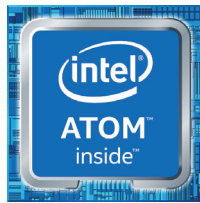
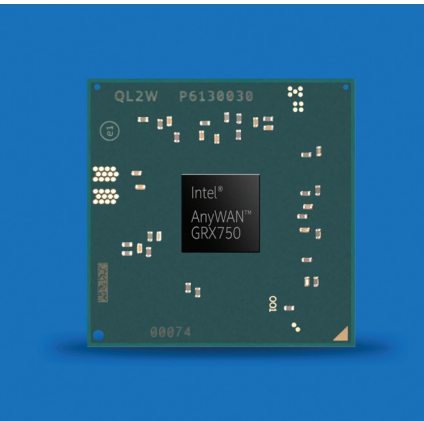


Intel® AnyWAN™ GRX750 Home Gateway NPU



The new Intel® AnyWAN™ GRX750 Home Gateway NPU brings the legendary performance and scalability of Intel Architecture to designers of next generation home gateway products. With optimizations for a wide variety of network interfaces and power-sipping performance, the Intel® AnyWAN™ GRX750 can live at the heart of the next generation of gateways for the smart home.

Intel pioneered scalable and flexible architectures, bringing performance and cross-platform compatibility from PC clients all the way up through the datacenter. Now Intel extends Intel Architecture into the home gateway space, allowing device designers to leverage their software development teams across an even greater array of devices. This saves time and resources in the development cycle as code can be written with an eye for cross-platform compatibility and scalability.

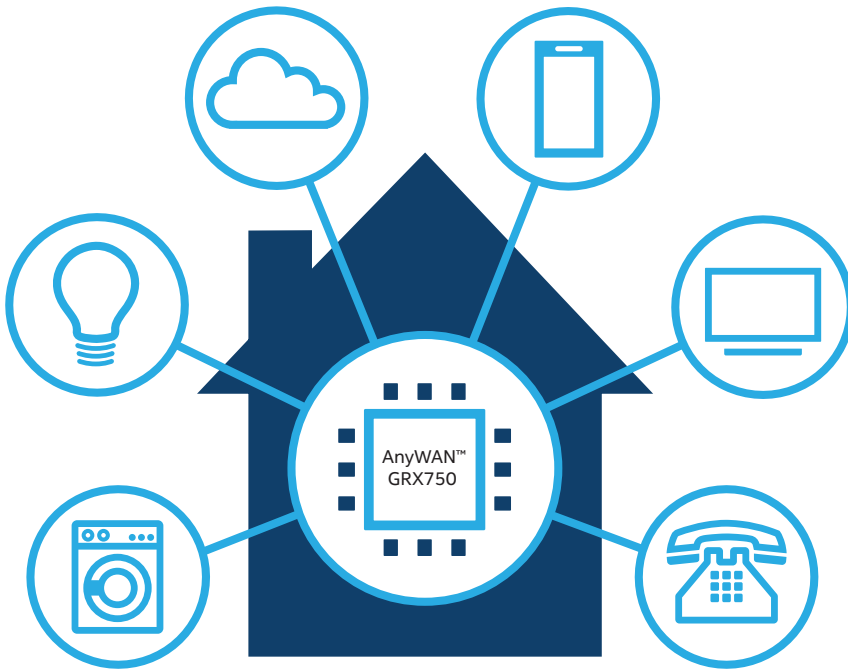
The outstanding performance of a dual-core Intel® Atom™ processor lives at the heart of the Intel AnyWAN GRX750 NPU. Built on 14nm technology the application processor provides dual-core Intel x86 processing at 32 or 64-bits running up to 2.5 GHz** for outstanding performance while being designed for only 6W thermal design power. The NPU is optimized and integrated for both DSL and PON with hardware acceleration.

