



DISEN ELECTRONICS CO.,LIMITED

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- Preliminary Specification
- Approval Specification

**SPECIFICATION
FOR
LCD MODULE**

Customer : _____
 Product Model: DS021-480-6P
 Sample code : _____

Designed by	Checked by	Approved by
Sally	Zhangbin	Ataman

Final Approval by Customer

<input type="checkbox"/> LCM Machinery OK Checked By <input type="checkbox"/> LCM Display OK Checked By	<input type="checkbox"/> LCM OK <input type="checkbox"/> NG, Problem survey: Approved By
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※ The specification of "TBD" should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.



Eastchip is an integrated comprehensive IEO solutions provider who focused on designing and developing, manufacturing, selling section. Our solution widely applied in medical, industrial controlling, appliances, kitchen utensils etc in smart home devices.

DS021-480-6P based on Linux OS ARM frame UART HMI smart displaying system platform. The ender users can easily make ideal come true by a UART HMI rotating button and touch screen module. its chipset embedded UART protocol function which included the picture recycling displaying, GIF animation displaying, starting displaying, loading bar, words displaying, QR codes displaying, geometric graphics displaying like the linear, the triangle, the squared features etc. All of this benefit it from the dual-core 1G Hz processing ability, high-speed processing and excellent 18 Bit color displaying performance, are the best choice of product developing and upgrading.

1, Product profile



2, Product description

- 2.1" Round LCD display module, 480*480 resolution;
- Rotating button and confirming key makes HMI come true;
- Capacitive touch screen enhance the HMI experiences touch function for option
- UART protocol, support 115200bps max ratio
- Pictures and Words can be stored, and updated by UART protocol interface

The memory capacity can be customized, support 128M max, support RTC timing function, it's optional

- Displaying data can be variable operated
- Support USB Flash disk upgrading, data loading, data saving
- LINUX HMI solution, free to secondary development



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3, Product Real Application(Picture)

