

yes keeps a promise.



EPD From YES Optoelectronics Display

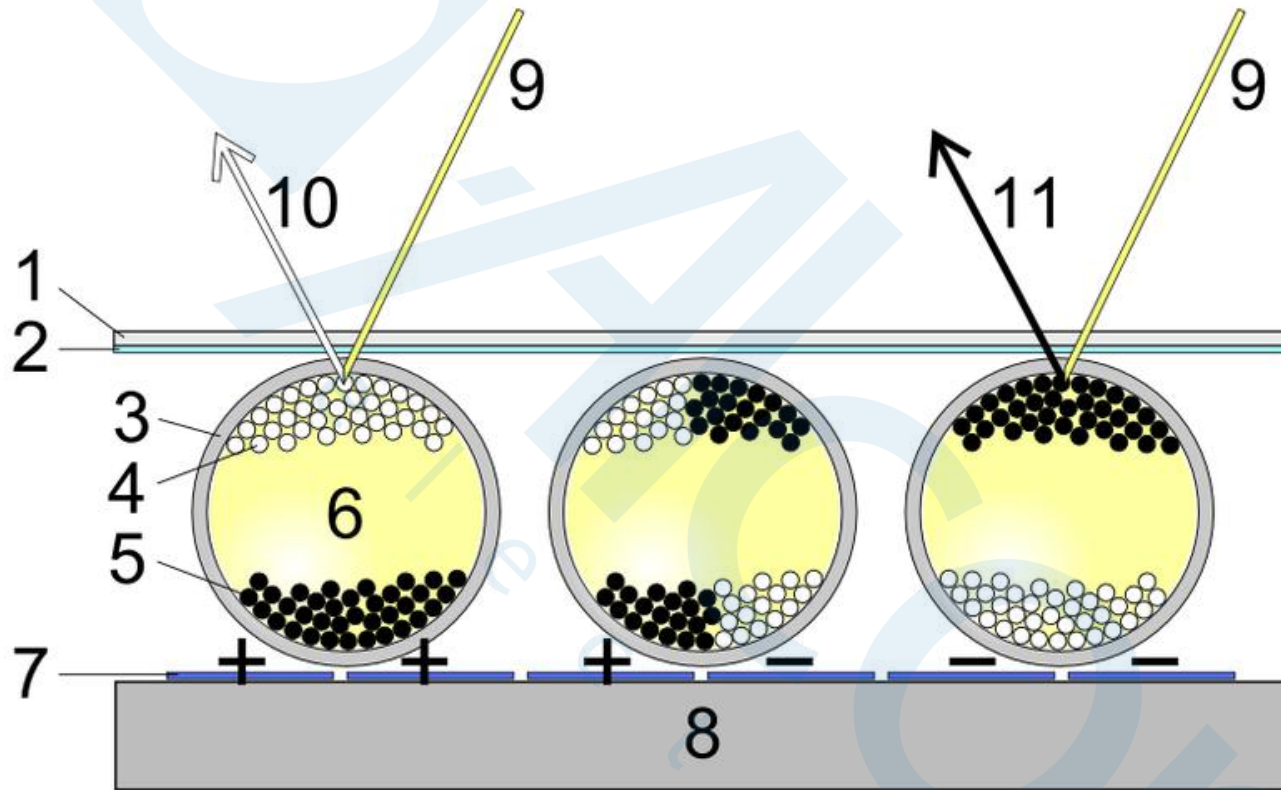
2021-06



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- ➔ T1 How Does E INK Work
- ➔ T2 Module structure
- ➔ T3 Standard product(Active Matrix Displays)
 - T3.1 Standard Products (B/W)
 - T3.2 Standard Products(B/W/R)
 - T3.3 Other Colored Active Matrix Displays
 - T3.4 Black and White Standard Products Key Features
- ➔ T4 CUSTOM DESIGN(segment display)
 - T4.1 ITO Substrate
 - T4.2 FPC Substrate
 - T4.3 Segmented Displays Key Features
- ➔ T5 Deep development
 - T5.1 TCON
 - T5.2 Front light
 - T5.3 Touch
 - T5.4 Blue teeth



