



Smart Homes Promote Convenience, Energy Savings, Safety, and Wellness

Tatung uses an Intel®-based intelligent gateway manufactured by Elitegroup Computer Systems (ECS) to improve the home environment and conserve energy

“A smart home not only makes physical life more convenient, it also makes energy conservation intelligent for a more energy-efficient future.”¹

Wen-Yen K. Lin
Chairperson of ECS
and president of Tatung

Enriching Lives with the Internet of Things

More than ever, people around the world are getting “connected” in a new era of mobility. This trend is now extending to the home, which can be monitored and controlled from anywhere, at any time. All kinds of home-related systems and devices are now connecting to the Internet as well as part of the rapidly evolving Internet of Things (IoT).

Smart meters represent just one example of this development. The meters make monitoring home information more convenient than ever, collecting real-time electricity usage data from home systems so residents can see power consumption on a daily, monthly, or yearly basis. With more efficient electricity management, residents can minimize wasted energy.

Smart home technology offers a powerful tool for harnessing the power and promise of IoT. Smart homes provide high levels of convenience, safety, and wellness. They also help residents conserve energy, which is vitally important as the world seeks to reduce pollution and confront other environmental issues. Just by reducing the amount of wasted power, people can have a tremendous impact on their carbon footprint.

Smart homes are enabling people to lead more convenient, environmentally friendly, healthier, and safer lives. And in today’s highly competitive real estate market, enhancing the occupant experience is a top priority for property management companies, building developers, and smart home solution providers.

The Smart Home in Action

Imagine managing your home appliances, energy consumption, healthcare services, and security monitoring all from one screen—on a PC, tablet, or smart phone. Tatung collaborated with Intel and design manufacturer Elitegroup Computer Systems (ECS) to make this possible, giving residents easy-to-use control over their home environment.

The Tatung/ECS Smart Home solution connects residents to a host of features designed to enhance their lives.

Greater convenience

With the touch of a button, the home environment adapts to what residents are doing, such as dining, entertaining, watching movies, sleeping, or traveling. Tatung/ECS Smart Home controls lighting and appliances to create the right mood and save energy, when possible.



Increased energy savings

Residents can cut their energy use by monitoring electricity consumption across the home. Tatung/ESC displays utility bills and energy usage by appliance, helping identify ways residents can reduce energy spending.

Enhanced security

Whether home or away, residents are alerted about dangerous incidents, such as an elderly family member falling, a possible burglary, or a fire. Tatung/ESC Smart Home connects to video surveillance and smoke alarms to detect unusual events in the home, while also limiting access to only those people it recognizes.

Improved wellness

Residents who need to keep a close watch on their blood pressure and/or other vital signs can now do so conveniently at home. Tatung/ESC Smart Home's telehealth care system can send physiological measurement data to the local hospital, pharmacy, or long-term care center, enabling healthcare professionals to provide immediate assistance in the case of abnormal readings. For patients with chronic diseases, the "Smart Medication Box" service works with local pharmacies to deliver medications to the home and provide drug consultation services.

Harnessing Data with the Tatung/ESC Smart Home

The Tatung/ESC Smart Home System connects devices and appliances in the home to the Internet using IoT technologies. By connecting all of the devices and appliances in the home, Tatung enables them to communicate with each other.

Managing your home

The resident manages the system by accessing the home screen, changing nodes and creating a more comfortable living environment with just the touch of a finger. Curtains and fans can also be set to automatically turn on/off based on the resident's schedule or the time of day.

When away from home, users can still control their home appliances and maintenance settings through a smart home app. They can activate security modes to keep their living environment safe, convenient, and more intelligent.

No matter where residents are, Tatung/ESC Smart Home enriches their lives by providing community information, including community notifications, transportation and consumer information, local weather and news, etc., via in-home displays or mobile devices.

The solution also addresses safety. When a smoke detector alarm sounds, the smart home will cut off power to kitchen appliances, heating systems, and other possible causes. A notification is then sent to residents and property management, alerting them of the potential danger.

Managing your health

Also included is a healthcare management system that allows physiological measurement data (e.g., blood pressure, blood glucose, pulse, heartbeat) to be uploaded to the system, making it easier for residents to keep track of their health and medical records. This information can also be made available to healthcare professionals so that they can more effectively respond in case of emergency. The resident's physiological information can be uploaded to the hospital database as well, enabling nurses and doctors to provide timely advice.

