



UBIQUITY

THE REMOTE ACCESS:
**SAFE, INTUITIVE,
FLEXIBLE**



A ROCKWELL AUTOMATION COMPANY



HIGHLIGHTS

- IEC 62443 certified solution for remote assistance in any industrial scenario
- Access to remote supervision and control systems and automation devices through a VPN optimised for industrial communications
- Easy to install, configure and use, it does not require additional hardware and specific IT knowledge.
- Speed, reliability and low latency guaranteed by the end-to-end connection
- Access to remote devices connected via Ethernet, USB, and serial interfaces
- Transparent management of remote systems, as if they were connected to their company network, excluding the intervention of the network administrator on any NAT, proxy, firewall, public IP, or reserved ports
- Multiple simultaneous connections by multiple remote support technicians to operate on the same machine at the same time
- Advanced user management with profiles and granular permissions, structured and flexible organization of devices and users
- Advanced audit of administration activities, connections activities and data traffic monitoring
- Remote device desktop access with process management, file exchange and chat
- Redundant cloud-based server infrastructure ensuring scalability, service continuity, load balancing and fault tolerance
- Remote desktop and VPN functionality can also be used in a local network without an internet connection
- Augmented Reality App with VoIP functionality to assist technicians in the field Web API for maximum integrability into proprietary applications
- Available as a software solution thanks to the UBIQUITY Runtime for Windows OS, from Windows CE to Windows 10, and Linux Ubuntu22
- Available as a hardware solution thanks to the UBIQUITY Routers
- UBIQUITY RUNTIME is also included in all ASEM operator panels and industrial PCs

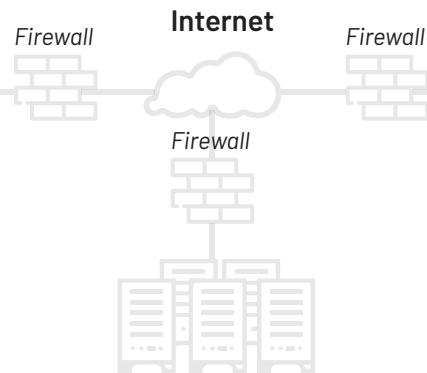




UBIQUITY
CONTROL CENTER

UBIQUITY CONTROL CENTER WEB

Available as a web application via the portal <https://ubiquity.asem.it/controlcenter/> and as a Windows application. It allows remote support technicians to perform remote assistance by activating device connection and the VPN to access the automation sub-network. It enables to manage of users, their permissions and to register and manage remote devices.



UBIQUITY Server Infrastructure

UBIQUITY RUNTIME

SOFTWARE APPLICATION

Installable on devices based on x86 platform and Windows operating systems, starting with WinCE and ending with Windows10, and Linux Ubuntu22 either or based on ARM platform and Windows CE operating system. It allows access to the system itself and the automation subnetwork. It requires no additional hardware or network configuration and uses the existing Internet connection.

UBIQUITY Runtime is also integrated and included in all ASEM operator panels and industrial PCs.

UBIQUITY ROUTER

HARDWARE SOLUTION

It provides remote support and remote access to any automation device or network where an UBIQUITY Runtime cannot be installed or where there is no ASEM operator panel or industrial PC.

UBIQUITY Router also features digital I/O for physical management of remote access, integrates networking features such as Routing, NAT and Internet Sharing, and finally can provide WiFi and Cellular connectivity for models that provide it.

UBIQUITY AR APP

AUGMENTED REALITY APP

Available for iOS and Android smartphones and tablets, it extends and simplifies remote support for both field and support technicians. The device on which the App is installed, which can be downloaded for free from the App Store and Play Store, can be associated with the domain like any UBIQUITY Runtime.

Remote access makes it possible to: share the scene framed by the camera, guide the operator using annotations that stay locked onto the framed elements, and enable voice communication via VoIP.

