TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
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SPECIFICATION

MODEL NO. : WL0F00050000FGAAASA00-FC

Summary

5 Inch Smart Display Feature

1. DC 5V working voltage, low power consumption for USB to drive.
2. Self testing after booting function.
3. CAN bus communication interface.
4. Support CANopen negotiation. Default baud rate is 250KB.
5. Embedded FLASH memory, storing Font and Object Dictionary.
6. Support capacitive touch panel (CTP).
7. Smart Display scenario is slave device display and action from Master Device instruction.
8. Embedded buzzer controlled by Master Device.
9. Demo set HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi (with PiCAN2).

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Product information

Mechanical Data

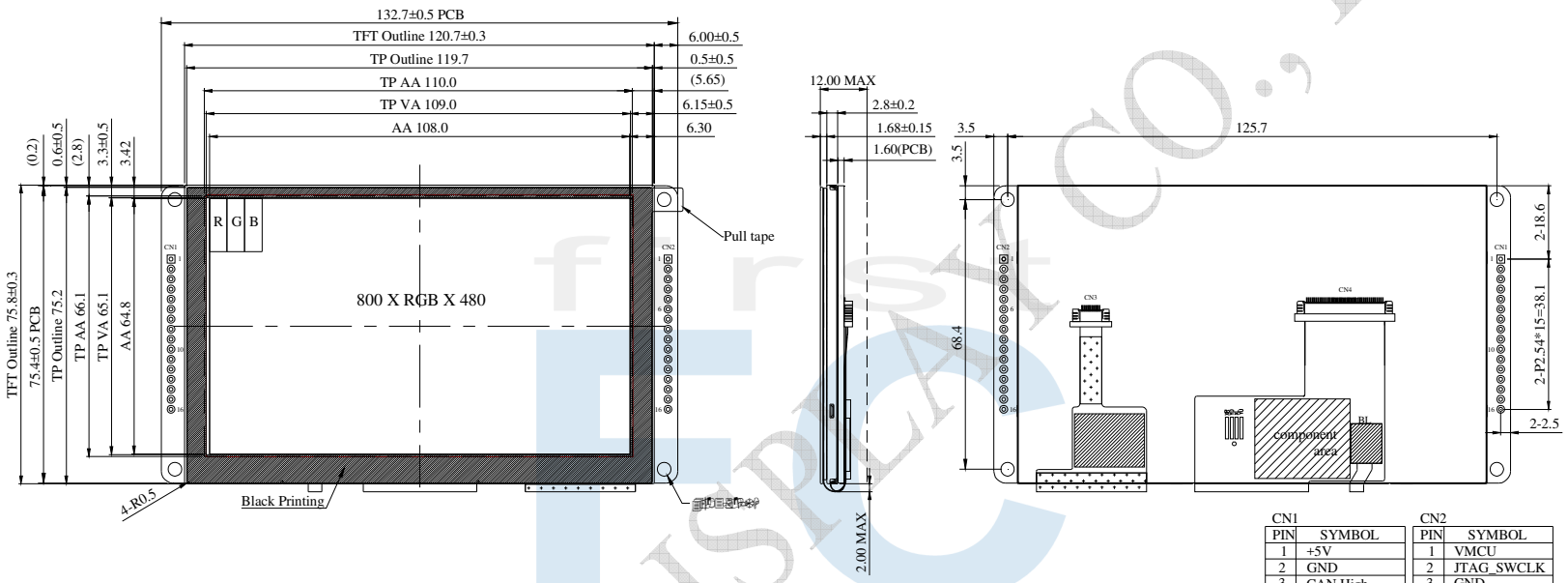
Item	Standard Value	Unit
LCD panel	120.7(W)*75.8(H)*4.475	mm
PCB	132.7(W)*75.8(H)*1.6	mm
Housing outline	NA	mm

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	CAN bus differential ± 3.3	Vpp
LCD display size	5.0	inch
Dot Matrix	800× 3(RGB) × 480	dot
Module dimension	120.7(W) ×75.8(H) ×4.475	mm
Active area	108(W) ×64.8 (H)	mm
Dot pitch	0.135(W) ×0.135(H)	mm
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	16:9	
Touch Panel	PCAP	
Surface	Glare	

