

**DKT** COMEGA

# ALL YOU NEED TO UPGRADE YOUR COAX NETWORK.



**COAX NETWORKS**

**DKTCOMEGA.com**



## OUR WORLD OF BROADBAND CONNECTIVITY.

**By combining our innovative mentality with extensive experience, DKT has developed a mindset for problem solving, enabling us to be first movers within the industry. We believe the competitive advantages of our customers are to be found in the details. That is why we say: “small differences, big impact”.**

This brochure introduces our vast product portfolio for the coaxial network. You can learn about our experiences from the DOCSIS 3.1 upgrades in Denmark, and why you should upgrade your distribution passives. Also you find out how we help operators fight the next big battle of the broadband industry, in taking responsibility for the customer experience in the in-home network.

**You can read more at [DKTCOMEGA.com](https://DKTCOMEGA.com)**



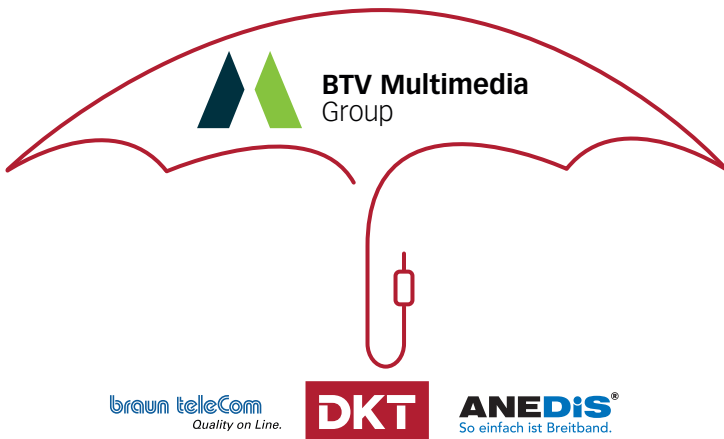


## **DKT JOINS FORCES WITH BROADBAND GROUP!**

**DKT A/S, Braun Telecom GmbH and Anedis GmbH join forces in BTV Multimedia Group. We combine our activities to offer customers the best possible partner in their expansion and network upgrades.**

*„As one of the Scandinavian leaders of the industry, we are committed to push boundaries. We have invested heavily in R&D, developing innovative solutions that improve network performance and end-user satisfaction. By joining BTV Multimedia, we can make an even greater contribution to improve the broadband infrastructure in Europe“*

*- Christian Emborg, CEO of DKT A/S*



**braun teleCom**  
Quality on Line.

**DKT**

**ANEDIS®**  
So einfach ist Breitband.



# WE HAVE EVERYTHING YOU NEED!

Whatever you are looking for, we can help you with the right solution. See examples below:



## Demarcation point/Outlets

Significantly improved screening efficiency to eliminate noise and with a design that can handle changes in frequencies.

“We recommend using our PIO outlet.”



## Home network interface

Terminating the DOCSIS 3.1 stream at the doorstep; eliminating return path noise generated in the in-home network, either via a DVU or a PIO outlet.



## Splitters & taps

The NiTin brass connectors eliminate the primary cause of network faults; loosening of connectors due to the „cold-flow“ phenomenon. This significantly reduces the noise. Support up to 1800 MHz.



## Push-On-Filters, multimedia

The passive push-on-filters come in different configurations to meet requirements for various setups for passive filtering of Data-TV-Radio in modern CATV home applications.



### **Trunk passives**

A robust and well proven construction that has been refined over the years. Of course ready for DOCSIS 3.1.



### **Filters**

Band-Stop-Filters to handle TV packages to end-users. Steep slopes, efficient stop band attenuation, and low insertion loss.



### **Equalizers & attenuators**

Efficient inline equalizers and attenuators are required to align the signal levels of the return path to reach the correct SNR.



### **In home amplifier**

With our HCA self-regulating amplifiers, the in-home network and CATV signals are easily prepared for a DOCSIS 3.1 upgrade.



