SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SMA800480T030ZHR06
MASS PRODUCTION CODE	:	HMA800480T030ZHR06
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	001
DRAWING NO. (Ver.)	:	LMD- HMA800480T030ZHR06 (Ver.001)
PACKAGING NO. (Ver.)	:	-

Customer Approved

Date:

Approved	Checked	Designer
林裘中 Daniel Lin	呂清溪 Marcs Lu	陳漢霖 Hans Chen

POWERTIP
2024.02.07
TW RD APR

■ Preliminary specification for design input

□ Specification for sample approval

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1. SPECIFICATIONS

1.1 Features

Hardware

CPU	RISC Processor	STM32H750 480 MHz, ARM Cortex-M7
Memory	RAM	16MB SDRAM
	Flash	32MB QSPI FLASH 8G eMMC (Optional)
	External Storage	1 x Micro SD (max. 32G)
Display	Resolution	800 * 3 (RGB) * 480Dots
	Viewing Direction	Full Viewing Angle
	Interface	Parallel RGB 24 bits
I/O	USB	1 x USB2.0 Device
	Serial	1 x UART, 1 x SPI, 1 x I2C, 1 x CAN
	RMII	1 x Ethernet
Power Input	DC	5V

Note:

1. Support Micro USB Power Supply.
2. Support USB Device Full Speed.
3. Support CAN Bus (Compatible with ISO11898-2).
4. Support Ethernet (10BASE-T / 100BASE-T).
5. Support RTC.

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	145.56(W) * 102.36(L) * 16.1(H)	mm
Active Area	108.0(W) * 64.8(L)	mm

1.3 Absolute Maximum Ratings

Ta = 25℃

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply	VIN	—	-0.3	6.0	V
Operating Temperature	TOP	—	-20	70	°C
Storage Temperature	TST	—	-30	80	°C
Humidity	HD	Ta=60 ℃	10	90	%RH

1.4 DC Electrical Characteristics

Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	VIN	-	4.5	5	5.5	V
Power Supply Voltage of RTC	VBAT	-	2.0		3.6	V
Power Supply Current	IIN	VIN = 5V	-	(TBD)	-	mA
Power Consumption of System	PIN	VIN = 5V	-	(TBD)	-	W
High-Level voltage of digital input	VIH	-	2.3	-	-	V
Low-Level voltage of digital input	VIL	-	-	-	0.9	V
High level voltage of digital output	VOH	-	2.4	-	-	V
Low level voltage of digital output	VOL	-	-	-	0.4	V

1.5 Optical Characteristics

VDD= 3.3 V, Ta=25°C

Item	Symbol		Condition	Min.	Typ.	Max.	unit	-
Response time	Tr+Tf		-	-	37	56	ms	Note 2
Viewing angle	Top	θY+	CR ≥ 10		80	-	Deg.	Note 4
	Bottom	θY-			80	-		
	Left	θX-			80	-		
	Right	θX+			80	-		
Contrast ratio	CR		Ta = 25°C θX , θY = 0°	650	650	800	-	Note 3
Color of CIE Coordinate （With B/L & T/P）	White	X		(0.27)	(0.32)	(0.37)	-	Note1
		Y		(0.30)	(0.35)	(0.40)		
	Red	X		(0.56)	(0.61)	(0.66)		
		Y		(0.30)	(0.35)	(0.40)		
	Green	X		(0.31)	(0.36)	(0.41)		
		Y		(0.53)	(0.58)	(0.63)		
	Blue	X		(0.08)	(0.13)	(0.18)		
		Y		(0.06)	(0.11)	(0.16)		
Average Brightness Pattern=white display （With B/L & T/P） *1	IV		PWM=”High” (Duty=100%)	(680)	(850)	-	cd/m2	Note1
Uniformity （With B/L & T/P） *2	△ B		PWM=”High” (Duty=100%)	70	-	-	%	Note1