The highly integrated System on a Chip (SOC) includes a 10Gbit packet processor for high-speed routing and 100MByte/sec NAS performance. Wireless LAN connects to the NPU through DirectConnect™ providing a seamless connection to Intel's fifth generation wireless LAN controller. The Intel WiFi solution is specially optimized for IoT applications to handle the demands of potentially hundreds of simultaneous connections from smart devices within the home.

Two development kits have been designed for service providers to increase time-to-market: a fiber-optic, DSL/G.fast or LTE home gateway design for service providers (codenamed Intel® EASY750™ Home Gateway) and a retail-centric wireless access point design (codenamed Haven Park). Both development kits are compatible with Intel's Universal Gateway (UGW) software development kit (SDK).

Intel® AnyWAN™ GRX750 Network Processor

Universal Gateway Platform



Any WAN	Any LAN
LTE	WiFi
PON	Ethernet
DSL	USB
G.fast	Bluetooth
Ethernet	DECT
USB	Voice

Key Features:

- Embedded 14nm dual-core Intel® Atom™ processor with up to 2.5GHz
- 32 and 64-bit Intel Architecture
- 10 Gbit/sec packet processor
- Over 100 MByte/sec NAS performance
- IoT-scalable WiFi connection with Intel DirectConnect™
- 6W thermal design power
- Universal Gateway SDK for cross-platform software development

Specifications:

CPU and Memory

- Dual-core Intel® Atom™ processor with 2-way super scalar OOO
- UMA, 12.8 GB/s peak memory bandwidth
- 64-bit DDR3L/LP-DDR3 memory channel to operate in x64 or x32 modes

- Supports x8 and x16 DDR3 devices, 256 MB – 8 GB capacity, or x32 LPDDR3 devices, 512 MB – 8 GB capacity
- All memory is protected using an HDCP cipher-based scheme

Integrated Peripherals¹ and Networking Interfaces

- RGMII and SGMII interfaces (WAN/LAN)
- Up to two USB 3.0/2.0 host ports
- Single USB 3.0/USB 2.0 OTG port
- Up to two USB 2.0 host ports
- Up to two SATA Gen3 (6 Gbps) ports
- Up to 4 PCIe Gen2 (5Gbps) ports
- SPI and I2C* interfaces for accessing board level component
- Hardware UARTs
- 60 dedicated GPIOs

Specifications Continued:

