



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

### QORIQ T1014 AND T1024 COMMUNICATIONS PROCESSOR

