Grapeboard

Scalys

RPi Connector

JTAG

1GbE (SGMII)

Wi-Fi/BT SMA Connector

Configuration Jumpers

Factory Default Switch

1GbE (SGMII)

USB 2.0 to Serial I/F
Connector (UART1)

Power Jack 4.6 – 16V

2x USB 3.0

External Power 4.6 – 16V

Micro SD Card Slot

Grapeboard (SES-LS1012A) is a 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.
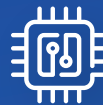
The module incorporates the same Trust Architecture and software compatibility known from higher-tier QorIQ™ LS family devices, enabling scalable, secure applications that leverage a common 64-bit software platform.

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 GB DDR3L (512 Mb x 16)
Micron - MT41K512M16

512 Mb NOR Flash
Micron - MT25QU512ABB

8 Mb SQI Flash Memory

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.