

# SMART DISPLAY SPECIFICATION

Distributed by:



[www.texim-europe.com](http://www.texim-europe.com)



**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



WEB: <https://www.winstar.com.tw> E-mail: [sales@winstar.com.tw](mailto:sales@winstar.com.tw)

### SPECIFICATION

**CUSTOMER :** \_\_\_\_\_

**MODEL NO. :** WLOF00043000WGAACSA00

<p><b>APPROVED BY:</b> ( FOR CUSTOMER USE ONLY )</p>	
--	--

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
	Ginger Xu	Paul Chen	Jason Chan

VERSION	DATE	REVISED PAGE NO.	SUMMARY
A	2024/11/13	p6	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>



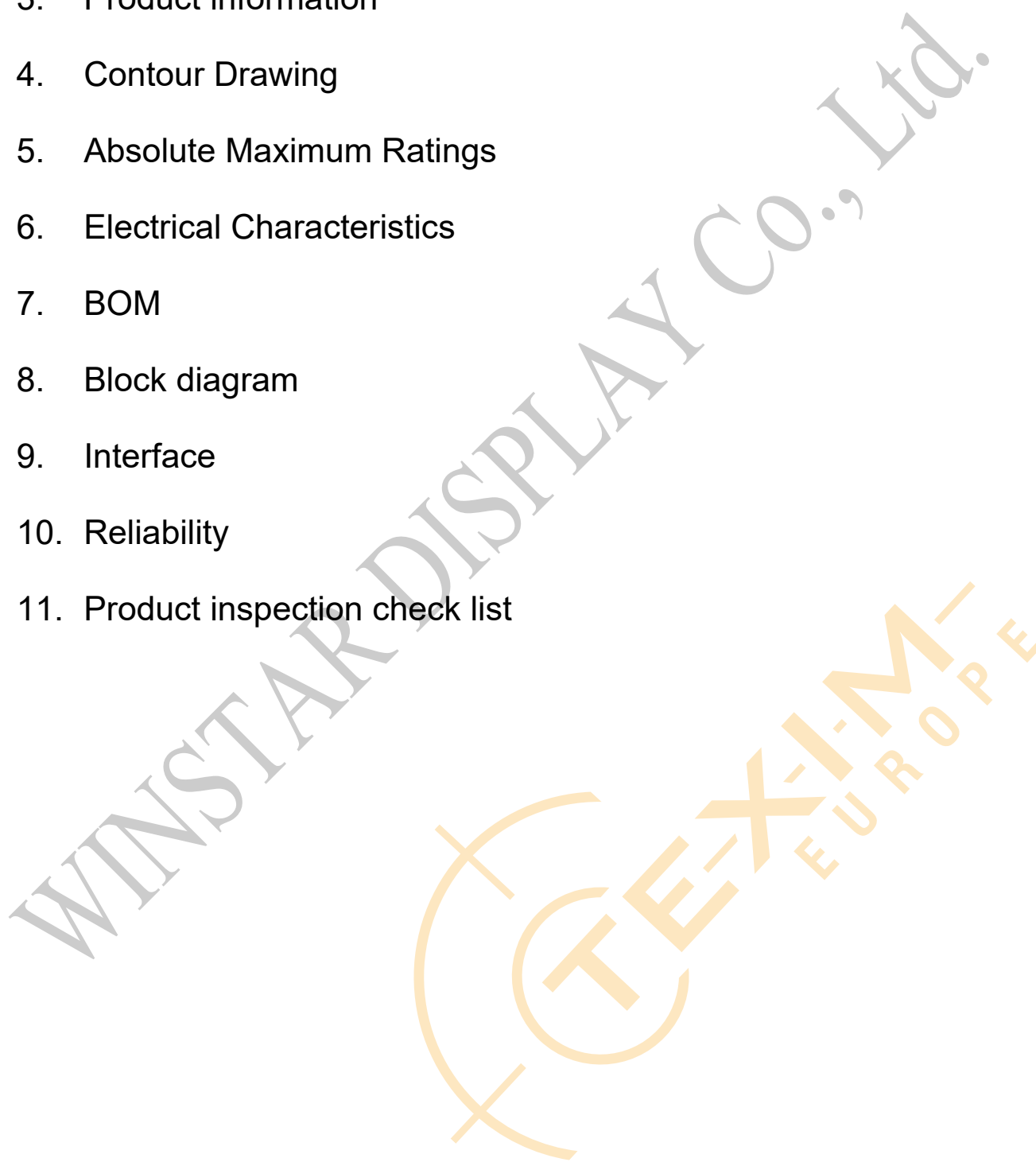
MODLE NO :  