The smart home's healthcare management system also communicates with the local pharmacy to give pharmacists the information they need to provide appropriate medications and recommendations.

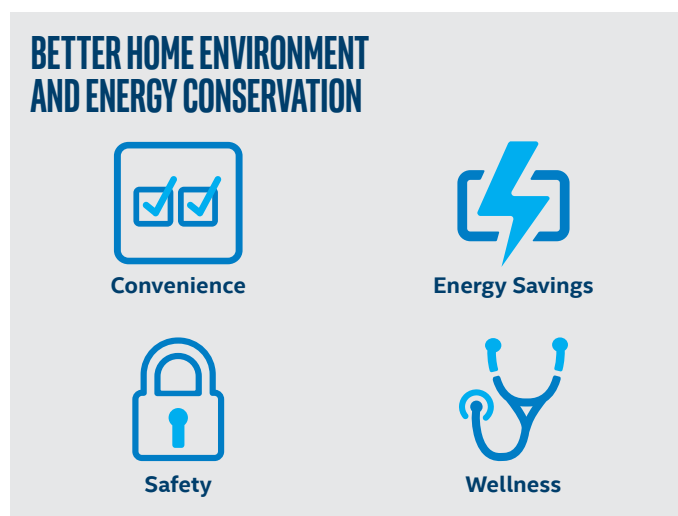


Figure 1. Key benefits of the Tatung/ESC Smart Home solution

Smart Home Benefits

Tatung/ESC Smart Home provides many benefits to residents, including:

Lower utility bills: Manage home devices and appliances, and optimize power usage, thereby reducing energy costs and practicing social responsibility.

Faster healthcare response: Immediately alert healthcare providers about accidents or quickly send them physiological measurements electronically.

Accident prevention: An emergency notification is sent via mobile devices to residents and property management representatives, alerting them of the potential danger.

Ease of use: Easily manage health, remotely control home appliances, and access security monitoring services through a variety of simple screens accessible on phones, tablets, and computers.

