eppendorf

CE

Hardware hub
VisioNize box 2
VisioNize box 2 cable

Operating Manual

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1 About this manual

1.1 Version overview

Version	Change	Content approved
01	• Document created	2024-02-15
02	• Renamed VisioNize box 2 / VisioNize box 2 cable • Content update of information on the VisioNize Lab Suite	2025-05-15

1.2 Notes on this manual

The dates in this manual correspond to the international date format as specified in the ISO 8601 standard. All dates are shown in the format YYYY-MM-DD or YYYY-MM.

1. Read this manual completely before using the product.

2. Please ensure that you have the manual available while using the product.

The current version of the manual can be found at www.eppendorf.com/manuals.
• Contact Eppendorf SE to obtain another version of the manual.

1.3 Warning notice structure

HAZARD LEVEL! Type of danger

Source of danger
Consequences of disregarding the danger

– Measures to avoid the danger

Symbol	Hazard level	Type of danger	Meaning
	DANGER	Personal injury	Will lead to severe injuries or death.
	WARNING	Personal injury	May lead to severe injury or death.
	CAUTION	Personal injury	May lead to minor or moderate injuries.

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Symbol	Hazard level	Type of danger	Meaning
!	**NOTE**	Material damage	May lead to material damage.

1.4   Graphics

Depiction	Meaning
1. 2.	Work steps
•	Bullet point
Text	Display text
Key	Name for port, button, status lamp, or key
❶	Important information
💡	Tip

1.5   Other applicable documents

The following documents supplement this manual:
- Safety instructions for the power supply unit
- Installation guide
- VisioNize sense operating manual (for use with the VisioNize box 2)

All other applicable documents can be found on the webpage www.eppendorf.com.

1.6   Certificates

Declarations of conformity, certificates, Safety Data Sheets etc. on the product can be found on the respective product page at www.eppendorf.com.

2 Safety

2.1 Intended use

The VisioNize box 2 and the VisioNize box 2 cable are intended for use as external accessories to connect laboratory devices to the VisioNize Lab Suite. The data from the laboratory devices is forwarded from the VisioNize box 2 or the VisioNize box 2 cable to the VisioNize Lab Suite.

The VisioNize box 2 can also be used in combination with products from VisioNize sense to forward measurement data collected by sensors to the VisioNize Lab Suite.

The VisioNize box 2 and the VisioNize box 2 cable are intended for indoor use only and for operation by trained and skilled personnel.

The VisioNize box 2 and the VisioNize box 2 cable are intended for general use in laboratories.

Any changes or modifications to the VisioNize box 2 or the VisioNize box 2 cable that have not been expressly approved by Eppendorf SE may void the user's authority to operate the device.

2.2 Residual risks when used as intended

If the product is not used as intended, the installed safety devices may not function correctly. To reduce the risk of personal injury and material damage and to avoid dangerous situations, please observe the general safety instructions.

2.2.1 Material damage

2.2.1.1 Warnings for the WLAN module (manufacturer)

The following warnings have been taken from the manufacturer of the WLAN module (PAN9026 module). The warnings are translations of the original German texts.

The end customer must ensure that the device has a distance of more than 20 cm from the human body under all circumstances. The end customer devices must meet the current safety and health requirements in accordance with RED.

The FCC requires the user to be notified that any changes or modifications made to this device (WLAN module – editor's note) that are not expressly approved by Panasonic Industrial Devices Europe GmbH may void the user's authority to operate the equipment.

The use of the PAN9026 module (WLAN module – editor's note) in a vehicular environment cannot be considered as indoor use.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

The device complies with the Canadian RSS-Gen Rules. The device meets the requirements for modular transmitter approval as detailed in RSS-Gen.

2.2.1.2 Accessories and spare parts

NOTICE! Damage to device
The use of accessories and spare parts other than those recommended by Eppendorf SE may impair the safety, functioning, and precision of the device. Eppendorf SE cannot be held liable or accept any liability for damage resulting from the use of accessories and spare parts other than those recommended.
– Use only the accessories and spare parts recommended by Eppendorf SE.

NOTICE! Disruption of the radio link
For devices with class A noise emission in accordance with EN IEC 61326-1/EN 55011: The device cannot ensure adequate protection of radio reception in residential areas and domestic environments. The device may cause radio interference in residential or domestic environments.
– Do not use the device in residential or domestic environments.

The safety instructions and other notes in the operating manual apply in addition to the safety instructions and warning notes in this installation guide. Read this operating manual completely before using the device for the first time.

2.3 Application limits

Due to its design, the product is not suitable for use in a potentially explosive atmosphere.

The product may only be used in a safe environment, such as a ventilated laboratory or under a fume hood. Substances which may potentially contribute to an explosive atmosphere may not be used.

2.4 Target groups

This manual is intended for the following target groups, who have different qualifications and levels of knowledge.

Owner

The owner is any natural or legal person who operates or owns the device.

The owner provides the product and the necessary infrastructure. The owner has a special responsibility to ensure the safety of all persons working on the product.

User

The user operates the product and works with it. The user must be instructed in the use of the product. The user must have read and fully understood the manual.

Any tasks that go beyond operation may only be performed by the user if this is specified in this manual. The owner must explicitly assign these tasks to the user.

Technical personnel

The technical personnel supervises the building services and ensures the technical pre-requisites for the operation of the product.

Authorized service technician

The authorized service technician is trained and certified by Eppendorf SE to service, maintain and repair the product.

2.5 Information for the owner

The owner must ensure the following:
- The product is in a safe operating condition.
- The safety devices are all available and functional.
- The product is serviced and cleaned according to the information in this manual.
- The product is disposed of in accordance with local regulations.
- All work on the product is carried out by users, technical personnel or authorized service technicians who are suitably qualified.
- Personal protective equipment is available and is worn.
- The manual is available during the use of the product.
- The manual is part of the product. The product will only be passed on to others with its manual.

