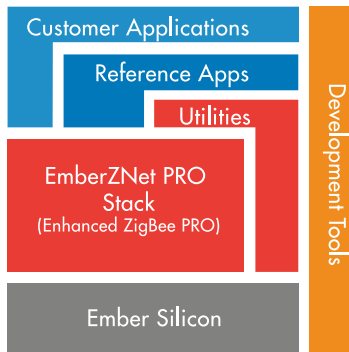


EmberZNet PRO™

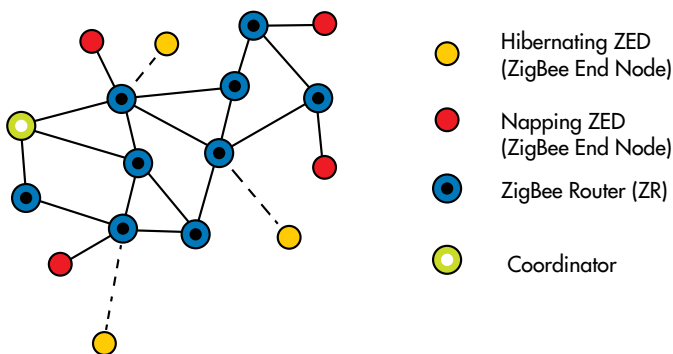
Professional Grade ZigBee Networking Software

Embedded
Software

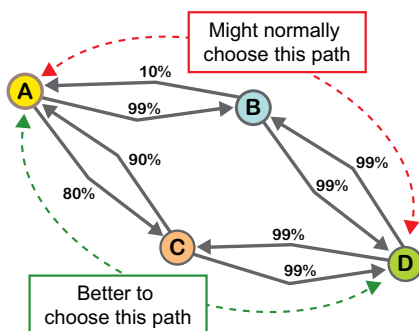
Fact Sheet



EmberZNet PRO is a complete ZigBee software package, including the industry's first available stack certified with the ZigBee PRO Feature Set



EmberZNet PRO delivers robust and reliable mesh networking, supporting all ZigBee device types in a single stack image.



Asymmetric Link Handling

The ZigBee PRO Feature Set includes asymmetric link avoidance, route aggregation, and frequency agility for added network scalability and resiliency.

EmberZNet PRO is a complete ZigBee software package containing all the elements required for robust and reliable mesh networking applications on Ember's silicon platforms. EmberZNet PRO includes the industry's first proven ZigBee stack based on the ZigBee PRO Feature Set, enhanced with unique Ember innovations, providing "professional grade" networking for the most challenging applications such as Advanced Metering Infrastructure (AMI), Home Automation, and Building Automation systems. A complete suite of easy-to-use reference applications dramatically accelerate development of complete ZigBee Certified Products using the latest approved Application Profiles. Flexible utility libraries, including over-the-air bootloaders and manufacturing test functions, allow products to move quickly from the development lab to real-world deployment. Full integration with Ember's powerful InSight development tools assure a successful ZigBee development experience.

Zigbee PRO Stack enables Larger, Denser, Sleepier, More Mobile, Secure and Resilient Zigbee Networks

EmberZNet PRO is the most robust, reliable and easy to use ZigBee platform that helps address the needs and characteristics of today's complex mesh networks.

- **Larger Networks** scaling to potentially thousands of nodes in a single network is enabled by Stochastic Addressing, Many-to-One/Source Routing and Asymmetric Link Handling
- **Denser Networks** enabled by Ember's Intelligent Table Management that assures network stability even when many routing nodes are within close proximity
- **Sleepier Networks** significantly extend the battery life of end devices through compatible Ember enhancements such as configurable deep-sleep timeouts and special ZigBee (ZR) router parent functions
- **More Mobile Networks** Ember mobile support features explicitly identify and optimize mobile ZigBee End Devices (ZED) within network
- **More Secure Networks** are enabled by implementing many of the optional ZigBee PRO security extensions for advanced network encryption and device security
- **More Resilient Networks** are ensured by ZigBee PRO's Frequency Agility features that allow the entire network to change channels in the face of interference

Chip Support

EmberZNet PRO supports the EM250 System-on-Chip, the EM260 Network Co-Processor and EM2420 transceivers from Ember.

Reference Applications

A suite of reference applications provided in EmberZNet PRO allow developers to quickly deliver complete, robust ZigBee applications. Ember’s AppBuilder tool leverages a simple checklist-driven GUI to generate a fully populated application template leveraging the standard ZigBee Cluster Library (ZCL), enabling accelerated time-to-market for ZigBee Certified Products, including those based on the new Home Automation Application Profile. These tools can reduce initial development from days/weeks to minutes/hours, while allowing complete customization for vendor-specific functions.

Enhanced Utilities and Debug Tools

EmberZNet PRO provides a robust and reliable platform for developing network applications, and Ember’s unmatched suite of utilities and network debugging tools simplify development, accelerating Time-to-Volume of high quality products. It includes:

- Bootloader utilities, enabling reliable local or over-the-air re-programming of stack and application code for fully deployed and operational devices. These utilities provide a range of implementation options, allowing developers their choice of OTA upgrade system architectures.
- Hardware Abstraction Layer (HAL), offering the ability for developers to leverage and customize the flexible peripherals, such as DACs, UARTS, and General Purpose I/Os available on the EM250 SoC.
- Available Manufacturing Test Library, allowing specific test functions to be built into the final application image, avoiding reprogramming of devices during the manufacturing process.
- Build-in debugging support for Ember’s leading debugging tools, including:
 - Ember InSight, an industry-first ZigBee network visualization and debugging tool.
 - Ember InSight Development and JumpStart Kits that enable customers to rapidly prototype their applications.

World Class Support

All Ember products are backed by a highly experienced, world class support team and field application engineers across the globe. Ember also offers formal training at its Boston and Cambridge, England facilities in all aspects of ZigBee embedded software design and hands-on application development.

Standard Feature	ZigBee FS	ZigBee Pro FS	EmberZNet PRO
Addressing	Tree	Stochastic	Stochastic
Routing	Tree and Mesh	Mesh	Mesh
Aggregation	No	Required	Yes
Asymmetric Links	No	Required	Yes
Frequency Agility	Optional	Required	Yes
APS Multicast	No	Required	Yes
Network Multicast	No	Required	Supported
Fragmentation	Optional	Optional	Yes
Base security	Residential	Standard	Standard
APS encryption	Optional	Optional	Yes
High Security	No	Optional	No
Enhanced sleep & mobile ZEDs	No	No	Yes
Dense Networks	No	No	Yes

About Ember

Ember develops wireless sensor and control network technologies that help make our living and working environments safer, smarter, more comfortable and energy efficient. Ember’s ZigBee-based semiconductors and software enable communication between devices embedded in a variety of building and home automation products. Ember is a lead member of the ZigBee Alliance, and its platform is the National Technical Systems’ (NTS) “Golden Suite” for 802.15.4/ZigBee interoperability testing.

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