

# UX302 and UX402 Installation Guide

Verifone Part Number: DOC159-081-EN-A, Revision A



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UX302 and UX402 Installation Guide  
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# Contents

## Preface

Audience .....	5
Organization .....	5
Related Documentation .....	5
Conventions .....	6
Conventions .....	6

## 1. Device Overview

Features and Benefits.....	7
Ease of Use .....	7
Compliance .....	7

## 2. Device Setup

Selecting the Unit Location .....	8
Choosing the Mounting Location .....	8
Unpacking the Shipping Carton .....	8
Instructions for Unpacking the Shipping Carton .....	9
Examining the Features of the Unit.....	9
Service Switch .....	12
Activating System Mode .....	12
Cable Connections .....	12
Connecting to a UX102 or UX112 PIN Pad.....	13
Connecting UX402 CTLS Antenna .....	13
Connecting UX302 to UX402.....	13
Mounting the Device.....	14
Instructions for Mounting the Unit.....	14
Mounting the Antenna Module.....	15
Grounding the Unit .....	17
Connecting the Power Supply .....	18
Power Connections.....	18

## 3. Specifications

Unit Power Requirement .....	19
Temperature .....	19
Humidity.....	19

External Dimensions .....	19
Weight.....	19
Processor.....	19
Memory.....	19
Magnetic Stripe card .....	19
Smart Card Reader .....	20
Peripheral Ports .....	20

## 4. Maintenance and Cleaning

General Care .....	21
--------------------	----

## 5. Service and Support

Returning a Device for Service .....	22
Connecting Cables .....	23
Grounding Cables .....	23
Accessories.....	23

## 6. Pinouts

Port Pinouts .....	24
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# Preface

This guide is the primary source of information for setting up the UX302 and UX402 devices.

## Audience

This guide is intended for the users involved in UX302 and UX402 installations.

## Organization

This guide is organized as follows:

- Chapter 1, [Device Overview](#). Provides an overview of the UX302 and UX402 devices.
- Chapter 2, [Device Setup](#). Explains setup and installation of the devices, selecting a location, and establishing connections with other devices.
- Chapter 3, [Specifications](#). Discusses power requirements and dimensions of the UX302 and UX402 devices.
- Chapter 4, [Maintenance and Cleaning](#). Explains how to maintain your UX302 and UX402.
- Chapter 5, [Service and Support](#). Provides information on how to contact your local Verifone representative or service provider and information on how to order accessories or documentation from Verifone.
- Chapter 6, [Pinouts](#). Shows the different pinout settings for ports on the UX302 and UX402.

## Related Documentation

Following are the related documents with associated Verifone Part Numbers.




UX302 and UX402 Quick Installation Guide      VPN DOC159-080-EN

UX302 and UX402 Certifications and Regulations      VPN DOC159-082-EN

## Conventions

The following table describes the conventions.

## Conventions

Convention	Meaning	Example
<p style="text-align: center;"><a href="#">Blue</a></p>	<p>Text in blue indicates terms that are cross-referenced.</p>	<p>See <a href="#">Conventions</a>.</p>
 <p style="text-align: center;"><b>NOTE</b></p>	<p>The bulb icon is used to highlight important information.</p>	<p>If exchanging cables use a Verifone-approved cable.</p>
 <p style="text-align: center;"><b>CAUTION</b></p>	<p>The caution symbol indicates possible hardware or software failure or loss of data.</p>	<p>Avoid placing metallic objects at the front of the card reader.</p>
 <p style="text-align: center;"><b>WARNING</b></p>	<p>The lightning symbol is used as a warning when bodily injury might occur.</p>	<p>For safety, do not string cables or cords across a walkway.</p>

# 1. Device Overview

This chapter provides an overview of UX302 and UX402 devices.

Verifone's UX302 is a powerful payment processing device for unattended scenarios. It allows both contact and with the UX402, contactless payment transactions to be processed. The payment device has the ability to either operate as an independent payment device or connect as a payment device for another system like a vending kiosk or a parking device. It also enables clients to remotely monitor and update their devices using Verifone's estate management solution.

## Features and Benefits

The UX302 is Verifone's card reader and main control unit. It creates an economical solution for merchants who are looking to expand their payment acceptance options.

