Enabling Secure and Flexible Wi-Fi Infrastructure

QorIQ® T1023 WLAN SYSTEM Fact Sheet

The 802.11ac Wi-Fi standard makes wireless communication faster and scalable with capabilities that come close to Gigabit Ethernet. NXP's T1023-based WLAN system is a customized purpose-built wireless access point tailored to fit the Enterprise Access Point or Gateway markets.

OVERVIEW

The next generation 802.11ac Wave 2 WLAN system based on the QorIQ T1023 dual core communication processor provides a market-ready, purpose-built, BOM-cost optimized hardware platform equipped with dual radios, PoE and up to 4Gbps offload - ideal for new solutions to address the WLAN EAP or Gateway market.

The T1023-based wireless LAN system offers a complete solution to build a next-gen 802.11ac compliant wireless access point delivering up to 2.5Gbps of performance with minimum core utilization providing maximum headroom for value added applications.

HIGHLY INTEGRATED DESIGN

This WLAN system, co-developed with Alpha Networks, can be quickly productized to accelerate time to market with the latest 802.11ac features. The board comes with not only a 2.4GHz and 5GHz radio but an additional PCIe slot for a potential 60GHz radio.

The QorIQ T1023 processor is the ideal low-power, high-performance processor for enterprise class features such as 4x4 MU-MIMO, 4 spatial stream capability, multi-rate PHY support, and PoE compliance. The T1023 WLAN system can be updated easily via open source OpenWRT Linux to your specific user interface. Optional, free NXP Enterprise Access

Point ASK with high-performance network offload software can make your system a leader in the WLAN access point market.

READY TO MANUFACTURE DESIGN

The T1023 WLAN system can significantly reduce investment costs for OEMs or ODMs seeking to address the 802.11ac WLAN market. The turnkey solution, co-developed with Alpha Networks is not only optimized to support 11ac Wave 2 features but also flexible to develop additional user specific applications.

The addition of a third radio slot facilitates in future proofing your design with either a 60Ghz radio (802.11ad) or a dual 5Ghz radio to support multiple clients.

SOFTWARE

Leveraging the open source community and NXP's internal Linux development, the T1023 WLAN system is supported by the NXP SDK 1.9. Extend the system offering by coupling a user-defined custom OpenWRT-based User Interface (UI) which includes a free **reference** NXP Enterprise

Access Point Application Solutions Kit. The OpenWRT platform provides maximum flexibility to the final product offering. The software development kit includes a combination of production-ready, networking offload to speed time to market and maintain maximum CPU cycles for applications and future-proofing.

RELATED PRODUCTS

▸ **LS1043 Residential Gateway ASK**

▸ **LS1012 Freedom Board LS1012 Freedom Board**

▸ NXP Priority Support - **NXP.com/sdk-support**

ORDERING INFORMATION

Orderable Part Number	PRICE (USD)
T1023WLAN-PA	$999

To learn more, visit **NXP.com/T1023WLAN**

FEATURE LIST

▸ Processor

– Highly integrated SoC with optimized network fast-path processing engines for the WLAN market

– QorIQ T1023 processor up to 1.4GHz

– Dual e5500 64b Power PC cores

– 32 Kb I/D L1 Cache and 256 Kb private L2 cache with core clocked dedicated backside cache.
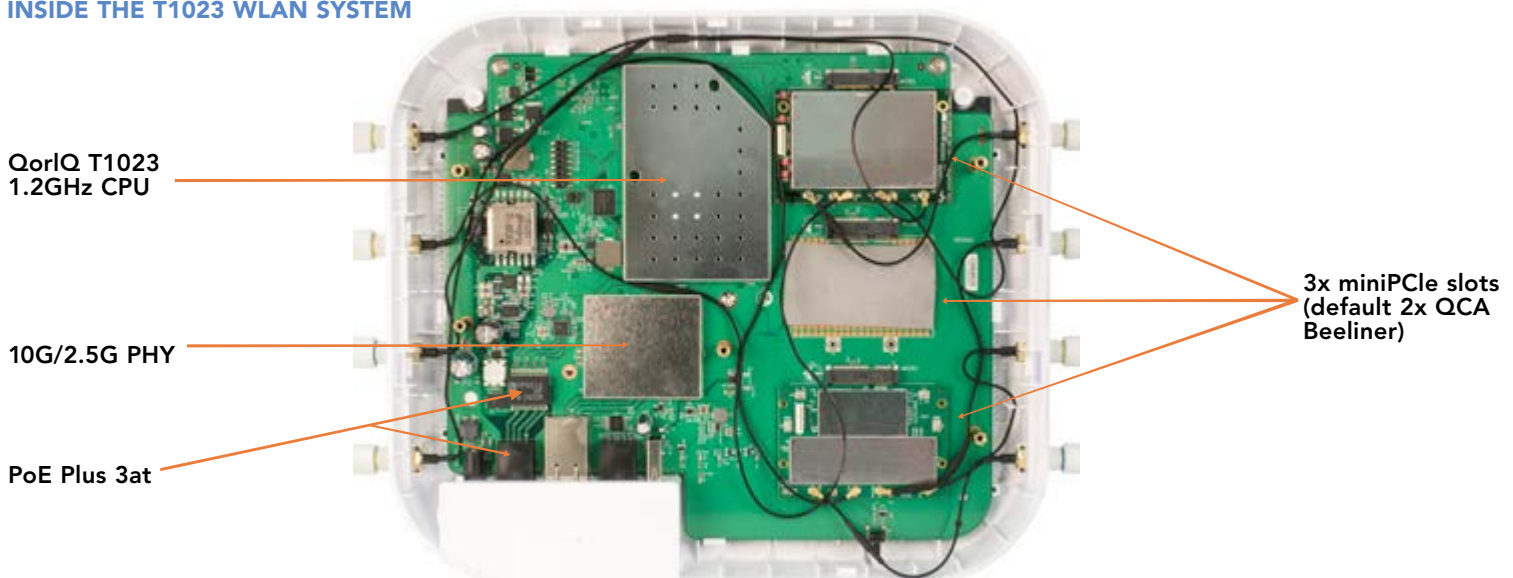
▸ Memory

