SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00035000XGAACSA00-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	2024/4/10		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
11. Product inspection check list

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MODLE NO：
WL0F00035000XGAACSA00-FC

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2. Summary

3.5 Inch Smart Display 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 C AN 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	5 ~ 28	Vdc
Communication Interface	CAN bus	--
MCU	STM32F750	N/A
Flash ROM	16	MB
SDRAM	8	MB
LCD display size	3.5	inch
Dot Matrix	320× 3(RGB) × 240	dot
Module dimension	100(W) x 82(H) x 13.2(D)	mm
Active area	70.08(W) x 52.56(H)	mm
Pixel pitch	0.219 x 0.219	mm
Brightness	Min: 300; Typ: 400	cd/m^2
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	4:3	
With /Without TP	With CTP	
Surface	Glare	

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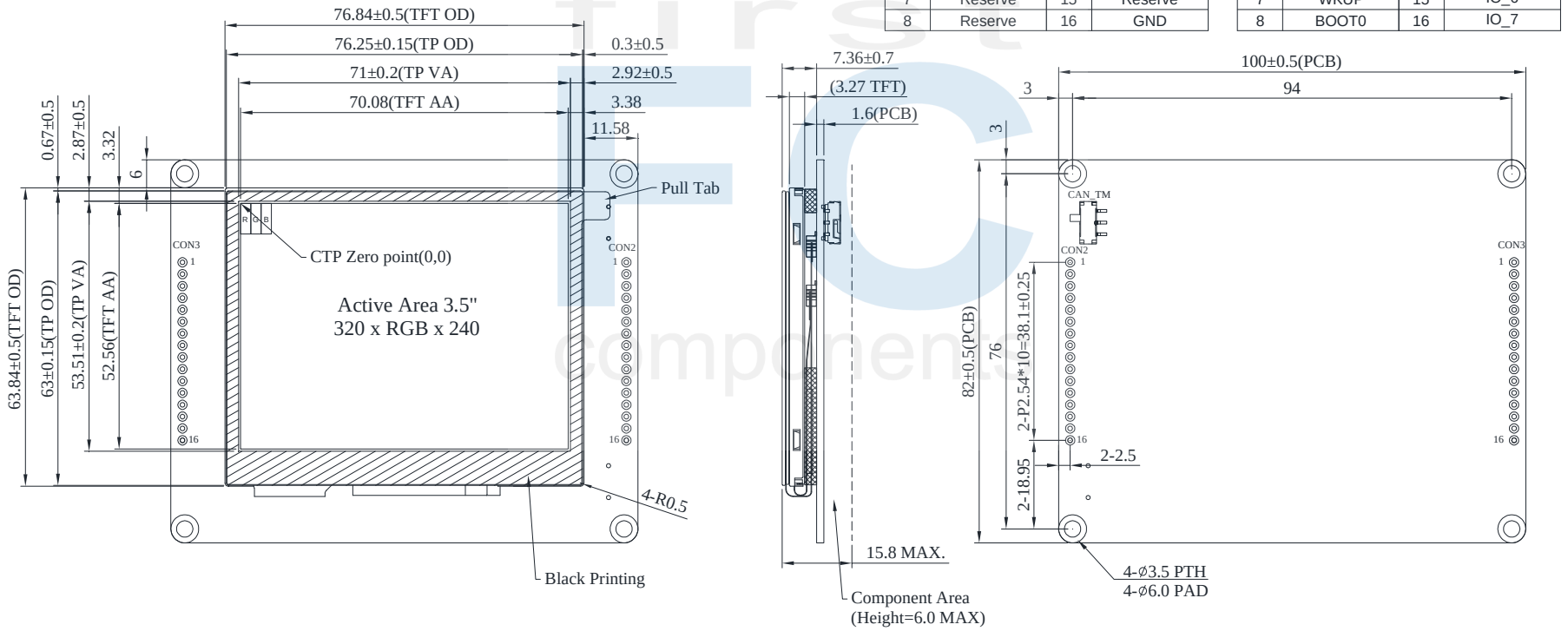
4. Contour Drawing

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	Remark
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
Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