## THE NEW AND UPDATED SIGNIA 10G.

**The Signia 10G passives go beyond the 1Gbit/s, enabling the bitrate capacity to more than 10 Gbit/s. By enhancing the frequency band all the way up to 1800 MHz, the new Signia series enable additional three full OFDM DOCSIS 3.1 channels resulting in a bitrate capacity exceeding 10 Gbit/s.**

Signia 10G is developed upon the well proven Signia series of passives. It is equipped with nickel-tin plated brass connectors, verified to keep the tight connection.

The Signia passives are proven to increase the network capacity; by replacing other passives in the distribution network the MER values increase allowing the data rates to grow – and being kept at a higher level. And even at lower maintenance cost.

**>60% improvement in service/support.**

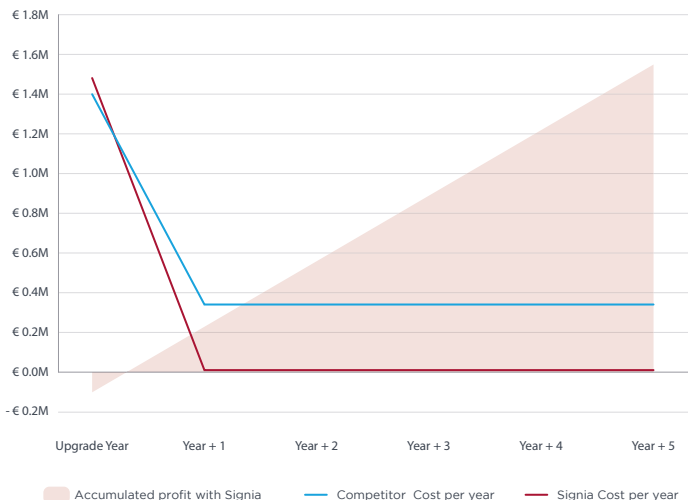






## SIGNIA BUSINESS CASE IMPACT.

**By minimizing the need for maintenance and replacements, the Signia passives can present a return on investment in less than a year.**



*The example is calculated based on 100.000 homes passed.*

### Approximate cost per homes passed:

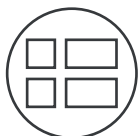
- Additional cost of a Signia: 1,5 €
- Labor cost: 20 €

The maintenance costs for a coaxial network are high. Standard connectors need to be retightened every 3-5 years.

Signia eliminates the need to retighten the connectors, and is built for durability. This minimizes the cost of maintenance, presenting a superior business case.



## FACTS OF THE DANISH UPGRADE.



**Country:**

Denmark



**Integrator:**

Huawei



**Operator:**

YouSee,  
Danish Incumbent



**Project dates:**

Rollout August 2016



**No. of customers  
upgraded:**

1.1 million



**Services:**

4k TV, 1 Gbps data,  
DVB-C flow TV



**Frequencies:**

204/1218 MHz



**Modulation index:**

QAM 4096



**Supplier of passive  
equipment:**

DKT A/S

*"... DKT has shown its vast experience in the HFC industry, its deep understanding of customer requirements and its unique leading technologies. We are confident that with DKT we can deliver a successful project."*

*- Mr. Binbing Xiao, former Managing Director Huawei Denmark*





## DOCSIS 3.1 LEARNINGS.

**As partner for the DOCSIS 3.1 upgrades in Denmark, we can prove the effectiveness of our product line on both the technical efficiency and the business impact.**

The primary benefits are **improvements** to the network capacity, the **subscriber satisfaction** and **reduced maintenance cost**.

### **Improvements to the network**

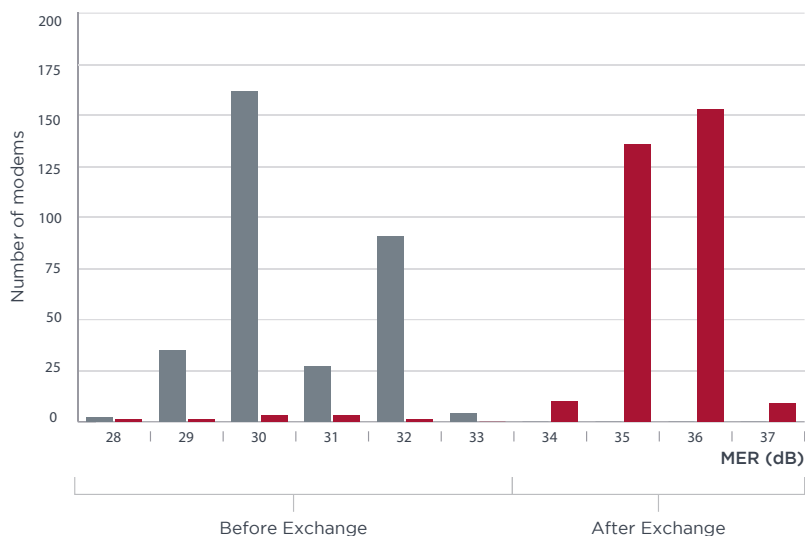
- The MER improvements enable maximum DOCSIS 3.1 bitrates (QAM 4096)
- Downstream MER also improves from the upgrade, but is limited by the in-home network

