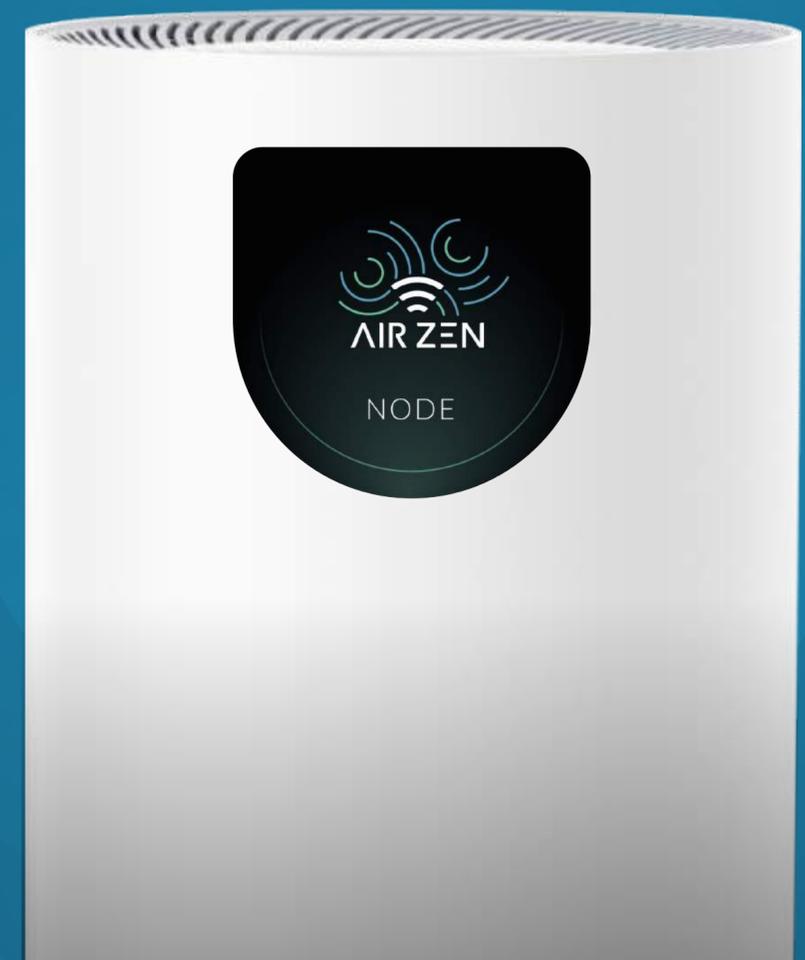




## HOME OFFICE SOLUTION

WORK EASILY AND SECURELY FROM HOME.



## SMART LIVING, SMART WLAN

A company's network technology lays the foundation for IT security and all internal digital processes. Apart from the increasing adoption of the home office, new challenges arise for this technology and its set-up. This document aims to provide decision-makers with a more detailed understanding of the holistic "Network-as-a-Service" approach of AirZen's IT infrastructure.

The aim is to strengthen the resilience of the respective IT environment and to provide a secure and smart network application. Thanks to our expertise, we also reduce the administration effort through AirZen Managed Service and thus relieve the burden on IT departments.

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## CYBER RISKS AND CHALLENGES IN HOME OFFICES

Digitalisation has changed our work environment. Processes that used to require great efforts now run automatically. Collaboration across locations right from your home office is no longer perceived as a problem but—in times of climate change—as a “home advantage” instead, providing an opportunity to conserve resources. This revolution in our work environment has also changed the employees’ requirements and needs and, with it, increased the importance of design and the relevance of network technology in companies in general. These new forms of “new work” require an increasingly robust and secure digital infrastructure, also affecting employees’ home offices, which has far-reaching consequences on a digital perspective.

### Liability risk

The management is responsible for the company’s IT security—regardless of whether it is within their scope of expertise. In the event of severe economic damage, e.g., to customers and suppliers due to data loss, blackmail, etc., its commercial liability towards harmed third parties is not limited to the company itself.

