Background Article:

**Lantiq Presents First FTTdp System Solution Delivering 300 Mbps Aggregate Data Rates**

*New Lantiq VINAX™ dp chipset with extremely low power consumption and extended industrial application temperature range allows flexible placement of FTTdp distribution points*

The chip manufacturer Lantiq has launched a new system for Fibre to the Distribution Point (FTTdp) broadband access technology, giving carrier/Internet Service Provider companies a powerful new tool to deliver broadband service at data rates up to 300 Mbps (Megabits per second) using a combination of fibre optic and copper-wire-pair VDSL2 technology. With the new VINAX™ dp chipset, the Munich-based company lets carriers address growing demand for ultra-fast internet with as little capital expenditure as possible.

The pressure on telecom providers is increasing because of three main factors: stronger competition from cable network operators, broadband initiatives by governments for countrywide broadband deployment and unsuitable or inadequate infrastructure in primarily developing and emerging countries.

FTTdp is currently the lowest possible cost technology to quickly link homes to high-speed broadband internet. Using optical fibre from the Central Office (CO), telecommunication providers transport data at rates of up to 2 Gbps to locations near customer sites (home/business). The signal is then fed into the existing copper-wire telephone network by a cigarette box-sized FTTdp distribution point. From that end node, data rates of up to 300 Mbps (VDSL vectoring) can be reached over the copper wire loop using VDSL vectoring. Without the need for building work, customers can enjoy the pleasures of ultra-fast internet with a conventional internet router of the latest generation.
FTTdp solutions already in the field – data rates of 300 Mbps

Several telecommunication OEMs already offer units based on the new system solution from Lantiq. These FTTdp systems provide an aggregated data rate of up to 300 Mbps over a distance of up to 200 metres. Based on Lantiq’s new VINAX dp chipset, download rates of 200 Mbps and upload rates of 100 Mbps are reached. A significant aspect of Lantiq’s FTTdp chip solution is that it is based on established VDSL CO hardware, while other suppliers use CPE-based solutions. The Lantiq solution thus boasts high robustness, low power consumption and safe interoperability with unrestricted performance.

Worldwide broadband demand will grow to 100 Mbps downstream or more by 2020 – driven by statutory requirements and increasing competition. Nationwide optical fibre deployment to the home (Fibre to the Home, FTTH) would be the best alternative as far as performance is concerned. However, the costs and the complexity of deployment often exceed the means of network operators in many respects. In Germany alone, countrywide deployment would, according to expert estimates, cost more than 80 billion euros.

FTTdp technology offers the best possible alternative approach to achieve ultra fast service. The distribution point (dp) is placed at the last (and passive) network node reached by a fibre line outside of a home or business location. The optical fibre is run as close to the end customer as possible and the signal then routed via the ‘dp’ box (photo) over the existing telephone wire / copper wire. Lantiq already conducted first commercial field tests in Poland, France and India together with Aethra Communications at the end of 2012. The new solution is a further development of this system optimised regarding costs, performance and energy efficiency.

A further advantage for customers and internet service providers is that – unlike FTTH – FTTdp does not require the support of a technician for in-home activation. Once a dp box is installed outside, all that customers need to do to get data flowing is
connect an FTTdp mains adapter, supplied by their internet provider, between their DSL modem and telephone socket. Modern modems such as the Fritzbox 7490 available in Europe (which supports Profile 30a among others) can process the high data rates without problem. And service providers benefit because it is usually not necessary to obtain permission from building owners or property administrators to install the equipment because the distribution point can be placed anywhere nearby, for example in basements, attics or on telephone poles. A further advantage here is that, thanks to so-called reverse powering technology, the power supply for the FTTdp solution can be connected anywhere.

“We at Lantiq see FTTdp as the ideal technology to give new impetus to the sluggish and extremely expensive deployment of broadband. Generally speaking, the demands on network operators to provide high-speed internet countrywide are very high and pressure from governments and competitors are growing. In FTTdp we are giving internet service providers an inexpensive and quickly implementable alternative to meet these demands,” says Lantiq’s FTTdp marketing manager Stefan Hirscher. “With the solution we are now presenting, FTTdp is ready for the mass market, with aggregated data rates up to 300 Mbps, very low power consumption for the FTTdp nodes and reverse powering.”

**Cool and compact solution**

Thanks to an intelligent power and heat management system, the new VINAX dp can be operated in an industrial temperature range of -40 to +85°C. That is important for flexible placement of the FTTdp distribution points, which need to have a sturdy and
weatherproof, i.e. leak-free, enclosure and which therefore work with passive cooling only.

The typical power consumption of the new VDSL chipset (with DFE, AFE and line driver) is only 2.7 W (one channel, VDSL Profile 30a) – that’s about 40% less than the previous generation and unique in the industry. Together with the GPON solutions from Lantiq, it is thus possible to realise compact and energy-efficient solutions for that mate optical fibre deployment with twisted copper wires (one and two-channel VDSL FTTdp nodes with reverse powering). With its compact construction and passive cooling, the system Aethra Telecommunications and Lantiq are now presenting gets operates with less than 6 W, including VDSL, GPON, DC/DC converter and other active and passive components.

Availability
The new VINAXdp chipset from Lantiq and the system solution from Aethra are available with immediate effect.

See www.lantiq.com/FTTdp for further information.

About Lantiq
Lantiq offers a comprehensive and innovative portfolio of semiconductor products for next-generation network appliances and the digital home. You can find further information at Lantiq’s website (http://www.lantiq.com/company) or via Twitter @Lantiq and YouTube.