KUARIO

HPT25

Date: December 16, 2025

Version: 1.0

Classification: Merchant

Document history

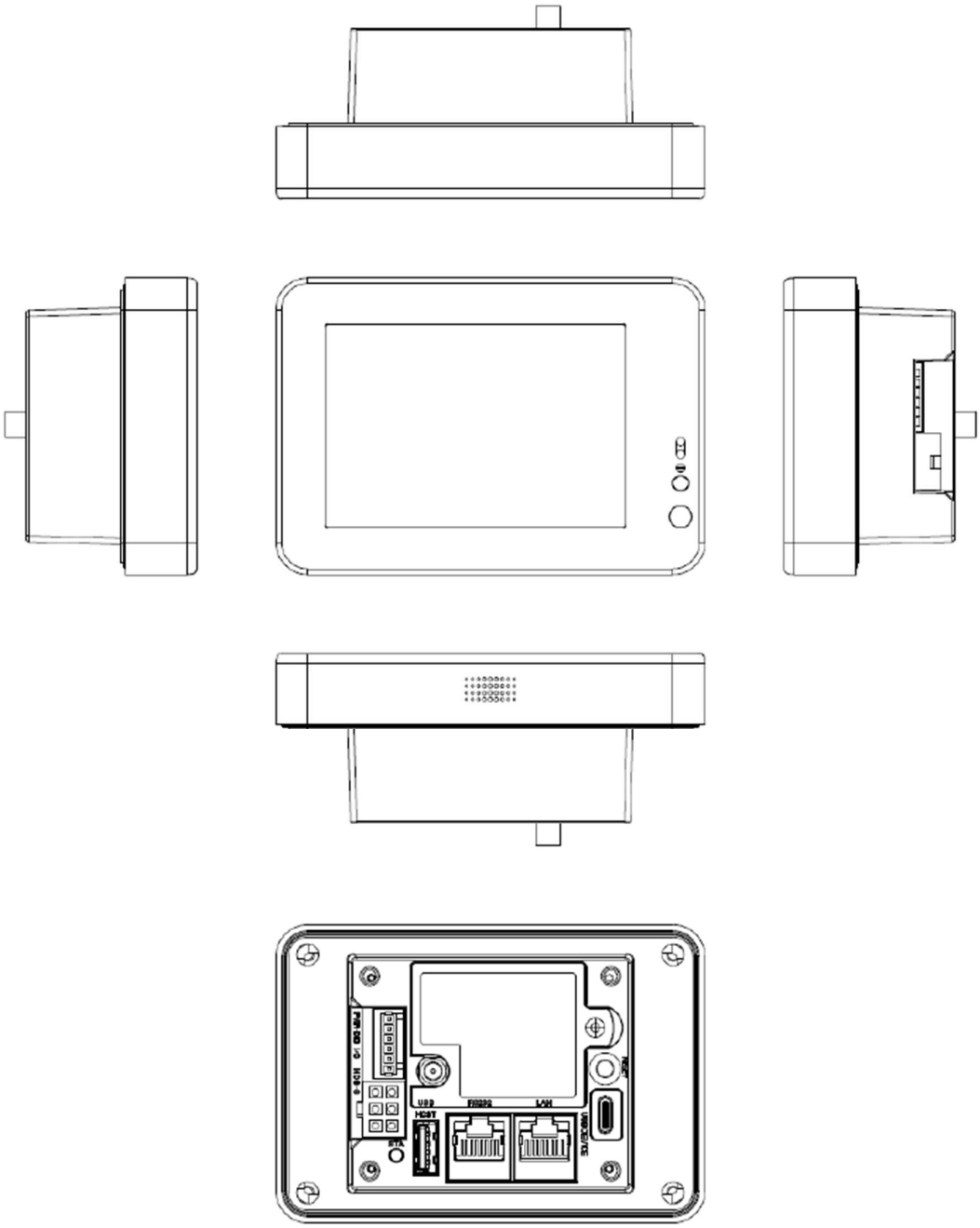
Revision Date	Revision List
30-10-2025	Initial document

Introduction

The HPT25 unattended payment terminal is an Android based POS terminal designed to operate in self-service environments. This device is designed to be used in a variety of indoor or outdoor settings, such for vending, parking, ticketing, charging stations, or self-service checkout registers.

This device combines a contactless card reader as well as 1D/2D code scanning, The HPT25 is also designed to operate in a wide range of temperatures, repel the ingress of dust and water, resist physical impacts, and disperse electrostatic discharges. These are all qualities that allow the device to be installed in a wide variety of indoor or outdoor locations.

Product specification



Module	Specifications	
CPU	AP processor	ARM Cortex-A53
	SP processor	ARMv7-M
operating system	PayDroid 10	
memory configurations	8 GB eMMC	2 GB LPDDR4 SDRAM
	16 GB eMMC	2 GB LPDDR4 SDRAM
Display	standard and EVA versions	3.5” 320 x 480 pixels
audio	built in speaker	maximum volume of at least 80 dB at 10 cm mono channel
wireless communications	Bluetooth 5.0 (optional*)	
	Wi-Fi 5; 2.4GHz and 5GHz (optional)*	
	4G network (optional*)	
external ports	USB Type A (Host)	
	USB Type C (OTG)	
	RS232 (RJ45)	
	Ethernet (RJ45)	
	MDB port (optional*)	
	JVMA port (optional*)	
	Digital IO (6 pin header)	
power source	7 to 48 VDC; (MDB port; optional*) 24 VDC; (JVMA port; optional*) 12 to 48 VDC; (RS232 port; optional*, MDB version only) 7 to 48 VDC; (6 pin WAGO header)	
SAM card slot	2 micro-SIM (3FF) SAM card slots	

SIM card slot	1 micro-SIM (3FF) SIM card slot 1 integrated eSIM (optional*)	
card reader	contactless card reader	ISO14443 Type A/B cards MIFARE cards JIS X 6319-4 FeliCa NFC devices
code scanner	2 MP accuracy ≥ 5 mil	
Ingress Protection	front face	IP65
operating environment	Temperature	-20°C ~ 70°C
	Humidity	5% ~ 95% (without condensation)
storage environment	Temperature	-30°C ~ 70°C
	Humidity	5% ~ 95% (without condensation)