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Contour Drawing



CN1	
PIN	SYMBOL
1	+5V
2	GND
3	CAN High
4	CAN Low
5	VDD_5V
6	Reserve
7	Reserve
8	GND
9	NC
10	NC
11	
12	
13	
14	
15	
16	

CN2	
PIN	SYMBOL
1	VMCU
2	JTAG_SWCLK
3	GND
4	JTAG_SWDIO
5	NRST
6	GND
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

1	Lcd Type	TFT
2	View Angle	80/80/80/80
3	Surface	Glare
4	Screen size	5.0"(diagonal)
5	Display format	800 x RGB x 480
6	Operating Temperature	-20℃ ~70℃
7	Storage Temperature	-30℃ ~80℃
8	Active area	108.0(H) x 64.8(V) mm
9	Pixel pitch	0.135(H) x 0.135(V) mm
10	Color arrangement	RGB-STRIPE
11	Brightness	300min. 400typ. cd/m2
12	CTP IC	FT5426 or equivalent
13	CTP Resolution	1792*1024

The non-specified tolerance of dimension is ±0.3 mm .

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Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

Electrical Characteristics

Operating conditions:

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Analog	VCI	—	4.75	5	5.5	V
Interface Operation Voltage	IOVCC	—	3.234	3.30	3.367	V
Supply LCM current	ICI(mA)	—	320	350	-	mA

LED driving conditions:

Parameter	Symbol	Min.	Typ.	Max.	Unit
LED current		-	1.0	1.5	mA
Power Consumption		-	-	27	mW
LED voltage	VBL+	-	-	18	V
LED Life Time		-	50,000	-	Hr

BOM

Item	Description	Remark
LCM	WF50FTYAGDNG0#	
PCBA	4 layer FR4, 1.6mm	

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Interface

CN1 definition:

Pin	Symbol	Function	Remark
1	+5V	Power supply 5V input	Input
2	GND	Power supply GND input	Input
3	CAN_High	CAN bus D+	I/O
4	CAN_Low	CAN bus D-	I/O
5	VDD_5V	5V output for USART interface	Output
6	USART1_RX	USART RX interface	Reserve
7	USART1_TX	USART TX interface	Reserve
8	GND	GND for USART interface	Output
9-16	NC	Connection	-

CN2 definition:

Pin	Symbol	Function	Remark
1	VMCU	3.3V power for JTAG interface	Output
2	JTAG_SWCLK	CLK pin for JTAG interface	Input
3	GND	GND for JTAG interface	Output
4	JTAG_SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	GND	Output
7-16	NC	Connection	-

