SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00101000JGDABSA00-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	2023/05/12		First issue

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first FC components

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Summary

10.1 Inch Smart Display (RS485 series) Features

1. +12V power supply input with 8V to 28V dynamic range power input, the power consumption is around 6 Watt.
2. Self testing after booting function.
3. RS485 communication interface.
4. Built in flash memory, store the font and Object Dictionary Data.
5. Support capacitive touch panel (CTP).
6. Embedded buzzer controlled by Master Device.
7. HOST can be used on multiple platforms, such as Computer (with USB to RS-485 Dongle), MCU.

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Product information

General information

Item	Standard Value	Unit
Operating voltage	8V~28V dynamic	Vdc
Communication Interface	RS485 differential ± 3.3	Vpp
MCU	STM32F746	N/A
Flash Memory	16	MB
LCD display size	10.1	inch
Dot Matrix	1024 x RGBx600(TFT)	dot
Module dimension	235(W) x 143(H) x 23.2(D)	mm
Active area	222.72 (H) x 125.28(V)	mm
Pixel pitch	0.2175(W) x 0.2088(H)	mm
Brightness	Min: 300; Typ: 400	
LCD type	LED, Normally White	
View Direction	85/85/85/85	
Aspect Ratio	16:9	
With /Without TP	With CTP	
Surface	Glare	

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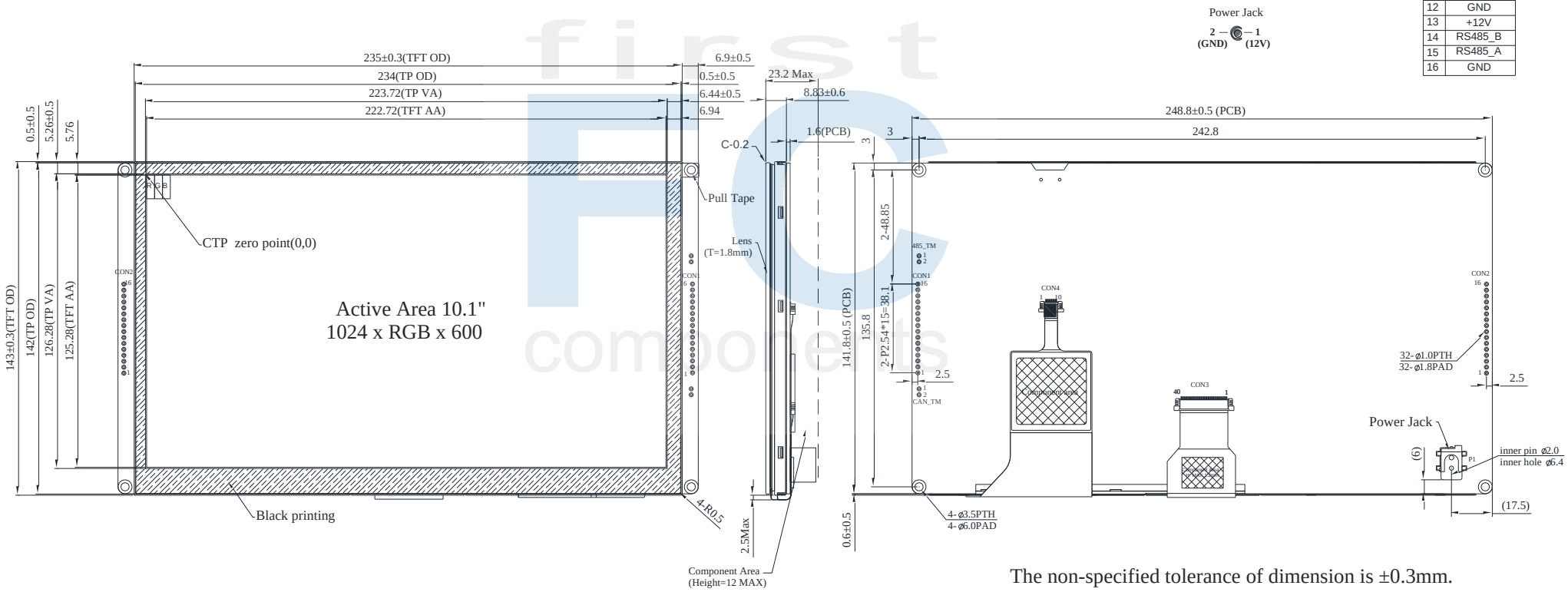
Contour Drawing

CON2

PIN	SYMBOL
1	+3V3
2	SWCLK
3	GND
4	SWDIO
5	NRST
6	GND
7-16	Reserve

CON1

PIN	SYMBOL
1	+12V
2	GND
3	NC
4	NC
5	GND
6	GND
7	Reserve
8	Reserve
9	NC
10	Reserve
11	Reserve
12	GND
13	+12V
14	RS485_B
15	RS485_A
16	GND



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

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
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℃

