USER MANUAL

TOSIBOX® Lock 150
TOSIBOX® 175
TOSIBOX® Lock 210
TOSIBOX® Lock 250
TOSIBOX® Lock 500
TOSIBOX® 610
TOSIBOX® 650
TOSIBOX® 670
TOSIBOX® 675
TOSIBOX® Key

Version 2.7

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Congratulations for choosing TOSIBOX® solution! It consists of modular components that offer unlimited expandability and flexibility. All products are compatible with each other as well as internet connection, operator, and device agnostic. The system works both in internal and external networks.

- TOSIBOX® Key is a client used to access the network.
- TOSIBOX® Node is a router with firewall sharing access to devices.

In physical matching, the Key is inserted to the Lock's USB port. The devices exchange their security certificates (and public keys). This trust relationship is the basis for all communication happening afterwards.

TOSIBOX creates direct VPN tunnel between the physical devices. Only trusted devices can access the network.

TOSIBOX is globally audited, patented and performs at the highest security levels in the industry. The technology is based on two-factor authentication, automatic security updates and the latest encryption technology.

TECHNICAL SUPPORT

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TOSIBOX GLOBAL SUPPORT

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1. REGULATORY INFORMATION

1.1 TOSIBOX® NODE INTENDED USE

The Lock is used for controlling other devices remotely over the Internet via a VPN connection. To be installed into a DIN rail, inside a cabinet with the controlled devices. Alternatively, the Lock may be standing on its rubber feet on a table or a shelf. The product conformity with the requirements is guaranteed only when using the antennas supplied with the product. The use of other antennas will void the conformity and is not allowed.

Lock 150: Office and residential environment

Norway: Use of this radio equipment (Wi-Fi) is not allowed in the geographical area within a radius of 20 km from the centre of Ny-Ålesund, Svalbard, Norway.

Lock 250: Office, residential and light industrial environment

Norway: Use of this radio equipment (Wi-Fi) is not allowed in the geographical area within a radius of 20 km from the centre of Ny-Ålesund, Svalbard, Norway.

Lock 500: Office, residential and light industrial environment

Norway: Use of this radio equipment (Wi-Fi) is not allowed in the geographical area within a radius of 20 km from the centre of Ny-Ålesund, Svalbard, Norway.

1.2 IMPORTANT NOTICE FOR WIRELESS OPERATION OF TOSIBOX® NODE

Because of the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices are used in a normal manner with a well-constructed network, TOSIBOX® Node with cellular modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property.

Tosibox Oy and its affiliates accept no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using TOSIBOX® Node with cellular modem, or for failure of the TOSIBOX® Node with cellular modem to transmit or receive such data.

1.3 SAFETY AND HAZARDS

At least 20 cm separation distance between the antennas and persons must be maintained at all times.

Do not operate your Node with internal or external cellular modem:

- In areas where blasting is in progress
- Where explosive atmospheres may be present including refuelling points, fuel depots, and chemical plants
- Near medical equipment, life support equipment, or any equipment which may be susceptible to any form of radio interference. In such areas, the Node and the cellular modem MUST BE POWERED OFF. Otherwise, the cellular modem can transmit signals that could interfere with this equipment.
- In an aircraft, the Node and the cellular modem MUST BE POWERED OFF. Otherwise, the Node and the cellular modem can transmit signals that could interfere with various onboard systems and may be dangerous to the operation of the aircraft or disrupt the cellular network. Use of a cellular phone in an aircraft is illegal in some jurisdictions. Failure to observe this instruction may lead to suspension or denial of cellular telephone services to the offender, or legal action or both. Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. The Node and the cellular modem may be used normally at this time.

1. INFORMATIONS RÉGLEMENTAIRE

1.1 DOMAINE D'APPLICATION DU TOSIBOX® NODE

Le Lock permet de contrôler des équipements distants à travers Internet en créant une connexion VPN. Il peut être installé sur un rail DIN dans une armoire à côté des équipements à contrôler. Il peut aussi être posé sur ses patins en caoutchouc sur une table ou une étagère. La conformité des caractéristiques de l'équipement est seulement garantie avec l'installation des antennes livrées. L'utilisation d'autre antenne annulera la conformité et n'est pas autorisée.

Lock 150 : environnement de bureau et résidentiel

Norvège : l'utilisation radio (Wi-Fi) de cet équipement n'est pas autorisée dans une zone géographique située dans un rayon de 20 km à partir du centre de Ny-Ålesund, Svalbard, Norvège.

Lock 250 : environnement de bureau, résidentiel et industriel léger

Norvège : l'utilisation radio (Wi-Fi) de cet équipement n'est pas autorisée dans une zone géographique située dans un rayon de 20 km à partir du centre de Ny-Ålesund, Svalbard, Norvège.

Lock 500 : environnement de bureau, résidentiel et industriel léger

Norvège : l'utilisation radio (Wi-Fi) de cet équipement n'est pas autorisée dans une zone géographique située dans un rayon de 20 km à partir du centre de Ny-Ålesund, Svalbard, Norvège.

1.2 INFORMATION IMPORTANTE POUR L'UTILISATION DU RÉSEAU SANS FIL DU TOSIBOX® NODE

En raison de la nature des communications sans fils, les données transmises et reçues ne peuvent être garanties. Les données peuvent être retardées, corrompues (avoir des erreurs) ou être complètement perdues. Bien que les pertes ou les retards de données soient rares lorsque les équipements sont utilisés dans des conditions normales dans des réseaux construits avec les règles de l'art, le TOSIBOX® Node avec un modem cellulaire ne devrait pas être utilisé dans les cas où les erreurs de transmission ou de réception de données pourraient entrainer des dommages de quelque nature que ce soit pour l'utilisateur ou pour une tierce partie, incluant mais ne limitant pas les blessures physiques, la mort ou la perte de jouissance.

Tosibox Oy et ses filiales ne pourront être tenues pour responsables des dommages de quelque nature que ce soit résultant de retards ou d'erreurs dans les données transmises ou reçues en utilisant un TOSIBOX® Node avec modem cellulaire ou des problèmes créés par l'équipement TOSIBOX® Node avec modem cellulaire lors de transmission ou réception de ces données.

1.3 SÉCURITÉ ET DANGERS

Une distance minimale de 20 cm entre les antennes et les personnes doit être respectée à tout moment.

N'utilisez pas votre Node avec un modem cellulaire interne ou externe :

- Dans les zones des explosions sont est en cours
- Où des atmosphères explosives peuvent être présentes, y compris des points de ravitaillement en carburant, des dépôts de carburant et des usines chimiques
- À proximité d'équipements médicaux, d'équipements de survie, ou de tout équipement susceptible de subir toute forme d'interférence radio. Dans ces zones, le Node et le modem cellulaire DOIVENT ÊTRE ÉTEINTS, sous peine d'émission de signaux par le modem cellulaire susceptibles d'interférer avec ces équipements.
- Le Node et le modem cellulaire DOIVENT ÊTRE ÉTEINTS dans un avion. Le Node et le modem cellulaire sont susceptibles de transmettre des signaux pouvant brouiller les systèmes de embarqués pouvant nuire au bon fonctionnement de l'appareil ou interférer avec les réseaux radio.
- L'utilisation d'un téléphone cellulaire dans un avion est illégale dans certaines juridictions. Le non-respect de cette règle peut entraîner la suspension ou le refus des services de téléphonie cellulaire pour le contrevenant, ou des poursuites judiciaires, ou les deux. Certaines compagnies aériennes peuvent autoriser l'utilisation de téléphones cellulaires lorsque l'avion est au sol et que la porte est ouverte. Le Node et le modem cellulaire peuvent être utilisés normalement à ce moment.

2. OVERVIEW TO TOSIBOX® KEY AND NODES (LOCKS)

2.1 TOSIBOX® KEY

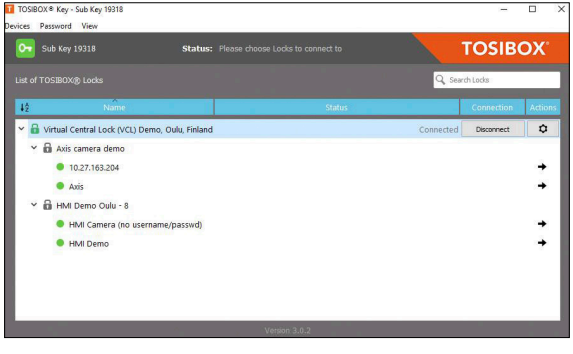
TOSIBOX® Key is an intelligent USB-connected device that contains a secure cryptoprocessor. The Key is used to establish a secure connection to the Lock. All TOSIBOX® Keys and Nodes are interoperable.

SUB KEY

An additional Key that has restricted access rights.

BACKUP KEY

A duplicated backup copy of the Key. All matched Keys and Nodes are automatically synchronized between the original Key and the Backup Key.



Key user interface (installed from the Key device). In the image you can see TOSIBOX® Node devices which are matched with the TOSIBOX® Key and the network devices connected to each TOSIBOX® Node.

2.2 TOSIBOX® NODE (LOCK)

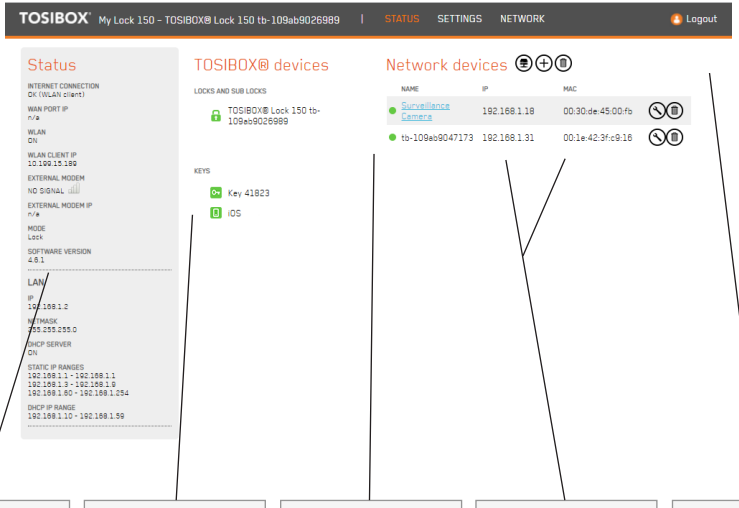
TOSIBOX® Node is a device that accepts remote connections from matched Keys and creates private and secure access to connected network devices. The network devices that are connected to the Node´s LAN port are automatically found. The Node automatically distributes IP addresses for the Keys, Sub Keys and the network devices connected to LAN port(s) of the Node. The Node can also control network devices with fixed IP addresses.

Lock settings can be changed via service port, encrypted TOSIBOX® VPN connection local network

SUB NODE

A Sub Node is a Node that has been converted to Sub Node mode. When connecting two Nodes to each other, one must be in Sub Node mode of operation.

LOCK USER INTERFACE



Status bar shows general information.

