Product Type	Integrated Communication Processor
Freescale Part #	T1040, T1042
Package	23x23 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: G150557

Overview:
The T1040 and T1042 are members of the QorIQ family of integrated communications processor from Freescale Semiconductor.

The T1040 incorporates (4) 64b e5501 Power Architecture CPU cores, (1) DDR3L/4 Memory Controller, (4) 1G Ethernet ports and (1) 8x1G Ethernet switch, along with multiple PCIe, SATA, and USB peripheral bus controllers.

The T1042 incorporates (4) 64b e5501 Power Architecture CPU cores, (1) DDR3L/4 Memory Controller, (5) 1G Ethernet ports along with multiple PCIe, SATA, and USB peripheral bus controllers.

In addition to these CPUs and interfaces, the T1040 and T1042 integrate a 5Gbps 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 T1040 & T1042 also provide support for secure boot and platform assurance.

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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