NXP IoT security IC A71CL

Plug & Trust: For IoT deployments/IoT Connectivity Alliance certified

With its core root of trust at the IC level, A71CL brings security into your solution. Designed with NXP's proven and secured core and crypto accelerators, ICA-certified, the A71CL delivers chip-to-cloud security right out of the box, available in two main configurations: 'Ready for Alibaba Cloud' and 'Ready for Baidu Cloud'.

KEY BENEFITS

- Secure, zero-touch connectivity
- IC-level root of trust for security from chip to edge to cloud
- ICA-security certified
- Alibaba Cloud configuration
  - ID^2(*) credentials pre-injected in secure storage
  - ID^2 Qualified AliOS THING pre-integration ready
- Baidu Cloud configuration
  - Baidu Cloud credentials pre-provisioned

KEY SECURITY FEATURES

- Protected access to credentials via encrypted channel
- Device-to-cloud authentication
- RSA key generation (512- to 2048-bit key length)
- TDES RSA key generation and signature verification
- High-performance RSA/RSA-CRT 512- to 2048-bit key, AES crypto-coprocessors, TRNG

KEY HARDWARE FEATURES

- Easy access to any MCU/MPU with I^2C 400 kbps slave interface
- Standard (-25 to +85 °C, A7101) and extended (-40 to +90 °C, A7102) temperature range
- Compact HVSON8 package

The arrival of subscription-based cloud connectivity using public clouds, such as Alibaba Cloud or Baidu Cloud, makes the Internet of Things (IoT) more accessible to everyday products, and is expanding the range of IoT-driven services.

When deploying cloud services, security is always a concern, since every device needs to be protected from hacking, data breaches, botnet attacks, and other dangers lurking in the IoT. The keys and certificates used to authenticate the cloud connection need to remain securely hidden, and any data transmitted by the IoT device needs to remain safe and secure while in transit. What's more, the security mechanisms need to be scalable, so they can be deployed efficiently on a large scale, even when manufactured by different OEMs.

(*) Internet Device Identity [ICA/T:2017-202-01]

To meet this need, NXP offers the A71CL, a security IC that delivers high-end security to IoT deployments of any size. As a turnkey, plug & trust solution used with Alibaba Cloud or Baidu Cloud, the A71CL offers zero-touch secure connectivity with proven, hardware-based security algorithms, and prevents OEMs from having to develop, establish, and maintain their own key-management systems.

A third configuration, customer-programmable, enables the customers to set credentials securely and directly according to their needs; this product is available on demand.

PROVEN PERFORMANCE

The A71CL design leverages NXP's leadership in the world's most demanding security applications, such as payment, logical and physical access, and identification, including electronic passports.

Purpose-built to bring security to the IoT, the A71CL protects essential device functions, including object authentication, data protection, and cloud access. It also ensures software integrity and roll-back protection, supports service integrity, protects the ecosystem, and enables new business models.

The A71CL supports industrial applications with an optional extended temperature range (-40 to +90 °C), and is designed for longevity, with 25 years minimum data retention in general-purpose storage and 500,000 cycles minimum endurance.

LIFECYCLE PROTECTION

NXP enables trust throughout the product lifecycle, from the factory to the field. ID2 keys are pre-injected under a license agreement with Alibaba Cloud.

The A71CL 'Programmed and Ready for Alibaba Cloud' is the foundation for a trusted IoT service , where security is built in from the start, not as a bolt-on or afterthought.

COMPLETE SUPPORT PACKAGE

Delivered as a turnkey solution, the A71CL is supported by a comprehensive support package that reduces time-to-market. NXP also offers other time-saving design tools, too, including sample code for major use cases, application notes, and compatible development kits for Kinetis microcontrollers.

A71CL USE CASES

- Secure connection to Alibaba Cloud, Baidu Cloud, edge computing platforms, infrastructure
- ICA-compliant secured connectivity
- Secure commissioning
- Device-to-device authentication
- Proof of origin / anti-counterfeiting
- Secure key storage
- Secure provisioning of credentials
- Secure data protection
- Ecosystem protection

A71CL TARGET APPLICATIONS

- E-Locks
- Connected industrial devices
- Sensor networks
- Voice assistants
- Smart metering
- IP cameras
- Home appliances

Configuration	Order Number	Description	Package	12NC
Provisioned & Programmed	A7101CLTK2/T0BC2WJ	Programmed and Ready for **Alibaba Cloud** security IC with standard temp range (-25 to +85 °C)	HVSON8, Reel	935368739118
Provisioned & Programmed	A7102CLTK2/T0BC2XJ	Programmed and Ready for **Alibaba Cloud** security IC with extended temp range (-40 to +90 °C)	HVSON8, Reel	935379152118
Provisioned & Programmed	A7101CLTK2/T0BC27J	Programmed and Ready for **Baidu Cloud** security IC with standard temp range (-25 to +85 °C)	HVSON8, Reel	935372576118
Provisioned & Programmed	A7102CLTK2/T0BC2AJ	Programmed and Ready for **Baidu Cloud** security IC with extended temp range (-40 to +90 °C)	HVSON8, Reel	935379153118

Item	Description	12NC
A71CLARD-ALI	Arduino-compatible Development Kit A71CL ▸ Programmed and Ready for **Alibaba Cloud**	935382104598
A71CLARD-BAI	Arduino-compatible Development Kit A71CL ▸ Programmed and Ready for **Baidu Cloud**	935382106598

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