Locks and Keys

Green: Connected

Red: Disconnected

Remotely controlled devices

Green: Connected

Red: Disconnected

Details of the remotely controlled devices

Login using “admin” user.
Password can be found on the bottom of the Lock

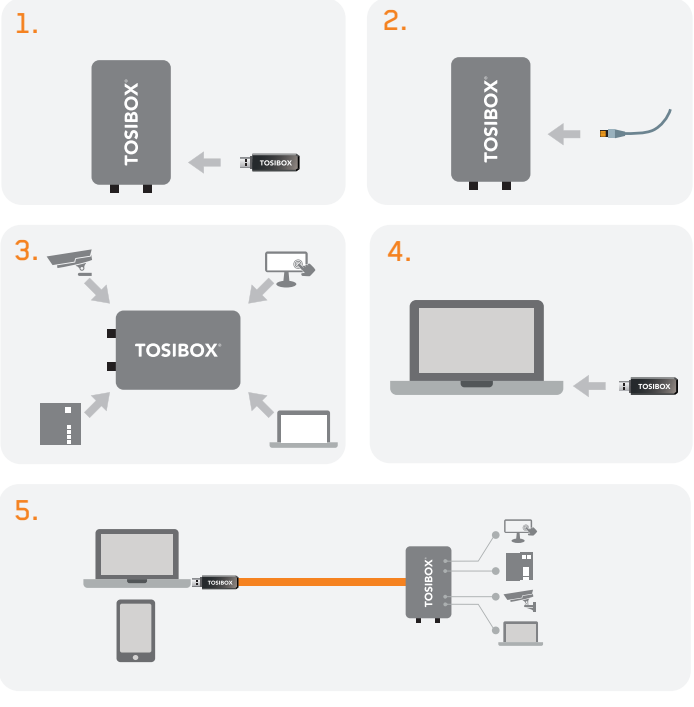
3. GETTING STARTED

THE FIRST DEPLOYMENT

1. Make sure the Node is powered before proceeding to matching the Key with the Node. Insert the Key into the USB port of the Node. When the LED on the Key turns off, the matching is complete (approximately 10 seconds). Remove the Key from the Node. You can also match additional Nodes to the same Key.

2 - 3. Connect the Node to your network according to your use case. Remember to make sure that the Node has a working internet connection.

4. Connect the Key to your computer and install the Key software. Follow the section "Deploying the Key".
5. Secure TOSIBOX connection is now ready to be used for controlling and monitoring devices remotely.



4. TOSIBOX® LOCK INSTRUCTIONS

4.1.1 DEPLOYING NODE IN “LOCK MODE”

With its factory default settings, the Node is connected to the Internet via its WAN port or a USB modem which can be connected to the USB port of the Node. In this mode, the Node creates its own protected local network for the connected devices. In this configuration, only devices that are connected to the Node by cable or via WLAN access point are accessible with the Key.

Note:

- See “USB Modem settings for the Node” (page 18) to connect a USB modem to the Node´s USB port.
- If the Node is connected to a DHCP enabled network via any of its LAN ports (LAN1, LAN2 or LAN3) the Lock’s own LAN functionality can be restored by resolving any DHCP conflicts by removing improper LAN connections to the Node.

CONNECTING NETWORK DEVICES TO THE NODE

A) Connecting device(s) that use dynamic IP addresses (DHCP)

Devices with a DHCP client enabled will automatically connect to the Node. Plug the device(s) into the Lock’s LAN port(s) and go!

B) Connecting device(s) with Fixed IP addresses by configuring the DEVICE to the NODE:

1. Before connecting device to Node, connect to device per device manufacturer’s instructions on your PC and assign a new static IP address to device(s) from the Node´s IP range printed on the bottom label of the Node. Do not add same IP address. We recommend adding the next IP sequential address ABOVE the IP address on the Node, and so forth for each additional device. (*Note: Node´s IP and netmask address can also be found in the service port at Network > LAN)
2. Plug the device(s) into the Node´s LAN port(s) and go!

C) Connecting device(s) with Fixed IP addresses by configuring the NODE to the DEVICE:

1. Get the device(s’) IP address(es) and netmask.
2. Connect your PC to the Node´s service port and log in following the step 1 on page 17 “Updating the Node software”.
3. Go to Network->LAN and change the IP address in the “IPv4 address” field to the next IP address above the IP address of the device (step 1). Also check that the “IPv4 netmask” field corresponds to the netmask set on the device and change it if necessary.
4. Plug the device(s) into the Node´s LAN port(s) and go!
5. ADVANCED/ENTERPRISE USERS ONLY: Go to Network>LAN DHCP SERVER and set the “Start” value so that it’s higher than all used static addresses. Set the limit value to a suitable value so that it covers the rest of the unused addresses in the LAN range. For example, the range 192.168.5.50 – 192.168.5.254 contains 205 addresses so the “Start” value would be 50 and the “Limit”value would be 205.

4.1.2 DEPLOYING NODE IN “CLIENT MODE”

Client mode can be used for connecting the Node to an existing network (e.g. an office network). In this mode, the Node joins the network like any other device (e.g. a PC) and provides remote users with access to other devices in the same network. The Node will obtain its address from the DHCP, so the local network needs to have a working DHCP server that allocated IP addresses.

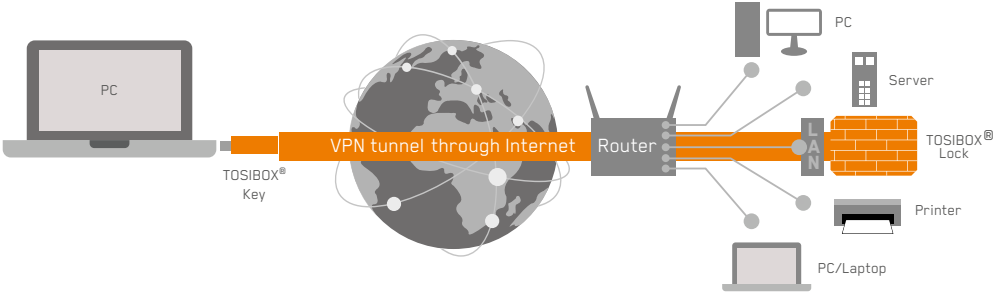
A) Connecting network devices in Client Mode

1. Log into the Node´s web user interface as admin and open the LAN settings by clicking Network > LAN.
2. Change the LAN interface protocol field to “DHCP Client”. Click the “Switch Protocol” button and click “Save”.
3. Plug in a cable from the local network into one of the Node´s LAN ports and go!

4.

Note:

- Do no connect the controlled devices to any LAN port.
- The Node will scan the entire LAN network for connected devices and will grant device access to any user with a matched Key. Please keep this in mind when considering network and information security.
- In cases where access rights need to be restricted, switch on MAC/IP Filtering (under Advanced Settings) or set up the Node in its factory default configuration.
- In this mode, the Node´s inbuilt firewall does not protect the devices in the LAN network.



4.2 CONNECTING NODES

With TOSIBOX® Nodes one can connect machines in separate places so that the connection between them is permanently and automatically on. One example is a real-time protected connection between home and office. This is made with a Node/Sub Node solution (see accompanying image Connecting Nodes).

- Lock 150 can be connected to up to 10 Sub Nodes
- TOSIBOX® 175 can be connected to up to 10 Sub Nodes
- Lock 210 and Lock 250 can be connected to up to 20 Sub Nodes
- Lock 500 can be connected to up to 50 Sub Nodes
- TOSIBOX® 610 can be connected to up to 20 Sub Nodes
- TOSIBOX® 650 can be connected to up to 20 Sub Nodes
- TOSIBOX® 670 can be connected to up to 20 Sub Nodes
- TOSIBOX® 675 can be connected to up to 20 Sub Nodes

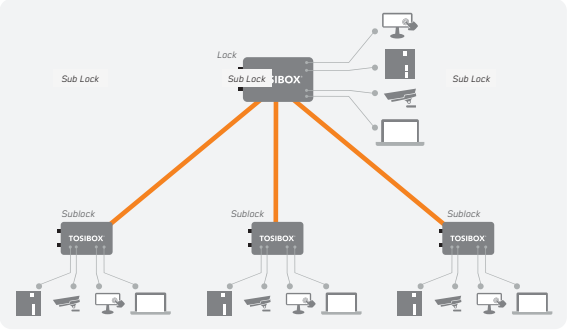
First match the Key to all the Nodes to be connected as described in section “Instructions for TOSIBOX® Key and Node setup”.

CONNECTING NODES

1. Insert a matched Key to the USB port of the computer.
2. Choose ”Devices” from the Key user menu and ”Connect Nodes” from the drop down menu.
3. Choose the Locks that you want to connect together and choose ”Next”.
4. Choose the Node that you want to attach the Sub Nodes. The other Nodes will be changed to Sub Node operating mode.
5. Confirm the selection > Save > matching is ready.

Note: The connections will come into effect when the Nodes have access to the Internet.

The Sub Node ends of the connection in the picture do not have their own DHCP service. If the connection between the Node and the Sub Node is interrupted, the network devices connected with the Sub Node can no longer connect to the Internet and each other.



4.3 UPDATING THE LOCK SOFTWARE

a. Connect the computer to the service port of the Node with an ethernet cable. First check that you have access to the Internet via the service port. Open an internet browser and type http://172.17.17.17 into the address field to access the Node user interface. Do not type “www” before the “http://” in the address.

b. Alternatively you can also log in remotely. When the connection between the Key and the Node is active, double click the Node symbol in the Key user interface.

1. Log in using “admin” for the user ID. The default admin password is visible on the bottom of the Node.
2. Choose “Settings” > “Software update”. If there is a software update available for the Node, you can start the update by clicking the “Start software update” button.*
3. Wait until the update has been downloaded and installed. Do not interrupt the power of the Node during the software update process. The update is complete when the software gives a notice “Software updated successfully”.

Automatic software updates are activated as a default setting. You can select the time when the automatic update of the released software is allowed. You can deactivate the automatic software update from the Node user interface.

4. Choose “Settings” > “Software update” > uncheck the box “Auto-update enabled”.

4.4 USB MODEM SETTINGS FOR THE NODE

You can connect the Node to the Internet with a USB Modem. For information on supported modems go to https://helpdesk.tosibox.com.

1. Log in as admin user, select “Network” > “USB Modem”.
2. Either use the Automatic APN setting or fill in the APN and if necessary the PIN field according to the SIM card settings. For APN settings information, please contact your mobile operator.
3. Confirm the selection > Save.
4. Connect a Tosibox supported USB Modem to the USB port of the Node.

4.5 INTERNAL MODEM SETTINGS

Supported on models TOSIBOX® 175, Lock 500, TOSIBOX® 670 and TOSIBOX® 675.

You can connect the Node to the Internet with an internal Modem. Before inserting or removing the SIM card(s), disconnect the Node power supply.

1. Log in as admin user, select “Network” > “Internal Modem”
2. Either use the Automatic APN setting or fill in the APN and if necessary the PIN field according to the SIM card settings. For APN settings information, please contact your mobile operator.
3. Confirm the selection > Save.

4.6 WLAN SETTINGS

Supported on models Lock 150, TOSIBOX® 175, Lock 250, Lock 500, TOSIBOX® 650 and TOSIBOX® 675.

You can configure the WLAN as Client (providing Internet access for the Lock) or as Access Point (providing access to Lock LAN and Internet for wireless devices). For detailed set-up instructions visit https://helpdesk.tosibox.com.

4.7 KEY CONNECTION SETTINGS FOR THE NODE

You can change the Key connection type from Layer 3 -routed (default) to Layer 2 -bridged (“Connection type” > “Layer 2-bridged”).

On Layer 2 connections you can allow connections from Node to Key. Log into the Node as admin, select “Settings” > “Keys and Nodes” > remove selection “Deny access towards client”

For more details on Layer 2 and Layer 3 connections visit https://helpdesk.tosibox.com.

4.8 ADVANCED SETTINGS FOR THE NODE

On the Advanced settings page you can configure LAN and Internet access restrictions and security related settings as well as time zone and NTP server settings. NTP settings are applicable to all products.

1. Log in as admin
2. Choose “Settings” > “Advanced settings”
3. Confirm changes > Save

4.9 INTERNET CONNECTION PRIORITIES

Several alternative Internet connections can be used by the Node:

1. WAN
2. USB modem
3. WLAN (if supported by device)
4. Internal modem (if supported by device)

One of the available connections can be selected as a main connection and the other connections can be set as backup connections. In the event that the main connection is interrupted, the connection is automatically shifted to preselected backup connections according to the priority setting (eg. WAN port > USB Modem). The connection is switched back to the main connection once it is available again.

4.10 SERVICE PORT

On Lock 150 there is a dedicated Service Port available. On TOSIBOX® 175 LAN port 1 and on Lock 210, Lock 250, Lock 500, and on TOSIBOX® 600 -series, LAN3 port can be configured as Service port by pressing the reset button for 3 seconds when there is no cable in LAN3.

