TFT DISPLAY SPECIFICATION

WINSTAR Display Co.,Ltd.

華凌光電股份有限公司

SPECIFICATION

MODEL NO. : WL0F00050000FGDAASA00

Summary

5 Inch Smart Display Feature

1. DC 5V working voltage.
2. Self testing after booting function.
3. RS485 communication interface.
4. Built in flash memory, store the font and Object Dictionary Data.
5. Support capacitive touch panel (CTP).
6. Smart Display scenario is slave device display and action from Master Device instruction.
7. Embedded buzzer controlled by Master Device.
8. Demo set HOST can be used on multiple platforms, such as Computer (with USB to RS-485 Dongle), MCU.

Product information

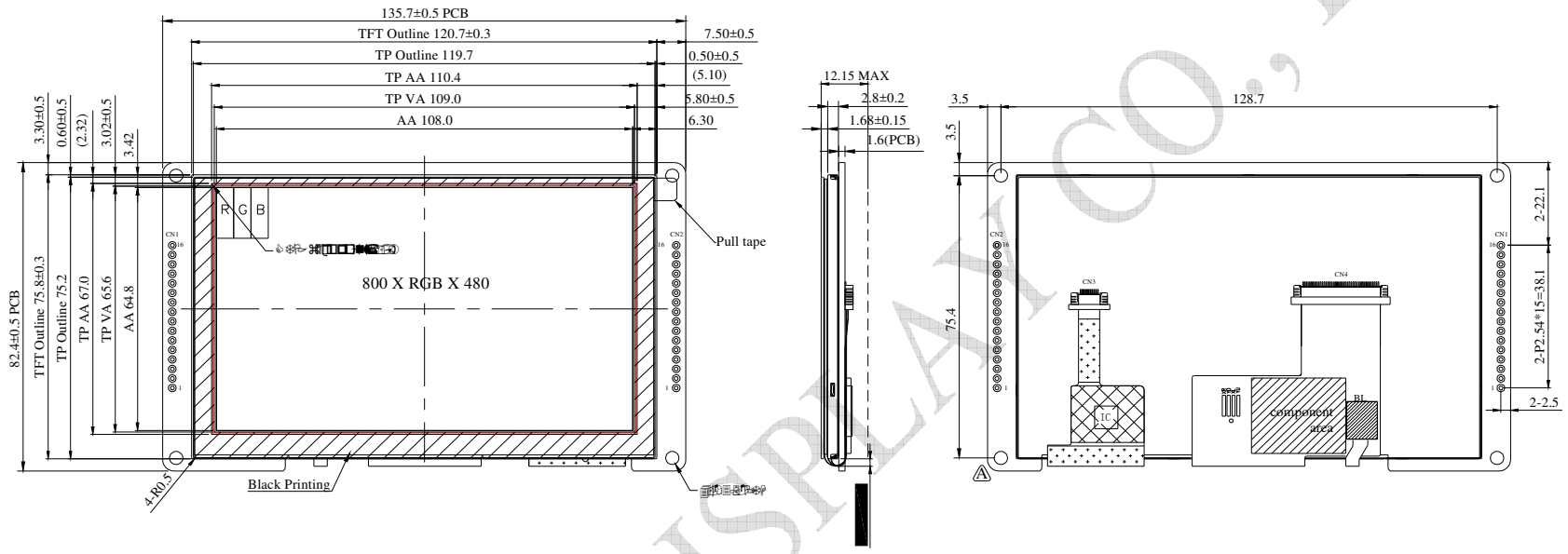
Mechanical Data

Item	Standard Value	Unit
LCD panel	120.7(W)*75.8(H)*4.475	mm
PCB	135.7(W)*82.4(H)*1.6	mm
Housing outline	NA	mm

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	RS485 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	
With /Without TP	With CTP	
Surface	Glare	

Contour Drawing



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	-30℃ ~80℃
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	ILI2130 or equivalent
13	CTP Resolution	16384*16384

CN2

PIN	SYMBOL
1	VDD3V
2	JTAG_SWCLK
3	GND
4	JTAG_SWDIO
5	NRST
6	GND

CN1

PIN	SYMBOL
1	5V
2	GND
3	NC
4	NC
5	GND
6	GND
7	NC
8	NC
9	VDD_5V
10	USART1_RX
11	USART1_TX
12	GND
13	VDD_5V
14	RS485_B
15	RS485_A
16	GND

