



Elevating FTTB VDSL2 to meet the needs of Germany's Gigabit Societies

Gfast
Fiber Extensions

At a Glance

Company Name

M-Net Telekommunikations GmbH

Industry

Alternative Network Operators

Founded

1995

Location

Bavaria Germany

Website

www.m-net.de

About M-Net

M-net is a leading fibre optic provider in Bavaria, Germany, and offers high-performance triple play services to its residential customers and an extended portfolio of networking and data center services to business customers.

M-net's service area includes large parts of Bavaria, the greater Ulm area, and the Main-Kinzig district in Hesse.

M-net is a pioneer in the use of future-proof fibre optic technology and was awarded best local provider in Germany four times in a row in the renowned Connect fixed network test and most innovative network operator by an influential German business journal.

In August of 2019, M-Net had a subscriber base of more than 470,000 and generated revenue of EUR255 million in 2018.



The Challenge

M-net is aiming to increase its FTTx network coverage to 620,000 homes and businesses in Munich by mid-2021, representing around 70% of households and 81,000 businesses in the city, while in Augsburg it is aiming to connect a further 11,000 homes and 1,500 commercial units between 2020 and 2027. These regions have a lot of existing copper infrastructure connecting homes and businesses.

A necessary driver for this growth was to offer multi-gigabit speeds to consumers at lowest cost and fastest time to market. Existing VDSL2 networks were incapable of supporting the deployment needs, while competing incumbent vendors in Huawei and Nokia didn't offer fiber extension solutions that supported multi-gigabit speeds.



The Solution

ADTRAN's 212MHz Gigabit Gfast solutions are an ideal fit for M-Net's deployment needs, as they offer aggregate throughput of over 2 Gbps at distances of within 400 meters, whilst utilising the existing copper infrastructure.



The Benefit

The new generation of 2nd Gen Gfast 212MHz solutions immediately enabled M-Net to provide its customers with gigabit services via the existing FTTB-infrastructure – a solution significantly more reliable, more robust against interference and much more efficient in the carbon footprint than alternative technologies in the market.

ADTRAN M-net Partnership

On May 4, 2020, ADTRAN formally announced that M-net had selected ADTRAN's Software-Defined Access (SD-Access) portfolio, specifically for its Fibre-to-the-Building (FTTB) fibre extension products, and Mosaic Cloud Platform to help accelerate the introduction of gigabit services to its residential and business customers.

M-net is leveraging ADTRAN's second-generation portfolio of 212 MHz Gfast Distribution-Point-Units (DPU) fibre extension solutions and Customer Premises Equipment (CPE) to support provision of gigabit broadband over existing copper infrastructure to residential customers.

ADTRAN has demonstrated its backwards compatibility with VDSL profiles 17a and 35b together with Gfast, allowing a seamless service upgrade, elevating MDUs currently equipped with VDSL into Gigabit ready Gfast properties, utilising the reverse powering capabilities of its DPUs to expedite deployment and improve reliability of services.

The Cornerstone for Gigabit Ready MDUs

Gfast is typically employed on FTTdp & FTTB circuits with a copper line length of up to 250 meters. Gfast can use a spectrum of up to 212Mhz and uses similar proven vectoring methods as VDSL2 17a and 35b to reduce crosstalk. Gfast 212Mhz technology can provide real-world speeds of over 2 Gbps aggregate. Note that frequency ranges for VDSL2 Profile 17a and 35b overlap with those of Gfast. Notching out the lower frequencies from Gfast allows coexistence with VDSL2 in the same copper binder and hence supports a smooth migration.



G.fast provides greater bandwidth and improved noise mitigation on the copper pair network and can achieve speeds up to 1Gbps over the shorter copper distances, achieving fibre like speeds.



G.fast installations cost on average 30% less than typical FTTP Brownfield deployments as it uses existing copper lines and therefore requires less rip and replacement of infrastructure.



G.Fast deployments on average take 12 – 18 months to deploy Gigabit services to 100,000 units, when compared to 3 – 3.5 years with FTTP brownfield deployments.



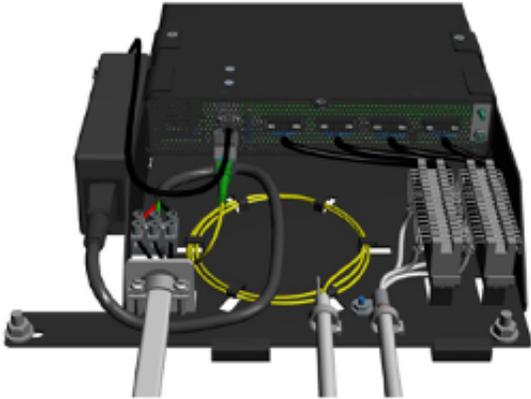
G.Fast deployments are superior to, have a longer lifecycle, and lower maintenance costs than typical FTTP deployments. The quality of connection is maintained between 20 to 40 years.

M-Net VDSL Swap Intricacies

To address M-net's requirements for FTTB DPU deployment at new sites as well as for the replacement of existing VDSL DPUs, the infrastructure housing of the ADTRAN DPUs was adapted.

The replacement of Huawei and Nokia DPUs was performed without drilling new holes into the wall. ADTRAN modified the infrastructure housing of the DPU in a way that the existing drill holes could be used for the installation.

The obvious advantage of that solution was that no additional wall mounting plate or adapter were needed for the DPU in case of replacement. The ADTRAN DPU infrastructure housing directly used the drill holes from former MDU whereby 3 drill holes were always used and 2 of the screws were inside the DPU infrastructure housing or behind the DPU.



ADTRAN & M-Net

Leading the industry in G.fast

The push towards a Gigabit Society that is being fueled by competition and championed by regulatory agencies around the world is driving the need for bringing fibre deeper into the network and closer to the end user. However, the cost of delivering Fibre-to-the-Home (FTTH) can be prohibitive in many scenarios.

Gfast is a next-generation fibre extension technology that delivers symmetric Gigabit speeds over existing Copper or Coax infrastructure. The material asset re-utilization offered by Fibre-to-the-Building (FTTB) solutions helps to accelerate the path to a Gigabit Society by lowering subscriber connection costs when compared to FTTH solutions, and even more important by speeding up time-to-market through the avoidance of conflicts with landlords and apartment owners.

ADTRAN has embraced and actively driven these possibilities from the very beginning. We have demonstrated the industry's first fully sealed Gfast FTTP solution as early as 2014 and have since proceeded to lead the industry in Gfast deployments around the world including the first commercial rollout of our 2nd generation 212 MHz Gfast DPUs in Q3 2018 in Australia. Deployments of ADTRAN Gfast solutions are well underway in carrier networks across Europe, North America, Asia and Australia.

“ *We are pleased to achieve the first milestone in our transformation project as we become a fully automated Gigabit network operation* ”

Dr. Hermann Rodler, M-net Chief Technology Officer



ADTRAN, Inc.
901 Explorer Boulevard
Huntsville, AL 35806
256 963 8000

General Information
800 9ADTRAN
adtran.com/contactus

Canada—Montreal, Quebec
+1 877 923 8726
+1 514 940 2888
sales.canada@adtran.com

Mexico and Central America
+1 52 55 5280 0265 Mexico
sales.cala@adtran.com

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