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Certicom AMI 7000 Series
SECURITY APPLIANCES FOR ADVANCED METERING INFRASTRUCTURE

THE NEED FOR SECURITY

Advanced Metering Infrastructure's (AMI) openness and two-way communication capabilities add new risks to what has traditionally been an isolated distribution system. As smart energy homes with demand response capabilities and smart grid infrastructure are deployed, hundreds of millions of devices will be connected in one way or another to utility networks and the public Internet. Information about energy consumption will flow out of homes and offices, remote command and control signals will flow in.

Given the two way command and control connectivity to every customer enabled by AMI, the utility must consider NERC Critical Infrastructure Protection (CIP) requirements when automating their distribution networks.

Certicom Advanced Metering Infrastructure solution was designed to meet these stringent security requirements. A highly scalable turnkey security platform, the AMI 7000 Series secures communications between utility meters and utility companies' back end meter data management infrastructure by providing data encryption and integrity validation of individual metering data as well as strong authentication of metering commands.

Certicom AMI 7100 Signing and Encryption Appliance
The Certicom AMI 7100 encrypts and digitally signs all command and control messages sent to the meters, using advanced Elliptic Curve Cryptography, the public key algorithm selected National Security Agency (NSA) for next generation cryptography. The AMI 7100 is a complete signing and encryption appliance that includes hardware, software and product support that will enable you to rapidly deploy an industry recognized; standards based security solution for advanced utility metering.

Certicom AMI 7200 Key Management Appliance
The Certicom AMI 7200 provides system wide security key management and decrypts all messages received from the meters, using the advanced encryption standard algorithm to protect sensitive data with bits of cipher security. The AMI 7200 is a specialized key management appliance that is specifically designed to store and manage cryptographic keys for meters and allows you to quickly deploy a root of trust using an industry recognized, security standards based turn-key solution.

BENEFITS

- Production proven appliances to secure advanced meters in large deployments

- 24x7 Operations grade support contracts to protect system availability

- Store, manage, and track cryptographic keying material that is used to secure remote meters

- Protects meter network control and backchannel data features
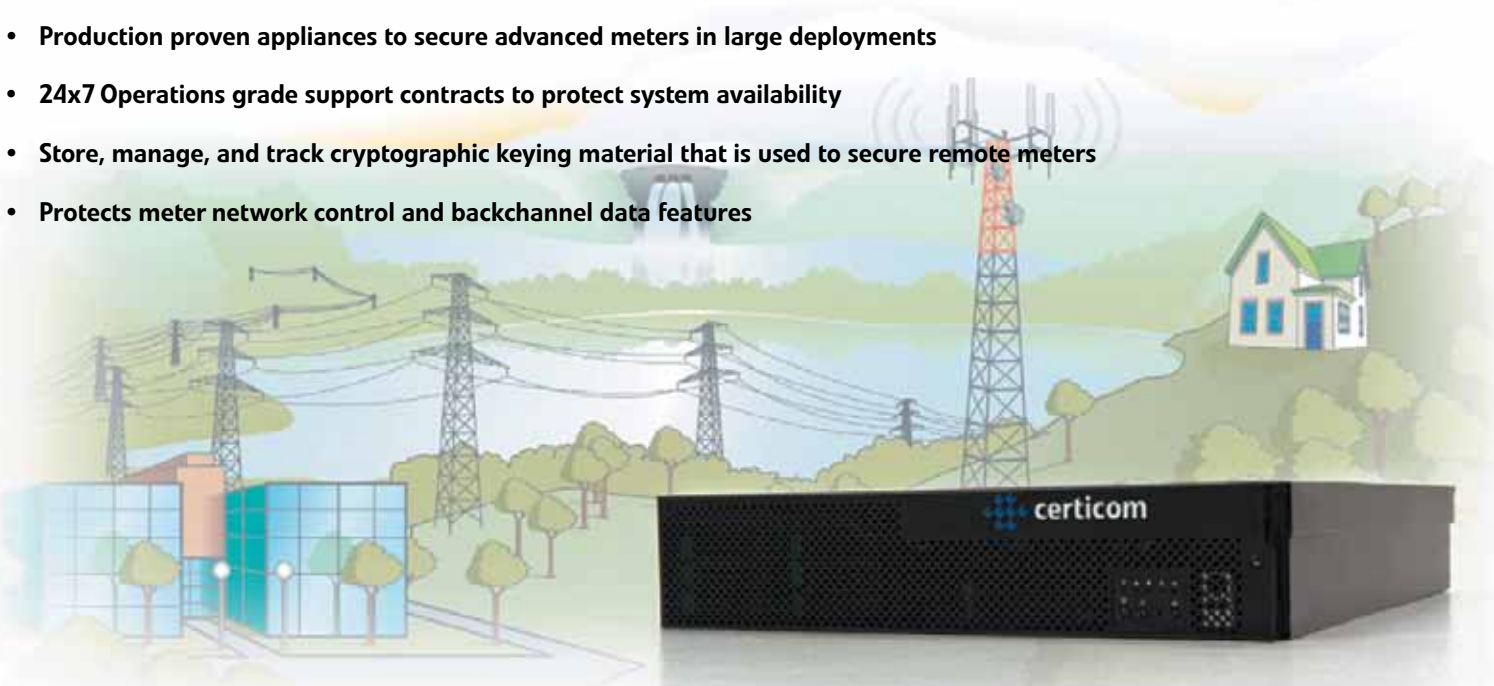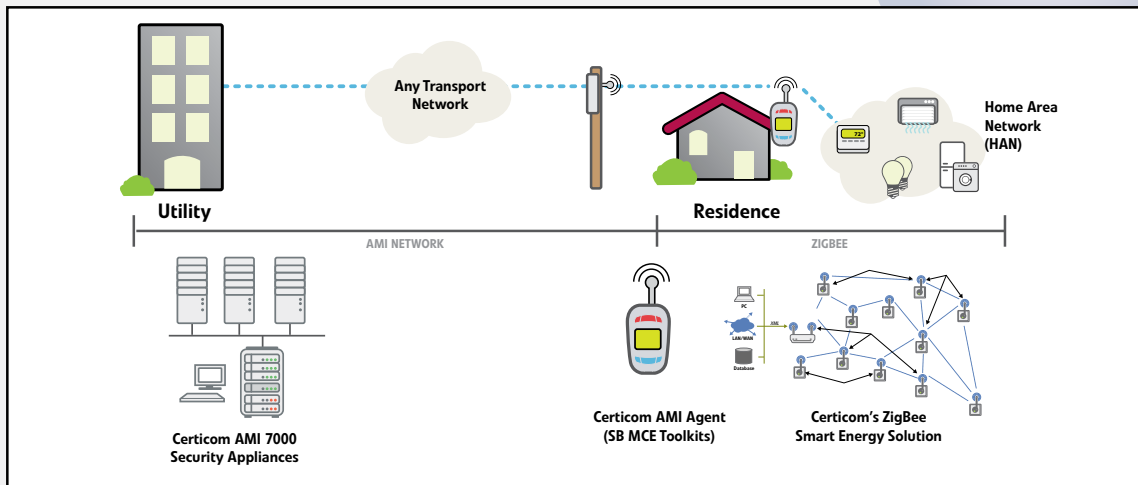
Features