## Ease of Use

The following features simplify transactions in various environments:

- Designed for indoor and outdoor use.
- Various connectivity options are integrated into the device.
- The LEDs on the UX302 signify device power and status, while the LEDs on the UX402 indicate the progress of contactless card reads.
- Buzzer for audio confirmation of card transactions.

## Compliance

- PCI PTS (PIN Transaction Security) 6.x Approved
- EMV Level 1 and Level 2
- Compliance with all major card schemes

## 2. Device Setup

This chapter describes the setup for the UX302 card reader and UX402, under the following sections:

- [Selecting the Unit Location](#)
- [Unpacking the Shipping Carton](#)
- [Examining the Features of the Unit](#)
- [Service Switch](#)
- [Cable Connections](#)
- [Mounting the Device](#)
- [Grounding the Unit](#)
- [Connecting the Power Supply](#)

### Selecting the Unit Location

Use the following guidelines when selecting a location for your device.

- Select a location convenient for the customer.
- To minimize data reading or writing errors, pick a location free from magnetic interference.

### Choosing the Mounting Location

Choose a mounting location that ensures the card slot is in full view of the cardholder during card insertion.



**NOTE**

The UX302 meets the Ingress Protection (IP34) standards for outdoor installation environments. If greater protection is required, consider adding additional protection features to the enclosure it is mounted in.

### Unpacking the Shipping Carton

Open the shipping carton and carefully inspect its contents for possible tampering or shipping damage.



## Instructions for Unpacking the Shipping Carton

- 1 Remove the items from the shipping carton. The package contains:
  - UX302 carton
    - UX302 device
    - Grounding cable
  - UX402 carton
    - UX402 device
    - SMA (RF) coaxial cable to connect UX402 to UX302
    - RJ45 communications cable to connect UX402 to UX302
    - Clamping plate
- 2 Remove any protective wrap before mounting the unit.
- 3 Save the shipping carton and packing material for future repacking or moving of the device.



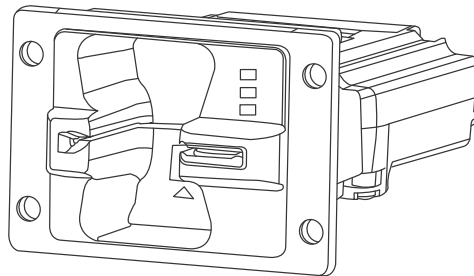
Do not use a unit that has been tampered with or otherwise damaged. This unit comes equipped with tamper-evident labels. If a label or component appears damaged, immediately notify the shipping company and your Verifone representative or service provider.

*N'utilisez pas un appareil qui a été altéré ou autrement endommagé. Cet appareil est équipé d'étiquettes inviolables. Si une étiquette ou un composant semble endommagé, informez-en immédiatement la compagnie maritime et votre représentant ou fournisseur de services Verifone.*

## Examining the Features of the Unit

Before you continue the installation process, review the features of the UX302 and UX402.

Figure: 1 UX302 Front Panel

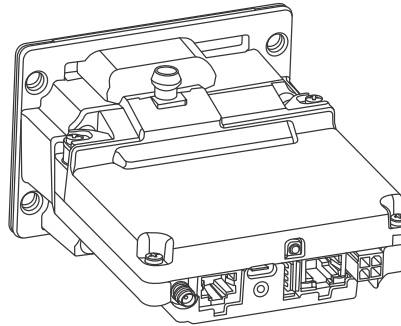


## Front Features

The front panel shows the following features:

- Customer-view indicator LEDs
- The card reader slot
- Installation mounting stud holes

Figure: 2 UX302  
Bottom View



## Bottom and Rear features

- Nozzle for water drainage
- USB Device (Type C) [Host/Client]
- Powered USB (Type A) [Host]
- Power port 9V DC to 43V DC
- LAN with 2 LEDs
- RJ45 socket to connect UX402 to UX302
- SMA (RF) coaxial connector to connect UX402 to UX302

The following illustration shows the top view of the UX302.

