Lantiq Enables Truly Trustworthy Home Gateway; GRX350 is First to Bring Carrier-Grade QoS, Security and Virtualization to Customer Premise

Since its first use, the broadband home gateway has evolved into a powerful platform for distribution and management of triple-play telecommunications services to residential customers. Across successive generations of gateway design, incoming WAN data rates have accelerated to near Gbps speed, wired and wireless home networks now operate at gigabit data rates, and the number of in-home devices accessing the local-area network has grown from a small handful to a dozen or more. Today, as service providers implement plans for smart home services and an in-home Internet of Things (IoT), yet another jump in performance of the home gateway is needed. The new Lantiq GRX350 Network Processor provides equipment vendors and carriers with a platform capable of a quantum leap in the performance of home gateways.

New Services, New Performance Demands
Home networks must rapidly evolve to meet consumer demand for:

- Concurrent, seamless management of media and communications services, including both traditional carrier-delivered content and telephony, and Internet-driven services such as IP voice/video calls and over-the-top media.
- Support of multiple in-home connectivity technologies, including wired Ethernet, Wi-Fi on a multitude of clients running 802.11n or 802.11ac, new powerline and coax data links, and various technologies to support Smart Home/IoT devices.
- Serving dozens of customer devices - including televisions, tablet and traditional computers, smart phones, and peripherals such as printers and attached storage - without any data drops or lags in performance that reflect on overall service quality.
• Hosting a new wave of applications that work with smart home devices, many of which are sourced and downloaded directly by consumers who expect that the gateway will work just like a smart phone in allowing fast and easy access to the latest apps.

The Lantiq GRX350 enables carriers to readily meet consumer requirements for triple-play telecom, in-home connectivity and Smart Home services. The highly integrated System-on-Chip (SoC) serves as the heart of the most integrated and throughput optimized broadband gateways available for the digital home.

One Device, Many Services - QoS, Security and Virtualization

Three key areas of system performance underlie the enormous capability of home gateways based on the GRX350. These are True Quality of Service (TrueQoS™), the dedicated Trusted Execution Processor (TrustWorld™) and hardware-enforced virtualization (TrueVirtualization™).

**TrueQoS™** - Raw packet routing speed greater than 2Gbit/s is paired with a dedicated packet classification engine to achieve a breakthrough in Quality of Service. Utilizing the type of technology found in core network processors, full classification of all downstream and upstream packets at line speed makes it possible to implement QoS protocols on all data streams, from every device operating on the gateway. This packet handling and dedicated QoS engine architecture is mapped to the specifications of the Home Gateway Initiative.

**TrustWorld™** - For the first time in a home gateway processor, the GRX350 implements a Trusted Execution Environment on a dedicated security core processor. The hardware-implemented and protected “Root of Trust” holds sole authority for security functions, manages Secure Boot and system debug, and contains a fully-protected OTP memory block to hold private key information for PKI security implementation.
**TrueVirtualization™** - Hardware-based virtualization gives the GRX350 the ability to run several operating systems in parallel, in full isolation from each other in terms of access to CPUs, peripherals and memory. This assures carriers that the access and networking functionality of the gateway is not exposed to the third-party application code. Access to the different OS’s and applications that run on them is managed by the security core. In short, for the first time carriers can deliver a true multi-service gateway with functionality that extends beyond triple-play into true digital home services.

Security and virtualization both play an increasingly important role as an applications ecosystem for the digital home evolves. Delivering a gateway that accommodates apps gives the carrier a platform that can help make “sticky” customers. At the same time, carriers have a paramount interest in maintaining the stability of the gateway and assuring the integrity of core network services. One issue faced by a gateway that supports multiple services is that apps created for non-core network services are likely to have shorter lifecycles and/or user-accessed update cycles that are markedly different than core services. In the GRX350, the dedicated security core enforces access policies and authorizes apps, while virtualization helps to prioritize system resources and prevent a problem at the applications level from affecting system stability.

**AnyWAN™ Support is Flexible, Future Forward**

Implementation of gateways based on the GRX350 is based on the proven Lantiq AnyWAN™ modular system design approach. WAN technologies supported by the platform include all standard DSL links, up through the most advanced VDSL2, recently deployed Fiber to the Distribution Point (FTTdp) solutions, hybrid DSLTE™ access configurations, and next generation G.fast technology.

The carrier grade edge router features of GRX350 also are complemented by a full array of advanced home gateway features. For in-home connectivity, Lantiq network processors integrate a wide array of technologies such as gigabit Ethernet, Wi-Fi, voice and cordless telephony, and offer features to maximize performance.
of the most advanced wireless links with minimal impact on the network CPU load. The extensive list of supported links includes emerging smart home standards such as integrated ULE functionality and the possibility to connect various other interfaces seamlessly.

For carriers planning to compete in the smart home area, a home gateway that addresses all traditional broadband services as well as new classes of applications and devices is the key to future successful business models. It is critical that the gateway deliver core network functionality with minimal risk that externally sourced applications and services in any way affect the customer experience. A gateway with both the flexibility to handle new devices and service models, as well as many different broadband access technologies, is a powerful competitive tool for carriers. In all respects, GRX350 represents a first to market solution to deliver broadband and true digital home services.

Customers get the service they want at the quality they want and, by building the GRX350 network processor into their boxes, the most secure broadband gateway that has ever existed.

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About Lantiq

Lantiq, a leading supplier of broadband access and home networking technologies, offers a broad and innovative semiconductor product portfolio for next-generation networks and the digital Home. On February 2, 2015, Intel Corporation announced that it will acquire Lantiq. The transaction, expected to close within 90 days, is subject to customary regulatory approvals. More Information about Lantiq is available on our Website or via Twitter @Lantiq, LinkedIn and YouTube.