WLOF00043000WGAACSA00

<b>RECORDS OF REVISION</b>			<b>DOC. FIRST ISSUE</b>
<b>VERSION</b>	<b>DATE</b>	<b>REVISED PAGE NO.</b>	<b>SUMMARY</b>
0	2024/05/22		First issue
A	2024/11/13	p6	Revised the content of feature



# Contents

1. Smart Display Classification Information
2. Summary
3. Product information
4. Contour Drawing
5. Absolute Maximum Ratings
6. Electrical Characteristics
7. BOM
8. Block diagram
9. Interface
10. Reliability
11. Product inspection check list



# 1. Smart Display Classification Information

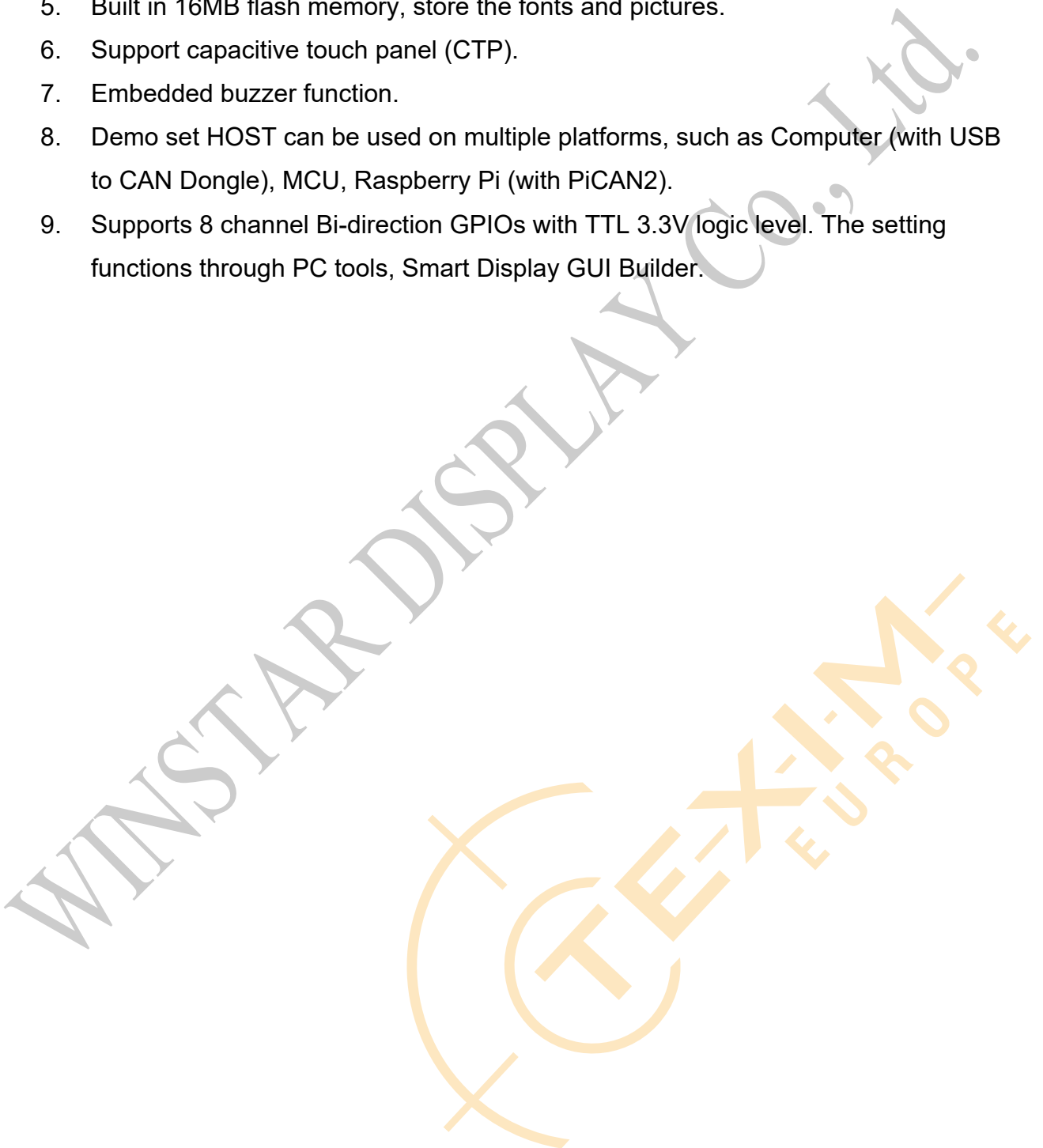
W	L	OF	000430	00W	G	A	AC	S	A	00
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