Figure: 3 UX302  
Top View

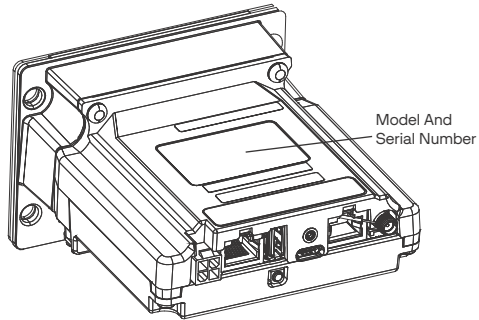


Figure: 4 UX402  
Antenna  
Front View

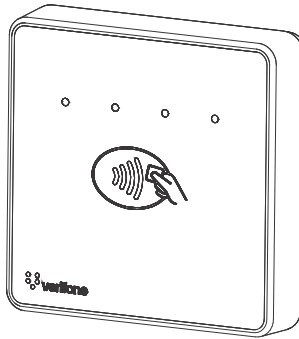
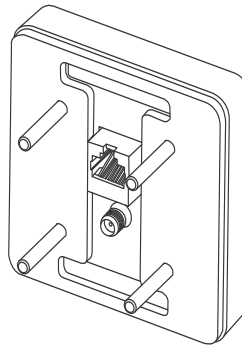


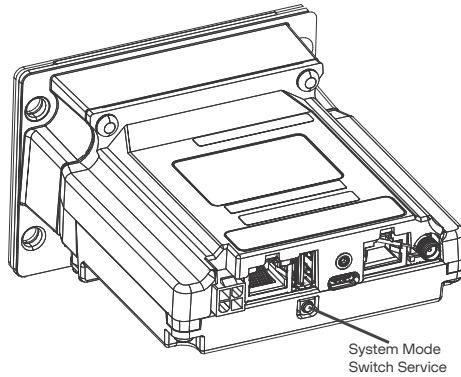
Figure: 5 UX402  
Antenna Rear  
View



## Service Switch

The following illustration shows the location of the service switch on the UX302.

Figure: 6 UX302  
Service Switch



**Activating System Mode** The rear service switch gives access to System Mode. System mode is intended for administrators and authorized users only. Please contact your Verifone representative for details.

**Cable Connections** The connectors on the UX302 rear panel are for power and external device connection.

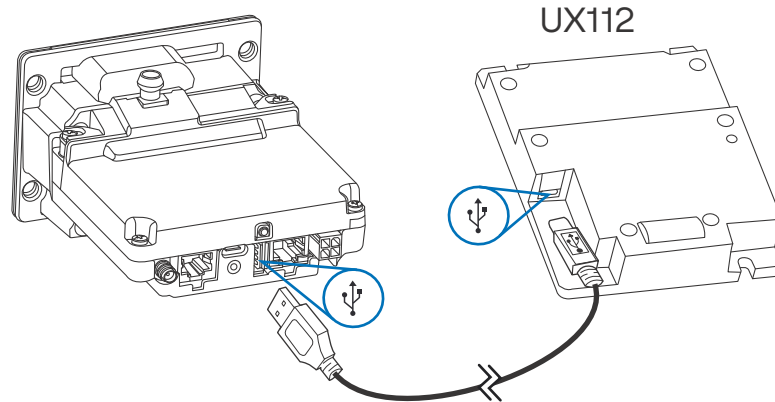
You can connect the UX302 to other devices using any of the following connection types:

- USB Type A
- USB Type C
- ETH (LAN)

### Connecting to a UX102 or UX112 PIN Pad

The UX302 can be connected to a UX102 or UX112 PIN Pad device with a Verifone USB Type A to Type C cable.

Figure: 7 Connecting to a UX102 or UX112 PIN Pad



Connect the Type A plug to the UX302 USB port and connect the Type C plug to the USB port of the UX112. Use the same procedure for connecting the UX102 PIN Pad.

### Connecting UX402 CTLS Antenna

UX302 is connected to a UX402 contactless unit using an RJ45 cable (VPN CBL159-314-01-B) and an SMA cable (VPN CBL159-302-03-A).