2.6 Personal protective equipment

Personal protective equipment serves to ensure the safety and protection of the user when working with the product.

Personal protective equipment must comply with country-specific regulations and the regulations of the laboratory.

2.7 Information on product liability

The owner of the device will be held liable for personal and material damage in the following cases:
- The device is used outside of its intended use
- The device is not used in accordance with the operating manual
- Manipulation of safety devices
- The device has spare parts installed that are not authorized by Eppendorf SE
- The device is used with accessories or consumables that are not recommended by Eppendorf SE
- Cleaning agents are used that are not recommended by Eppendorf SE
- Chemicals are used that are not recommended by Eppendorf SE
- Shipment not in original packing or in improper substitute packing
- The device is maintained or repaired by persons not authorized by Eppendorf SE
- Unauthorized modifications

2.8 Information on the device

Information	Meaning	Location
CE	This device has been tested by the manufacturer and meets all EU-wide safety, health and environmental protection requirements.	Bottom of the device
c (UL) US LISTED	Certification mark indicating that representative samples of the device have been tested by Underwriters Laboratories (UL) against safety standards recognized by the USA and Canada	Bottom of the device
⚠	Observe the safety-relevant information in the manual.	Bottom of the device

Information	Meaning	Location
	Mark for the conformity of electronic and electrical devices with the DIN EN 50419 standard in accordance with Directive 2012/19/EU of the European Union	Bottom of the device

3 Product description

3.1 Features

VisioNize box 2 cable

The VisioNize box 2 cable connects Eppendorf devices to the VisioNize Lab Suite. It is a hardware hub and works as a data decoding and translation system enabling the collection of device data in the VisioNize Lab Suite.

VisioNize box 2

With the VisioNize box 2, additional VisioNize sense products can be connected. In addition to its function as a hardware hub for integrating Eppendorf devices into the VisioNize Lab Suite, the VisioNize sense environmental monitor can also be connected via Bluetooth. In this context, the VisioNize box 2 acts as a gateway and transmits the measurement data collected by the sensors (VisioNize sense environmental monitor and VisioNize sense temperature sensor) to the VisioNize Lab Suite. For further information, refer to the VisioNize sense operating manual.

The VisioNize box 2 replaces the former VisioNize sense gateway router.

3.2 Product overview
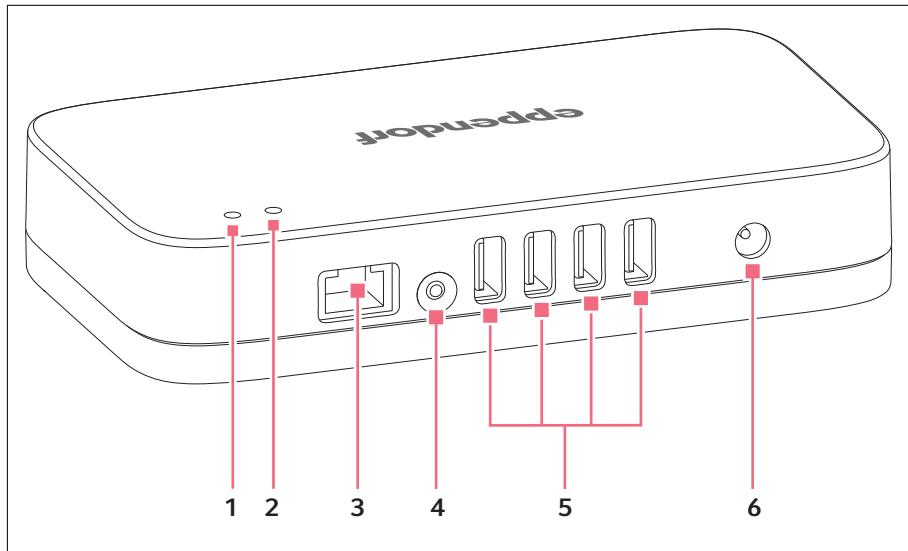
Fig. 3-1:   Indicators and ports of the VisioNize box 2

1	Status LED	4	Button
2	Power LED	5	USB interfaces
3	Ethernet interface	6	Power supply

3.3 LED status display

Left LED	Description	Comment
Off	The device is switched off.	
White	The device starts up.	
Flashing blue	The device must be registered in the VisioNize Lab Suite.	
Blue	The device is registered in the VisioNize Lab Suite and ready for use.	

Left LED	Description	Comment
Yellow	The software is being updated.	Wait for the left LED to turn blue again.
Green	The software update is complete.	
Red	Error	
Flashing red	Critical error	Restart the device. Contact your authorized Eppendorf Service if the error persists.

Right LED	Description	Comment
White	The device starts up.	
White, flashes once	A new device has been detected or is no longer detected.	For example, when connecting or removing a laboratory device.
Green, flashes once	The device data is being updated.	Data is read from a connected device.
Cyan, flashes once	A USB storage medium has been connected or removed.	
Yellow, flashes once	A new software version has been found.	
Blue, flashes once	Data has been successfully transferred to the VisioNize Lab Suite.	
Red, flashes once	The data connection to the VisioNize Lab Suite has failed.	

