PRODUCT INTRODUCTION

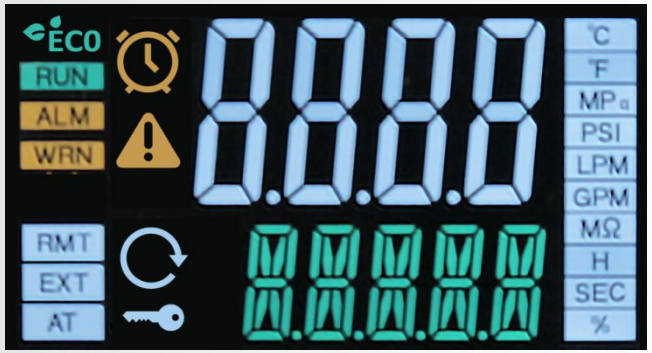
WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

WINSTAR

2020 - 10

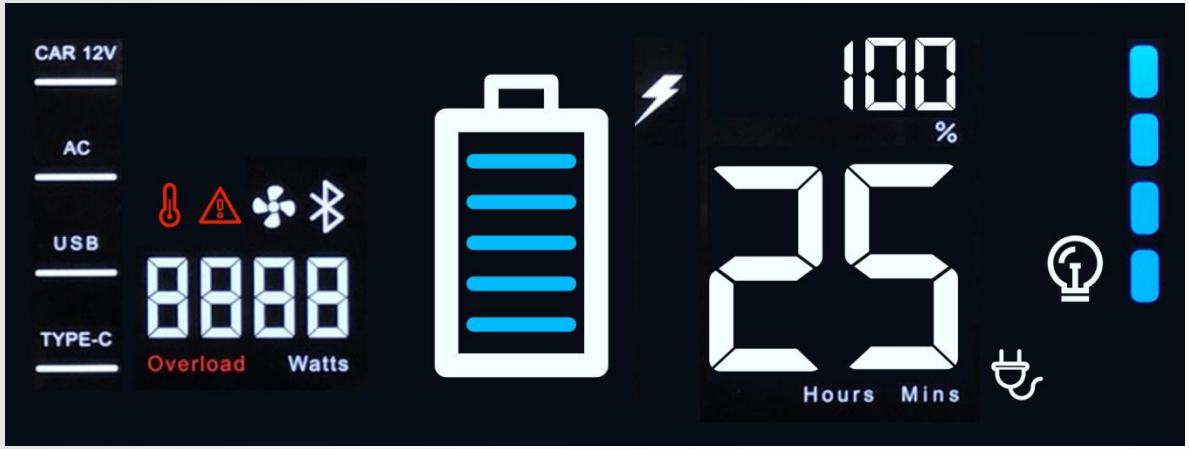
STN Display

Silk Printing Screen - STN



Measuring equipment

Vehicle-mounted device



Power Bank

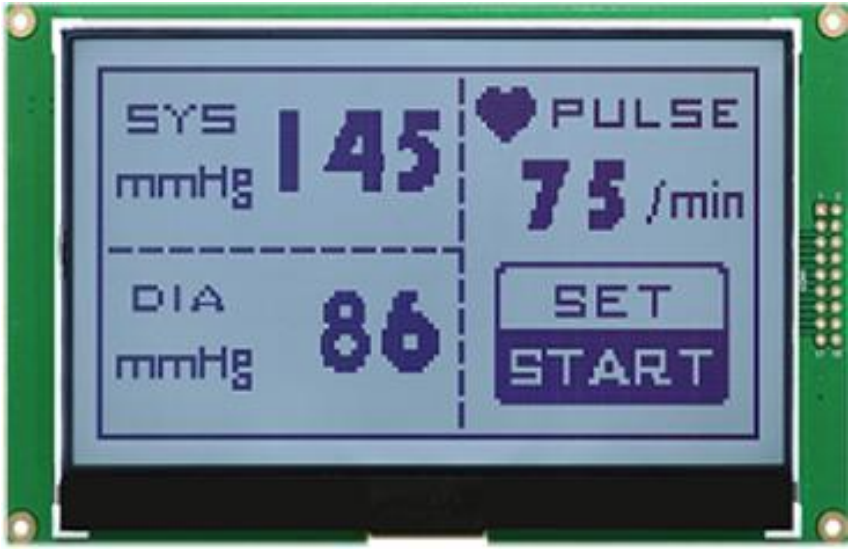
Circular COG Graphic LCD - STN

- 128×128 Dots
  Size: 1.7”
  Interface: 6800/8080/SPI/I2C
  Power +3.3V
  -20°C to +70°C

