USER MANUAL

Thinvent® 15" Industrial Panel PC

PPC15-cu5_14l-8_5-m1024-12_7-X-DOS-0



Edition November 2026

Serial number: _____

Thinvent Technologies Private Limited · www.thinvent.in

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1. BEFORE YOU START

The Thinvent 15 inch Industrial Panel PC is a computer and a 15 inch screen in one aluminium housing. It has no fan, it is cooled passively, and it is rated IP65. The screen is 1024 × 768 pixels, 350 nits, with a viewing angle of 178° horizontally and vertically. It suits the shop floor, control rooms and kiosks.

- Keep the vents clear, and keep the computer away from water and direct sunlight.
- Use only the power adapter that came with the panel PC.
- Save your work before you shut down. Unsaved work is lost.

Drivers, other files for this computer and the latest edition of this manual are on the Thinvent Support Downloads page: www.thinvent.in/support/downloads. Enter the serial number or the order number of your computer.

2. WHAT IS IN THE BOX

- Thinvent 15" Industrial Panel PC
- 12 V power adapter with a 2 metre cable

3. SPECIFICATIONS

Processing	
Generation	14th
Series	Ultra 5
Processor Brand	Intel
Processor Model	125U
Cores	12
Max Frequency	4.3 GHz
Cache	12 MB
Main Memory	8 GB
SSD Storage	1024 GB
Display	
Screen Size	15 inch
Resolution	1024 × 768
Brightness	350 nits
Viewing Angle	Horizontal 178°, Vertical 178°
HDMI 2.0	1
VGA	1
Audio	
Speaker Out	1
Mic In	1
Connectivity	
USB 3.2	2
USB 2.0	2
RS485 Option	1
Networking	
Ethernet	1000 Mbps
Ethernet Ports	2
Power	
DC Voltage	12 Volts
DC Current	7 Amps
Power Input	100~275 Volts AC, 50~60 Hz, 1.5 Amps maximum
Cable Length	2 Metre
Environmental	
Ingress Protection	IP65

Physical

Form Factor	Panel PC
Thermal Design	Fanless Passive Cooling
Dimensions	370mm × 290mm × 55mm
Housing Material	Aluminium
Net and Gross Weight	4.75kg, 5.33kg

Operating System

Operating System	FreeDOS

4. PORTS AND CONTROLS

Rear

From left to right, seen from the back:

#	Port	Description
1	DC-IN	DC power jack, 5.5 x 2.5 mm, 12 V or 19 V
2	HDMI	HDMI 2.0 port, up to 4K at 60 Hz
3	VGA	VGA port, up to 1920 x 1080 at 60 Hz
4	USB 3.2 x 2	Two stacked USB 3.2 Gen1 ports, 5 Gbps
5	LAN2	RJ45 Gigabit Ethernet port
6	LAN1	RJ45 Gigabit Ethernet port
7	LINE_OUT	Audio output jack
8	MIC_IN	Microphone input jack

5. SETTING UP

Connect and switch on

1. Place the panel PC where you will use it.
2. Connect the cable of the power adapter to the DC power socket.
3. Plug the power adapter into a power outlet.
4. Connect the keyboard and mouse to the USB ports, and the network cable to the Ethernet port if you use a wired network.
5. Press the power button to switch on the panel PC.