- Scheme of the **E Ink** technology. Legend: 1 upper layer. 2 transparent electrode layer. 3 transparent micro-capsules. 4 positively charged white pigments. 5 negatively charged black pigments. 6 transparent oil. 7 electrode pixel layer. 8 bottom supporting layer. 9 light. 10 white. 11 black



Backplane

The backplane works as a rear electrode of the display which control each pixel or segment to formulates the image. Several types of backplanes are available for different applications. For dot-matrix displays, we have TFT glass substrate; For segmented displays, we can choose PCB and FPC.

Driver IC

The driver IC generates appropriate voltage to control each pixel or segment of the backplane.

Protective sheet

The protective sheet is covered closely on top of the sheet to prevent damage on the film by moisture.

Edge-sealing material

The edge-sealing material fills in the gap between the edge of protective sheet and the backplane to prevent moisture penetrating through the edge of protective sheet.

T3 Standard product(Active Matrix Displays)



T3.1 Eink BW 0° C ~ 50° C



Low Resolution	High Resolution	Frontlight	Touch	Dem kit
1.54" 152*152 AA: 25.98(H)×25.98(V) DPI: 140	1.54" 200*200 AA: 27.6(H)×27.6(V) DPI: 184			Dem kit
2.13" 104*212 AA: 48.55(H)×23.71(V) DPI: 110	2.13" 122*250 AA: 48.55(H)×23.71(V) DPI: 130	WHITE		Dem kit
2.66" 296*152 AA: 60.1(H)×30.7(V) DPI: 125				Dem kit
2.7" 264*176 AA: 25.98(H)×25.98(V) DPI: 117			With LENS	Dem kit
2.9" 296*128 AA: 65.9(H)×29.06(V) DPI: 112		WHITE		Dem kit
4.2" 400*300 AA: 84.8 (H)×63.6 (V) DPI: 120			With Touch	Dem kit
7.5" 640*384 AA:163.2(H)×97.92(V) DPI: 100	7.5" 800*480 AA:163.2(H)×97.92(V) DPI: 100			Dem kit

T3 Standard product(Active Matrix Displays)

T3.1 Standard Products(B/W)

The image displays seven different Active Matrix Displays (AMDs) with their respective sizes and functions:

- 1.54"**: A small digital clock display showing "sunny SUN", "12:30", and "Mon 22 Fbe".
- 2.13"**: A display for "Yangcheng Lake fresh hairy" crabs, showing "¥298.00", "Origin: Suzhou", "Packing: 1200g", and a crab icon.
- 2.7"**: A display for "Children's tableware" featuring a "SALE" banner, "Origin: Germany", "Specifications: 1", "Unit: sets", "Item No.: 45089751", a QR code, a barcode, and a price of "\$538.00".
- 2.9"**: A display for "Pandalus borealis" (shrimp) showing "Price: \$12.5", "Country of origin: Russia", "Packing Specifications: 500g", "Storage conditions: Below -18°C", and a shrimp icon.
- 0.97"**: A small display showing "12:50" and a heart icon with the number "76".
- 4.3"**: A larger display showing a lock screen with the time "08:12", date "2018年11月08日 Thu 十月初一", weather "Anshan Haze 6°C", and icons for Weather, Gallery, Music, Camera, Settings, App Store, Security, and Tools.
- 6.0"**: A large square display titled "Intelligent household appliances" with a central house icon and icons for Light curtains, SmartPlayer, Air exchange system, Background music, Central heating, Security monitoring, Video intercom, and Central air-conditioning.

