) How to set VCOM & temperature

• Execute E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe (refer to Figure 3.7)

Set Vcom

- 1. Click "Engineer Features "button
- 2. VCOM Set/Get
- 3. Set/Get VCOM voltage value.
- 4. Click "Execute" button to Set/Get VCOM.
- 5. Click "OK" button

Set temperature

- 1. Click "Engineer Features "button
- 2. Temperature Set/Get
- 3. Set/Get temperature value.
- 4. Click "Execute" button to Set/Get temperature.
- 5. Click "OK" button

Kjok/Tool/tor/MeeNote/IVK/VS0.1.3 X	Dialog X
Image: Decision of the control of	Register R/W OK RegAddr(Hex) Value(Hex) C Read Write Execute Force Set Temperature C Set Temperature C Read Power on C Get Temperature VComSetting (mV) Power on C Get Temperature Execute Power on with Set VCom Load TConCfg Execute C Get VCom Load TConCfg
Dialog	1.84 Vcom values are marked on the PCB label
Register R/W RegAddr(Hex) Value(Hex) Read Write Execute VComSetting (mV) Power on Power off Power off Power on Set VCom Execute Set VCom Memory Addr(Hex) Size(Hex) Dump	OK Cancel Force Set Temperature 25 Get Temperature Execute

Figure 3.7



(5) Other Features Description for E_Ink_Tool_for_MeeNote_EVK_V5.0.1.4.exe

Each of the checkbox described above has to be selected before you load an image using "Open File" button based on different firmware.

- Mono : Used in BW EPD
- SC1452-FOA : Only used in 6" CFA EPD
- SC1452-GHA : Only used in 7.8" CFA EPD.

5 How to use MeeNote function

(1) Installation

- 1. Launch MeeNote_EVK.exe
- 2. Press power key to boot up MeeNote EVK board.
- 3. Connect your NB and MeeNote EVK board with USB cable.
- 4. Choose the EPD Type to "SC1452-FOA" or "SC1452-GHA"
- 5. Wait for a moment then you will see the EPD starting mirror the content from Windows.

		_		\times
SC1452-	GHA			\sim
• 0	0 90	0 180	⊖ 2	270
Mirror				
GL				\sim
Gamma:	1.00			\sim
	Re	fresh		
🗹 On				
<mark>R</mark> G	ВС) M (Y	K	W
		1 1 1 1		
🗌 On				
● Small		⊖ Large		
		Versi	on: 3.4	1
	SC1452-4 © 0 © Mirror GL Gamma: Gamma: Gu On On On On On On On	SC1 452-GHA ● 0 90 ● Mirror GL Gamma: 1.00 P On R G On On On On Small		- □ SC1452-GHA ● 0 ● 90 ● 180 ● 2 ● Mirror GL Gamma: 1.00 Refresh ✓ On R G B C M Y K ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

Figure 3.8

(2) Configuration of MeeNote.exe

MeeNote_EVK			_		\times
MeeNote Status: Connected					
EPD Type	SC1452-	GHA			\sim
Touch Orientation	• 0	0 90	○ 180	○ 2	270
Display mode	Mirror				
EPD waveform mode	GL				~
Gamma	Gamma:	1.00			~
Clear Ghost		Re	fresh		
HandWrite Configuration					
Direct handwrite	🗹 On				
Pen color	<mark>R</mark> G	BC		K	W
Pen width			1 1 1 1		I
Eraser	🗌 On				
Eraser size	● Small		○ Large		
			Versi	nn: 3.4	1

Figure 3.9

- MeeNote status: Used to display the current USB connection status, there are two types, "Connected" and "Disconnected"
- EPD type: Users can choose what kind of EPD type of MeeNote which they are using, "Mono" for black and white EPD, "SC1452-FOA" and "SC1452-GHA" for printed color EPD.
- Touch orientation: Users can adjust the rotation angle of touch panel while the touch coordinate is not normal, there are 4 different angles can be chosen: 0°, 90°, 180°, 270
- EPD waveform mode: Users can select which EPD waveform mode they would like to use: A2, DU, GL, GC.
- Gamma: Users can adjust the Gamma value to obtain clearer picture quality, there are 7 different values can be set: Auto, 0.25, 0.45, 0.75, 1.00, 1.40, 2.20
- Clear Ghost: Users can press this button to clear ghost by applying GC refresh.
- Direct Handwrite: Direct Handwrite is a technology that allows T1000 to draw lines

directly to obtain faster writing speed. User can enable/disable this feature by the switch.

- Pen color: Users can select the pen color of Direct Handwrite. There are 8 colors can be selected: RED, GREEN, BLUE, CYAN, MAGENTA, YELLOW, BLACK, WHITE. Please note that if you are using a B/W EPD, the color pen will still only display B/W.
- Pen width: Users can select the pen width of Direct Handwrite. There are 15 different levels can be selected.
- Eraser: Users can enable or disable the eraser function of Direct handwrite by the switch.
- Eraser size: Users can select the size of eraser of Direct handwrite, there are 2 sizes can be selected: small, large.

6 Troubleshooting

Below is a list of commonly asked questions and basic troubleshooting steps of T1000 evaluation board.

Table 4.1 Troubleshooting

Num	Issue	Possible Cause and Solution	
1	T1000 device is not visible on PC	USB cable damage	
		Replace USB cable.	
2	T1000 device is not visible on PC	Battery in low power	
		Recharge Battery to 4.0V ~4.2V .	

7 Legal Information

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Revision History

Version	Date	Page	Description	Author
0.1	2021/09/28	19	Initial	Will.Yen
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0.2	2021/10/05	20	Modification for module name	Will.Yen
			change and wording.	Alvin.Chen