COG Module with PCB

WO1602I3/5

WO128128A2



WO240128B2

WO256128A2

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2021 STN Product Roadmap

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	2021 Q1	2021 Q2	2021 Q3	2021 Q4
PCB Optional		COG Character 20x4 WO2004A+PCB COG Graphic 240x64 WO24064C+PCB COG Graphic 240x128 WO240128A+PCB		COG Graphic 240x64 WO24064D+PCB COG Graphic 240x64 WO24064B+PCB
New Module	Character 16x2 VATN 1602 COG			
New Technology	VATN +ICON TOUCH + Silk Screen Printing		Graphic 120x32 VATN 12032 COG	

OLED Display

OLED COB Series

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Panel Size

Character Application

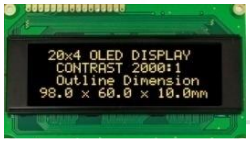
40ch * 2L (5.85”)

200*16 (4.90”)

16ch * 2L (3.67”)

100*16 (3.84”)

20ch * 2L (3.08”)



20ch * 4L (2.88”)

100*16 (2.59”)

16ch * 1L (2.25”)

16ch * 2L (2.29”)

100*32 (2.44”)

12ch * 2L (1.6”)

100*16 (2.4”)

76*16 (1.7”)

8ch * 2L (1.2”)

50*16 (1.26”)

Graphic Application

Resolution

OLED Bar Type

Panel Size

20*2 (2.93”)

16*2 (2.26”)

128*32 (1.71”)

128*32(0.91”)

96*16(0.84”)

128*32(2.23”)

128*32 (2.03”)

256*64 (5.5”)

256*64 (3.12”)

256*64(2.8”)

Resolution

OLED with Evaluation board

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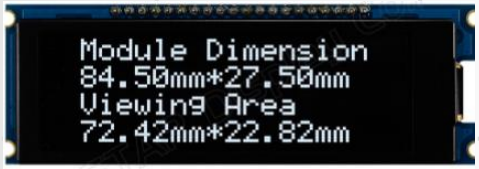
Panel Size

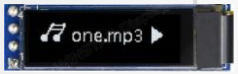


WEP2004C (2.89”)

WEP12832A (2.23”)

WEP2002A (2.93”)

48×64 (0.71”)



96×16 (0.84”)

256×64 (2.08”)

64×48 (0.66”)

128×32 (1.04”)

96×64 (1.1”)

128×64 (1.28”)

64×32 (0.49”)

128×32 (0.91”)

128×64 (0.96”)

Resolution

OLED with PCAP

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Panel Size

WEO012864Q(2.7”)

WEO012864A(1.54”)

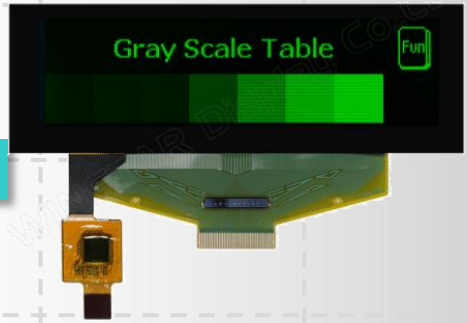
WEO012864G(2.42”)

WEP12832A (2.23”)

WEO012864J(1.54”)

WEO0128128D

WEO025664D(3.55”)



WEX025664B(3.12”)

