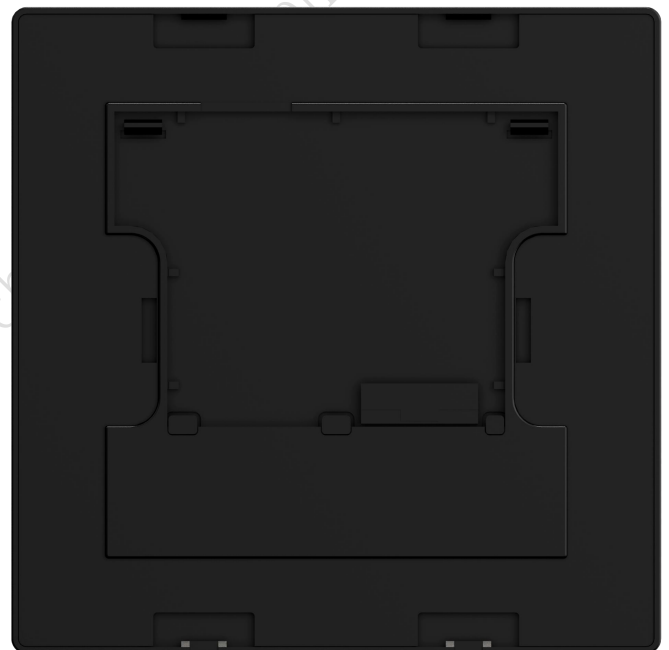Professional, Creditable, Successful

TC040C62U00

Features:

- **Powered by T5F0 ASIC, running DGUS II HMI platform, front screen kit for thermostats.**

- **4 inch, 480*480 resolution, IPS-TFT-LCD.**

- **Power by TPS04, reliable 2.5D integrated black capacitive touch panel.**

- **30-pin FPC connector with UART2, SD card, PWM and other interfaces.**

- **Support temperature measurement using NTC.**

1 Pin Configuration

Pin#	CPU	Function 1	Description	Function 2	Description
1	OS	P1.6	I/O	RTC_SCL	The I²C clock signal for communication with the external RTC chip.
2	OS	P1.7	I/O	RTC_SDA	I²C data transfer with the external RTC chip.
3	-	+5V	Power		
4	-	+5V	Power		
5	-	GND	GND		
6	-	GND	GND		
7	-	3.3V	3.3V output		
8	OS	P0.5	I/O	RX2	UART2 data reception
9	OS	P0.4	I/O	TX2	UART2 data transmission
10	OS	P0.1	I/O	RX4	UART4 data reception
11	OS	P0.0	I/O	TX4	UART4 data transmission
12	OS	P3.2	I/O	PWM0	PWM0 output
13	OS	P0.3	I/O	CRX	CAN data transmission
14	OS	P0.2	I/O	CTX	CAN data reception
15	OS	P3.6	I/O	FTX	FSK data transmission
16	OS	P3.7	I/O	FRX	FSK data reception
17	GUI	PWM_DA	32kHz PWM DA signal for audio. Use an RC filter to convert the signal into an analog form and then fed it to the power amplifier.		
18	GUI	SPI_D0	Used to interface with external SPI Flash, supporting QSPI (Quad SPI) data transfer.		
19	GUI	SPI_D1			
20	GUI	SPI_D2			
21	GUI	SPI_D3			
22	GUI	SPI_CS1	Chip select signal for the second external SPI Flash (SPI NOR or SPI NAND).		
23	GUI	SPI_CLK	Bus clock signal for external QSPI Flash.		
24	GUI	JIOS	Select the function of PIN25~28. 0: JTAG interface; 1: SD interface data bus		
25	GUI	TMS	JTAG interface. Upon reset, the target CPU connected to the JTAG interface is determined by the logic level of the OS/GUI pin.	SD_D0	SD/SDHC interface data line. The bus speed supports up to 4 MHz.
26	GUI	TCK		SD_D1	
27	GUI	TDI		SD_D2	
28	GUI	TDO		SD_D3	
29	GUI	SD_CK	The clock signal for SD/SDHC data transfer.		
30	GUI	SD_CMD	Command and response transmission in the SD/SDHC interface.		

