



Product Type	Integrated Communication Processor
Freescale Part #	P5020, P5010
Package	1295 FC PBGA
Crypto Hardware	SEC 4.2

**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
ARC-4	128
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
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: 5A002  
CCAT: G068311

Overview:  
The P5020 and P5010 are members of the QorIQ family of integrated communications processor from Freescale Semiconductor. The P5020 incorporates 2 64b e5500 Power Architecture CPU cores, 2 DDR3/3L Memory Controllers, 1 10G ethernet and 5 1G Ethernet controllers, along with multiple PCIe and sRIO peripheral bus controllers. The P5010 incorporates 1 64b e5500 Power Architecture CPU cores and 1 DDR3/3L Memory Controller, otherwise the features are the same as the P5020. In addition to these CPUs and interfaces, the P5020 and P5010 integrate a 5Gbps Pattern Matching Engine (regex), and a 5Gbps Crypto Acceleration Engine (SEC 4.2). The algorithms and key lengths supported by the SEC 4.2 are listed in the table above.



In addition to crypto algorithm processing, the SEC 4.2 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 4.2 is expected to achieve 5000+ public key exchanges per second.

The P5020 & P5010 also provide support for secure boot and platform assurance.

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