①	W: WINSTAR products										
②	Type: L:Standard K:Customization										
③	Display Type:	Standard:	<b>OH:</b> Character STN <b>OX:</b> Graphic STN (TAB/COF) <b>OF:</b> TFT <b>EH:</b> Character OLED <b>EX:</b> OLED (TAB/COF)				<b>OG:</b> Graphic STN <b>OP:</b> Graphic STN (COG) <b>EG:</b> Graphic OLED <b>EP:</b> OLED (COG)				
		Customization:	<b>DH:</b> Character <b>DN:</b> Graphic <b>ED:</b> OLED				<b>DG:</b> Graphic STN <b>OJ:</b> 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:	<b>A:</b> CAN <b>B:</b> Bluetooth <b>C:</b> Controller Specified <b>D:</b> RS485 <b>E:</b> RS232 <b>F:</b> USART <b>G:</b> Logic I/O			<b>H:</b> HDMI <b>R:</b> Memory Specified <b>N:</b> Ethernet <b>J:</b> Analog I/O <b>K:</b> USB <b>L:</b> WIFI <b>M:</b> Zigbee			<b>X:</b> Combined <b>Y:</b> 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 (Custom CAN ID series with GPIO) Feature

1. Input voltage dynamic range 5V to 28V, typical voltage 12V.
2. Self-testing after booting function.
3. CAN bus communication interface.
4. Supports Custom CAN ID protocol, default baud rate at 250Kbps.
5. Built in 16MB flash memory, store the fonts and pictures.
6. Support capacitive touch panel (CTP).
7. Embedded buzzer function.
8. Demo set HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi (with PiCAN2).
9. Supports 8 channel Bi-direction GPIOs with TTL 3.3V logic level. The setting functions through PC tools, Smart Display GUI Builder.

