



HVAC INTEGRATION IN 194 APARTMENTS

Sector: Home Automation

Project Goals

- To have a real status of the air conditioner system being able to monitor alarms and specific signals of the AC units.
- Compromise between functionality and aesthetic aspect.
- Ensure that the solution offers comfort, energy savings and a remote control of the entire building.

Client

- ILEVIA S.R.L.

Products

- IntesisBox WiFi gateway for Mitsubishi Electric air conditioning (ME-AC-WMP-1).
- ILEVIA EVE X1 Server for multi-protocol integration.

Solution

- ILEVIA EVE Server allows the control and supervision of the whole building thanks to the ability to manage different protocols simultaneously.
- The IntesisBox WiFi gateway is connected via WiFi to EVE Server allowing full control and monitoring of the Air Conditioner system.
- The IntesisBox gateways are installed next to the AC units in a hidden location in order not to damage the careful design of the apartments.



Bangkok, Thailand

ILEVIA, the Italian manufacture of Home & Building Automation products, chooses IntesisBox WiFi gateways for the control and monitoring of HVAC systems. This provides building owners real-time data from their buildings as well as energy savings and preventive maintenance.

The project is based on a complex of 194 apartments in which the building owner decided to implement some advanced solutions in terms of comfort, energy savings and automation. ILEVIA implements a solution that allows, among others, the control of lighting, shading, HVAC and energy management.

One of the main concerns was to be able to control the 4 Mitsubishi Electric Air Conditioner units that each apartment includes and, even further, to have a real status of them. This together with the need of not damaging the original design of the apartments, made IntesisBox WiFi gateways the best solution. In addition to the Mitsubishi Electric gateway used for this project, IntesisBox offers a wide range of products for different Air Conditioning manufactures as well as an Infrared solution compatible with thousands of AC models.

ILEVIA EVE X1 Server - All in One Smart Home Solution

EVE Server was the solution selected by the customer to control and supervise the entire building. Eve is an innovative product for Home & Building Automation developed by the Italian company ILEVIA. Its ability to interact with multiple protocols, both standard and proprietary, has enabled the easy interfacing of all the installed technologies in each apartment. Due to this ability, the communication with the IntesisBox WiFi gateways is also possible by using a simple ASCII protocol via TCP/IP.

In addition to the lighting, shading and HVAC management, EVE Server includes numerous additional function such as scenarios, timers, calendar events, energy monitoring, statistics charts and notifications. The tenants of the apartments have all the control from a remote Android or iOS app.

One of the most appreciated point by the installer was the user interface set up time required. In a few minutes the interface was ready for 194 users (194 apartments). The possibility to apply a remote configuration avoid also unnecessary travels to each apartment when some adjustment is required.



“We choose this solution for many reasons but the three most important are: to have the real feedback from the AC unit which cannot be done with IR solutions, to avoid using bad looking and expensive thermostats and the time we save in the installation and configuration thanks to EVE Server”

Den Theo,
owner of ESTUDIO TECNOLOGIES,
the installer.

How it works

The IntesisBox WiFi gateways range of products allows an easy Air Conditioner integration in any kind of control and monitoring system using a simple ASCII Protocol. This product family is specifically designed for Home Automation manufacturers, as ILEVIA, interested in offering a control solution for the Air Conditioning system.

The WiFi gateway brand specific is directly wired to the AC unit and connected to a local WiFi network. EVE Server is connected to the same IP network via Ethernet cable. So, by using a simple ASCII protocol the communication between the 2 devices is established. EVE can send telegrams to IntesisBox which will be transferred to the AC unit and vice versa.



IntesisBox WiFi gateways – Full control of Air Conditioners from IP systems

One of the biggest challenges of the project was to be able to control the Air Conditioner system from the EVE Server and to get always the real status of the AC units. Thanks to the bidirectional communication that offers IntesisBox gateways, this matter was solved. The Air Conditioner data provided by the WiFi gateway can be analyzed by the EVE Server and used by the users (installer, building owner or final customer).

Some benefits of having bidirectional communication:

- Economic savings: The internal temperature sensor of the AC unit can be monitored and therefore used to launch some actions. This eliminates the need of expensive thermostats.
- Data processing: The data can be organized in real-time graphs and analyzed. Then some corrective actions can be implemented to get energy savings.
- Technical assistance: the AC unit reports errors instantly allowing a fast reaction.

Thanks to the possibility of creating local WiFi networks for each apartment, the risk of having to reprogram the IntesisBox after custom router installation is avoided saving also valuable time.