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WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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華凌光電股份有限公司



SPECIFICATION

CUSTOMER : _____

MODEL NO. : WLOF00039000QGAABSA00

APPROVED BY: (FOR CUSTOMER USE ONLY)	
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SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
		Eason Chang	Debby Hsu

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2024/10/28		First issue

RECORDS OF REVISION			DOC. FIRST ISSUE
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1. Smart Display Classification Information

W	L	0F	000390	00Q	G	A	AB	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)		
		OLED:	e.g., 128x64: 012864 Customization: 0001XX		
⑤	Serial No:	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

3.9 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 Custom CAN ID protocol. Default baud rate is 250Kbps.
5. Built in flash memory, store the font and Object Dictionary Data.
6. Support capacitive touch panel (CTP).
7. Embedded buzzer controlled by Master Device.
8. Demo set HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi (with PiCAN2).

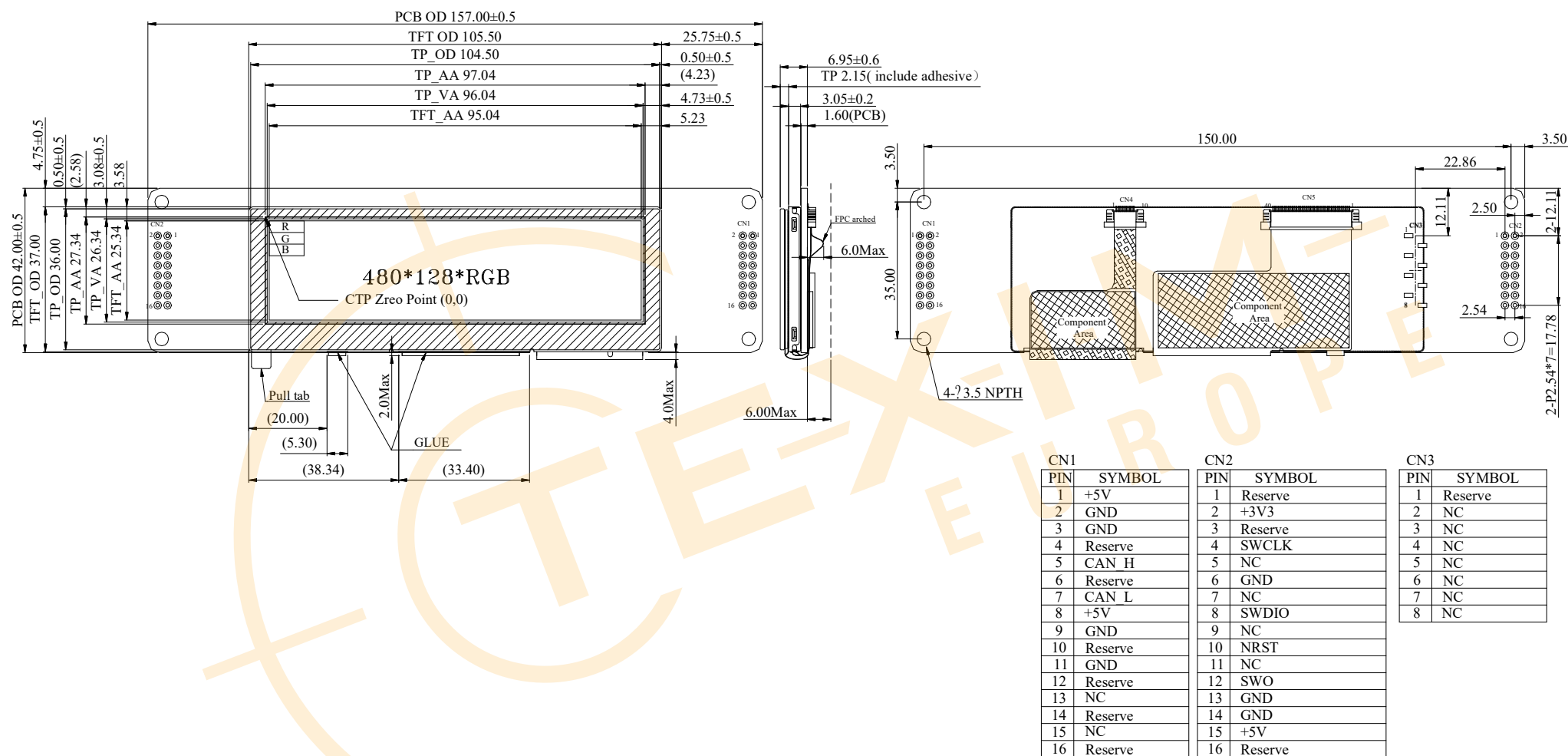


3 Product information

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	CAN bus	Vpp
MCU	STM32F750	N/A
Flash Memory	16	MB
LCD display size	3.9	inch
Dot Matrix	480x128 x RGB (TFT)	dot
Module dimension	105.5(W) x 37.0(H) x 5.13	mm
Active area	95.04 x 25.34	mm
Dot pitch	0.066(W)x 0.198(H)	mm
LCD type	TFT, Normally White, Transmissive	
View Direction	6 o'clock	
Aspect Ratio	Bar Type	
With /Without TP	With CTP	
Surface	Glare	