T3 Standard product(Active Matrix Displays)



T3.2 Eink BWR/BWY 0° C ~ 40° C

Low Resolution	High Resolution	Frontlight	Touch	Dem kit
1.54" 152*152 AA: 25.98(H)×25.98(V) DPI: 140	1.54" 200*200 AA: 27.6(H)×27.6(V) DPI: 184			Dem kit
2.13" 104*212 AA: 48.55(H)×23.71(V) DPI: 110	2.13" 122*250 AA: 48.55(H)×23.71(V) DPI: 130	WHITE		Dem kit
2.66" 296*152 AA: 60.1(H)×30.7(V) DPI: 125				Dem kit
2.7" 264*176 AA: 25.98(H)×25.98(V) DPI: 117			With LENS	Dem kit
2.9" 296*128 AA: 65.9(H)×29.06(V) DPI: 112		WHITE		Dem kit
4.2" 400*300 AA: 84.8 (H)×63.6 (V) DPI: 120			With Touch	Dem kit
7.5" 640*384 AA:163.2(H)×97.92(V) DPI: 100	7.5" 800*480 AA:163.2(H)×97.92(V) DPI: 100			Dem kit

T3 Standard product(Active Matrix Displays)

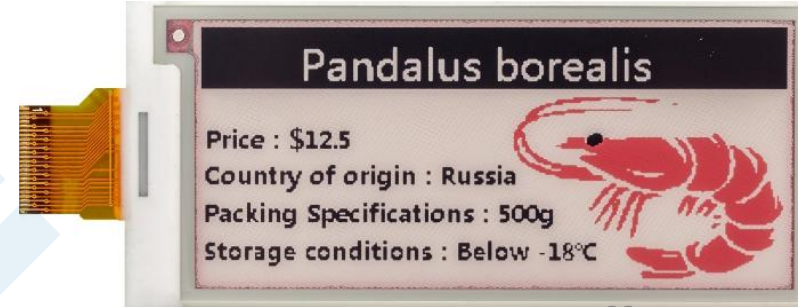
T3.2 Standard Products(B/W/R B/W/Y)



1.54"



2.13"



2.9"



2.66"

Mechanical Specifications

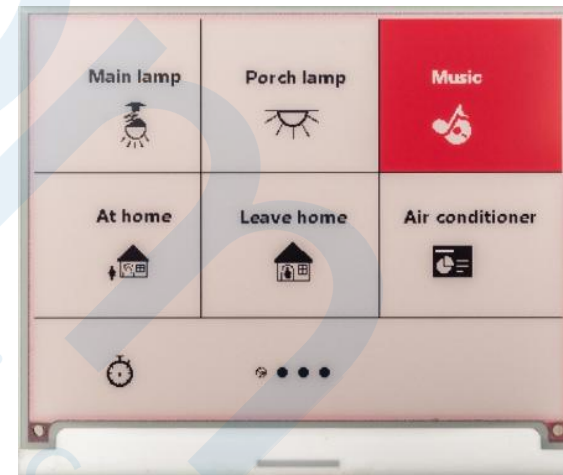
yes Optoelectronics 亚世光电

Screen Size(Inch):	7.5
Display Resolution(Pixel):	640(H)*384(V)
Active Area(mm):	163.2(H)*97.92(V)
Pixel Pitch(mm):	0.255*0.255
Outline Dimension(mm):	111.2(H)*107.2(V)*0.7(D)

Yes Optoelectronics Co., Ltd. is a joint venture incorporated by Yes Optoelectronics (HK) Co., Ltd and Anshan Rulin Investment Co., Ltd in July of 2012.

Business scope: Manufacture of display and control components of laser printer, laser scan electrical sticker, 3D display, touch system, LED backlight and other flat optoelectronic display components; laser measuring meter and equipment and other special electrical equipment, testing equipment and tooling; laser manufacture and manufacture of electrical products, computer software, technology consulting, technology service and technology transfer.