UBIQUITY RUNTIME – FEATURES

UBIQUITY RUNTIME FOR IPC ⁽¹⁾ AND HMI ⁽²⁾	BASIC	PRO
<ul style="list-style-type: none"> Interactive tools: Remote Desktop, Chat⁽³⁾, File transfer, Task manager VPN to the device with integrated Firewall and Routing Rules Support for multiple connections from different Control Center Web App with separate VPNs for each client Local Connection to use interactive tools and VPN without internet access 	✓	✓
<ul style="list-style-type: none"> VPN to the automation subnet with integrated Firewall and Routing Rules Serial and USB passthrough Internet connection sharing (ICS) with devices on the automation subnet 	✗	✓

(1) any ASEM IPC, includes UBIQUITY Runtime Basic license

(2) any ASEM HMI, includes UBIQUITY Runtime Basic or Pro license depending on the model

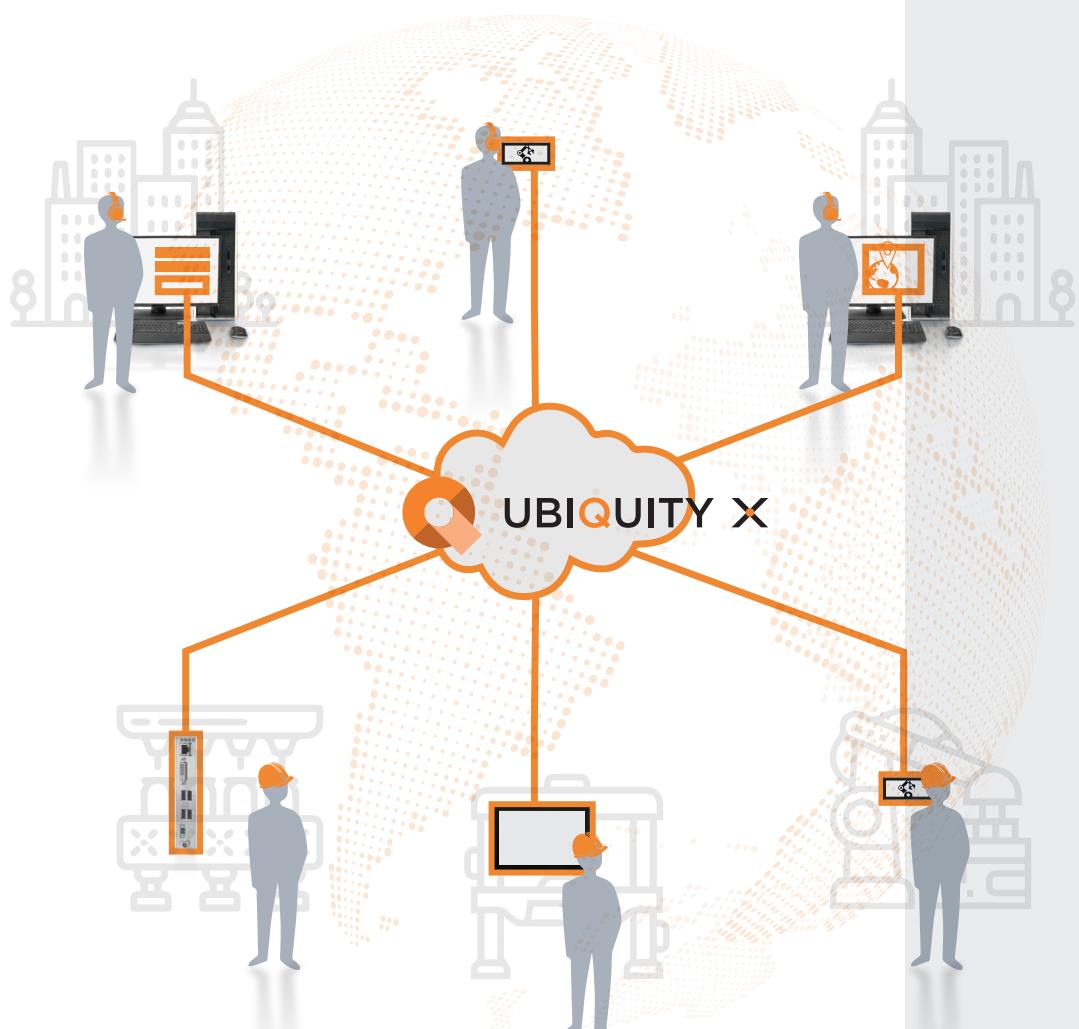
(3) available on Runtime for IPC and on Runtime for HMI based on WinCE

UBIQUITY X - CONNECTIVITY SERVICES

UBIQUITY X is a package of advanced cloud-based connectivity services perfectly integrated into the infrastructure to meet the increasingly dynamic needs of companies using remote assistance for plant commissioning, malfunction analysis, remote training, and for all other activities that especially today's people choose to carry out remotely in total security.

