



## Ember® EM35x Series Development Environment

[www.silabs.com/zigbee-software](http://www.silabs.com/zigbee-software)



### COMPLETE DEVELOPMENT ENVIRONMENT FOR EMBER ZIGBEE® SYSTEMS

Silicon Labs provides all the components required for developers to deliver complete products ready for “ZigBee® Certified Product” testing and designation. Going beyond network interoperability at the stack level, ZigBee Certified Products offer assured interoperability against specific ZigBee Public Application Profiles defined for specific market applications, such as home automation and smart energy.

The Ember® ZigBee development environment includes the following components:

- Ember AppBuilder Rapid Prototyping Utility
- Complete Development Kits
- Desktop Network Analyzer

### Development Environment

Silicon Labs' Ember AppBuilder is used to develop complete applications based on pre-certified, ZigBee Application profile, production-ready code. The unique silicon-based packet trace port offers a collection of non-intrusive hardware debugging features integrated on the EM35x series of ARM® Cortex™ based ZigBee SoCs. Debug adapters bridge packet trace port to the developer's PC via an Ethernet connection, where the Desktop Network Analyzer enables rapid network analysis and debugging.

### Ember AppBuilder Rapid Prototyping Utility

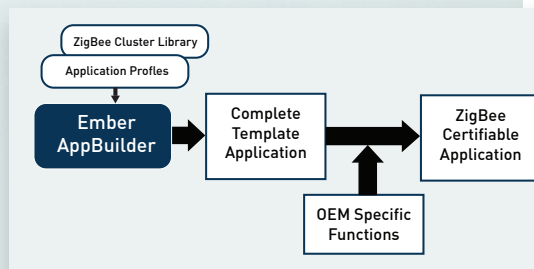
The Ember AppBuilder development tool automatically generates a complete, ZigBee certifiable application with a defined interface for customers to add their device-specific code. Through the easy-to-use Ember AppBuilder graphical interface, developers can configure:

- A ZigBee Public Application Profile (i.e. Home Automation, Smart Energy or Light Link profiles)
- A specific device type within the profile (i.e. a light dimmer or thermostat) or define a custom device
- Multiple endpoints containing different clusters and device support
- The specific ZCL commands and attributes supported for that device
- General network options, such as security modes
- Specific hardware configuration parameters

### Fastest Way to ZigBee Certifiable Products

- Automatically customizes EmberZNet PRO application framework for any number of specific ZigBee public application profiles.
- Support for ZigBee's standard Smart Energy, Home Automation and Light Link Profiles.
- Provides a full range of ZigBee Cluster Library (ZCL) devices and commands
- Developers can add their own device specific code in a structured way to the production-ready ZigBee certifiable application framework code
- Fast and easy development of products ready for ZigBee Certified Product testing against standard profiles

### ZIGBEE CERTIFIED PRODUCT DEVELOPMENT

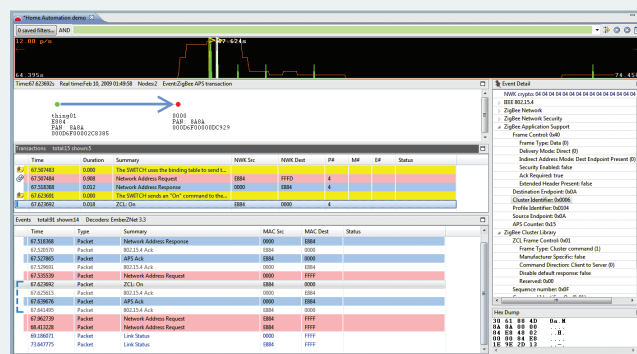


Using this information, the Ember AppBuilder tool specifically tailors EmberZNet PRO application framework source code. The developer then adds whatever OEM-specific code is required to execute the configured commands to the generated application code. The result is a complete application ready for hardware integration and testing.

## Desktop Network Analyzer

The foundation of the Ember development environment is the fully-integrated remote network monitoring and debugging capabilities. A unique packet trace capability allows every node in the development network to report time-stamped radio traffic, API activity and application prints across an Ethernet LAN to a centralized PC-based Desktop Network Analyzer. The Desktop Network Analyzer analyzes and filters the data for presentation to the user, not only eliminating the need for separate 'sniffer' nodes and expensive sniffer software, but delivering much more accurate and chronologically synchronized information from a more widely dispersed network than might normally be supported by traditional tools. By making use of the LAN infrastructure already present in most offices, developers can build quite large and dispersed development and test networks, which they can monitor and control from a central location.

The Ember debug adapter which provides connectivity across an Ethernet LAN to nodes in the developer's network, allows remote programming and collection of time-synchronized packet, API and application information from many nodes at once.



## DESKTOP NETWORK ANALYZER

## Choosing Your Development Kit

EM35x development kits provide all the tools needed to start building development and test networks.

## EM35x Series Development Kit

(EM35X-DEV or EM35X-DEV-IAR)

Customers starting new ZigBee SoC projects will most likely want to choose the EM35x Development Kit as their start point, due to the industry leading performance and application space on the ARM Cortex-M3 based EM351 and EM357 SoCs. There are two variants:

- EM35X-DEV with a 30-day trial license of IAR Embedded Workbench for ARM
- EM35X-DEV-IAR includes a full standalone Cortex-M3 licence for IAR Embedded Workbench for ARM

An IAR EWARM license (P/N: EM35X-DEV-UPG-IAR) for use with the EM35x development kit may be purchased separately.

## EM35x Family as a Network Co-Processor (NCP)

(EM35X-NCP-ADD-ON-S)

Silicon Labs' Ember EM35x NCP add-on kit allows designers to take maximum advantage of the superior power consumption, radio performance and CPU performance of the Ember EM35x series chips in a network co-processor configuration.

## EM35x Development Kit

## Hardware

- (3) EM35x Radio Control Modules Board
- (3) EM35x Breakout Board
- (3) EM35x Debug Adapter (Ember ISA3)
- EM35x Module Variety Pack (1 Box with 6 modules)
- Radio Frequency Cable
- (3) Port Cable
- (3) Data Emulation Interface Cable
- (3) Power Supplies and Battery Pack
- 8 Port Switch with 4 x POE ports

## Software

- Desktop Network Analyzer and Ember AppBuilder
- IAR Embedded Workbench (trial or standalone version)

## Add-on Kit

- EM35x NCP Breakout Board
- EM35x Module
- Host Module
- EM35x Module
- Battery Pack