

Product Type            Integrated Communication Processor

Freescale Part #        LS1046A, LS1026A

Package                 23mm x23mm, .8mm pitch 780 FC PBGA

Crypto Hardware        SEC 5.4

**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)
Kasumi (A5/3, GEA-3, f8, f9)	128
Snow 3G	128
ZUC (EEA-1 & EIA-2)	128
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    :  
Control processing for Routers, Storage Arrays, Industrial Single Board Computers

Export Control Info:  
Harmonized Tariff (US): 8542.31.0000  
ENC Status: Restricted. US EAR part 740.17(b)(2)  
ECCN: 5A002A.1  
CCAT: G165493

Overview:  
The LS1046A and LS1026A are members of the QorIQ family of integrated communications processor from Freescale Semiconductor.

The LS1046A incorporates (4) 64b A72 ARM Architecture CPU cores, (1) DDR3L/4 Memory Controller, (5) 1G Ethernet ports and (2) 10 Ethernet port, along with multiple PCIe, SATA, and USB peripheral bus controllers.

The LS1026A incorporates (2) 64b A72 ARM Architecture CPU cores, (1) DDR3L/4 Memory Controller, (5) 1G Ethernet ports and (2) 10 Ethernet port, along with multiple PCIe, SATA, and USB peripheral bus controllers.

In addition to these CPUs and interfaces, the LS1046A and LS1026A integrate a 7Gbps Crypto Acceleration Engine (SEC 5.4). The algorithms and key lengths supported by the SEC 5.4 are listed in the table above.

In addition to crypto algorithm processing, the SEC 5.4 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 5.4 is expected to achieve 2500+ public key exchanges per second.

The LS1046A and LS1026A also provide support for secure boot and platform assurance and 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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