What is a Smart Home?

The very first glimpse of smart home technology was in 1975 with the invention of X10, a home automation platform that sent digital information through a radio frequency into a home's electrical wiring. This communication protocol was first used with a home's air conditioner wiring. It enabled the platform to communicate between devices and control modules installed within the home.

Today, home automation refers to the automatic and electronic control of household utilities, features, activities and appliances in your home via the Internet, an important element of what is commonly known as the Internet of Things (IoT). It is designed to make life more convenient and secure. It is also designed to help you spend less on household bills because you can control virtually everything remotely from your phone or computer, even when you are not at home. This includes things like a home security system, lighting, heating, cooling, entertainment and electronic devices.

A home automation system typically connects controlled devices to a central smart home hub, sometimes referred to as a 'gateway'. This control system interface can use wall-mounted terminals, a tablet, desktop computers, a mobile phone application, or a Web interface that may also be accessible off-site through the Internet.

Matter: Making Home Automation Simple and Safe

There are concerns with the current state of home automation, including a lack of standardized security measures and deprecation of older devices without backwards compatibility. Because of this, the Connectivity Standards Alliance (CSA), which is committed to promoting unified standards for smart homes, was established.

Prior to the inception of CSA, the Zigbee Alliance, in conjunction with smart home manufacturers, jointly promoted Project CHIP (Project Connected Home over IP) and officially renamed it Matter at its launch in October 2022. Matter serves as a common language among future smart home devices. It provides reliable connectivity as an IP-based standard. Since that time, Matter has launched updated standards — Matter 1.1 in May 2023 and Matter 1.2 in October 2023.

Smart Home

Devices that support Matter can interconnect with each other, breaking down ecosystem barriers and giving users more choices and ease of use. From the consumer perspective, Matter brings an excellent user experience through unified standards and simplified controls, making the original complicated operation process simple. Users can now enjoy a more convenient, safe and comfortable home living environment brought by smart homes. This has contributed in making smart homes more readily available to consumers, increasing their market share.

Where AKER Crystals Can Be Used

Available in various types, AKER crystals offer excellent performance and reliability. They can fully meet the specifications for wireless connection of smart home devices in the following applications:

AKER Product	Frequency (MHz)
CXAN-161 series	Zigbee : 16.0, 32.0, 48.0
CXAN-211 series	BT/BLE : 16.0, 32.0
CXAN-221 series	WiFi : 40.0, 48.0, 80.0, 96.0
CXAN-321 series	