dB Performance

EPIIC for IoT Devices

What is EPIIC?

EPIIC is a comprehensive software solution, providing financial-grade security and automotive-grade performance for IoT (Internet of Things) edge devices.

EPIIC is designed specifically for embedded devices with limited resources that may not have direct internet connectivity, but require high levels of authentication and encryption. EPIIC is also designed for highly-mobile devices which require transient, peer-to-peer network connections.

EPIIC is not hardware-specific and can be used with most PHY and MAC layer topographies. EPIIC can also be used with or without an IP stack, and with most operating system platforms. This allows for software upgrades to the latest EPIIC version as new security protocols become available.

EPIIC Reference Design
(TI EVM)

Best-In-Class Security

EPIIC security is based on the IEEE 1609 specification for automotive safety applications. This specification has been reviewed and tested by leading safety agencies around the world to ensure maximum security and reliability.

Standards-Based Protocols

EPIIC implements the following authentication and encryption protocols:

- SHA-2 (256 bit digest) digital certificate signing
- ECDSA-256 digital certificate signing
- NIST P-256 digital certificate signing
- Brainpool P-256r1 digital certificate signing
- ECIES-256 key generation
- Implicit and Explicit Digital Certificate support
- AES-128 encryption

Fast Discovery

When used in conjunction with a supported Wi-Fi chipset and proprietary discovery technology, EPIIC discovers and transmits data to nearby compatible IoT devices in milliseconds. Using this technology, device makers can optimize device battery life and bandwidth usage.

Provisioning

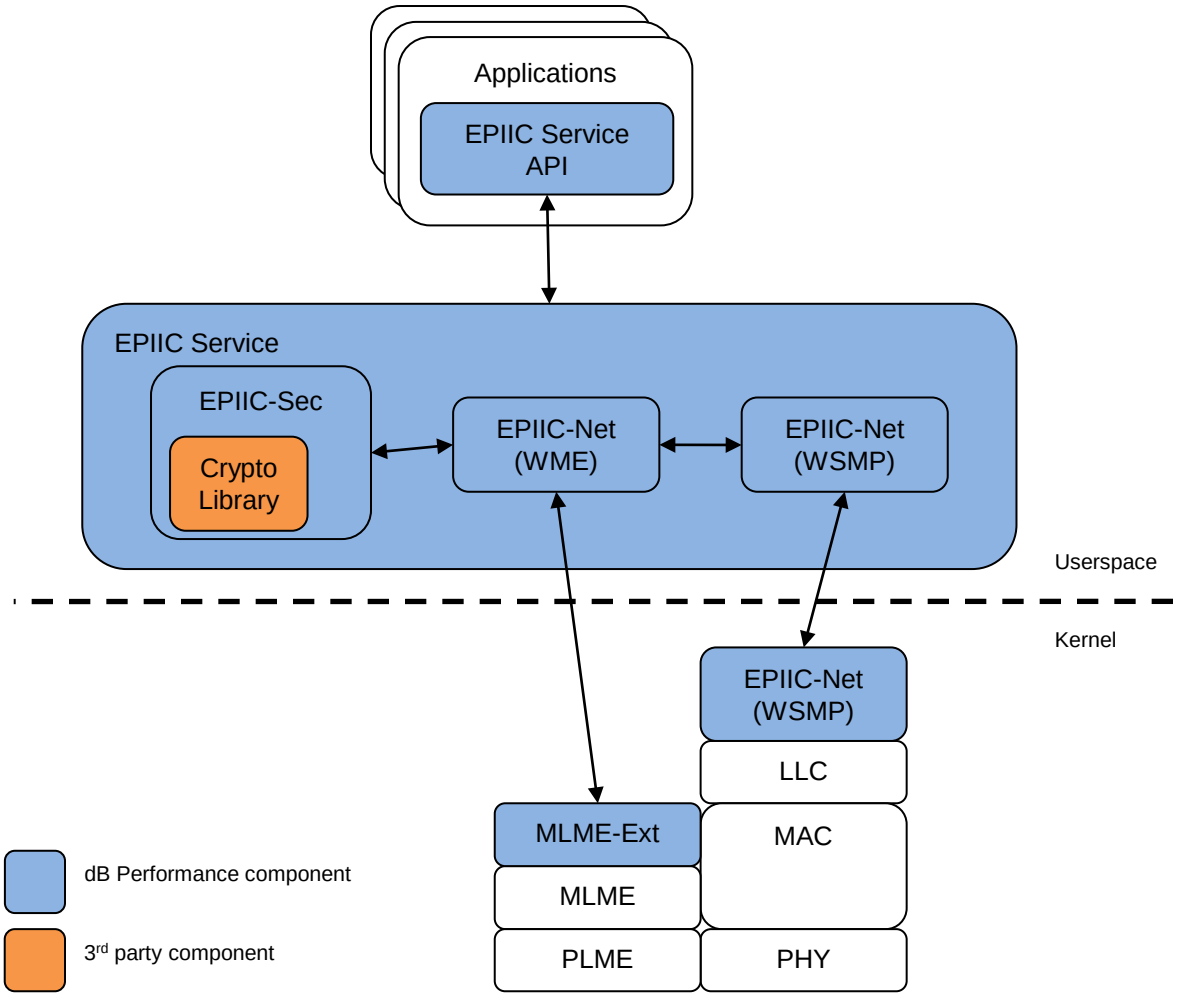
EPIIC is scalable to large IoT deployments, and can be provisioned according to the customer's requirements. As authentication and encryption are performed by EPIIC, no MAC-layer authentication/encryption device provisioning is required.

Device Design Flexibility

EPIIC is written in thread-safe ANSI C, and full source code licenses are available. This gives device developers complete flexibility in porting EPIIC to the operating system, processor, and network chipset of their choice.

If a specific user interface is required, dB Performance can provide Professional Services to deliver a turnkey solution.

EPIIC Architecture
(Linux)



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EPIIC Specifications

INDUSTRY STANDARDS (with appropriate H/W driver)

- IEEE 802.11 a/b/g/n/ac compatible
- Bluetooth compatible
- IEEE 1609
- IEEE 1609.2
- IEEE 1609.3 (optional)
- IEEE 1609.4 (optional)
- IEEE 802.11p (optional)
- SHA-2 (256 bit digest)
- ECDSA-256
- NIST P-256
- Brainpool P-256r1
- ECIES-256
- Implicit/Explicit Certificate support
- AES-128

DEVELOPMENT FEATURES

- Extensive debug support
- Unit testing tools
- Control Interface

AVAILABLE OPERATING SYSTEMS

- Linux 2.6+
- Android 4.1+
- Others available on request

PORTABILITY FEATURES

- Written in thread-safe C
- Supports most hardware implementations
- Wide PHY/MAC topography support
- 90% of implementation is in user space
- Compatible with most network protocols
- Does not require an IP stack

DOCUMENTATION

- Release Notes
- Developer Guide
- API Reference Manual

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