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WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



Winstar Display Co., LTD

華凌光電股份有限公司



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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WLOF0007000A8GAACSA00

APPROVED BY:

(FOR CUSTOMER USE ONLY)

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
B	2024/11/13	p6,7	Revised the content of feature

TFT Display Inspection Specification: <https://www.winstar.com.tw/technology/download.html>

Precaution in use of TFT module: <https://www.winstar.com.tw/technology/download/declaration.html>

RECORDS OF REVISION
DOC. FIRST ISSUE

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2023/03/25		First issue
A	2023/06/17	9	Revise Min value in Electrical Characteristics
B	2024/11/13	p6,7	Revised the content of feature

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1. Smart Display Classification Information

W	L	0F	000700	0A8	G	A	AC	S	A	00
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

①	W: WINSTAR products			
②	Type: L:Standard K:Customization			
③	Display Type:	Standard:	0H: Character STN 0X: Graphic STN (TAB/COF) 0F: TFT EH: Character OLED EX: OLED (TAB/COF)	0G: Graphic STN 0P: Graphic STN (COG) EG: Graphic OLED EP: OLED (COG)
		Customization:	DH: Character DN: Graphic ED: OLED	DG: Graphic STN OJ: TFT
④	Display size: (diagonal) / Display format: (resolution)	Character STN:	e.g., 8x1: 000801 16x2: 001602 24x4: 002404	
		Graphic STN:	e.g., 128x64: 012864 320x240: 320240	
		TFT Size (inch):	000096-0.96" / 000350-3.5" / 000430-4.3" / 000570-5.7" 000700-7.0" / 000800-8.0" / 001020-10.2" / 001210-12.1" (The last two digits are two digits after the decimal point)	
⑤	Serial No:	OLED:	e.g., 128x64: 012864 Customization: 0001XX	
		0A1 ~ 0ZZ	Customization STN: 000	

⑥	Touch Panel Type:	N: Without TP T: RTP G: CTP		
⑦	Model Interface:	A: CAN B: Bluetooth C: Controller Specified D: RS485 E: RS232 F: USART G: Logic I/O	H: HDMI R: Memory Specified N: Ethernet J: Analog I/O K: USB L: WIFI M: Zigbee	X: Combined Y: Proprietary interface
⑧	Interface Serial No.:	AA ~ ZZ		
⑨	Control Category:	S: Smart Display E: Entry N: Non-specified		
⑩	Special Code:	A → Generic B → Industrial C → Automotive D → Medical		
⑪	Model code:	00 ~ ZZ		

2. Summary

7 Inch Smart Display (CAN series) Features

1. +12V power supply input, the power consumption is around 6W.
2. Self testing after booting function.
3. CAN bus communication interface.
4. Support Custom CAN ID protocol, default baud rate is 250KB.
5. Built in 16MB flash memory, store the font and Object Dictionary Data.
6. Support capacitive touch panel (CTP).
7. Embedded buzzer controlled by Master Device.
8. HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi (with PiCAN2).

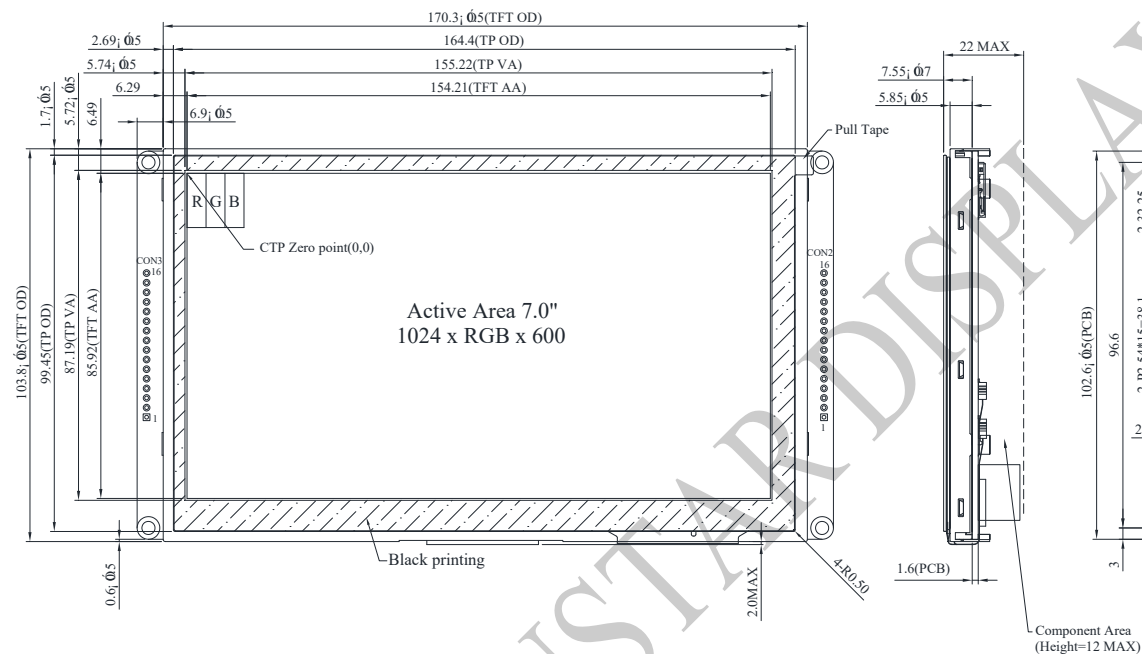
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3. Product information