Insurance companies are also severely restricted in this respect, posing more and more requirements for the relevant IT systems. For the first time, insurers are suffering losses due to the rapid increase in malware—which adds to the dangers of connecting employees in their home offices from an IT perspective.

The AirZen system combines numerous measures to create a sound and secure IT foundation and to comply with due diligence in this area.

### Exponential risk: Home office

#### Lack of IT security

- Employees’ private routers are a “black box” that can neither be viewed nor administered by the IT department.
- Personal Internet-connected devices are particularly prone to automate hacking attacks.
- IT risks & expenses for the company increases exponentially with each home office.

#### Problem: Shared network

- Enlargement of the company network with each home office.
- When using a VPN, malware can enter the company network directly.

#### Unsupervised user behaviour

- Family members use Internet access more carefree
- Integration of private hardware with its vulnerabilities
- Increased risk exposure (social media, malware, etc.)

BEFORE | AFTER

COMPANY-IT

## Home office so far:

### Unmanaged home office

- lack of IT security
- additional burden on company IT
- one network for all devices
- unprotected, despite VPN

### Commercially available routers

Outdated software, lack of updates & security mechanisms

### Private network without AirZen

All devices in one non-secured network

#### Private network

Malware, viruses via email

#### Kids WiFi

Apps & malware, careless clicking behaviour

#### Smart Home Devices

Outdated software, target for automated attacks, exploits

home office

company device

INTERNET

## Home office with AirZen:



### AirZen Managed Service

- AirZen Protection Framework (AZP)
- Remote Management & Support
- private & office securely separated
- company policy in the home office network

### AirZen Node

Regular software updates, remote support, AZP: malware filter & blocking, botnet firewall and much more.

AZP AirZen Protection Framework



### Private network with AirZen

separate & secured networks

company device

AirZen HomeOffice

#### Kids WiFi

Parental control filter, Internet timer

#### Smart Home Devices

Increased IT risk, isolated network

#### Private network

Daily updated, security filters

## HOME OFFICE WIFI & SECURITY SYSTEM, MADE IN EUROPE.

Our service standardises your internal network, remote locations and connected home offices:

### High network resilience

- AirZen Protection Framework: Botnet Blocker, Malware Filter, Employee Data Protection
- separate & secured networks
- individual network accesses per user with 2FA
- optional VPN from Node

### Managed Service & Support

- regular software updates
- Plug-and-play installation
- AirZen Managed Support from the Expert via APP, Chat or Video Meeting
- optional self-service portal

### Noticeably better WiFi

- Seamless roaming via mesh technology
- Data limit and pause times for subnets
- dynamic network optimisation

## AIRZEN HOME OFFICE SOLUTION

The AirZen HomeOffice solution is a set of at least three AirZen Nodes (WLAN access points and router). Thanks to mesh technology, the nodes automatically form a comprehensive network across the entire home office.

The AirZen Nodes automatically establish a secure connection to the AirZen Cloud and receive their assigned configurations from there. All configurations are managed exclusively via the AirZen Cloud.

The AirZen system actively supports only in-house end devices. They can be monitored, configured, and administered by the system. Third-party components connected to or operating on the network (other routers, switches, etc.) are neither affected by the AirZen system nor impaired in their function.

IT administrators and authorized individuals are provided access to configure and administer your AirZen Nodes. AirZen also offers a managed service where AirZen takes care of your administration, configuration, and maintenance according to your specific requirements.

The nodes' firmware is specifically designed and functionally tuned for connection to the AirZen Cloud. All AirZen Nodes can be operated via network cable and/or WLAN connection.

Among other things, the AirZen Cloud also takes care of the assignment of end devices to the physical and logical locations as well as their affiliation, configurations and much more:

The AirZen Cloud is also:

- Configuration tool
- Administration tool
- Reporting tool
- Monitoring tool
- VPN coordinator (optional)

When implementing a secure home office solution, a distinction is made between networks with and without VPN connection of the nodes. In the case of a VPN connection, only an AirZen VPN endpoint is required at the company headquarters (no other technology is needed).