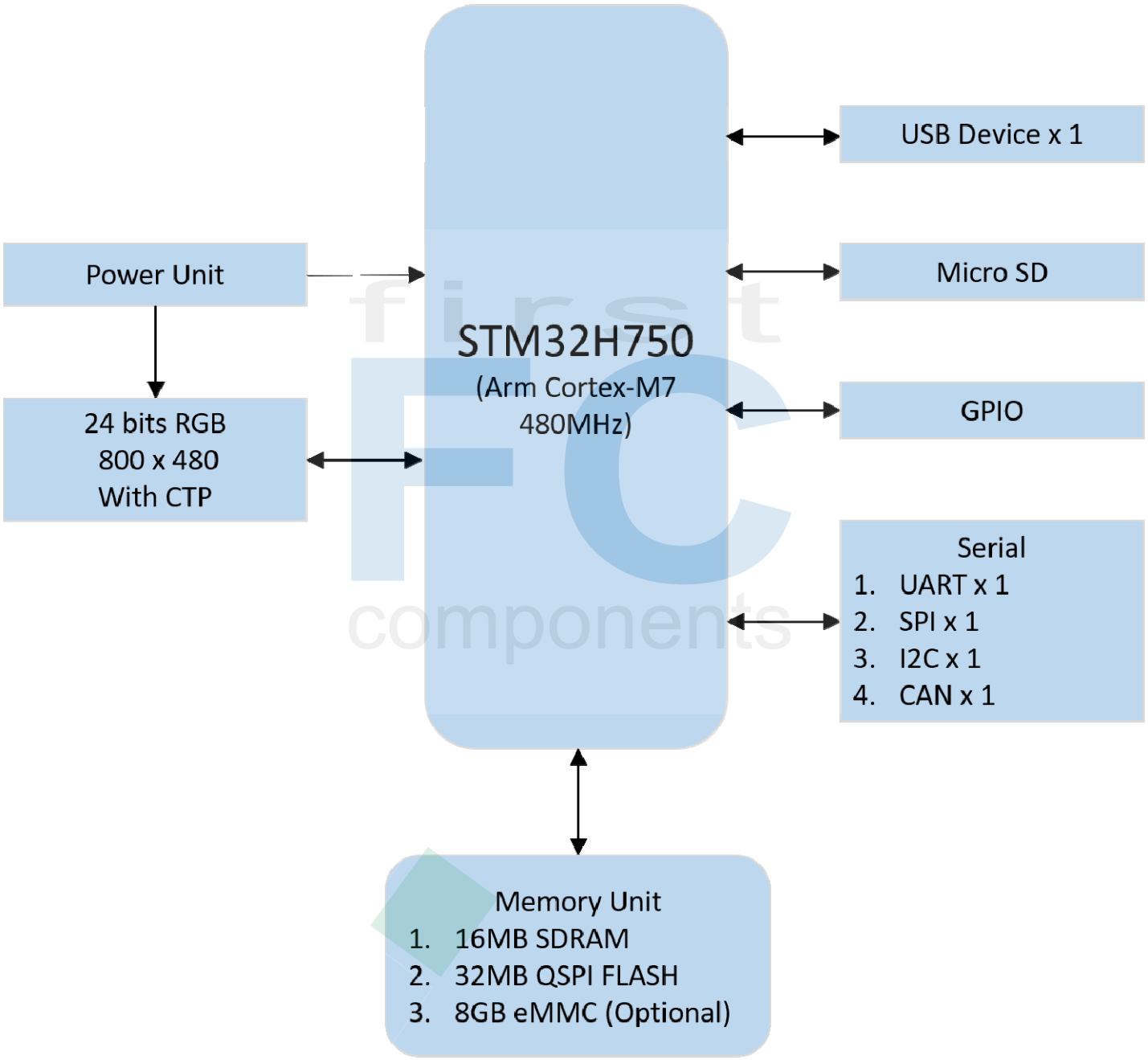
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



2.2 Interface Pin Description

JT1 --- JTAG (Wafer Pitch1.25mm 6pin)

Pin No.	Symbol	Type	DESCRIPTION
1	PA15	IO	General Purpose I/O, Port A [15].
2	PF6	IO	General Purpose I/O, Port F [6].
3	RESETINn	I	JTAG test reset.
4	JTMS/SWDIO	I/O	JTAG test mode select / Serial wire data in/out.
5	JTCK/SWCLK	I	JTAG test clock / Serial wire clock.
6	GND	P	Ground.