When completed, the Internet status LED will blink for three seconds. The Node Management Interface can then be accessed by entering http://172.17.17.17 on the address bar of your browser. Assigning the port back to LAN range can be done following the same procedure or by restarting the device.

4.11 MOUNTING INSTRUCTIONS

LOCK 150 QUICK INSTALLATION TO DIN RAIL

The bottom of the Lock has integrated hooks that allow a quick installation to DIN rail with the LAN/WAN ports facing upwards.

LOCK 150 SECURE INSTALLATION TO DIN RAIL

For environment where a more robust installation method is needed or another installation orientation is wanted, the Node can be installed to DIN rail with the clip and screws included in the sales package. There are M4 threaded mounting holes on the bottom of the equipment. The screws shall be placed through the bottom sticker which has the hole locations indicated. Use only the screws included in the sales package. Using longer screws pose a risk of damaging the device internal electronics. More versatile installation options to DIN rail, such as angle brackets are available as an accessory.

LOCK 150 WALL MOUNTING

The bottom of the Lock has two keyhole shaped openings that allow the Lock to be installed on the wall with countersunk screws.

Lock 150 with DIN rail bracket

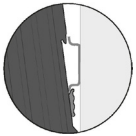
LOCK 210, LOCK 250 AND LOCK 500 INSTALLATION ON THE TABLE

The Node can be placed standing vertically on its rubber feet. There are vent holes on both sides of the device, designed to provide cooling air passing through the device. Allow enough free space, minimum of 25mm around the Node to ensure the free flow of cooling air.

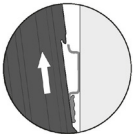
Make sure there is no risk of the device falling aside as this would block the cooling air flow through the vent holes. Have all the cables secured in such a way that they cannot make the Lock fall aside and routed as far away from the antennas as possible. Position the antennas in orthogonal pattern, i.e. in such a way that they form 90 degrees angle between each other.

Observe the gender of the antenna connectors to make sure each antenna is fitted into the correct antenna port. To achieve the maximum radio performance, follow the antenna pattern shown in the picture on the next page.

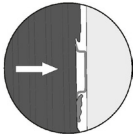
Avoid installing the Node close to other high-power radio transmitters as they may affect the performance of the Node. Also avoid installing the Node close to any sensitive devices that may be affected by the antenna signals emitted by the radio transmitter of the Node. In case of unwanted disturbance, relocate the cables and/or the Node in a place where the devices do not disturb each other.



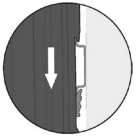
1. Place the DIN-rail bracket slider under the lower edge of the DIN rail.



2. Push the Lock upwards until the slider travel is in the end



3. Push the upper edge of Lock parallel to the wall



4. Slide the Lock down and check that the DIN rail bracket has a firm grip of the DIN rail

Picture 8. Lock 500i installed to DIN rail. See the antenna directions.

4.12 INPUT POWERING OPTIONS

LOCK 150

Use the AC adapter included in the sales package. Alternatively, in case the operating voltage of 8-30V DC (absolute value) is available from an external power source, a DC input plug included in the sales package can be used. Connect the stripped wires by tightening the screws with a flat blade screwdriver. Follow the polarity marking in the plug.

TOSIBOX® 175

Use the AC adapter included in the sales package. Alternatively, in case the operating voltage of 9-35V DC (absolute value) is available from an external power source, a DC input plug included in the sales package can be used. Connect the stripped wires by tightening the screws with a flat blade screwdriver. Follow the polarity marking in the plug.

LOCK 210, LOCK 250 AND LOCK 500

A power source with voltage of 12-48V DC +/-20% is required to operate the Node. The power input port is equipped with a removable plug-in connector included in the sales package. Remove the connector if needed and connect the stripped power wires by tightening the wire connector screws with a flat blade screwdriver.

A device frame connection ⏚ is available at the power input port. It is recommended to wire this connection to the installation cabinet protective earth potential with as short cable as possible. This will enhance the immunity of the equipment against conducted and radiated RF disturbance, as well as against electrical transients that may be propagated by the ethernet cables. Use + and - terminals to power the device. Follow the polarity and grounding symbols in the front panel.

Make sure the connector is completely plugged in and secure the connector into the Lock frame by tightening the locking screws with a flat blade screwdriver. The wires with a cross-section of up to 1.5mm^2 (AWG 16) can be used with the connector. The stripping length of the conductor is 6 mm.

The Node is equipped with a 2 Amp internal fuse. In case of a device malfunction, the fuse is blown to protect the power circuitry. The fuse cannot be replaced by the user. In case of a blown internal fuse, do not open the device. Instead, contact your local Tosibox distributor for service.

LOCK 500*PS

In addition to the powering options for Lock 500, an AC adapter included in the Lock500*PS-version sales package may be used. The AC adapter is supplied with interchangeable plugs that makes it possible to connect to different electrical outlets. Select and fit the plug that complies with your local requirements. The AC adapter DC output connector is coaxial. Therefore, a conversion cable is necessary to convert from coaxial DC connector to stripped wires required by the Node power input connector. The conversion cable is included in the Lock500*PS-version sales package. Follow the same procedure as with Lock 500 powering options.

TOSIBOX® 600 -SERIES

Use the AC adapter included in the sales package. Alternatively, in case the operating voltage of 9-50V DC (absolute value) is available from an external power source, a DC input plug included in the sales package can be used.

4.13 DIGITAL IN/OUT PORT WITH 24V DC OUT

Supported models: Lock 210/250, Lock 500 and TOSIBOX® 600 -series.

The Digital I/O port is equipped with a removable plug-in connector included in the sales package, for 600 -series additional IO cable is needed. Remove the connector if needed and in case of a solid wire simply insert the stripped signal wire to the correct port opening. In case a flexible wire is used, press the release button with a flat blade screwdriver to open the locking springs and insert the wire. Follow the signal symbols in the front panel and connect all needed signals. Make sure the connector is completely plugged in and secure the connector into the Node frame by tightening the locking screws with a flat blade screwdriver. The wires with a cross-section of up to 1.5 mm^2 (AWG 16) can be used with the connector. The stripping length of the conductor is 10 mm. The wire is released from the connector by pushing the corresponding release button with a flat blade screwdriver.

4.14 SOFTWARE CONFIGURABLE I/O

Supported models: Lock 210/250, Lock 500 and TOSIBOX® 600 -series. The Digital I/O state information and configuration can be accessed from Settings -> Digital I/O menu. For signal physical properties, please refer to section I/O specifications at the end of this manual.

Input port roles can be selected from:

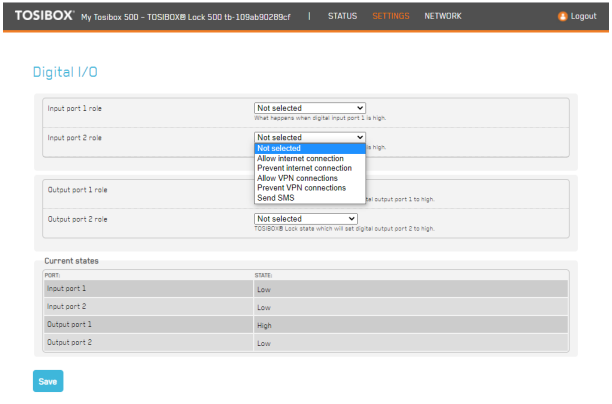
Not selected – no action based on port state

Allow Internet connection – when port voltage is set high, Node allows Internet connections. When port voltage is set low, there is no Internet access and the Node visibility is “offline” for all Keys matched with it.

Prevent Internet connection – when port is set high, Node prevents Internet connection and the Node visibility is “offline” for all Keys matched with it. When port voltage is low, Internet access is allowed.

Allow VPN connections – when port voltage is set high, Node allows incoming VPN connections from matched Keys. When port voltage is low, VPN connections are not allowed and the Node visibility is “offline” for all Keys matched with it.

Prevent VPN connections – when port is set high, VPN connections are not allowed and the Node visibility is “offline” for all Keys matched with it. When port voltage is low, Node allows incoming VPN connections from matched Keys.



Output port roles can be selected from:

Not selected – no action based on port state

Internet connection OK – when Node detects Internet connection to be OK, the port voltage is set high. If the Internet connection is not OK, the port voltage is set low.

Internet connection failed - when Node detects there is no Internet connection, the port voltage is set high. If the Internet connection is OK, the port voltage is set low.

VPN connection active – when Node detects active VPN connection(s) from matched Keys, the port voltage is set high. When there are no active VPN connections, the port voltage is set low.

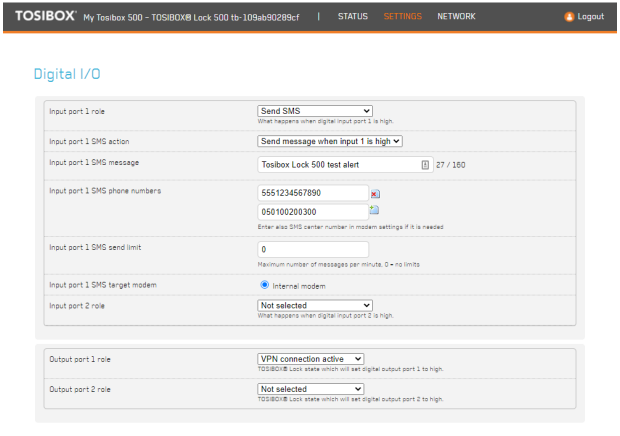
VPN connection inactive – When there are no active VPN connections the port voltage is set high. When Node detects active VPN connection(s) from matched Keys, the port voltage is set low.

4.15 DIGITAL I/O SMS ALERT

Supported models: Lock 500, TOSIBOX® 670 and TOSIBOX® 675.

In order for the SMS alert feature to work, make sure to use a SIM card that supports sending SMS messages.

SMS alert feature can be activated on Digital I/O settings by selecting “Send SMS” for “Input port 1 role” and/or “Input port 2 role”. After this, more settings for the SMS alert feature will become visible.



The following settings need to be defined for input port 1 or input port 2 or both:

Input port ≤X≥ SMS action
Select the trigger (high / low) for SMS sending: “Send message when input ≤X≥ is high” or ”Send message when input ≤X≥ is low”

Input port ≤X≥ SMS message
Define the message to be sent. Concatenated SMS is not supported so the maximum length of a message is 160 characters (western alphabet). If using non-western alphabet, the limit is 70 characters.

Input port ≤X≥ SMS phone numbers
Enter phone number(s) to send the message to. Only one number per input field is allowed. More phone numbers can be added by adding a new input field.

Input port ≤X≥ SMS send limit
Determines how many messages per minute will be sent. “0” stands for no limit. Use this feature when the I/O may switch high-low several times and you do not want to send SMS for each state change.
Any message sent will be sent to all numbers defined in “Input port ≤X≥ SMS phone numbers”

Input port ≤X≥ SMS target modem
Currently only internal modem is supported. In case there are two SIMs inserted, the SMS will be sent from the active SIM at the time of the alarm.

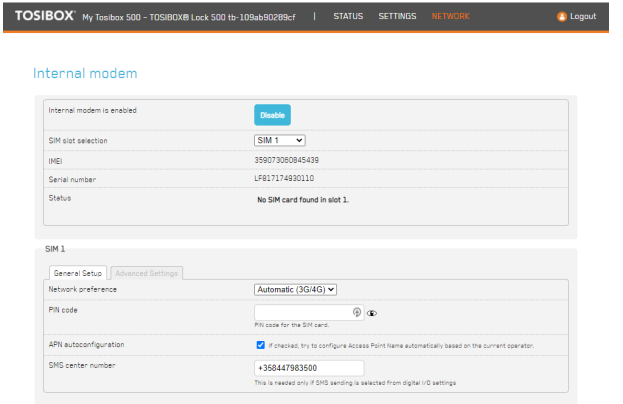
Both I/O ports have SMS settings independent of each other.