### **Optional: VPN straight from the node**

To do so, a secured direct connection is established between the AirZen Nodes (home office) and the AirZen Location Server (office) using a "Layer 2 VPN tunnel" directly from the node. The configuration and coordinative assignment of all these specific VPN connections is carried out via the AirZen Cloud. Any data communication is done directly from the AirZen Node to the AirZen Location Server and vice versa. Existing VPN technologies can also be used.

Besides the company PC and laptop in the home office, the company printer, IP telephone, etc., can be integrated just like at the office workplace. All other private devices in the home office continue to use the existing home network, safely separated from the company network. The network can be easily extended by adding more AirZen nodes. Also, AirZenOS technology supports multiple VPN connections per node to different endpoints to suit your needs.



**SOFTWARE DEFINED NETWORK TECHNOLOGY**  
over 40 microservices & digital infrastructure

**HARDWARE**



**AirZen Nodes**  
Router, Access, Mesh & Security

**TOUCHPOINTS**



**WiFi6**  
several virtually separated networks per node



**Portal**  
comprehensive self-service



**APP**  
full transparency



**Command Line**  
full control



**AirZen Team**  
Managed Service

**SERVICES**



**Administration**  
smart automation, comprehensive analysis tools, autonomous updates



**User networks**  
multiple locations in the same network or various subnets in one location



**Guest network**  
safely separated and with a marketing function



**Devices & Internet of Things**  
full connectivity with high-security standards



**AirZen Protection Framework**  
VPN, malware filter, botnet blocker and many more

supported interfaces of various AirZen Node products:



**Cable**  
Fibre & Ethernet

**Bluetooth**  
up to 50 m

**WiFi 6**  
up to 500 m,  
up to 10 km  
with accessories

**AirZen IoT**  
Sensor data  
up to 10 km

**4G & 5G**  
Mobile data  
reception at  
high speeds of  
up to 15 km

**Starlink**  
Internet uplink  
for distances up  
to 550 km

**GNSS/GPS**  
Location  
tracking up to  
20,000 km

**Iridium**  
Satellite connection,  
low bandwidth for  
sensor data

## Your benefits

The AirZen platform virtually extends your corporate network into the home office (and vice versa), relieving the burden on your IT department and maintaining the entire network's security. But the platform has many more advantages:

### High network resilience

Through innovative and smart automation that fully exploits the potential of your network.

- Automated software updates and short update intervals effectively improve your IT security.
- AirZen Protection Framework for increased enterprise security and minimised attack surface.
- Team management via the self-service portal: Unique employee passwords, including content filters.
- Separate and secure networks to isolate the home office networks from the employees' private networks.
- Optional VPN right from the AirZen Node, with data communication, always taking place between the Node and the Location Server.

### Cost & time saving

Comprehensive service and expert support for all your users.

- Remote management and support, permanent monitoring for operability, continuous WLAN quality measurement.
- Plug and play WLAN set: simple installation, no IT knowledge required.
- AirZen Managed Support via the AirZen App Ticket system with integrated chat solution: Employees can communicate directly with AirZen Managed Support, or the customer's IT team is connected upstream.
- Full control over your entire network through smart app management, CLI or self-service portal (optional).
- Extensive technical expertise thanks to AirZen's network know-how.

### Dynamic WiFi optimization

The latest WiFi 6 standard and clever automation provide a noticeably better network.

