



Home Security Systems

LoRa® APPLICATION BRIEF

DESCRIPTION

Police statistics show that most home burglaries are crimes of convenience with burglars looking for easy targets and striking in the middle of the day when no one is home. Next-generation LoRa-enabled security systems provide around-the-clock protection for residences by integrating traditional door and window alarm sensors with security cameras, intercoms and automatic door locks, all activated and operated by keychain sensors and smartphones.

By implementing a smart home security solution comprised of sensors and gateways embedded with LoRa® Technology and an intelligent low power wide area network based on the LoRaWAN™ protocol, security equipment firms and carriers offering security services have a network foundation that delivers long battery life for sensors, a network that can not be tampered with and the ability to integrate with WiFi networks to trigger streaming video feeds.

HOW A LoRaWAN-BASED HOME SECURITY SYSTEM WORKS

Semtech LoRa Technology enables connectivity, real-time analytics, reporting, and additional functions such as geolocation.

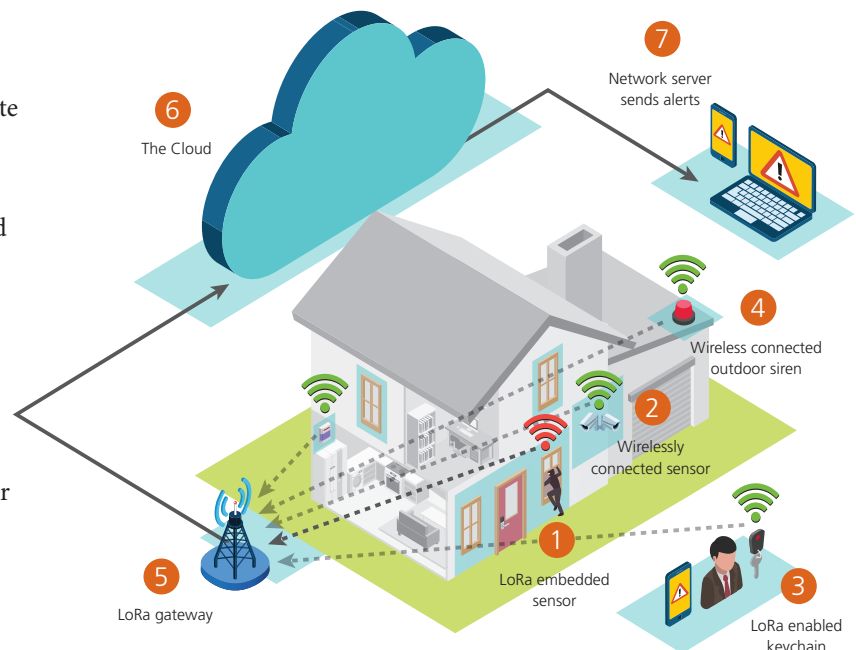
- 1 LoRa-enabled door, window or motion sensors activate an alarm when they detect a door or window being opened, or any motion in a secured room
- 2 Wirelessly connected security camera can be triggered by sensors or started via smartphone
- 3 User wearing LoRa-enabled keychain sensor can turn the system on or off with the press of a button
- 4 Wirelessly connected outdoor siren is triggered by sensors
- 5 Hybrid LoRa and WiFi-based gateway manages sensor data and communicates with other security devices
- 6 Gateway sends information to the Cloud or network server where data are processed and security devices (alarms) are engaged
- 7 Cloud server sends alerts to smartphone or computer

BENEFITS

- Integrated smart security system with sensors featuring LoRa Technology helps to keep residences secure
- Cost-effective technology helps to make the system affordable for a bigger addressable market
- LoRaWAN network is independent of a home's internet connection for added reliability if dataline or power is cut
- Very low power network technology means a sensor battery lifetime of up to 20 years
- New business opportunity for service providers with LoRaWAN networks
- Security platform can be extended for other home automation services

APPLICATIONS

Next-generation home security systems leverage LoRa networks for long battery life, a network that can not be tampered with and the ability to integrate with WiFi networks to facilitate streaming video feeds.



Semtech Products used in this application:

Sensors	Gateway
• SX1272/3	• SX1301
• SX1276/7/8/9	

All application elements (sensing modules, gateways, servers, software) are available through LoRa Alliance™ partners.



FIND YOUR IoT SOLUTION FROM SEMTECH'S LoRa ECOSYSTEM

MODULES & MODEMS

SENSORS

BASE STATIONS

NETWORK SERVERS

SYSTEM INTEGRATORS







For a full list of LoRa Ecosystem partners and services, visit our LoRa Community <https://semtech.force.com/lora>

KEY FEATURES OF SEMTECH'S LoRa WIRELESS RF TECHNOLOGY

- LONG RANGE** Penetrates in dense urban and deep indoor environments, connecting to sensors 15-30 miles away in rural areas
- LOW POWER** Enables multi-year battery lifetime of up to 20 years or more
- HIGH CAPACITY** Supports millions of messages per base station
- GEOLOCATION** Enables tracking applications without GPS or additional power consumption
- STANDARDIZED** LoRaWAN specification ensures interoperability among applications, IoT solution providers and telecom operators
- SECURE** Embedded end-to-end AES-128 encryption of data ensuring optimal privacy and protection
- LOW COST** Reduces upfront infrastructure investments, as well as operating and end-node costs

JUMP-START YOUR IoT DEVELOPMENT TODAY

Semtech offers several training options to help you get started:

-  Learn about Semtech's LoRa Technology platform: visit www.semtech.com/loT
-  Join the LoRa Community: <https://semtech.force.com/lora>
-  Become a member of the LoRa Alliance™: visit www.lora-alliance.org
-  Attend a LoRa Boot Camp for a full-day of training featuring LoRa Technology and real world applications: www.semtech.com/loT
-  Follow Semtech on [LinkedIn](#) and our [LoRa Showcase page](#)
-  To contact one of our global offices in North America, Europe and Asia, visit www.semtech.com/contact