2 Specification Parameters

2.1 Product Parameters

Main Chip	T5F0
User Interface	30Pin_0.5mm FPC
FLASH	8MB NOR Flash
UI Version	DGUS II / TA
Dimensions	4 inch
Resolution	480*480
Viewing Area (VA)	71.9mm (W)×70.2mm (H)
Viewing Angle	Wide viewing angle (85°/85°/85°/85° typical), high contrast, and good color reproduction.
Backlight Service Life	>20000 hours
Brightness	50nit
Brightness Control	100-level brightness adjustment (Flickering may occur at 1%-30% of max brightness; not recommended for use in this range)
Note: Use dynamic screen saver to prevent afterimages from prolonged fixed page display.	
Type	CTP (Capacitive Touch Panel).
Structure	G+G structure with tempered glass surface and hardness ≥ 6H.
Light Transmittance	>20%

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2.2 Interface Parameters

Item	Conditions	Min	Typ	Max	Unit
Baud rate (UART1)	Fixed Value	-	921600	-	bps
Baud rate (UART2, 4, 5)	User Set(Configure the CFG file)	3150	115200	3225600	bps
Output Voltage (TXD)	Output 1	3.0	3.3	-	V
	Output 0	-	0	0.3	V
Input Voltage (RXD)	Input 1	-	-	3.3	V
	Input 0	0	-	0.5	V
Interface	UART1: TTL; UART2: TTL; (Only available after OS configuration) UART4: TTL; (Only available after OS configuration) UART5: TTL; (Only available after OS configuration)				
Data Format	UART1: N81 UART2: N81 UART4: N81/E81/O81/N82; 4 modes (OS configuration) UART5: N81/E81/O81/N82; 4 modes (OS configuration)				

2.3 Electrical Specifications

Rated Power	<2W	
Operating Voltage	4.5~5.5V, typical value of 5V.	
Operating Current	300mA	VCC=5V, max backlight.
	130mA	VCC=5V, backlight off.
Recommended power supply: 5V 0.5A DC.		

2.4 Operating Environment

Operating Temperature	-10℃~60℃
Storage Temperature	-20℃~70℃
Operating Humidity	10%~90%RH, typical value of 60% RH.

3 Reliability test

3.1 Electrostatic discharge test

Test temperature: 25°C. Test humidity: 50%RH.

Test process: Place the product on the test bench fixture (approximately 15cm in height), and perform contact and air discharge tests on the smart LCM. Observe if any freezing, black or white screen, flickering, or rebooting occurs during the test.

Test conclusion: The product's ESD performance meets GB/T 17626.2 Class B standards.