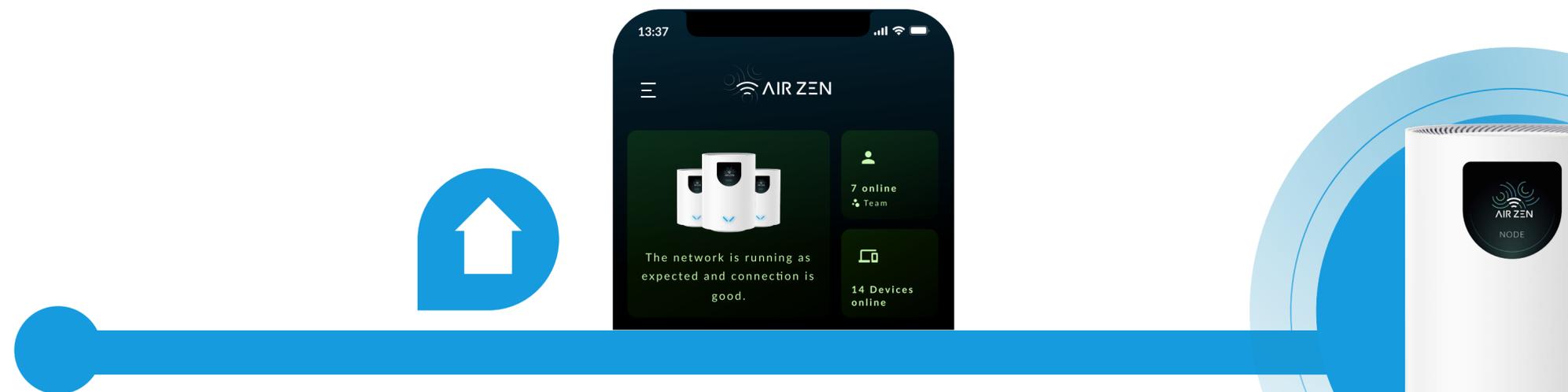
- AirZen WiFi Quality technology is used for quality control and helps solve WLAN problems before they become noticeable.
- Better WLAN connections through seamless roaming: Your end device is always connected with the optimal node.
- Automatic selection of the best wireless channel through smart analysis tools.
- Using beam forming technology, the AirZen Node always selects the best combination of WLAN antennas for the best WiFi quality.
- Mesh technology: powerful and seamless WLAN connections between all nodes thanks to intelligent mesh technology.

## IMPLEMENTATION OF THE AIRZEN HOMEOFFICE SOLUTION

The AirZen HomeOffice solution offers a substantial reduction in the workload of the IT department, increased quality of work and higher IT resilience to our customers' home offices.

AirZen provides a network management solution that examines and implements network design and security requirements based on your company's needs.

Employees receive a plug-and-play system that they can install themselves and, if required, receive help via AirZen direct support. Once the installation is done, a comprehensive network is made available in the employees' home offices.



**Week 1** *in cooperation*  
Video meeting & project meeting, start network planning.

**Week 2** *via AirZen*  
End of network planning, test unit with planned network configuration.

**Week 3-5** *via AirZen*  
Start of rollout, shipment of the devices and on-site installation via plug and play. The network is available immediately.

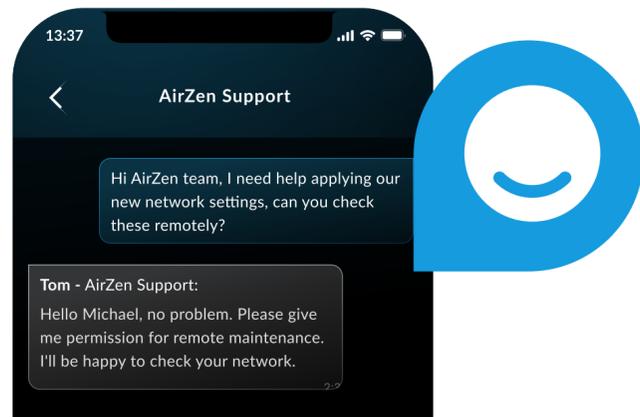
### Preparation

Specific network and location settings are defined in the AirZen Cloud. Each AirZen set is assigned to a so-called "location" (based on the node serial number), which follows the network settings previously defined by the customer. Identical or different configurations may apply at various locations. These configurations are usually done before delivery.

### Delivery and commissioning via plug and play

The AirZen Node set is delivered directly to the home office or workplace by parcel service. In case of installation problems, AirZen live support is available to help your staff.

Via LAN cables, the AirZen Nodes are connected to the DSL modem of the private Internet connection or the existing provider router and thus receive their IP address via DHCP.



### **Week 6-8**

Conclusion & fine-tuning. Final details are set up and agreed upon. The go-live operation is already underway.

### **Operation of the AirZen HomeOffice solution**

As soon as the AirZen Node has Internet access, it automatically establishes a secure connection to the AirZen Cloud, logs into it, and receives its individual configuration. Then, it generates an accessible WLAN with a configurable (company) SSID, which we call "HomeOffice".