Sending an SMS will happen in 1-10 seconds of the trigger. In case the SIM subscription does not support sending SMS, the messages will not be sent.

Once the SMS has been sent by the Lock 500, the time to get it delivered to the destination is dependent on the Operator used.

Some subscriptions need the Message Service Center number defined to be able to send SMS messages. This can be set in “Internal Modem “ settings where ”SMS center number” can be defined. The number should be defined in international format (e.g. “+358...”

Note that the setting can be defined separately for both SIM slots.



5. TOSIBOX® KEY INSTRUCTIONS

5.1 TAKING MASTER KEY INTO USE

1. Insert the matched Key into the USB port of your computer. You should notice an auto play window open up on your desktop. If not, double click the executable file located in the Key's folder (Setup_Tosibox.exe). If your computer asks whether you want to allow Tosibox to make changes to your computer click yes.
2. The Key software will ask for a password that you can enter if you wish (recommended). By entering a password, you can prevent the unauthorized use of the Key. Store the password safely. Also pay attention to PUK code instructions on section 5.5.
3. The Key software opens up a window that shows the Locks that have been matched to the Key. Connect the Key with the wanted Node by clicking the Node´s "Connect" icon.
4. The Key info dialogue shows the status of the connection between the Key and Node.

The Key is now ready to be used

The Node symbol displays a different colour according to the operating status of the Node:

- Red = The Node is not connected to the Internet.
- Yellow = The Node is connected to the Internet, but the Key doesn't have a remote connection to the Node.
- Green = The Node is connected to the Internet and the Key has a remote connection to the Node.

The Key symbol located in the computer's task bar displays different colours according to the operating status of the Key:

- Red = The Node is not connected to the Internet.
- Yellow = The Key is connected to the Internet, but not to any found Nodes.
- Green = The Node is connected to the Internet and the Key has a remote connection to the Node.

REMOTE MATCHING

Remote Matching is an alternative way to match the first master Key to a new Node, Central Lock, or Virtual Central Lock. In Remote Matching, the Key does not have to be physically connected to a Node, but it uses a unique, cryptographic code instead. This can be useful e.g. if the Node needs to be reset and the master Key is not available in the same place. With Virtual Central Lock, remote matching is the only way to match it with a master Key.

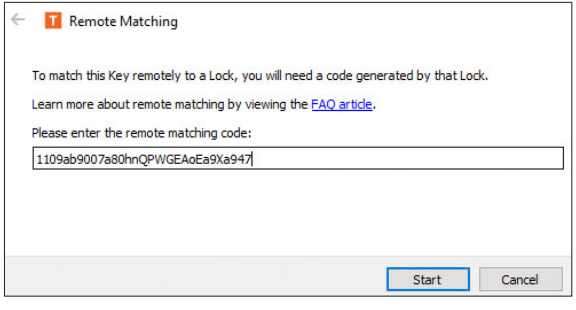
The process is initiated by generating the remote matching code on the Node that shall be matched, which enables remote matching on the Node with that code only. Then, the remote matching wizard is opened on the master Key software and the code is entered there. This completes the process and the devices will establish a trust relationship over the Internet. The Node appears on the master Key similarly as after physical matching.

Note: make sure to keep the code safe when transferring it to the master Key as anybody who knows the code can match the Node and connect to it. If the code gets lost, deactivate remote matching on the Node´s web user interface and start it again by generating a new code.

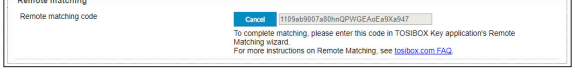
Remote Matching is supported on all products.

Required Steps to Perform Remote Matching

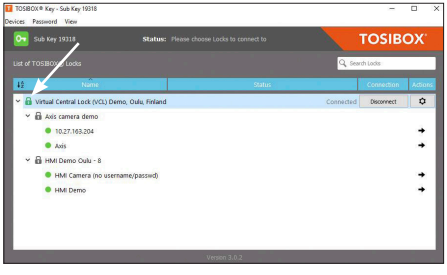
1. Log in as admin on Node or (Virtual) Central Lock
2. Go to Settings > Keys & Nodes click Generate button under Remote Matching title
3. Start Key SW on a PC/Mac
4. Open Devices > Remote Matching
5. Enter the code in the wizard and click Start



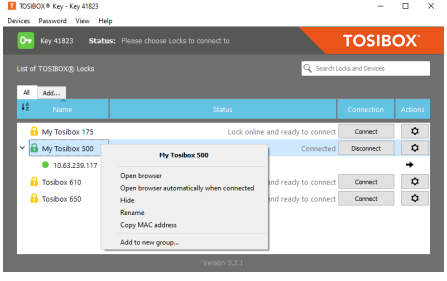
If both devices are online, the process completes after a few seconds and the Node is now matched with the Key.



5.2 RENAMING AND USING DEVICES

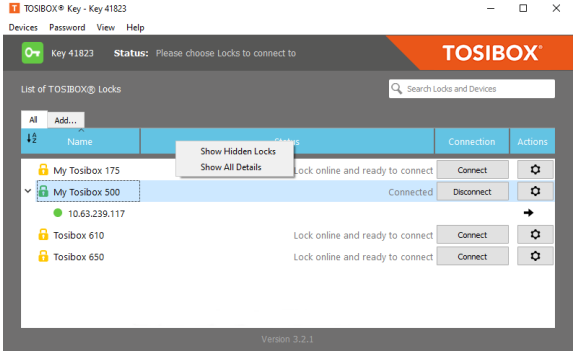


This is the start window for the Key user interface. You can open the Node user interface by double clicking the Node icon on the left side of the window.

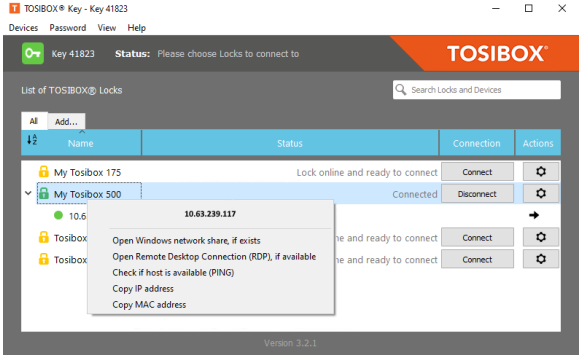


By clicking ⚙ an extra menu opens.

1. You can open the browser user interface of the controlled device in “Open with browser (http)”.
2. Click “Open browser automatically when connected” to have the Node user interface launch automatically when the Key connects to the Node.
3. Click “hide” to hide this node from the view.
4. Click “Rename” to rename the selected Node. The Node names are global so a Node´s name change will be reflected on all Node and Keys. Only Master and Back-up Keys can rename Nodes.
5. Click “copy MAC address” to copy the nodes address to clipboard.
6. Click “add to new group” to create a new device tab.



1. Selecting “Show all details” allows you to view all the details of the connected device.
2. “Show hidden Locks” displays all nodes that have been hidden with the “hide” command.



1. You can connect to network sharing in “Open windows network share”.
2. You can open the remote desktop connection in “Open Remote Desktop Connection (RDP), if available”.
3. You can check the functionality of the controlled device with PING command in “Check if host available (PING)”.
4. Click “copy IP address” to copy the nodes address to clipboard.
5. Click “copy MAC address” to copy the nodes address to clipboard.

5.3 ADDING EXTRA KEYS

Additional Keys can be matched with a Node.

1. Insert a previously matched Key into the USB port of your computer.
2. Insert a new Key to another USB port of the computer.
3. Wait until "New Key" window opens.
4. If you are adding a Sub Key, follow the steps 1-4 ADDING SUB KEY.
   If you are adding a Backup Key, follow the steps 1-4 ADDING BACKUP KEY.

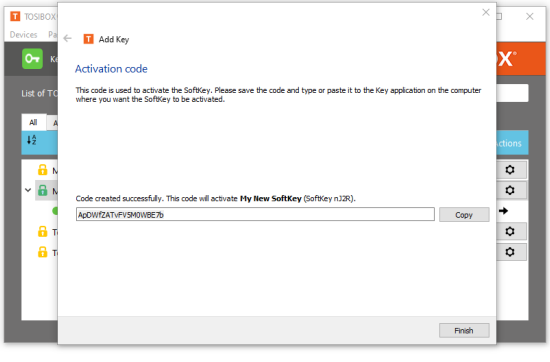
ADDING TOSIBOX® SOFTKEY

To activate SoftKey on a PC or Mac, you will need a SoftKey license for the master Key – please contact our sales to purchase one.

ACTIVATION

The activation process has five steps as outlined below:

1. On master Key: generate activation code:
   Go to Devices > Manage Keys > Add Key, and add a new Key of type "SoftKey" and give it a name.



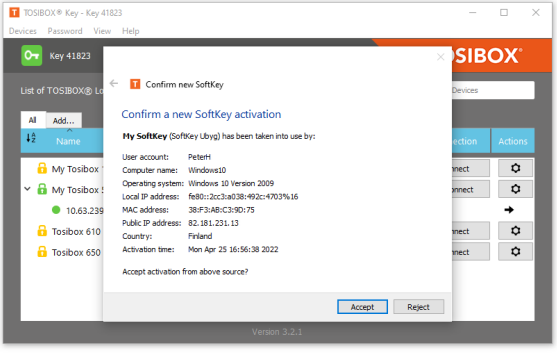
2. An activation code will be generated, send it over to the end user who shall activate and use the SoftKey client.

3. On client computer start the software.

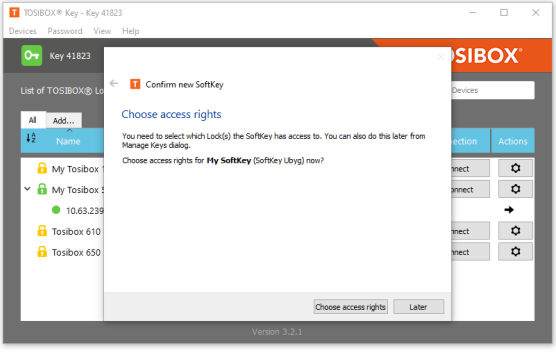
   Activate the SoftKey by choosing Devices > Activate SoftKey and enter the activation code.

4. On Master Key: Confirm SoftKey. Confirm the activation from the pop-up dialog.

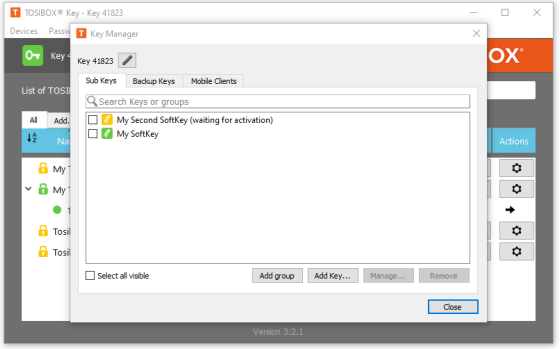
5. Define access rights for the new SoftKey by following the wizard.



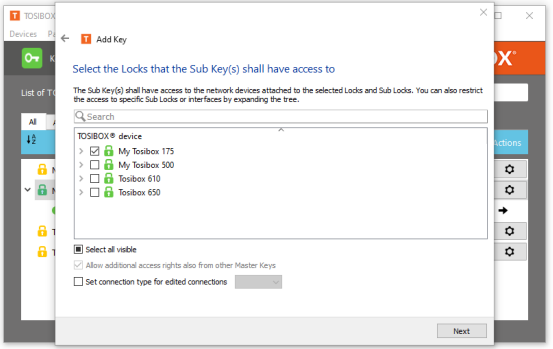
The SoftKey is now ready to be used and can connect to the Nodes where access was granted in step 5.



