Since use of the internet and digitization took off in the 1990s, the networking of systems has become increasingly important. However, the challenges consist not only in protecting personal and confidential data, but above all in protecting critical infrastructure such as energy supply grids.

Solution

Harnessing the Potential of IP Cameras

Advanced to its current and most popular form, Avnet’s Nuvoton IP camera platform leverage the power and convenience of WiFi connectivity.

Securing the Potential of IoT with Infineon Optiga

The Infineon OPTIGA IoT Security solution incorporates a secure element device in an IoT node reference design which helps decrease the risk of data breaches.

Setting the Standard for WIFI Power Plug Solutions

Internet-enabled power plug solutions let us monitor and measure usage conveniently, maintain safety levels and even protect our homes and valuable electronic investments against electrical faults.

Products - Security and Energy Management

Together with industry leading companies, Avnet provides you the best and most popular options here to support your security and energy solutions.

Infineon

OPTIGA™ TPM

Maxim Integrated

DeepCover Secure Authenticators

Microchip Technology

ATECC508A

NXP

Microcontrollers - Kinetis & LPC MCUs

ON-Semi

12 V Electronic Fuse - NIS5132

Texas Instruments

Digital Signal Controllers - TMS320F28333

Xilinx

Embedded Vision on Surveillance Camera

Quick Links

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Harnessing the Potential of IP Cameras

It wasn’t too long ago that video surveillance technologies were primarily used for commercial security purposes. Today it has become a common sight in everyday life. Advanced to its current and most popular form, IP cameras leverage the power and convenience of WiFi connectivity, helping parents keep close eyes on young children, working people watch over their homes, and even allow the curious-minded witness events across the globe in real time.

Fueling the advancements in this field is one of Avnet’s notable solutions, the Nuvoton IP camera platform. Adopting the N32926 family, Nuvoton’s latest SoC, the platform is complete with highly integrated capabilities from an ARM926 Core, DDR memory and A/V codec. Together with a rich I/O interface, all on a single 14x14mm LQFP package, the platform is integral to products for the domestic surveillance market, and will help engineers minimize PCB size and system costs to meet mass market requirements.

Features

- 720p H.264 encode/decode
- Ethernet/Wifi for video streaming
- SD card storage
- Composite TV output & LCD 800 x 600 I/F
- Audio in/out
- Support video streaming on Android and Windows

System

- SoC (Nuvoton)
- SPI Flash 128MB (Spansion/Toshiba/Winbond)
- Security IC (Maxim)
- Wifi module (LB-Link)
- DC-DC (TI, On-Semi, BCD)

Target Applications

- IP camera
- Wifi camera
- Car DVR/Aero modelling
- Video door
- Baby monitor
The life-enhancing potential of IoT thrives on the ability to share, transfer and access vast amounts of information over wide arrays of devices. Such convenience, however, increases the risk of data breaches and thus calls for robust security technologies to protect sensitive data. That is why Avnet brings you the power of Infineon whose solutions could prove to be an asset to your IoT designs.

The Infineon OPTIGA IoT Security solution incorporates a secure element device in an IoT node reference design. Built for exceptional versatility, it comes complete with a sensor hub with sensors from ST Micro, and a BLE module designed around Dialog Semi. Most impressively, Infineon's OPTIGA Trust products offer an extensive range of security chips to enable embedded authentication in security applications, thereby ensuring that you will always have a suitable security solution for every innovative design.

**Features**

- With Infineon Optiga trust SLS10ERE inserted: Smartphone app can read sensor data and control LED via BLE DA14681
- With security module removed, Smartphone app cannot read sensor data and control LED via BLE DA14681

**Key Components**

- SLS10ERE (Infineon)
- DA14681 (Dialog)
- M452LG5AE (Nuvoton)

**Target Applications**

- IoT Node and Gateway Security
- Product authentication and brand protection
- Enhanced security for high valued goods
- Industrial control and automation
- Consumer electronics and accessories
- Smart home and home automation
- PKI networks
- Original replacement parts
- Diagnostic and healthcare equipment and networks
- Energy generation and distribution systems
As the proliferation of electronic innovations continues to introduce new conveniences into our lives, they are placing increasing demands on our electrical supplies. Internet-enabled power plug solutions put control back in our hands by letting us monitor and measure usage conveniently, maintain safety levels and even protect our homes and valuable electronic investments against electrical faults.