General

- Mitigates personnel risks with multi-administrative smart-card control of appliances
- Prevents eavesdropping and malicious infiltration of metering network
- Prevents false commands and replay attacks
- Ensures meter network availability with optional hot and warm standby redundancy configurations
- Add-on protected communications pathway into home via ZigBee Smart Energy devices

AMI 7200

- System wide key management with capabilities to perform key rollover and meter revocation
- Decrypts all transmitted meter reading data
- 20,000 decrypt operations per second using AES-128 cipher suite

AMI 7100

- Authenticates command and control messages using ECDSA based digital signatures
- Protect private signing keys using tamper-reactive Hardware Security Module (HSM)
- 200 digital signatures per second using 283 bit ECC security level

Any Transport Network

Home Area Network (HAN)

Utility   **Residence**

AMI NETWORK   ZIGBEE

Certicom AMI 7000 Security Appliances

Certicom AMI Agent (SB MCE Toolkits)

Certicom's ZigBee Smart Energy Solution

SPECIFICATIONS

Cryptographic Key Strength
- 128-bit or 256-biteffective cryptographic strength utilizing US government grade algorithms
- ECC (asymmetric), AES (Symmetric)

Processor
- Intel 45 nm Enhanced Quad Core Xeon CPU 5400 (AMI 7100)
- 2 x Intel 4 nm Enhanced Quad Xeon CPUs (AMI 7200)

Network Interfaces
- 2 x 10/100/1000Mb On-Board Interfaces

Raid Storage
- 3 x 146 Gb SAS 2.5" Hot Swap HDDs Hardware RAID 5 (AMI 7100)
- 5 x 146 Gb SAS 2.5" Hot Swap HDDs (AMI 7200)
- 2 x 2 HDDs RAID 1 Configuration (AMI 7200)
- 1 HDD Hot Spare (AMI 7200)

System Administration
- Secure Shell (SSH) Console Administration with Operator Smart Cards

Hardware Security
- FIPS 140 Level 3 rated Hardware Security Module (AMS 7100)

Enclosure
- 2 U rack mountable (20 " depth))

Power Supplies:
- 600 W AC Auto-ranging (Optional DC)
- Optional 2nd Dual Hot Swap Power Supply

Operating Environment:
- Temperature – Operating 10°C to 35°C (50°F to 95°F)
- Temperature – Non-Operating -40°C to 70°C (-41°F to 158°F)
- Humidity – Non-operating 50% to 90%, non-condensing with a maximum wet bulb of 28°C

About Certicom

Founded in 1985 with a long-term focus on Elliptic Curve Cryptography, Certicom has been awarded over 500 patents. As a leader in applied cryptography and key management, Certicom provides managed PKI, key management and provisioning technology that helps to protect customers' device firmware, applications, and long-lived assets. Certicom is a critical element of the Blackberry cybersecurity portfolio deploying the first and best in class end-to-end security solutions used in preventing product counterfeiting, re-manufacturing, and rogue network access. Blackberry Certicom's secure key provisioning, code signing and identity management solutions are field-proven to protect next-generation connected cars, critical infrastructure and IoT deployments.

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