QorIQ T1024/14 and T1023/13 Communications Processors

Next-generation system-on-chip (SoC) for low-cost enterprise and service provider edge and network control applications

TARGET APPLICATIONS

▸ Wired and wireless branch routers

▸ WLAN 11ac enterprise access points

▸ Service provider WLAN access points

▸ Unified threat management gateways

▸ Multifunction printers

▸ Router and switch controllers

▸ Line card controllers

▸ Industrial automation and computing, single board computers

▸ Aerospace and defense ruggedized network equipment

The QorIQ T1024/23 communications processors combine single or dual 64-bit cores, built on Power Architecture® technology, with high-performance Data Path Acceleration Architecture (DPAA) and network peripheral bus interfaces required for networking and telecommunications applications. The T1024 and T1014 processors come in a full featured 23 x 23 mm package which provides scalable pin compatibility with the quad-core T1042 processor, and even the eight-core T2081 processor, for price and power scaling with a single system design. The T1023 and T1013 processors are interfaces and power-optimized SoCs designed to deliver impressive

single- or dual-core performance for cost and power sensitive networking systems. Both versions offer an excellent software compatible 64-bit and I/O upgrade path for the popular QorIQ P10XX family of 32-bit communications processors.

SOFTWARE AND TOOL SUPPORT

With the help of our partner network, we deliver a wide range of tools, run-time software, reference solutions and services to accelerate your designs.

▸ CodeWarrior Development Studio for Power Architecture technology

▸ Proprietary QorIQ Linux® SDK

▸ VortiQa application software

– VortiQa application identification software (AIS)

– Enterprise software for networking

– VortiQa open network switch software
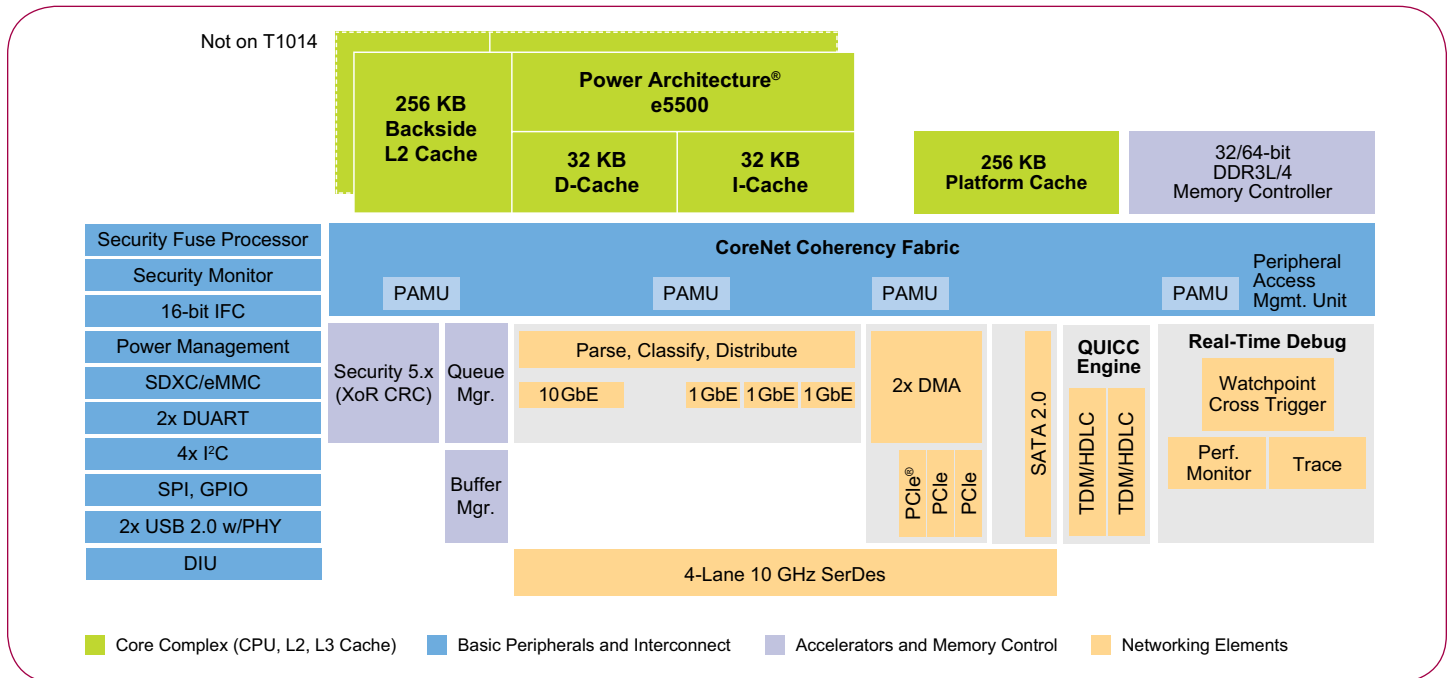
– VortiQa open network director software

- ▸ Professional services and support
  - – Commercial services
  - – Linux SDK support package
  - – Reference design software (RDS) support package
- ▸ Third-party software and tools
  - – Enea, Green Hills, Mentor Graphics and Wind River

