SMART DISPLAY SPECIFICATION



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WINSTAR Display Co.,Ltd.

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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00050000FGAAESA02-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	2024/07/19		First issue

Contents

1. Records of Revision
2. Summary
3. Product information
4. Contour Drawing
5. Absolute Maximum Ratings
6. Electrical Characteristics
7. BOM
8. Block diagram
9. Interface
10. Reliability

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RECORDS OF REVISION			DOC. FIRST ISSUE
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2. Summary

5 Inch Smart Display (Custom CAN ID series) 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 16M external flash memory to store the font and Object Dictionary Data.
6. Support capacitive touch panel (CTP).
7. Build in buzzer and can be 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).
9. GPIO PIN support.

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3. Product information

General information

Item	Standard Value	Unit
Operating voltage	12	Vdc
Communication Interface	CAN Bus	--
MCU	STM32F750	N/A
Flash Memory	16	MB
LCD display size	5.0	inch
Dot Matrix	800× 3(RGB) × 480	dot
Module dimension	132.7(W) ×75.8(H) ×12.5	mm
Active area	108(W) ×64.8 (H)	mm
Pixel pitch	0.135(W) ×0.135(H)	mm
Brightness	Min: 650; Typ: 750	cd/m^2
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	5:3	
With /Without TP	With CTP	
Surface	Glare	

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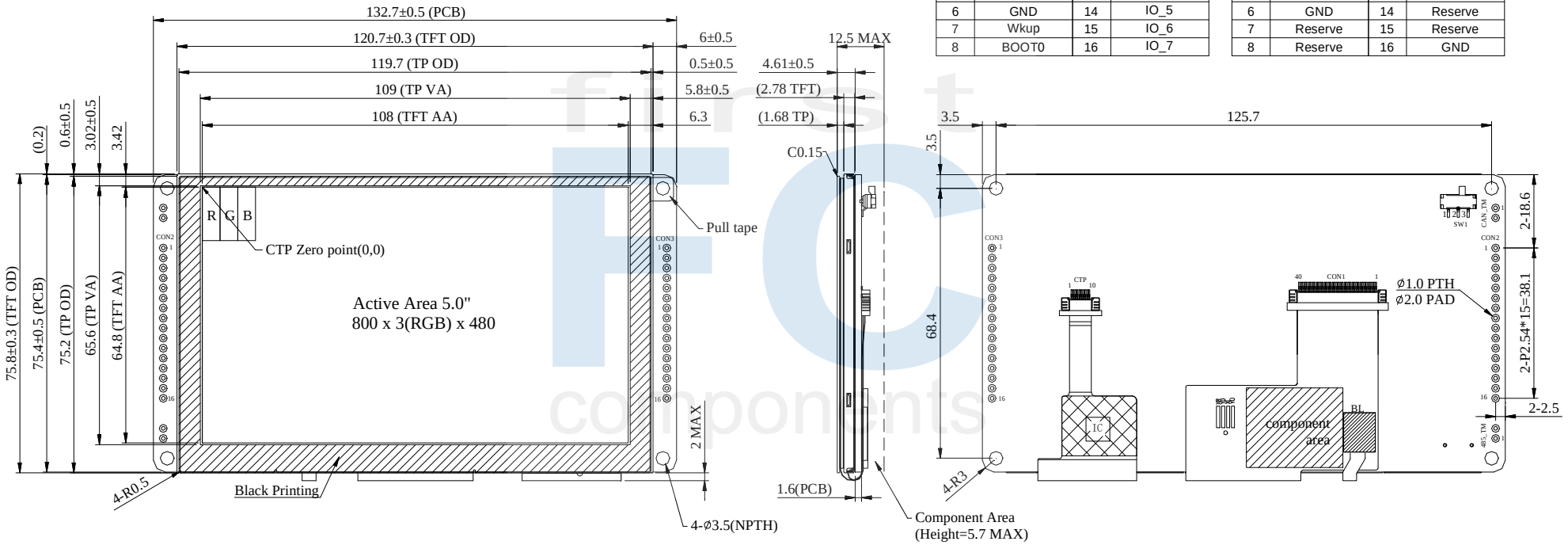
4. Contour Drawing