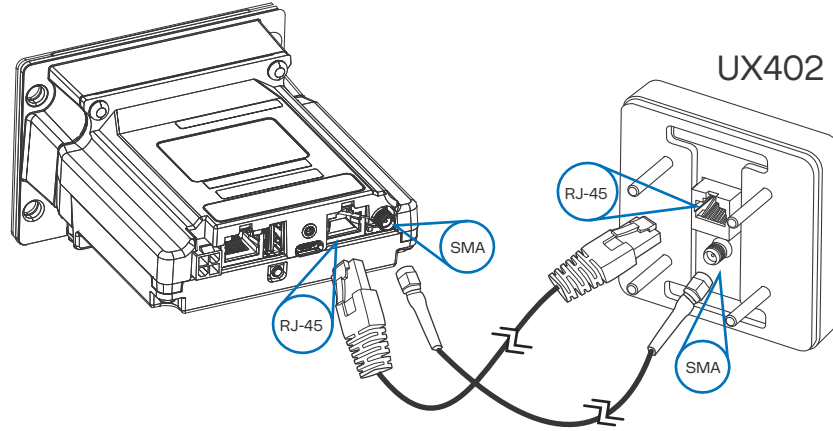
Before you continue the installation process, review the features of the UX402 (see [Figure 10](#) and [Figure 11](#)).

### Connecting UX302 to UX402

- 1 Connect one end of the RJ45 connector to the UX302 and the other end to the UX402. Make sure both devices are not more than 0.5 m away from each other.

- 2 Connect one end of the SMA cable to the UX302 and the other end to the UX402 unit.

Figure: 8 Connecting UX302 to a UX402 CTLS Unit



- 3 Hold the cable and tighten the body.
- 4 SMA connector should be tightened by hand only.

## Mounting the Device

Use the following procedure to mount the UX302 to a suitable mounting surface.

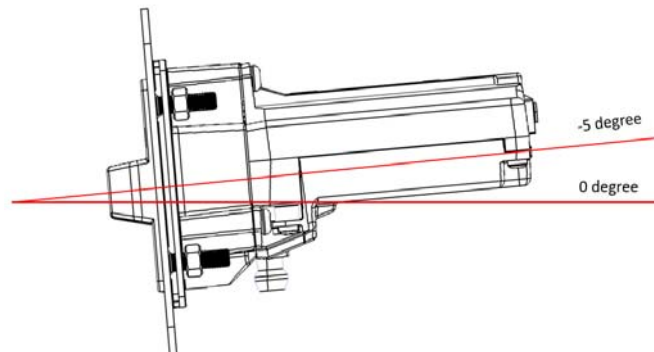


Make sure that your mounting frame has a thickness of 2 mm.  
*Assurez-vous que votre cadre de montage a une épaisseur de 2 mm.*

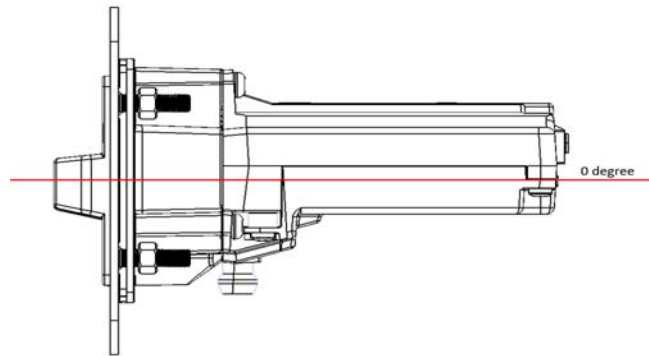
## Instructions for Mounting the Unit

Two mounting positions are listed below along with the illustrations.

- Ideal Mounting Position with -5 forward degree tilt.

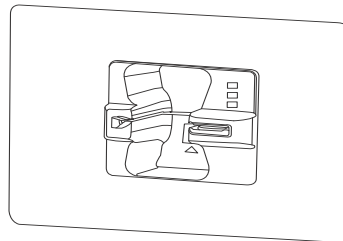


- Horizontal Mounting position.



- 1 Align the UX302 stud holes with the holes on the mounting surface.
- 2 Secure the unit with M5 nuts with a minimum length of 12 mm. Tighten the nuts to the recommended tightening torque of 7.0 kgf.cm (6.1 lbf.in).
- 3 Connect flexible tubing with a 9 mm inner diameter to the drain nozzle at the bottom of the UX302 (see [Figure 2](#)) and place the other end of the tubing at an appropriate drainage area.

Figure: 9 Mounting the UX302



**NOTE**

The nozzle drains water out of the bezel area through the flexible tube.

Ensure that the tubing is properly dressed and mounted as vertically as possible (without any loops) to ensure smooth water drainage.

