

LAYERSCAPE® LS1012A PROCESSOR BROADBAND HOME ROUTER APPLICATION SOLUTION KIT



The comprehensive Layerscape LS1012A broadband home router (BHR) application solution kit (ASK) helps OEMs and ODMs achieve shorter design cycles without compromising the quality of networking products.

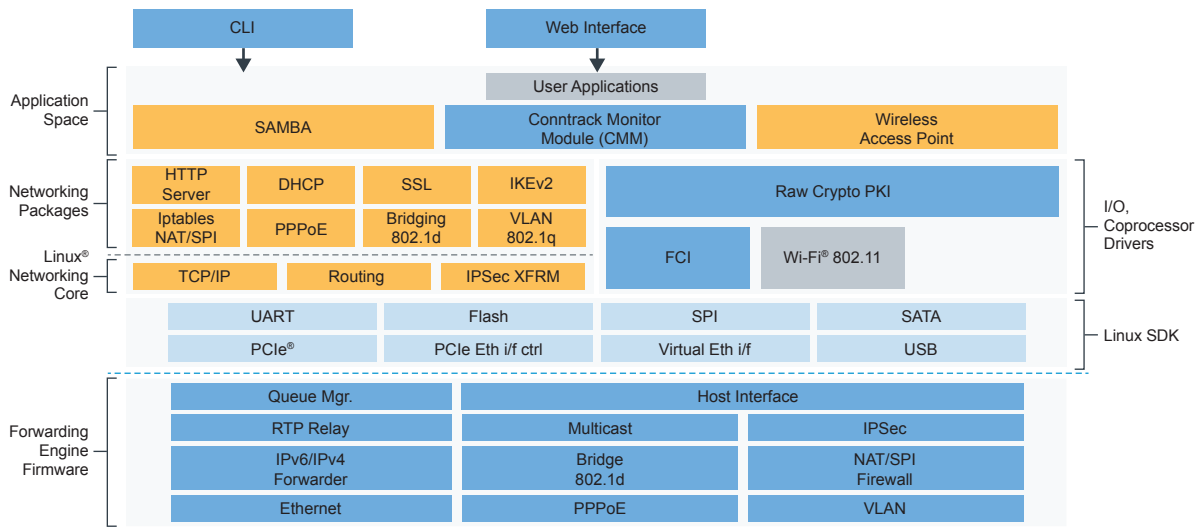
TARGET APPLICATIONS

- Broadband home router
- Mobile broadband router
- MiFi® wireless router
- Consumer wireless access point
- Enterprise access point
- Security gateway

OVERVIEW

The LS1012A BHR ASK reliably and efficiently meets the needs of next-generation consumer and enterprise networks through the powerful combination of its LS1012A processor and feature-rich Linux OpenWRT software package. Together, these components offer a highly optimized network stack and scalable platform. This turnkey software optimally leverages the packet accelerators and delivers wire-speed performance with less than 5 percent load on the Arm® core. OEMs and ODMs can reduce system costs and benefit from the free CPU by including more value-added services without introducing redundant hardware.

LS1012A ASK SOFTWARE BLOCK DIAGRAM



LS1012A OPENWRT LINUX BSP AND ASK OVERVIEW

The ASK package includes access to the source code of all the board support packages, the OpenWRT broadband home router ASK and binaries for the packet forwarding engine. A list of supported third party software ecosystem categories is shown below.

LINUX OPENWRT

- U-Boot
- BSPs
- Linux kernel
- Linux file system
- Application drivers
- Binaries for packet forwarding engine

NETWORKING SERVICES

- TCP/UDP
- IPv4
- RFC 2684 routed, bridged
- PPP/PPPoE
- ICMP
- NAT/NAPT
- IGMP and MLDv6
- 802.1d bridging

LS1043A AND QorIQ LS1046A FEATURES

FEATURES	BENEFITS
Programmable packet forwarding engine	<ul style="list-style-type: none"> • Delivers 2 Gbit/s performance and provides flexibility to offload current and future bandwidth-demanding applications • Offloads NAS TSO and LRO operations to hardware and reduces CPU load
Hardened OpenWRT distribution	<ul style="list-style-type: none"> • More than six years of rigorous field tests and millions of deployments • Hardened and mature software distribution reduces time-to-market
Flexible and highly optimized software architecture	<ul style="list-style-type: none"> • Easy to port and integrate third-party software stacks • Significantly reduces software design cycle • Ensures ample headroom for run-time services even during peak performance
Hardware security	Support for Secure Boot and trusted environment with high-performance SEC engine and gigabit encryption
BSPs for hardware reference EVM	Suitable for software development and ASK performance benchmarking

- IP forwarding
- 802.1p, 802.q
- (s)RTCP
- (s)RTP

IPv6

- Base protocol
- Neighbor discovery
- Auto-configuration
- ICMPv6
- Multicast addressing
- MLDv2
- DHCPv6

- IPv6/IPv4 dual stack
- IPv4 over IPv6 tunneling
- MLDv2 snooping driver support
- Multi-tier wireless LAN vendor driver support for 1n and 11ac
- USB stack
- PCIe stack
- I²C driver
- SPI driver
- Gigabit Ethernet MAC drivers
- IPsec engine control
- UART access
- GPIO control
- Interrupt service routine

SECURITY

- SPI firewall
- IKE IPsec
- OpenSSL
- L2TP, PPTP, ETHERIP

CLIENT/SERVER

- FTP
- Telnet
- SSH
- SAMBA
- NFS
- NTP

QOS

- Classful and classless queuing
- Traffic shaping
- Rate limiting
- Ingress control
- DiffServ

FAST PATH SUPPORT

- TCP/UDP
- IPv4/IPv6
- PPPoE
- NAT/NAPT
- IPsec/SSL
- DPI/SPI
- EtherIP
- 4RD/4 over 6
- Egress QoS
- Traffic shaping and rate limiting
- IPv4/IPv6 Multicast
- RTP relay/cut through

ACCESSIBILITY

- WebGUI content management system
- CLI
- Telnet
- SSH

DIAGNOSTICS

- TCPDump
- Cyclesoak
- RTP/RTCP stats

ORDERING PART NUMBERS

- LS1012A-SWSP-PRM \$50,000
- LS1012A-SWSP-PLS \$25,000

PART NUMBER INCLUDES

- Access to BHR software stack
- Access to binaries for PPFE
- NXP point-of-contact application engineer to resolve customer issues

The ordering part numbers are a yearly subscription that includes distribution rights. To maintain distribution rights you must have an active and paid subscription (see Ordering Part Number).

LS1012A SUBSCRIPTION PLAN OPTIONS

SUPPORT LEVEL	PREMIUM	PLUS
Part numbers — LS1012A	LS1012A-SWSP-PRM	LS1012A-SWSP-PLS
New ASK software releases*	•	•
Assigned a Voucher ID for software support issues	•	•
Access to test codes to facilitate early feature integration	•	•
Ability to request custom features	•	•
Software support hours included	250	100
Annual fee	\$50,000	\$25,000
Royalties	Included in annual subscription	
License	Included in annual subscription	

*New Software releases — regular updates to the LS1043A/LS1046A software are made available via NXP production and patch releases.

www.nxp.com/LS1012a_ASKBHR and www.nxp.com/partners

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