7.5"



4.2"

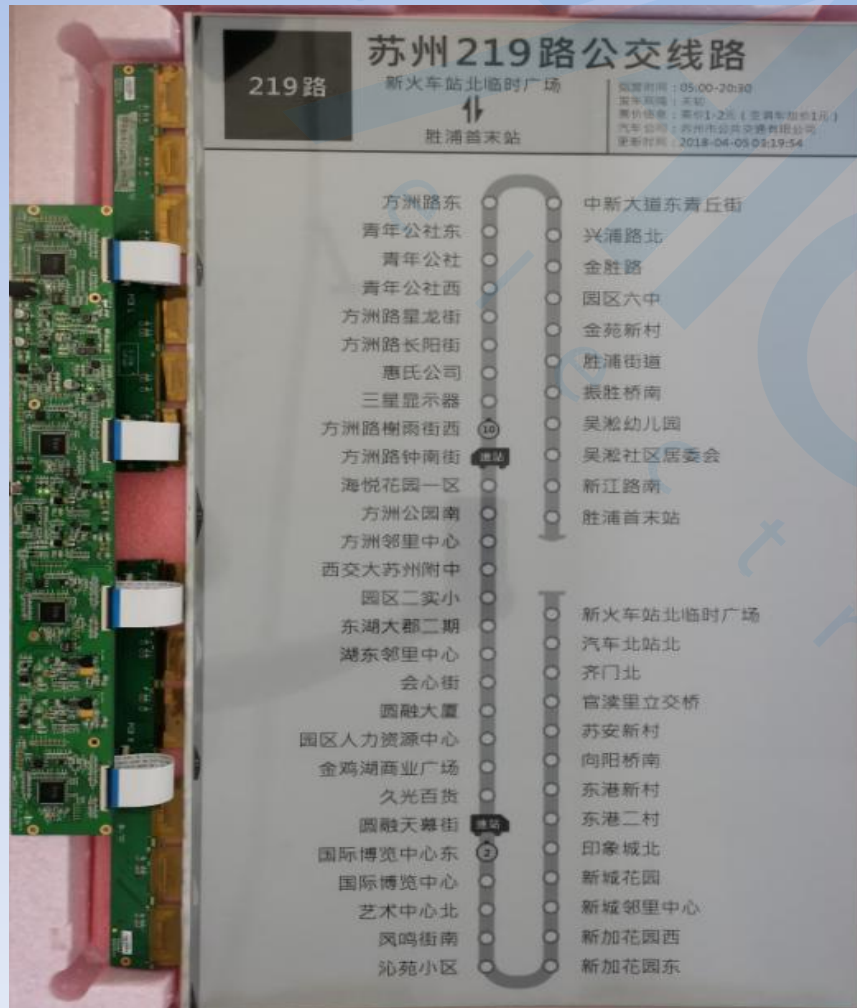
Eink 13.3" with frontlight



T3 Standard product(Active Matrix Displays)

Eink 31.2"

TCON



DAILY ROUTES

WAUSAU-MADISON-APPLETON-MILWAUKEE		
Route 211 To Milwaukee: (read down)	City	Route 210 To Wausau: (read up)
Lv 7:45am	Wausau Transit	Ar 7:55pm
8:05am	Wausau Lamers	7:40pm
8:35am	Stevens Point	7:10pm
Lv 8:40am	Stevens Point	Ar 7:10pm
Ar 10:55am	UW-Madison	Lv 4:50pm
Ar 11:15am	Madison Dutch Mill	Lv 4:25pm
Lv 8:45am	UW-Stevens Point	Ar 7:05pm
9:20am	Waupaca	6:25pm
10:05am	Appleton	5:25pm
10:55am	UW-Oshkosh	4:50pm
11:05am	Oshkosh	4:40pm
11:35am	Fond du Lac	4:15pm
12:50pm	Milwaukee Intermodal	3:00pm
Ar 1:20pm	Milwaukee Airport	Lv 2:30pm

GREEN BAY-APPLETON-MILWAUKEE-MADISON		
Route 105 To Madison: (read down)	City	Route 106 To Green Bay: (read up)
Lv 9:25am	Green Bay	Ar 6:10pm
Ar 10:10am	Appleton	Lv 5:30pm
Lv 10:15am	Appleton	Ar 5:25pm
Ar 12:50pm	Milwaukee Intermodal	Lv 3:00pm
10:55am	UW-Oshkosh	4:50pm
11:05am	Oshkosh	4:40pm
11:35am	Fond du Lac	4:15pm
12:05pm	Waupun	3:45pm
12:25pm	Beaver Dam	3:25pm
12:40pm	Columbus Amtrak	3:10pm
1:15pm	Madison Dutch Mill	2:30pm
Ar 1:40pm	UW-Madison	Lv 2:10pm

