



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