4. Contour Drawing



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



5. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-10	—	+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

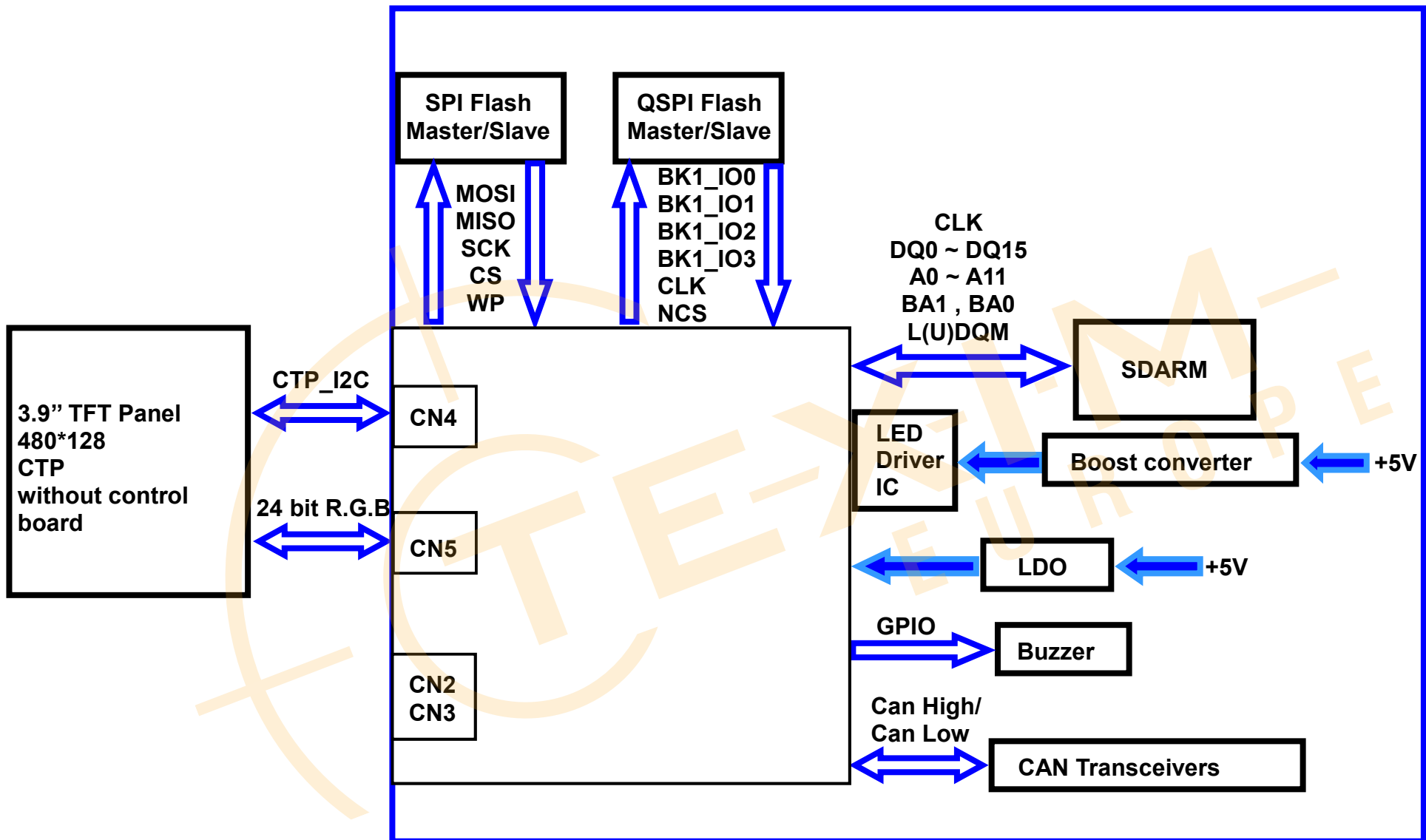
6. Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage For Analog	VCC	4.75	5	5.25	V	
Interface Operation Voltage	ICC		350		mA	