BUSINESS MODEL

The sales offer for the purchase of UBIQUITY X services is based on a SaaS business model, which makes the platform for remote assistance even more competitive and allows new features to be maintained and developed more easily and efficiently, and provides users with greater flexibility, speed of configuration, implementation, and upgrade, accessibility and scalability in subscription option. In fact, UBIQUITY X services can be purchased upon payment of a fee, which entitles users to be sent an activation key to access the cloud infrastructure managed by ASEM and whose value is based on the number of simultaneous connections between field systems and remote support devices (1, 2, 5, 10 or unlimited connections).





LOCAL CONNECTION

It allows you to take full advantage of all UBIQUITY features even on a local network without Internet access*. Thanks to this innovation, it is possible to: connect via Remote Desktop to the UBIQUITY Runtime locally, enjoying advanced features such as chat, file transfer and process management, overcoming the limitations of VNC; access via VPN to the automation subnet during the development and commissioning of machines integrating UBIQUITY Runtime or UBIQUITY Router; use UBIQUITY to connect to remote devices integrating UBIQUITY Runtime or UBIQUITY Router, even when a third-party VPN provided by the end customer is required.

* The feature is supported to date only by UBIQUITY Runtime for Windows, OptixPanels, and UBIQUITY Router RK2x.



SINGLE SIGN-ON

A UBIQUITY X domain can be configured to use an external Identity Provider based on OpenID Connect (OIDC), such as Azure AD, Auth0, and so on. Integration with the external Identity Provider is available in two ways: authentication only where authentication is provided by the external Identity Provider, while permissions are managed in UBIQUITY; authentication and authorization where authentication is provided by the external Identity Provider and in addition, permissions are assigned to users through group membership, which are provided by the Identity Provider during authentication. It is also possible to have a mixed type of authentication where some users authenticate through the external Identity Provider and others authenticate with UBIQUITY credentials.

NOTE: Integration first requires a feasibility study by ASEM.



SECURE END-TO-END CONNECTIVITY

Secure end-to-end connectivity for device access and use of interactive services:

Remote desktop / You do not need to keep RDP services active or install additional utilities such as VNC.

File exchange / Complete tool to download and upload remote files. No need to open shared folders or install additional applications such as an FTP server.

Chat / It is possible in many cases to avoid using the phone to communicate with remote operators and simply take advantage of the chat, saving costs.

Multi-client / UBIQUITY Runtime supports multiple simultaneous connections by multiple Control Center both with interactive sessions (remote desktop, file transfer, etc.) and in VPN. Furthermore, multiple interactive sessions can be enabled from the control centre to different devices but with only one VPN connection to a remote device.

Maximum productivity thanks to the possibility to operate simultaneously on the same machine.



AUTOMATIC SELECTION OF THE BEST CONNECTION

A simple function that measures the quality of the connection on both local and remote networks. Performance is measured in terms of latency time, jitter, and packet loss.



DEVICE GEOLOCALIZATION

Geolocation of devices with positioning on geographical map.



PROGRAMMABLE UPDATES

UBIQUITY devices can be updated immediately and by scheduling the update within a specific time interval. The process can be carried out securely and without the need to be on site.



ASSISTANCE REQUEST

Support for sending notifications for the request for assistance directly from the system in the field.

The support request is sent directly from the UBIQUITY Runtime interface by simply clicking a button inside the UBIQUITY Runtime control interface.

The Control Center user enabled to receive assistance requests, will see a visual notification (pop-up) that indicates the request from the field operator. It is also possible to configure the sending of an e-mail following the request for assistance to the authorized support technicians.



CONNECTION AUTHORISATION

Through Control Center, it is possible to configure UBIQUITY Runtime on a device so that it requires interactive confirmation from the field operator on possible incoming connections from Control Center by remote support technicians. Once the incoming connection is accepted, a widget always appears in the foreground that will indicate the remote users currently connected and with which it is possible to interrupt remote connections at any time.



ADVANCED AUDIT

UBIQUITY records on cloud domain all the connection activities to devices and domain administration operations. The administrator can check at any time the workload carried out by the after-sales support operators, verify the correctness of the work performed, and obtain statistics for:

- customer
- device
- operator



ADVANCED USER MANAGEMENT

UBIQUITY allows the creation of an unlimited number of users, user groups, device groups, each with different access rules. Four different user profiles:

Administration: allows the management of users and folders.

Device Installer: allows to add new domain devices.

Network security: allows configuration and fine-tuning of firewall rules.

Remote access: allows to practice remote access sessions.