Floor Heating Controlling in Smart Home



Light adjust in Smart Home



Rotating Displaying

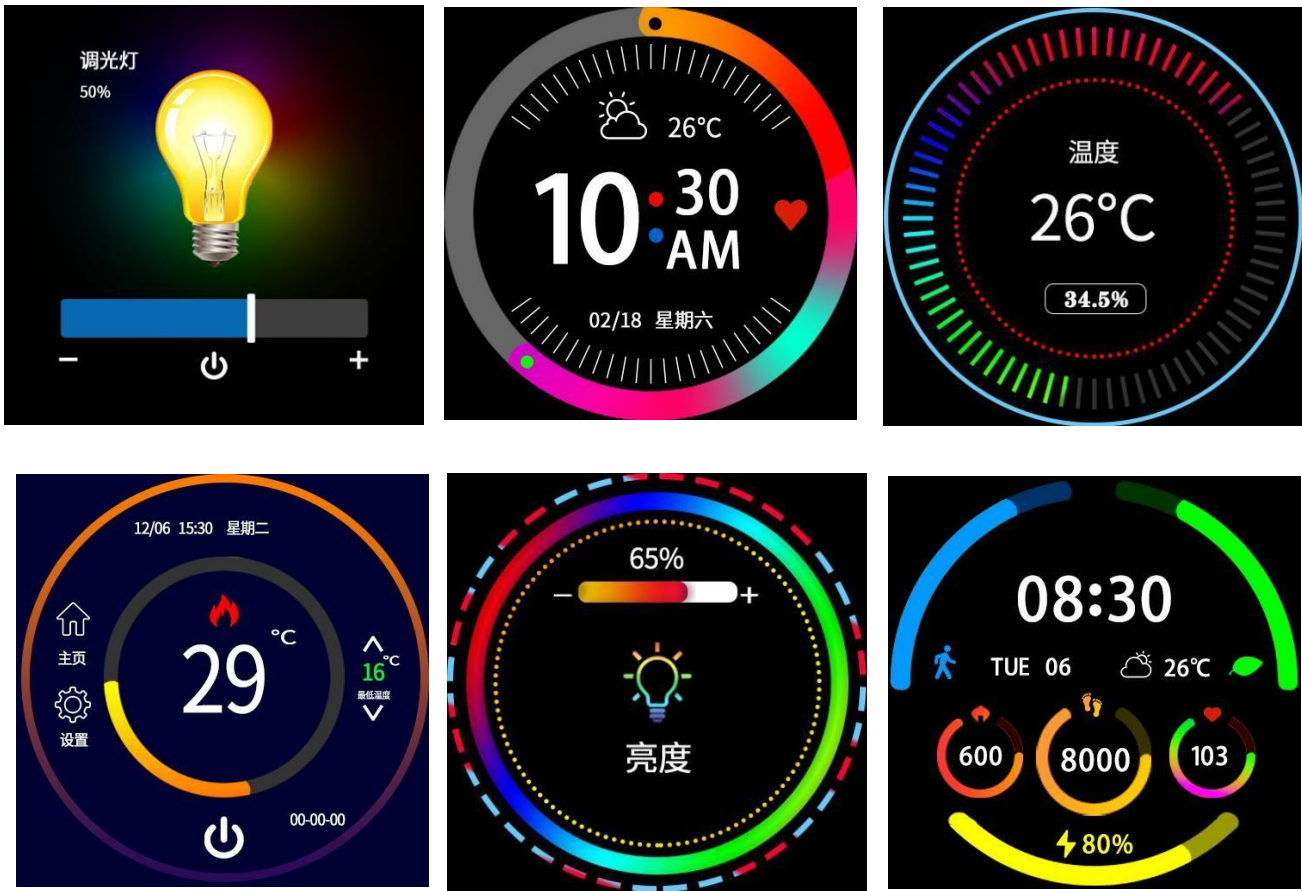


OvenSmart Shoes Heater





4, Enriched UI icon displaying (picture)



2.1" inch Rotating LCD Display Module applied:
smart home appliances, air fryer, water heater, washing machine, oven, cooking
ranges etc which need a real color displaying kits



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5, Product parameters

Display Parameters	Parameters	Defaults	Mark
	2.1" inch	RGB666 18bit IPS LCD	NTSC:72%
	Active Areal(AA)	Φ53.28mm	-
	Resolution	480*480 pixels	
	Viewing angle	ALL	Typ.80°/80°/80°/80°
	Backlight Mode	LED	-
	display luminance	300Cd/m ² -	-

Electrical Parameters	Parameters	Testing Condition	Min.	Typ.	Max.	Unit
	Working Voltage	-	-	-	5.0	-
Working Electricity	VCC=5V	BLU Max	-	190	-	mA
		BLU OFF	-	110	-	mA
Recommend working power supply unit: 5V/1A DC						
Reliable Parameters	Operation Temperature	5V Voltage ,Humidity 60%	-20	25	70	°C
	Storage Temperature	-	-30	25	80	°C
	Working humidity	-	10%	60%	90%	RH
	Three treatments	-	-	无	-	-
	ESD protection	-	-	-	-	-
	Aging time	-	-	-	-	H
Interface Parameters	UART Baud rate	-	1200	115200	-	bps
		-	-	-	-	bps
	UART OUTPUT (TXD、BUSY)	OUTPUT 1 , Iout=1mA	3.0	3.2	-	V
		OUTPUT 0 , Iout=-1mA	-	0.1	-	V
	VOHmin=2.48V@IOH=-4mA VOLmax=0.44@IOH=-4mA					
	UART INPUT (RXD)	INPUT 1 , Iin=1mA	1.5	3.3	15	V
		INPUT 0 , Iin=-1mA	-15	0.0	0.5	V
	VIHmin=1.5V VILmax=0.5V					
	UART Protocol	1 lane UART				
	User's protocol	UART/6P/2.0 Connector				
USB Interface	MICROUSB					
SD Flash	NO					