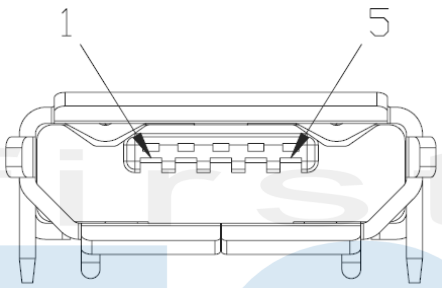
J3 --- CAN Bus (Wafer Pitch1.25mm 2pin)

Pin No.	Symbol	Type	DESCRIPTION
1	CAN H	DS	High Level CAN Bus Line.
2	CAN L	DS	Low Level CAN Bus Line.

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J4 --- USB 2.0 Device MICRO USB

Pin No.	Symbol	Type	DESCRIPTION
1	VBUS5V	P	+5.0V
2	D-	DS	Data – (Data M)
3	D+	DS	Data + (Data P)
4	ID	-	Not Used.
5	GND	P	Ground



J6 --- Ethernet (Wafer Pitch1.25mm 10pin)

Pin No.	Symbol	Type	DESCRIPTION
1	GND	P	Ground.
2	GND	P	Ground.
3	LED_ACK	O	Link Speed LED Indication. (See Note 1)
4	RXD-	DS	Receive Negative.
5	RXD+	DS	Receive Positive.
6	TXD-	DS	Transmit Negative.
7	TXD+	DS	Transmit Positive.
8	LED_LINK	O	Link Activity LED Indication. (See Note 2)
9	GND	P	Ground.
10	VDD3V3	P	Power Supply (+3.3V).

Note 1: This pin is driven active when the operating speed is 100Mbps. It is inactive when the operating speed is 10Mbps or during line isolation.

Note 2: This pin is driven active when a valid link is detected and blinks when activity is detected.

J8 --- RTC (Wafer Pitch1.25mm 2pin)

Pin No.	Symbol	Type	DESCRIPTION
1	VBAT	P	Power Supply for RTC.
2	GND	P	Ground.

J10 --- P05D00071-01 Interface Reserved (Pitch 0.5mm 30pin Double contact)

