SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.

華凌光電股份有限公司

Represented by:

FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

SPECIFICATION

MODEL NO. : WL0F00043000WGXAANA00-FC

Summary

4.3-inch HMI Display Development Board Feature

1. **TFT Module**: WF43-480272WD#APW3-FC 4.3” IPS, normally black transmissive TFT with 80/80/80/80 wide viewing angle, 480×272 resolution, 24-bit RGB color depth (16.7M colors), typ. 400 cd/m² brightness, 50,000 hours LED backlight lifetime, and integrated I²C capacitive touch panel.
2. **MCU**: STM32U599ZIT6Q ultra-low-power MCU with 2 MB Flash, ~2.5 MB SRAM, integrated GPU2D and LTDC, and TrustZone-based secure boot, providing efficient GUI processing for low-power HMI systems.
3. **Memory**: W25Q128JVSIQT 128-Mbit (16 MB) serial Flash provides additional storage for fonts, images and application data beyond the MCU’s internal memory.
4. **Power Input**: Wide-range VIN input 5–28 V or 5 V via USB-C.
5. **Interfaces**: USB-C (USB 2.0 OTG HS, power + data), Micro SD card slot, RS-485 / UART, SPI, I²C, UART, SWD debug interface, plus PWM backlight and GPIO buzzer control.
6. **Development Support**: Supplied with Initial Code Project compatible with STM32CubeMX,STM32CubeIDE, STM32Cube Programmer and TouchGFX Designer, enabling rapid application development; hardware schematic is available under NDA to assist developers with system integration and secondary development.

Product Information

General information

Item	Standard Value		Unit
Operating voltage	5-28		VDC
Communication Interface	USB-C		—
	Micro SD Card		—
	CON300	Option for RS485, UART	—
	CON301	SPI	—
		I²C	—
	CON302	UART	—
MCU	STM32U599ZIT6 (2MB Flash, 2.5MB RAM)		—
External Flash Memory	16		MB
LCD display size	4.3		inch
Dot Matrix	480 x R.G.B. x 272 (TFT)		dots
Module dimension	119.3(W) ×67.2(H) ×12.8(D)		mm
Active area	95.04(W) x 53.856(H)		mm
Pixel pitch	0.198(H) x 0.198(V)		mm
Brightness	Min: 300; Typ: 400		cd/m^2
LCD type	TFT, Normally Black, Transmissive		
View Direction	80/80/80/80		
Aspect Ratio	16:9		
Touch Panel	With CTP		
Surface	Glare		

Contour Drawing

CON303

PIN	SYMBOL
1	+3V3
2	SWCLK
3	GND
4	SWDI
5	NRST
6	SWO

CON302_UART1

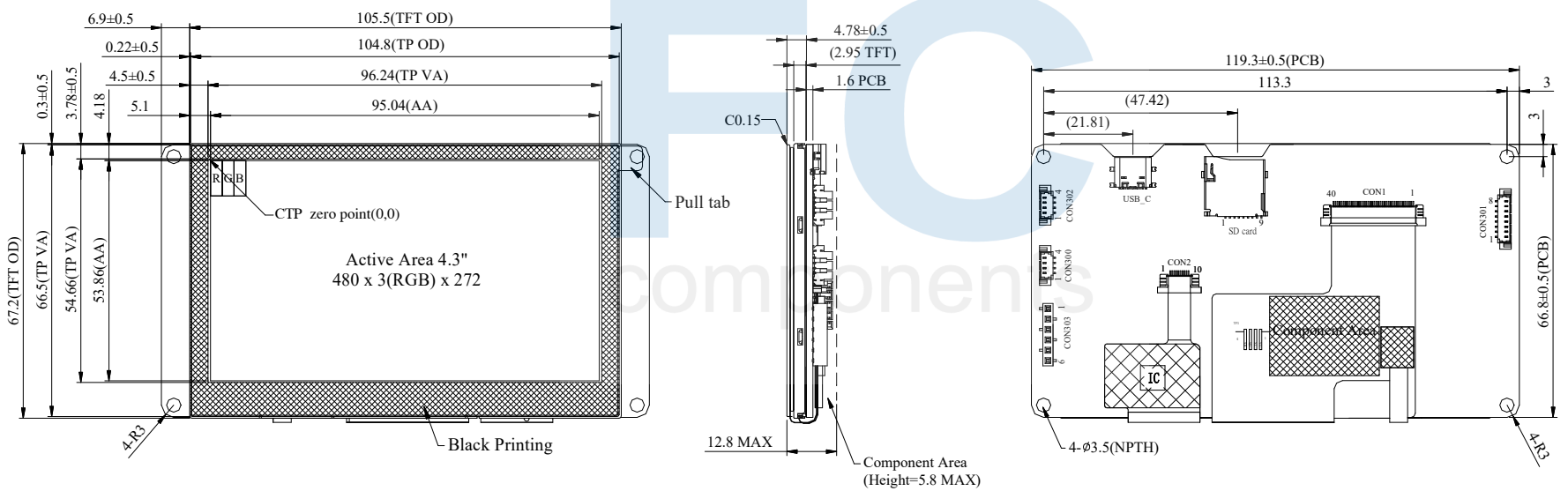
PIN	SYMBOL
1	VIN
2	GND
3	UART_TX1
4	UART_RX1

