SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.

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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00043000WGAACSA00-FC

APPROVED BY: (FOR CUSTOMER USE ONLY)	

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2024/05/22		First issue

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first FC components

RECORDS OF REVISION			DOC. FIRST ISSUE
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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 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.

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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^2
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	16:9	
With /Without TP	With CTP	
Surface	Glare	

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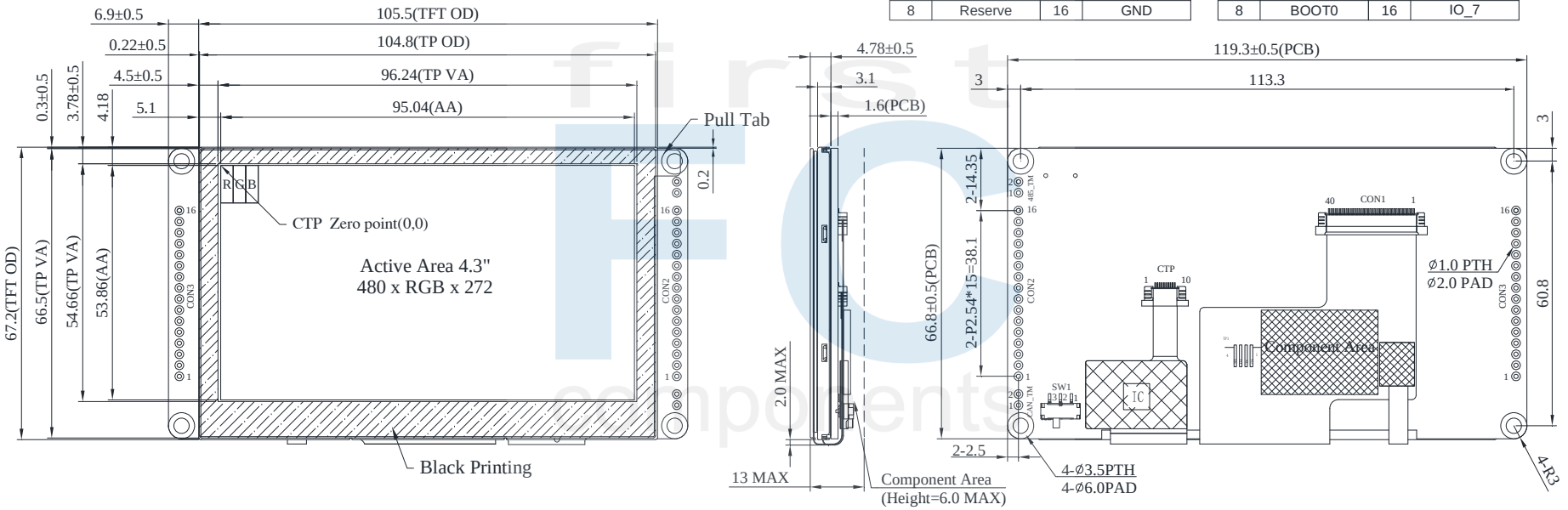
4. Contour Drawing

CON2

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

CON3

PIN	SYMBOL	PIN	SYMBOL
1	+3V3	9	IO_0
2	SWCLK	10	IO_1
3	GND	11	IO_2
4	SWDIO	12	IO_3
5	NRST	13	IO_4
6	GND	14	IO_5
7	WKUP	15	IO_6
8	BOOT0	16	IO_7



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

5. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+80	℃
Storage Temperature	TST	-30	—	+80	℃
Supply Voltage	VIN			+30	V

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above
1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