Components, Interfaces and ports

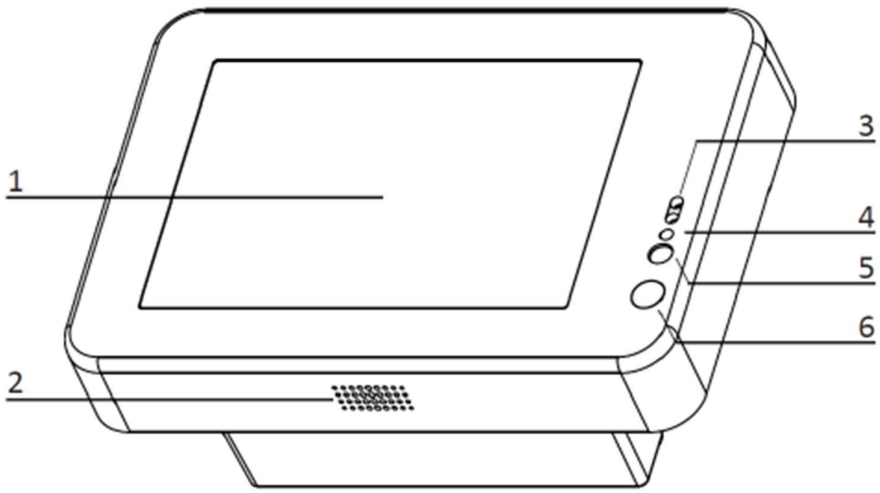


Figure 4: components, interface, and ports (front)

1. LCD screen
2. speaker
3. proximity and light sensor
4. LED indicator
5. camera locator light
6. code scanning camera

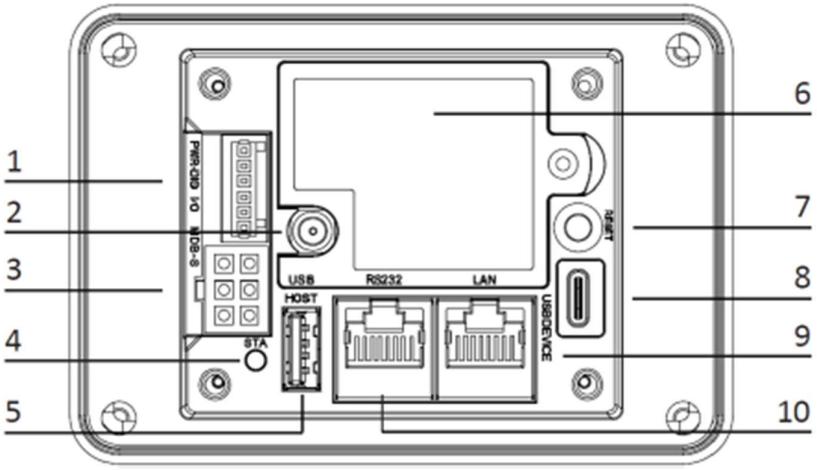


Figure 5: components, interface, and ports (back; MDB)

1. digital IO port
2. 4G antenna (SMA)
3. MDB port
4. status indicator LED
5. USB Type A port (host)
6. back cover
7. reset button
8. USB Type C port (device)
9. Ethernet port (RJ45)
10. RS232 (RJ45)

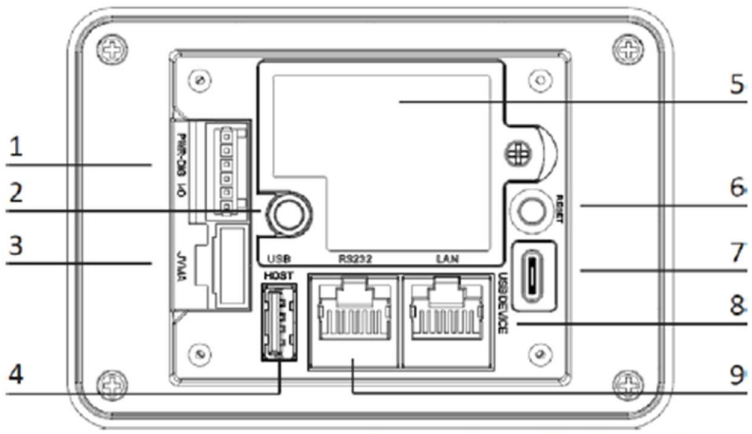


Figure 6: components, interface, and ports (back; JVMA)

1. digital IO port
2. 4G antenna (SMA)
3. JVMA port
4. USB Type A port (host)
5. back cover
6. reset button
7. USB Type C port (device)
8. Ethernet port (RJ45)
9. RS232 (RJ45)