### **Business impact**

- The solution can consistently reduce truck roll in the distribution network by more than 60%
- Return on investment on the DKT product line is as low as 1-2 years

## IMPROVING MER LEVELS BY >4 DB.

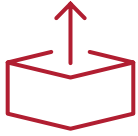
**Simply by exchanging the distribution passives  
in the network.**



Our data from the DOCSIS 3.1 upgrade shows that the passive upgrade improves the average MER by an astonishing 4 dB.

By also exchanging all amplifiers, an additional 3 dB improvement can be achieved.

Full benefits are obtained by isolating the in-home modem connection from the in-home DVB-C distribution.



# THE NETWORK IMPACT OF AN UPGRADE.

**What does this mean for you?**

**The obtained MER improvements enable maximum DOCSIS 3.1 bitrates**

- The improvement increases the network capability, giving customers connections of 1Gbit/s or higher
- The need for investing in node splits decreases significantly

**The network becomes more stable**

- Increased customer satisfaction, as the network has increased uptime, and less fallout

**Data analysis of modem parameters highlights mediocre in-home networks needing improvements**

- This enables a more proactive approach for operators in their customer service, as bad in-home networks can easily be identified

# OUTLETS AND PUSH ON FILTERS.

## NEW AND IMPROVED PIO (Push in Outlet) CONCEPT

The outlet and in-home installation are some of the major challenges in future upgrades. In order to ensure the home is prepared for changes in frequencies, DKT has developed the **PIO**.

It all starts with the first outlet in the home. Here DKT offers PIO as an innovative solution that separates the **DOCSIS 3.1** signal from the in-home network. This gives the possibility to simplify the change of frequencies and **minimize the cost of future upgrades**.

See more at **[DKTCOMEGA.com](https://www.dktomega.com)**



## CLASSICAL MULTIMEDIA OUTLETS

- Very high isolation between TV and DATA-port to avoid influences of TV-IF frequency by ingress of reverse signals
- Galvanic isolation protection against hum modulation and leakage currents (only inner conductors)




## BROADBAND PUSH ON FILTERS

- Intermodulation resistant according to EN 60728-4
- High screening, Class A+ 10 dB
- Corrosion resistant due to surface coated with CuSin white bronze plating



See more at [BRAUNTELECOM.de/en](https://www.brauntelecom.de/en)



# TAKE CONTROL OF THE CUSTOMER EXPERIENCE.

**Taking responsibility of the in-home network allows operators full control of the customer experience. Many focus only on the network itself.**

We have more than 20 years of experience in helping operators to take control of the in-home network, thereby minimizing churn and expenses to truck roll, while increasing customer satisfaction.

## **How?**

- By creating flexible solutions for coax and fiber that separate WiFi performance from the router
- Helping end-users to fix problems themselves, with guides, tutorials and more
- Setting industry standards in collaboration with operators
- Developing DIY product lines that are easy to use, while ensuring the best possible customer experience

**Learn more about our innovative concept.**

**Visit [DKTHOME.dk/en](https://DKTHOME.dk/en)**



## WHO CAN VOUCH FOR OUR WORK?





# OUR VISION.

**IMPROVE LIVING STANDARDS VIA  
BROADBAND PERFORMANCE**

## **Strategic product categories**



### **COAXIAL NETWORKS**

Proven higher performance  
and more cost efficient networks!



### **FTTH NETWORKS**

Simplicity in installation  
and service activation!



### **HOME NETWORKS**

Smooth end user  
activation and support!