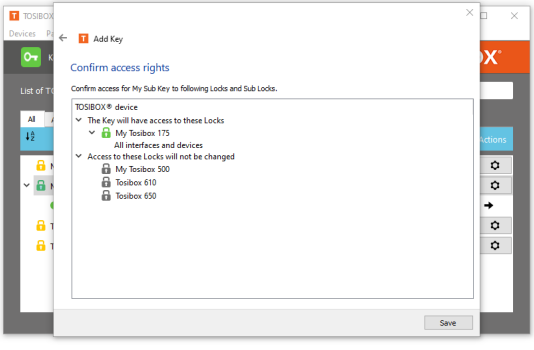
ADDING SUB KEY



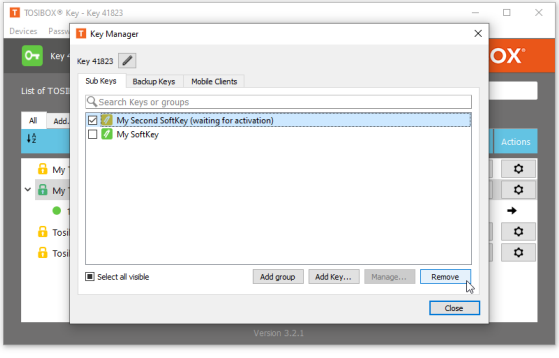
1. When a new Key is turned into a Sub Key, choose "Sub Key", provide a descriptive name for it, and click "Next". A Sub Key is able to connect to chosen Nodes but it has no rights to create new Keys.



2. Select the Node(s)/Sub Node(s) to which you want to grant access for the extra Key and choose "Next".

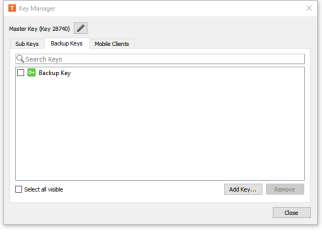


3. Confirm the selection by pressing "Save". Matching of the extra Key is now complete.

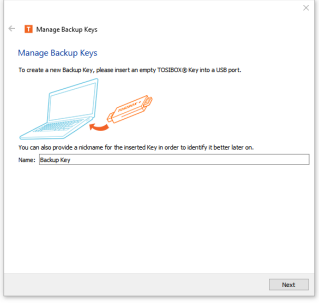


4. The extra Keys can be removed in the Node user interface by clicking Settings > Keys and Nodes (admin only).

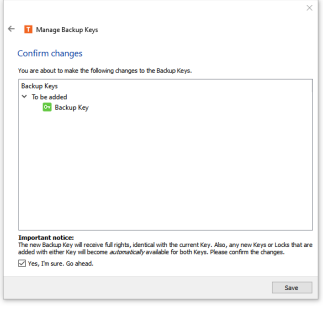
ADDING BACKUP KEY



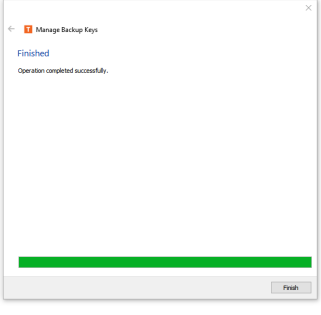
1. In the Key manager, choose "Backup Keys" tab and press "Add Key". All Keys and Nodes are automatically synchronized between the Backup Keys.



2. Insert blank Tosibox Key into a USB port and provide a nickname for the new Key. Press "Next"



3. Confirm by pressing "Save".



4. The Backup Key is now created. Press "Finish" button to exit the feature.

5.4 REMOTE MATCHING OF EXTRA KEYS

This feature is only available for Keys that have already been matched locally.

1. Insert the Key into the USB port of the computer and wait for the TOSIBOX® Key application to start.
2. Choose ”Manage Keys” from the “Devices” menu in the user interface and open the “Sub Keys” tab.
3. Choose the extra Keys to which you want to add new Nodes and press the ”Match...” button.
4. Choose the Nodes to which you want to add to the extra Keys and press the ”Next” button.
5. A list of targeted Nodes is displayed. Confirm the choises and click “Save”.
6. Matching of the extra Keys is now complete. Press “Finish” button to exit the wizard.

5.5 PUK CODE FOR THE KEY

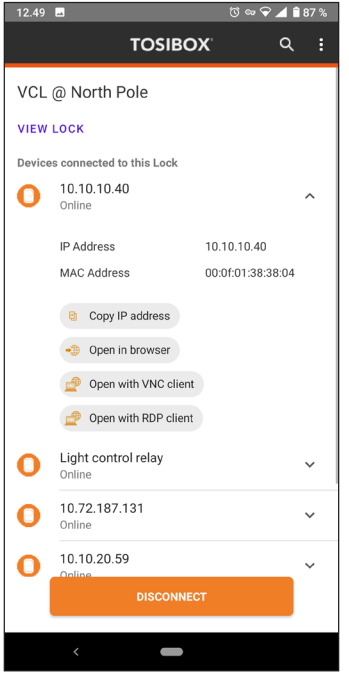
1. In the event that a wrong Key password has been entered six consecutive times, the Key will be locked. To unlock the Key a personal unlocking code, PUK is needed. The PUK code is delivered with the Key. Store it safely.
2. Go to the ”Password” menu in the Key software and choose ”Change password using PUK code...”.
3. Enter the PUK code into the ”PUK-code” field.
4. Enter a new password into the ”New password” field.
5. Confirm your password by typing it once more into the “New password (again)” field.
6. Choose ”OK”.

6. TOSIBOX® MOBILE CLIENT

TOSIBOX® Mobile Client gives you secure and easy remote access on the go. The application is available for iPhones, iPads and Android devices.

See a video how to create a TOSIBOX® Mobile Client with a TOSIBOX® Key at the Tosibox YouTube channel: https://youtu.be/x7Ee-0A4lO8

1. Insert TOSIBOX® Key into your computer's USB port.
2. Login to TOSIBOX® Key Client software.
3. In the TOSIBOX® Key Client software, select Devices > Manage keys.
4. Select Mobile Cleints tab and Add new.
5. Name the new Mobile Client.
6. Grant the Mobile Client user access to Locks.
7. Generate a QR code for Mobile Client.
8. Download TOSIBOX® Mobile Client from Google Play or App Store and install it.
9. Scan the QR code.
10. Mobile Client is now activated. Finalize the activation by setting a password.
11. Once logged in, the app shows the Nodes the Mobile Client (Sub Key) user has access to. The user can now configure Nodes via mobile.



7. TROUBLESHOOTING

The TOSIBOX® Key software cannot be installed:

- Check whether your computer has an operating system supported by TOSIBOX®
- Restart the computer and plug in the Key.

The Key's connection window does not show the connections:

- The computer is not connected to the Internet.
- The Key is not matched with the Node.
- The Node does not have an internet connection or is not connected to the AC adapter.

The Node connection in the window remains yellow:

- The Key has found a Node, but VPN has not yet been established.

Device connections or the Node connection in the window remains red:

- Make sure the controlled devices are connected to the Node.
- If connected wirelessly, use the ethernet service port to log in to the Node. Check that the wireless connection is enabled and that the Node and the controlled device have the same password and encryption settings.
- Make sure the controlled device has a DHCP-service. If not, add the device in the device list of the Node and specify the IP address of the device .

Visit https://helpdesk.tosibox.com for more instructions.

7. DÉPANNAGE

Le logiciel pour la TOSIBOX® Key ne peut être installé

- Vérifiez que votre ordinateur dispose d'un système d'exploitation pris en charge par TOSIBOX®.
- Redémarrez l'ordinateur et branchez la Key.

La fenêtre de connexion de la Key ne montre pas les connexions :

- L'ordinateur n'est pas connecté à Internet.
- La Key n'est pas associée au Node.
- Le Node ne dispose pas d'une connexion Internet ou n'est pas sous tension.

La connexion du Node dans la fenêtre reste jaune :

- La Key a trouvé un Node, mais le VPN n'a pas encore été établi.

Les connexions au périphérique ou la connexion de NODE dans la fenêtre reste rouge :

- Assurez-vous que les appareils contrôlés sont connectés au Node.
- Si vous êtes connecté via un réseau sans fil, connectez-vous au Node par le port de service Ethernet. Vérifiez que la connexion sans fil est activée et que le Lock utilise le bon mot de passe et les mêmes paramètres de cryptage de l'appareil supervisant le réseau sans fil.

Assurez-vous que l'appareil supervisant le réseau sans fil dispose d'un service DHCP. Sinon, ajoutez le NODE à la liste des périphériques et spécifiez son adresse IP.

Pour plus d'instructions, visitez https://helpdesk.tosibox.com

8. MAINTENANCE INSTRUCTIONS

TOSIBOX® devices should be treated with care. By observing the following instructions you can enjoy the maximum performance of the devices and ensure full warranty coverage.

- Keep the devices dry. Protect the devices from precipitation, moisture and liquids as they can cause corrosion to electronic circuits. The devices are intended for indoor use only. Do not use them in wet environment or outdoors.
- Protect the devices from dirt and dust. When necessary, clean the devices with a soft, dry cloth. Do not use chemicals, solvents, detergents or pressurized air.
- Protect the devices from heat. High temperatures can damage plastic parts and shorten the life of the electronics.
- Protect the devices from cold. Low temperatures can make them more susceptible to breakage. Let the device's temperature stabilize properly before deploying them into the network..
- Protect the devices from mechanical shocks. Do not shake, knock or drop the devices.
- Do not paint the devices.
- Do not cover the devices or install them on top of each other. This can cause overheating. Allow enough free space around the devices to ensure the free flow of cooling air.
- Do not open the devices. There are no serviceable parts inside the devices. If the devices malfunction or need servicing, contact an authorized service facility.
- After the service life of the devices is over, do not throw them into domestic waste. Instead, take them to an authorized waste electronics collection facility.

8. CONSIGNES D'ENTRETIEN

Les équipements TOSIBOX® doivent être traités avec précaution. En observant les instructions suivantes, vous profiterez de leurs performances maximales et aurez l'assurance d'avoir une garantie optimale.

- Gardez les appareils au sec. Pour éviter des risques de corrosion des circuits électroniques, protégez les équipements des précipitations, de l'humidité et des liquides. Les appareils sont conçus pour une utilisation en intérieur uniquement. Ne les utilisez pas dans un environnement humide ou à l'extérieur.
- Protégez les appareils de la saleté et de la poussière. Si nécessaire, nettoyez les appareils avec un chiffon doux et sec. N'utilisez pas de produits chimiques, de solvants, de détergents ou d'air comprimé.
- Protégez les appareils de la chaleur. Les températures élevées peuvent endommager les parties en plastique et raccourcir la durée de vie des composants électroniques.
- Protégez les appareils du froid. Les basses températures peuvent les rendre plus sensibles à la casse. Avant leur installation, laissez-les revenir à température ambiante.
- Protégez les appareils des chocs mécaniques. Ne les secouez pas, ne les frappez pas et ne les laissez pas tomber les appareils.
- Ne peignez pas les appareils.
- Ne couvrez pas les appareils et ne les empilez pas les uns sur les autres sous peine de provoquer une surchauffe. Assurez-vous d'assez d'espace libre autour des appareils pour leur refroidissement par libre circulation d'air.
- N'ouvrez pas les appareils. Aucune réparation ne peut être effectuée par vous-même. Si les équipements ne fonctionnent pas correctement ou nécessitent une réparation, contactez un centre de réparation agréé.
- Après leurs utilisations, ne les jetez pas mais ramenez-les dans un centre de collecte de déchets électroniques.