3.4 Name plate
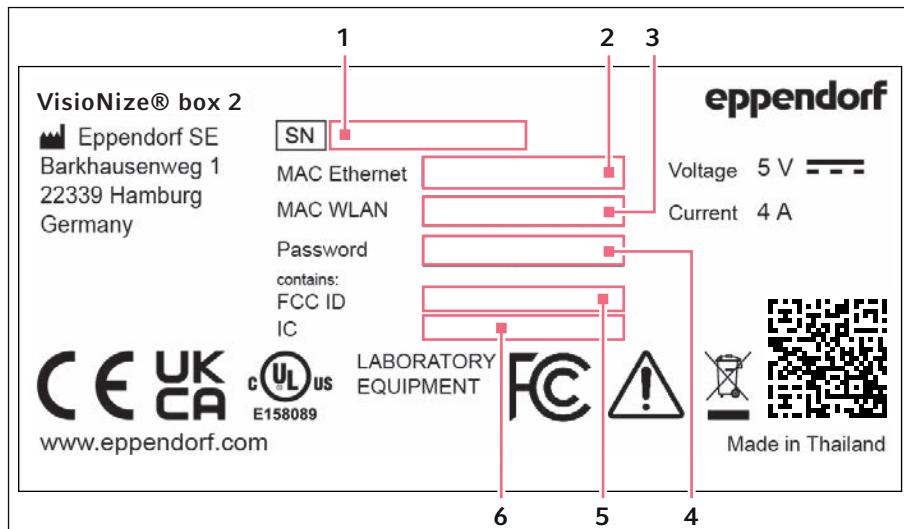
1	Serial number	4	Password for accessing the device settings via the web browser
2	Ethernet MAC address		
3	WLAN MAC address (for the VisioNize box 2 only)	5	Federal Communications Commission Identification (for the VisioNize box 2 only)
		6	Industry Canada Identification (for the VisioNize box 2 only)

Certification and conformity marks and symbols on the device

Information	Meaning
CE	This device has been tested by the manufacturer and meets all EU-wide safety, health and environmental protection requirements.
UK CA	This device has been tested by the manufacturer with regard to the legal requirements for the UK market and meets all requirements for market approval.

Information	Meaning
c(UL)US LISTED E158089	Certification mark indicating that representative samples of the device have been tested by Underwriters Laboratories (UL) against safety standards recognized by the USA and Canada.
FC	Certification mark indicating electromagnetic compatibility in accordance with the requirements of the Federal Communications Commission (FCC, USA)
⚠	Observe the safety-relevant information in the manual.
(crossed-out wheeled bin symbol)	Mark indicating the conformity of waste electrical and electronic equipment with the DIN EN 50419 standard in accordance with Directive 20212/19/EU of the European Union.

4 Installation

4.1 Preparing installation

- Access to the VisioNize Lab Suite is available.
- A power connection corresponding to the specifications of the power supply unit is available.
- An active network socket for the local area network is available near the device.
- A standard Ethernet cable is available.
- A suitable connecting cable from the VisioNize box 2 or VisioNize box 2 cable to the laboratory device is available.
- The laboratory device has the required software version.

More information on the connecting cable and the software version can be found at ∜ *Chapter 4.2.5 "Compatible devices" on page 22*.

Information on required firewall settings can be found at https://labsuite.visionize.com/compatibility-list.html.

4.1.1 Checking connection requirements

All prerequisites must be met before the device can be installed and put into operation.

Checking the electrical connection

1. Check whether the electrical connection meets the following requirements:
   - The mains/power connection matches the details on the name plate.
   - An earth/grounded socket with a PE conductor is available.
   - The earth/grounded socket is always freely accessible.
   - A residual current circuit breaker is available and accessible.

4.1.2 Checking the location

> **⚠ NOTICE! Disruption of the radio link**
>
> For devices with class A noise emission in accordance with EN IEC 61326-1/EN 55011: The device cannot ensure adequate protection of radio reception in residential areas and domestic environments. The device may cause radio interference in residential or domestic environments.
>
> – Do not use the device in residential or domestic environments.

1. Check that the location meets the following requirements:
   - The ambient conditions correspond to the specifications in the Technical data chapter
   - Non-explosive environment
2. Check that the location is protected from the following:
   - Heat sources
   - Sparks
   - Open fire
   - Direct sunlight
   - UV radiation
   - Strong electromagnetic radiation

All requirements must be met before the device can be installed and put into operation.

4.1.3 Checking the delivery and packing

1. Check whether the packages indicated on the delivery note match the packages actually delivered.
2. Check the packing for transport damage.
3. Report any visible damage to your Eppendorf partner.

4.1.4 Checking the delivery package

1. Check that the supplied components match the specifications of the delivery package.
2. If any parts are missing, contact your Eppendorf partner.

Scope of delivery

Quantity	Description
1	VisioNize box 2 or VisioNize box 2 cable
1	Power adapter
1	Installation guide

Keep the original packing for shipping and storing the device.

4.2 Performing the installation

4.2.1 Installing the device

The device may only be connected to the local area network and put into operation by a network administrator or trained personnel.

A incompatible communications structure will result in laboratory device malfunctions.

- Only connect approved laboratory devices.
- If the device is disconnected from your laboratory device and connected to a different laboratory device, data loss may occur.

1. Connect the device to the power line using the power adapter.

2. Connect the device to the network socket with a standard Ethernet cable. The VisioNize box 2 can also be connected to the network via WLAN. For further information, please refer to ♦ *Chapter 5.1.4 "Configuring the WLAN (for VisioNize box 2 only)" on page 30*.

3. Connect your laboratory device without a network connection to the VisioNize box 2 or VisioNize box 2 cable with a suitable connecting cable.

To integrate the VisioNize box 2 and VisioNize box 2 cable, a user account is required for the VisioNize Lab Suite. More information on setting up a user account can be found on the Internet at https://www.eppendorf.com/visionize.