Resolution

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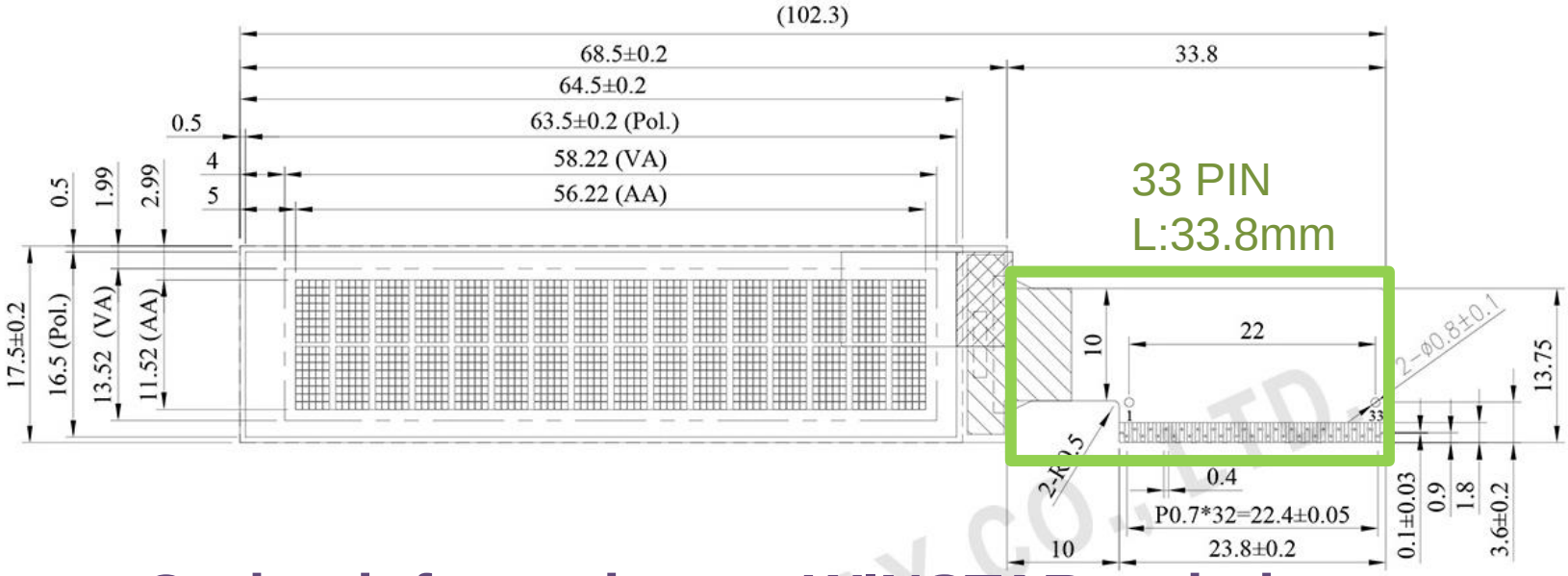
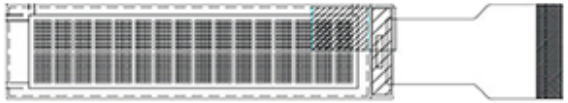
OLED FPC Option
Example :WEO001602C

DRAWING



Option information on WINSTAR website

Drawing	FPC Length	PIN	Pitch	ZIF FPC or HOTBAR FPC
	35.2	31	0.7	HOTBAR FPC
	31	34	0.5	ZIF FPC

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2021 OLED Product Roadmap

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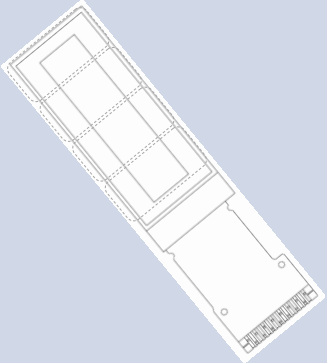
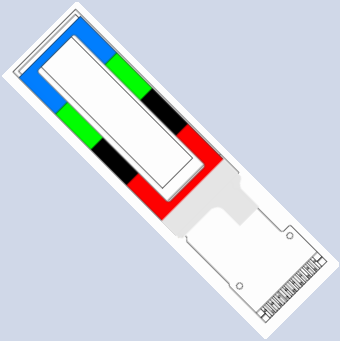
	2021 Q1	2021 Q2	2021 Q3	2021 Q4
New Module	0.96” 128 X 64 dual Color SSD1315 (shrinked ver.) Consumer	0.96” WEO064128A* Industrial /Consumer	0.69” WEO009616B* Consumer	1.12” WEO128128* SSD1327 Industrial
Touch Solution	0.91” WEO012832D FPC-version Consumer	0.49” WEO006432A FPC-version Consumer	1.54” WEO012864A* Optical bonding Industrial	0.96” WEO064128B* In-cell Industrial /Consumer
PCB optional	5.5” WEX025664C + FR + PCB Industrial		0.96” WEA012864V* + PCB Consumer	

