# TOSIBOX®

## Simplifying IoT

Secure IoT connectivity, remote maintenance and network management

PATENTED CONNECTION METHOD

## The anatomy of IoT solutions

**4 Pillars of a Connected Enterprise**



**THINGS**
Devices

**CONNECTIVITY**
Network
Gateway

**DATA**
Storage
Streaming

**ANALYTICS**
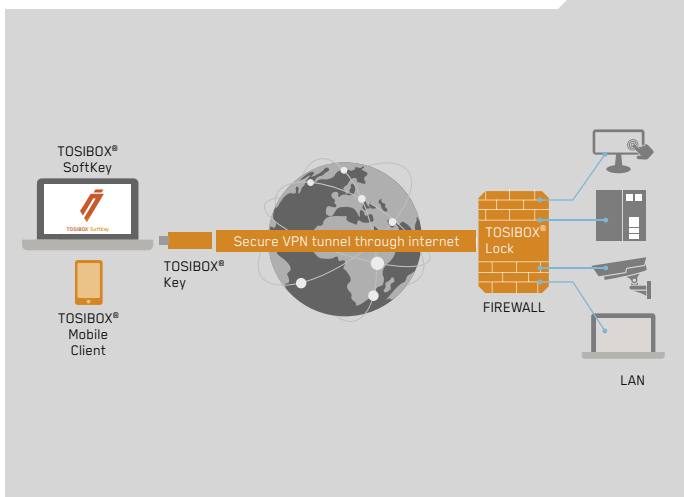Machine Learning
Visualisation
Automation
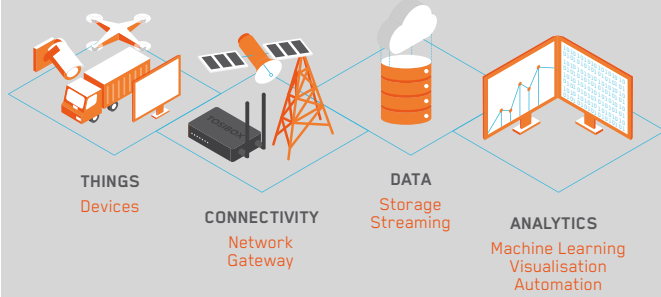
We believe that success in the era of the Internet of Things is simply a matter of connections, and connectivity is the core of IoT. Today the need for reliable connectivity is greater than ever: By 2020 more than half of major new business processes and systems will incorporate some elements of IoT.

Secure connectivity is essential for remote access, remote maintenance, continuous monitoring, real-time data collection and data logging. TOSIBOX® helps you to harness IoT for your business.

With TOSIBOX® you can create a fully secure remote connection within minutes, and without special IT skills. You can build and manage networks and IoT infrastructures with the easily expandable and timeless solution.

We offer centralized real-time management of your devices and access control that help you generate cost savings. With TOSIBOX® adding new devices or users into the network is simply drag and drop, whereas with old-fashioned IT networks completing the same task takes days or weeks.

## How TOSIBOX® Plug & Go™ works



TOSIBOX®
SoftKey

TOSIBOX®
Key

TOSIBOX®
Mobile
Client

Secure VPN tunnel through internet

TOSIBOX®
Lock

FIREWALL

LAN

## Modular TOSIBOX® technology



TOSIBOX® Virtual Central Lock

TOSIBOX® SoftKey

TOSIBOX® solution consists of modular components that offer unlimited expandability and flexibility. All products are compatible with each other. The technology can also be integrated into OEM devices.

- TOSIBOX® Key is a client used to access the network.
- TOSIBOX® Lock is an industry router sharing access to devices.
- TOSIBOX® Virtual Central Lock is the platform for network and access rights management.

| Functions | TOSIBOX® Lock 100 | TOSIBOX® Lock 150 | TOSIBOX® Lock 200 |
|---|---|---|---|
| TOSIBOX® Plug & Go™ Technology | Yes | Yes | Yes |
| Mounting options | DIN rail mounting at bottom | DIN rail mounting at bottom | DIN rail mounting on three sides |
| Power input | 12 – 24V DC, ±25% | 12 – 24V DC, ±25% | 8 – 27 V DC ±10%, with cable anchor |
| 3G / 4G USB modem support | Yes | For TOSIBOX® modems | Yes |
| WAN port | 10/100 Mbit/s | 10/100 Mbit/s | 10/100 Mbit/s |
| LAN ports | 3 x 10/100 Mbit/s, bridged | 3 x 10/100 Mbit/s, bridged | 3 x 10/100 Mbit/s, bridged |
| VPN throughput | Up to 6 Mbit/s | Up to 10 Mbit/s | Up to 15 Mbit/s |
| VPN encryption | Blowfish 128 bit CBC, AES 128/192/256 bit CBC | Blowfish 128 bit CBC, AES 128/192/256 bit CBC | Blowfish 128 bit CBC, AES 128/192/256 bit CBC |
| VPN connection authentication | PKI, 3072 bit RSA | PKI, 3072 bit RSA | PKI, 3072 bit RSA |
| Concurrent VPN connections | Max 10 | Max 10 | Max 50 |
| Supported platforms | N/A | N/A | N/A |
| TosiOnline™ – automatic connection recovery functionality | Yes | Yes | Yes |
| PoE functionality | No | No | PoE in and PoE out: 27 V / 580 mA max |
| Approvals | CE, FCC | CE, UL, FCC, ISED | CE, FCC, UL |
| WLAN | 802.11b/g/n | 802.11b/g/n | No |
| Measurements (LxWxH) | 132 mm x 99 mm x 35.5 mm / 5.2" x 3.9" x 1.39" | 132 mm x 99 mm x 35.5 mm / 5.2" x 3.9" x 1.39" | 140 mm x 36 mm x 125 mm / 5.51" x 1.41" x 4.92" |
| Power consumption | Max 7.2 W | Max 7.2 W | Max 7 W |
| Product code | TBL1 | TBL15 | TBL2 |