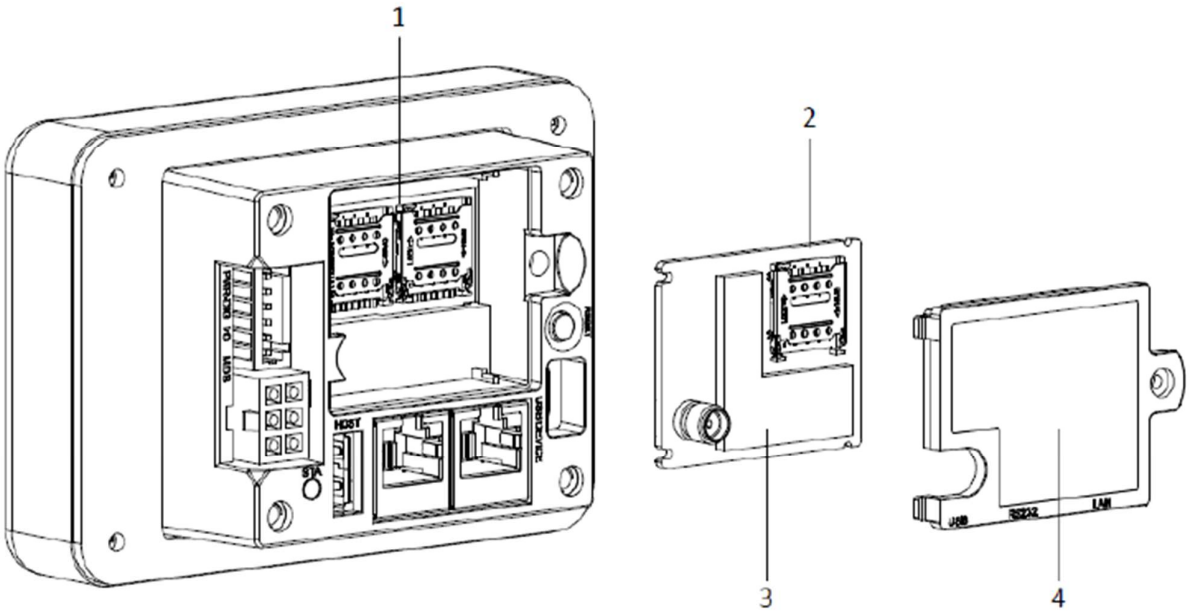


Figure 7: exploded view of SAM and SIM card slots

1. SAM card slots
2. SIM card slot
3. 4G network board
4. removable back cover

RS232 pinout

pin	signal
1	POWER_IN
2	RXD
3	TXD
4	MDB_WAKEUP
5	RTS
6	CTS
7	GND
8	GND

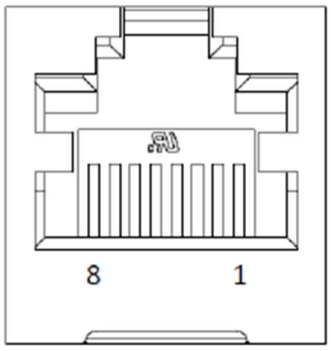
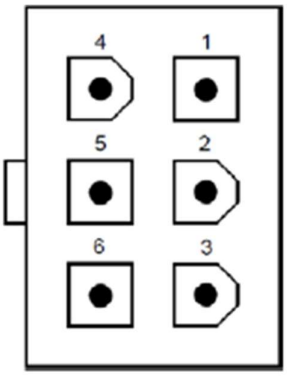


Figure 8: RJ45 port (RS232)

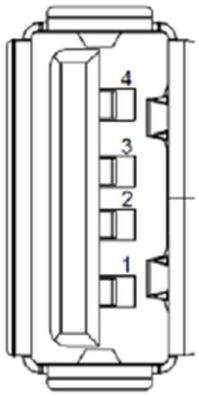
MDB pinout

pin	signal
1	VDC
2	GND
3	MDB_WAKEUP
4	MASTER_RX
5	MASTER_TX
6	COM (D_GND)



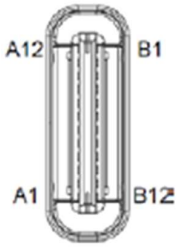
USB pinout (Type A host)

pin	signal
1	VIN
2	D-
3	D+
4	GND



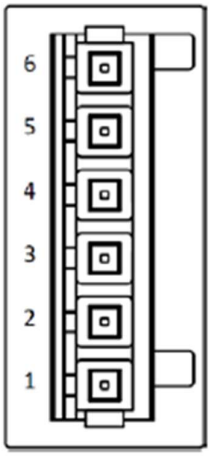
USB pinout (Type C OTG)

pin	signal	pin	signal
A1	GND	B1	GND
A2	NC	B2	NC
A3	NC	B3	NC
A4	USB_VBUS	B4	USB_VBUS
A5	NC	B5	NC
A6	D+	B6	D+
A7	D-	B7	D-
A8	NC	B8	NC
A9	USB_VBUS	B9	USB_VBUS
A10	NC	B10	NC
A11	NC	B11	NC
A12	GND	B12	GND



Digital IO pinout

pin	signal
1	DIGI_IN3
2	DIGI_IN2
3	DIGI_IN1
4	DIGI_OUT1
5	GND
6	POWER (input by default; switch controlled)



signal	connected circuit requirements		voltage		current	
			min	max	min	max
DIGI_IN3	active low, requires current sink	V_{ON}		0.4V		200mA
		V_{OFF}	0.7V	30V		
DIGI_IN2	active low, requires current sink	V_{ON}		0.4V		200mA
		V_{OFF}	0.7V	30V		
DIGI_IN1	active low, requires current sink	V_{ON}		0.4V		200mA
		V_{OFF}	0.7V	30V		
DIGI_OUT1	requires external pull up		3.3 V	32 V		350mA

Ethernet

pin	signal
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

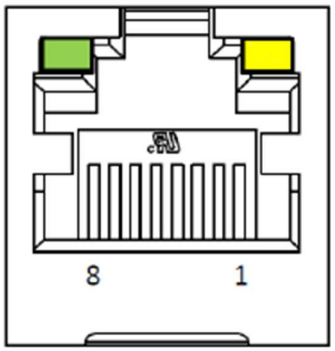


Figure 13: Ethernet port

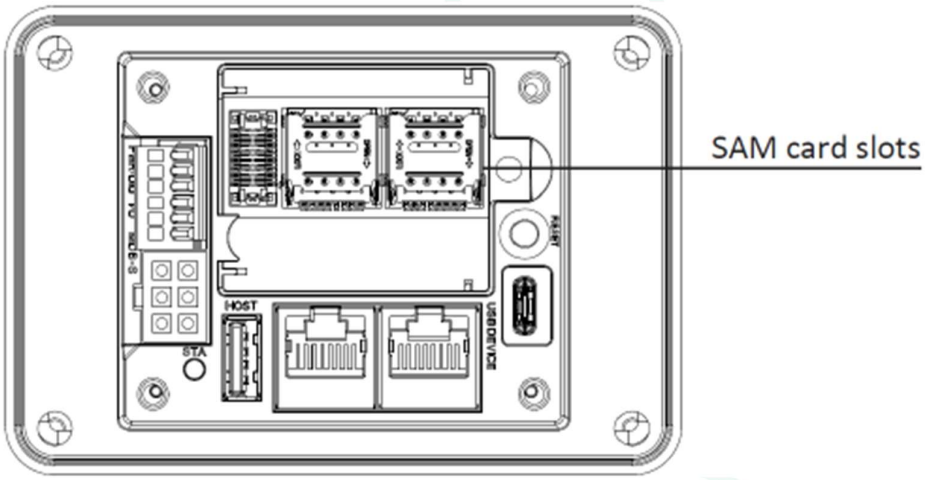
Power consumption

device state	12 V current draw (A)	24 V current draw (A)
normal operation	0.504	0.235
max power consumption	0.912	0.602

Device in sleep mode

input voltage	current draw
12 V	5 mA

Sam card installation



The HTP25 has 2 mirco-SIM (3FF) sized SAM card slots available for use.