6. Electrical Characteristics

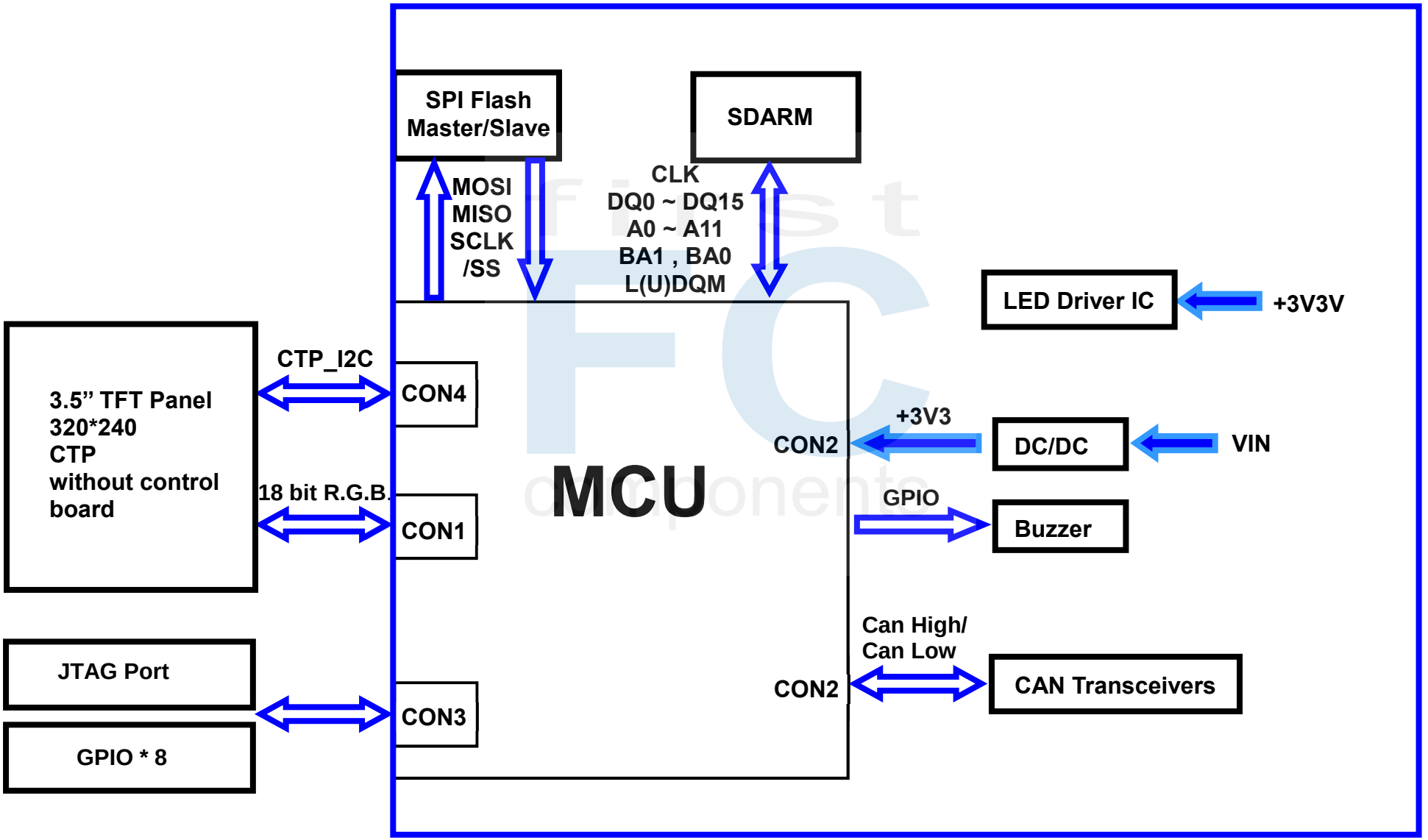
Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage	VIN	5	12	28	V	
Supply Current	ICC	-	150	-	mA	
I/O pin Voltage	--	--	--	3.3	V	Note 1

Note1: I/O allow below 3.3V input, If exceeding 3.3V may cause MCU damage.

7. BOM

Item	Description	Remark
LCM	WF35-320240XD#0PW3-FC	
PCBA	PB1V0003R500XA461X00	

8. Block diagram



9. Interface

CON2 definition:

Pin	Symbol	Function	Remark
1	VIN	Power +5V~28V	Input
2	GND	Power GND	--
3	CAN_H	CAN bus D+	I/O
4	CAN_L	CAN bus D-	I/O
5-16	Reserved	--	--

CON3 definition:

Pin	Symbol	Function	Remark
1	+3V3	3.3V power for JTAG interface	Output
2	SWCLK	CLK pin for JTAG interface	Input
3	GND	GND for JTAG interface	--
4	SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	Power GND	--
7	WKUP	WKup,ADC,Timer,Event,I/O	Input
8	BOOT0	Lo: Internal flash boot (Default) Hi: External flash boot	Input
9	IO_0	ADC,DAC,Timer,Event,I/O @3.3V	I/O
10	IO_1	ADC,Timer,Event,I/O @3.3V	I/O
11	IO_2	ADC,Timer,Event,I/O @3.3V	I/O
12	IO_3	RST,Timer,Event,I/O @3.3V	I/O
13	IO_4	RST,Timer,Event,I/O @3.3V	I/O
14	IO_5	ADC,Timer,Event,I/O @3.3V	I/O
15	IO_6	RST,Timer,Event,I/O @3.3V	I/O
16	IO_7	RST,ADC,Event,I/O @3.3V	I/O

@3.3V : I/O allow below 3.3V input, If exceeding 3.3V may cause MCU damage.

10. Reliability

Content of Reliability Test

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	___
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.

11. Product inspection check list

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

Item	No 1	No 2	No 3	Note
V_{IN} (V)	12	12	12	
I_{System} (mA)	150	151	150	

Check sample Reliability Test

Item	Result	Note
Thermal shock	PASS	-30℃/80℃ 20 cycles
High Temperature Operation	PASS	80℃ 200hrs
Low Temperature Operation	PASS	-30℃ 200hrs
High Temperature/ Humidity Operation	PASS	60℃,90%RH 96hrs
Static electricity test	PASS	VS=±2KV~±6KV(contact),±2KV~±8KV (air), RS=330Ω CS=150pF 10 times
Vibration test	PASS	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes

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