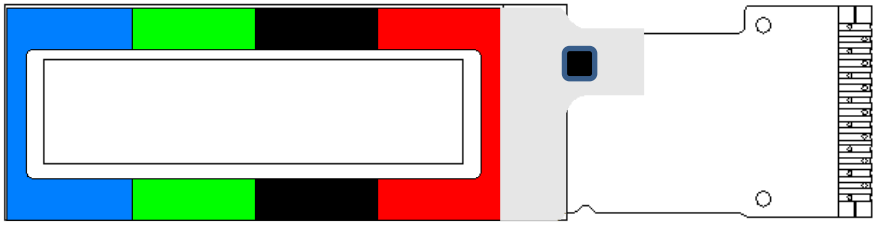
Completed | Confirm | Planning

Touch Solution Roadmap

Released Time	20’ H1	20’ H2	21’ H1	21’ H2
Solution	 Out cell - Air Bonding	 In-cell	 FPC Version	 Out cell - Direct/Optical Bonding
Size	AA > 1.5”	AA < 1.2”	AA < 1”	AA > 1.5”
Cost	OK	Low (High if panel need customized)	Very Low	High
Application	Industrial used	Consuming used For thinner product	Consuming used For low cost	Industrial used For better C.R.
Support Gesture	1. Singe tap 2. Double taps 3. Long tap 4. Slide 5. X-Y addressing	1. Singe tap 2. Double taps 3. Long tap 4. Slide (one axis) 5. 4 keys	1. Singe tap 2. Double taps 3. Long tap 4. Slide(one axis) 5. 4 keys	1. Singe tap 2. Double taps 3. Long tap 4. Slide 5. X-Y addressing
Other Restriction		Portrait panel only		

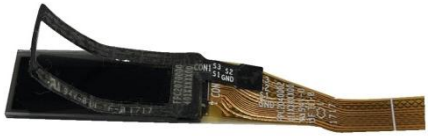
FPC Version Touch Solution

Touch Features	Support Gesture
1. One Finger 2. 4 Key	1. Singe tap 2. Double taps 3. Long tap 4. Slide (one axis)



Film

OLED



Optical Bonding Touch Solution

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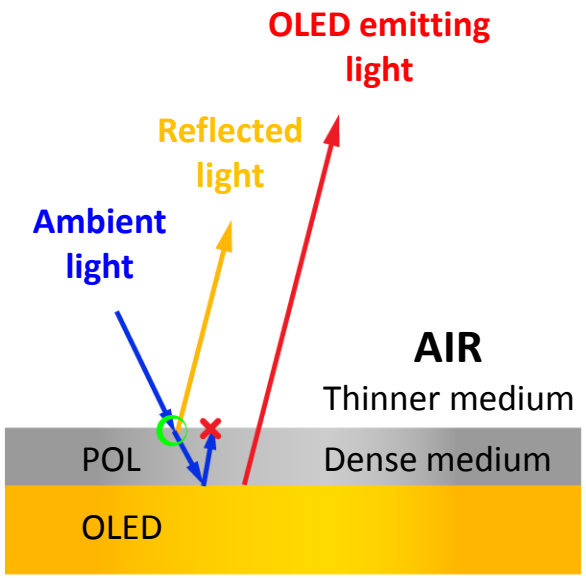
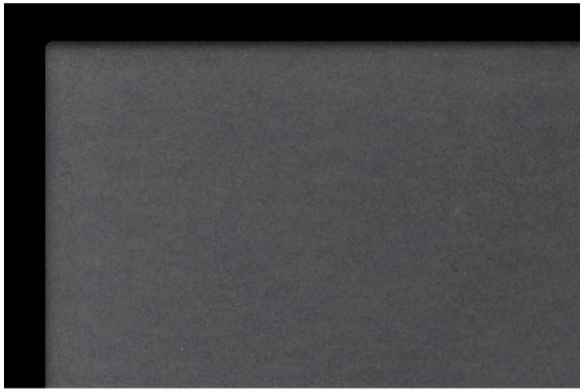
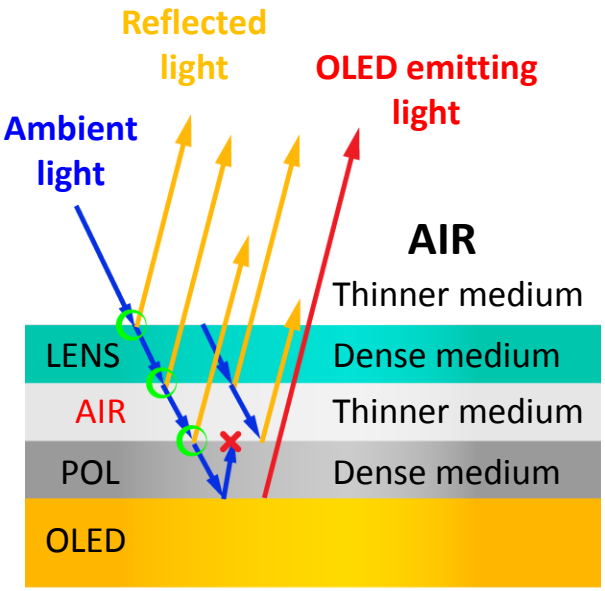
OLED Only