Users can flexibly implement their own organisational structure (consisting of users, administrators, power-users, third parties involved, limited users, etc.) to reach in a flexible and controlled way all plants worldwide with the possibility to create subdomains, local and global users. Useful for separating domain management into independent subdomains representing different business units and/or facilities located in different geographic areas.



AUGMENTED REALITY

Easy and intuitive to use UBIQUITY AR makes visible in Control Center the scene framed by the camera of the operator's smart device in the field with the possibility of creating 3D annotations, 2D freehand drawings, and texts on the scene framed by the camera both by the operator and by the remote support technician from Control Center, being able to communicate easily both by voice thanks to VoIP technology and through the integrated chat.

Fully integrated into the UBIQUITY ecosystem, it ensures:

- Permission management
- Cybersecurity standard IEC62443
- Connection log
- Sending of "requests for assistance"



WEB API

Web APIs that enable the integration of UBIQUITY's features with third-party web applications, enabling an advanced interoperability level with business management tools such as ERP or plant monitoring dashboard.

SERVER INFRASTRUCTURE

To provide excellent service, ASEM has set up a redundant and globally distributed server infrastructure that ensures scalability and service continuity.

In the same way, it is possible to replicate and set up a private server infrastructure managed independently.



THE UBIQUITY SERVER INFRASTRUCTURE

Through ASEM's cloud-based public server infrastructure, each customer, within its domain, is not subject to any limitations regarding the maximum number of configurable users, associated devices, concurrent sessions, free access to network traffic via VPN.

The infrastructure has two servers in Europe, two in the United States (West and East Coast), one in South America (Brazil) and two in Asia-Pacific.

The ASEM public server infrastructure uses the best security techniques for information exchange such as SSL/TLS and public-key encryption to guarantee the confidentiality and integrity of the exchanged data.



THE PRIVATE SERVER INFRASTRUCTURE

The Private Server package allows the user to install a private server infrastructure in completely independently. The private server can be installed on dedicated machines or cloud servers. There are two implementation options: Primary Server and Secondary Server.

Primary Server

- Contains data: manages authentication, permissions, security
- Manages the licenses of UBIQUITY Runtime, acquired by the client
- Performs the relay function for the implementation of end-to-end communication

Secondary Server (optional)

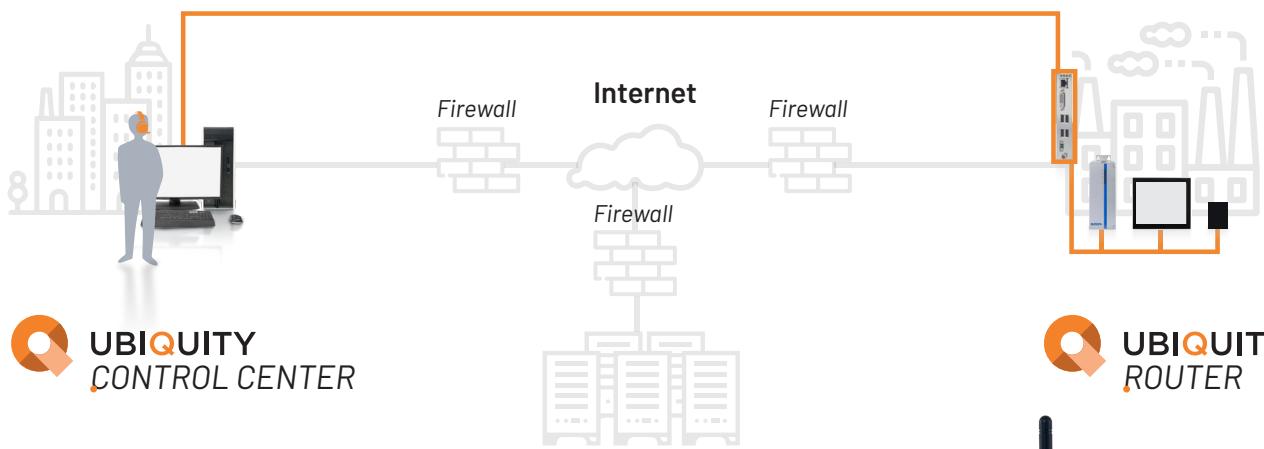
- Optional package with relay functions. You can buy several secondary servers and install them in different parts of the world by building a second server network parallel to the "public" network
- Implements the relay function for end-to-end communication
- Multiple geographically distributed instances can be installed to decrease latency and balance traffic