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

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+80	℃
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)	—	380	440	-	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
LCM	WF50FTWAGDNG0#
PCBA	4 layer FR4, 1.6mm

Interface

CN1 definition:

Pin	Symbol	Function	Remark
1	+5V	Power supply 5V input	Input
2	GND	Power supply GND input	Input
3	NC	Connection	-
4	NC	Connection	-
5	GND	Power supply GND input	Input
6	GND	Power supply GND input	Input
7	NC	Connection	-
8	NC	Connection	-
9	VDD_5V	5V output for USART interface	Output
10	USART1_RX	USART RX interface	Reserve
11	USART1_TX	USART TX interface	Reserve
12	GND	GND for USART interface	Output
13	VDD_5V	5V output for USART interface	Output
14	RS485_B	RS485 DATA-	I/O
15	RS485_A	RS485 DATA+	I/O
16	GND	Power supply GND input	Input

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	-

Display Usage

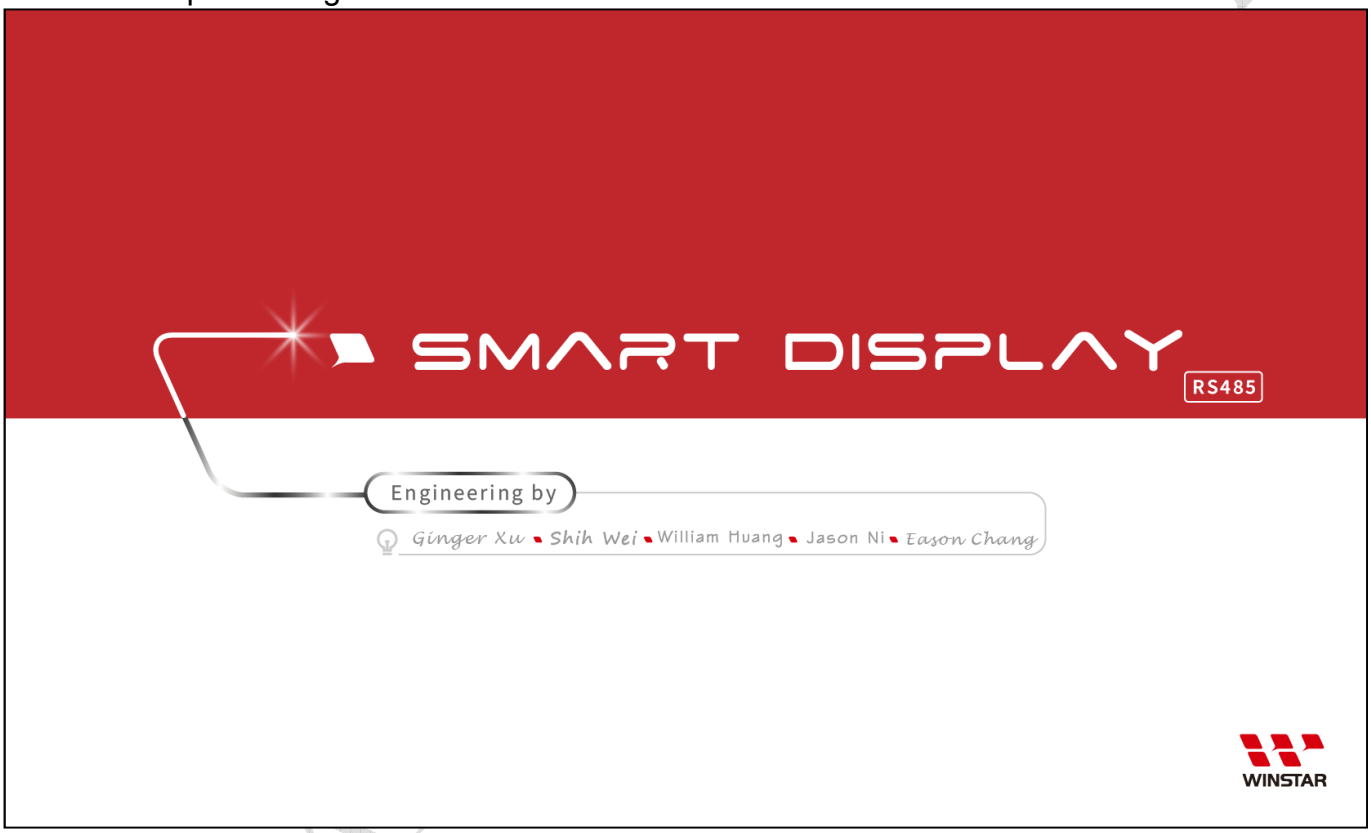
Functional description

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 (Device Address = 0x7B).