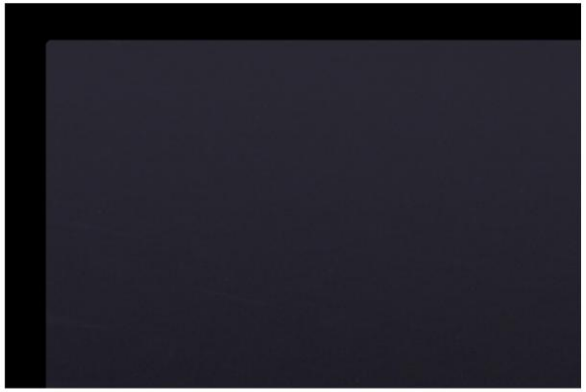


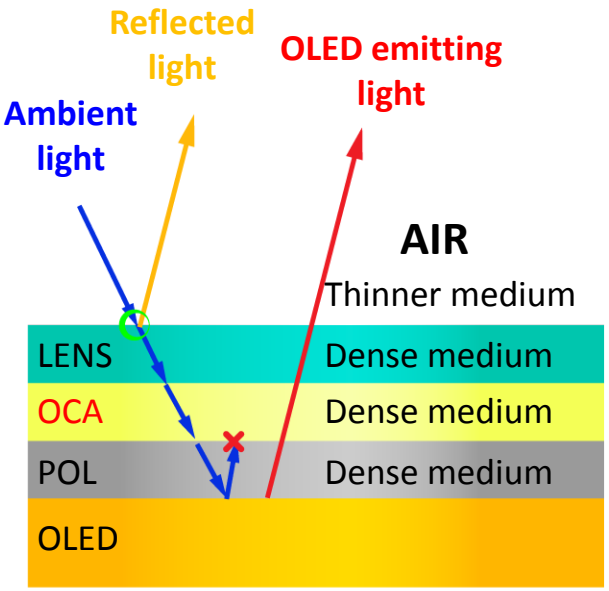
Air Bonding





Direct Bonding





- While light travel through the junction of two different density mediums , the reflection light would be occurred. The contrast ratio is poor.
- Minimizing the junctions can decrease the reflection light .

TFT Display

Traditional TFT List

Resolution : 80×160 ~ 1280×800
Size : 0.96” ~ 15”
I / F : Digital / LVDS / MIPI

Type	Mass Production				
Main promotion	0.96” WF0096A IPS	1.77” WF18F TN	2.4” WF24H /K/L TN / IPS	2.8” WF28E/G/J TN / IPS	2.83” WF283A TN
	3.2” WF32C TN	3.5” WF35L / U /R/X/W TN / IPS	4.3” WF43E/G/U /V/W/ S/T TN / IPS	4.6” WF46A TN	5.0” WF50A/B/E/F TN / IPS
	5.7” WF57B/C/D/E/R TN	7.0” WF70G/A2/A4/A 9/B2/Y/R TN/IPS	8.0” WF80B TN	9.0” WF90B IPS	10.2” WF102A TN
LVDS	7.0” WF70B/W/A7/A8 TN / IPS	10.1” WF101F/G/J IPS	10.4” WF104F IPS	12.1” WF121E TN	15” WF150A IPS
MIPI	3.97” WF40C IPS	4” WF40E IPS	5.0” WF50D IPS		

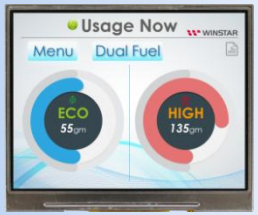
High Brightness TFT List

WINSTAR High Brightness

Resolution : 320×240 ~ 1280×800
Size : 3.5” ~ 10.1”
Brightness : 800 ~ 1000nits

3.5”

320×240

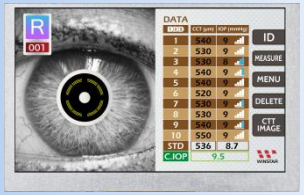


4.3”

480×272

5” & 5.2”

800×480
720×1280
480×128

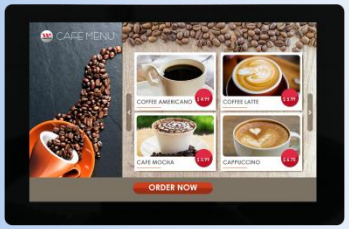


5.7” & 7”

320×240
800×480
1024×600

10.1”

1024×600
1280×800



Bar Type TFT List

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Resolution : 480×128 ~ 1920x720
Size : 3.9” ~ 12.3”

3.9”

480×128

RGB interface

4.6”

800×320

RGB interface

5.2”

480×128

RGB / MCU

8.8”

480×920

MIPI interface

12.3”