## Mounting the Antenna Module

The front view of the UX402 Antenna Unit shows the following. The customer-view indicator LEDs denote a successful transaction with an

audible sound emitted from the module for approximately 2 seconds.

Figure: 10 UX402  
Antenna  
Front View

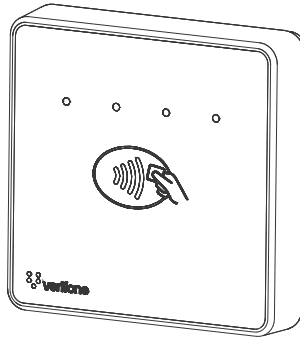
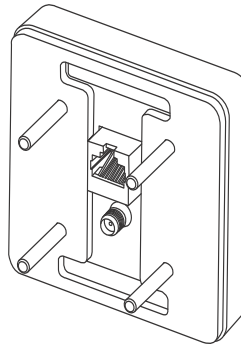
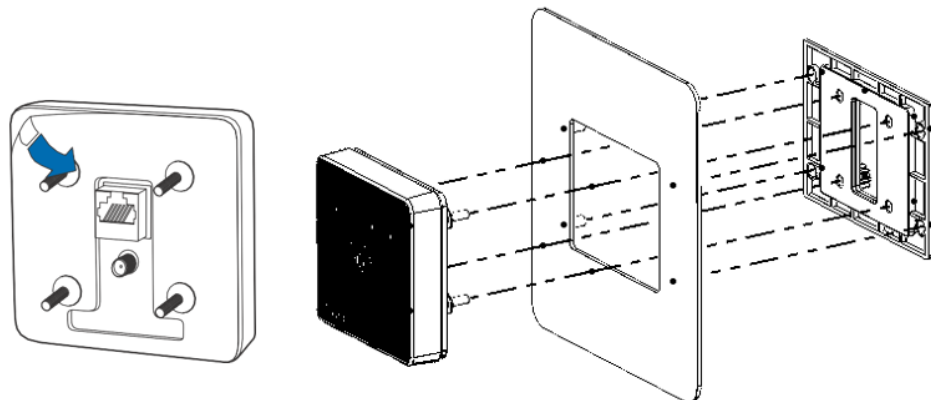


Figure: 11 UX402  
Antenna Rear  
View



- Remove the clear protective film from the back of the unit.
- Align all the unit's stud bolts with the stud holes of the installation panel.

Figure: 12 Mounting a  
UX402  
Device





- UX402 can be affixed to a panel with a minimum thickness of 2 mm, either directly using the bolts located on the rear of the UX402 or indirectly by utilizing the provided clamping plate.
- Insert the bolts through the installation panel and then attach them to the EVA clamping plate (VPN PPL159-417-01-A).
- Secure the unit with M4 washers and nuts. Tighten the nuts using the recommended tightening torque of 5.0 kgf.cm (0.49 Nm or 4.3 lbf.in).

## Grounding the Unit

Use the following steps to ground the UX302 unit.

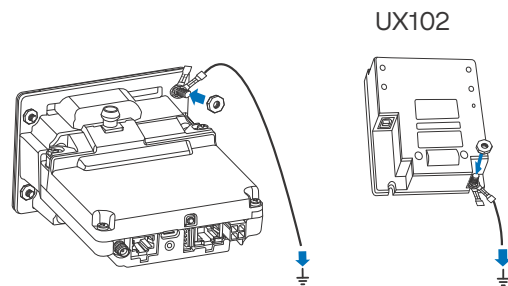
- Use the grounding cable provided to establish a direct connection between the UX302 chassis and the designated system ground termination point.
- All modules should be connected to a single star point and shorter grounding cables should be used wherever possible.



NOTE

For cable and ordering information, refer to [Service and Support](#).

Figure: 13 Grounding the UX302 and PIN Pad Modules



- 1 Remove mounting nuts from the back of the UX302 and the PIN Pad unit (do remove the nut securing the PIN Pad cable retainer).
- 2 Attach one end of the grounding cable (VPN WIR159-302-02-A) to the UX302 and connect the other end to the system ground termination point.
- 3 Use another grounding cable (VPN WIR159-302-02-A) and attach one end to the PIN Pad mounting bolt. Connect the other end to the ground installation.
- 4 Replace the nuts and tighten them to the recommended torque of 7.0 kgf.cm (6.1 lbf.in).