CON301

PIN	SYMBOL
1	+3V3
2	GND
3	SDA
4	SCL
5	MOSI
6	MISO
7	CLK
8	CS

CON300_UART2

PIN	SYMBOL
1	VIN
2	GND
3	UART_TX2
4	UART_RX2



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

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+80	℃
Storage Temperature	TST	-30	—	+80	℃
Supply Voltage	VIN	—	—	28	V

Electrical Characteristics

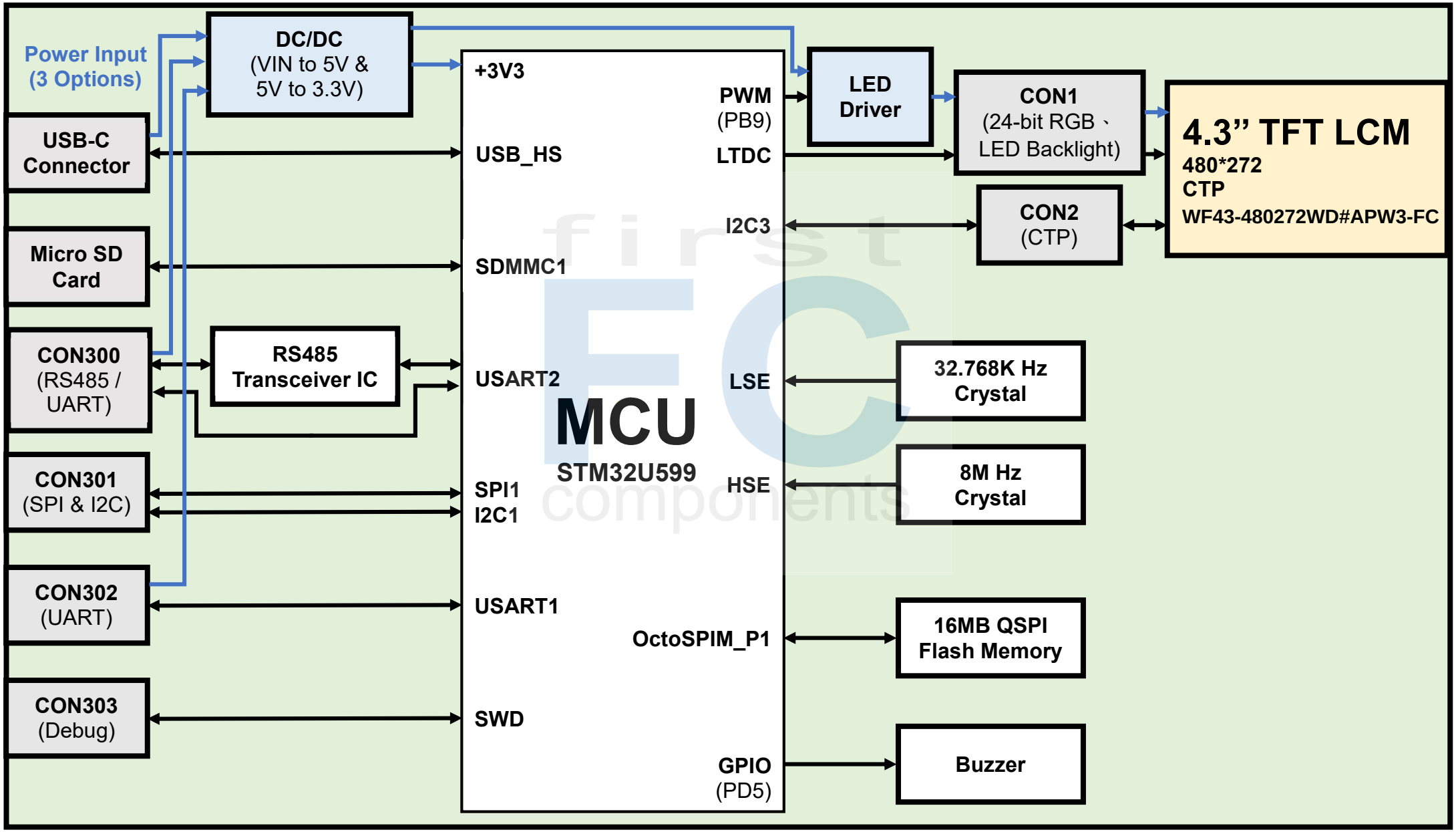
Item	Symbol	Min	Typ	Max	Unit
Supply Voltage	VIN	5	12	28	V
Supply Current	ICC	—	120	—	mA

