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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 : Winstar

MODEL NO. : WLOF00024000MNFAANA00

<p>APPROVED BY: (FOR CUSTOMER USE ONLY)</p>	
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SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
A	2026/02/23	P6,11	Revise the summary and add connector type in the Interface.

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>



MODLE NO :
WLOF00024000MNFAANA00

RECORDS OF REVISION			DOC. FIRST ISSUE
VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2025/10/14		First release.
A	2026/02/23	P6,11	Revise the summary and add connector type in the Interface.



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1. Smart Display Classification Information

W	L	OF	000240	00M	N	F	AA	N	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:	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

This 2.4" STM32G0 module is a low cost UART solution.

1. **TFT Module:** WF24MTLAJDNN0# 2.4" TFT, Normally White, Transmissive, view direction is 6 o'clock, 240×320 resolution, SPI, typ. 500 cd/m² brightness, 50,000 hours LED backlight lifetime.
2. **MCU:** STM32G0B1RET6 are based on high-performance Arm® Cortex®-M0+ 32-bit RISC core operating at up to 64 MHz frequency, with 512 Kbytes of flash memory, 144 Kbytes of SRAM.
3. **Power Input:** 5V or 5 V via USB-C.
4. **Interfaces:** USB-C (USB 2.0 OTG HS, power + data), Micro SD card slot, UART, SWD debug interface, plus PWM backlight.
5. **Development Support:** Supplied with Initial Code Project compatible with STM32CubeMX, STM32CubeIDE, STM32Cube Programmer and TouchGFX Designer, enabling rapid application development; hardware schematic is available under NDA to assist developers with system integration and secondary development.



3. Product information

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	UART	--
MCU	STM32G0B1RET6	N/A
LCD display size	2.4	inch
Dot Matrix	240 x R.G.B. x 320 (TFT)	dot
Module dimension	54.32(W) ×61.45(H) ×11.0(D)	mm
Active area	36.72 x 48.96	mm
Pixel pitch	0.153(W) ×0.153(H)	mm
Brightness	Min: 400; Typ: 500	cd/m ²
LCD type	TFT, Normally White, TN, Transmissive	
View Direction	6 o'clock	
Aspect Ratio	Portrait	
With /Without TP	Without TP	
Surface	Glare	

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

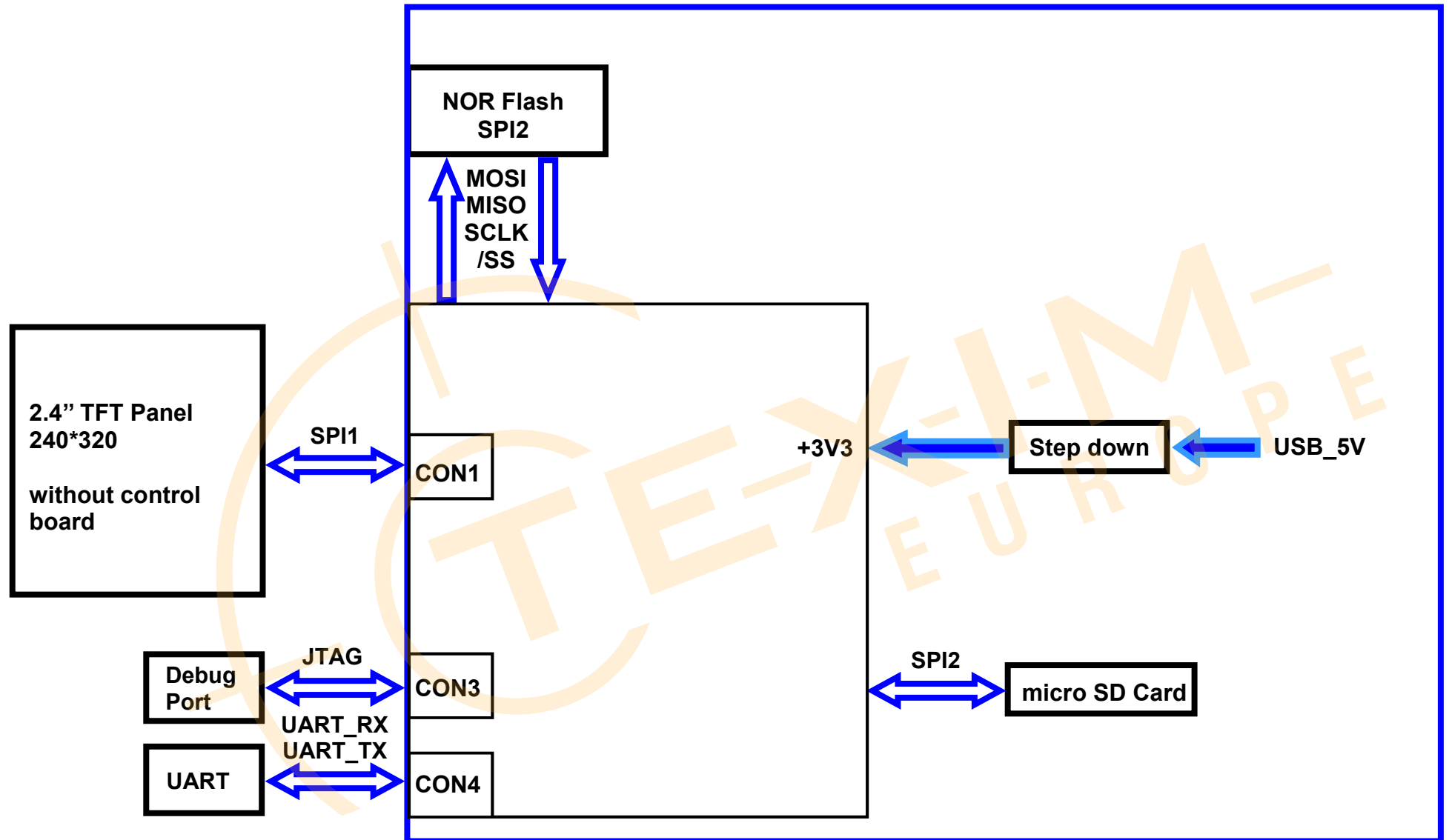
6. Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit
Supply Voltage	VCC	4.75	5	5.25	V
Supply Current	ICC		40		mA