The SAM card slots are located under the removable back cover of the HPT25. For configurations of the HPT25 with a 4G network board, both the back cover and the 4G network board must be removed to access the SAM card slots. Take the following steps to install a SAM card in the HPT25:

1. Remove the back cover of the HPT25 by unscrewing it from the body of the device.

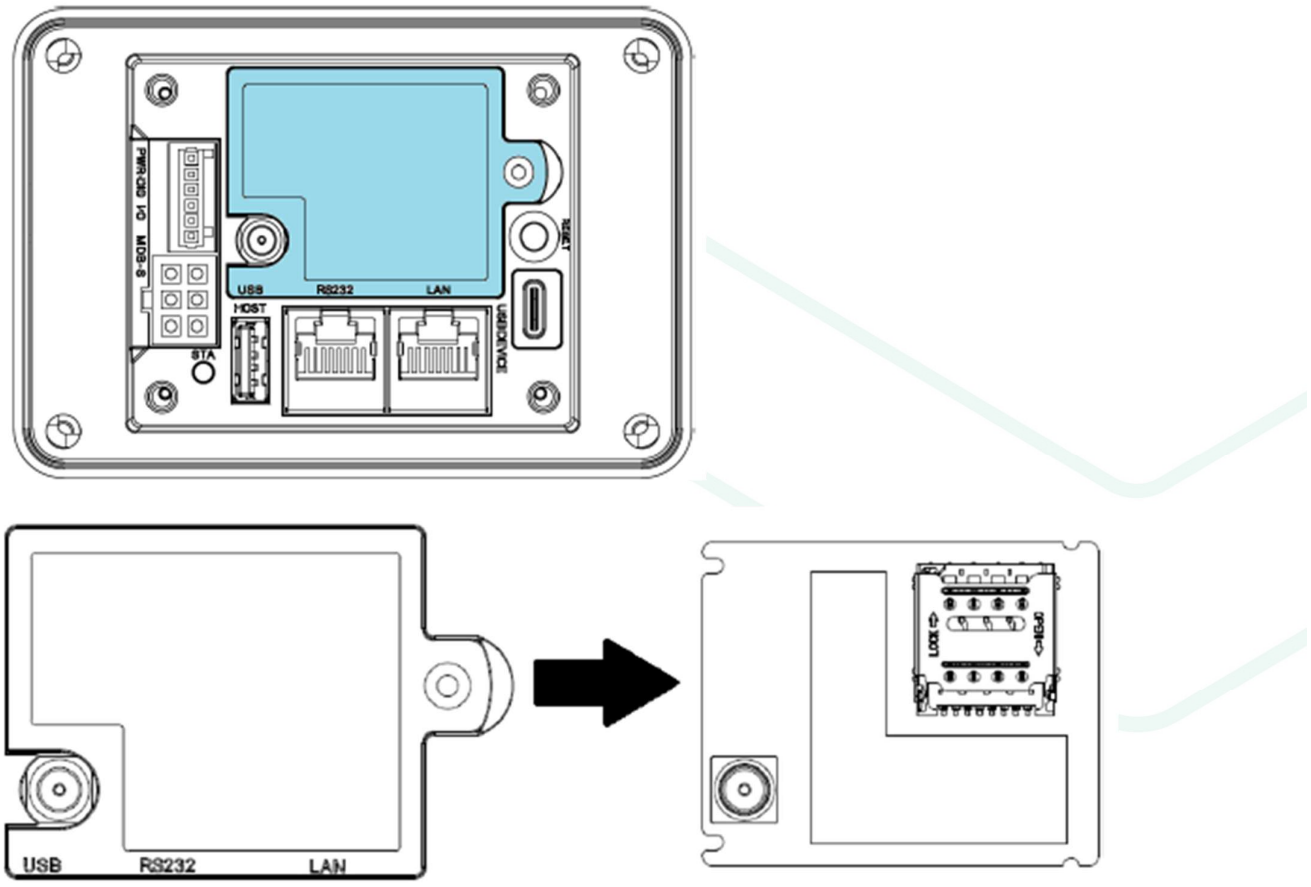
2. Once the cover is removed, the 4G network board is visible. Removed the 4G network board by holding the SMA connector and pulling away from the body of the device.

3. The SAM card slots are visible on the main body of the HPT25.

4. Open the card mount and insert a card with the contacts facing the board and the clipped corner of the card aligned with the card slot, then lock the mount with the card inside.

5. Reassemble the HPT25 by reversing steps 1 through 2.

Sim card installation



Certain configurations of the HPT25 have a 4G network board, these devices have 1 micro-SIM (3FF) sized SIM card slot available for use.

The SIM card slot is located on the 4G network board of the HPT25. Take the following steps to install a SIM card in the HPT25:

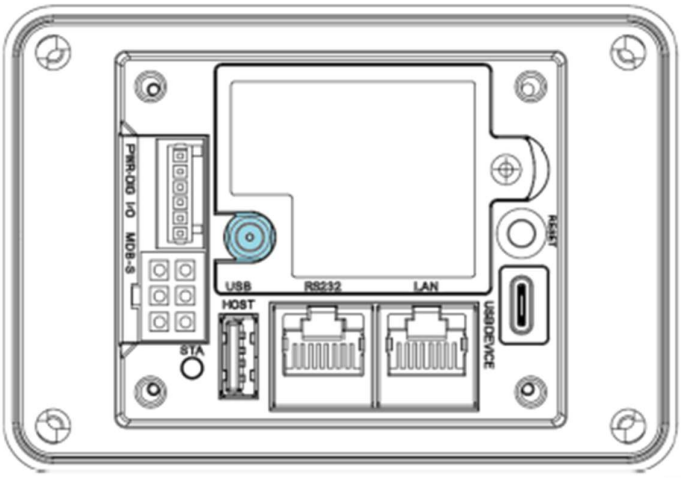
1. Remove the back cover of the HPT25 by unscrewing it from the body of the device.

2. Once the cover is removed, the 4G network board and the SIM card slot are visible.

3. Open the card mount and insert a card with the contacts facing the board and the clipped corner of the card aligned with the card slot, then lock the mount with the card inside.