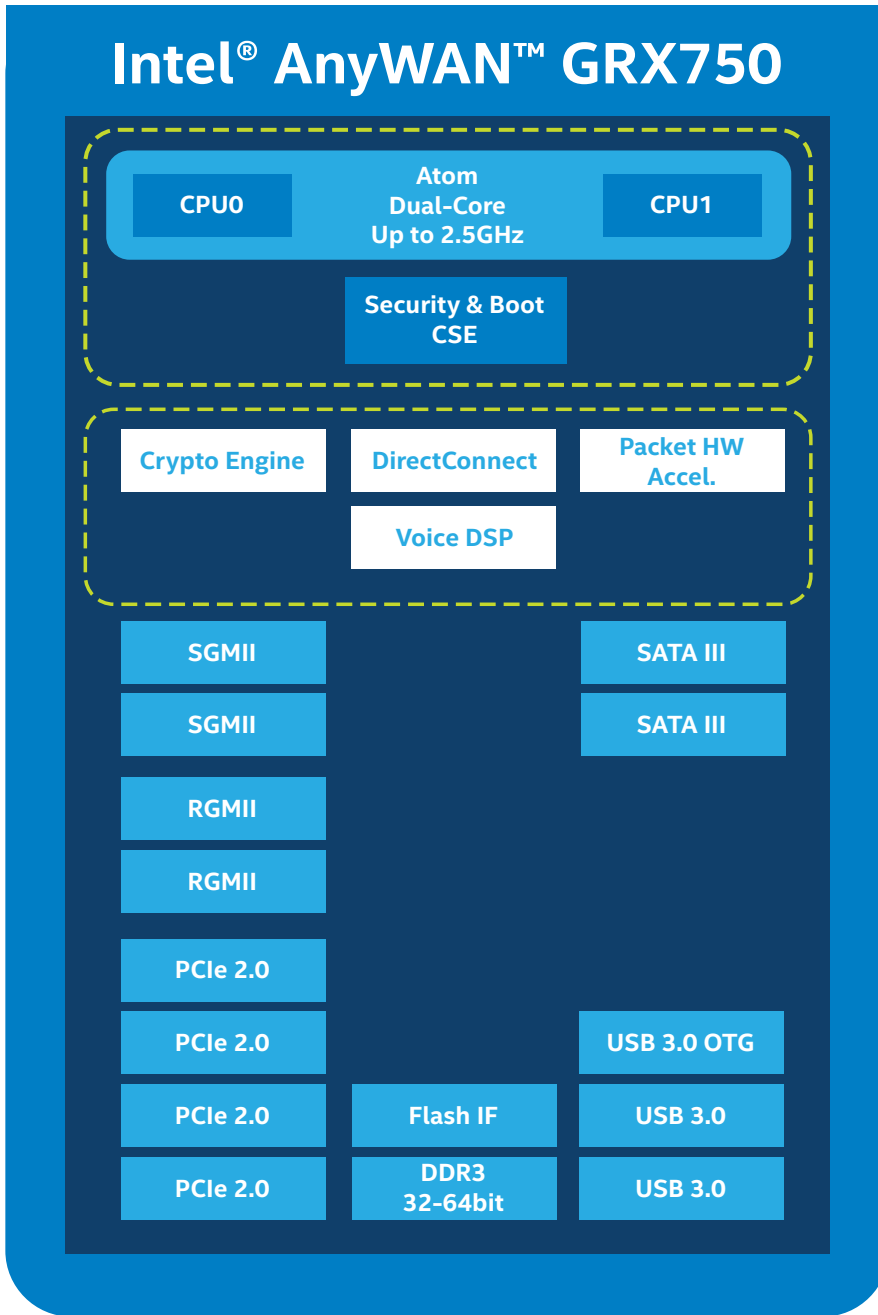
Non-Volatile Memory/Boot Devices

- Serial NOR flash memory with single-bit and dual-bit SPI interfaces for boot purposes
- eMMC* 4.5 NAND flash memory devices, 1.8V, HS200 bus interface
- SD Card 3.0, UHS-I, up to 104 MB/s device rate

Networking Subsystems

- Integrated Voice DSP, C55x* and peripherals that supports VoIP codecs and signal processing function; enables PacketCable*/EuroPacketCable* 1.5/2.0 eMTA with concurrent support of up to four wired telephone lines (FXS) and glueless interfaces to DECT base station
- Integrated Peripherals that include four UARTs, single master I2C*, Battery Back-up Unit (BBU) Controller, and PGA SPI and control signals

Intel® AnyWAN™ GRX750 Block Diagram



Battery Operation and Management

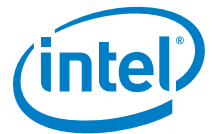
- NetIP fallback into low-power mode with single DS and US channels for operation during power outages
- Integrated power management controller CPU for BBU, battery monitoring, and battery charging

Security Processor²

- Dedicated security processor with on-die boot ROM, 128 KB, with a library of cryptographic utilities for IP Sec, DRM, and CA security management
- Trusted boot support from signed and encrypted Flash image
- Content protection system for non-trusted host operation
- Acceleration for AES, DES/3DES, RSA, SHA, MD5, C2 and AES128

Mechanical

- 27x27mm FCBGA package; package pinout designed for low-cost, 4-layer PCB routing
- Package Z-height is 648 +/- 75 μm
- Variable pad geometry for space conservation while still adhering to electrical connectivity requirements



¹ Not on all devices, see device family specification. Some functionality is implemented as multi-function pins, and the exact features available in a specific design might depend on pin configurations.

² Supported only on Ethernet Wired LAN interfaces.

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