General information

Item	Standard Value	Unit
Operating voltage	5~16V	Vdc
Communication Interface	CAN bus	N/A
MCU	STM32F746 216MHz	N/A
Flash Memory	16	MB
SDRAM Frequency	166	MHz
LCD display size	7.0	inch
Dot Matrix	1024 x RGBx600(TFT)	dot
Module dimension	169.9(W) x 103.4(H) x 5.6(D)	mm
Active area	154.2144 x 85.92	mm
Pixel pitch	0.1506 x 0.1432	mm
Brightness	Min: 400; Typ: 450	cd/m ²
LCD type	TFT, Normally Black, Transmissive	
View Direction	85/85/85/85	
Aspect Ratio	16:9	
With /Without TP	With CTP	
Surface	Glare	

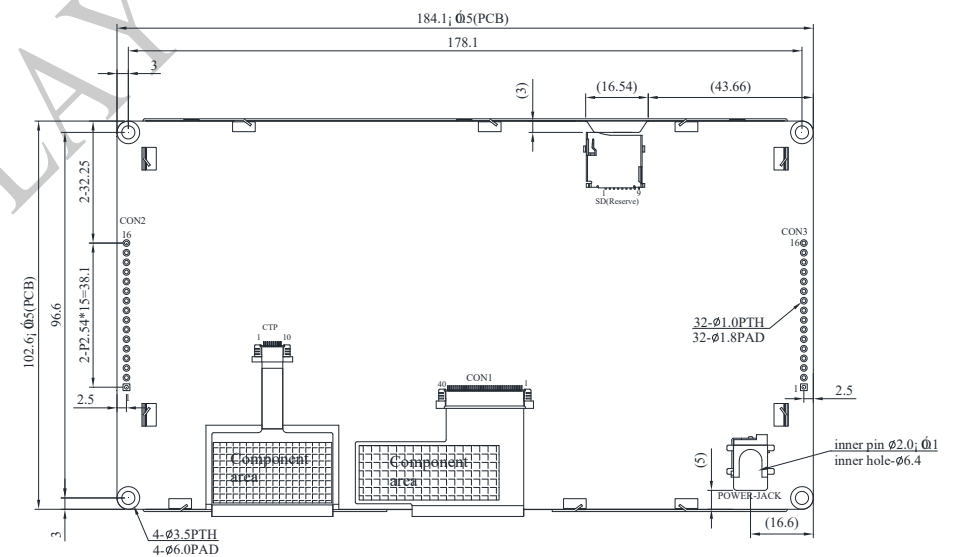
4. Contour Drawing



POWER JACK
2 — 1
(GND) (12V)

PIN	SYMBOL
1	+3V3
2	SWCLK
3	GND
4	SWDIO
5	NRST
6	GND
7~16	NC

PIN	SYMBOL	PIN	SYMBOL
1	+12V	9	Reserve
2	GND	10	Reserve
3	CAN_H	11	Reserve
4	CAN_L	12	GND
5	GND	13	Reserve
6	GND	14	NC
7	NC	15	NC
8	NC	16	GND



The non-specified tolerance of dimension is $\pm 0.3\text{mm}$.