| Functions | TOSIBOX® Key | TOSIBOX® SoftKey | TOSIBOX® Mobile Client |
|---|---|---|---|
| TOSIBOX® Plug & Go™ Technology | Yes | Yes | Yes |
| Key role | Master Key, Backup Key, Sub Key | Sub Key | Sub Key |
| Cryptographic key size and type | 2048 bit RSA, hardware-based | 4096 bit RSA | 2048 bit RSA |
| Data encryption | TLS, Blowfish-128-CBC, AES-128-CBC, AES-256-CBC | TLS, Blowfish-128-CBC, AES-128-CBC, AES-256-CBC | TLS, Blowfish-128-CBC, AES-128-CBC, AES-256-CBC |
| VPN connection type | Layer 2 / Layer 3 (OpenVPN) | Layer 2 / Layer 3 (OpenVPN) | Layer 3 (OpenVPN on Android, IPsec/IKEv2 on iOS) |
| Mobile Client for Android and iOS | Yes (1 license incl.) | No | N/A |
| Two-factor authentication | Yes | Yes | Yes |
| Product code | TBK2 | TBSKL1 TBSKL5 TBSKL10 | TBMC1 TBMC5 TBMC10 |

| TOSIBOX® Lock 500 | TOSIBOX® Central Lock | TOSIBOX® Virtual Central Lock* |
|---|---|---|
| Yes | Yes | Yes |
| DIN rail attachment at back | 19" rack mounting, rails included | N/A |
| 12-48V DC (+/-20%), reverse polarity protected | 90 - 264 V AC | N/A |
| Internal LTE (option) | No | N/A |
| 10/100 Mbit/s | 1 Gbit/s | One required, dependent on virtual platform |
| 3 x 10/100 Mbit/s | 4 x 1 Gbit/s, independent | One or more, dependent on virtual platform |
| Up to 70 Mbit/s | Up to 700 Mbit/s | Dependent on virtual platform |
| Blowfish 128 bit CBC, AES 128/192/256 bit CBC | Blowfish 128 bit CBC, AES 128/192/256 bit CBC | Blowfish 128 bit CBC, AES 128/192/256 bit CBC |
| PKI, 3072 bit RSA | PKI, 3072 bit RSA | PKI, 3072 bit RSA |
| Max 50 | Max 4000 | Dependent on virtual platform and license |
| N/A | N/A | VMWare ESXi, Microsoft Hyper-V, Linux KVM |
| Yes | N/A | N/A |
| No | No | No |
| CE, UL, FCC, ISED | CE, FCC, UL | N/A |
| 802.11b/g/n | No | No |
| 110 mm x 58 mm x 127 mm / 4.33" x 2.28" x 5.0" | 570 mm x 430 mm x 43 mm/ 22.44" x 16.93" x 1.69" | N/A |
| Max 10 W | Max 250W | N/A |
| TBL5, TBL5PS, TBL5iA, TBL5iAPS, TBL5iB, TBL5iBPS, TBL5iC, TBL5iCPS | TBCL1 | TBVCL1 |

* Please see all requirements on Virtual Central Lock datasheet

## Patented security

TOSIBOX® is globally audited, patented and performs at the highest security levels in the industry. It's not a cloud service, but a direct VPN tunnel between the physical devices. Only trusted devices can access the network.

All of the users and keys are managed from a single console. So you can be sure that your network and data will remain encrypted and secure.

PATENTED CONNECTION METHOD

| Accessories | |
|---|---|
| DIN rail mounting bracket | TBMBD1 |
| AC Adapter (EU only) | TBPS1 |
| AC Adapter (US, UK, EU, JAP, AUS) | TBPS2 |

# TOSIBOX® solution built for your needs

## Simple
### Build and manage secure IoT infrastructure in minutes

- Easy configuration-free Plug & Go™ implementation without special IT skills
- Create and manage access groups: Limit access, add new users and objects simply by drag and drop.
- IT/OT convergence solved
- "Self-healing" network: TosiOnline™ automatically reconnects dropped connections.

## Timeless
### Deals with legacy and future systems

- Technology makes the legacy hardware and future systems compatible.
- Internet connection, operator, and device agnostic
- Works both in internal and external networks.