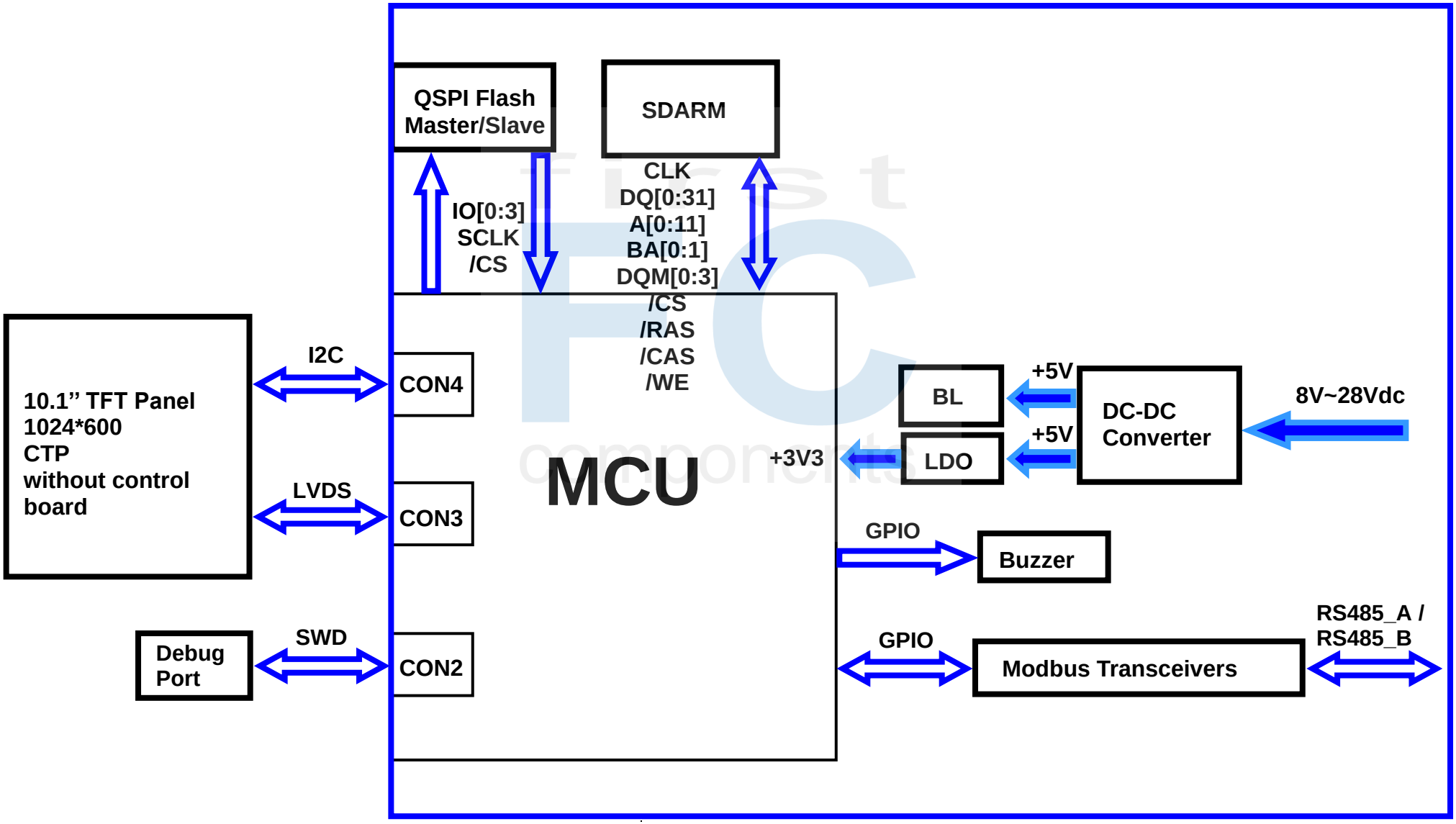
Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage	VCC	—	11.4	12	12.6	V
Supply LCM current	I(mA)	-	-	510	-	mA

BOM

Item	Description	Remark
LCM	WF101-1024600JL#0P8-FC	
PCBA	SV10010R100JB00N0101	

Block diagram



Interface

CON1 definition:

Pin	Symbol	Function	Remark
1	+12V	Power supply12V input	Input
2	GND	Power supply GND input	Input
3	NC	-	-
4	NC	-	-
5	GND	Power supply GND input	GND
6	GND	Power supply GND input	GND
7	Reserve	USB_D-	Reserve
8	Reserve	USB_D+	Reserve
9	NC	-	-
10	Reserve	USART RX interface(Reserve)	Reserve
11	Reserve	USART TX interface(Reserve)	Reserve
12	GND	Power supply GND input	GND
13	+12V	Power supply12V input	Input
14	RS485_B	RS485 D-	I/O
15	RS485_A	RS485 D+	I/O
16	GND	Power supply GND input	Input

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CON2 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	Output
4	SWDIO	Data pin for JTAG interface	I/O
5	NRST	Reset pin for JTAG interface	Input
6	GND	GND	Output
7	Reserve	IO_8 for system Resume from suspend (Reserve)	WKup,ADC,Timer,Event,I/O
8	Reserve	Reset (active Low) (Reserve)	I
9	Reserve	IO_0 (Reserve)	ADC,DAC,Timer,Event,I/O
10	Reserve	IO_1 (Reserve)	ADC,Timer,Event,I/O
11	Reserve	IO_2 (Reserve)	ADC,Timer,Event,I/O
12	Reserve	IO_3 (Reserve)	RST,Timer,Event,I/O
13	Reserve	IO_4 (Reserve)	RST,Timer,Event,I/O
14	Reserve	IO_5 (Reserve)	ADC,Timer,Event,I/O
15	Reserve	IO_6 (Reserve)	RST,Timer,Event,I/O
16	Reserve	IO_7 (Reserve)	RST,ADC,Event,I/O

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Reliability

Content of Reliability Test (Wide temperature, -20℃~70℃)

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.	70℃ 200hrs	
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20℃ 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 40℃,90%RH max	60℃,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation -20℃ 25℃ 70℃ 30min 5min 30min 1 cycle	-20℃/70℃ 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=±600V(contact),±800v(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	No 2	No 3	Note
V_{IN} (V)	12.1	12.1	12.1	
I_{System}(mA)	0.513	0.515	0.517	