T3.4 Black and White Standard Products Key Features

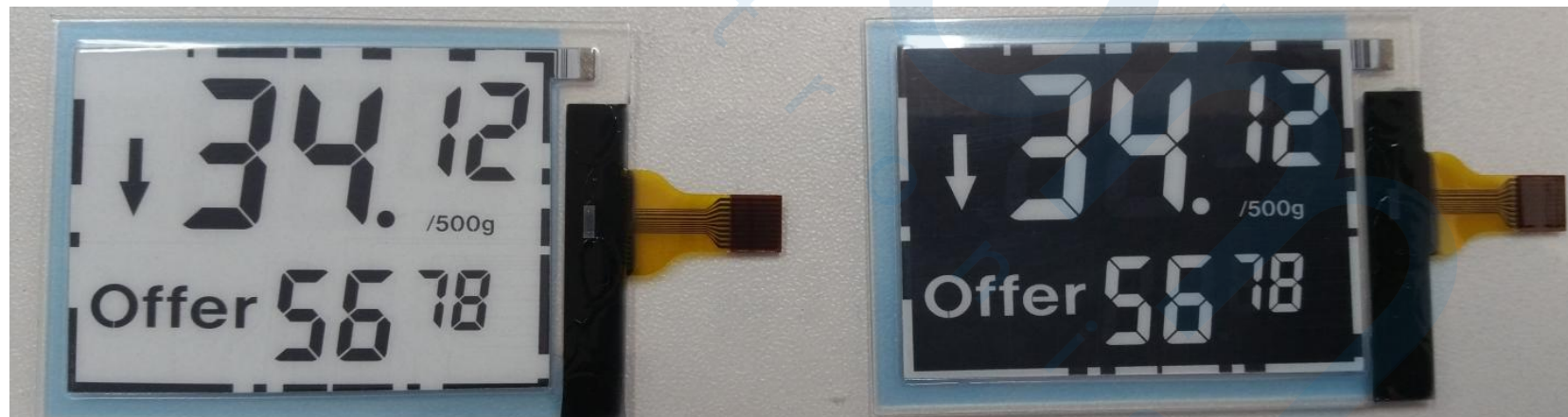
Color	Black, White, Red ,Greyscale
Contrast Ratio	12:01
Reflectivity	>42%
Bi-stability	$\Delta Lw \leq 2$ @300ms,25°C
Greyscale	16
Viewing Angle	180°
Image Update Time	3S(B/W) 12S(B/W/R) 260ms(EBOOK)
Driving Current	0.5 μ A/cm ²
Size	2" ~ 12"
Service Life	$\geq 1,000,000$ updates
Operation Temperature	0~50°C
Storage Temperature	-20~70°C
Driving Method	Active matrix TFT
Driving Voltage	$\pm 15V$