9. TECHNICAL DATA

TOSIBOX® LOCK 150

Ports

- 1x USB 2.0, type A, 500 mA maximum load allowed
- 1 x RJ-45 WAN conn., 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN conn., 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x RJ-45 Service conn., 10/100 Mb/s, auto-negotiation (MDI / MDI-X)

WAN connection features

- Independent of operating systems
- Works in all Internet connections (operator independent)
- Firewall friendly
- Works with dynamic, static and private IP addresses
- Built-in firewall, NAT
- Up to 10 concurrent VPN connections
- VPN throughput up to 10 Mb/s (BF-CBC 128 bit)

Physical properties

- 132 mm x 99 mm x 35.5 mm / 5.2” x 3.9”x 1.4” (L x W x H)
- Weight 365 g / 1.31 lbs (net weight article)
- Operating temperature: -20 °C ... +55 °C / -4 °F ... 131 °F
- Oparating humidity 20 - 80% RH, non condensing
- Storage temperature -40 °C ... +70 °C / -40 °F ... 158 °F
- Cast aluminium casing
- IP protection class: IP20
- Maximum operating altitude 2000 m / 6562 ft
- Overvoltage category I

TOSIBOX® 175

Ports

- 1 x RJ-45 WAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x RJ-45 LAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- LAN can be assigned as Service connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)

WAN connection features

- Independent of operating systems
- Works in all Internet connections (operator independent)
- Firewall friendly
- Works with dynamic, static and private IP addresses
- Built-in firewall, NAT
- Up to 10 concurrent VPN connections
- VPN throughput up to 10 Mb/s

Physical properties

- 104 mm x 28 mm x 110 mm / 4.09” x 1.10” x 4.33” (L x W x H)
- Weight 305 g / 0.67 lbs (net weight article)
- Operating temperature 0...40°C / 32°F...104°F
- Storage temperature -30 °C ... +70 °C / -22 °F ... +158 °F
- Aluminium alloy shell

Powering requirements

- 9-35V DC

TOSIBOX® LOCK 210 | TOSIBOX LOCK 250

Ports

- 1x USB 2.0, type A, 500 mA maximum load allowed
- 1 x RJ-45 WAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- LAN3 can be assigned as Service connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- Ethernet port isolation: 1500 Vrms 1 minute (when connected to protective ground)

WAN connection features

- Independent of operating systems
- Works in all Internet connections (operator independent)
- Supports HTTP proxy servers with and without authentication
- Firewall friendly
- Works with dynamic, static and private IP addresses
- Built-in firewall, NAT

I/O Specification

- 2 x digital inputs, galvanic isolation, current limited to 5mA, voltage 0 - 32V nominal, input voltage of 0-5V is interpreted as ‘0’, input voltage over 12V
  is interpreted as ‘1’
- 2 x digital outputs, type: transistor sourcing, output voltage 24V DC +/- 5% nominal
- 1 x 24V DC out: 24V DC +/- 5% nominal, always active, non-configurable
- Total combined maximum current output for digital outputs and 24V DC out
  is limited to 50mA
- Software Configurable I/O state

Powering requirements

- 12-48V DC +/-20%, 10.0W max, reverse polarity protected

Physical properties

- 110 mm x 58 mm x 127 mm / 4.33” x 2.28” x 5.0” (L x W x H)
- Weight 495 g / 1.09 lbs
- Operating temperature -20 °C ... +60 °C / -4 °F ... +140 °F
- Operating humidity up to 96% RH, non-condensing
- Storage temperature -40 °C ... +70 °C / -40 °F ... +158 °F
- Cast aluminium casing
- IP protection class: IP20
- Maximum operating altitude 2000 m / 6562 ft
- Overvoltage category I

USB modem options

- TB4GM2EU, TB4GM2AU, TB4GM8EU

TOSIBOX® LOCK 250

WLAN

- IEEE 802.11 b/g/n, max. 150 Mbps
- WEP, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK Mixed, WPA-EAP, WPA2-EAP TKIP/AES encryption
- Frequency 2.412 – 2.462 GHz, 11 channels
- Output power 20 dBm max

TOSIBOX® LOCK 500

Ports

- 1x USB 2.0, type A, 500 mA maximum load allowed
- 1 x RJ-45 WAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- LAN3 can be assigned as Service connection, 10/100 Mb/s, auto-negotiation (MDI / MDI-X)
- Ethernet port isolation: 1500 Vrms 1 minute (when connected to protective ground)

WAN connection features

- Independent of operating systems
- Works in all Internet connections (operator independent)
- Supports HTTP proxy servers with and without authentication
- Firewall friendly
- Works with dynamic, static and private IP addresses
- Built-in firewall, NAT
- Up to 50 concurrent VPN connections
- VPN throughput up to 70 Mb/s (BF-CBC 128 bit)

WLAN

- IEEE 802.11 b/g/n, max. 150 Mbps
- WEP, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK Mixed, WPA-EAP, WPA2-EAP TKIP/AES encryption
- Frequency 2.412 – 2.462 GHz, 11 channels
- Output power 20 dBm max

I/O Specification

- 2 x digital inputs, galvanic isolation, current limited to 5mA, voltage 0 - 32V nominal, input voltage of 0-5V is interpreted as '0', input voltage over 12V is interpreted as '1'
- 2 x digital outputs, type: transistor sourcing, output voltage 24V DC +/- 5% nominal
- 1 x 24V DC out: 24V DC +/- 5% nominal, always active, non-configurable
- Total combined maximum current output for digital outputs and 24V DC out is limited to 50mA
- Software Configurable I/O state

Powering requirements

- 12-48V DC +/-20%, 10.0W max, reverse polarity protected

Physical properties

- 110 mm x 58 mm x 127 mm / 4.33" x 2.28" x 5.0" (L x W x H)
- Weight 495 g / 1.09 lbs (TBL5*) / 505g / 1.11 lb (TBL5i*)
- Operating temperature -20 °C ... +60 °C / -4 °F ... +140 °F
- Operating humidity up to 96% RH, non-condensing
- Storage temperature -40 °C ... +70 °C / -40 °F ... +158 °F
- Cast aluminium casing
- IP protection class: IP20
- Maximum operating altitude 2000 m / 6562 ft
- Overvoltage category I

USB modem options

- TB4GM2EU, TB4GM2AU, TB4GM8EU

TOSIBOX® LOCK 500 - TBL5iA*

Internal modem connection features

TBL5iA*

- Region: EMEA
- LTE Cat-6
- Up to 300 Mbps DL, 50 Mbps UL
- Frequency Bands (4G LTE): B1, B2, B3, B4, B5, B7, B12, B13, B20, B25, B26, B29, B41
- Supported technology (HSPA+, UMTS) Bands: B1, B2, B3, B4, B5, B8
- Dual SIM

LTE frequency band support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 3	1710–1785	1805–1880 MHz
Band 4	1710–1755	2110–2155 MHz
Band 5	824–849 MHz	869–894 MHz
Band 7	2500–2570 MHz	2620–2690 MHz
Band 8	880–915 MHz	925–960 MHz
Band 12	699–716 MHz	729–746 MHz
Band 13	777–787 MHz	746–756 MHz
Band 20	832–862 MHz	791–821 MHz
Band 25	1850–1915 MHz	1930–1995 MHz
Band 26	814–849 MHz	859–894 MHz
Band 29	n/a	717–728 MHz
Band 41	2496–2690 MHz (TDD)	

- For bandwidth support details, see 3GPP TS 36.521-1 v11.3.0, table

WCDMA frequency bands support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 3	1710–1785 MHz	1805–1880 MHz
Band 4	1710–1755 MHz	2110–2155 MHz
Band 5	824–849 MHz	869–894 MHz
Band 8	880–915 MHz	925–960 MHz

Conducted TX (Transmit) Power tolerances

Parameter	Cond. tr. p.	Notes
LTE		
LTE Band 1, 3, 5, 8, 18, 19,21,28,39	+23 dBm +- 1 dB	
LTE Band 7, 38, 40, 41	+22 dBm +- 1 dB	
UMTS		
Band 1 (IMT 2100 12.2 kbps)		
Band 5 (UMTS 850 12.2 kbps)		
Band 6 (UMTS 850 12.2 kbps) Connectorized (Class 3)	+23 dBm +- 1 dB	
Band 8 (UMTS 900 12.2 kbps)		
Band 9 (UMTS 1700 12.2 kbps)		
Band 19 (UMTS 850 12.2 kbps)		
TD-SCDMA frequency band		
Band 39	+23 dBm +- 1 dB	

TOSIBOX® LOCK 500 - TBL5iB*

Internal modem connection features

TBL5iB*

- Region: APAC
- LTE Cat-6
- Up to 300 Mbps DL, 50 Mbps UL
- Frequency Bands (4G LTE): B1, B3, B5, B7, B8, B18, B19, B21, B28, B38, B39, B40, B41
- Supported technology 1 (HSPA+, UMTS) Bands: B1, B5, B6, B8, B9, B19
- Supported technology 2 (TD-SCDMA) Band 39
- Dual SIM

LTE frequency band support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 3	1710–1785	1805–1880 MHz
Band 5	824–849 MHz	869–894 MHz
Band 7	2500–2570 MHz	2620–2690 MHz
Band 8	880–915 MHz	925–960 MHz
Band 18	815–830 MHz	860–875 MHz
Band 19	830–845 MHz	875–890 MHz
Band 21	1447.9–1462.9 MHz	1495.9–1510.9 MHz
Band 28	703–748 MHz	758–803 MHz
Band 38	2570–2620 MHz (TDD)	
Band 39	1880–1920 MHz (TDD)	
Band 40	2300–2400 MHz (TDD)	
Band 41	2496–2690 MHz (TDD)	

- For bandwidth support details, see 3GPP TS 36.521-1 v11.3.0, table 5.4.2.1-1

WCDMA frequency bands support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 5	824–849 MHz	869–894 MHz
Band 6	830–840 MHz	875–885 MHz

Conducted TX (Transmit) Power tolerances

Parameter	Cond. tr. p.	Notes
LTE		
LTE Band 1, 3, 5, 8, 18, 19,21,28,39	+23 dBm +- 1 dB	
LTE Band 7, 38, 40, 41	+22 dBm +- 1 dB	
UMTS		
Band 1 (IMT 2100 12.2 kbps)		
Band 5 (UMTS 850 12.2 kbps)		
Band 6 (UMTS 850 12.2 kbps) Connectorized (Class 3)	+23 dBm +- 1 dB	
Band 8 (UMTS 900 12.2 kbps)		
Band 9 (UMTS 1700 12.2 kbps)		
Band 19 (UMTS 850 12.2 kbps)		
TD-SCDMA fequency band		
Band 39	+23 dBm +- 1 dB	

TOSIBOX® LOCK 500 - TBL5iC*

Internal modem connection features

TBL5iC*

- Region: US/CAN
- LTE Cat-6
- Up to 300 Mbps DL, 50 Mbps UL
- Frequency Bands (4G LTE): B1, B2, B3, B4, B5, B7, B12, B13, B20, B25, B26, B29, B41
- Supported technology (HSPA+, UMTS) Bands: B1, B2, B3, B4, B5, B8

LTE frequency band support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 3	1710–1785	1805–1880 MHz
Band 4	1710–1755	2110–2155 MHz
Band 5	824–849 MHz	869–894 MHz
Band 7	2500–2570 MHz	2620–2690 MHz
Band 8	880–915 MHz	925–960 MHz
Band 12	699–716 MHz	729–746 MHz
Band 13	777–787 MHz	746–756 MHz
Band 20	832–862 MHz	791–821 MHz
Band 25	1850–1915 MHz	1930–1995 MHz
Band 26	814–849 MHz	859–894 MHz
Band 29	n/a	717–728 MHz
Band 41		2496–2690 MHz (TDD)

- For bandwidth support details, see 3GPP TS 36.521-1 v11.3.0, table 5.4.2.1-1

WCDMA frequency bands support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 3	1710–1785 MHz	1805–1880 MHz
Band 4	1710–1755 MHz	2110–2155 MHz
Band 5	824–849 MHz	869–894 MHz
Band 8	880–915 MHz	925–960 MHz