Discharge Type	Discharge Value	Result
Air discharge	±8KV	Normal operation

3.2 RE test
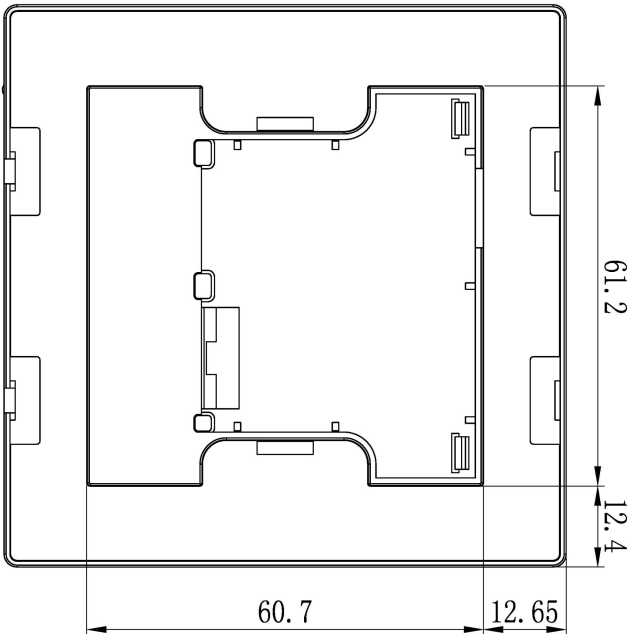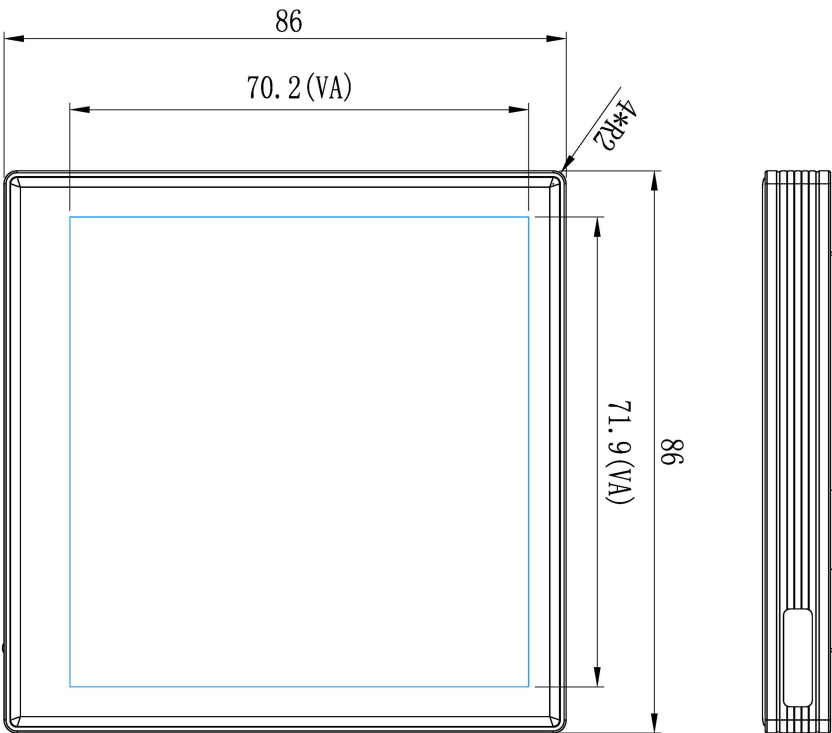
Test Item	Test Standard	Result
RE	Class B (-6dB)	Pass

4   Packing Capacity & Dimension

Dimension				
Dimension	86(W) ×86(H) × 11(T) mm			
Net Weight	78g			

Packing Capacity				
Model	**Size**	**Layer**	**Quantity/Layer**	**Quantity(Pcs)**
Carton 1	220mm(L)×160mm(W)×47mm(H)	-	-	-
Carton 2	250mm(L)×200mm(W)×80mm(H)	-	-	-
Carton 3	320mm(L)×270mm(W)×80mm(H)	-	-	-
Carton 4	435mm(L)×335mm(W)×290mm(H)	2	10	20
Carton 5	600mm(L)×430mm(W)×290mm(H)	2	20	40

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PIN#	Name			
1	P16	11	TX4	21	SD3
2	P17	12	P32	22	CS1
3	+5V	13	CRX	23	SCK
4	+5V	14	CTX	24	JTOS
5	GND	15	P36	25	TMS/D0
6	GND	16	P37	26	TCK/D1
7	3.3V	17	PWM_DA	27	TDI/D2
8	RX2	18	SD0	28	TDO/D3
9	TX2	19	SD1	29	CLK
10	RX4	20	SD2	30	CMD

86
70.2(VA)
4*R2
71.9(VA)
86
10.4
11
61.2
12.4
60.7
12.65

Location hole is used as position reference.

Unmarked Tolerance is +/-0.3mm

Active area is marked in Dash lines

Model		TC040C62U00			
Drawing	A 4	Drawn	DWIN	Date	
Scale		Check	Date	Date	
Unit	MM	Approval		Date	

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5 Record of Revision

Rev	Date	Content	Editor
00	2025-08-26	First Edition	Chen Xian

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