## Connecting the Power Supply

UX302 is not supplied with a power supply, it requires the use of a power supply providing between 9V to 43V DC input.

If you have questions about which power supply to use, contact your Verifone representative.



CAUTION

Using an incorrectly rated power supply can damage the unit or cause it to malfunction. See [Specifications](#) for power supply information.

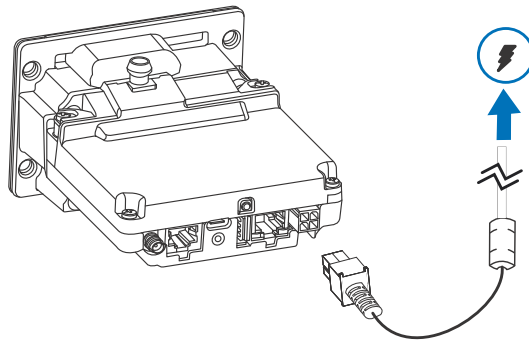
*L'utilisation d'une alimentation électrique mal évaluée peut endommager l'appareil ou provoquer un dysfonctionnement. Voir Spécifications pour plus d'informations sur l'alimentation électrique.*

Attach and route all cables between the UX302 and all peripheral units before connecting to the power source.

## Power Connections

Connect the UX302 device to the power supply using a 4-pin cable. See [Figure 14](#).

Figure: 14 Power Connection for the UX302 Series



# 3. Specifications

This chapter discusses power requirements, dimensions, and other specifications of the UX302 and UX402 devices.

## Unit Power Requirement

UX402 is powered by UX302. UX302 device have the following power requirements:


- Operating voltage: 9-43V DC
- Idle Power: <1 W
- Typical Power: <2 W (CTLS read), 0.5 W (UX102/112)

## Temperature

- Operating temperature: -30° to 70°C (-22° to 158°F)
- Storage temperature: -40° to 80°C (-40° to 176°F)

## Humidity

- Relative humidity: 5% to 90% RH non-condensing

 <p><b>NOTE</b></p>	<p>If this device is to be used in any environment where the temperature range exceeds the product’s operating temperature, it is the responsibility of the integrators to ensure that the ambient environment is controlled in such a way as to ensure that the product operates within the specified temperature range.</p>
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## External Dimensions

- Length: 71 mm (2.80 in)
- Width: 100 mm (3.94 in)
- Depth: 129 mm (5.08 in)

## Weight

- Unit weight: 635g (22.4 oz)

## Processor

- ARM Cortex A7 32-bit RISC | 650 MHz

## Memory

- 512 MB SDRAM (Synchronous Dynamic Random Access Memory)
- Flash: 2GB

## Magnetic Stripe card

- Triple track

## Smart Card Reader

- Card-conserving plated landing contacts

## Peripheral Ports

- Consistent ports:
  - Power
  - Powered USB Type A for UX PINpads (Host) 600mA maximum
  - USB Type C (Client/Host)
  - ETH (LAN) connection with 2 colored LEDs for link state and speed indication
  - RJ45 socket to connect UX402 to UX302
  - SMA (RF) coaxial connector to connect UX402 to UX302

# 4. Maintenance and Cleaning

The UX302 and UX402 devices have no user-serviceable parts. It can, however, be cleaned.

**General Care** Your device is a product of superior design and craftsmanship and should be treated with care. The following suggestions will help you protect your warranty coverage.

- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.

### Chemical for Cleaning

Recommended	ethyl-alcohol
Not Recommended	acetone, butanone, thinner, trichloroethylene, or ketone-based solvents

These suggestions apply equally to your device or any of its attachments or accessories. If your device is not working properly, take it to the nearest Verifone authorized service provider for servicing or replacement.

# 5. Service and Support

Contact your local Verifone representative or service provider for any problems on your device.

For product service and repair information:

- USA – Verifone Service and Support Group, 1-800-837-4366, Monday - Friday, 8 A.M. - 8 P.M., Eastern time
- International – Contact your Verifone representative

## Returning a Device for Service

Before returning a UX302 or UX402 device, you must obtain an MRA (Merchandise Return Authorization) number. The following procedure describes how to return one or more devices for repair or replacement (U.S. customers only).



Customers outside the United States are advised to contact their local Verifone representative for assistance regarding service, return, or replacement of devices and accessories.