4. Reassemble the HPT25 by replacing the back cover and screwing it in place.

4G Module



There is a SMA antenna connector located on the back of the HPT25 to which a 4G antenna can be attached.

Specification (EC200A-EU)

• LTE bands: 1/3/5/7/8//20/28/38/40/41

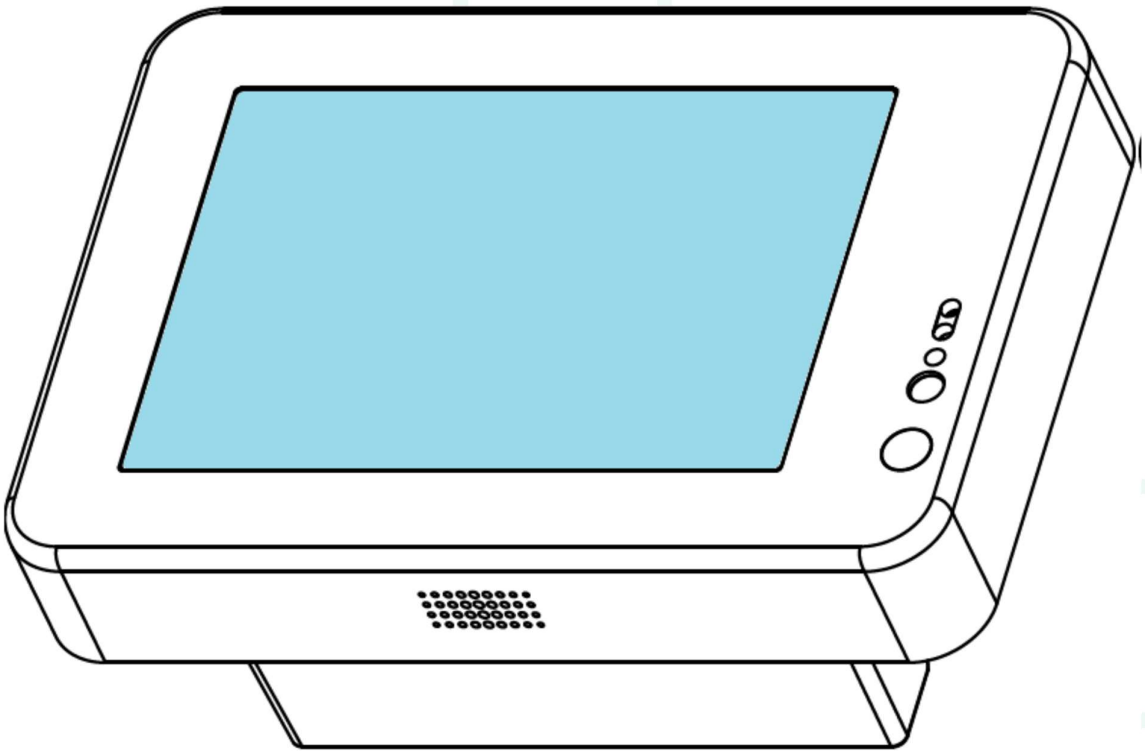
• WCDMA: 1/5/8

• GSM: 2/8

Antenna

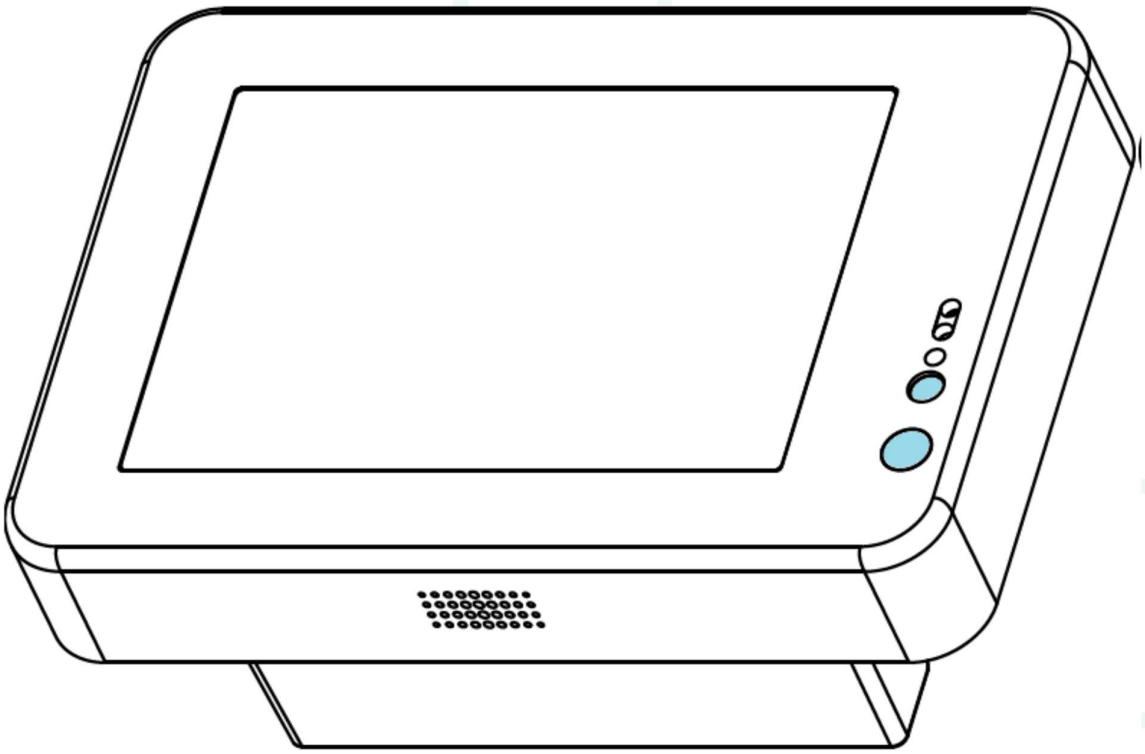
• dipole antenna with 1 meter cable

Display



The HPT25 has a 3.5" LCD screen located on its front face. This color display has a resolution of 320 x 480 pixels. The display is equipped with an adjustable LED backlight, allowing the screen brightness to be adjusted as needed. It functions as the primary mechanism for the device to display information to users, guiding them through the payment process. The display also includes an integrated touchscreen, making it the primary input device for the HPT25

Code scanning camera



The HPT25 has a code scanning camera located on the bottom right corner of its front face.