T4.1 ITO Substrate

Segment :base the driver IC

Size : up to 4" size

Resolution: UP to 264 Segement by two driver cascade

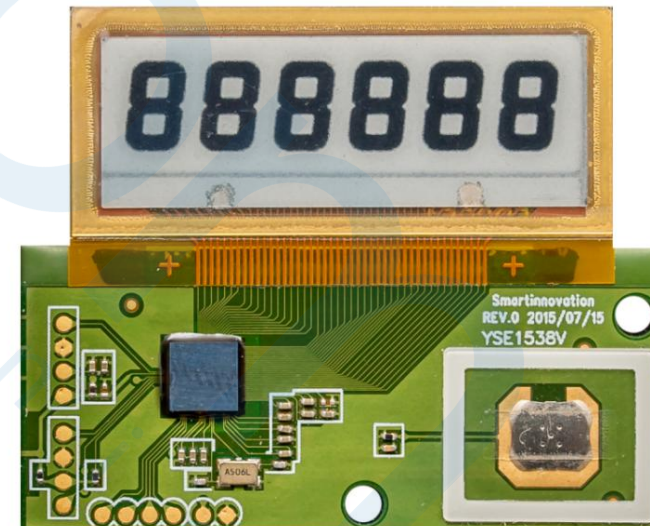


T4.2 FPC Substrate

Segment :base the driver IC

Size : up to 3" size or bigger

Application: smartcard or other



T4.3 Segmented Displays Key Features

Color	Black, White
Contrast Ratio	7:1(average) 10:1(max)
Reflectivity	>41%
Viewing Angle	Near 180°
Image Update Time	240-720ms
Driving Current	12microwatts/cm ²
Service Life	≥1,000,000 updates
Operation Temperature	0~50°C(max -10~60)
Storage Temperature	-20~70°C
Driving Method	Direct driving
Driving Voltage	15V typical

T5.1 TCON



No	Item	Specification
1	USB Power interface	Power supply for SDK
2	Main Controller	STM32F103RCT6
3	Debug Port	SWD
4	EPD Controller	ITE8951
5	Panel Power	FP9928A
6	Panel Interface	For 5.0 inch panel

