Ember AppBuilder

Accelerated ZigBee Certified Product Development

Tools

Fact Sheet

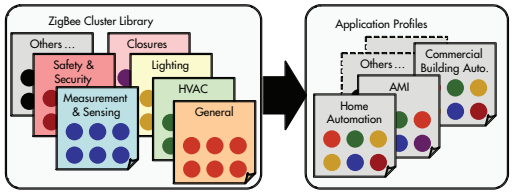
Easy-to-use graphical tool provides fastest way to certifiable products using ZigBee standard public application profiles

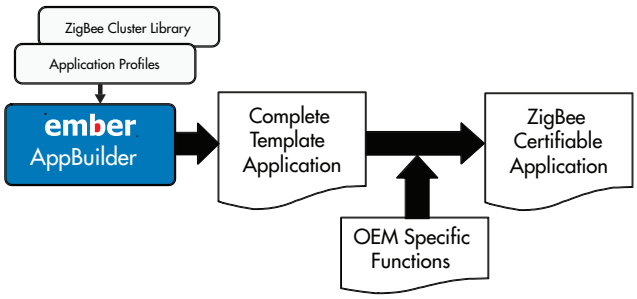
Ember provides all the components required for developers to deliver complete products ready for "ZigBee Certified Product" testing and designation. Going beyond network interoperability at the stack level, ZigBee Certified Products offer assured interoperability against specific ZigBee Public Application 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 or the emerging Advanced Metering Infrastructure 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 AppBuilder

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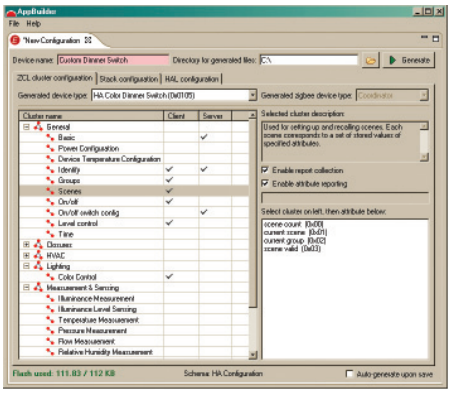
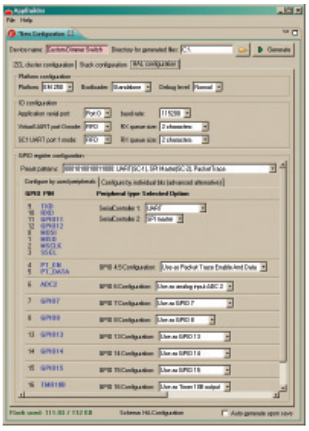


Ember's AppBuilder allows the developer to select from a large list of devices within a given profile (Home Automation Profile shown). The ZigBee Cluster Library clusters associated with the selected device are displayed as client or server-side commands. Selecting a specific cluster shows the attributes 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 AppBulder 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 many different Home Automation Profile devices, including:

- HA On/Off Switch
- Level Control Switch
- On/Off Output
- Level Controllable Output
- Scene Selector
- Configuration Tool
- 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

About Ember

Ember Corporation develops ZigBee wireless networking technology that enable companies involved in energy technologies—enertech—to help buildings and homes consume less energy, operate more efficiently, and keep people comfortable, safe and secure. Ember low-power wireless technology can be embedded in potentially any device to be part of a self-organizing mesh network. Ember is headquartered in Boston and has its radio development center in Cambridge, England, and distributors worldwide. The company is a promoter and Board member of the ZigBee Alliance and its platform is the "Golden Suite" for 802.15.4/ZigBee interoperability testing.

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