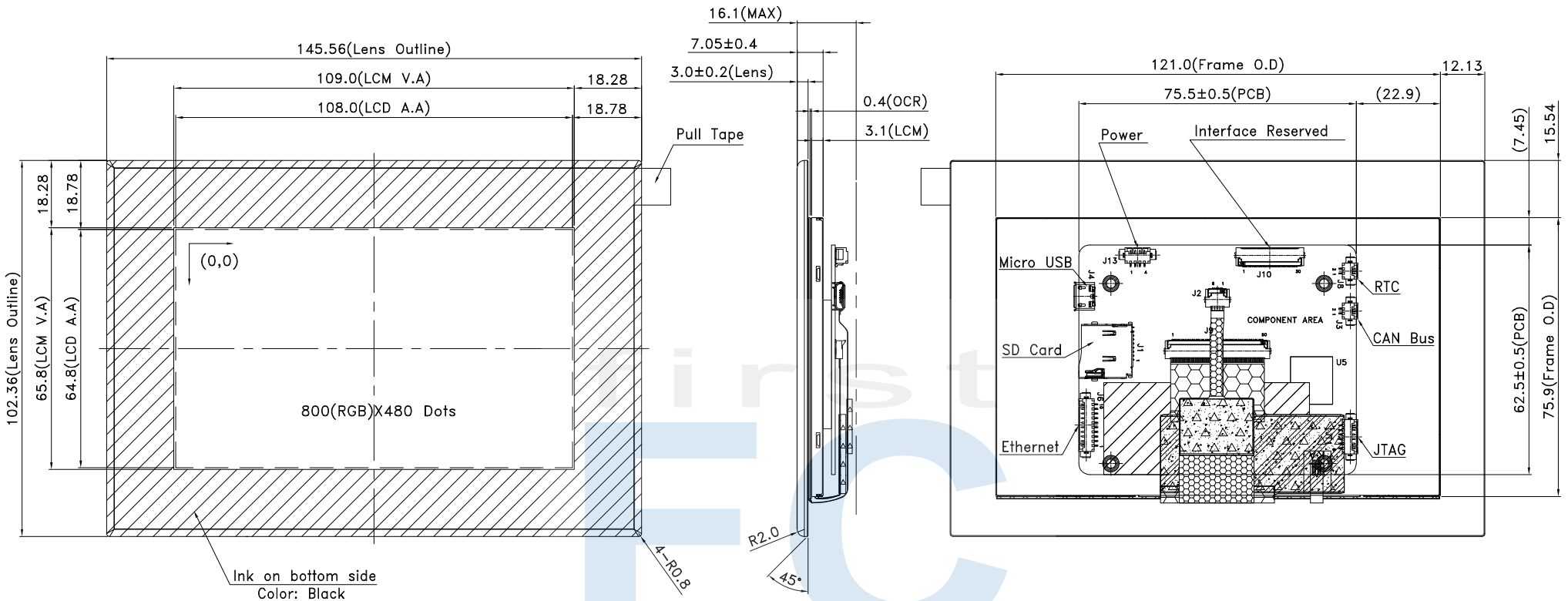
Pin No.	Symbol	Type	DESCRIPTION
1	GND	P	Ground.
2	PG3	IO	General Purpose I/O, Port G [3].
3	PB2	IO	General Purpose I/O, Port B [2].
4	NC	-	Not Used.
5	GND	P	Ground.
6	I2C_CLK	IO	I2C2 CLK, Function Reserved.
7	GND	P	Ground.
8	I2C_DAT	IO	I2C2 DAT, Function Reserved.
9	GND	P	Ground.
10	SPI_CLK	IO	SPI1 CLK, Function Reserved.
11	GND	P	Ground.
12	SPI_MISO	IO	SPI1 MISO, Function Reserved.
13	SPI_MOSI	IO	SPI1 MOSI, Function Reserved.
14	GND	P	Ground.
15	SPI_CS0	IO	SPI1 CS0, Function Reserved.
16	GND	P	Ground.
17	PH6	IO	General Purpose I/O, Port H [6].
18	PH7	IO	General Purpose I/O, Port H [7].
19	PC0	IO	General Purpose I/O, Port C [0].
20	PB1	IO	General Purpose I/O, Port B [1].
21	GND	P	Ground.
22	RESETINn	I	System Reset, Active Low.
23	UART_TXD	IO	USART2 TX, Function Reserved.
24	UART_RXD	IO	USART2 RX, Function Reserved.
25	GND	P	Ground.

Pin No.	Symbol	Type	DESCRIPTION
26	VIN	P	Power Supply (+5.0V).
27	VIN	P	Power Supply (+5.0V).
28	UART_RTS	IO	USART2 RTS, Function Reserved.
29	UART_CTS	IO	USART2 CTS, Function Reserved.
30	GND	P	Ground.

J13 --- Power Input (Wafer Pitch1.25mm 4pin)

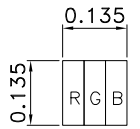
Pin No.	Symbol	Type	DESCRIPTION
1	VIN	P	+5V
2	VIN	P	+5V
3	GND	P	Ground
4	GND	P	Ground

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NOTES:

1. LCD TYPE: TFT LCD
2. LCD DISPLAY:Normally Black/TRANSMISSIVE
3. VIEW DIRECTION:Full Viewing Angle
4. JT1:Molex 532610671 or Compatible
5. J3、J8:Molex 532610271 or Compatible
6. J6:Molex 532611071 or Compatible
7. J10:OMRON XF2M-3015-1A or Compatible
8. J13:Molex 532610471 or Compatible
9. The tolerance unless classified ±0.3mm



Dots Detail
Scale 100X

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Jason	2024/02/05

PART NO: HMA800480T030ZHR06

DRAWING NAME : LMD-HMA800480T030ZHR06

TITLE: LCD MODULE DRAWING

久正光電股份有限公司
POWERTIP TECHNOLOGY CORPORATION

Design	Jason Chang	(3)	Surface		
Check	Bright Chiang	Unit	MM	Material	
Approve	Marcs Lu	Scale	FIT	Thickness	
		Page	1/1	Quantity	

Length(Min) (mm) \ Tolerance \ Precision	Precision Level
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

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