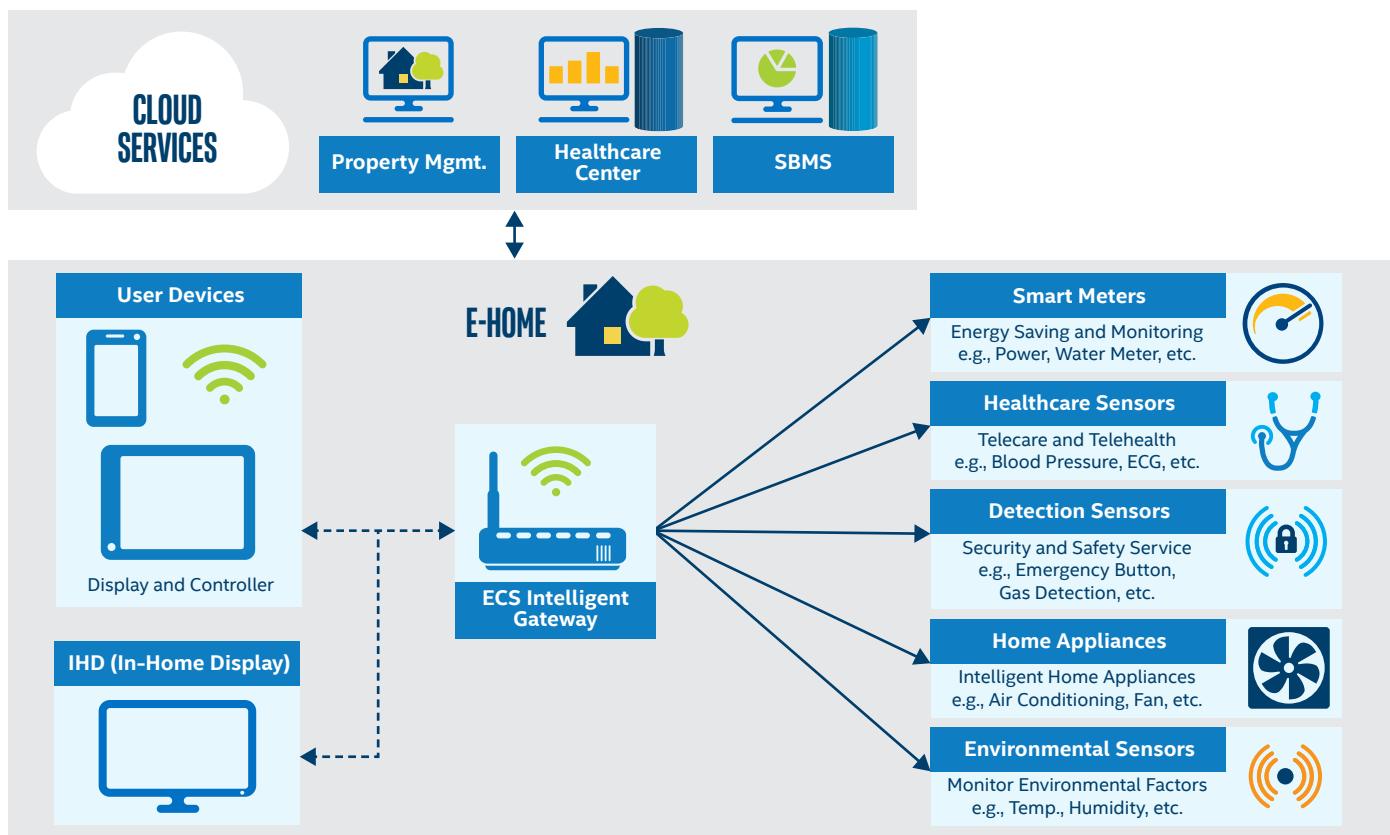


Figure 2. Solution diagram


How the Tatung/ESC Smart Home Works

Tatung/ESC Smart Home provides a wide range of services to residents. It does so by using the ECS IoT gateway, which connects home devices to the cloud over the Internet, as shown in Figure 2. Powered by an Intel® processor, the gateway communicates to user devices (e.g., PCs, tablets, and mobile phones), health sensors, cameras, home appliances, lights, air conditioners, and more.

Smart Building Management System

The Tatung/ESC Smart Home uses easy-to-understand graphics to deliver energy-saving and health-management information and advice. The recommendations are based on analysis of energy usage and physiological data delivered by Tatung's Smart Building Management System (SBMS).

In addition, the solution can automatically adjust the environment to make it more comfortable by using readings from a three-in-one sensor (e.g., temperature, humidity, and CO₂).




GWS-QX2* INTELLIGENT GATEWAY

The compact and stylish GWS-QX2 enables the integration of home automation, home monitoring, and remote healthcare systems. When combined with an in-home display, the GWS-QX2 can bring automation to a variety of household activities, such as centralized control of lighting, HVAC (heating, ventilation, and air conditioning), appliances, and gate and door locks, providing improved convenience, comfort, energy efficiency, and security.

At a Glance:

- Intel® Quark™ SoC X1021 processor
- Compact size and stylish design
- Enables centralized control, energy efficiency, and security



Property management personnel can use the Tatung SBMS, in combination with a cloud system and Web-based dashboard, to monitor and supervise the security and safety of each building unit. Detailed information can be provided by the ECS gateway, which is connected to multiple sensors, such as smart meters, healthcare sensors, detection sensors, and home appliances. The data is analyzed to help with security and safety management.

In the future, Tatung/ECS Smart Home will also collect healthcare data from sensors and devices, which the Tatung SBMS will turn into valuable information that can be used to improve health-related decision making. For example, healthcare professionals will be able to monitor a resident's physiological status in real time. Big data tools can then analyze historical physical data, equipping medical personnel to more accurately predict future chronic problems.

Changing How We Live

Property management companies, building developers, and smart home solution providers can help people live smarter, safer, and more comfortably by installing the Tatung/ECS Smart Home. And because the solution is based on a powerful Intel® processor, users ensure the power to run new applications over time.

For more information about Tatung, visit tatung.com/en/investment_taiwan.asp.

ECS IoT solutions are described at ecs.com.tw.

To learn about smart building solutions from Intel, visit intel.com/content/www/us/en/internet-of-things/smart-buildings.html.



1. Intel Case study, "Paving the Way for an Energy Smart Business," 2015, intel.com/content/www/us/en/it-leadership/iot-quark-elitegroup-case-study.html.

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