



S. Antonino, April 2005



31st May - 2nd June 2005

Köln, Messegelände CongressCentrum Ost

Dear Reader,

EMC is once again participating in the most important European trade show for CATV operators. This year's highlights are:

Facts on FTTH solutions: For cabling the neighbourhood housing communities a small-sized Swiss cable operator opted for a FTTH solution instead of using a coax system. At ANGA, EMC will present its Fiber Hub and the related Home Termination Units.

Extending the reach of HFC-networks: By simply branching up the new EMC Optical Extender in your existing coaxial of HFC-network, it is now possible to extend the reach to remote single residences.

High efficiency Return Path system: More data traffic, more bandwidth per subscriber mean that the number of dedicated Return Path channels will increase significantly. With its new Multiple Return Path Receiver EMC provides an innovative family of products which meet the evolving HFC network requirements.

Our newsletter attached offers you an overview of the solutions EMC will exhibit in Cologne. For more information or to get familiar with our products, visit us at Halle **14.2, Stand –Nr. J20**.

If you would like to receive a free entrance card, please email your personal records to sales@emc-web.com

We are looking forward to seeing you in Cologne.

Sincerely,
EMC Electronic Media Communication,

Marco Maffioli

When Fibre is cost competitive to coaxial!

Télédistal is a small-sized Swiss cable operator based in the French part of Switzerland near Lausanne delivering cable television services to private households. When residents of small nearby housing communities asked for cable services, Télédistal had to extend its network to those communities. While HFC is the most commonly used network architecture to provide Broadcast TV, Télédistal opted for a new FTTH architecture. Teledistal is part of Cablecom GmbH.



The project

The existing layout of the network delivers broadcast television services from a primary hub location to curbside fibre nodes. From there, the project consisted in connecting the neighbourhood housing communities totaling 280 residents. About 120 are single family homes, the remaining 160 are mainly multi-dwelling units.

Challenge

Télédistal had several network requirements:

- Full transparency with delivering legacy CATV and DOCSIS-based services
- Optimising capital investment and minimising operating and maintenance costs.

Although tree/branch coaxial infrastructure is most commonly used, Télédistal looked at extending its network by means of a fibre infrastructure. Faced with the SUBONET[®], Télédistal realised that a coaxial-based solution was not the ideal way to optimise investment as well as minimise operating and maintenance costs, and that a coax-based approach would ultimately restrict future network upgradability.

Fibre - the best choice

While conducting a thorough evaluation in order to determine feasibility and costs of both solutions, Télédistal was looking for a FTTH architecture that could overcome the problems associated with current coax design. EMC's SUBONET[®] eliminates the need for active RF amplifiers and at the same time all the costs associated with deploying and servicing outside cabinets.

"The more we looked at SUBONET[®] the better it looked". Télédistal decided that EMC's fibre solution was the best infrastructure solution.



Fibre Node Hub

Solution

The SUBONET[®] architecture employs concepts familiar to HFC practitioners. The Fibre Node Hub feeds homes with broadcast TV while upstream signals are summed and transmitted back to the headend.

The fibre node fulfils much the same purpose as a fibre node in conventional HFC architecture except that the output is fibre and not coaxial.

At the subscriber's home a termination device incorporating the fibre splicing module performs the signal conversion in both directions.

Results

While fibre was pulled through the ducts, EMC provided the active and passive equipment. Installation of the system as well as connection of the first households were made operational in March 2005. At the beginning of April 2005, the customer was equipped with CATV and internet services.



Conclusion

For Télédistal, what was attractive about EMC's SUBONET[®] architecture was the possibility to deliver classical TV and internet services at a competitive cost, minimising operating costs, and at the same time future proofing its network.

To find out more about EMC's

SUBONET[®] solutions contact us via

email at: sales@emc-web.com

"The more we looked at SUBONET[®] the better it looked".



Fibre Optic Extender

Several CATV operators say that they would like to connect single remote residences, providing cost effective solutions.

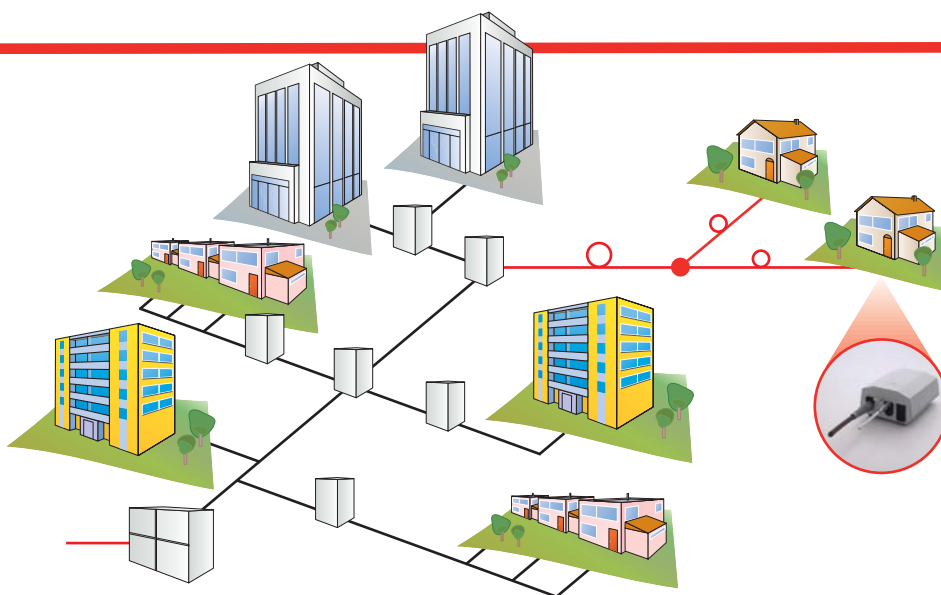
What does it really take to supply CATV services to those remote residents?