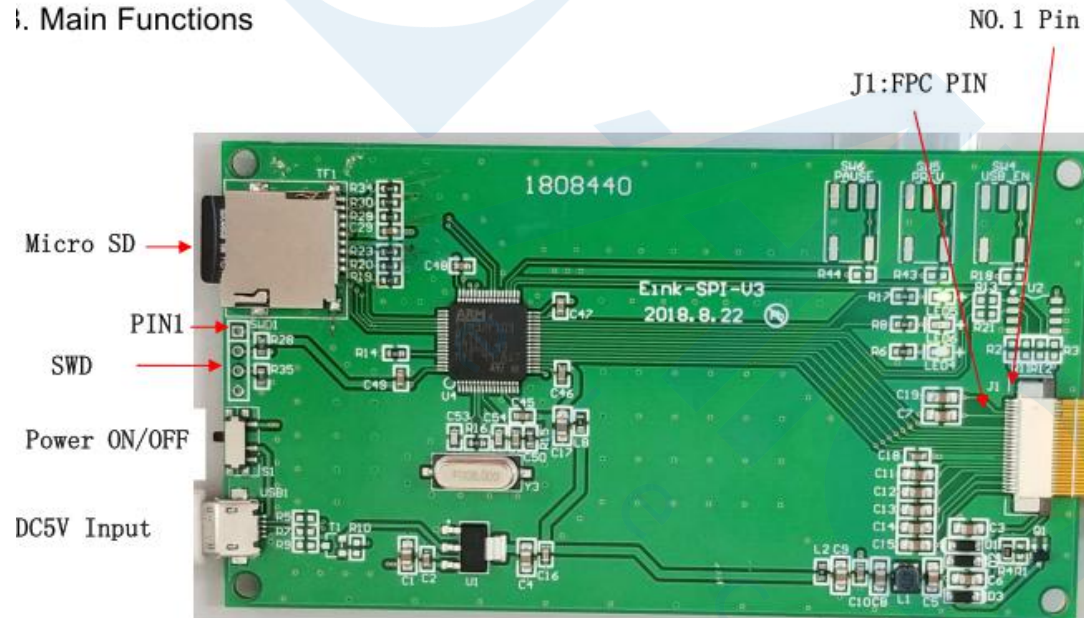


T5.1 TCON

Demo Kit

24pin SPI Interface

1. Main Functions



Function of J1

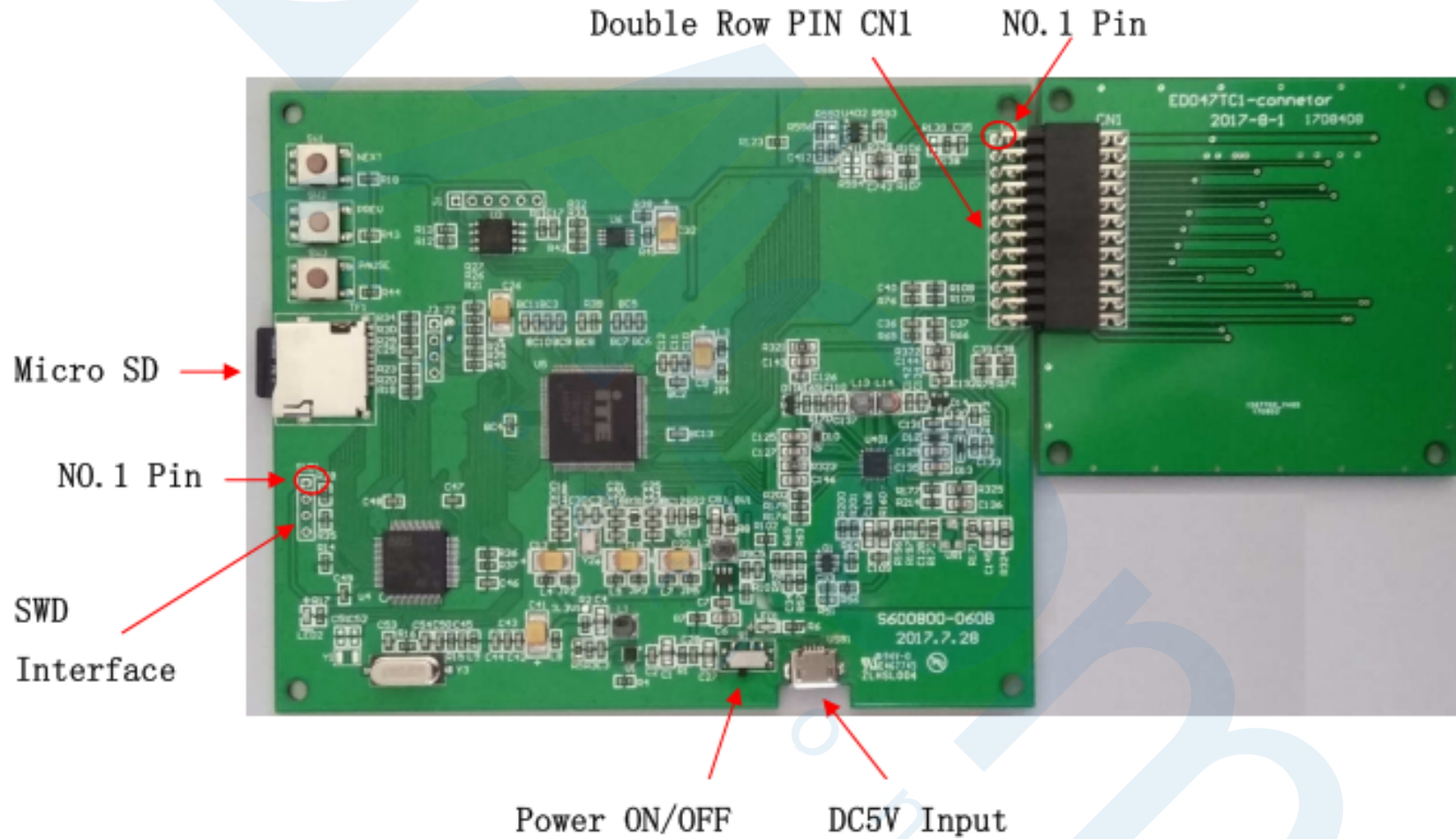
1	NC
2	GDR
3	RESE
4	NC
5	VSH2
6	TSCL
7	TDA
8	BS1
9	BUSY
10	RES#
11	D/C#
12	CS#
13	SCL
14	SDA
15	VDDIO
16	VCI
17	VSS
18	VDD
19	VPP
20	VSH1
21	VGH
22	VSL
23	VGL
24	VCOM

FPC24-0.5mm

T5.1 TCON

Demo Kit

Parallel interface



T5.1 Front light

Red Frontlight



White Frontlight

