

# Amazon Sidewalk and Texas Instruments

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# Amazon Sidewalk | TI is your main partner

## What is Sidewalk?



- Sidewalk is a ready-to-use stack with security leveraging the 900MHz band
- Extends connectivity beyond Bluetooth and your home Wi-Fi
- Leverages Amazon's existing infrastructure for a crowdsourced network

## Benefits



- Eliminates the need to build your own gateway
- Added redundancy with neighboring gateways
- Provides extended range (wall penetration) at a lower cost than cellular
- Immunity to interference (outside of 2.4GHz)

## TI Advantage



- Extremely low standby current (0.8uA)
- Highly efficient integrated Power Amplifier (25% lower TX current at +20dBm vs. market)
- Use BLE for easy provisioning & firmware updates with CC1352P7
- Easy to use Sidewalk protocol integrated into TI SDK

## Getting Started



- Build a rapid prototype and expand to full development with [LP-CC1352P7 Development kit | TI.com](https://www.ti.com/lit/zip/cc1352p7_devkit)
- Support via local FAEs and TI E2E



# What is Amazon Sidewalk?



DATA FROM DEVICE TO CLOUD

Sidewalk is a network for IoT at a massive scale



SERVING THE COMMUNITY

It's a public network that is powered by the community and whose devices are meant to better serve the community



DIVERSE USE CASES

Sidewalk combines three physical layers – BLE (short-range), FSK (mid-range)

# Sidewalk Fills the Gap Between WiFi and Cellular

Sidewalk Is Optimized For



Low Cost  
Deployments

Low Bandwidth  
Data

Maximizing Battery  
Life

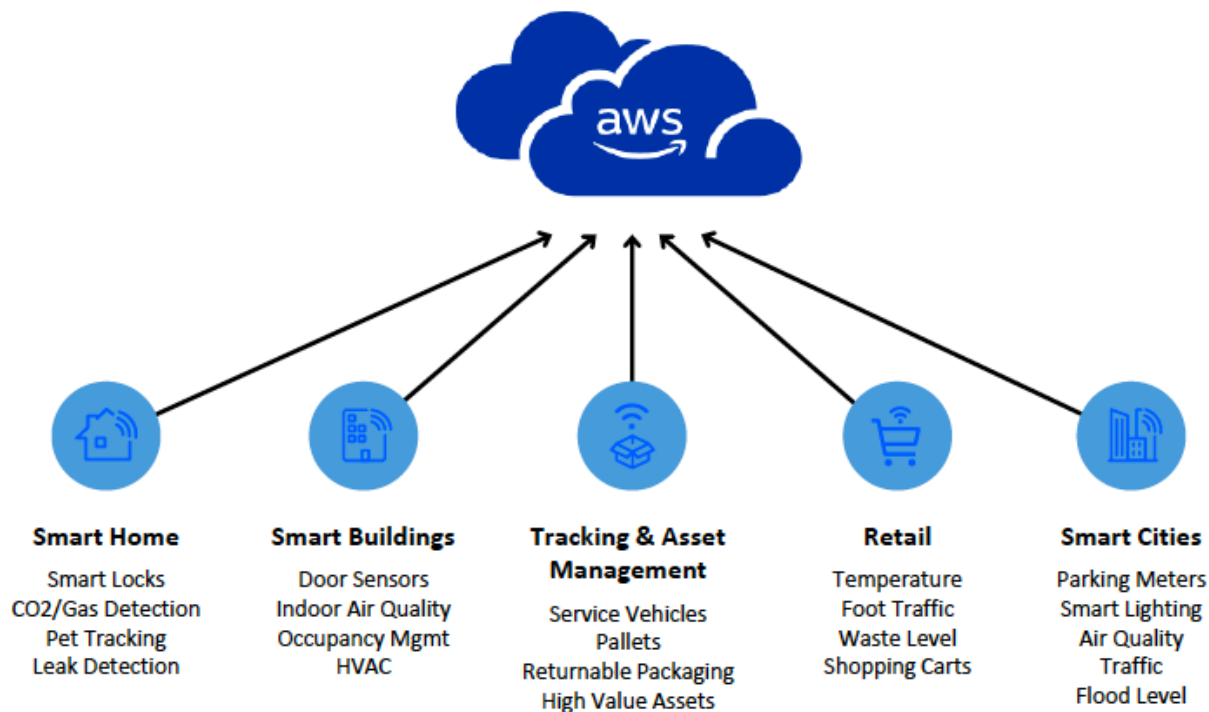
Stationary & Mobile  
Devices

# Sidewalk's Value Proposition for Developers

Why should IoT developers care about Sidewalk? Because Sidewalk is:

- **Open.** Any 3rd party developer can use Sidewalk.
- **Versatile.** Devices can leverage multiple wireless narrowband technologies (FSK) for long range and BLE for local use cases with optimized power/battery consumption.
- **Developer friendly.** Our service is built for rapid development and time to market. SiLabs has included the Sidewalk stack in an alpha version of their Gecko SDK and can provide field support.
- **Built for scale.** Sidewalk is designed to support billions of devices.
- **Secure.** Comprehensive security and privacy are core Sidewalk tenets.
- **Disruptively cost-effective.** There is no connectivity/transport usage fee, and the network relies upon an organic deployment of Sidewalk gateways already in the field.