Avnet’s WiFi Power Plug Solution is a choice widely selected by today’s smart innovators. Controlled via mobile app, and compatible with most cloud platforms, it combines Silergy energy measurement IC (78M6610), current measuring Vishay shunt resistors and a WiFi module, creating a highly capable solution that measures power usage, electricity bill fees and other common parameters. Most impressively, its comprehensive safety features include over voltage, under voltage, over current and short circuit protection, as well as protection for all home appliances connected to it.

**Features**

- 3 different operating mode (Master/Slave, Single Monitoring, General)
- Zero crossing detection
- Energy consumption measurement
- Measurement in separate time slot
- Electricity parameter monitoring
- Fault detection and protection
- LED indication

**System**

- Power measurement: Silergy 78M6610
- Current sensor: Vishay Shunt Resistor
- Wifi module: B-Link

**Target Applications**

- Home application power plug
- Home appliance
- Home automation

**BOM**

<table>
<thead>
<tr>
<th>Item Brand</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-Link</td>
<td>BL-M300TA1</td>
<td>WiFi Module</td>
<td>1</td>
</tr>
<tr>
<td>NXP</td>
<td>KM14</td>
<td>MCU</td>
<td>1</td>
</tr>
<tr>
<td>Panasonic</td>
<td>JVN1aF-4.5V-F</td>
<td>16A Relay</td>
<td>1</td>
</tr>
<tr>
<td>ONSEMI</td>
<td>NCP1339H</td>
<td>PWM Controller</td>
<td>1</td>
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</tbody>
</table>
OPTIGA™ TPM (Trusted Platform Module) is a standardized security controller which protects the integrity and authenticity of devices and systems in embedded networks. Built on proven technologies and supporting TPM 1.2 and the latest TPM 2.0 standard, OPTIGA™ TPM highlights include secured storage for keys, certificates and passwords as well as dedicated key management. As the established, trusted market and innovation leader in the Trusted Computing space, Infineon offers a broad portfolio of certified OPTIGA™ TPM security controllers based on the Trusted Computing Group (TCG) standard to suit all needs.

**Features**

- High-end security controller with advanced cryptographic algorithms implemented in hardware (e.g. RSA & ECC256, SHA-256)
- Common Criteria (EAL4+) and FIPS security certification
- Flexible integration with SPI, I2C and LPC interface support
- Extended temperature range (-40 to +85°C) for a variety of applications

**Application**

- PC and embedded computing
- Network equipment
- Industrial control systems
- Home security and automation
- Energy generation and distribution systems
- Automotive electronics

**Product Benefits**

- Reduced risk based on proven technology
- Fast time to market through concept reuse
- Flexibility thanks to wide range of security functions as well as dedicated key management
- Easy integration into all platform architectures and operating systems

**Downloads**

- Data Sheet

[products.avnet.com/asia]
DeepCover Secure Authenticators

Protect R&D investment by preventing aftermarket knockoffs

Features

• 512-Bit EEPROM with SHA-256 Authentication for Reads and Writes
  - Symmetric-Key-Based Bidirectional Secure Authentication Model Based on SHA-256
  - Strong Authentication with a High-Bit-Count User-Programmable Secret and Input Challenge
  - 512 Bits of User EEPROM Partitioned Into Two Pages of 256 Bits
  - User-Programmable and Irreversible EEPROM Protection Modes Including Authentication, Write and Read Protect, and OTP/EPROM Emulation
  - Unique Factory-Programmed, 64-Bit Identification Number

• Minimalist 1-Wire Interface Lowers Cost and Interface Complexity
  - Reduces Control, Address, Data, Power, and Programming Signals to a Single Data Pin
  - ±8kV HBM ESD Protection (typ)
  - 2-Pin SFN, 6-Pin TDFN-EP, and 6-Pin TSOC Packages
  - Operating Range: 3.3V ±10%, -40°C to +85°C

Application

• Medical
• Smart Cables
• Printers
• Consumer
• Communications
• Batteries
• Industrial Control
• FPGA’s
• NFC

Product Benefits

• IP Protection
• Counterfeit protection
• Protect end user data
• Licence and feature management
• Restrict access or use
• Peripheral authentication

Specifications

ALCATRAZ (MAXREFDES34#): SHA-256 Secure Authentication Design

Block Diagram

Downloads

Data Sheets

SAP Part Number / Web Buyable
MXMDS28E15P+T

Learn More

ECC based crypto element: The Atmel ATECC508A integrates ECDH (Elliptic Curve Diffie–Hellman) security protocol—an ultra-secure method to provide key agreement for encryption/decryption, along with ECDSA (Elliptic Curve Digital Signature Algorithm) sign-verify authentication—for the Internet of Things (IoT) market including home automation, industrial networking, accessory and consumable authentication, medical, mobile and more.