1920×720

LVDS interface

Traditional IPS TFT List

Size	Series	Resolution	RTP/CTP	Interface
0.96”	A	80×160	X	4-Wire SPI
2.4”	L	240×320	V	8080/SPI
2.8”	J	240×320	V	8080/SPI
3.5"	X	320×240	V	RGB
	U	320×480	V	8080/SPI
	W	240×320	X	8080
4.0"	C	800×480	X	MIPI
	E	480×480	X	MIPI
4.3"	W	480x272	V	RGB
5.0"	D	720×1280	V	MIPI
	F	800×480	V	RGB/HDMI
7.0"	A9	800×480	V	RGB
	A8	1024×600	V	LVDS
8.8"	B	480×1920	X	MIPI
9.0"	B	1024×600	X	LVDS
10.1"	F/G	1280×800	V	LVDS/HDMI
	J	1024x600	V	LVDS
12.1"	E	1024×768	X	LVDS
12.3"	B	1920×720	X	2-CH LVDS
15.0"	A	1024×768	X	LVDS

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Monochrome TFT List

Size

WF62A	Dimension
Dot Matrix	640 x 320 Mono TFT
Module dimension	170.0 x 88.3 x 6.0 mm

WF57S	Dimension
Dot Matrix	320 x 240 Mono TFT
Module dimension	160.0 x 109.0 x 7.0 mm

WF35N	Dimension
Dot Matrix	240 x 320 Mono TFT
Module dimension	62.9 x 86.54 x 4.0 mm

Contrast ratio > 800
MCU 8080 interface

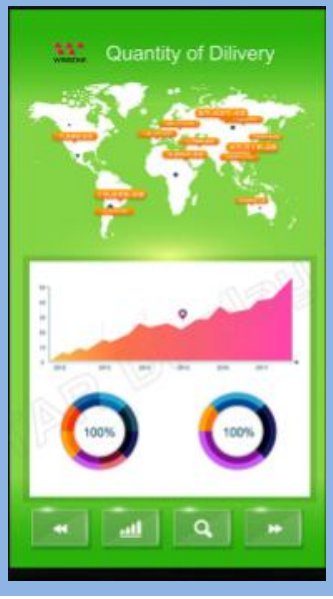
Resolution

MIPI interface IPS

40E 480x480

40C 480x800

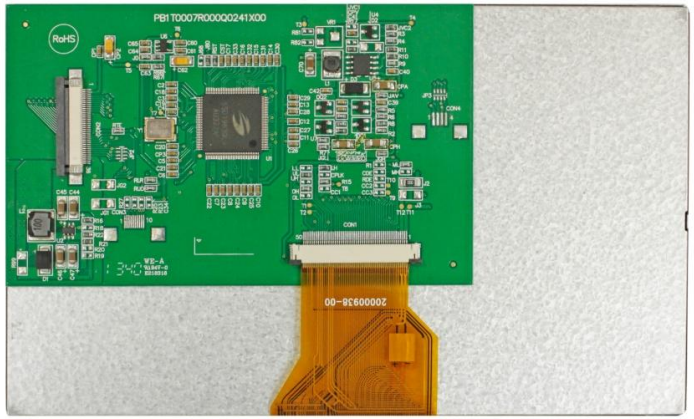
50D 720x1280



88B

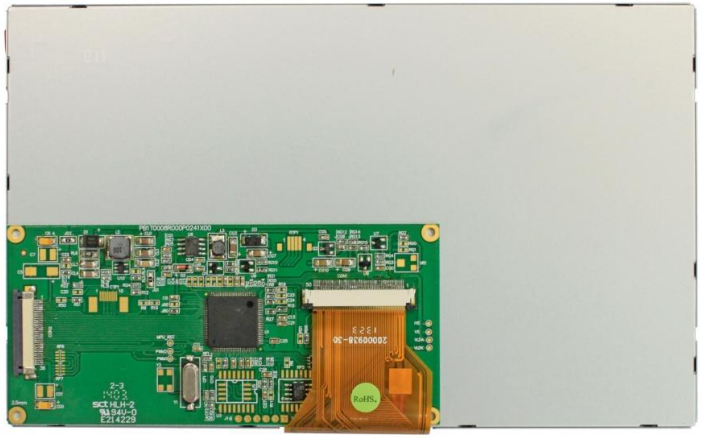
480×1920

Q-Series Control Board



Control /MCU IC	SSD1963
Support Resolution	864 x 480
Number of Color	16M-color
Support Interface	8/16/BITS 8080/6800

P-Series Control Board



Control /MCU IC	RA8875
Support Resolution	800 x 480
Number of Color	65k-color
Support Interface	8/16/BITS 8080/6800
Extra Functions	Chinese character, Flash Memory BL adjustment , and T/P driver