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Display Usage

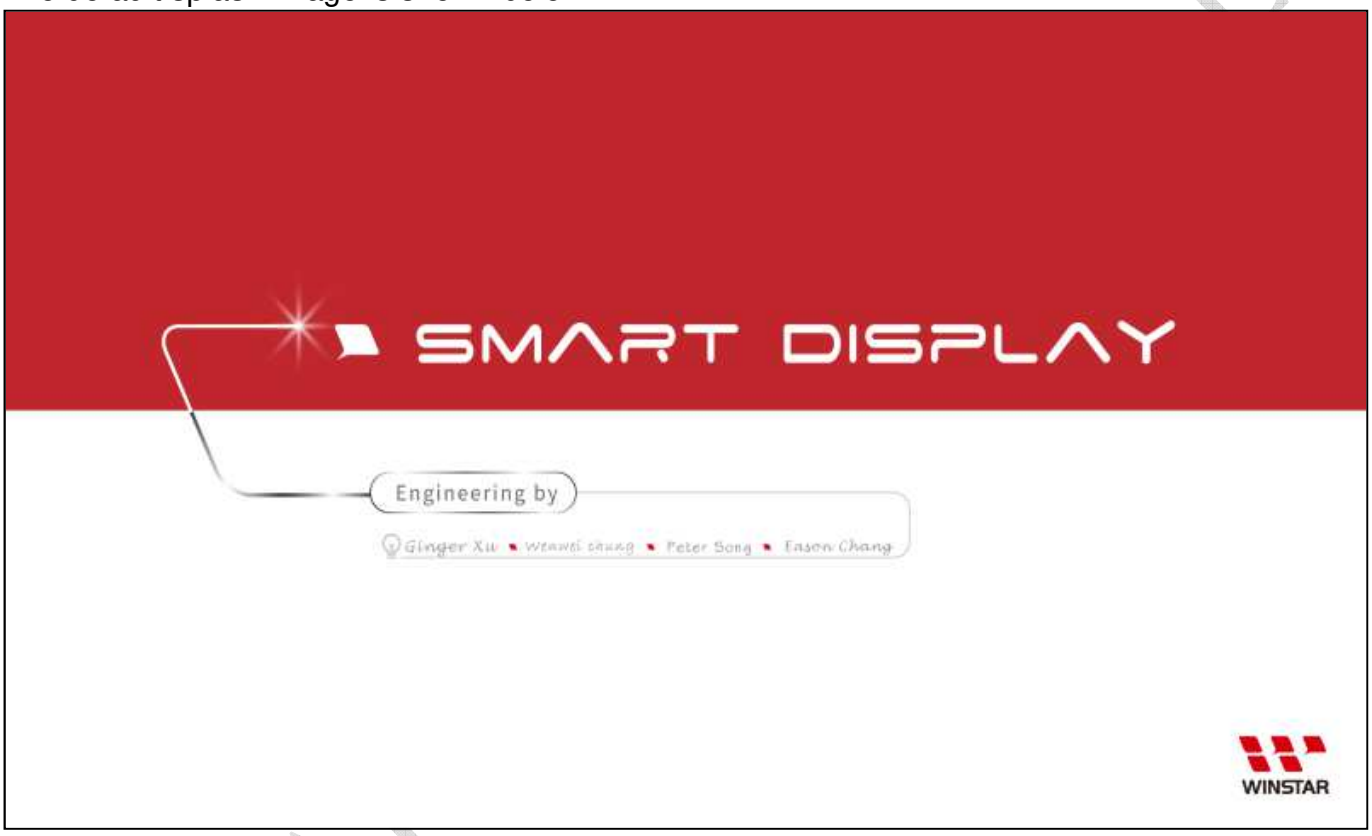
Functional description

Smart Display can be used to display the coordinate, status and data information provided by the connected HOST device. Customers can configure the position coordinates they want to display in normal operation mode (COB-ID = 0x7B).

The Display is designed to be easily connected to a controller network, and to operate with minimum setup or knowledge of the SDO configuration on the controllers.

Splash Screen

The default splash image is shown below.



✓ This product is produced as a generic product. If you require a custom splash image for your application, contact us to discuss.

Acquisition of Displayed Data

The Smart Display can acquire the data that it displays either using the CANopen SDO protocol, or using the CANopen PDO protocol.

On Pre-operational mode, customers can set the coordinates of objects through SDO; On operational mode, customers can send data of objects through PDO.

Configuring the Display

Winstar Smart Display CAN series offers an out-of-the-box CANopen development experience that will lower customers' development costs and speed time-to-market expectations.

The Smart Display can use wide-temperature are designed to support control applications in harsh operating conditions, which designed to be connected to a variety of different situation combinations, such as automotive, marine, power generation and oil-and-gas.