6. USING THE COMPUTER

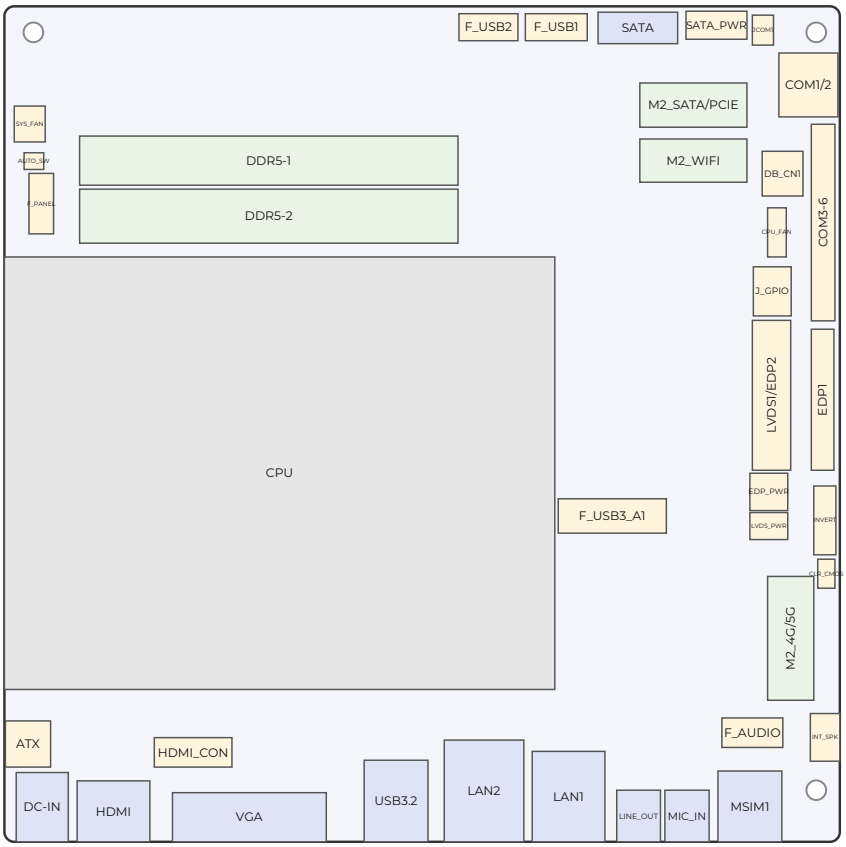
Shut down

1. Save your work and close your programs.
2. If the panel PC does not respond, hold the power button until it switches off.

7. OPERATING SYSTEM

This computer comes with FreeDOS.

8. INSIDE THE COMPUTER: THE MOTHERBOARD



170 mm × 170 mm

Component side of the board. Positions are approximate.

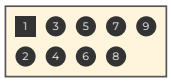
Label	Connector or component
CPU	Intel Core Ultra 5 125U under the heatsink
DDR5-1	DDR5 SO-DIMM slot
DDR5-2	DDR5 SO-DIMM slot
AUTO_SW	3-pin header for hardware power-on
F_PANEL	Front panel header: LEDs, reset and power switch
F_USB2	Front USB 2.0 header, 2 ports
F_USB1	Front USB 2.0 header, 2 ports
SATA	SATA 3.0 connector, SATA1
SATA_PWR	4-pin power connector for a SATA drive, 5 V and 12 V
JCOM1	Jumper that sets the voltage on pin 9 of COM1
M2_SATA/PCIE	M.2 Key-M slot for a 2280 NVMe or SATA SSD
COM1/2	Serial port header for COM1 (RS-232, RS-422 or RS-485) and COM2 (RS-232)
M2_WIFI	M.2 Key-E slot for a 2230 Wi-Fi and Bluetooth module
DB_CN1	10-pin header marked DB_CN1 on the board
COM3-6	Serial port header for COM3 to COM6 (RS-232)
J_GPIO	General purpose input and output header
LVDS1/EDP2	LVDS screen header (eDP with a changed fitting), 30 pins
EDP1	eDP screen header, 30 pins, with backlight pins
EDP_PWR	Jumper header that sets the supply voltage of the EDP1 screen
LVDS_PWR	Jumper header that sets the supply voltage of the LVDS1/EDP2 screen
INVERT	6-pin LVDS backlight header
CLR_CMOS	3-pin header that clears the CMOS settings
M2_4G/5G	M.2 Key-B slot for a 3052 or 3042 5G module or a 3042 4G module
F_USB3_A1	Front USB 3.2 Gen1 header, 2 ports
F_AUDIO	Front audio header

