

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