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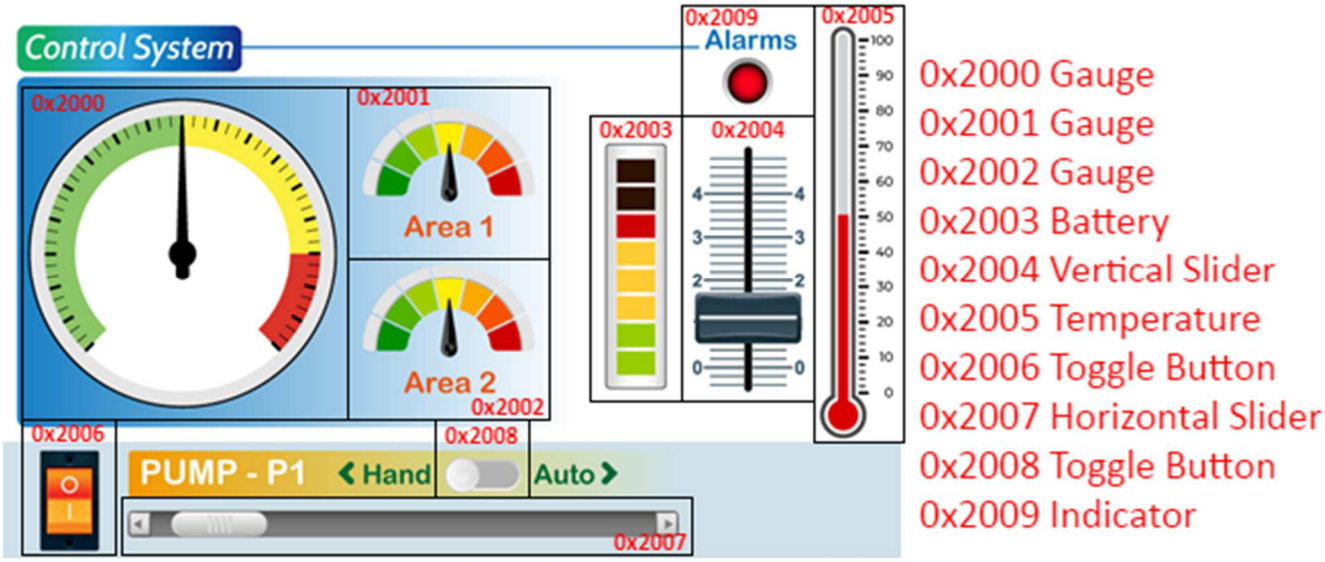
The Smart Display comes with standard UI objects to get customers project off the ground quickly. If customers need custom UI objects support, our engineers are here to help. Send over your contents in PNG/JPG format, we will send over a new set of UI objects within 3~5 working days.

The Smart Display is defined as a slave device, which is controlled by master device via CAN bus command to render display content on the display screen and return touch event data with protocol objects.

Example Screen Layout (Industry application)

Example Layout

The screen layout described in this section is intended to demonstrate the settings of screen items that can be used in an industry application situation.



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Example Screen Layout (Vehicle automotive)

Example Layout

The screen layout described in this section is intended to demonstrate the settings of screen items that can be used in a vehicle automotive situation.

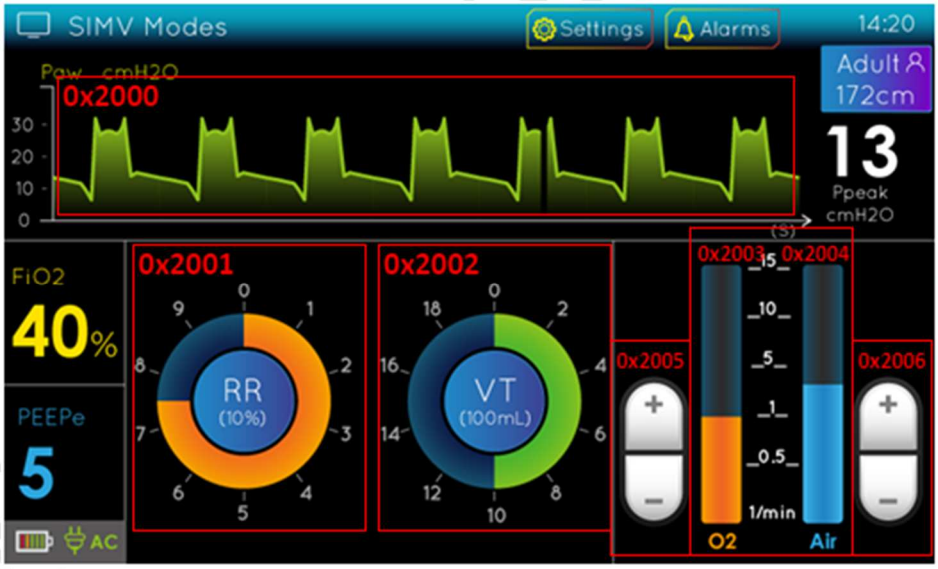


0x2000 Gauge
0x2001 Battery
0x2002 Temperature
0x2003 Toggle Button
0x2004 Toggle Button
0x2005 Indicator

Example Screen Layout (Medical application)

Example Layout

The screen layout described in this section is intended to demonstrate the settings of screen items that can be used in a Medical application situation.



0x2000 Graph
0x2001 CircleProgres
0x2002 CircleProgres
0x2003 ImageProgress
0x2004 ImageProgress
0x2005 Progressive button
0x2006 Progressive button