4.2.2 Registering the device in the VisioNize Lab Suite

1. Open the web browser on a computer or mobile device with Internet access.

2. Enter the following URL for the VisioNize Internet page from Eppendorf: https://www.eppendorf.com/visionize.

3. Go to the *Log in* button.

4. Log into the VisioNize Lab Suite with the VisioNize access data.

5. Open *Device Management*.

6. Click on *Add device*.

7. Enter the serial number with no spaces and in capital letters.

The serial number can be found on the name plate of the VisioNize box 2 or VisioNize box 2 cable.

The device appears in the VisioNize Lab Suite in *Device Management*.

4.2.3   Connecting the device to the power supply

Prerequisites:
- The device has been installed according to this operating manual.
- The device has been acclimatized for at least 6 h.
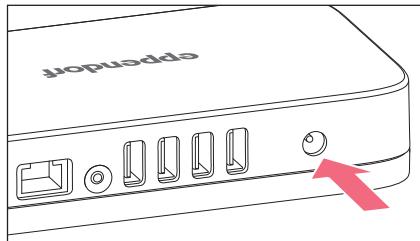
1. Select the earth/grounded socket adapter that matches your power line connection.

2. Attach the earth/grounded socket adapter to the power adapter according to the enclosed instructions.

3. Connect the power adapter to the rear of the device.

4. Connect the power adapter to the earth/grounded socket.

4.2.4   Connection diagram
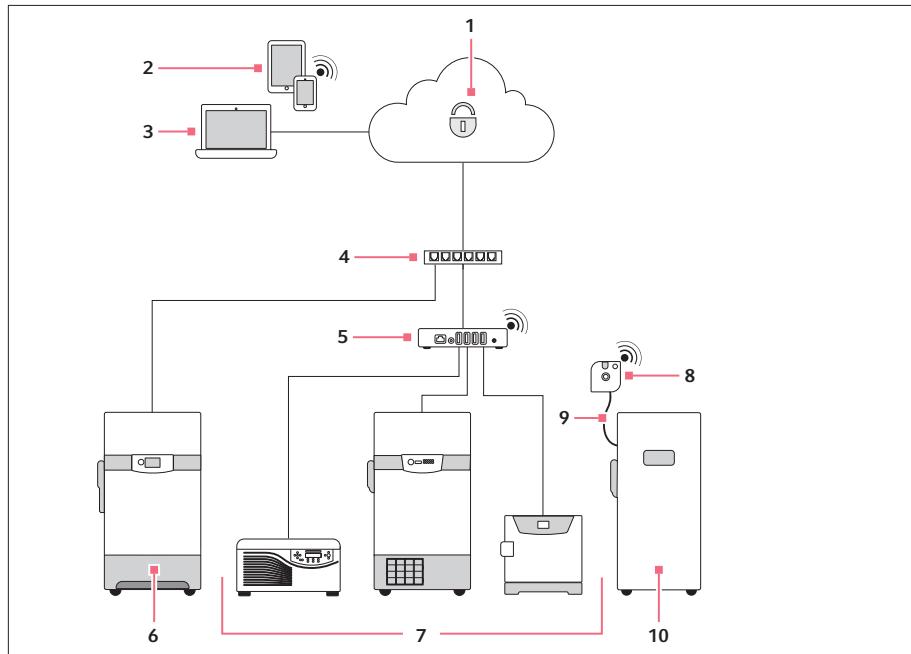
1	VisioNize Lab Suite	6	Devices compatible with VisioNize box 2
2	Mobile devices		
3	Computer	7	Eppendorf devices compatible with VisioNize
4	Corporate network		
5	VisioNize box 2 or VisioNize box 2 cable	8	VisioNize sense environmental monitor (for use with the VisioNize box 2)
		9	VisioNize sense temperature sensor (for use with the VisioNize box 2)
		10	Example device

4.2.5 Compatible devices

The listed devices can exchange data via the VisioNize box 2 or the VisioNize box 2 cable. For this purpose, the devices must have at least the specified software version and be connected to the VisioNize box 2 or the VisioNize box 2 cable via the corresponding cables. The integration of older freezers, shakers, and incubators in VisioNize requires a service upgrade by the authorized Eppendorf Service. Contact your local Eppendorf partner to have an appropriate service upgrade carried out.

VisioNize Lab Suite device list

Device type	Device	Minimum software version	Required connection cables
Centrifuges	Centrifuge 5910 R	V1.4	5428 850 280
	Centrifuge 5424 R	V2.2	5428 850 280
	Centrifuge 5425	V1.1	1006 077 001
	Centrifuge 5425 R	V1.0	5428 850 280
	Centrifuge 5427 R	V1.8	5428 850 280
Mixers and temperature control systems	ThermoMixer C	V3.5.0	5382 000 201
	ThermoMixer F0.5		
	ThermoMixer F1.5		
	ThermoMixer F2.0		
	ThermoMixer FP		
	ThermoMixer C		
Shakers	Innova 40	B/F	1006 071 003
	Innova 42		
	Innova 43		
	Innova 44		
ULT freezers	CryoCube F740 series	V3.10	1006 074 002
	CryoCube F101 series	V4.1	1006 075 009 F652 999 007
	CryoCube F440 series		
	CryoCube F570 series		
	CryoCube FC660 series		

Device type	Device	Minimum software version	Required connection cables
	Innova U101		
	Innova U535		
	Innova U725		
	U570-G		
	U725-G		
	Premium U410		
	Premium U570		
Thermocyclers	Mastercycler nexus		
	Mastercycler nexus gradient		
	Mastercycler nexus flat		
	Mastercycler nexus X2	V3.6.9.0	1006 073 006
	Mastercycler nexus GX2		
	Mastercycler nexus X1		
	Mastercycler nexus GSX1		
Detection devices	BioSpectrometer basic		
	BioSpectrometer kinetic		
	BioSpectrometer fluorescence	V4.3.6.0	1006 073 006
	BioPhotometer D30		
Incubators	New Brunswick Galaxy 48R	BA2201181115	1006 071 003
	New Brunswick S41i	Display Board: V2.03 IO Board: V1.6.2	1006 073 006 with 1006 076 005
	CellXpert C170	V1.7.1	1006 073 006 with 1006 076 005

4.2.6 Connecting compatible devices

Connecting centrifuges

1. Remove the USB cable from the centrifuge.

2. Switch on the centrifuge.

3. Connect the USB cable to the centrifuge.

Connecting devices from the Innova 4X family

Before connecting the devices to the VisioNize box 2 or the VisioNize box 2 cable, install the service upgrade with the order no. 0082 080.240.

