

DKT facilitates IP Distribution

DOCSIS 3.1 requires massive upgrades in the network and at the customer premises

“With the DOCSIS 3.1 standard, we quickly concluded that the network termination unit in the home (the outlet) would be problematic. Unless something was done, the operator would have to visit the end-user numerous times to replace the outlet. With the “easy-swap” approach we are proud to say that we have solved this problem and the operator does not have to visit the home more than once.”— Michael Kristensen, DKT Product Development Team

DOCSIS 3.1 is the newly-established industry standard in Europe for the cable TV market. It was introduced to ensure that, within just a few years, every cable home in Europe can benefit from high speed broadband services with up to Gigabit support.

Introducing this new standard will require significant investments by cable operators, along with a tremendous manpower effort to upgrade millions of homes. DKT has developed a cost-efficient process and product to assist cable operators in their efforts to plan for, and exploit, their manpower resources in the best possible way. This is when preparing for the successful simultaneous upgrading of their customers for the new DOCSIS 3.1 standard.

Introducing DOCSIS 3.1 today gives rise to some challenges for the cable operator. Within the premises the cable operator must know how to distribute DOCSIS 3.1. The operator must understand the architecture of the customer coax installation.

DKT has developed a universal coax outlet. This implies that a technician only needs to work in the customer's home once during the entire DOCSIS 3.1 upgrade process. The technician only needs to perform a very simple operation, that is exchanging the outlets in the apartment. The remaining part of the coax installation within the customer premises is normally untouched

as there is no need for any upgrade. The DOCSIS 3.1 service will be terminated at any of the outlets, and this by using a DOCSIS 3.1 cable modem.

The new outlet is a modular system. It integrates the well-known “Push-On-Filter” concept into the interior of the outlet. Thus the flexibility of the Push-on-Filter is preserved, but in a much more elegant and safe way invisible to and inaccessible for the subscriber. The existing outlet is replaced by a universal frame and a special outlet module that matches the current transmission specification of the individual operator. The universal frame provides complete RF at a dedicated level into the apartment. Different TAPs, for example loop-through are included. Finally, a Push-In-Filter (PIF) module, complying with the transmission specification provided by the operator, will be inserted into the frame and thereby completes the installation. This reduces the storage costs because only one type of PIF module is used. Last, but not least, subsequent frequency upgrades, when e.g. FM is turned off can be easily performed by the customers themselves by simply replacing the PIF module in the outlet-frame.

Especially in loop-through installations the modular DKT outlet assures high network performance and less interruption/disturbance, when tampered with by customers.

The DKT solution is backward compatible. Installations prepared for future DOCSIS

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Antenna outlet

3.1 services will support the legacy broadband service until the new technology is activated.

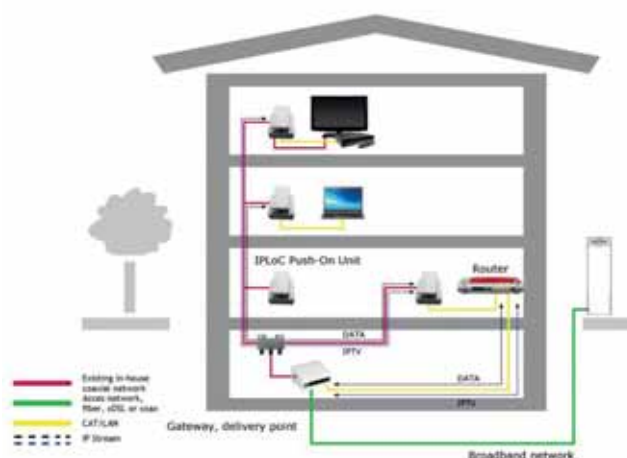
At simultaneous final upgrade of the entire customer base to DOCSIS 3.1, the cable operator will ship a single DIY-kit (push-in kit) for the customer to install

in one outlet. The entire household will then be upgraded for the DOCSIS 3.1 standard and its residents can enjoy all the benefits that a future-oriented high-speed connection provides.

IP-Distribution in the home

“As part of our vision we want to solve the many issues that are, and will be, in the home network. Without focused attention on the home network we will never succeed as an industry. With our IP Link over Coax we have solved the issue with IP distribution in the home, which we are quite proud of”, Christian Emborg, CEO, DKT

It is common knowledge that many households throughout Europe experience less than optimal home networks. As large TVs and game PCs find their way into most homes, it takes quite a toll on the WiFi system. Very often



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this is unstable and cannot provide strong enough signals for all devices in the household to run efficiently and smoothly; especially game PCs and TVs.