INT_SPK	4-pin header for an internal speaker pair with its own amplifier
MSIM1	SIM card slot for the 4G or 5G module
ATX	4-pin ATX power connector
DC-IN	DC power jack, 5.5 x 2.5 mm
HDMI	HDMI 2.0 port
HDMI_CON	16-pin header for an HDMI cable to another connector
VGA	VGA port (DisplayPort on the DisplayPort version)
USB3.2	Two stacked USB 3.2 Gen1 ports
LAN2	RJ45 Gigabit Ethernet port
LAN1	RJ45 Gigabit Ethernet port
LINE_OUT	Audio output jack
MIC_IN	Microphone input jack

9. INTERNAL CONNECTORS AND HEADERS

F_PANEL: Front panel header

Connects the chassis LEDs, reset button and power button. 2 x 5 pins, 2.54 mm pitch. Pin 10 has no pin. The hard disk LED flashes while the drive is in use. The power LED is lit while the board is on. The reset button restarts the system. The power button, on pins 6 and 8, turns the board on and off.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	HDLED+ (hard disk LED positive)	2	PWRLED+ (power LED positive)
3	HDLED- (hard disk LED negative)	4	GND (power LED negative)
5	RST (reset button)	6	P_SW IN (power button)
7	GND (reset button)	8	GND (power button)
9	NC		

ATX: 4-pin ATX power connector

Alternative power input to the DC jack. 2 x 2 pins, 4.2 mm pitch.

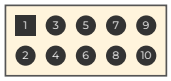


Pin 1 is square.

Pin	Signal	Pin	Signal
1	GND	2	GND
3	+12V	4	+12V

COM1/2: Serial port header for COM1 and COM2

Two headers with the same pin layout, one for COM1 and one for COM2. 2 x 5 pins, 2.54 mm pitch. Both are RS-232. COM1 can be set to RS-422 or RS-485 in the BIOS.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

COM1: COM1 in RS-422 mode

With COM1 set to RS-422 in the BIOS, pins 1 to 4 of the COM1 header carry the RS-422 signals.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	TXD-	2	TXD+
3	RXD+	4	RXD-

COM1: COM1 in RS-485 mode

With COM1 set to RS-485 in the BIOS, pins 1 and 2 of the COM1 header carry the RS-485 signals.

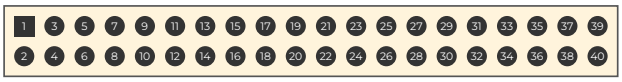


Pin 1 is square.

Pin	Signal	Pin	Signal
1	S485-	2	S485+

COM3-6: Serial port header for COM3 to COM6

2 x 20 pins, 2.0 mm pitch. All four ports are RS-232.

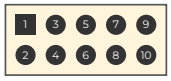


Pin 1 is square.

Pin	Signal	Pin	Signal
1	COM3_DCD	2	COM3_RXD
3	COM3_TXD	4	COM3_DTR
5	GND	6	COM3_DSR
7	COM3_RTS	8	COM3_CTS
9	COM3_RI	10	NC
11	COM4_DCD	12	COM4_RXD
13	COM4_TXD	14	COM4_DTR
15	GND	16	COM4_DSR
17	COM4_RTS	18	COM4_CTS
19	COM4_RI	20	NC
21	COM5_DCD	22	COM5_RXD
23	COM5_TXD	24	COM5_DTR
25	GND	26	COM5_DSR
27	COM5_RTS	28	COM5_CTS
29	COM5_RI	30	NC
31	COM6_DCD	32	COM6_RXD
33	COM6_TXD	34	COM6_DTR
35	GND	36	COM6_DSR
37	COM6_RTS	38	COM6_CTS
39	COM6_RI	40	NC

F_USB1, F_USB2: Front USB 2.0 headers

Two headers with the same pin layout. Each header connects 2 USB 2.0 ports. 2 x 5 pins, 2.54 mm pitch.

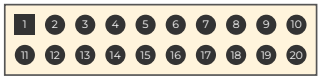


Pin 1 is square.