The ATECC508A is the second integrated circuit (IC) in the Atmel CryptoAuthentication™ portfolio with advanced Elliptic Curve Cryptography (ECC) capabilities. With ECDH and ECDSA being built right in, this device is ideal for the rapidly growing IoT market by easily supplying the full range of security such as confidentiality, data integrity, and authentication to systems with MCU or MPUs running encryption/decryption algorithms (i.e. AES). Similar to all Atmel CryptoAuthentication products, the new ATECC508A employs ultra-secure hardware-based cryptographic key storage and cryptographic countermeasures which are more secure than software-based key storage.

The device is compatible with any microprocessor (MPU) or microcontroller (MCU) including Atmel | SMART and Atmel AVR MCUs or MPUs. As with all CryptoAuthentication devices, the ATECC508A delivers extremely low-power consumption, requires only a single GPIO over a wide voltage range, and has a tiny form factor making it ideal for a variety of applications that require longer battery life and flexible form factors.

Features
- Secure Private Key provisioning, AWS IoT, ECC curve, secure storage

Application
- Any IoT application with an IP address to provide maximum flexibility and security

Product Benefits
- Zero Touch provisioning for AWS IoT, MCU agnostic with CryptoAuthLib

Specifications
- Crypto Element Device with Secure Hardware-based Key Storage
- Performs High-Speed Public Key Algorithms (PKI): ECDSA and ECDH
- NIST Standard P256 Elliptic Curve Support
- SHA-256 Hash Algorithm with HMAC Option
- Host and Client Operations
- Two High-endurance Monotonic Counters
- Guaranteed Unique 72-bit Serial Number
- Internal High-quality FIPS Random Number Generator (RNG)
- Storage for up to 16 Keys
- Multiple Options for Consumption Logging and One Time Write Information
- Intrusion Latch for External Tamper Switch or Power-on Chip Enablement
- 2.0V to 5.5V Supply Voltage Range
- 1.8V to 5.5V IO Levels
- <150nA Sleep Current
- 8-pad UDFN, 8-lead SOIC, and 3-lead CONTACT Packages

Zero Touch Provisioning Kit for AWS IoT

Downloads
- FireWire and Usermanual

SAP Part Number / Web Buyable
- Kit: AT88CKECC-AWS-XSTK
February 2017

Products - NXP

Microcontrollers - Kinetis & LPC MCUs

Smart. Secured. Secure, Connected.

Features

• Smart
  Increasing performance, reducing space & power budgets to deliver more power efficient & intelligent edge node processing

• Secure
  Delivering scalable security across the families to facilitate secure edge node processing at right price/performance ratios

• Connected
  Support for wired & wireless connectivity backbones while facilitating reduced cost of ownership for

Point of Sale (POS) Reader Solution Overview

• POS Reader Reference Design for applications requiring Payment Card Industry certifications, supporting QVGA display

• NXP PN5180 Contactless, TDA8035 Contact card reader module with KSDK driver support

• Hardware and software, including all drivers, cryptographic libraries, NXP Secure Kinetis K81 MCU
  - Pin to pin compatible, covering range of performance and price targets

• Chip-and-PIN keypad based on Cirque® SecureSense™ technology

• CardTek L2 CT/CL EMVCo Certifiable Stack

Target Applications:

- Point of Sales Terminals, Contact & Contactless
- Automatic Teller Machine PIN Pad + Reader
- Building and Home Automation, Secure Access Control

Availability:

- Sampling now, Launch Sep '16

Certifications & Testing:

- TWR-POS-K81 PCI 4.1 Certified as PIN Entry Device (PED)*
- PCI silicon pre-certification
- CAVP (crypto assurance validation program) certified
- TRNG entropy evaluation
- EMVCo L1 CT/CL pre-certified

Target application and NXP product

EPOS

Application Product Features

<table>
<thead>
<tr>
<th>T-POS</th>
<th>i.MX6UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.MX258</td>
<td>Cortex-A7, low power, PCI4.x standard</td>
</tr>
</tbody>
</table>