The respective end device is securely separated from the private home network, i.e., it is located "exclusively" in the company network. No access from the private network to the company network is possible.

### **Separate & secured networks**

All data transmission in the "HomeOffice" network is protected and securely separated from the private home network (and vice versa).

Via the self-service portal, even the WLAN SSID "HomeOffice" login can be protected by individual passwords per user and device. In addition, each Ethernet cable connection of the AirZen Node can be assigned to the desired network to securely install printers and other in-house devices in the home office.

### **Required connections & bandwidths**

A home office Internet connection should have a transmission rate of at least 10 Mbps. Alternatively, an AirZen Node model might be able to provide higher bandwidth via 4G/5G connectivity. This device can further be used as a fail-over system during an Internet outage so that the Node automatically switches from cable to 4G or 5G. An additional SIM card from the respective country provider is required to enable the 4G/5G connection. In addition, a VPN tunnel can be established, and the company can thus be connected via various uplinks (SD-WAN).

## STATE-OF-THE-ART TECHNOLOGY

With the AirZen HomeOffice solution, you gain a professional WLAN system at your home office, providing all users with a secure network solution for their personal and business applications.

Each AirZen Node features multiple networks: HomeOffice, Private, Kids WiFi & Things. These networks are securely separated from each other and managed. The company's IT department can manage the home office network while all other networks remain private.

Apart from the expansion option ("mesh") for optimal coverage of all rooms, the AirZen Smart Roaming function ensures that the end device is always automatically connected to the most powerful AirZen Node at the current position. This is relevant, for example, for uninterrupted voice-over-IP telephone calls when you want to move around the house during the call. The new method is based on the fact that it is not the end device but the WLAN system that regularly checks which connection between the end device and the accessible AirZen Nodes offers the best transmission quality.

The AirZen tools provide the IT administrator and the home office user with numerous status analysis tools so that the cause of connection problems can be quickly determined. The AirZen system is designed to perform regular status analyses autonomously and to transmit them if a problem is detected.

An authorized administrator can then dial directly into the home office network via VPN to support the user remotely. The administrator has no insight or access to the user's private network.

Alternatively, you can use the common tools via the company network. Administrators can change the configuration of the home office network or reset a WLAN password, depending on their authorization. All these activities are recorded in a log. The users do not usually have these permissions, as they are not required for use.

## Mesh technology

AirZen Nodes are mesh capable. Multiple and mixed-model AirZen Nodes can be used in a home office, extending the WLAN across the entire house and outdoors (in the garden and outbuildings).

Since the mesh function is also installed via plug-and-play, the network can be upgraded with multiple AirZen Nodes at any time. The "AirZen MeshNode" process automatically connects all AirZen Nodes in the home office effortlessly without any further manual configuration. The mesh technology ensures full coverage at a stable transmission speed, deciding autonomously which AirZen Node provides the best performance for an end device—particularly for mobile end devices in the mesh zone.

## Cybersecurity

AirZen continuously scans the destination IP addresses accessed through the AirZen Node, filtering current virus botnets and other malicious destination IPs. Such connections are blocked to prevent communication to the virus command server during a virus attack.

The optional AirZen Node H5 5G model offers another feature for remotely managed home office networks. The AirZen mesh set provides a perfect and secure WLAN within the home office, while the Node H5 gateway handles Internet operations via 5G and a private DSL connection. It is even possible to connect the home office network solely via 5G using a VPN tunnel (AirZen VPN or 3rd party provider), leaving the private DSL connection unused.

If both uplinks are used, the inactive one serves as a fallback. This way, Ethernet connections in the home office can also be directly linked to the company, extending the corporate Ethernet connection into the home office. As a result, the AirZen platform offers you true dynamic enterprise networking.

The AirZen HomeOffice solution has security mechanisms and authentication procedures of various strengths, which are set up and activated as needed to suit the network characteristics and customer requirements. At the highest security level, for example, it is possible to configure that only previously selected users and identified devices are granted access via a particular Node and at a specified location. Therefore, should a shipment fall into the wrong hands, there is no risk, as additional security features, such as a second passcode, are required to complete the installation.