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

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



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

5. Absolute Maximum Ratings

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

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

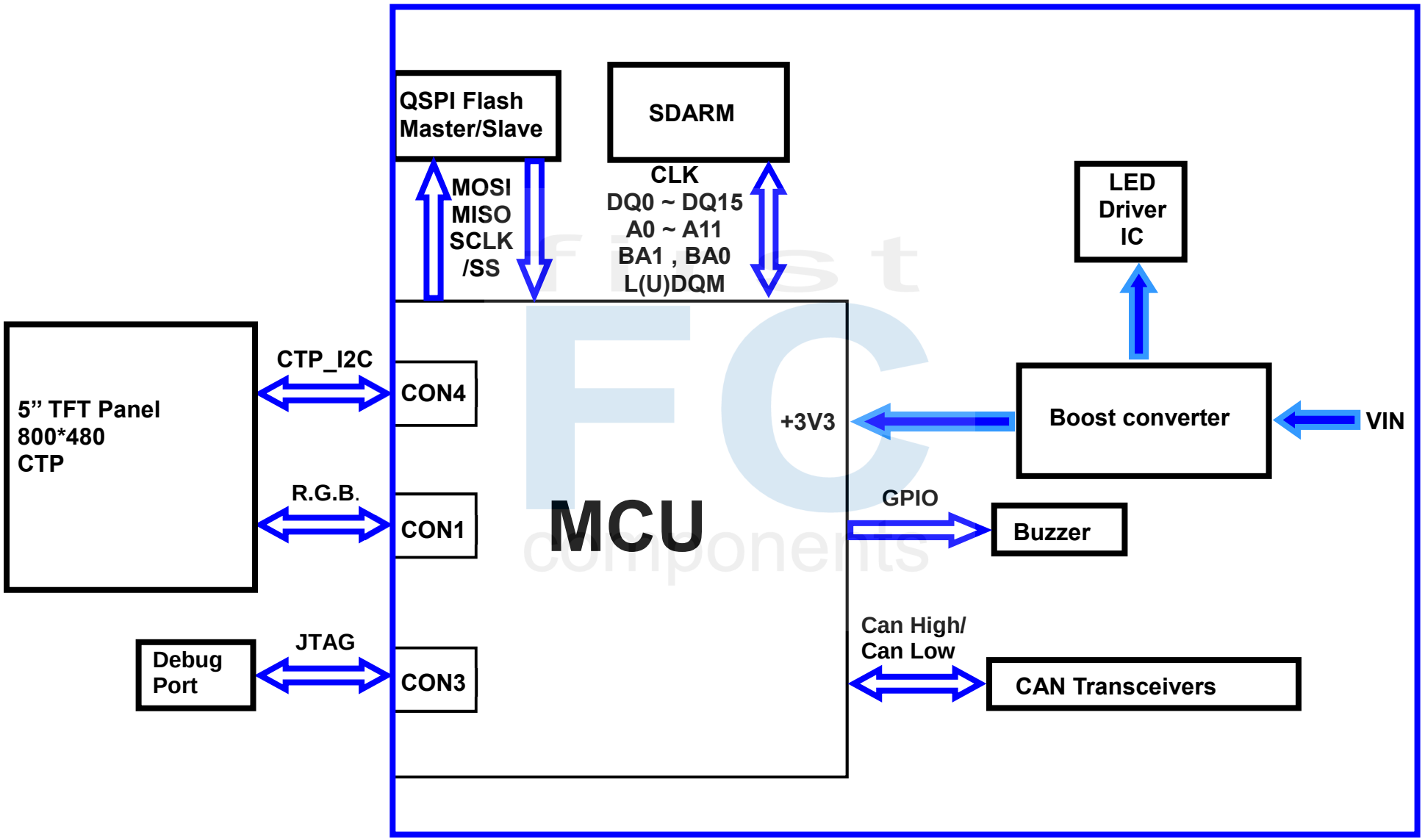
Item	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VCC	5	12	28	V	
Supply Current	ICC	590	230	110	mA	
I/O pin Voltage	--	--	--	3.3	V	Note 1

Note1: Exceed 3.3V may cause MCU damage.

7. BOM

Item	Description	Remark
LCM	WF50-800480FD#0SPW3-FC	
PCBA	TBD	

8. Block diagram



9. Interface

CON2 definition:

Pin	Symbol	Function	Remark
1	VIN	Power supply 5V to 28V input	Input
2	GND	Power supply GND input	Input
3	CAN_H	CAN bus D+	I/O
4	CAN_L	CAN bus D-	I/O
5	GND	Power supply GND input	GND
6	GND	Power supply GND input	GND
7	Reserve	-	-
8	Reserve	-	-
9	VBUS	Power supply 5V input	Input
10	Reserve	-	-
11	Reserve	-	-
12	GND	Power supply GND input	Input
13	VIN	Power supply 5V to 28V input	Input
14	Reserve	-	-
15	Reserve	-	-
16	GND	Power supply GND input	Input

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CON3 definition:

Pin	Symbol	Function	Remark
1	+3V3	3.3V power for JTAG interface	Output
2	JTAG_SWCLK	CLK pin for JTAG interface	Input
3	GND	GND for JTAG interface	Output
4	JTAG_SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	GND	Output
7	WKUP	WKup,ADC,Timer,Event,I/O	TTL signal voltage is 3.3V
8	BOOT0	Lo: Internal flash boot (Default) Hi: External flash boot	TTL signal voltage is 3.3V
9	IO0	ADC,DAC,Timer,Event,I/O	TTL signal voltage is 3.3V
10	IO1	ADC,Timer,Event,I/O	TTL signal voltage is 3.3V
11	IO2	ADC,Timer,Event,I/O	TTL signal voltage is 3.3V
12	IO3	RST,Timer,Event,I/O	TTL signal voltage is 3.3V
13	IO4	RST,Timer,Event,I/O	TTL signal voltage is 3.3V
14	IO5	ADC,Timer,Event,I/O	TTL signal voltage is 3.3V
15	IO6	RST,Timer,Event,I/O	TTL signal voltage is 3.3V
16	IO7	RST,ADC,Event,I/O	TTL signal voltage is 3.3V

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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℃ 96hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30℃ 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.	80℃ 240hrs	———
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-30℃ 240hrs	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	———
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)	12	
I_{System}(mA)	230	