5. Absolute Maximum Ratings

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

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above
1. Temp. $\leq 60^{\circ}\text{C}$, 90% RH MAX. Temp. $> 60^{\circ}\text{C}$, Absolute humidity shall be less than 90% RH at 60°C

6. Electrical Characteristics

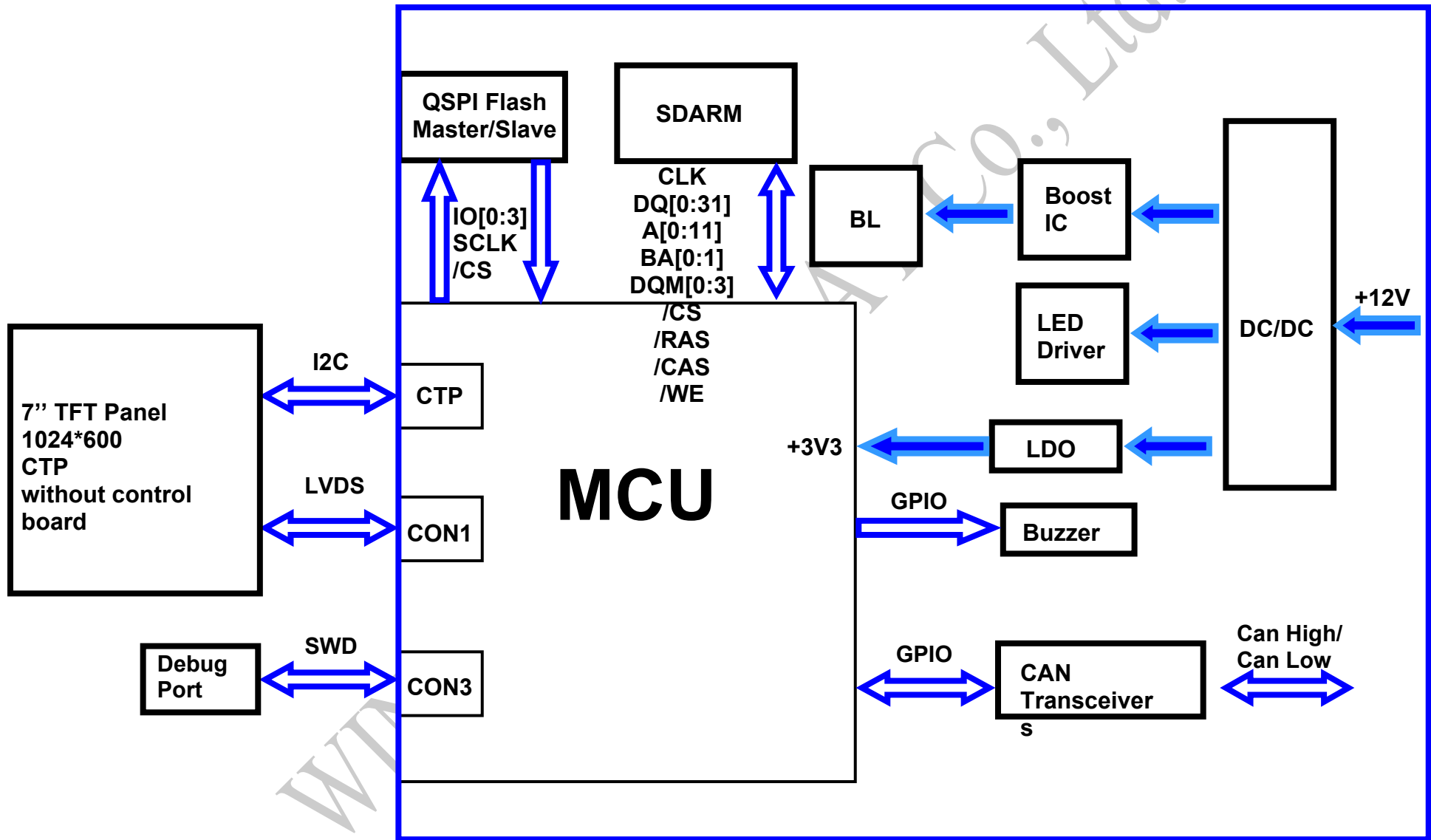
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage	VCI	—	5	12	16	V
Supply current	I(mA)	—	—	490	—	mA