# Sidewalk is Designed to Power IoT Solutions for the Community



# TI brings lowest power end devices for Sidewalk ecosystem

- **Sidewalk Benefits**

- Redundancy of having multiple gateways (neighbor)
- Lower cost of development & deployment (no need of new gateway)
- Immunity to interference (2.4 GHz is crowded)
- Ready to use software stack
- Leveraging Amazon's existing infrastructure
- Frustration-free commissioning with Bluetooth Low Energy



- **Home Security & Safety**

- Multiple levels of security & encryption
- Low power standby current of 0.8uA (RTC ON, 144KB RAM and CPU retention) for extended battery life



- **Home Comfort**

- Easy to use (commissioning, controlling, opt in/out)
- Low power (multi-year operation on AA)
- Low latency (est. below 500ms)

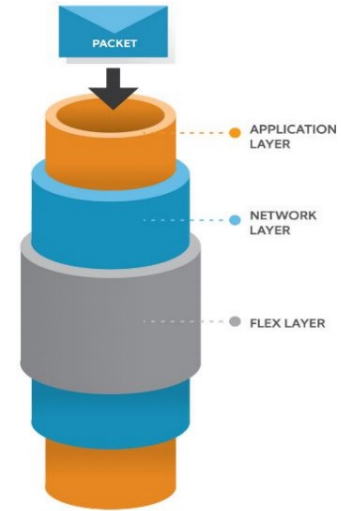


- **Home Outdoors**

- FSK long range, no blind spot at home and great coverage outdoors
- Industry's lowest power TX current at +20dBm with highly efficient integrated PA

# Amazon Sidewalk – Privacy and Security

- Objective is to protect the end node and gateway owners
- 3 layers of encryption for **security**:
  - Application layer (End point and application server)
  - Network layer (protects the packet over the air)
  - Flex layer (Gateway and Sidewalk network server)
- Trusted device identities for **authentication**
- Rolling transmission-IDs for **privacy**
- More details: [Amazon Sidewalk white paper](#)

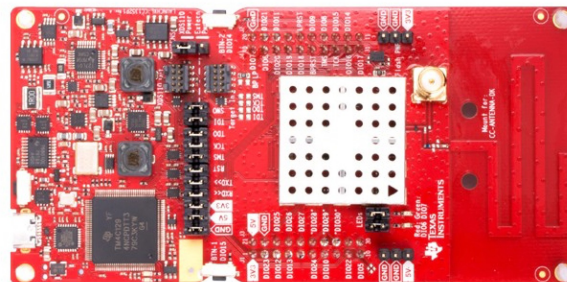


*Photo credit: Amazon*



# Sidewalk | TI supported devices

- TI is the full ecosystem provider, from end points to gateways
- SimpleLink™ wireless MCUs currently in production and Sidewalk-ready for your design
  - [CC1352P7](#) - Dual-band low-power wireless MCU with an integrated +20 dBm power amplifier (PA) and 704KB of Flash
- Development tools available now:
  - [LP-CC1352P7 Development kit | TI.com](#) It comes with an onboard debugger; XDS110 and EnergyTrace – a low power development tool @ \$49.99
  - Sensor Controller – Take advantage of TI' Sensor Controller in ultra low power applications, using our [Sensor Controller Studio](#) and [white paper](#)
- Available under NDA
  - SimpleLink SDK supporting Sidewalk
  - Software Library – Out of box examples to help you start your development
- Worldwide support available via local sales and/or [TI E2E™ support forum](#).



# Why starting your design with CC1352P7?

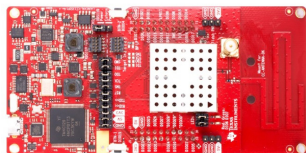
- Amazon Sidewalk is an evolving protocol, and new features are being added
- To upload new features, it is necessary to have memory for OTA while keeping current image intact until new one is fully loaded and verified
- Some use cases may require backward compatibility with existing used protocols
- CC1352P7 allows pin to pin compatibility with smaller and larger memory devices, allowing designer to select the right part after the development is completed and code is optimized.

# Sidewalk demo

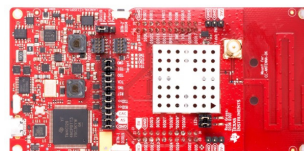
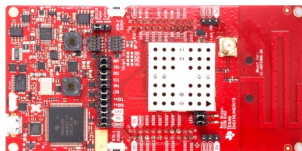


## Over-the-air download & seamless provisioning

Download an Amazon Sidewalk image to EVM over-the-air through Bluetooth & provision to an Amazon Sidewalk-enabled gateway.

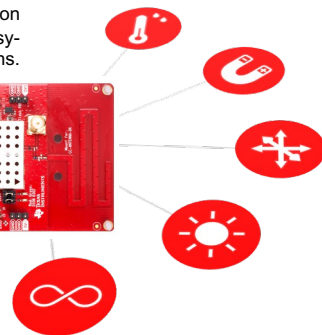
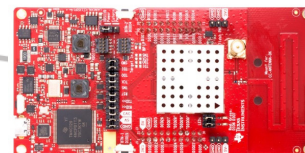


**Flexible connectivity options**  
with concurrent 2.4GHz & sub-1GHz options. Support various protocols, including Bluetooth, ZigBee, Thread & proprietary protocols.



## Easy integration with Sensor

Integrated environmental & motion sensors or add your own with easy-access I/O pins.



## Ultra-low power

AAA or coin cell powered design

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