BOM

Item	Description
LCM	WF43-480272WD#APW3-FC
PCBA	SV10004R300WC00N0100

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Block diagram



Interface

CON300 (RS485 / UART) Definition:

Pin	Symbol	Function	Remark
1	VIN	Power supply input; 5V ~ 28V	Power
2	GND	Ground	Power
3	RS485_A / UART_TX2	USART2_TX	I/O
4	RS485_B / UART_RX2	USART2_RX	I/O

Note:

1. Pin 3 and Pin 4 share the same USART2 port and operate in RS-485 mode by default (on-board transceiver enabled). When the RS-485 driver is disabled via software, the pins function as a 3.3 V TTL UART. The external wiring must match the selected mode.
2. Connector Type: Molex 0532610471 (1.25 mm pitch, 4-pin) or equivalent.

CON301 (SPI & I2C) Definition:

Pin	Symbol	Function	Remark
1	+3V3	Power input	Power
2	GND	Ground	Power
3	SDA	I2C1_SDA	I/O
4	SCL	I2C1_SCL	I/O
5	MOSI	SPI1_MOSI	I/O
6	MISO	SPI1_MISO	I/O
7	CLK	SPI1_CLK	I/O
8	CS	SPI1_CS	I/O

Note:

1. Connector Type: Molex 0532610871 (1.25 mm pitch, 8-pin) or equivalent.

CON302 (UART) Definition:

Pin	Symbol	Function	Remark
1	VIN	Power supply input; 5V ~ 28V	Power
2	GND	Ground	Power
3	UART_TX1	USART1_TX	I/O
4	UART_RX1	USART1_RX	I/O

Note:

1. Connector Type: Molex 0532610471 (1.25 mm pitch, 4-pin) or equivalent.

CON303 (SWD) Definition:

Pin	Symbol	Function	Remark
1	+3V3	Power input	Power
2	SWCLK	Serial wire clock	I/O
3	GND	Ground	Power
4	SWDIO	Serial wire debug data input/output	I/O
5	NRST	Reset	Input
6	SWO	Serial wire trace output	Output

Note:

1. Connector Type: Würth Elektronik 61300611821 (2.54 mm pitch, 6-pin) or equivalent.

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