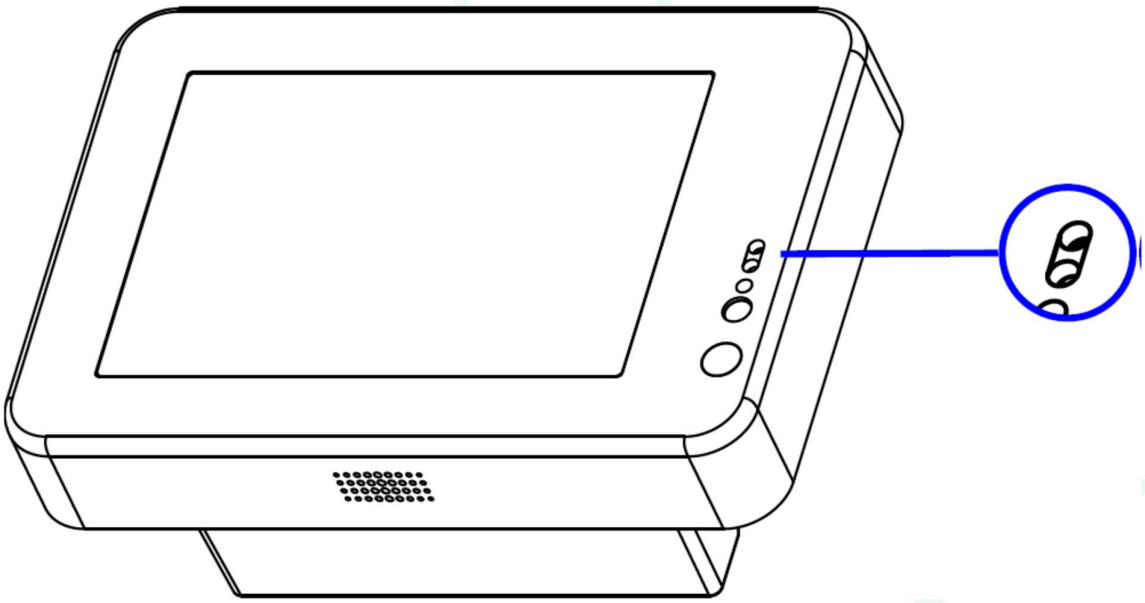
This 2 megapixel camera is designed to read common 1D or 2D codes. The camera is equipped with an LED that provides lighting during the code scanning process.

Code Scanning Camera

1D codes: Code11, Code39, Code93, Code128, EAN-8, EAN-13, UCC/EAN 128, UPC-A/E, JAN-13, ISSN EAN, ISBT-128, ISBN-13, Interleaved 2 of 5, Matrix 2 of 5, Industrial 2 of 5, GS1, Codabar

2D code: PDF417, QR Code, Data Matrix, Aztec

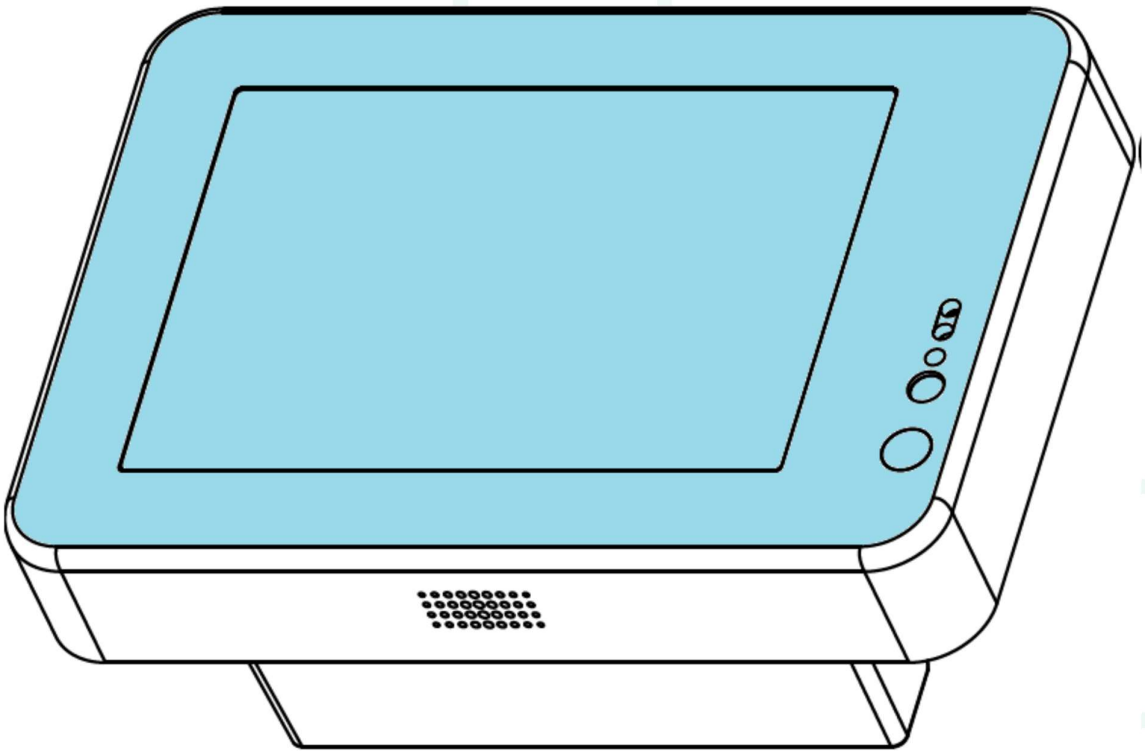
Proximity and light detector



The HPT25 has a code scanning camera located on the right side of its front face.

This proximity and light detector is designed to act as a wakeup signal for when object approach within 10 cm of the sensor. This allows for power conservation while also quickly responding to potential users. The light sensor can also be used to automatically adjust screen brightness to suit the ambient lighting.