The Display is designed to be easily connected to a controller network, and to use the register type of Holding Register.

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.

Default Selection

Press the preferred application and hold for 3 seconds for the first time power on.

Acquisition of Displayed Data
Smart Display uses the Modbus protocol to get and send the data.

On Config mode, customers can set the coordinates or type of objects; On Display mode, customers can send and get data of objects.

Configuring the Display
Winstar Smart Display RS-485 series offers an out-of-the-box Modbus development experience that will lower customers' development costs and speed time-to-market expectations.

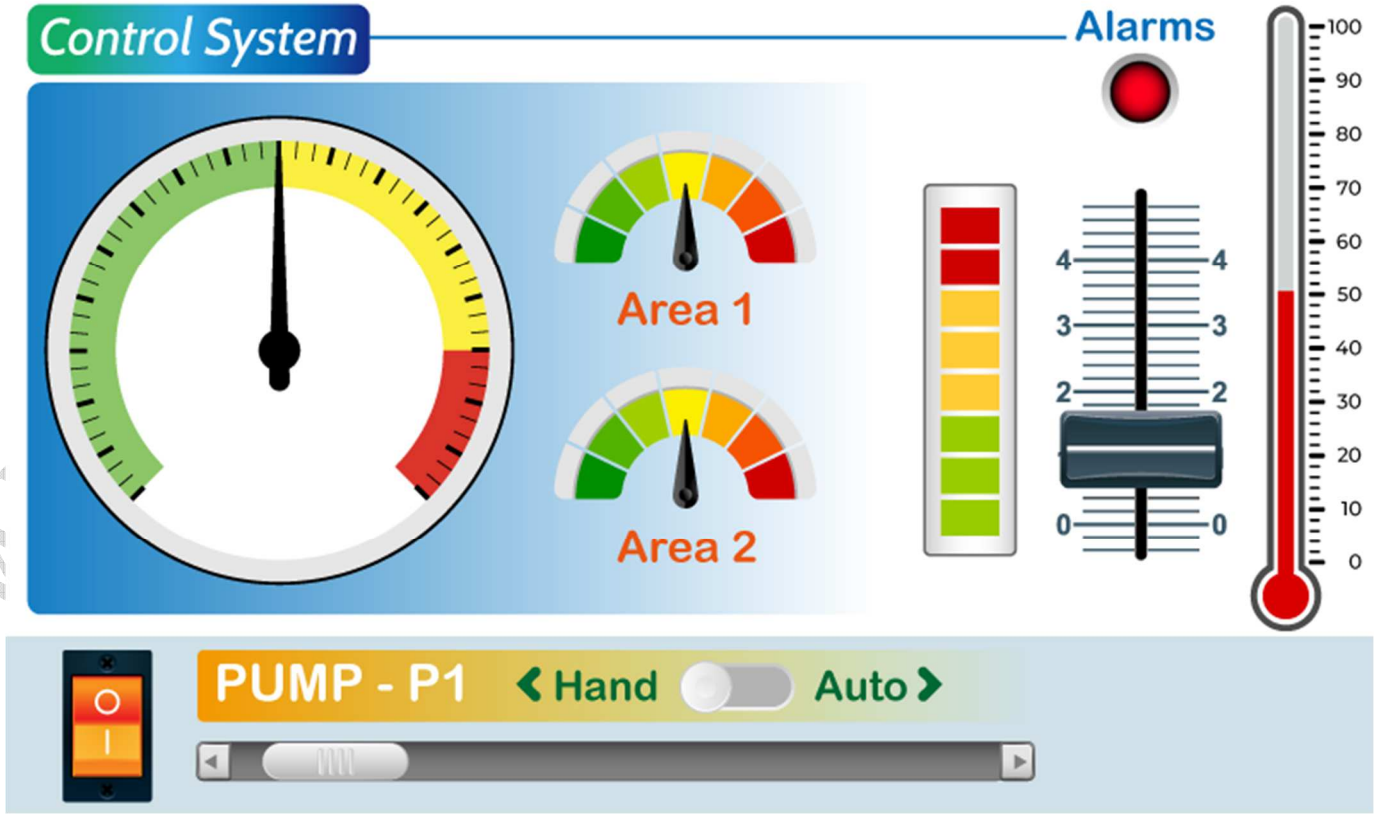
The Smart Display can use wide-temperature are designed to support control applications in harsh operating conditions, which designed to be connected to a variety of different situation combinations, such as automotive, marine, power generation and oil-and-gas.

