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SMART DISPLAY SPECIFICATION



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 : Winstar

MODEL NO. : WLOF00043000WGDACSA00

APPROVED BY: (FOR CUSTOMER USE ONLY)	
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
A	2025/05/21	p9	Revised Absolute Maximum Ratings and BOM

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>

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RECORDS OF REVISION			DOC. FIRST ISSUE
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0	2024/12/10		First issue
A	2025/05/21	p9	Revised Absolute Maximum Ratings and BOM



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1. Smart Display Classification Information

W	L	OF	000430	00W	G	D	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)	
		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

4.3 Inch Smart Display (RS485 series with GPIO) Feature

1. Input voltage dynamic range 5V to 28V, typical voltage 12V.
2. Self-testing after booting function.
3. RS485 communication interface.
4. Built in 16MB flash memory, store the fonts and pictures.
5. Support capacitive touch panel (CTP).
6. Embedded buzzer function.
7. Demo set HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi
8. Supports 8 channel Bi-direction GPIOs with TTL 3.3V logic level. The setting functions through PC tools, Smart Display GUI Builder.

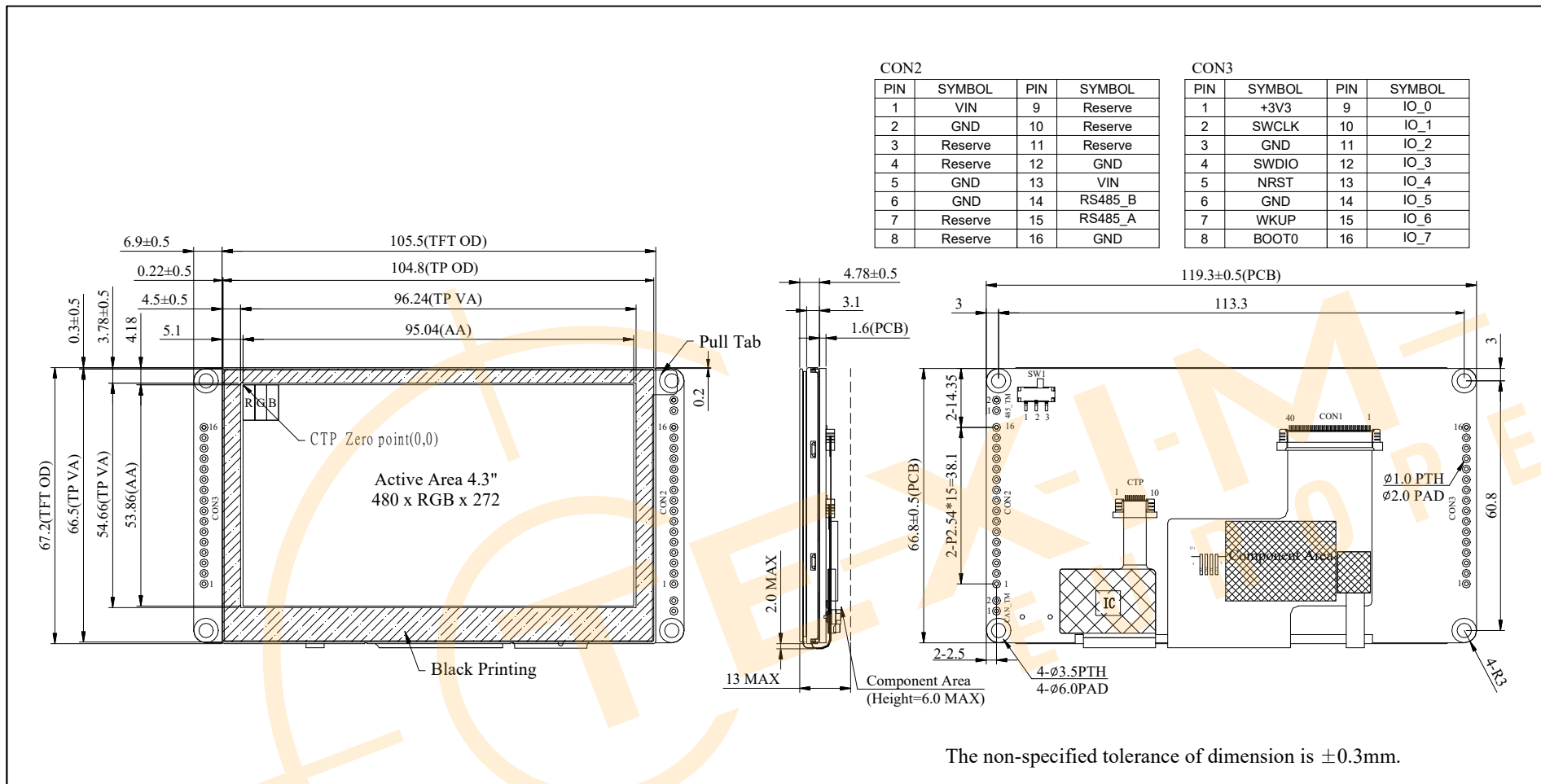


3. Product information

General information

Item	Standard Value	Unit
Operating voltage	5-28	Vdc
Communication Interface	RS485 differential	--
MCU	STM32F750	N/A
Flash Memory	16	MB
LCD display size	4.3	inch
Dot Matrix	480× 3(RGB) × 272	dot
Module dimension	119.3(W) ×67.2(H) ×13 (D)	mm
Active area	95.04(W) × 53.856 (H)	mm
Pixel pitch	0.198(H) x 0.198(V)	mm
Brightness	Min: 300; Typ: 400	cd/m ²
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	16:9	
With /Without TP	With CTP	
Surface	Glare	

4. Contour Drawing



5. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+80	°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

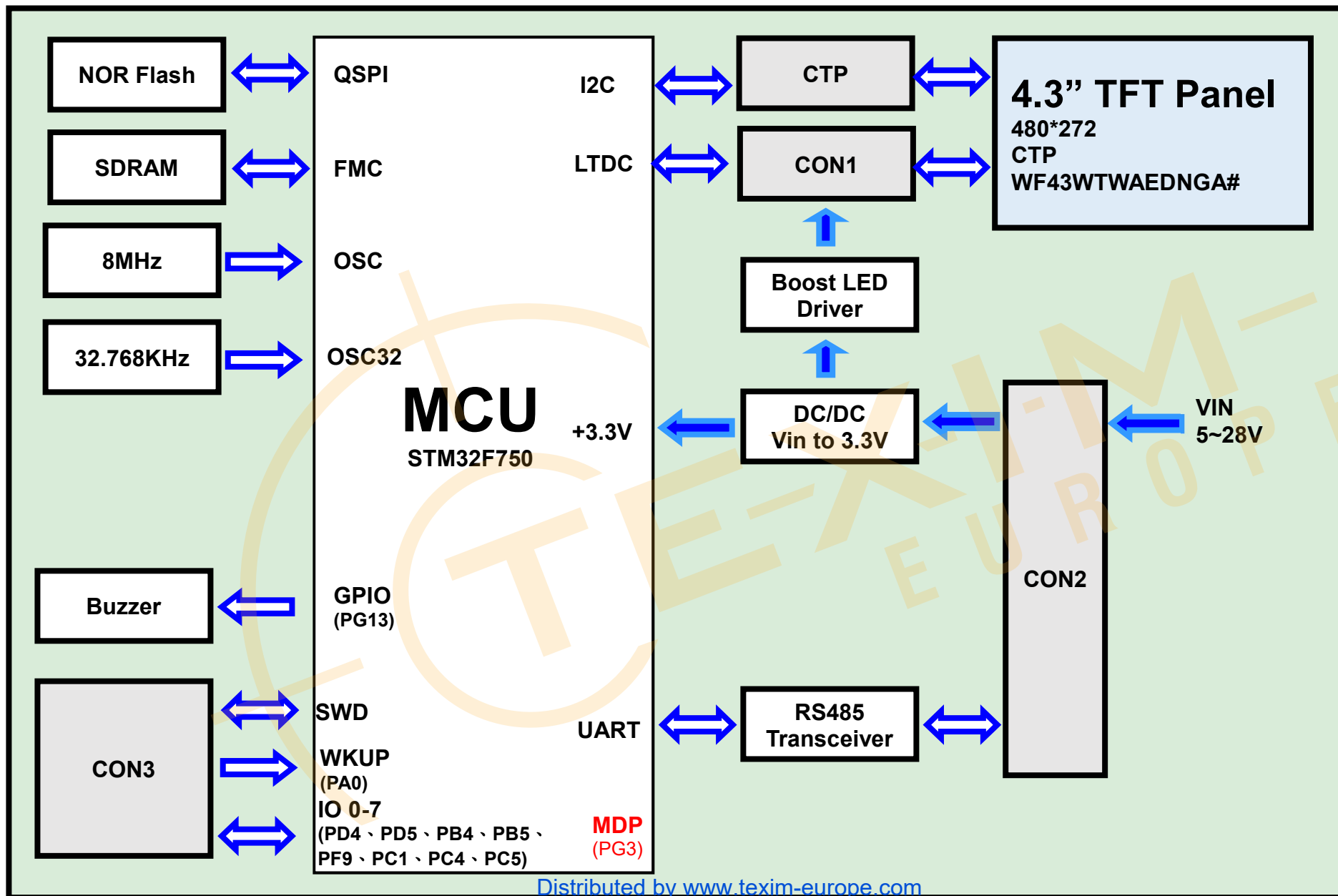
Item	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VCC	5	12	28	V	
Supply Current	ICC		180		mA	
I/O pin Voltage	--	--	--	3.3	V	Note 1

Note1: Exceed 3.3V may cause MCU damage.