Pin	Signal	Pin	Signal
1	VCC +5V	2	VCC +5V
3	DATA0-	4	DATA1-
5	DATA0+	6	DATA1+
7	GND	8	GND
9	NC	10	GND

F_USB3_A1: Front USB 3.2 Gen1 header

Connects 2 USB 3.2 Gen1 ports. 2 x 10 pins, 2.0 mm pitch. Pins 1 to 10 are in one row. Pins 20 to 11 run back along the other row, so pin 20 is beside pin 1.

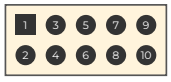


Pin 1 is square.

Pin	Signal	Pin	Signal
1	USB3_VCC	2	USB3_RX4N
3	USB3_RX4P	4	GND
5	USB3_TX4N	6	USB3_TX4P
7	GND	8	USB PN3
9	USB PP3	10	NC
11	USB PP2	12	USB PN2
13	GND	14	USB3_TX3P
15	USB3_TX3N	16	GND
17	USB3_RX3P	18	USB3_RX3N
19	USB3_VCC	20	NC

F_AUDIO: Front audio header

2 x 5 pins, 2.54 mm pitch.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	MIC-L	2	GND
3	MIC-R	4	NC
5	LINE OUT-R	6	MIC_JD
7	FAUDIO_JD	8	NC
9	LINE OUT-L	10	LINE_JD

INT_SPK: Internal speaker header

Connects two speakers of 8 ohm and 5 W through the board amplifier. 4 pins in one row, 2.0 mm pitch.

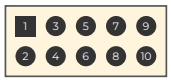


Pin 1 is square.

Pin	Signal	Pin	Signal
1	L+	2	L-
3	R-	4	R+

J_GPIO: General purpose input and output header

2 x 5 pins, 2.0 mm pitch. The direction of each GPIO pin can be changed to suit the application.

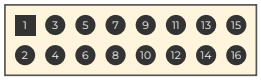


Pin 1 is square.

Pin	Signal	Pin	Signal
1	GND	2	+5V
3	GPIO_IN0	4	GPIO_OUT0
5	GPIO_IN1	6	GPIO_OUT1
7	GPIO_IN2	8	GPIO_OUT2
9	GPIO_IN3	10	GPIO_OUT3

HDMI_CON: HDMI signal header

Carries a second HDMI signal to a cable. 2 x 8 pins, 2.0 mm pitch. Up to 4K at 60 Hz.

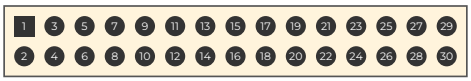


Pin 1 is square.

Pin	Signal	Pin	Signal
1	HDMI_TXD2P	2	HDMI_TXD1P
3	HDMI_TXD2N	4	HDMI_TXD1N
5	GND	6	GND
7	HDMI_TXD0P	8	HDMI_TXC0P
9	HDMI_TXD0N	10	HDMI_TXC0N
11	GND	12	HDMI_5V
13	HDMI_CLK	14	HDMI_5V
15	HDMI_DATA	16	HDMI_HPD

LVDS1/EDP2: LVDS screen header

LVDS signals, the default fitting. 2 x 15 pins, 2.0 mm pitch. Up to 2K at 60 Hz.

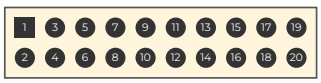


Pin 1 is square.

Pin	Signal	Pin	Signal
1	VCC	2	VCC
3	VCC	4	GND
5	GND	6	GND
7	ADO0-	8	ADO0+
9	ADO1-	10	ADO1+
11	ADO2-	12	ADO2+
13	GND	14	GND
15	ACLK-	16	ACLK+
17	ADO3-	18	ADO3+
19	BDO0-	20	BDO0+
21	BDO1-	22	BDO1+
23	BDO2-	24	BDO2+
25	GND	26	GND
27	BCLK-	28	BCLK+
29	BDO3-	30	BDO3+

LVDS1/EDP2: eDP screen header, 20-pin cable

The same header with an eDP fitting and a 20-pin screen cable. The screen cable and the backlight are separate. Pins 21 to 30 carry no signal.

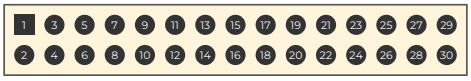


Pin 1 is square.