Conducted TX (Transmit) Power tolerances

Parameter	Cond. tr. p.	Notes
LTE		
LTE Band 1, 3, 5, 8, 18, 19,21,28,39	+23 dBm +- 1 dB	
LTE Band 7, 38, 40, 41	+22 dBm +- 1 dB	
UMTS		
Band 1 (IMT 2100 12.2 kbps)		
Band 5 (UMTS 850 12.2 kbps)		
Band 6 (UMTS 850 12.2 kbps) Connectorized (Class 3)	+23 dBm +- 1 dB	
Band 8 (UMTS 900 12.2 kbps)		
Band 9 (UMTS 1700 12.2 kbps)		
Band 19 (UMTS 850 12.2 kbps)		
TD-SCDMA frequency band		
Band 39	+23 dBm +- 1 dB	

TOSIBOX® LOCK 500 - TBL5iD*

Internal modem connection features

TBL5iD*

- Region: US/CAN
- CBRS
- LTE Cat12 / carrier aggregation
- Up to 600 Mbps DL, 100 Mbps UL
- Frequency Bands (4G LTE): B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14, B18, B19, B20, B26, B29, B30, B32, B41, B42, B43, B46, B48, B66

LTE frequency band support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 3	1710–1785 MHz	1805–1880 MHz
Band 4	1710–1755 MHz	2110–2155 MHz
Band 5	824–849 MHz	869-894 MHz
Band 7	2500–2570 MHz	2620–2690 MHz
Band 8	880–915 MHz	925–960 MHz
Band 9	1749.9–1784.9 MHz	1844.9–1879.9 MHz
Band 12	699–716 MHz	729–746 MHz
Band 13	777–787 MHz	746–756 MHz
Band 14	788–798 MHz	758–768 MHz
Band 18	815–830 MHz	860–875 MHz
Band 19	830–845 MHz	875–890 MHz
Band 20	832–862 MHz	791–821 MHz
Band 26	814–849 MHz	859–894 MHz
Band 29	n/a	717–728 MHz
Band 30	2305–2315 MHz Note: B30 Tx is disabled.	2350–2360 MHz
Band 32	n/a	1452–1496 MHz
Band 41		2496–2690 MHz (TDD)
Band 42		3400–3600 MHz (TDD)
Band 43		3600–3800 MHz (TDD)
Band 46	n/a	5150–5925 MHz (TDD)
Band 48		3550–3700 MHz (TDD)
Band 66	1710–1780 MHz	2110–2200 MHz

- For bandwidth support details, see 3GPP TS 36.521-1 v11.3.0, table 5.4.2.1-1

WCDMA frequency bands support

Band	Frequency (Tx)	Frequency (Rx)
Band 1	1920–1980 MHz	2110–2170 MHz
Band 2	1850–1910 MHz	1930–1990 MHz
Band 4	1710–1755 MHz	2110–2155 MHz

Conducted TX (Transmit) Power tolerances

Parameter	Conducted Tx power	Notes
LTE		
LTE bands 1, 2, 3, 4, 5, 8, 9,		
12, 13, 14, 18, 19, 20, 26 ,66	+23 dBm +- 1 dB	
LTE Band 7, 41 hardcoded	Single cell: +22 dBm +- 1 dB	0.8 dB offset for UL CA
	UL CA: +22.8 dBm +- 1 dB	by chipset manufacturer
LTE bands 42,43,48	+22 dBm +- 1 dB	
UMTS		
Band 1 (IMT 2100 12.2 kbps)		
Band 2 (UMTS 1900 12.2 kbps)		
Band 4 (AWS 1700/2100 12.2 kbps)		
Band 5 (UMTS 850 12.2 kbps)	+23 dBm +- 1 dB	Connectorized (Class 3)
Band 6 (UMTS 800 12.2 kbps)		
Band 8 (UMTS 900 12.2 kbps)		
Band 9 (UMTS 1700 12.2 kbps)		
Band 19 (UMTS 800 12.2 kbps)		
TD-SCDMA frequency band		
Band 39	+23 dBm +- 1 dB	

TOSIBOX® 610

Ports

- 1 x RJ-45 WAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x USB 2.0, type A

Connections

- 4 pin industrial DC power socket
- 9-50V DC, reverse polarity protection, voltage surge/transient protection
- DIN rail mounting slot in the back
- Maximum power consumption 6W

I/O specifications

- 1 x Digital input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
- 1 x Digital output, open collector output, max output 30 V, 300 mA
- Software configurable I/O state
- Requires separate I/O cable (TB600PAC1 or TB600PAC2)

Physical properties

- 115 mm x 32.2 mm x 95.2 mm / 4.52” x 1.26” x 3.74” (W x H x L)
- Protection class IP30
- Weight 345 g / 0.76 lbs (net weight article)
- Storage temperature -40 °C ... +75 °C / -40 °F ... +167 °F
- Operating temperature -40 °C ... +75 °C / -40 °F ... +167 °F

TOSIBOX® 650

Ports

- 1 x RJ-45 WAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x USB 2.0, type A

Connections

- 4 pin industrial DC power socket
- 9-50V DC, reverse polarity protection, voltage surge/transient protection
- 2 x RP-SMA for WiFi
- DIN rail mounting slot in the back
- Maximum power consumption 9W

WLAN

- IEEE 802.11 b/g/n, 2.4 GHz, max. 150 Mbps
- Encryptions WEP, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK mixed mode
- Frequency 2.412 – 2.462 GHz, 11 channels
- Access point or client mode
- Output power 20 dBm max

I/O specifications

- 1 x Digital input, 0 - 6 V detected as logic low,
- 8 - 30 V detected as logic high
- 1 x Digital output, open collector output, max output 30 V, 300 mA
- Software configurable I/O state
- Requires separate I/O cable (TB600PAC1 or TB600PAC2)

Physical properties

- 115 x 32.2 x 95.2 mm / 4.52" x 1.26" x 3.74" (W x H x L)
- Protection class IP30
- Weight 355 g / 0.78 lbs (net weight article)
- Storage temperature -40 °C ... +75 °C / -40 °F ... +167 °F
- Operating temperature -40 °C ... +75 °C / -40 °F ... +167 °F

TOSIBOX® 670

Ports

- 1 x RJ-45 WAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x USB 2.0, type A

Connections

- 4 pin industrial DC power socket
- 9-50V DC, reverse polarity protection, voltage surge/transient protection
- 2 x SMA for LTE
- 1 x GNSS
- DIN rail mounting slot in the back and on both sides
- Maximum power consumption 9W

Physical properties

- 115 mm x 44.2 mm x 95.1 mm / 4.52” x 1.74” x 3.74” (W x H x L)
- Protection class IP30
- Weight 455 g / 1.00 lbs (net weight article)
- Storage temperature -40 °C ... +75 °C / -40 °F ... +167 °F
- Operating temperature -40 °C ... +75 °C / -40 °F ... +167 °F

4G Module

- TBL670US
- Region: North America and Mexico
- LTE Cat-6
- Up to 300 Mbps DL, 42 Mbps UL

Frequency Bands

- LTE FDD: B2, B4, B5, B7, B12, B13, B25, B26, B291, B30, B66
- WCDMA: B2, B4, B5
- TBL670EU, TBL670UK, TBL670AU
- Region: EMEA/APAC/Brazil (excluding Japan)
- LTE Cat-6
- Up to 300 Mbps DL, 42 Mbps UL

Frequency Bands

- LTE FDD: B1, B3, B5, B7, B8, B20, B28, B32
- LTE TDD: B38, B40, B41
- WCDMA: B1, B3, B5, B8

I/O specifications

- 1 x Digital input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
- 1 x Digital output, open collector output, max output 30 V, 300 mA
- Software configurable I/O state
- Requires separate I/O cable (TB600PAC1 or TB600PAC2)

TOSIBOX® 675

Ports

- 1 x RJ-45 WAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 3 x RJ-45 LAN connection, 10/100/1000 Mb/s, auto-negotiation (MDI / MDI-X)
- 1 x USB 2.0, type A

Connections

- 4 pin industrial DC power socket
- 9-50V DC, reverse polarity protection, voltage surge/transient protection
- 2 x RP-SMA for WiFi
- 2 x SMA for LTE
- 1 x GNSS
- DIN rail mounting slot in the back and on both sides
- Maximum power consumption 16W

Physical properties

- 115 mm x 44.2 mm x 95.1 mm / 4.52” x 1.74” x 3.74” (W x H x L)
- Protection class IP30
- Weight 456 g / 1.00 lbs (net weight article)
- Storage temperature -40 °C ... +75 °C / -40 °F ... +167 °F

WLAN

- IEEE 802.11 b/g/n, 2.4 GHz, max. 150 Mbps
- Encryptions WEP, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK mixed mode
- Frequency 2.412 – 2.462 GHz, 11 channels
- Access point or client mode
- Output power 20 dBm max

I/O specifications

- 1 x Digital input, 0 - 6 V detected as logic low, 8 - 30 V detected as logic high
- 1 x Digital output, open collector output, max output 30 V, 300 mA
- Software configurable I/O state
- Requires separate I/O cable (TB600PAC1 or TB600PAC2)

TBL675US

- Region: North America and Mexico
- LTE Cat-6
- Up to 300 Mbps DL, 42 Mbps UL
- Dual SIM

Frequency Bands

- LTE FDD: B2, B4, B5, B7, B12, B13, B25, B26, B291,B30, B66
- WCDMA: B2, B4, B5

TBL675EU TBL675UK, TBL675AU

- Region: EMEA/APAC/Brazil (excluding Japan)
- LTE Cat-6
- Up to 300 Mbps DL, 42 Mbps UL
- Dual SIM

Frequency Bands

- LTE FDD: B1, B3, B5, B7, B8, B20, B28, B32
- LTE TDD: B38, B40, B41
- WCDMA: B1, B3, B5, B8

POWER SOURCE SPECIFICATION FOR LOCK 150 AND LOCK 500

Power model	ATS024T-W240V
Input	100-240 V AC
Frequency	50-60 Hz
Output V	24 V
Output A	1 A
Output max	24 W
Operating temperature	-20 °C ... +70 °C / -4°F... 158 °F
Operating humidity	20% - 80% RH
Storage temperature	-20 °C ... +80 °C / -4°F... 176 °F
Storage humidity	10% - 90% RH

POWER SOURCE SPECIFICATION FOR TOSIBOX 175

Power model	ICP12-120-1000D
Input	100-240 V AC
Frequency	50/60 Hz
Output V	12 V DC
Output A	1 A
Output max	12 W
Operating temperature	0...40°C / 32°F...104°F
Storage temperature	-20°C~+80%°C / -4°F... 176°F
Humidity	5~95%RH (non-condensing)

POWER SOURCE SPECIFICATION FOR TOSIBOX 600 -SERIES

Power model	US: SJ-12015033
	EU: SJ-12015044
	AU: SJ-38812015055
	UK: SJ-12015066
Input	100-240 V AC
Frequency	50-60 Hz
Output V	12 V
Output A	1.5 A
Output max	18 W
Operating temperature	0°C~40°C / 32°F... 104 °F
Operating humidity	20% - 80% RH (non-condensing)
Storage temperature	-20 °C ... +70 °C / -4°F... 158 °F
Storage humidity	10% - 90% RH (non-condensing)

Safety Precaution

Do not use the provided power supply at temperatures exceeding 40C. To use the device in high temperatures, replace the power supply with a source rated for the used temperature.

Parameters

Input Voltage 100-240 VAC

Input Frequency 50/60 Hz

Output Voltage 12 VDC

Output Current 0-1.5 A

Operating temperature max 75C

TOSIBOX® KEY

- 2048 bit RSA key in the cryptographic module
- 4 GB or larger flash memory storage for TOSIBOX® Key software and settings
- USB 2.0 interface, type A
- Standard CSP/PKCS#11

Supported operating systems:

Windows: 10 and 11

Windows Server, 2016 and 2019

Mac OS X 10.14 (Mojave), Mac OS X 10.15 (Catalina), Mac OS X 11 (Big Sur)

Physical properties

- 83 mm x 22 mm x 10 mm / 3.27” x 0.87” x 0.39” (L x W x H)
- Weight 27 g / 0.06 lbs
- Casing aluminium + plastic
- Operating temperature 0 °C ... +70 °C / +32 °F ... +158 °F
- Storage temperature -20 °C ... +80 °C / -4 °F ... +176 °F

10. LIMITED WARRANTY

Subject to the exclusions set forth below, Tosibox will repair or replace, at its option without charge, any TOSIBOX® product which fails due to a defect in material or workmanship within 24 months following the initial consumer purchase.