7. BOM

Item	Description	Remark
LCM	WF70A8TYAHLNGB#	
PCBA	SV10007R00AAA00N0100	

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6. Block diagram



9. Interface

CON2 definition:

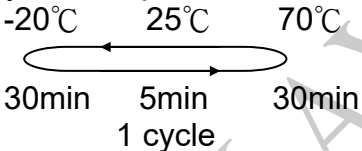
Pin	Symbol	Function	Remark
1	+12V	Power supply 12V input	Input
2	GND	Power supply GND input	Input
3	CAN_High	CAN bus D+	I/O
4	CAN_Low	CAN bus D-	I/O
5	GND	Power supply GND input	Input
6	GND	Power supply GND input	Input
7	NC	—	—
8	NC	—	—
9	Reserve	—	—
10	Reserve	USART RX interface(Reserve)	Reserve
11	Reserve	USART TX interface(Reserve)	Reserve
12	GND	GND	GND
13	Reserve	—	—
14	NC	—	—
15	NC	—	—
16	GND	GND	GND

CON3 definition:

Pin	Symbol	Function	Remark
1	+3V3	3.3V power for JTAG interface	Output
2	SWCLK	CLK pin for JTAG interface	Input
3	GND	GND for JTAG interface	Output
4	SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	GND	Output
7~16	NC	—	—

10. Reliability

Content of Reliability Test (Wide temperature, -20°C~70°C)

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°C 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/Humidity Operation	The module should be allowed to stand at 40°C,90%RH max	60°C,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation 	-20°C/70°C 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.

11. Product inspection check list

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

Item	No 1	No 2	No 3	Note
V_{IN} (V)	12.1	12.1	12.1	
I_{system} (mA)	550	548	538	

Check sample Reliability Test

Item	Result	Note
Thermal shock	—	-20°C/70°C 20 cycles
High Temperature Operation	—	70°C 96hrs
Low Temperature Operation	—	-20°C 96hrs
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

Disclaimer

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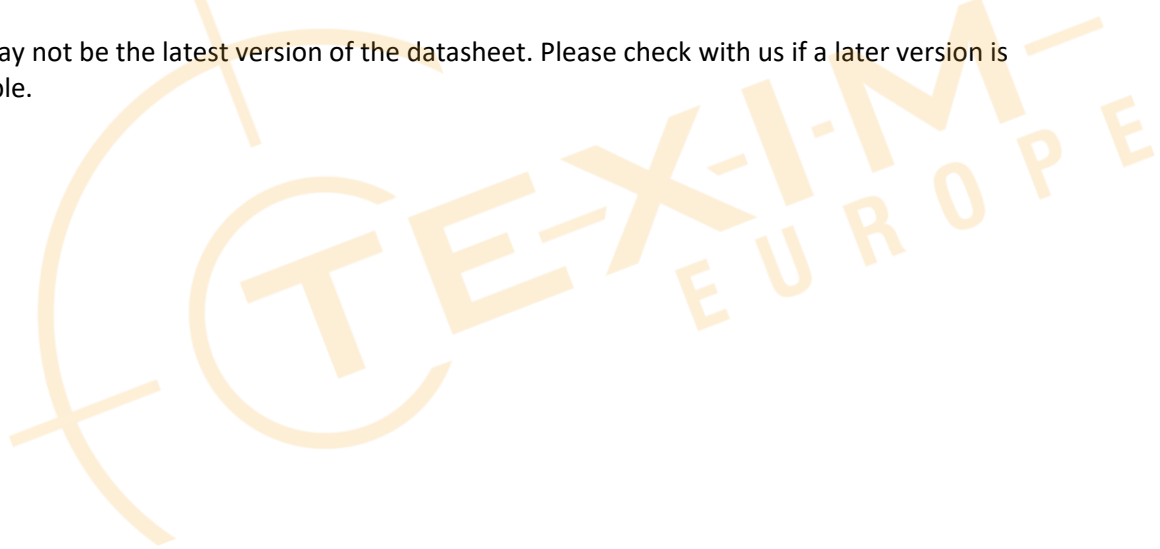
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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