Pin	Signal	Pin	Signal
1	VCC	2	VCC
3	VCC	4	HPD
5	GND	6	GND
7	TX0N	8	TX0P
9	TX1N	10	TX1P
11	TX2N	12	TX2P
13	GND	14	GND
15	AUX-	16	AUX+
17	TX3N	18	TX3P
19	NC	20	NC

EDP1: eDP screen header, 30-pin cable

A 30-pin eDP screen cable with the backlight power in the same cable. 2 x 15 pins, 2.0 mm pitch. Up to 4K at 60 Hz.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	VCC	2	VCC
3	GND	4	GND
5	TX0P	6	TX0N
7	GND	8	GND
9	TX1P	10	TX1N
11	GND	12	GND
13	TX2P	14	TX2N
15	GND	16	GND
17	TX3P	18	TX3N
19	GND	20	GND
21	AUXP	22	AUXN
23	GND	24	HPD
25	BKLT_CTL	26	BKLT_EN
27	GND	28	GND
29	BLPWR	30	BLPWR

INVERT: LVDS backlight header

6 pins in one row, 2.0 mm pitch.



Pin 1 is square.

Pin	Signal	Pin	Signal
1	+12V	2	+12V
3	ON/OFF (backlight switch)	4	ADJ (brightness adjustment)
5	GND	6	GND

10. JUMPERS AND SWITCHES

JCOM1: Voltage on pin 9 of COM1

Setting	Function
1-2 closed	+5 V on pin 9
3-4 closed	+12 V on pin 9
5-6 closed	No voltage on pin 9 (0 V) (default)

LVDS_PWR: Supply voltage of the LVDS1/EDP2 screen

Setting	Function
1-2 closed	+3.3 V
3-4 closed	+5 V
5-6 closed	+12 V

EDP_PWR: Supply voltage of the EDP1 screen

Setting	Function
1-2 closed	+3.3 V
3-4 closed	+5 V
5-6 closed	+12 V

11. BIOS SETUP

Open the Save & Exit menu to save the settings and restart.

Updating the BIOS

> Keep the power connected during a BIOS update. A power cut during the update leaves the board unable to start.

1. The Thinvent Support Downloads page does not have a BIOS file for this board.
2. Contact Thinvent support with the serial number of your computer and ask for a BIOS file. The contact details are in the Support section of this manual.
3. Thinvent support sends the BIOS file for your board with its instructions. Follow those instructions.
4. Keep the power adapter connected until the update finishes.

12. DRIVERS

Install the drivers in this order. Each one is on the Support Downloads page.

#	Driver	Version
1	Intel Chipset INF Utility for Windows 10 and 11	10.1.20658.8883
2	Intel Arc graphics driver (Core Ultra) for Windows 10 and 11	32.0.101.9034
3	Intel Ethernet driver (I219-V) for Windows 10 and 11	31.2.2
4	Realtek 8111H Ethernet driver	11016
5	Realtek audio driver fix for the Core Ultra 5 board	rtk-audio-fix
6	Intel NPU driver for Windows 11	32.0.100.5540

13. CARE

- Switch off the panel PC and unplug the power adapter before you clean it.
- Wipe the screen with a soft, lint-free cloth moistened with an alcohol-free glass cleaner.
- Do not spray liquid on the panel PC and do not use strong solvents.

14. TROUBLESHOOTING

The panel PC does not switch on

1. Check that the power adapter is plugged firmly into the panel PC and into the outlet.
2. Plug a different device into the same outlet to test it.
3. Disconnect every USB device and the network cable.
4. Hold the power button for 15 seconds until the panel PC switches off, then press it once to switch on.
5. If it still does not start, contact Thinvent Support with the serial number.

The screen is blank

1. Press the power button to switch on the panel PC.
2. Touch a key or move the mouse in case the panel PC is asleep.
3. If you use a second screen on the HDMI or VGA port, check that its cable is firmly connected.

The panel PC does not respond

1. As a last step, hold the power button until the panel PC switches off, then switch it on again.

15. SUPPORT

Support Downloads	www.thinvent.in/support/downloads
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