This warranty does not apply to water damage, abuse or misuse of unauthorized accessories, unauthorized service or modification or altered products.

This warranty does not include the cost of labor for removal or re-installation of the product.

ANY IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED AS SET FORTH HEREIN AND TO THE DURATION OF THE LIMITED WARRANTY, OTHERWISE THE REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS EXPRESS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER AND IS PROVIDED IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. IN NO EVENT SHALL TOSIBOX OY BE LIABLE, WHETHER IN CONTRACT OR TORT (INCLUDING BUT NOT LIMITED TO NEGLIGENCE, GROSS NEGLIGENCE, BODILY INJURY, PROPERTY DAMAGE AND DEATH) FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT OR ACCESSORY, OR FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE ABILITY OR INABILITY TO USE THE PRODUCTS OR ACCESSORIES TO THE FULL EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW.

The complete information about Tosibox Terms and Conditions is available at:
https://www.tosibox.com/regulatory-information

For Product Purchased in the USA:

Performance of any obligation under this warranty may be obtained by returning the warranted product, prepaid freight, along with proof of purchase to:

Tosibox, Inc.
11770 Haynes Bridge Rd
Suite 205-101
Alpharetta, GA 30004

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Note: The above warranty applies only to merchandise purchased in the United States of America or any of the territories or possessions thereof, or from a U.S. Military exchange.

For Product Purchased in Canada:

Performance of any obligation under this warranty may be obtained by returning the warranted product, along with proof of purchase, to your place of purchase in Canada.

This warranty gives you specified legal rights. Additional warranty rights may be provided by law in some within Canada

11. LEGAL NOTICES

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sourcecode.request@tosibox.com

Tosibox Oy
Elektroniikkatie 2 A, 7th floor
90590 OULU, FINLAND

11. MENTIONS LÉGALES

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sourcecode.request@tosibox.com

Tosibox Oy
Elektroniikkatie 2 A, 7th floor
90590 OULU, FINLANDE

12. DECLARATIONS

TOSIBOX® LOCK 150

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type Lock 150 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

www.tosibox.com/documentation-and-downloads/

UL DECLARATION OF CONFORMITY

This device is UL listed in USA and Canada with UL file number E507259.

I.T.E.
E507259

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tosibox Inc.
11770 Haynes Bridge Rd
Suite 205-101, Alpharetta, GA 30004
Tel. +1 478 419-8674, www.tosibox.com

FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

FCC ID: 2AHCN-LOCK150

IC: 25009-LOCK150

TOSIBOX® LOCK 150

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 25009-LOCK150 has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Lock 150: Wi-Fi monopole antenna max peak gain 2.0 dBi.

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le CI émetteur radio: 25009-LOCK150 a été approuvé par ISED pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

Lock 150: gain de crête maximum de l'antenne monopôle Wi-Fi de 2,0 dBi.

Selon les réglementations ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière à ce que la puissance rayonnée isotrope équivalente (par exemple) ne soit pas supérieure à celle nécessaire pour une bonne communication!

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre l'antenne et l'utilisateur ou des tiers.

TOSIBOX® 175

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type 175 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at https://www.tosibox.com/tosibox-for-sites

This equipment should be installed and operated with a minimum distance of 20cm between the antenna and the user or bystanders. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Patented, incl. US8831020, US9900178, US14/119753, US14/39015

Tosibox Inc.
11770 Haynes Bridge Rd.
Suite 205-101, Alpharetta, GA 3004.
Tel: +1 478 419-8674, www.tosibox.com

TOSIBOX 175

FCC ID: 2AHCNTBNODE

Contains FCC ID: XMR201903EG25G

Compliance with IMDA Standards
XXXXXXXX

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 175: Wi-Fi monopole antenna, 50 ohm, max peak gain 0.4 dBi.

TOSIBOX® LOCK 250

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type Lock 250 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

https://www.tosibox.com/tosibox-for-sites

UL DECLARATION OF CONFORMITY

This device is UL listed in USA and Canada with UL file number E497243.

I.T.E.

E497243

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Suite 205-101, Alpharetta, GA 30004
Tel. +1 478 419-8674, www.tosibox.com

FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

Lock 250

FCC ID: 2AHCNLOCK500I

IC: 25009-LOCK500IC

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Lock 250: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi.

TOSIBOX® LOCK 250

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 25009-LOCK500IC has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Lock 250: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi.

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le CI émetteur radio: 25009-LOCK500IC a été approuvé par ISED pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

Lock 250: antenne Wi-Fi unipolaire, 50 ohm, gain de crête max 2.0 dBi.

Selon les réglementations ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière à ce que la puissance rayonnée isotrope équivalente (par exemple) ne soit pas supérieure à celle nécessaire pour une bonne communication!

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre l'antenne et l'utilisateur ou des tiers.

TOSIBOX® LOCK 500

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type Lock 500 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following Internet address:
https://www.tosibox.com/tosibox-for-sites

UL DECLARATION OF CONFORMITY

This device is UL listed in USA and Canada with UL file number E497243.

I.T.E.

E497243

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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11770 Haynes Bridge Rd
Suite 205-101, Alpharetta, GA 30004
Tel. +1 478 419-8674, www.tosibox.com

FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

Lock 500

FCC ID: 2AHCNLOCK500I

IC: 25009-LOCK500IC

Lock 500iC

FCC ID: 2AHCNLOCK500I, contains FCC ID: N7NEM7455

IC: 25009-LOCK500IC, contains IC: 2417C-EM7455

Lock 500iD

FCC ID: 2AHCNLOCK500I, contains FCC ID: N7NEM75S

IC: 25009-LOCK500IC, contains IC: 2417C-EM75S

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Lock 500: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi.

Lock 500iC, Lock 500iD: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi, LTE dipole antenna, 50 ohm, max peak gain 3.0 dBi.

TOSIBOX® LOCK 500

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 25009-LOCK500IC has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Lock 500: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi.

Lock 500iC, lock 500iD: Wi-Fi monopole antenna, 50 ohm, max peak gain 2.0 dBi, LTE dipole antenna, 50 ohm, max peak gain 3.0 dBi.

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le CI émetteur radio: 25009-LOCK500IC a été approuvé par ISED pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

Lock 500: antenne Wi-Fi unipolaire, 50 ohm, gain de crête max 2.0 dBi.

Lock 500iC, Lock 500iD: antenne Wi-Fi unipolaire, 50 ohm, gain de crête max 2.0 dBi, LTE antenne bipolaire, 50 ohm, gain de crête max 3.0 dBi.

Selon les réglementations ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière à ce que la puissance rayonnée isotrope équivalente (par exemple) ne soit pas supérieure à celle nécessaire pour une bonne communication!

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre l'antenne et l'utilisateur ou des tiers.

TOSIBOX® 610

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type 610 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at https://www.tosibox.com/tosibox-for-sites

This equipment should be installed and operated with a minimum distance of 20cm between the antenna and the user or bystanders.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Patented, incl. US8831020, US9900178, US14/119753, US14/39015

Safety Precaution

Do not use the provided power supply at temperatures exceeding 40C. To use the device in high temperatures, replace the power supply with a source rated for the used temperature.

Parameters

Input Voltage 100-240 VAC

Input Frequency 50/60 Hz

Output Voltage 12 VDC

Output Current 0-1.5 A

Operating temperature max 75C

TOSIBOX® 650

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type 650 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at https://www.tosibox.com/tosibox-for-sites

This equipment should be installed and operated with a minimum distance of 20cm between the antenna and the user or bystanders.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Patented, incl. US8831020, US9900178, US14/119753, US14/39015

Safety Precaution

Do not use the provided power supply at temperatures exceeding 40C. To use the device in high temperatures, replace the power supply with a source rated for the used temperature.

Parameters

Input Voltage 100-240 VAC

Input Frequency 50/60 Hz

Output Voltage 12 VDC

Output Current 0-1.5 A

Operating temperature max 75C

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tosibox Inc.
11770 Haynes Bridge Rd
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Tel. +1 478 419-8674, www.tosibox.com

FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

TOSIBOX® 650

FCC ID: 2AHCNLOCK675

IC: 25009-LOCK675

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 650: Wi-Fi monopole antenna, 50 ohm, max peak gain 3.5 dBi.

TOSIBOX® 650

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 25009-LOCK675 has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 650: Wi-Fi monopole antenna, 50 ohm, max peak gain 3.5 dBi.

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le CI émetteur radio: 25009-LOCK675 a été approuvé par ISED pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

TOSIBOX® 650: antenne Wi-Fi unipolaire, 50 ohm, gain de crête max 3.5 dBi.

Selon les réglementations ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière à ce que la puissance rayonnée isotrope équivalente (par exemple) ne soit pas supérieure à celle nécessaire pour une bonne communication!

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre l'antenne et l'utilisateur ou des tiers.

TOSIBOX® 670

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type 670 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at https://www.tosibox.com/tosibox-for-sites

This equipment should be installed and operated with a minimum distance of 20cm between the antenna and the user or bystanders.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Patented, incl. US8831020, US9900178, US14/119753, US14/39015

Safety Precaution

Do not use the provided power supply at temperatures exceeding 40C. To use the device in high temperatures, replace the power supply with a source rated for the used temperature.

Parameters

Input Voltage 100-240 VAC

Input Frequency 50/60 Hz

Output Voltage 12 VDC

Output Current 0-1.5 A

Operating temperature max 75C

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tosibox Inc.
11770 Haynes Bridge Rd, Suite 205-101
Alpharetta, GA 30004
Tel. +1 478 419-8674, www.tosibox.com

FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

TOSIBOX® 670

Contains FCC ID XMR201807EG06A

IC contains 10224A-201807EG06A

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 670: Wi-Fi monopole antenna, 50 ohm, max peak gain 3.5 dBi.

TOSIBOX® 675

EU DECLARATION OF CONFORMITY

Hereby, Tosibox Oy declares that the radio equipment type 675 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at https://www.tosibox.com/tosibox-for-sites

This equipment should be installed and operated with a minimum distance of 20cm between the antenna and the user or bystanders.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Patented, incl. US8831020, US9900178, US14/119753, US14/39015

Safety Precaution

Do not use the provided power supply at temperatures exceeding 40C. To use the device in high temperatures, replace the power supply with a source rated for the used temperature.

Parameters

Input Voltage 100-240 VAC

Input Frequency 50/60 Hz

Output Voltage 12 VDC

Output Current 0-1.5 A

Operating temperature max 75C

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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FCC CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user´s authority to operate this equipment.

TOSIBOX® 675

FCC ID: 2AHCNLOCK675 contains XMR201807EG06A

IC: 25009-LOCK675 contains 10224A-201807EG06A

This radio device has been tested to operate with the external antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 675: Wi-Fi monopole antenna, 50 ohm, max peak gain 3.5 dBi.

TOSIBOX® 675

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 25009-LOCK675 has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

TOSIBOX® 675: Wi-Fi monopole antenna, 50 ohm, max peak gain 3.5 dBi.

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

This equipment should be installed and operated with a minimum distance of 20 cm between the antenna and the user or bystanders.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le CI émetteur radio: 25009-LOCK675 a été approuvé par ISED pour fonctionner avec les types d'antennes énumérés ci-dessous avec le gain maximal admissible indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits d'utilisation avec cet appareil.

TOSIBOX® 675: antenne Wi-Fi unipolaire, 50 ohm, gain de crête max 3.5 dBi.

Selon les réglementations ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière à ce que la puissance rayonnée isotrope équivalente (par exemple) ne soit pas supérieure à celle nécessaire pour une bonne communication!

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre l'antenne et l'utilisateur ou des tiers.

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