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 RS-485 command to render display content on the display screen and return touch event data with protocol objects.

Example Screen Layout (Industry application)

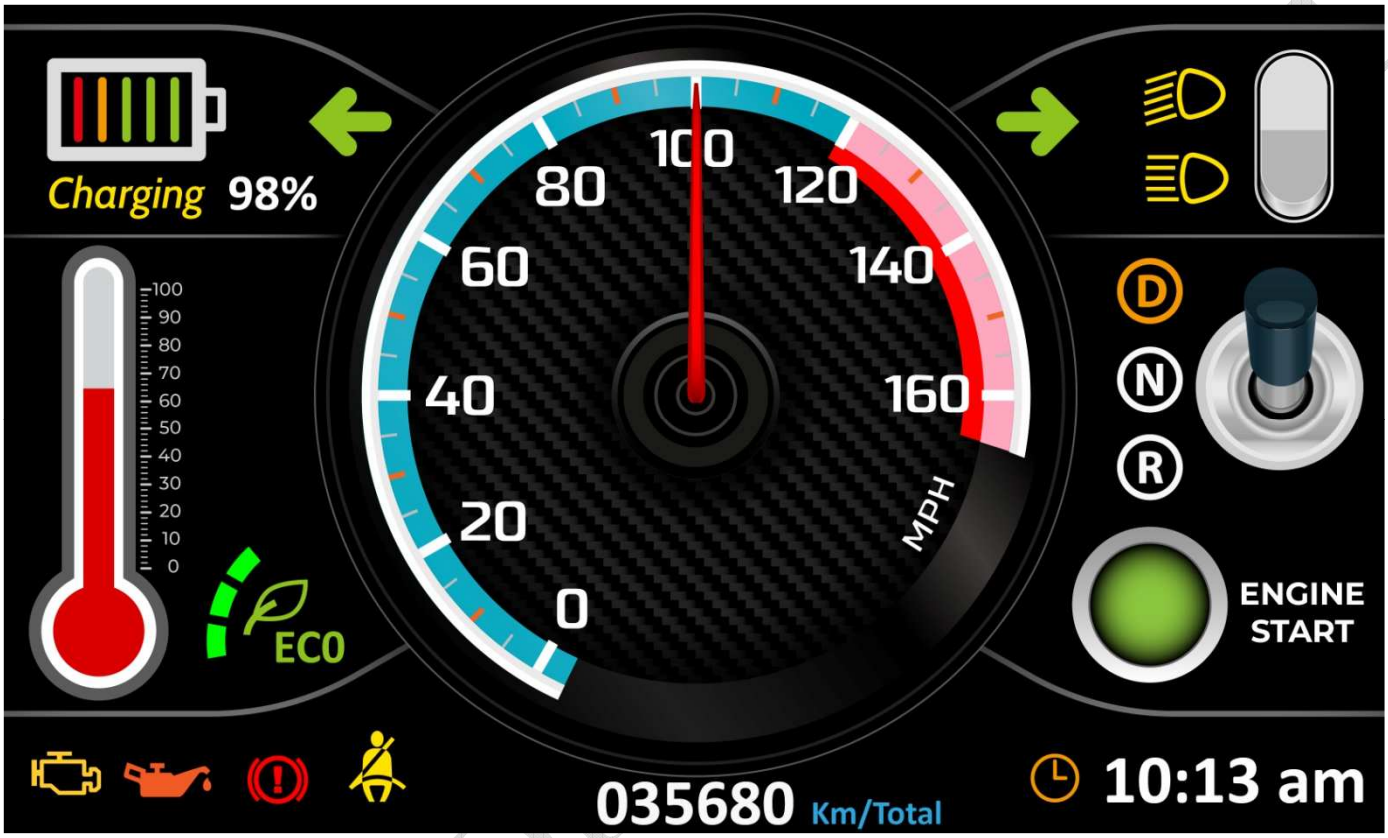
Example Layout
The screen layout described in this section is intended to demonstrate the settings of screen items that can be used in an industry application situation.



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.



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.