

Ember AppBuilder

Accelerated ZigBee Certified Product Development

Tools

Fact Sheet

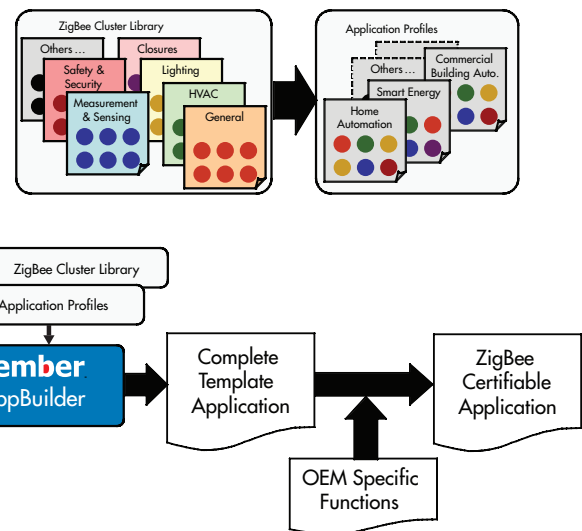
Easy-to-use graphical tool provides fastest way to certifiable products using ZigBee standard public application profiles

Ember 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, Advanced Metering Infrastructure, or Commercial Building Automation. Each Application Profile defines a number of standard device types that use messaging described by the ZigBee Cluster Library (ZCL), which provides standard messages and attributes “clustered” by functional categories (i.e. lighting, HVAC, security, etc.). Application Profiles also specify how the various ZigBee protocol stack options may be used to assure interoperability between devices conforming to the same profile.

With the number of different profiles, device types, and ZCL commands and attributes available, embarking on a new device development can be challenging, especially if the device needs to pass ZigBee product certification testing. Ember’s AppBuilder development tool dramatically simplifies this task by automatically generating a complete, ZigBee certifiable template application. Through AppBuilder’s easy-to-use graphical interface, developers can configure:

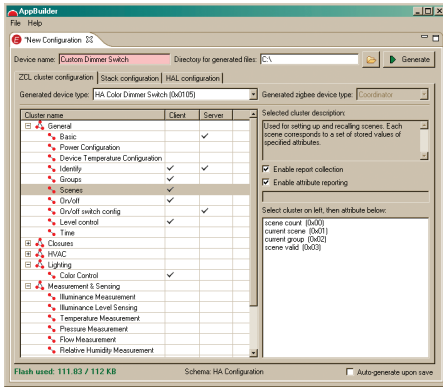
- A ZigBee Public Application Profile (such as Home Automation, Smart Energy or Building Automation profiles)
- A specific device type within the profile (such as a light dimmer or thermostat), or define a custom device
- The specific ZCL commands & attributes to be supported for that device
- General network options, such as security modes
- Specific hardware configuration parameters

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



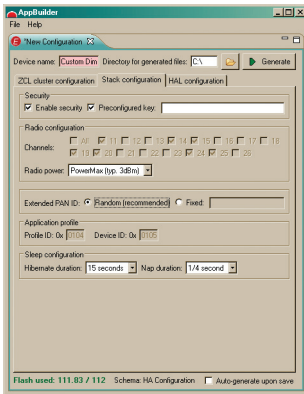
Ember AppBuilder: Fastest Way to ZigBee Certifiable Products

- Automatically customizes EmberZNet PRO reference applications for any number of specific ZigBee public application profile devices.
- Support for ZigBee’s standard Home Automation Profile and the emerging Advanced Metering Infrastructure Profile.
- Provides a full range of ZigBee Cluster Library devices and commands
- Developers can easily add their own device-specific code into the resulting ZigBee certifiable template application
- Fast and easy development of products ready for ZigBee Certified Product testing against standard profiles

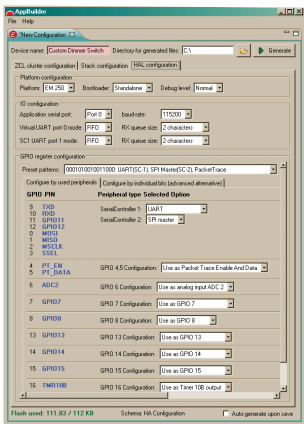


Ember's AppBuilder allows the developer to select from a large list of devices within a given profile (Home Automation Profile shown). The ZigBee Cluster Library clusters associated with the selected device are displayed as client

or server-side commands. Selecting a specific cluster shows the attributes associated with that cluster. The developer can customize the clusters as desired, and add the hardware-specific code to the resulting template application.



In addition to the devices and cluster selections, the developer can configure the various options associated with the ZigBee PRO stack, as allowed by the Application Profile (Home Automation Profile shown). In this example, security operation, transmitter power, PAN ID, and sleepy end device parameters are shown.



The AppBuilder also allows configuration of the Ember Hardware Abstraction Layer (HAL), which determines various hardware specific parameters, including which Ember silicon platform is being used, selection of bootloader (including local or over-the-air configurations), inclusion of InSight Port debug information, and various GPIO and serial communications configurations.

When configuration is complete, AppBuilder generates a complete source code application with places for the developer to add their OEM-specific code. The resulting application can then be compiled and tested as usual using Ember's xIDE and InSight development tools.

AppBuilder allows selection of different Home Automation, Smart Energy and Building Automation Profile devices, including:

- HA On/Off Switch
- Level Control Switch
- On/Off Output
- Level Controllable Output
- Scene Selector
- Remote Control
- Combined Interface
- Range Extender
- Mains Power Outlet
- On/Off Light
- Dimmable Light
- Color Dimmable Light
- On/Off Light Switch
- Dimmable Switch
- Color Dimmable Switch
- Light Sensor
- Occupancy Sensor
- Shade
- Shade Controller
- Heating Cooling Unit
- Thermostat
- Temperature Sensor
- Pump
- Pump Controller
- Pressure Sensor
- Flow Sensor
- IAS Control and Indication Equipment
- IAS Ancillary Control Equipment
- IAS Zone
- IAS Warning Device
- Custom Devices
- Electricity Meter
- In-Home Display
- Smart Appliance
- Load Control Device
- BACnet Tunneled Device

About Ember

Ember Corporation (www.ember.com) develops wireless mesh networking technology — chips, software and tools — for Smart Energy, connected homes, and many other monitoring and control applications enabling greener living and work environments. The Boston-based company is a promoter of the ZigBee Alliance with an IC design center in Cambridge, England, an office in Hong Kong and sales channels and distributors worldwide.

US Headquarters:

25 Thomson Place
Boston, MA 02210
USA
+1 617 951 0200
www.ember.com

European office:

Cambridge Science Park
Unit 300, Milton Rd.
Cambridge, CB4 0XL, UK
+44 (0) 1223 423322
www.ember.com

Asian office:

Unit 13, 14th Floor
Wellborne Commercial Centre
8 Java Road, Hong Kong
852 8199 0313
www.ember.com

ember
www.ember.com

AppBuilder-0212
Information contained in this document is subject to change without notice and is presented without express or implied warranty. Ember, EmberZNet and InSight are trademarks of Ember Corporation. All other trademarks are the property of their respective owners. Copyright 2012, Ember Corporation. All rights reserved.