To operate devices from the Innova 4X family on the VisioNize box 2 or the VisioNize box 2 cable, set the following values for the RS-232 port.

- Port mode: Slave
- Baud rate: 9600

Connecting freezers

The F740 freezer family can be connected to the VisioNize network without any modification.

Other freezers require the service upgrade with the article number 0082 070.096 together with the spare parts 1006 075.009 and F652 999.007 before connecting to the VisioNize box 2 or the VisioNize box 2 cable.

Connecting the Mastercycler nexus and the BioSpectrometer family

To operate the Mastercycler nexus or a BioSpectrometer with the VisioNize box 2 or the VisioNize box 2 cable, carry out the following steps.

1. Update the software.

2. Activate remote access for the thermocycler (see Mastercycler nexus operating manual).

3. Integrate the thermocycler or the BioSpectrometer into the local network.

- If all devices are assigned to the same subnet, the VisioNize box 2 or the VisioNize box 2 cable automatically recognizes the thermocycler or the Bio-Spectrometer. If, in exceptional cases, VisioNize cannot assign a device automatically, you have to assign the device manually afterwards.
- Older BioSpectrometers do not have an Ethernet connection.
- After a software update, the Mastercycler nexus is only recognized by VisioNize after a restart.

Connecting incubators

Before connecting to the VisioNize box 2 or to the VisioNize box 2 cable, the incubators Galaxy 48 R and New Brunswick S41i require the service upgrade with the order no. 0082 060.096.

Galaxy 48R

1. Connect the RS232 connector of the connecting cable to the Galaxy 48R.

2. Connect the USB connector of the connecting cable to the VisioNize box 2 or the VisioNize box 2 cable.

New Brunswick S41i

The VisioNize box 2 or the VisioNize box 2 cable can manage only one Ethernet-to-USB adapter. Connecting multiple adapters is not supported.

1. Connect the New Brunswick S41i and the Ethernet-to-USB adapter to the Ethernet cable.

2. Connect the VisioNize box 2 or the VisioNize box 2 cable and the Ethernet-to-USB adapter to the USB cable.

Connecting several New Brunswick S41i

The VisioNize box 2 or the VisioNize box 2 cable manages a maximum of 4 devices.

1. Connect the incubators to an Ethernet switch.

2. Connect the Ethernet switch to the Ethernet-to-USB adapter.

3. Connect the VisioNize box 2 or the VisioNize box 2 cable and the Ethernet-to-USB adapter to the USB cable.

4. In the incubators' network settings, select *ZeroConf*.
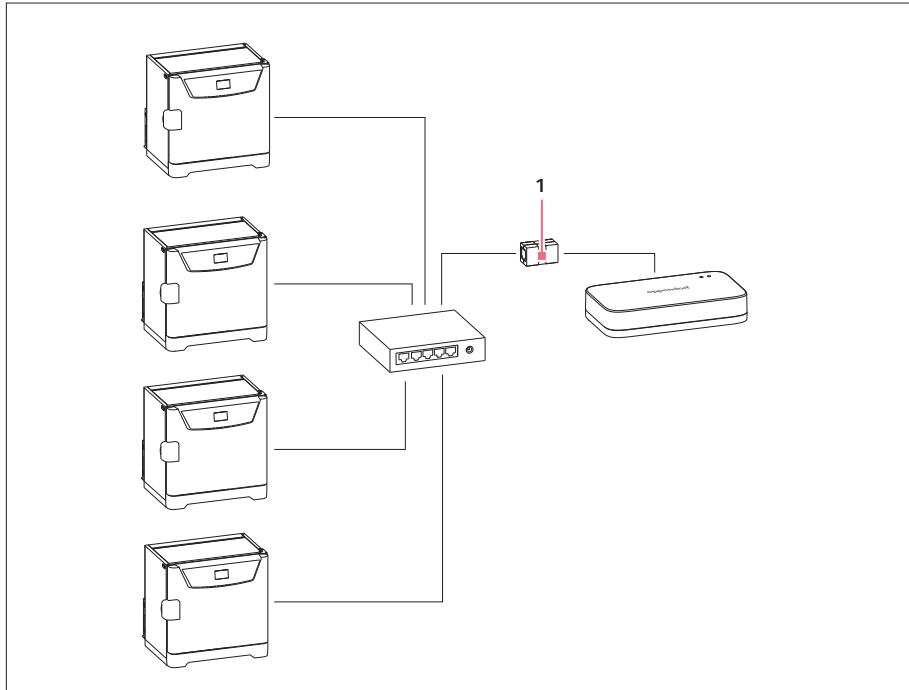
1   Ethernet-to-USB adapter

**Connecting several CellXpert C170**

The VisioNize box 2 or the VisioNize box 2 cable manages a maximum of 4 devices.