QorIQ P1020 AND T102X PROCESSORS COMPARISON TABLE

	P1020/11	T1023/13	T1024/14	T1042
Core	1-2 x e500v2	1-2 x e5500	1-2 x e5500	4 x e5500
Power ISA	32-bit	64-bit	64-bit	64-bit
Max MHz	800	1400	1400	1400
L2 Backside Cache	–	256 KB	256 KB	256 KB
Platform Cache	256 KB	256 KB	256 KB	256 KB
DDR Type and Speed	2/3 1333MTs	3L/4 1600MTs	3L/4 1600MTs	3L/4 1600MTs
DDR Speed	to 1333MTs	to 1600MTs	to 1600MTs	to 1600MTs
DDR Width	36 b	36 b	36 b/72 b	36 b/72 b
SerDes	4	4	4	8
PCIe Lanes	2 x 1 v1	3 x 1 v2	3 x 1 v2	4 x 1 v2
GbE	up to 3	up to 4	up to 4	up to 5
10GbE I/O	–	1	1	-
MACSEC	–	All ports	All ports	All ports
Hardware Offload	–	DPAA	DPAA	DPAA
Crypto	SEC 3.x	SEC 5.x	SEC 5.x	SEC 5.x
Pattern Matching	–	–	–	Yes
QUICC Engine TDM/ HDLC, ISDN, Industrial	Yes	–	Yes	Yes
SATA	–	2.0 x 1	2.0 x 1	2.0 x 2
USB	2.0 x 2	2.0 x 2 w Phy	2.0 x 2 w Phy	2.0 x 2 w Phy
Lossless Deep Sleep	–	–	Yes	Yes
Auto Response	–	–	Yes	Yes
Display Interface	–	-	Yes	Yes
Single Clock Source	–	Yes	Yes	Yes
Package	31 x 31 PBGA	19 x 19 FCBGA	23 x 23 FCBGA	23 x 23 FCBGA
Pin Compatible	No	No	Yes	Yes

QORIQ T1014 AND T1024 COMMUNICATIONS PROCESSOR

QorIQ T1023/24 PROCESSORS FEATURES LIST

Two or four e5500 single-threaded cores built on Power Architecture technology	• Up to 1.4 GHz with 64-bit ISA support • Low latency, per core, core clocked 256 KB dedicated cache • Hybrid 32-bit mode to support legacy software and transition to a 64-bit architecture • Nap, wait and doze low-power modes
CoreNet platform cache	• 256 KB shared platform cache for stashing support
Hierarchical interconnect fabric	• CoreNet fabric supporting coherent and non-coherent transactions with prioritization and bandwidth allocation amongst CoreNet endpoints • QMAN fabric supporting packet-level queue management and quality of service
64-bit DDR3L/4 SDRAM memory controller with ECC support	• 32-bit or 64-bit low power DDR up to 1600 MT/s
DPAA incorporating acceleration for the following functions	• Full L2/3 tunneling and en/decrypt offload support for functions such as WLAN • CAPWAP/DTLS secure wired links • Packet parsing, classification and distribution • Queue management for scheduling, packet sequencing and congestion management • Hardware buffer management for buffer allocation and de-allocation • Cryptography acceleration (SEC 5.x)
SerDes	• Four lanes at up to 10 Gbit/s • Supports SGMII, 2.5 Gbit SGMII, QSGMII, XFI, 10G BASE-KR, PCI Express® and SATA
Ethernet interfaces	• Up to 4 x Ethernet MACs
QUICC Engine module	• Integrated support for legacy WAN protocols TDM, HDLC, UART, ISDN and industrial protocols
High-speed peripheral interfaces	• Three PCI Express 2.0 controller
Additional peripheral interfaces	• One serial ATA (SATA 2.0) controller • Two high-speed USB 2.0 controllers with integrated PHYs • Enhanced secure digital host controller (SD/MMC/eMMC) • Enhanced serial peripheral interface • Two I²C controllers • Four UARTS • Integrated flash controller supporting NAND and NOR flash memory
DMA	• Dual four channel
Support for hardware virtualization and partitioning enforcement	• Extra privileged level for hypervisor support
QorIQ trust architecture	• Secure boot, secure debug, tamper detection, volatile key storage
Single source clocking	• For BOM cost reduction

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Microprocessors - MPU *category:*

Click to view products by NXP *manufacturer:*

Other Similar products are found below :

MC7457RX1267LC A2C00010998 A ALXD800EEXJCVD C3 A2C00010729 A T1022NSE7MQB MPC8313EVRADDC
MPC8313VRADDC BOXSTCK1A8LFCL LS1021ASE7KQB LS1021ASN7KQB T1024NXN7MQA T1024NXE7MQA T1023NSE7PQA
CM8063501521600S R19L NS7520B-1-C55 T1024NXN7PQA T4240NSN7PQB MVF30NN152CKU26 FH8067303534005S R3ZM
R9A07G044L24GBG#AC0 SVF311R3K2CKU2 R7S721030VLFP#AA0 M0516LBN MCF5208CVM166 MCIMX6L2EVN10AB
MCIMX6U7CVM08AC TEN54LSDV23GME MC68302AG33C MC68302EH16C MCF5233CVM150 MCIMX6G1CVM05AB
MCIMX6L3DVN10AB MPC8314ECVRAGDA MPC8314VRAGDA MPC8315VRAGDA MPC8541VTAPF NS9750B-0-C125
PIC16F1828-I/SS W78C032C-40PL PIC16F690T-I/SS PIC18F13K50-I/SS PIC16F877-20/PQ PIC16F727-I/PT PIC16F1847-I/SS
PIC16F1823-I/SL PIC18LF14K50-I/SS MPC8313ECVRAGDC MPC8245LVV333D MPC8309CVMAHFCA MPC8314EVRAGDA