7. BOM

Item	Description	Remark
LCM	WF39QTIBSDBG0#	
PCBA	SV100039000QA00N0105	

8. Block diagram



9.Interface

CN1 definition:

Pin	Symbol	Function	Remark
1	+5V	Power supply 5V input	Input
2	GND	GND for USART interface	Output
3	GND	Power supply GND input	Input
4	Reserve	-	-
5	CAN_H	CAN bus D+	I/O
6	Reserve	-	-
7	CAN_L	CAN bus D-	I/O
8	+5V	5V output for USART interface	Output
9	GND	GND for USART interface	Output
10	Reserve	-	
11	GND	GND for USART interface	Output
12	Reserve	-	-
13	NC	-	-
14	Reserve	-	-
15	NC	-	-
16	Reserve	-	-

CN2 definition:

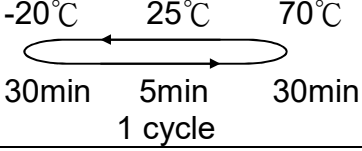
Pin	Symbol	Function	Remark
1	Reserve	-	-
2	+3V3	3.3V power for JTAG interface	Output
3	Reserve	-	-
4	SWCLK	CLK pin for JTAG interface	Input
5	NC	-	-
6	GND	GND for USART interface	I/O
7	NC	-	-
8	SWDIO	JTAG Serial Wire debug Data Input/Output interface	I/O
9	NC	-	-
10	NRST	Reset pin for JTAG interface	Input
11	NC		
12	SWO	Data pin for JTAG interface	I/O
13	GND	GND for USART interface	I/O
14	GND	GND for USART interface	I/O
15	+5V	Power supply 5V input	Input
16	Reserve	-	-

CN3 definition:

Pin	Symbol	Function	Remark
1	Reserve	-	-
2-8	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 96hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C 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.	70°C 96hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-10°C 96hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 40°C,90%RH max	40°C,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation 	-10°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)	5	5	5	
I_{system} (mA)	353	350	358	

Check sample Reliability Test

Item	Result	Note
Thermal shock	PASS_20200219	-10°C/70°C 20 cycles
High Temperature Operation	PASS_20200225	70°C 96hrs
Low Temperature Operation	PASS_20200302	-10°C 96hrs
Static electricity test	PASS_20200402	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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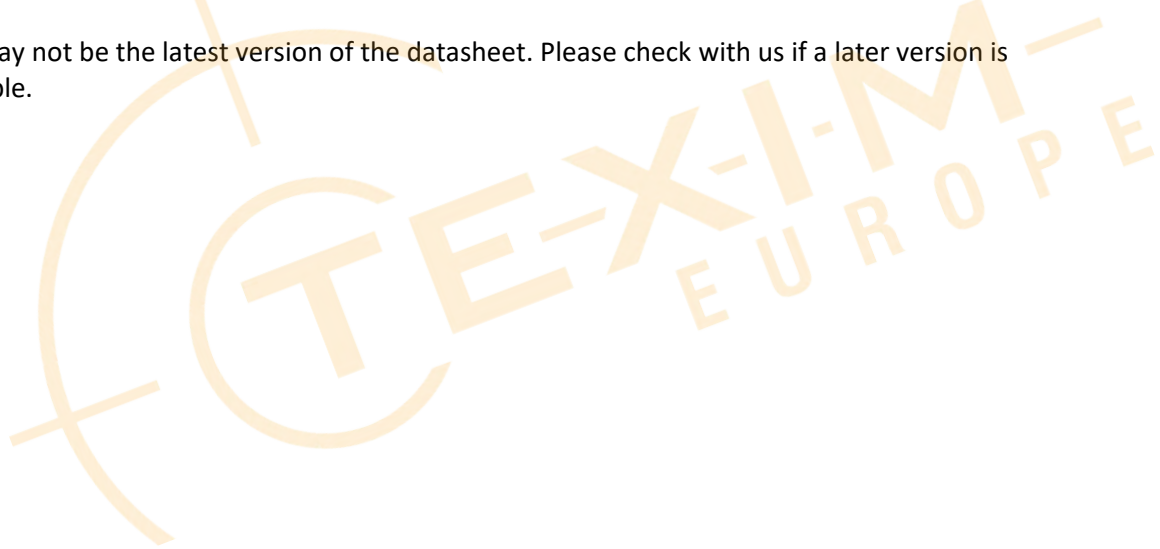
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

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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