**CAUTION** *Il est conseillé aux clients en dehors des États-Unis de contacter leur Verifone local. représentant pour obtenir de l'aide concernant l'entretien, le retour ou le remplacement des appareils Et accessoires.*

- 1 Get the following information from the printed labels on the back of each UX302 and UX402 devices to be returned:
  - Product ID, including the model and part number. For example, “UX302” “M159-302-XX-WWA-6” and “PTID xxxxxxxx”
  - Serial number (S/N nnn-xxx-xxx)
- 2 Obtain the MRA number(s) by completing one of the following:
  - Call Verifone toll-free within the United States at 1-800-Verifone and follow the automated menu options.
  - Select the MRA option from the automated message. The MRA department is open Monday to Friday, 8 A.M. to 8 P.M., Eastern Time.
  - Give the MRA representative the information you gathered in [Step 1](#).
  - Complete the Inquiry Contact Form at <https://www.verifone.com/en/us/contact-us>.
  - Address the Subject box to “Verifone MRA Dept.”
  - Reference the model and part number in the Note box.



**NOTE**

One MRA number must be issued for each UX302 and UX402 devices you return to Verifone, even if you are returning several of the same models.

- 3 Describe the problem(s).
- 4 Provide the shipping address where the repaired or replacement unit must be returned.
- 5 Keep a record of the following items:
  - Assigned MRA number(s).
  - The Verifone serial number is assigned to the UX302 and UX402 devices when you are returning for service or repair (device serial numbers are located at the back of the unit).
  - Shipping documentation, such as air bill numbers used to trace the shipment.
  - Model(s) returned (model numbers are located on the Verifone label at the back of the UX302 and UX402 devices).

**Connecting Cables** CBL159-314-01-B - (RJ45 socket to connect UX402 to UX302)  
 CBL159-302-03-A - (SMA (RF) coaxial connector to connect UX402 to UX302)  
 CBL159-312-01-B- (LAN cable for Ethernet connections)  
 5557-04R - (4-pin Molex-Mini Fit)  
 NOTE: 5557-04R requires 5556 series pins

**Grounding Cables** WIR159-302-01-A - 1 m grounding cable for UX302 and UX1xx PIN Pads  
 WIR159-302-02-A - 2.5 m grounding cable for UX302 and UX1xx PIN Pads

**Accessories** 02746 - Verifone Cleaning Kit  
 PWR-159-002-01-X - Power Pack

# 6. Pinouts

**Port Pinouts** This section contains port pinout tables for UX302 and UX402.

## USB A

Connector	PIN	Function	Description
	1	+5 V	5 V USB Power (500 mA)
	2	DATA-	USB Host Signal -
	3	DATA+	USB Host Signal +
	4	GND	USB ID pin/Ground

## RJ45 CTLS (UX302 to UX402)

Connector	PIN	Function	Description
	1	Buzzer	PWM
	2	5V0	Power
	3	3V3	Power
	4	0V	GND
	5	Proximity	User detect wake
	6	SDA	CTLS
	7	SCL	CTLS
	8	SCL	Proximity
	9	SDA	Proximity
	10	0V	GND

## SMA RF CTLS Antenna

Connector	PIN	Function
	1	Signal
	2	0V



### USB C

Connector	PIN	Description	PIN	Description
	A1	GND	B12	GND
	A2	TX1+	B11	RX1+
	A3	TX1-	B10	RX1-
	A4	VBUS	B9	VBUS
	A5	CC1	B8	SBU2
	A6	D+	B7	D-
	A7	D-	B6	D+
	A8	SBU1	B5	CC2
	A9	VBUS	B4	VBUS
	A10	RX2-	B3	TX2-
	A11	RX2+	B2	TX2+
	A12	GND	B1	GND

### Power Port

Connector	PIN	Function	Description
	1	9 V to 43 V	External power from cable
	2	GND	Power ground
	3	Wake_MDB_Module	Low active wake-up signal
	4	NC	No connection

### Ethernet Port (LAN)

Connector	PIN	Function	Description
	1	TXD+	Transmit data +
	2	TXD-	Transmit data -
	3	RXD+	Receive data +
	4	75 Ohms	AC coupled to GND
	5		
	6	RXD-	Receive data -
	7	75 Ohms	AC coupled to GND
	8		

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