Contactless RFID Reader



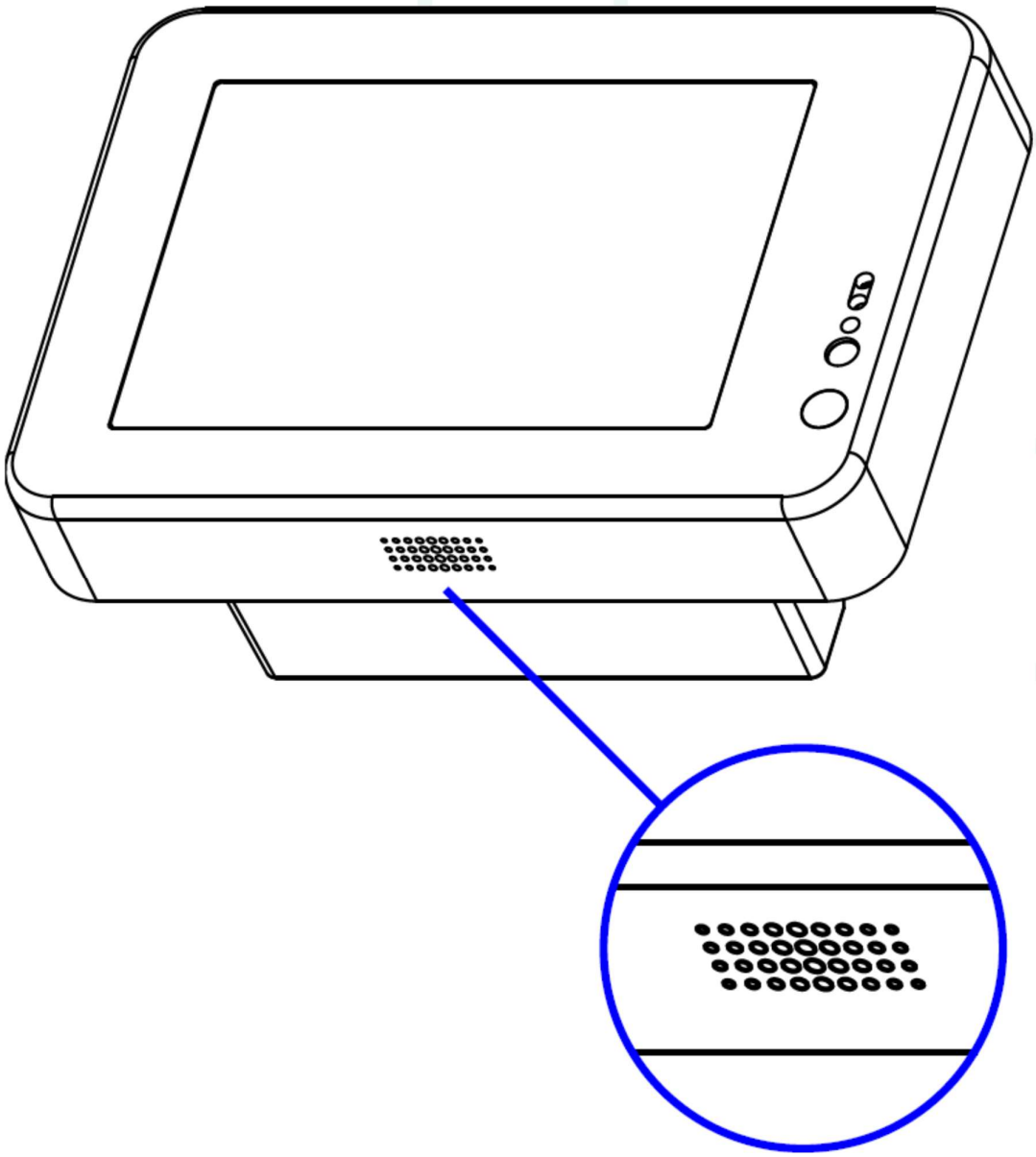
The HPT25 has a contactless card reader with an RF antenna located on front face. The read area for this card reader roughly corresponds to the entire front face of the device.

The contactless card reader reads cards and devices placed roughly parallel to the area indicated in figure 20 from a distance of anywhere from 0 to 4 cm. For best results, place as close to the screen as possible and center the card over the indicated area.

Contactless Card Reader

support ISO14443 Type A/B, ISO/IEC 18092 / ECMA-340, ISO/IEC 21481 / ECMA-352, closed loop Mifare™, JIS X6319-4 FeliCa™, and NFC devices.

Speaker



The HPT25 has a speaker located on the center of its bottom face.

The speaker can output audio signals of up to 80 dB at a distance of 10 cm, the volume is software controlled and can be adjusted. This can be used to output user prompts for the card reader and code scanner as well as default tones for presses of the functional keys or occurrences of errors.

WiFi and Bluetooth

The HTP25 has a Wi-Fi and Bluetooth combination module, which would allow the unit to connect to nearby Wi-Fi networks as well Bluetooth devices.

Wi-Fi specification:

• frequency: 2.4 GHz; 5 GHz

• protocol: IEEE 802.11a/b/g/n/ac

Bluetooth specification:

• protocol: Bluetooth 5 (BDR, EDR, BLE)