1. Connect the incubators to an Ethernet switch.

2. Connect the Ethernet switch to the Ethernet-to-USB adapter.

3. Connect the VisioNize box 2 or the VisioNize box 2 cable and the Ethernet-to-USB adapter to the USB cable.
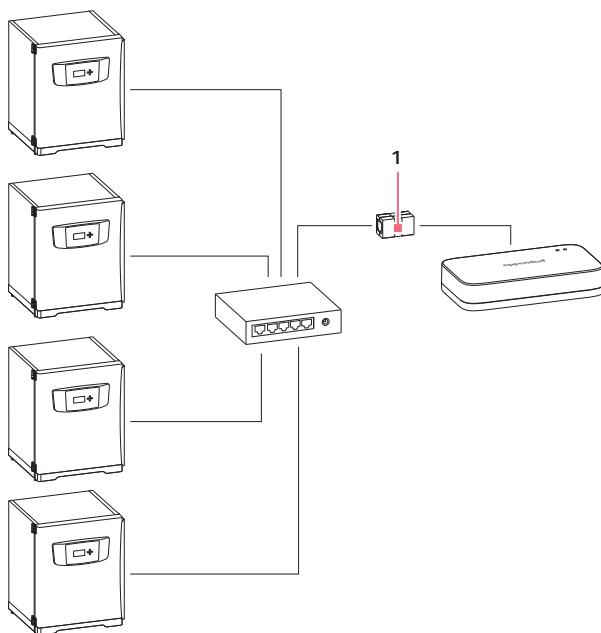
1   Ethernet-to-USB adapter

5 Operation

5.1 Preparing the device for use

5.1.1 Switching on the device

This device does not have a mains/power switch. As soon as the mains/power adapter connected to the device is supplied with power, the device also receives power.

5.1.2 Logging in to the device via a browser

General data, network parameters and connected laboratory devices are managed via a web interface. If a computer is connected to the same network as the VisioNize box 2 or the VisioNize box 2 cable, the VisioNize box 2 or the VisioNize box 2 cable is configured using a web browser. If using the web interface, the latest versions of the Chrome or Firefox web browsers should be used.

Material:
- A computer with network access
- A computer with Internet access

Prerequisites:
- The device is connected to the network.
- The device is connected to the power supply.

1. Enter the following address in the address bar of your Internet browser: epDevice + serial number; example: http://epDevice1008AB900001

   The login window opens.

2. The individual password for accessing the device settings can be found on the name plate.

3. Enter the password in the *Enter user passwort* window.

   The *Dashboard* with the *Selected devices* page opens.

5.1.3 Configuring VisioNize box 2 or VisioNize box 2 cable

The VisioNize box 2 and the VisioNize box 2 cable have their own web interface, which works in a similar way to a WLAN router. You can use this interface to change the general information and network settings and to manage the connected laboratory devices.

Prerequisites:
- The requirements stated in ↳ *Further information on page 17* are met.
- The VisioNize box 2 or the VisioNize box 2 cable is connected to the power line and to the Internet.
- There is a personal computer or a mobile device with Internet access in the same network as the VisioNize box 2 or the VisioNize box 2 cable.

1. Open the web browser on a computer or mobile device with Internet access.

2. To access the web interface of the VisioNize box 2 or the VisioNize box 2 cable, enter the serial number or IP address of the VisioNize box 2 or the VisioNize box 2 cable in the address bar of the web browser as shown below:

   Serial number:
   - https://epDevice<serial number_VisioNize_box>/login
     Example: http://epDevice1008AB900001/login

   IP address:
   - https://<IP address_VisioNize_box>/login
     Example: http://192.168.1.74/login

   A dialog window opens.

3. Identify the device-specific password on the name plate.

4. Enter the device-specific password.

   The web interface opens.

5. If necessary, customize the settings of the interface. You can find the recommended settings in the following table.

Dashboard	Overview of all connected and available devices
Settings > General	You can rename the VisioNize box 2 or the VisioNize box 2 cable to make it easier to identify the device within your IT network.
Settings > General > Date & Time	Overview of the time zone settings of the VisioNize box 2 or the VisioNize box 2 cable and the web browser used. We recommend synchronizing the time zones of your end device with those of the VisioNize box 2 or the VisioNize box 2 cable to ensure that the data collected from the connected devices is processed correctly in the VisioNize Lab Suite. To do this, select *Save browser time to device*.

Settings > General > Password	We recommend setting a personal password for the web interface of the VisioNize box 2 or the VisioNize box 2 cable to restrict access.
Settings > Network	Entering the access data for the company WLAN Access to network settings for LAN and WLAN (DNS/NTP).
Settings > General > Factory settings	To reset the VisioNize box 2 or the VisioNize box 2 cable to factory settings, select *Reset factory settings*. All settings entered manually will be lost.

5.1.4 Configuring the WLAN (for VisioNize box 2 only)

Prerequisites:
- You have logged in to the web interface of the device.
- The access data for the company WLAN is available.

1. Navigate to the *Settings > Network* menu item.

2. Enter the WLAN ssid and the WLAN password of your company WLAN under *Wlan settings > Access data*.

6 Maintenance

6.1 Cleaning

Aggressive cleaning agents or sharp objects can damage the surface of the device.
- Do not use any corrosive cleaning agents, solvents or abrasive polishing agents.
- Take note of the material specifications.
- Clean the device with a soft cloth.
- Do not clean the device with Acetone or organic solvents that have a similar effect.

Liquid in the interior of the device may enter the electronics and cause a short-circuit. The electronics of the device may be damaged.
- Switch off the device.
- Disconnect the device from the voltage supply.
- Contact an authorized service technician.
- Only put the device into operation if the service technician has confirmed that the device interior is dry.

