certicom™

Security Builder® MCE™

SOFTWARE CRYPTOGRAPHIC MODULE FOR MICROCONTROLLER DEVICES

Security Builder® MCE™ provides the cryptographic primitives required to create a trusted platform for microcontroller devices. This enables wireless networks of devices that can be uniquely identified and allows data to be securely sent to and retrieved from all devices. In addition to symmetric encryption, Security Builder MCE allows you to integrate key exchange and digital signatures based on elliptic curve cryptography (ECC), the only public-key scheme capable of meeting the footprint and power limitations of these constrained devices.

Public-key-based operation distributes intelligence in the network, allowing devices to interact and communicate securely. This enables networks that are scalable, fluid and easily reconfigurable, setting the stage for an array of new and innovative applications, to drive sales of your microcontroller devices. Security Builder MCE allows you to differentiate your products for higher value applications where security is critical, and to drive the adoption of wireless microcontroller networks.

HIGHER VALUE, HIGHER MARGINS

Secure devices are used in more-critical, higher value applications, and will therefore have a higher average selling price. This will create higher value in the chipsets and software stacks that compose the microcontroller device.

COMPLETE SECURITY FOR THE ENTIRE DEVICE LIFECYCLE

Security Builder MCE is part of Certicom Security for Sensor Networks, a suite of products which enable developers of low power sensor devices to build secure, reliable operation into sensor networks from design and development through to manufacturing, deployment and upgrade. Certicom Security for Sensor Networks also includes the Certicom f(2m) ECC IP Core for the acceleration of ECC in low power devices, and Certicom Key Inject, which permits device vendors to pre-inject keys into devices to provide a root of trust.

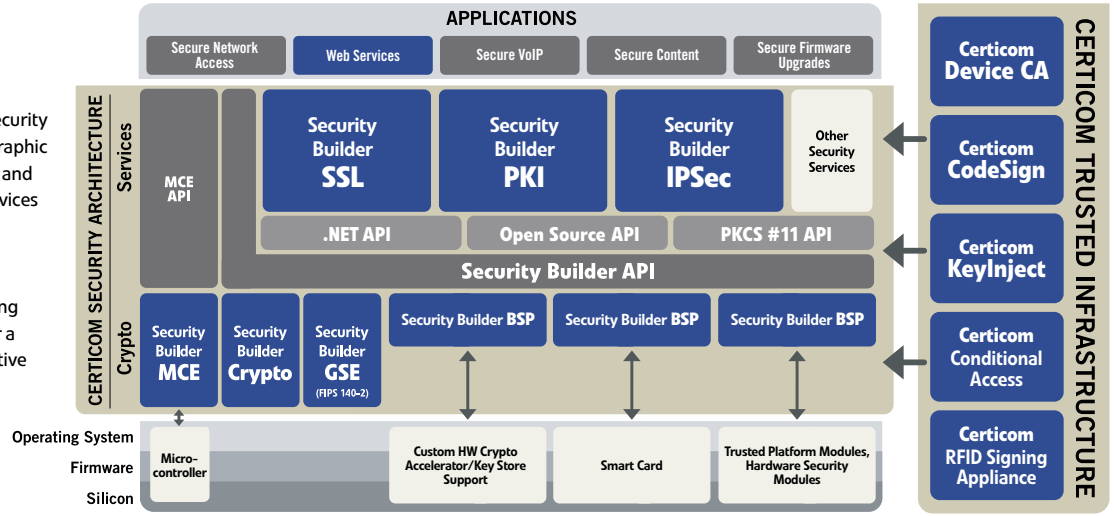
SUPPORTS SCALABLE, AD-HOC MESH NETWORKING

With public-key, each device has its own unique set of keys, so there is no need for network key updates as the network changes. This allows for the automatic enrolment of devices to the network providing improved node mobility and flexible topologies that enable mesh networking and ad-hoc cluster formation that easily scales to a large number of devices.

OPTIMIZED PERFORMANCE

Optimized for the power, processing and footprint constraints of a microcontroller device, Security Builder MCE delivers strong security without impacting device performance. ECC provides smaller key sizes with higher strength-per-bit than any other public-key cryptosystem, making it the only viable alternative for microcontroller devices. For even stronger performance, Security Builder MCE can be combined with the Certicom f(2^m) ECC IP Core.

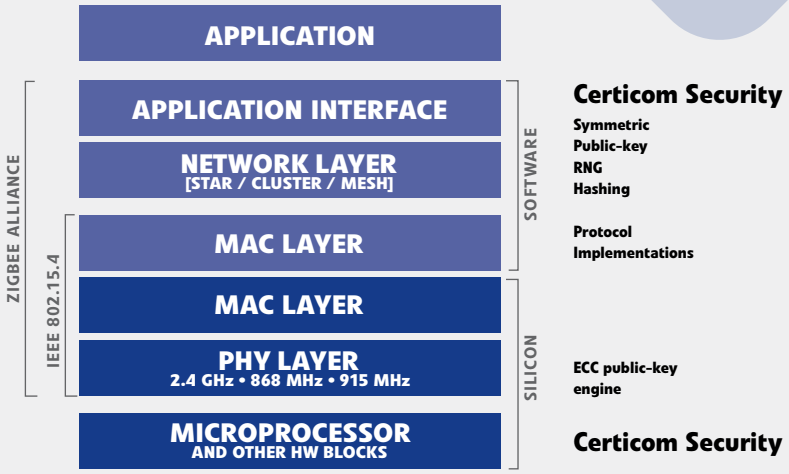
The Certicom Security Architecture is a comprehensive, portable and modular security platform that includes: software cryptographic providers that offer FIPS 140-2 Validation and meet NSA guidelines for ECC; security services like SSL, IPSec and PKI; hardware security cores and board support packages (BSP) that expose cryptographic functionality available in hardware. An application using SSL can benefit from CSA to enable either a FIPS, non-FIPs provider (SB-Crypto) or native hardware crypto provider.



Features

Programming Language	C
Symmetric Encryption	AES
Asymmetric Encryption	ECC
Key Agreement/Key Transport	ECDH, ECMQV
Digital Certificates	ECQV
Hash Functions	MMO, SHA-1
Implementation Code Size Range	2K to 40K
Supported Platforms	Atmel AVR, other platforms under development

Security Builder MCE Architecture



Security Builder MCE in addition to the Certicom f(2^m) Hardware IP Core, allows you to quickly and cost-effectively build security into your microcontroller device.

About Certicom

Certicom, a wholly owned subsidiary of Research In Motion Limited (RIM) (Nasdaq: RIMM; TSX: RIM), manages and protects the value of content, applications and devices with government-approved security. Adopted by the National Security Agency (NSA) for government communications, Elliptic Curve Cryptography (ECC) provides the most security per bit of any known public-key scheme. As the global leader in ECC, Certicom's security offerings are currently licensed to hundreds of multinational technology companies, including IBM, General Dynamics, Motorola and Oracle. Founded in 1985, Certicom's corporate office is located in Mississauga, Ontario, Canada with worldwide sales offices in USA and Asia. Visit www.certicom.com.

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