M Series

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WINSTAR Clever System

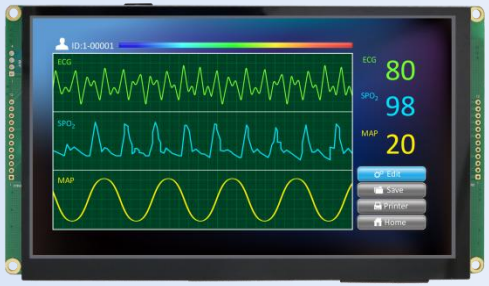
- SPI/UART Interface
- 4-SW Included
- Easy to Use with UI
- Support Low Level MCU
- Shorten Development Time

3.5”
320X240

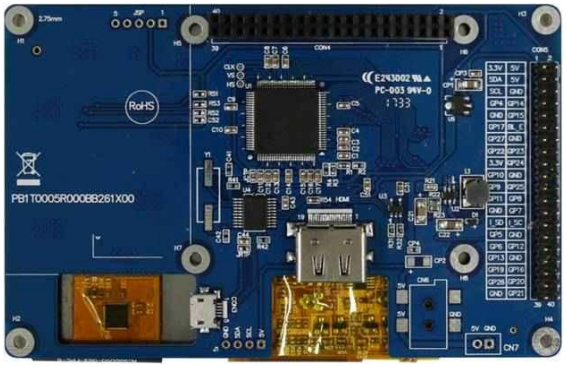
4.3”
480X272

5.7”
320X240

7.0”
800X480



HDMI(DVI) Series



52A

Only for Raspberry Pi

480x128

CTP

50B

800×480

RTP / CTP with USB

70G/70A2

800×480

RTP / CTP with USB

70A7/70A8

1024×600

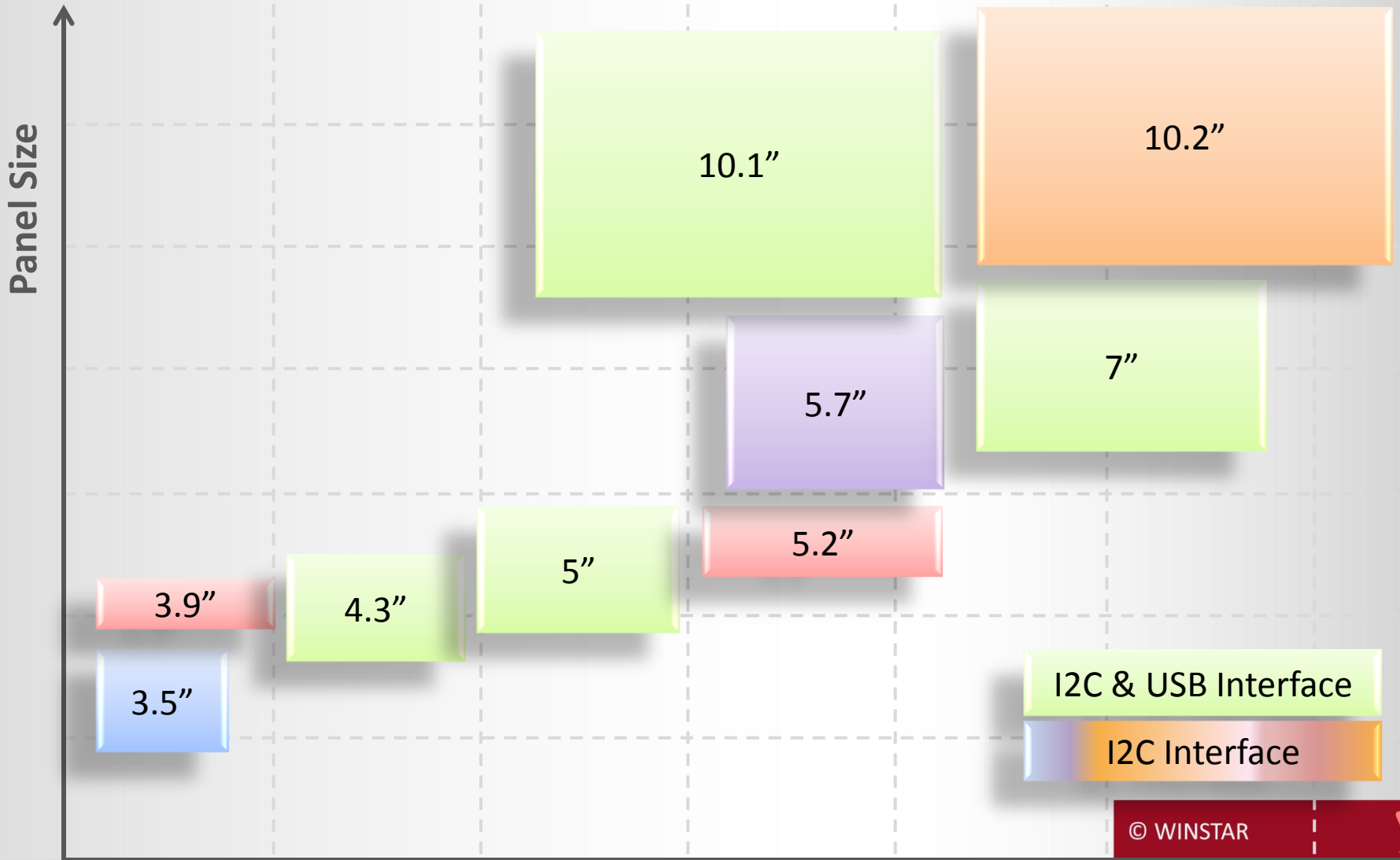
RTP / CTP with USB

101G/F

1280×800

RTP / CTP with USB

Winstar Capacitive Touch Panel



2021 TFT Product Roadmap

WINSTAR

2021 Q1	2021 Q2	2021 Q3	2021 Q4
SPI **TFT 4.3” (IPS)** 480X272 Top: -20°C~+70°C	**RGB** **TFT 5.0” (LPRD)** 800×480 Top: -20°C~+70°C	**MIPI** **TFT 3.5” (Blan View)** 480×640 Top: -30°C~+70°C	**MIPI** **TFT 3.4”(Circle)** 800×800 Top: -20°C~+70°C
SPI **TFT 5.0” (IPS)** 800X480 Top: -20°C~+70°C	**B/W/R** **TFT 4.2” (LPRD)** 300×400 Top: -20°C~+70°C	**RGB** **TFT 2.2” (Blan View)** 240×320 Top: -30°C~+70°C	**LVDS** **TFT 15.0”(IPS)** 1024×600 Top: -20°C~+70°C

3D Touch Display Technology

System Integration

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Full embedded display solutions

Communication interface design

CAN / RS232 / RS485 / USB

Output interface

GPIO contact point
Custom Display rendering of User Interface

GUI Programming

Driver boards

Multi-language Font

PCB Custom shape & size

Inputs for User Interface

Custom Touchscreen
Membrane Switches / Tact Switches
Silicon keypads

Mounting options & methods

Custom TFT-OLED-STN Segment LCD