Customer requirements

Customer requirements are clear and simple: It is all about connecting remote single residences where a traditional RF cable plant requires significant investment and operating costs. For EMC, understanding the customer's requirements makes it important for us to develop and build an innovative product solution.

The solution

The system consists of an Optical Extender typically located in the field and a Home Termination Unit placed in the basement of the subscriber's home.



Optical Extender provides cable operators with a cost effective way to extend the reach of their HFC network to remote households.

Typically placed in an existing amplifier cabinet, the Optical Extender distributes the downstream signals to the remote households and simultaneously serves as a combiner for the upstream signals.

It fulfils much the same purpose as a node in HFC architecture except that the output is fibre and the input is coaxial.

In that way, all the costs associated with deploying and servicing RF-Amplifiers are eliminated. At the subscriber's home a termination device performs the signal conversion in both directions.

Easy installation

The EMC Optical Extender can feed up to four single homes with broadcast TV and Internet based services. The unit is designed for easy branching to the existing RF network equipment, avoiding any intervention at the head-end.



Optical Extender, 4 ports

By branching up the Optical Extender in your network, you can extend the reach of the HFC network to remote households in a simple and cost effective way while maintaining existing equipment.

The Home Termination Unit incorporates a high performance receiver/transmitter with integrated areas for the splicing and storage of fibre.

Features, benefits and functionality include:

- Two-way communication
- Coaxial input with 4 fibre ports
- Fast and easy installation
- Compact, die cast aluminium housing.

Conclusion

At EMC we give priority to the customers' requirements and think about solutions. EMC's key focus is to help operator customers find competitive and easy to use solutions.

To find out more about EMC's Optical Extender opportunity

contact us via email at:
sales@emc-web.com

High Efficiency Return Path System

As a result of bandwidth limitation, classical HFC-networks are moving towards fibre deep HFC architectures such as FTTC or FTTB. As a consequence, the number of fibre nodes installed in the network is expected to increase significantly. Finding an efficient and cost-effective architecture to handle the return links may represent a significant challenge for cable operators.

Introduction

The most common way of handling return channels is to use dual-channel RP receivers in conjunction with RF combiners. This architecture is widely used in classical HFC infrastructures, where the number of RP channels (fibre) is rather small. In networks where the number of fibre nodes or dedicated RP channels is high, the issue of handling the return signals has to be addressed.

Product description

The EMC Multiple Return Path RXR-2500 series is designed to maximise the efficiency of the return path system by making the most of optical technology.

“The multiple RP Receiver, RXR-2500 series is ideally used when the number of RP channels to combine becomes significant”.

The system employs a return path receiver in conjunction with a dedicated optical combiner, which is ideal when the number of channels (fibres) to be combined is high.

The incoming optical return paths with a 5-65 MHz bandwidth are optically combined and converted into a single RF output.

The RF output feeds the Cable Modem Termination System (CMTS) directly minimising the use of an RF management combiner system. The RXR is designed to handle a large range of level inputs minimising S/N alteration on the return channels.



Multiple RP Receiver, 32 ports

Benefits

There are both cost and performance benefits to using the Multiple RP Receiver rather than competitive technologies to combine and convert light from multiple transmitters:

- when the number of RP lines is high.
- when optimising Signal-to-Noise Ratio (SNR) is necessary.
- it simplifies installation and eliminates RF combiner.

EMC provides a large product range anywhere from 4 to 32 channels in a single 19" rack chassis. As the number of return channels continues to grow, EMC's custom Return Path Receiver family will increase to meet the requirements.

RXR models

RP Receivers	Optical ports	RF ports
Multi RXR - 2504	4	1 x F
Multi RXR - 2508	8	1 x F
Multi RXR - 2516	16	1 x F
Multi RXR - 2532	2 x 16	2 x F

Applications

The Multiple Return Path Receiver is particularly useful in HFC architectures where the number of RP lines is significant.

Together with a return path transmitter, it is a cost effective way to send return paths to the headend on a single fibre. It is an alternative to complex and costly wavelength division multiplexing systems.

Of course there are still many applications especially in fibre deep architectures or in low density areas where FTTB/FTTH is deployed.

Conclusion

EMC's engineering team continues to add innovative product solutions which meet the evolving network requirements. We help operator customers find competitive solutions.

To find out more about EMC's

Multiple RP receiver contact us via

email at: sales@emc-web.com