At some stage the end user will call their operator and ask them to “fix the problem”. The operator often chooses to appease the customer and solve the problem by shipping off a new service box containing a new WiFi router (expecting that the problem will be resolved). This is a standard way of trying to fix the instability of the WiFi system in a home, but often this doesn’t solve the problem. The approximate cost of this operation (carried by the operator) is up to 10 Euro for the actual phone call, and up to 100 Euros for the router and shipping costs; this results in more than 100 Euros for attempting to solve a problem that often remains unsolved. It is important to understand that while a WiFi installation connecting us to the outside world through all our devices is what most of us prefer in our houses, WiFi signals cannot penetrate the heavy steel and concrete constructions that modern houses are made of – without “a little help from a friend”, a mechanism to complement the IP distribution via WiFi is desired.

DKT has an IPLoC (IP Link over Coax) set. This allows the end user to easily connect to their antenna outlet. The user will experience that “heavy” bandwidth consuming devices such as



IPLoC (IP Link over Coax) set

TVs and game PCs that require stable WiFi signals, will work optimally. The IPLoC concept uses the coaxial network in the home as backbone and the coax outlet as converters. The standard coax outlet across Europe has an architecture with one dedicated TV and one Radio port. This is based on IEC adapters separated by 30 mm and sometimes supplemented with a dedicated DOCSIS data port (commonly known as the multimedia port). The Push-On IPLoC enables the consumer to remove the connectors from the wall outlet, insert the Push-On-IPLoC and inject IPTV, Internet and telephony (IP services in general) services into the existing cable TV (DVB-C/T) distribution coaxial net-

work. The solution utilizes an unused frequency band, enabling support for 400 MHz bandwidth for the IP Service distribution.

In general, residential coax network distribution components have not been designed for operation above 1000 MHz. Fortunately, only in very few instances have designers been required to take measures to provide high port-to-port isolation above 1000 MHz. Also, since IPLoC operates by auto negotiating frequency and only requires one 50 MHz wide channel in the 1.125 to 1.525 MHz frequency range, most distribution networks provide the required insertion loss. The DKT IPLoC requires less than 65 dB insertion loss between devices for proper and stable link connectivity.

The DKT IPLoC units are based on the MoCA 2.0 protocol and will coexist with MoCA devices from other manufacturers. In conclusion, this solution is a perfect complementary technology to WiFi by enabling stable and robust bandwidth to heavy bandwidth consuming devices and thereby increasing customer satisfaction with the broadband services. It is the right choice for stable and performant IP signal distribution through the home where coax outlets are available, in particular for IP based video distribution between the Modem outlet and the TV.

ANGA COM-Stand: 10.2/E34

WISI: Extension of next generation networks

WISI shows at ANGA COM the two extended headend systems TANGRAM und CHAMELEON. The versatile optical access platform OPTOPUS has been developed towards DOCSIS 3.1 and 1.2 GHz. WISI is launching a new product line for DFC (Digital Fiber Coax) networks. First product of this line is the Distributed CMTS System (Cable Modem Termination System) WISI GV10. With its partner INCA Networks WISI will present for the first time a comprehensive solution for OTT and multi-screen applications.

WISI has extended its successful system TANGRAM for IPTV and analogue/digital TV solutions. The Edge ISDB-T

module GT 26 provides up to two ISDB-T channels. A cable network can be feed with a maximum of 24 ISDB-T channels per fully equipped basic unit. The headend system CHAMELEON is designed for all current and future applications and is ideally suited for the transition from the analogue to the digital world as well as the connection between HFC and IP distribution platforms.

WISI has extended its modular access platform OPTOPUS consistently towards DOCSIS 3.1 and 1.2 GHz. By this network operators are able to respond to the continuously increasing demand for bandwidth. It is also available for xPon networks with an integrated WDM fil-

ter. LX15 S 3000 is a new optical adjustable full-band transmitter for long signal transmissions of up to 60 kilometers.

WISI launches at ANGA COM a new product line DFC (Digital Fiber Coax) networks. The first product of this line is the CCAP solution (D-CMTS - Distributed CMTS) WISI GV10. It is a cable edge device for the delivery of video, data and voice services over coax. The implementation of CCAP supports the production and distribution of video, data and voice via a single digital platform and the optimization of capital and operation expenditures in central and regional headends.

ANGA COM-Stand 9, Hall 10.2.