CAN Bus series Smart Display

Features

- ✓ 5” and 7” IPS TFT
- ✓ CAN OPEN (ISO11898)
- ✓ 10 standard graphic object
- ✓ Power-On Self-Test & Splash screen.
- ✓ Customer UI support
- ✓ PCAP available and built-in Buzzer.
- ✓ 3 part numbers for different application
- ✓ Good transmission distance, anti-interference ability and stability

7” RS485 series Smart Display is coming soon

Control Board Summary

Serial Type	Q Series	P Series	M Series	HDMI Series	SmartDisplay
Support TFT Size	3.5“ ~ 10.2“	3.5“ ~ 10.2“	3.5“ ~ 7.0“	5.0“ ~ 10.1“	5“ & 7“
Number of Color	16M-color	65k-color	262K-color	16M-color	5“ 64K-color 7“ 16M-color
Support Interface	8/16/BITS 8080/6800	8/16BITS 8080/6800	UART/4-LineSPI	HDMI	CAN Bus with Can Open /RS485 Mod Bus(7”)
Backlight PWM	No	Yes	Yes	No	Yes
Display Mode	Graphic	Text/Graphic	Text/Graphic	Graphic	Object
Feature	MCU interface	Geometric Drawing engine Character ROM RTP driver	UI Support	Plug and play	Semi customize product fast development

System Integration Product Roadmap

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	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4
5.0” 800X480 RGB Top:-20~+70	MP				
7.0” **1024X600** LVDS Top:-20~+70	DVT	PVT	MP		
3.9” **480X128 RGB** **Top:-20~+70**	EVT	DVT	PVT	MP	
4.3”		EVT	DVT	PVT	MP
3.5”		EVT	DVT	PVT	MP

THANK YOU FOR LISTENING

www.winstar.com.tw

Responsibility
on Environmental Protection

Winstar considered that our responsibility on environmental protection; our manufacturing process completely follows RoHS, SVHC of EU REACH and WEEE standard since 2006, as well as our relative supplier was asked to be cooperated with same regulation.