Product Type	Integrated Communication Processor
Freescale Part #	LS1012A, LS1014A
Package	9.6mm x 9.6mm, 211 flip chip, land grid array (FC-LGA)
Crypto Hardware	SEC 5.5

Algorithms	Max Key Size (bits)
DES (ECB, CBC, OFB, CFB)	56
3DES (ECB, CBC, OFB, CFB)	168 (3-keys)
AES (ECB, CBC, CTR, CCM, CMAC, GCM, OFB, CFB, XCBC-MAC)	256
MD-5 + HMAC	(up to 512 bit keys)
SHA-1 + HMAC	(up to 512 bit keys)
SHA-224 + HMAC	(up to 512 bit keys)
SHA-256 + HMAC	(up to 512 bit keys)
SHA-384 + HMAC	(up to 512 bit keys)
SHA-512 + HMAC	(up to 512 bit keys)
RSA Digital Signature	4096-bit operands
RSA Digital Verify	4096-bit operands
ECC Digital Signature	1023-bit field or modulus size
ECC Digital Verify	1023-bit field or modulus size
FIPS compliant deterministic RNG	On chip 32-bit

Target Applications   :
Consumer NAS, IoT gateway, broadband Ethernet gateway and industrial automation.

Overview:
The LS1012A and LS1014A are members of the QorIQ Layerscape family of integrated communications processor from Freescale Semiconductor.

The LS1012A and LS1014A incorporate (1) A53 ARM Architecture CPU cores, (1) DDR3L Memory Controller, (2) 1G Ethernet ports, (1) PCIe, (1) SATA, and (2) USB peripheral bus controllers.

In addition to these CPUs and interfaces, the LS1012A and LS1014A integrate a 2.5 Gbps Crypto Acceleration Engine (SEC 5.5). The algorithms and key lengths supported by the SEC 5.5 are listed in the table above.

In addition to crypto algorithm processing, the SEC 5.5 supports security protocol processing off-load capability, with specific support for protocol header and trailer processing for IPsec, SSL, DTLS, SRTP, MACSec, 802.16e, and 802.11e. The SEC 5.5 is expected to achieve 2500+ public key exchanges per second.

The LS1012A and LS1014A also provide support for secure boot and platform assurance, including ARM TrustZone.

NOTE 1: This authorization does not authorize the export of products designed to use the encryption functionality of these chips. Such products may require a classification and/or license from the Bureau of Industry and Security (BIS) prior to export. OEMs incorporating these chips in their products should call the BIS Encryption Export Support Line at 202-482-0707 with specific questions.

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