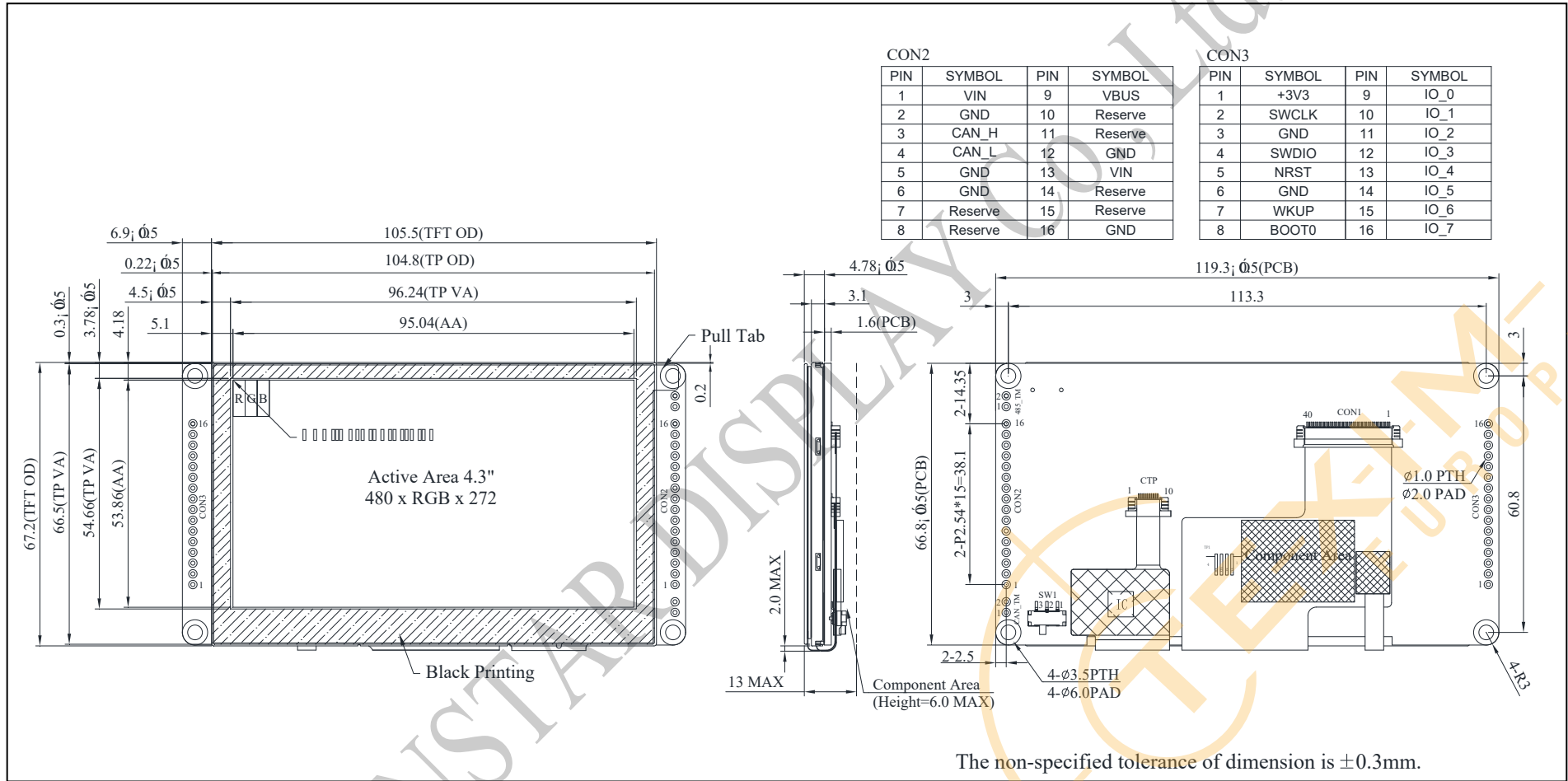


### 3. Product information

#### General information

Item	Standard Value	Unit
Operating voltage	5-28	Vdc
Communication Interface	CAN Bus	--
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	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 <sup>2</sup>
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
Supply Voltage	VIN			+30	V