1. Switch off the device.

2. Disconnect the device from the mains/power line.

3. Remove contamination on the outside using a mild cleaning agent or isopropanol (70 %).

4. Remove cleaning agent residues using a damp cloth.

5. Allow the device to dry.

6. Connect the dry device to the mains/power line and put it into operation.

6.2 Updating VisioNize box 2 or VisioNize box 2 cable

To ensure optimum performance, it is essential that the device software version of the VisioNize box 2 or the VisioNize box 2 cable is always up to date.

The default setting for the updating process of the device software version is via OTA. A new device software version is provided via the cloud server of VisioNize and can be updated in the VisioNize Lab Suite in the *Device Management*.

The device software version of the VisioNize box 2 or the VisioNize box 2 cable can be found in the VisioNize Lab Suite in the *Device Management* or in the web interface of the VisioNize box 2 or the VisioNize box 2 cable under *Info > System information*.

During a restart of the VisioNize box 2 or the VisioNize box 2 cable, no data from the connected devices is collected.

If the VisioNize box 2 or the VisioNize box 2 cable is reset to factory settings during a restart, adjust the settings in the web interface.

In the web interface under *Settings > Firmware update > Automatic update*, you can set whether the device software update should generally be updated via OTA or manually. When selecting *Auto*, the update will be executed via OTA and thus via the VisioNize Lab Suite. When selecting *Manual*, you will have to start the update process manually via the web interface of the VisioNize box 2 or the VisioNize box 2 cable.

Updating via OTA

Prerequisites:
- The VisioNize box 2 or the VisioNize box 2 cable is connected to the power line and to the Internet.
- You are logged in to the VisioNize Lab Suite as an administrator or lab manager.
- The *Device Management* has been opened.
- A new device software version is available. This is displayed in the VisioNize Lab Suite in the *Device Management* when opening the detail view of the VisioNize box 2 or the VisioNize box 2 cable.

1. In the *Device Management*, click on the VisioNize box you want to update.

2. Next to the current software version, click on *Update available*.

   A dialog window opens showing all devices of the VisioNize box 2 for which the new device software is available in their respective organization.

3. Confirm that the new device software is to be installed on the VisioNize box 2 or the VisioNize box 2 cable.

   During the update process, the status LED is lit in orange.
   The VisioNize box 2 will restart once or several times.
   The status LED will flash in green once the new device software version has been installed successfully.
   The status LED will turn blue again after the update process is completed.

Manual update

If it is not possible to update the device software version via OTA, you can update it manually.

Prerequisites:
- The VisioNize box 2 or the VisioNize box 2 cable is connected to the power line and to the Internet.

1. Download the latest device software version from the website https://www.eppendorf.link/software-downloads.

   The download contains a ZIP file.

2. Unpack the ZIP file to an empty USB storage medium (FAT32 format).

3. Insert the USB storage medium into one of the 4 USB-A ports of the VisioNize box 2 or the VisioNize box 2 cable.

   The update process starts automatically.

4. If the update is not started automatically, click on *Settings > Firmware update* in the web interface.

5. Click on *Install Firmware*.

   During the update process, the status LED is lit in orange.

   The VisioNize box 2 or the VisioNize box 2 cable will restart once or several times.

   The status LED will flash in green once the new device software version has been installed successfully.

   The status LED will turn blue again after the update process is completed.

6. Remove the USB storage medium.

7 Troubleshooting

7.1 Device-specific messages

Error messages on the device (LED)

LED display	Possible cause	Solution
During the update: The left LED changes from yellow to red.	• The update process was not completed.	• Download the latest software update. Install the update. • Use another USB storage medium.
The left LED lights up in red.	Various causes	• Restart the device. • Download the latest software update. Install the update. • Reset the device to its factory settings. To do this, use the *Reset factory settings* function in the web interface of the VisioNize box 2. • Contact your local Eppendorf partner.

7.2 Error messages

Symptom/message	Possible cause	Solution
The web interface is not found.	Various causes	Restart the VisioNize box 2 or the VisioNize box 2 cable.
		Contact the system administrator.
		Contact your local Eppendorf partner.
The laboratory device is not displayed in the web interface.	The laboratory device is not located in the same network as the VisioNize box 2 or the VisioNize box 2 cable.	Connect the laboratory device to the same network as the VisioNize box 2 or the VisioNize box 2 cable.
	The laboratory device is not connected correctly.	Check the cables and connectors between the devices.

Symptom/message	Possible cause	Solution
	The laboratory device is not switched on.	Switch on the laboratory device.
	The laboratory device is not compatible with the VisioNize box 2 or the VisioNize box 2 cable.	Only connect compatible Eppendorf laboratory devices (see ⅌ *Chapter 4.2.5 "Compatible devices" on page 22*).
	The software version of the laboratory device is not compatible with the VisioNize box 2 or the VisioNize box 2 cable.	Update the software of the laboratory device.
The laboratory device is not displayed in VisioNize.	Various causes	Restart the VisioNize box 2 or the VisioNize box 2 cable.
		Contact the system administrator.
		Contact your local Eppendorf partner.
The software update does not work automatically.	The software version on the VisioNize box 2 or on the VisioNize box 2 cable is newer or the same as the software version on the USB storage medium.	Download and install the latest software update for the VisioNize box 2 or the VisioNize box 2 cable.
		To install an older software version on the VisioNize box 2 or the VisioNize box 2 cable, use the manual update function in the web interface of the VisioNize box 2 or the VisioNize box 2 cable.
Interrupted communication between the laboratory device and VisioNize via the VisioNize box 2 or the VisioNize box 2 cable	Various causes	Check the cables and connectors between the individual components.
		Restart the VisioNize box 2 or the VisioNize box 2 cable and the laboratory device.
		Carry out a software update with the latest version for the VisioNize box 2 or the VisioNize box 2 cable.
		Restore the factory settings in the web interface of the VisioNize box 2 or the VisioNize box 2 cable using the *Reset factory settings* function.