7. BOM

Item	Description	Remark
LCM	WF43WTWAEDNGA#	
PCBA	SV10004R300WB00N0105	

8. Block diagram



9. Interface

CON2 definition:

Pin	Symbol	Function	Remark
16	GND	Power GND	Input
15	RS485_A	Driver output or receiver input (complementary to B)	BUS I/O
14	RS485_B	Driver output or receiver input (complementary to B)	BUS I/O
13	VIN	Power +5V~+28V	Input
12	GND	Power GND	Input
11	Reserved	--	--
10	Reserved	--	--
9	Reserved	--	--
8	Reserved	--	--
7	Reserved	--	--
6	GND	Power GND	Input
5	GND	Power GND	Input
4	Reserved	--	--
3	Reserved	--	--
2	GND	Power GND	Input
1	VIN	Power +5V~+28V	Input

CON3 definition:

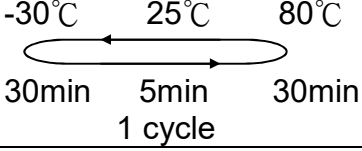
Pin	Symbol	Function	Remark
16	IO_7	GPIO (PC5)	I/O
15	IO_6	GPIO (PC4)	I/O
14	IO_5	GPIO (PC1)	I/O
13	IO_4	GPIO (PF9)	I/O
12	IO_3	GPIO (PB5)	I/O
11	IO_2	GPIO (PB4)	I/O
10	IO_1	GPIO (PD5)	I/O
9	IO_0	GPIO (PD4)	I/O
8	BOOT0	--	--
7	WKUP	Wake UP (PA0)	Input
6	GND	GND for SWD interface	Output
5	NRST	Reset pin for SWD interface	Input

4	SWDIO	Data pin for SWD interface	I/O
3	GND	GND for SWD interface	Output
2	SWCLK	CLK pin for SWD interface	Input
1	+3V3	3.3V power for SWD interface	Output



10. Reliability

Content of Reliability Test (Wide temperature, -30°C~80°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.	80°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-30°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°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  -30°C 25°C 80°C 30min 5min 30min 1 cycle	-30°C/80°C 10 cycles	—
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.

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

Item	No 1	Note
V_{IN} (V)	12	
I_{System} (mA)	177	

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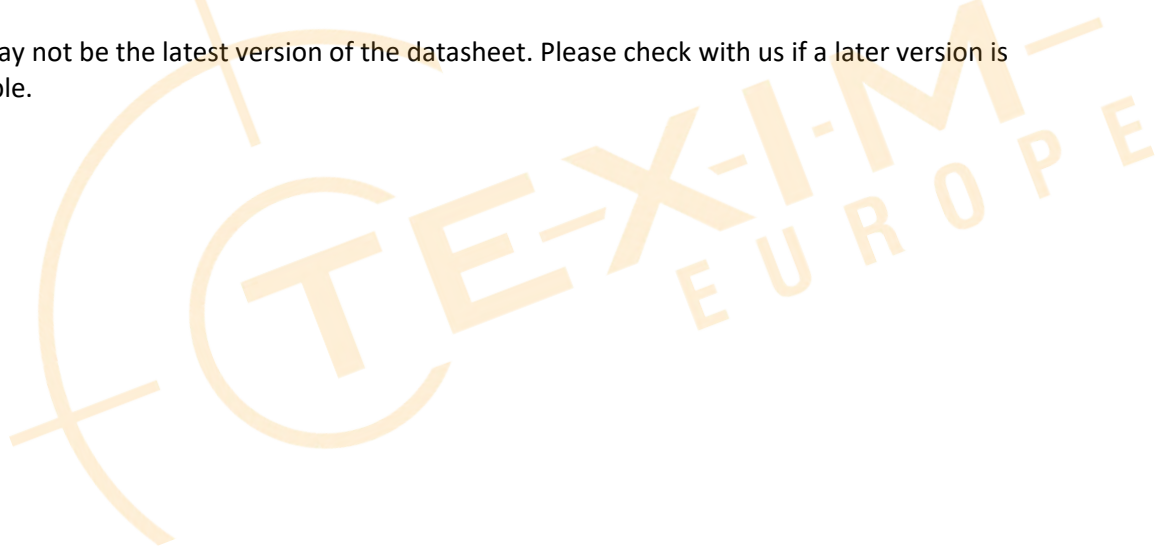
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

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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