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  $60^{\circ}\text{C}$

## 6. Electrical Characteristics

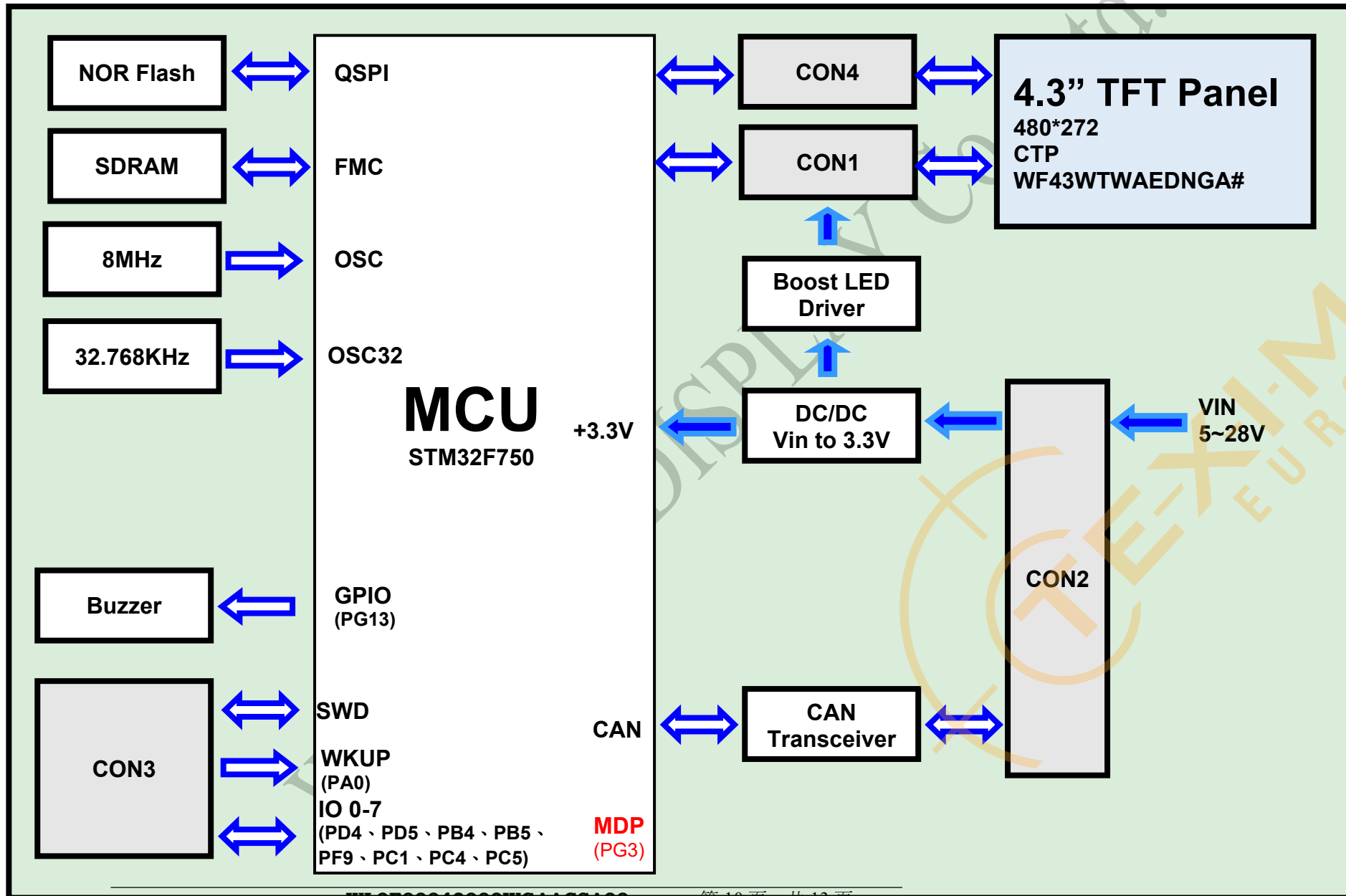
Item	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VCC	5	12	28	V	
Supply Current	ICC		180		mA	
I/O pin Voltage	--	--	--	3.3	V	Note 1

Note1: Exceed 3.3V may cause MCU damage.

## 7. BOM

Item	Description	Remark
LCM	WF43WTWAEDNGA#	
PCBA	SV10004R300WB00N0100	

# Block diagram



## 9. Interface

### CON2 definition:

Pin	Symbol	Function	Remark
16-5	Reserved	--	--
4	CAN_L	CAN bus D-	I/O
3	CAN_H	CAN bus D+	I/O
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	Reversed	--	--
7	WKUP	Wake UP (PA0)	Input
6	Reversed	--	--
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

### CAN\_TM definition:

Pin	Status	Function	Remark
1	Open	Switch off terminal resistance 120Ω	Default
2	Short	Activate terminal resistance 120Ω	--

# 11. 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 <div style="text-align: center;"> <p style="margin: 0;">-30°C    25°C    80°C</p> <p style="margin: 0;">←—————→</p> <p style="margin: 0;">30min    5min    30min</p> <p style="margin: 0;">1 cycle</p> </div>	-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	

WINSTAR DISPLAY Co., Ltd.