Symptom/message	Possible cause	Solution
		Contact the system administrator.
		Contact your local Eppendorf partner.

8 Transport

8.1 Decontamination before shipment

⚠️ **WARNING! Contamination**

Shipping or storing a contaminated device or contaminated accessories may lead to contamination of persons or cause damage to health.

– Decontaminate the device and accessories before shipping or putting them into storage.

Hazardous substances:

- solutions that are hazardous to health
- potentially infectious agents
- organic solvents and reagents
- radioactive substances
- proteins that are hazardous to health

1. Observe the notes on the "decontamination certificate for returned goods." It is available as PDF document on our website.

2. Enter the serial number of the device in the decontamination certificate.

3. Enclose the completed "decontamination certificate for returned goods" with the device.

4. Send the device to Eppendorf SE or to an authorized service.

9 Disposal

9.1 Legal regulations

EU countries

In EU member states, electrical and electronic equipment must be disposed of in accordance with Directive 2012/19/EU. This directive has been passed into national law by all EU member states.

Electrical and electronic equipment which has been put on the market after August 13, 2005 must be marked in a special way. According to the European standard EN 50419 the following symbol can be used to mark this equipment:

In the EU member states, batteries and rechargeable batteries must be disposed of in accordance with Directive 2006/66/EC. This directive has been passed into national law by all EU member states.

Non-EU countries

Non-EU countries have country-specific standards for the disposal of waste electrical and electronic equipment and the disposal of batteries and rechargeable batteries.

Notes on disposal of electrical and electronic equipment in the United Kingdom

In the United Kingdom, the disposal of electrical and electronic equipment is governed by national regulations which are based on national legislation from 2013, The Waste Electrical and Electronic Equipment Regulations 2013 (as amended), which apply to these devices.

According to these regulations, any electrical and electronic equipment that was put on the market after August 13, 2005 in the business-to-business sector – which applies to this product – must no longer be disposed of with household waste. They are marked with the following symbol to indicate this:

As the disposal regulations may differ from one country to another, please contact your supplier for more information.

9.2   Preparing for disposal

Preparing disposal according to legal regulations

 For information on the legal regulations that apply in your country, contact your local authority and your Eppendorf partner.

 Dispose of non-decontaminable devices as hazardous waste.

1. Check which legal regulations apply to disposal in your country.

2. Choose a certified waste disposal company or contact your Eppendorf partner.

Removing batteries and rechargeable batteries

1. Check whether your device contains permanently installed batteries or rechargeable batteries.

2. Only remove the batteries and rechargeable batteries that are not permanently installed.

3. Dispose of the removed batteries and rechargeable batteries in accordance with the legal regulations of your country.

Creating a decontamination certificate

Prerequisites:
  • The device has been decontaminated.

1. Download the decontamination certificate from the website
   https://www.eppendorf.link/decontamination/.

2. Complete the decontamination certificate.

9.3 Handing over the device to the disposal company

1. Inform the disposal company of any hazards posed by the device, e.g., locking
   devices, flammable substances.

2. Hand over the device and the decontamination certificate to the certified disposal
   company.

10   Technical data

10.1   Dimensions

Width	168 mm
Height	34.5 mm
Depth	95 mm

10.2   Weight

Weight	196 g

10.3   Mains/power supply

Mains/power adapter

Input voltage	100 V – 240 V, ±10 %
Frequency	50 Hz – 60 Hz, ±5 Hz
Output voltage	DC 5 V, ±6 %
Maximum output	20 W
Power consumption	• Maximum: 24 W • Standby (at 230 Vac, without load): < 0.1 W
Overvoltage category	II
Pollution degree	2 (IEC 664)
Protection class	II

VisioNize box 2 / VisioNize box 2 cable

Input voltage	DC 5 V, ±6 %
Maximum current consumption	DC 4 A
Maximum output	20 W
Power consumption	• Normal operation without power load on the USB ports: 4 W • Standby: 1.25 W

USB port

Power load, maximum per port	500 mA

10.4   Ambient conditions

Environment	For indoor use only
Ambient temperature	15 °C to 35 °C
Relative humidity	10 %– 75 %, non-condensing
Atmospheric pressure	79.5 kPa – 106 kPa
Altitude	Use up to an altitude of 2000 m above MSL.

11   Ordering information

11.1   Accessories

Description	Order no.
CO2 Incubator Services - Upgrade Services O2 upgrade incl. CellXpert® 170(i)	0082 060 096
Interface RS-485 with PCB and cable	F652999007
Shaker Service	0082 080 240
ULT Freezer Services	0082 070 096
USB cable type A/B length 3 m	5428 850 280
VisioNize® box 2 Hardware hub that serves as connection point for VisioNize sense equipment and additionally connects up to four qualified Eppendorf devices. Features WLAN connectivity.	1008 000 006
VisioNize® box 2 cable Hardware hub that serves as connection point for up to four qualified Eppendorf devices. without radio module	1008 000 014
VisioNize® box adapter for shakers and incubators	1006 071 003
for CryoCube® F740h	1006 074 002
for CO2 incubators	1006 076 005
for Eppendorf ThermoMixer® C and F models	5382 000 201
VisioNize® box adapter for freezers (CryoCube® and Innova® models)	1006 075 009
VisioNize® cable Ethernet, length 5 m	1006 073 006

Description	Order no.
VisioNize® sense environmental monitor a wireless, rechargeable multi-sensor unit (ambient temperature, humidity, pressure & light)	ESS1000002
VisioNize® sense temperature sensor PT-100 extension that can measure temperature of any device (including ULT Freezers) within the range of +60 to -90 °C.	ESS1000003

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