6. Electrical Characteristics

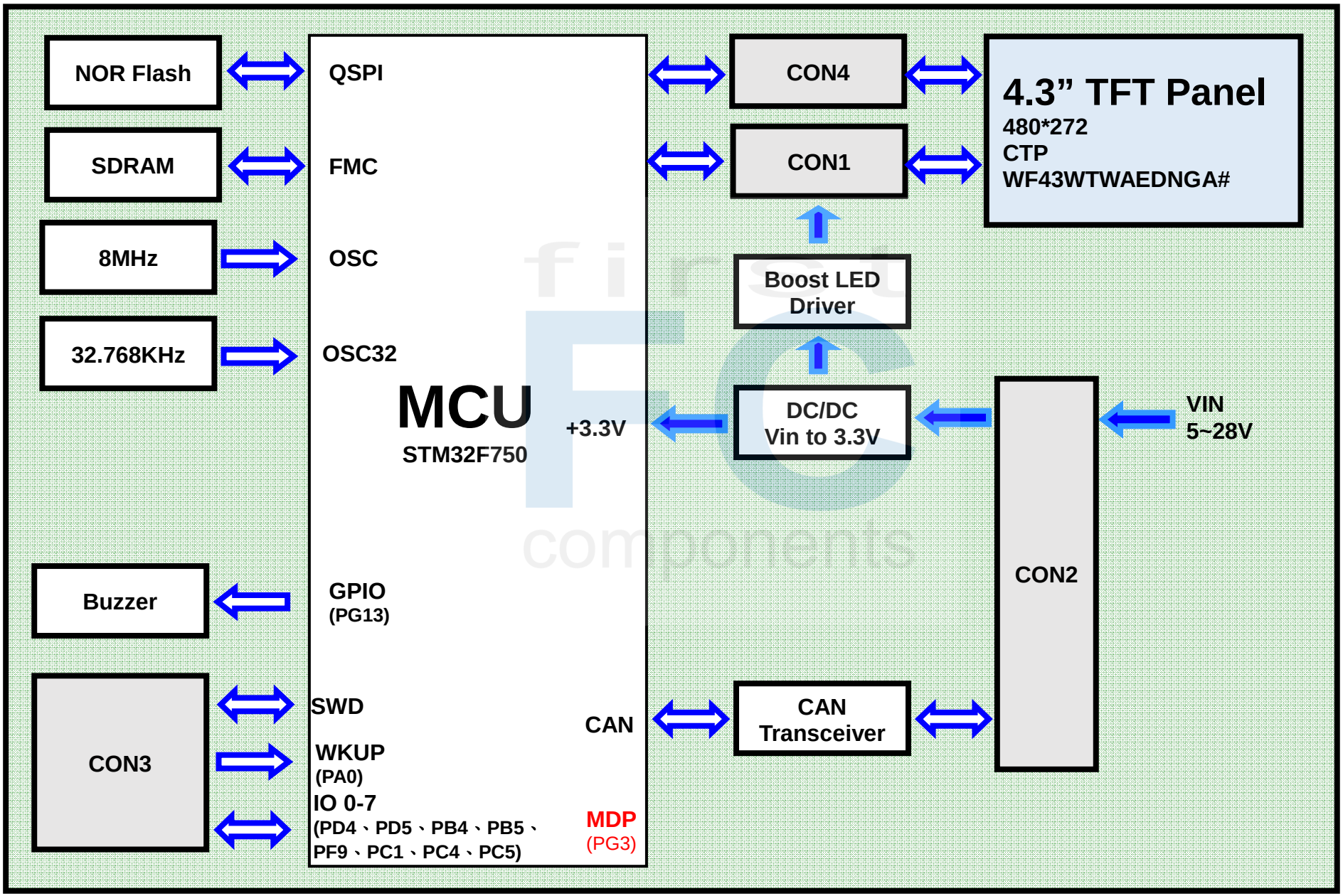
Item	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VCC	5	12	28	V	
Supply Current	ICC		180		mA	
I/O pin Voltage	--	--	--	3.3	V	Note 1

Note1: Exceed 3.3V may cause MCU damage.

7. BOM

Item	Description	Remark
LCM	WF43-480272WD#APW3-FC	
PCBA	SV10004R300WB00N0100	

8. 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 2	Open	Switch off terminal resistance 120Ω	Default
	Short	Activate terminal resistance 120Ω	--

10. Reliability

Content of Reliability Test (Wide temperature, -30℃~80℃)

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℃ 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30℃ 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℃ 200hrs	———
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-30℃ 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60℃,90%RH max	60℃,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation -30℃ 25℃ 80℃ 30min 5min 30min 1 cycle	-30℃/80℃ 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	