## Secure
### Tested & audited security

- Technology based on two-factor authentication, automatic security updates and latest encryption technology
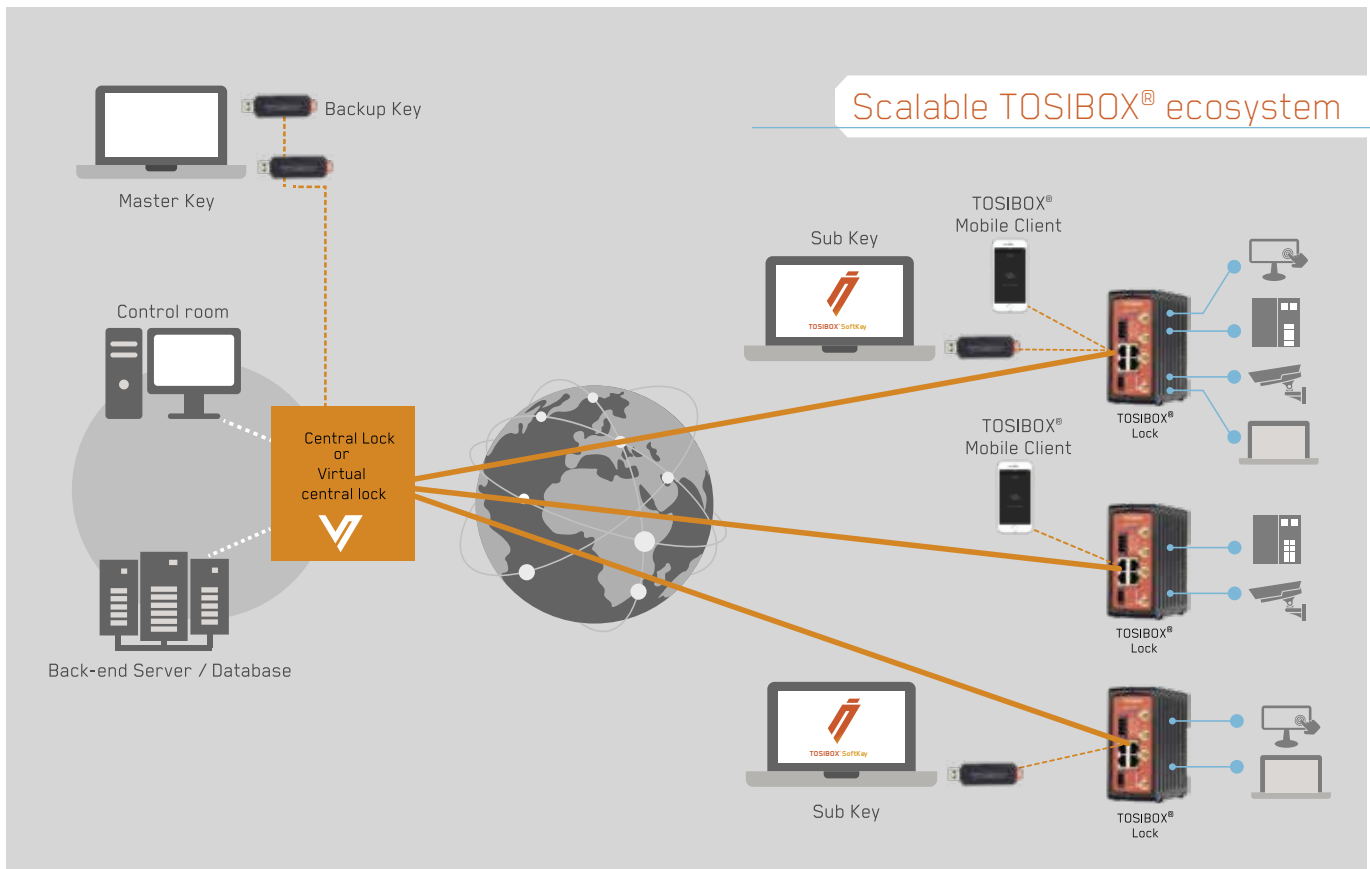- One TOSIBOX® Lock device protects all devices behind it.

## Modular
### Unlimited expandability and flexibility

- Easily extend the network when you need to.
- Grow from one object to thousands, without changing the system.

## Unique
### Globally patented point-to-point connection

- Point-to-point data flow: data streams directly between two modules, no cloud
- Two-way communication offers the benefits of IoT plus remote maintenance with one technology.
- Globally awarded solution



Backup Key

Master Key

Control room

Central Lock or Virtual central lock

Back-end Server / Database

## Scalable TOSIBOX® ecosystem

Sub Key

TOSIBOX® Mobile Client

TOSIBOX® Lock

TOSIBOX® Mobile Client

TOSIBOX® Lock

Sub Key

TOSIBOX® Lock

# TOSIBOX®

*"If a tourist can fly across oceans without knowing anything about airplanes, why can't people enjoy the benefits of technology without having an IT degree?"*

Veikko Ylimartimo, Tosibox founder

We have taken connectivity and made it simple. Our people, technology and software have created a new standard for secure IoT connectivity, remote maintenance and network management. The award-winning TOSIBOX® products are manufactured in Finland and used worldwide.

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