SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
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Winstar Display Co., LTD

SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00043000WGAABSA00-FC

APPROVED BY: (FOR CUSTOMER USE ONLY)	

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
		TingWei Lee Erick Chung	Corina Yeh

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2022/11/16		First Issue

MODLE NO：

RECORDS OF REVISION			DOC. FIRST ISSUE
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Summary

4.3 Inch Smart Display Feature

1. DC 5V working voltage.
2. Self-testing after booting function.
3. CAN bus communication interface.
4. Supports Custom CAN ID protocol, default baud rate at 250KB.
5. Built in flash memory, store the fonts and pictures.
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

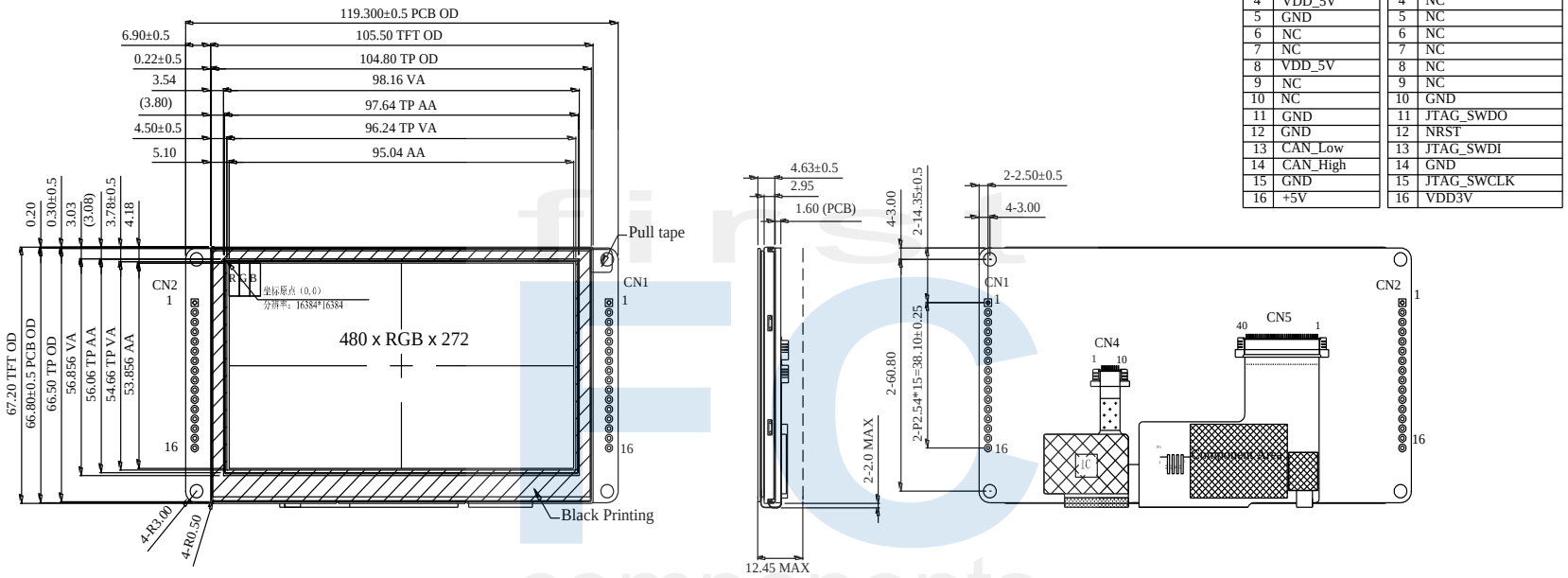
Item	Standard Value	Unit
LCD panel	105.5(W) x 67.2(H) x 4.6(D)	mm
PCB	119.3(W)*67.2(H)*1.6	mm
Housing outline	NA	mm

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	CAN bus differential ± 3.3	Vpp
MCU	STM32F750	N/A
Flash Memory	16	MB
SDRAM Frequency	108	MHz
LCD display size	4.3	inch
Dot Matrix	480 x RGBx272(TFT)	dot
Module dimension	105.5(W) x 67.2(H) x 4.6(D)	mm
Active area	95.04(W) ×53.856 (H)	mm
Dot pitch	0.066 (W) ×0.198(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	

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Contour Drawing



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

CN2	
PIN	SYMBOL
1	NC
2	NC
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC
9	NC
10	GND
11	JTAG_SWDO
12	NRST
13	JTAG_SWDI
14	GND
15	JTAG_SWCLK
16	VDD3V

1	Lcd Type	TFT
2	Viewing Angle	80/80/80/80
3	Surface	Glare
4	Screen size	4.3"(diagonal)
5	Display format	480 x RGB x 272
6	Operating Temperature	-30℃ ~80℃
7	Storage Temperature	-30℃ ~80℃
8	Active area	95.04(H) x 53.856(V) mm
9	Pixel pitch	0.198(H) x 0.198(V) mm
10	Color arrangement	RGB-STRIPE
11	Brightness	300min. 400typ. cd/m2
12	CTP IC	ILI2130 or equivalent
13	CTP Resolution	16384*16384