	PUBLIC	PRIVATE	NOTES
Remote update of UBIQUITY Router	✓	✗	
Map localization	✓	✓	Only by manual setting the address in the Control Center
VPN Mobile	✓	✓	
Augmented Reality	✓	✓	
Request of assistance	✓	✓	
Request of user authorization	✓	✓	
Audit of Connections details	✓	✓	
Concurrent access	✓	✓	On public server available only with the Unlimited concurrent connections
Two factor authentication	✓	✓	

UBIQUITY ROUTER

UBIQUITY ROUTERS complete the range of Remote Assistance Solutions. The integrated UBIQUITY software creates a VPN between the remote assistance PC and the router, enabling access to automation devices connected via Ethernet, Serial, or USB interfaces.

Also available with GLOBAL 4G modem, Wi-Fi interface, and 4-port Ethernet switch, ensuring extensive connectivity options. Reliable and sturdy, thanks to the extended temperature range, UBIQUITY routers can also be used in harsh environments.



UBIQUITY Server Infrastructure



ROUTER	RK20	RK21	RK22
WAN	1x Gigabit Ethernet	1x Gigabit Ethernet	1x Gigabit Ethernet
LAN	1x Gigabit Ethernet	1x Gigabit Ethernet	1x Switch Ethernet (4x Gigabit Ethernet)
USB	1x USB 2.0	1x USB 2.0	1x USB 2.0
SERIAL	1xDB9M	1xDB9M	1xDB9M
CONNECTIVITY	X	✓ (not available for RK21 - WiFi version)	✓
	X	✓	✓
DIGITAL INPUT/ OUTPUT	✓	✓	✓
VPN	✓	✓	✓
NAT/ROUNTING	✓	✓	✓
INTERNET SHARING	✓	✓	✓
INTEGRATED FIREWALL	✓	✓	✓
OPERATING TEMPERATURE	-20°C + 60°C with radio module -20°C + 65°C without radio module		

REQUIREMENTS

UBIQUITY CONTROL CENTER AND UBIQUITY TOOLS		
SW REQUIREMENTS	OPERATING SYSTEM	HW REQUIREMENTS
.NET Framework 4.0 Client Profile	Windows 10	512 MB RAM, CPU 1.6 GHz or faster
	Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016, 2019	
	Only by manual setting the address in the Control Center	
UBIQUITY RUNTIME		
SW REQUIREMENTS	OPERATING SYSTEM	HW REQUIREMENTS
.NET Compact Framework 3.5	Windows CE 6.0 (x86)	256 MB RAM, CPU 500 MHz or faster
	Windows CE Compact 7.0 (ARM, x86)	
	Windows XP SP3	
NET Framework between 4.0 and 4.7.1 (4.0 is distributed with the setup)	Windows Embedded Standard 2009 (XPe)	512 MB RAM, CPU 500 MHz or faster
	Windows Embedded Standard 7 (7E and 7P) 32-bit and 64-bit	
	Windows 7 32-bit and 64-bit	
	Windows 10, Windows 10 IoT Enterprise	
	Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016, 2019	
	Linux Debian 10	
X Window System (X11)	Linux Ubuntu 20	
VPN MOBILE		
HARDWARE	OPERATING SYSTEM	SW REQUIREMENTS
Please check Android compatibility documentation	Android 4.1 or later	
UBIQUITY VPN MOBILE APP		
HARDWARE	OPERATING SYSTEM	SW REQUIREMENTS
Please check Android compatibility documentation	Android 7 or later	Please visit https://developers.google.com/ar/discover/supported-devices for a complete list of supported devices
Please check Apple compatibility documentation	iOS 11 or later	
UBIQUITY PRIVATE SERVERS		
HOSTING	OPERATING SYSTEM	SW REQUIREMENTS
PRIMARY SERVER: 2 public IP addresses, one of them associated to an Internet Domain name SECONDARY SERVER: 1 public IP address	Windows Server 2008 R2 SP1 x64 (with KB2533623) Windows Server 2012 R2 x64 (with KB2999226)	Microsoft SQL Server 2012 Express or later .NET Framework 4.6.1 Client .NET Core Hosting Bundle Web server: IIS 7.5 or later (with TLS 1.2) SMTP Server SSL certificate

ASEM S.r.l.

Via Buia 4
33011 Artegna (UD) | Italia

Phone: +39/0432-9671
Fax: +39/0432-977465

email: industrialautomation@asem.it
website: www.asemautomation.com