If VPN is used, the settings and security mechanisms of the company network are also active in the home office. Please note that the AirZen Cloud is neither intended to nor can it administer the company network. The extension of a company network can only ever be as secure as the company network itself.

Access to the AirZen Cloud is granted via a security certificate coupled with two-factor authorization. The communication between AirZen Nodes and the AirZen Cloud is likewise encrypted and certificate-based. This communication is controlled via special-purpose software developed by AirZen.

## AirZen App

The AirZen App management is straightforward and easy to use for the individual user. Because of this, the home IT security features are easy to understand and, based on our experience, are often used by users to take further preventive security measures in the home office. Using the functions for the private network is optional. AirZen ensures a separation of private and work through innovative and modern technologies, aiming to protect users against Internet threats.

## AUTOMATED SOFTWARE UPDATES FOR WLAN ROUTERS AND CLOUD SYSTEMS

In today's digital world, most users are aware of the need to keep their laptops, mobile phones, etc., updated to protect their data. Yet, the WLAN router itself is often neglected.

**Prevention is better than reaction: Regular, automated updates are paramount.**

A WLAN router that does not receive periodic and automated software updates is a great security risk. Numerous WLAN routers come with outdated firmware ex-works and are thus no match for the current cyber threat situation. Such WLAN routers are all too often inadequately maintained. Hence, an additionally acquired security system will be of little use if the prime equipment connected directly to the Internet is the main problem.

At AirZen, a high update interval is maintained as a fundamental practice. The access points automatically check for new versions once daily, during the night. If an update is available, it is executed automatically, and normal operations are resumed within a few minutes. This facilitates the rapid deployment of time-critical security updates and feature enhancements. Updates can also be initiated manually, and there is the option to schedule updates based on a predefined time frame.

### **Critical Security Updates**

On our servers, automatic installation of security updates for standard components takes place no later than four hours after their release. In the case of applications developed by AirZen, the structure is designed such that security-relevant components, such as connection encryption, are inherited from standard components that are regularly updated in this manner.

### **Regular Updates**

Regularly updating software provides a dual benefit. Firstly, it allows for the closure of security vulnerabilities before they become publicly known. Secondly, it reduces the risk of interface changes in interim versions hindering the smooth installation of urgently needed updates. Since the majority of attacks are based on already-known security vulnerabilities, regular updates prove to be of utmost importance.

### **Feature Updates**

The provided updates implement new product requirements. In cases where updates are released to adapt and expand functionality, they also include updates for the rest of the system whenever possible.

## Expandable services

In addition to the AirZen HomeOffice solution, AirZen offers other packages, namely the AirZen Core Solutions.

All AirZen solutions are compatible, interoperable, and based on standardised node technology and common cloud architecture.

AirZen

### Public WiFi

Offers secured guest access with a portal and additional marketing functions. Thanks to the various configuration options, the appearance, functions, and evaluations of the guest networks can be conveniently configured individually.

AirZen

### Business

Provides a simple and secure network management solution that can quickly deploy and scale corporate networks of all types and sizes as needed. For this purpose, AirZen offers a variety of administration options via remote maintenance, which significantly reduces the workload of IT departments.

AirZen

### Education

Provides educational institutions with the ability to securely operate separate administrative, teacher and student networks simultaneously and ensure highly protected Internet use. The administration functions are tailored to the unique needs of this industry and can be operated intuitively.

AirZen

### Industrial

It is specially designed for industrial and governmental requirements, with demands on IT security and reliability—even under difficult operating conditions such as extreme weather or dynamic environments.



## AIRZEN IDENTITY

AirZen is a manufacturer of European, innovative, high-quality and easy-to-use network solutions. Our pioneering Network-as-a-Service approach strengthens IT security and sustainably optimizes IT management to ensure maximum customer benefit.

Responsibility is the guiding principle for the development and deployment of AirZen products and solutions, with a focus on security, reliability, and performance.

As a manufacturer, we value direct collaboration with customers as well as partnerships with experienced IT partners. AirZen offers comprehensive solutions comprising proprietary hardware and software components.

For more information and contact details, please visit [www.airzen.io](http://www.airzen.io).

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