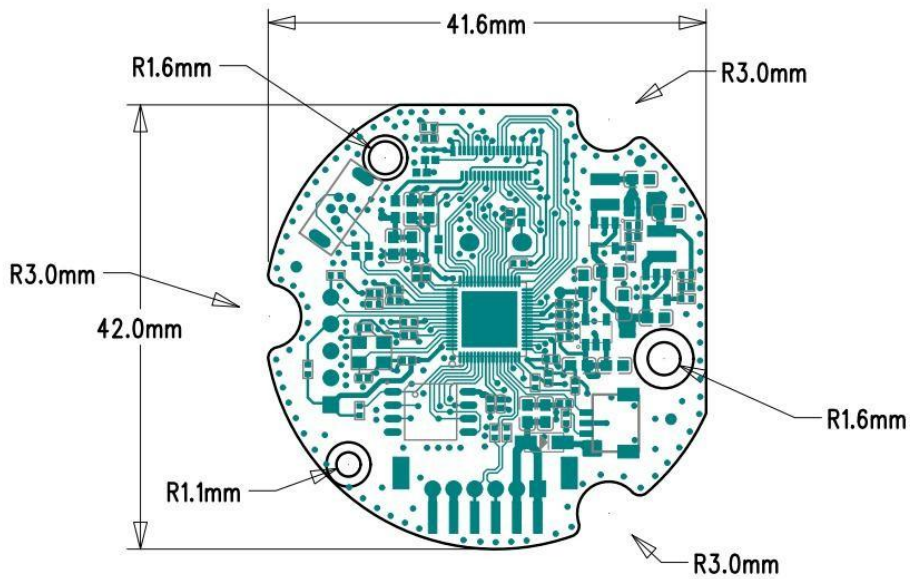


Memory Parameters	Type	Parameters	Min.	Typ.	Max.	Unit	
	FLASH Capacity	Total capacity		-	-	128	MB
		Digits memory		-	-	32	MB
		Picture memory		-	-	200	Piece

6, Sofeware data, TBD, feel free to conact our salesmen

7, Product Outline Dimensions

PCB Board(Tolerance±0.30 mm, Unit: mm)





1, UART Protocol Pin-outs

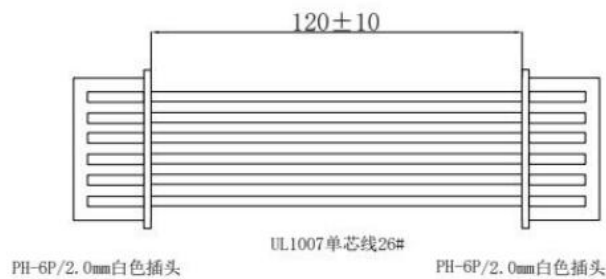


GND/GND/TXD/RXD/+5V/+5V

CON1 No.	Symbol	USB1 pinout	Symbol na	Mark
1	DC5V	1	Power input+	-
2	DC5V	2	Power input+	-
3	RXD	3	UART Data Receiving	-
4	TXD	4	UART Data Transmitting	-
5	GND	5	GND	-
6	GND	6	GND	-

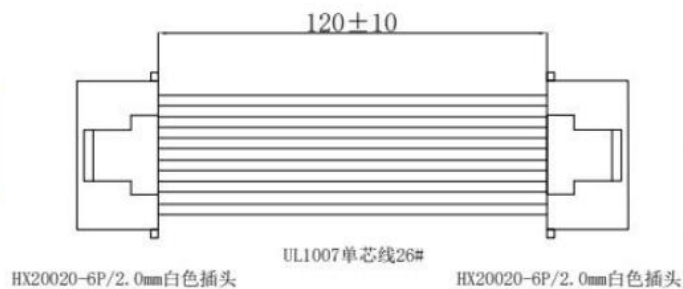
2, DC Power and UART Interface connect with FPC/CONNECTOR(6P/2.0mm white with connector or not)

FPC Connection



Red
black
white
yellow
orange
green

Conector Connection



Red
black
white
yellow
orange
green



8,Product RealAssembling Pictures



PCBA Assembling Pictures



LCD display+Lens Cover Assembling Picture