7. BOM

Item	Description	Remark
LCM	WF24MTLAJDNN0#	
PCBA	SV10002R400MA00N0100	

8. Block diagram



9. Interface

CON3 definition:

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

Note:

1. Connector Type: 3M 929870-01-06-RA (2.54 mm pitch, 6-pin) or equivalent.

CON4 definition:

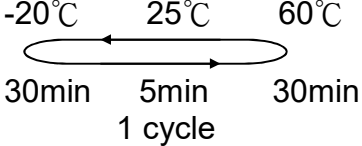
Pin	Symbol	Function	Remark
1	+5V	Power supply 5V input	Input
2	UART_RX	USART RX interface	I/O
3	UART_TX	USART TX interface	I/O
4	GND	GND	Output

Note:

1. Connector Type: 3M 929870-01-04-RA (2.54 mm pitch, 4-pin) or equivalent.

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.	-20°C 96hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C,85%RH max	60°C,85%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation 	-20°C/60°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.

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

Item	No 1	Note
V_{IN} (V)	5	
I_{system} (mA)	49	

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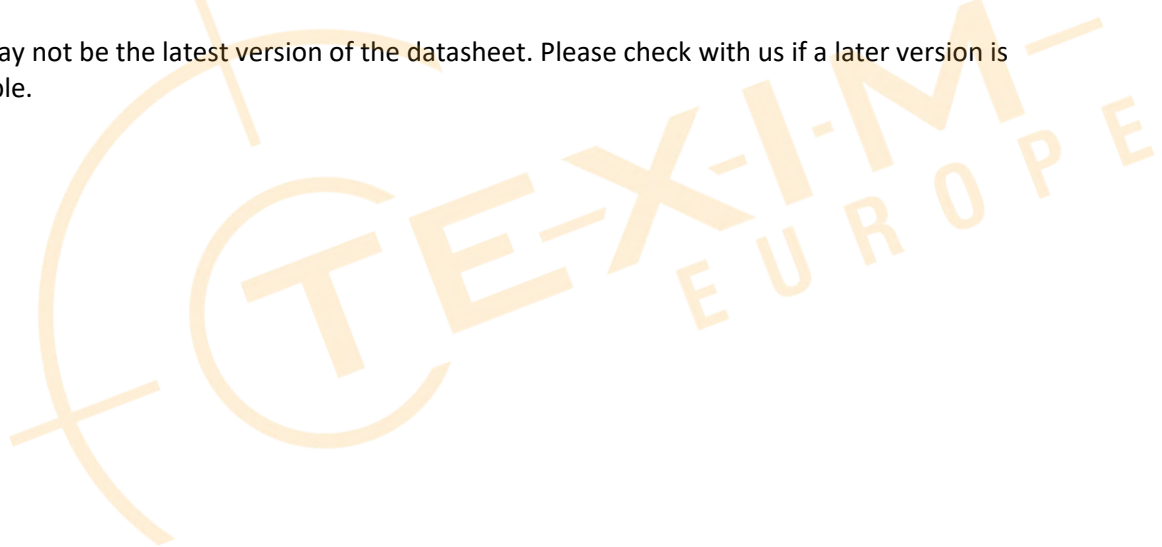
It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

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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