– 1Gb DDR3 DRAM

– 512 MB NAND Flash

– 32 MB SPI NOR Flash

▸ Radios and Antenna

– 5Ghz QCA9990 4X4 802.11ac MIMO with 1700Mbps performance

– 2.4GHz QCA9990 4X4 802.11a/b/g/n MIMO with 800Mbps performance

– 8 x SMA Antenna Connectors

▸ Ethernet

– 1 x 1/2.5 SGMII–supporting up to 10 Gbps XFI

– 1 x 1GbE Ethernet (RGMII)

– 3 x mini PCIe Gen2 slots

– 1x 10/100/1000Mbps RJ45 with PoE 802.3atz

▸ Basic Peripherals and Interconnect

– 1 x Console, RJ45

– 1 x USB2.0

– 5 x LED indicators, 1 x factory reset button

– 12V DC, 2.5A supply; PoE 802.3at PD

– JTAG for Debug

▸ Compliance

– EN55022:2010 +AC:2011, Class A

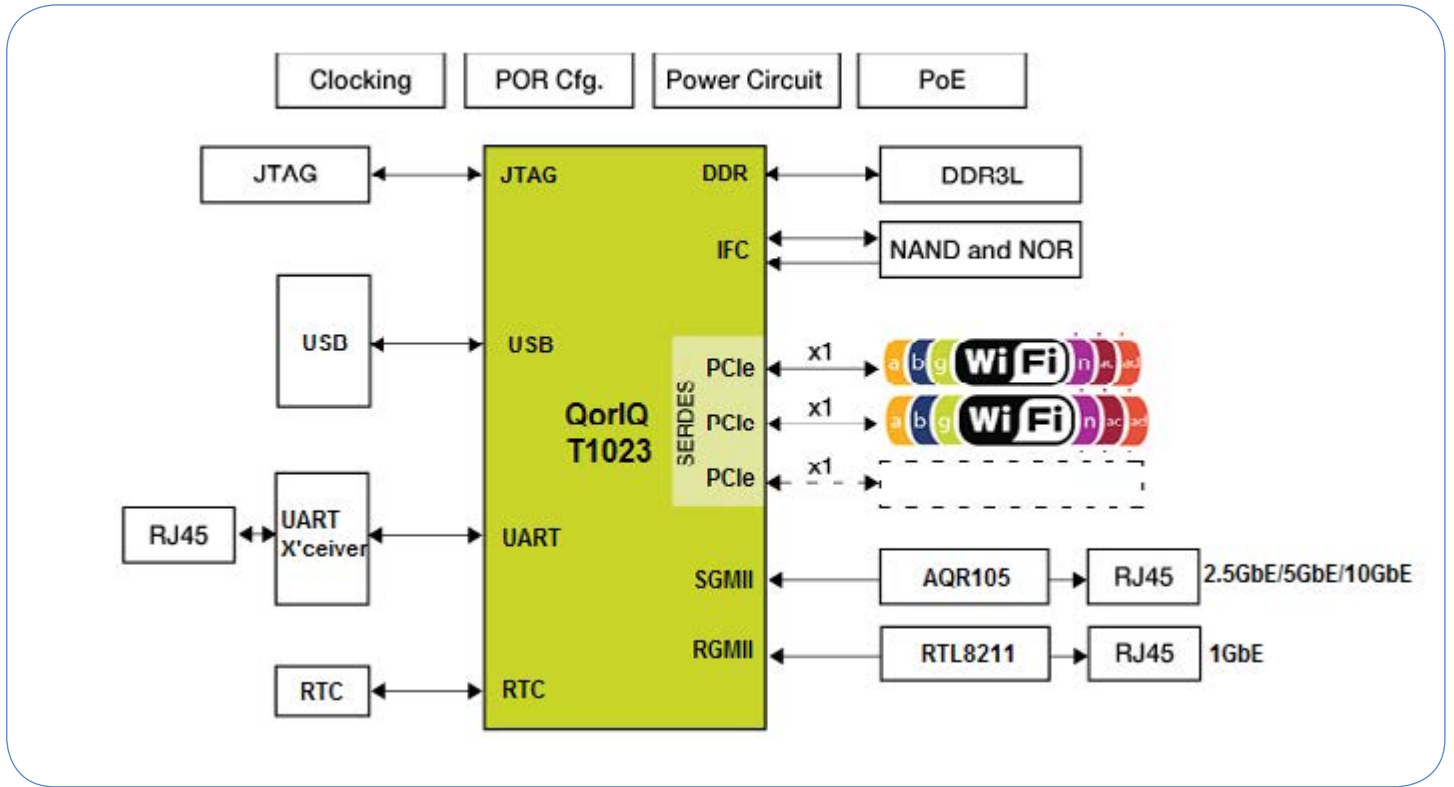– AS/NZS CISPR 22:2009 + A1:2010, Class A

– EN 61000-3-2:2014, Class A

T1023 BOARD ENCLOSURE

INSIDE THE T1023 WLAN SYSTEM

QorIQ T1023 1.2GHz CPU

10G/2.5G PHY

PoE Plus 3at

3x miniPCIe slots (default 2x QCA Beeliner)

QORIQ T1023 SYSTEM BLOCK DIAGRAM