• modulation: GFSK, π/4-DPSK, 8DPSK

Battery

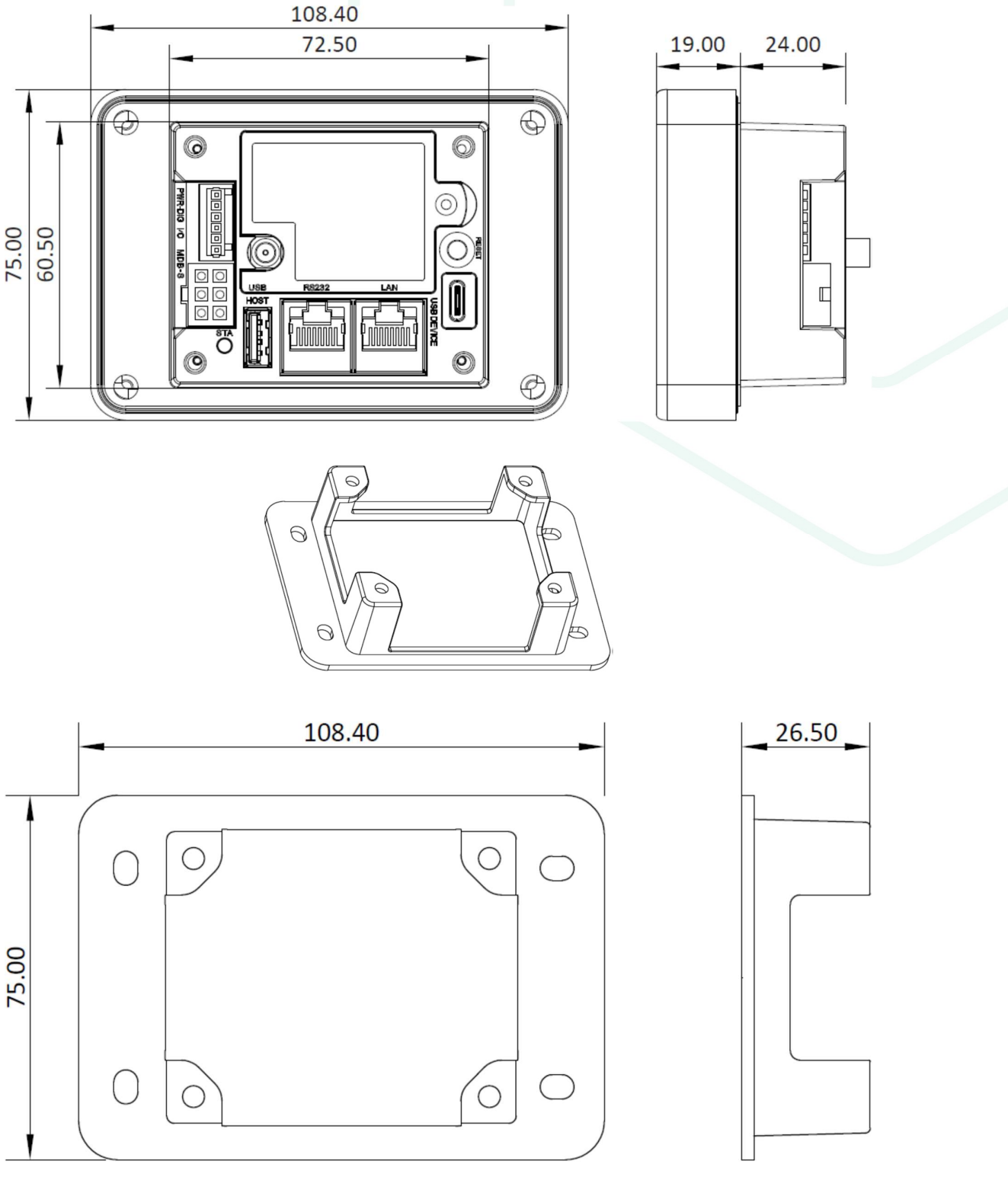
The HPT25 has a non-rechargeable battery used to power the tamper-proofing circuits. Do not attempt to open the HPT25 to access its internal circuity. If repairs are required, contact a professional technician through your supplier instead of attempting them on your own.

Battery Safety

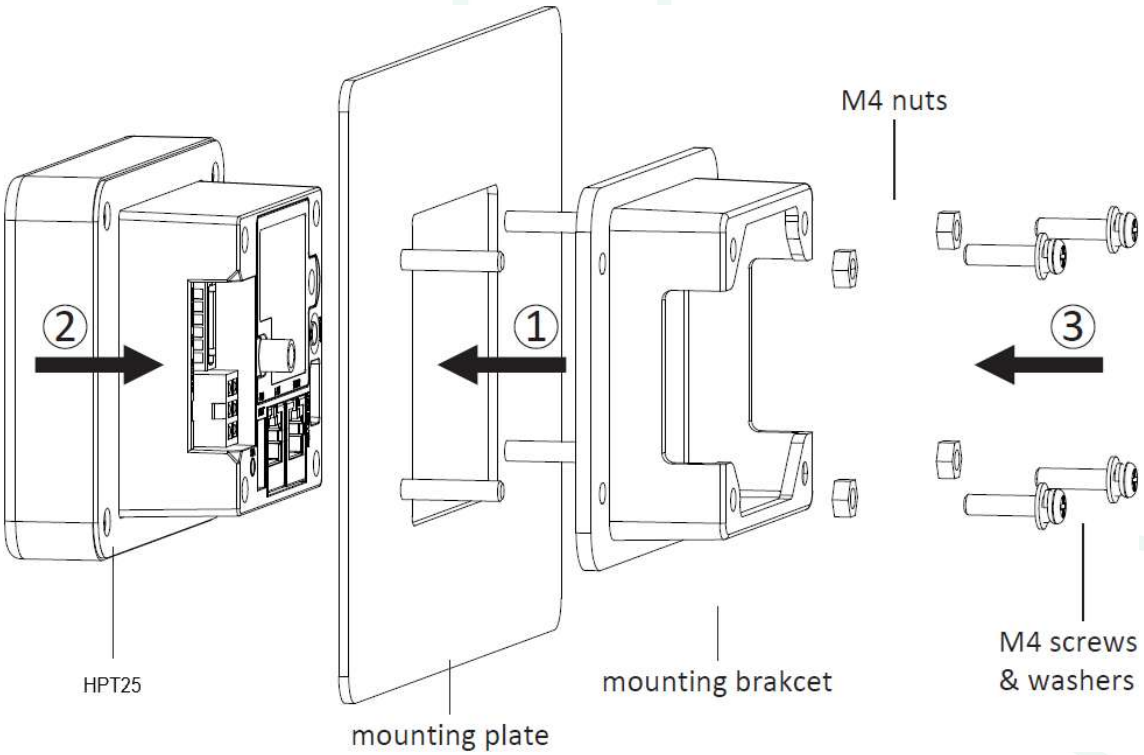
• Disposal of a battery into a fire or hot oven, or mechanically crushing or cutting a battery can result in an explosion

• Leaving a battery in an extremely high temperature environment can result in an explosion or the leakage of flammable liquids or gases.

Product dimensions



Device installation



Take the following steps to install the HPT25 onto a mounting plate:

1. Begin by securing the mounting bracket onto the mounting plate. The back of the mounting plate should have four M4 stud bolts that correspond to four mounting points on the mounting bracket. Slid the mounting bracket onto the bolts, then use M4 nuts to secure it in place.

2. After the mounting bracket is secured to the mounting plate, insert the HPT25 unit through the front of the mounting plate into the mounting bracket.

3. Apply a torque of 0.4 to 0.6 Nm to the four M4 screws to secure the HPT25 to the mounting bracket through its four inner mounting points.