NXP network listening module (NLM) platform

For use in cell planning, geolocation and time/frequency synchronization applications

Network listening modules (NLM) are used in listening/sniffing related use cases such as:

- GPS replacement/augmentation, providing time/frequency synchronization and geolocation based on sensing of neighbor base stations (eNB/gNB) across operators and (4G/5G) standards.
- Augmentation to wireless communication equipment for channel sensing, allocation and registration, enabling automated cell planning and self organizing networks (SON).
- RF control for analog repeater systems, which requires control channel decoding to extract TDD frame format and timing information.
- Meta data collection, including rogue cell detection (security purposes), network occupation and RF propagation.

NXP's NLM reference design uses software-defined radio (SDR) technology to enable future-proofing of a diverse set of use cases and deployment models, optimized for operator frequency band, bandwidth, backhaul and timing requirements.

Software-defined radio

The NXP layerscape access baseband processor family is a fully software programmable modem solution. It supports the full flexibility defined by current and future 3GPP standards across numerologies and deployment options. This includes 4G (by NXP or partner) and 5G (partner) software support. Field upgradeability and longevity for new network deployments with zero touch hardware is implied. Satellite, software GPS and other air interfaces are supported.

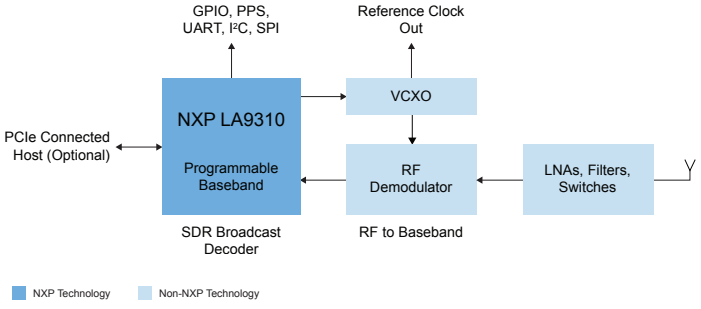
Enterprise grade networking equipment

Based on network grade silicon, the design is fully capable of being qualified to operate in industrial and telecommunication environmental conditions for ten years of continuous operation.

Specifications

- Layerscape access LA9310 software-defined radio. Highly form-factor, power and cost-optimized that is future-proof
- Host (PCIe connected) and host-less (self-booting, SPI/UART/I²C/GPIO + reference clock IO) modes of operation
- High performance: +/-100 ns, +/- 10PPB lab bench performance in timing reference compared to industrial grade GPS

System block diagram



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