

**Grapeboard** is a credit-card sized Secure Networking Communication Device, used in sensor gateways, communication hubs and secure edge devices. Grapeboard is based on the NXP™ LS1012A, a 64-bit ARM™ v8 network processor with network packet acceleration. Grapeboard contains a single ARM™ Cortex-A53 core running up to 800 MHz,

a hardware packet forwarding engine and high-speed interfaces to deliver line-rate networking performance.

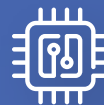
The module incorporates the same Trust Architecture and software compatibility known from higher-tier QorIQ™ LS family devices, enabling scalable, secure applications that leverage a common 64-bit software platform.

## HARDWARE SPECS



### Key features

- Raspberry Pi™ 3 Form-Factor
- 10 pin JTAG header layout
- Reset / Factory Default switch
- On-board USB 2.0 UART converter
- Tamper detect pin



### Processor

- NXP™ QorIQ LS1012A single core 64-bit ARM™ Cortex®-A53 network processor
- 800 MHz Core operation



### Connectivity

- 2x 1GbE Ethernet
- PCIe, SATA and USB 3.0 on M.2 I/F
- 2x I2C, UART, SPI SDHC on PI+
- 2x USB 3.0/2.0, Wi-Fi/BLE 4.0
- ExPi connector



### Memory

- 1 Gbyte DDR3L SDRAM  
Micron - MT41K512M16HA-125
- NAND Memory 8Gbit  
Micron - MT25QU128ABA1EW7-0SIT
- 128 Mbyte NOR Flash
- Factory Default Storage

## APPLICATIONS



- Network Attached Storages (NAS)
- Personal Storage
- Wireless Personal Storage



- Broadband Home Router
- Mobile Broadband Router
- Small Business Router



- Micro Firewall
- Security Gateway
- Enterprise Access Point



- Media Gateway
- Consumer Wireless Access Point
- Integrated Services

## KEY ADVANTAGES

### Rich industrial interfaces

Grapeboard provides an excellent base for quick, reliable, secure and efficient networking by using interfaces such as 3x SERDES (up to 6 GHz), including SATA 3.0 (up to 6Gbps), 2x SGMII (1.25 Gbaud) and Gen 2.0 PCI-e (up to 5Gbps).

### Scalable performance

Grapeboard is the most versatile member of a comprehensive range of modules supporting the QorIQ™ LS1012A processor family. The product is based on the Raspberry PI™ 3 formfactor and is compatible with Raspberry PI™ 3 add-on boards (Hats) available on the market today. The comfort, quality and design safety of a standard board solution is combined with the flexibility of a full system design. You can realize this full system design by adding application specific shields or arrange an optimized custom design by us.

### Long-term availability

NXP™ guarantees availability of the QorIQ™ Layerscape industrial product family for an impressive period of at least ten years. This allows for long-term planning of products with a QorIQ™ Layerscape processor inside. Scalys guarantees long term availability of the Grapeboard. Grapeboard will also be delivered with a Board Support Package (BSP) for Yocto Linux, so you can immediately start developing your own application (IP) even without application specific developed hardware. On special request we develop BSP's for other operating systems.