QRPOS

<table>
<thead>
<tr>
<th>MPOS</th>
<th>K81/KL81</th>
<th>K21F/K21D</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI4.x standard, Camera interface</td>
<td></td>
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</table>

Finger Printer

<table>
<thead>
<tr>
<th>Photoelectric sensor F.P.</th>
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</thead>
<tbody>
<tr>
<td>LPC541xx, K22FN</td>
</tr>
<tr>
<td>Customer has own algorithm.</td>
</tr>
<tr>
<td>Low power consumption and big RAM size (LPC5411x)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Photoelectric sensor F.P.</th>
</tr>
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<tbody>
<tr>
<td>KL16, LPC8xx</td>
</tr>
<tr>
<td>Customer uses the algorithm from P.E. SOC vendor. MCU is for control purpose</td>
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</tbody>
</table>

<table>
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<tr>
<th>Semicon sensor F.P.</th>
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</thead>
<tbody>
<tr>
<td>LPC541xx, K8x</td>
</tr>
<tr>
<td>Stable solution with the cooperation with finger printer chip vendor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cap sensor F.P.</th>
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</thead>
<tbody>
<tr>
<td>KL16, LPC8xx</td>
</tr>
<tr>
<td>Multiple serial ports to adapt for different applications</td>
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</tbody>
</table>

Power data concentrator

<table>
<thead>
<tr>
<th>Application Product Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type-I</td>
</tr>
<tr>
<td>LPC1778FBD208, LPC4078FBD208, MK64FX512VLQ12, LPC54606</td>
</tr>
<tr>
<td>Robustness, &gt;128 GPIO (Type-I), &gt;100 GPIO (Type-II), Ethernet, USB HOST, &gt;100MHz, external memory interface (Flash and RAM), 5 UARTs</td>
</tr>
</tbody>
</table>

| Type-II |
| LPC1778FBD144, LPC4078FBD144, MK64FX512VLQ12, LPC54606 |

▲ TOP

Quick Links

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The NIS5132 is a cost effective, resettable fuse which can greatly enhance the reliability of a hard drive or other circuit from both catastrophic and shutdown failures. It is designed to buffer the load device from excessive input voltage which can damage sensitive circuits. It also includes an overvoltage clamp circuit that limits the output voltage during transients but does not shut the unit down, thereby allowing the load circuit to continue operation.

**Features**

- Integrated Power Device
- Internal Latching Thermally Protected
- No External Current Shunt Required
- 9V to 18V Input Range
- Internal Charge Pump
- Internal Undervoltage Lockout Circuit
- Internal Overvoltage Clamp
- ESD Ratings: Human Body Model (HBM); 1500V, Machine Model (MM); 200V
- These are Pb-Free Devices
- Auto Retry Option
- 44 mohm Typical

**Application**

- Mother Board Power Management

**Downloads**

- NIS5132-D

**Learn More**

▲

**Quick Links**

- products.avnet.com/asia
The TMS320F28335, TMS320F28334, TMS320F28333, TMS320F28332, TMS320F28235, TMS320F28234, and TMS320F28232 devices, members of the TMS320C28x/Delfino™ DSC/MCU generation, are highly integrated, high-performance solutions for demanding control applications.

Application
- Industrial AC Inverter Drives
- Industrial Servo Amplifiers and Controllers
- Computer Numerical Control (CNC) Machining
- Uninterruptible and Server Power Supplies
- Telecom Equipment Power
- Solar Inverters

Learn More
Xilinx All Programmable solutions enable developers to rapidly prototype and deploy next generation video surveillance systems. From native support for all the common video connectivity standards, to SDSoC, the software defined environment for Xilinx All Programmable SoCs, Xilinx offers a robust platform to develop complex next generation systems. Zynq Programmable SoC devices target next generation video surveillance systems from multi-camera surround view 1080p to super immersive 2160p systems. With hardened support for H.264 and H.265 at 4KP60, Xilinx offers the ideal platform for you to differentiate your system and gain leadership in the video surveillance market.

Xilinx's comprehensive solutions enable image analytics and superior image quality at lowest cost.

Design Examples

- Design With All Programmable SoC
- Increase system performance with hardware acceleration for video analytics such as object identification, object tracking, virtual trip wire, counting, license plate localization and reading

Learn More

- Embedded Vision Zone
- Embedded Vision on Surveillance Camera
- Vision-Based Face Tracking: (using our own AES's Embedded Vision Dev Kit)

Quick Links

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