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	℃

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

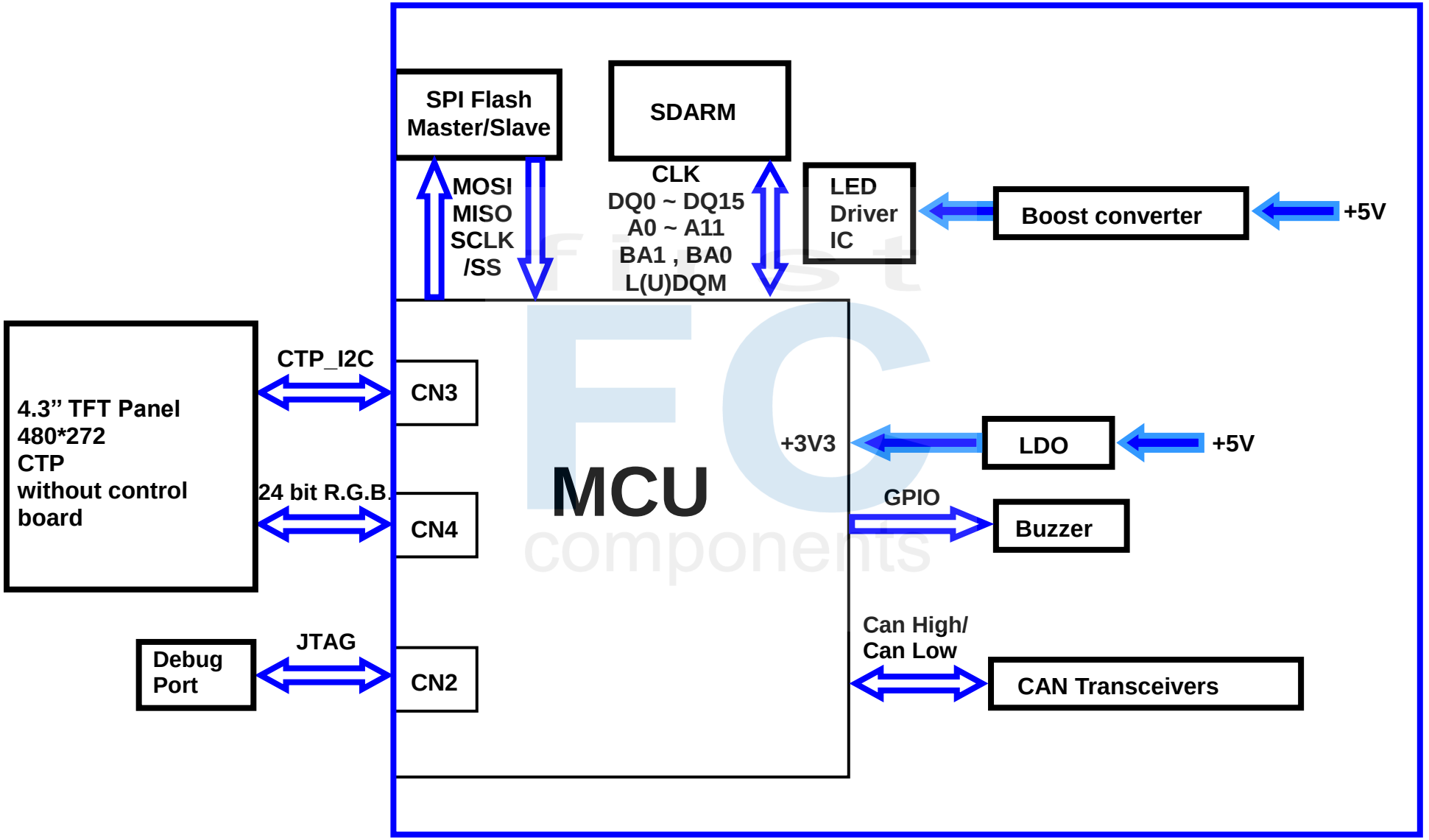
Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage	VCC	4.5	5-	5.5	V	
Supply Current	ICC	-	330		mA	

BOM

Item	Description	Remark
LCM	WF43-480272WD#APW3-FC	
PCBA	SV10004R300WA00N0100	

Block diagram



Interface

CN1 definition:

Pin	Symbol	Function	Remark
1	GND	GND	Output
2-3	NC		
4	+5V	+5V	Output
5	GND	GND	Output
6-7	NC		
8	+5V	+5V	Output
9-10	NC	Connection	
11	GND	GND	Output
12	GND	GND	Output
13	CAN_L	Differential signal D-	I/O
14	CAN_H	Differential signal D+	I/O
15	GND	Power supply GND input	Input
16	+5V	Power supply 5V input	Input

CN2 definition:

Pin	Symbol	Function	Remark
1-9	NC		-
10	GND	GND	Output
11	SYS_JTAG_SWO	Data pin for JTAG interface	I/O
12	NRST	Reset pin for JTAG interface	Input
13	SYS_JTAG_SWDIO	Data pin for JTAG interface	I/O
14	GND	GND for JTAG interface	Output
15	SYS_JTAG_SWCLK	CLK pin for JTAG interface	Input
16	VMCU	3.3V power for JTAG interface	Output

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Reliability

Content of Reliability Test (Wide temperature, -30℃~80℃)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80℃ 96hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30℃ 96hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	80℃ 240hrs	——
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-30℃ 240hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60℃,90%RH max	60℃,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation -30℃ 25℃ 80℃  30min 5min 30min 1 cycle	-30℃/80℃ 10 cycles	——
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=±2KV~±6KV(contact),±2KV~±8KV(air), RS=330Ω CS=150pF 10 times	——

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.

Product inspection check list

Check samples by meter V_{IN}, I_{system}

Item	No 1	No 2	No 3	Note
V_{IN} (V)	5	5	5	
I_{System}(mA)	326	336	331	

Check sample Reliability Test

Item	Result	Note
Thermal shock		-30℃/80℃ 20 cycles
High Temperature Operation	PASS_20210217	80℃ 240hrs
Low Temperature Operation	PASS_20210315	-30℃ 240hrs
Static electricity test		VS=±2KV~±6KV(contact),±2KV~±8KV (air), RS=330Ω CS=150pF 10 times
Vibration test	–	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes

- Prepare sets for testing

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