

MODULO - HFC



YOUR SMART HFC HEADEND TOOLKIT



UNIVERSAL, SMART AND EASY - DON'T MISS IT

THE ART OF ENGINEERING

UNIVERSAL, SMART, AND EASY

MODULO - HFC

Cable Operators are faced with the critical challenge of significantly increasing the efficiency and capacity of their existing HFC (Hybrid Fiber Coax) networks in order to support the growing bandwidth demands for broadband services. Existing HFC network infrastructure must be upgraded to DOCSIS 3.1 standard. Complete and extensive overbuilds are not a viable option.

DEV's MODULO meets this challenge

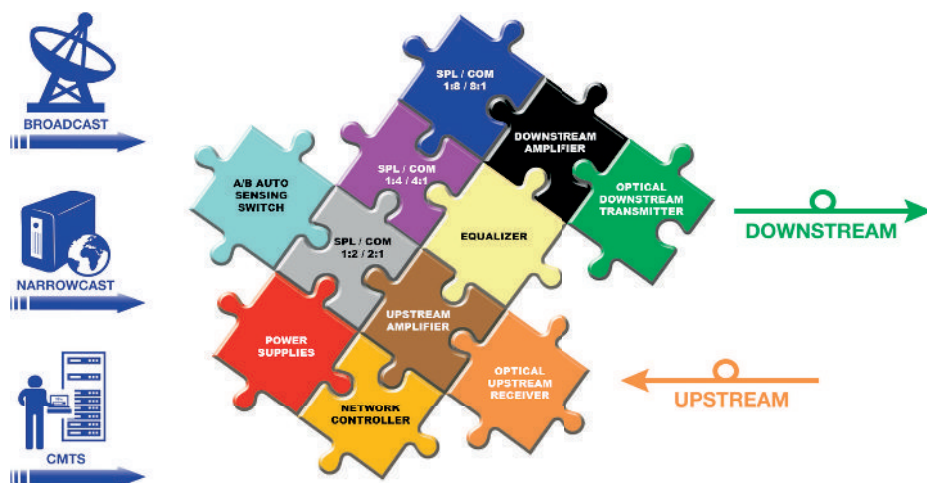
For Your HFC Network:

- Passive and Active Splitters/Combiners
- Amplifiers
- Redundancy Switches
- Optical Receivers and Transmitters
- Several other superior quality RF modules

To transmit RF signals either electrically or over fiber individual modules are available.



The New Solution for HFC Headends



Benefits

The following benefits differentiate MODULO from conventional solutions:

- DOCSIS 3.1 Ready
- More Functions per RU
- Manageability if Needed
- 7 Years of Warranty
- High Availability

These benefits make purchasing, storage and application of MODULO intelligent and simple for Customers and Sales Partners alike – Universal, Smart and Easy – Don't miss it!

MINIMUM SIZE, MAXIMUM VERSATILITY













Product Information

The MODULO active Chassis is a 5 RU frame suitable for all active and passive modules and can be equipped with a controller to provide remote control and SNMP support for active products. MODULO provides also a 5 RU chassis for passive modules only and a 3 RU chassis for active modules only. A 2 RU chassis for active and passive modules is coming soon.



Your Choice of Modules

Superior quality RF transmission modules are available for use in HFC networks to transmit RF signals both electrically or over fiber optic cables.

 Splitter/Combiner 1:8/8:1	 Downstream Amplifier	 Optical Downstream Transmitter
 Splitter/Combiner 2x1:4/4:1	 Upstream Amplifier	 Optical Upstream Receiver
 Splitter/Combiner 3x1:2/2:1	 Power Supplies	 EDFA
 Equalizer	 A/B Auto Sensing Switch	 Controller

What Our Customers Say

For more than ten years DEV Systemtechnik supplies RF Transmission products for the HFC (Hybrid Fiber Coax) Plant of Kabel Deutschland. The active and passive components for our broadband network run absolutely stable. For our future needs and competitiveness, we will have to focus even more on savings in rack space and power consumption as well as an increased level of flexibility and modularity. The DEV Team understands our requirements and adapts to our needs with new innovative developments.

Frank Helleminck, CTO Vodafone Kabel Deutschland GmbH

MODULO - HFC

The Coax Headend Toolkit



Your Choice of Coax Modules

Superior-quality RF transmission modules are available for use in HFC networks to transmit RF signals over coaxial cables. All modules have been designed and engineered with operator functionality in mind, regardless of customer network variations and requirements. All products are Made in Germany and built to meet the highest standards of system availability, reliability and manageability.

Power Supplies



DEV 3490
DEV 3491



- Available as AC/DC and DC/DC Power Supply
- 100...240 V AC or 36...72 V DC with Selectable Polarity
- 220 W @ 45 °C
- 1+1 Redundant Configuration
- Local LED Monitoring (Prime OK, Temp OK)

Downstream Amplifier



DEV 3440



- 47...1218 MHz
- 35.5 dB Variable Gain, 10 dB Variable Slope
- <7 dB Noise @ 20 dB Gain
- In- and Outputs at the Rear
- Monitor Port for In- and Output at the Front
- Local Control of Gain and Slope (EQ)

Upstream Amplifier



DEV 3446



- 5...204 MHz
- 30 dB Variable Gain 5 dB Variable Slope
- <7.5 dB Noise @ 15 dB Gain
- In- and Outputs at the Rear
- Monitor Port for In- and Output at the Front
- Local Control of Gain and Slope

A/B Auto Sensing Switch



DEV 3460



- 5...1218 MHz
- In- and Outputs at the Rear
- Switch with two Input Ports and one Output Port
- RF Detector at each Input
- Manual and Automatic Switching Based on RF level
- ClassA+10dB

MODULO - HFC THE COAX HEADEND TOOLKIT

Controller

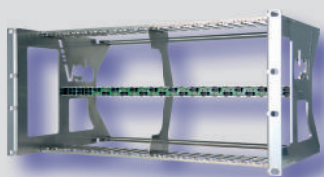


DEV 3464
DEV 3465



- ▮ Available with or without Local User Interface
- ▮ Monitoring and Control of all Active Components
- ▮ Prepared for Clustering
- ▮ SNMP Support
- ▮ DEV Web Interface

5 RU Frame



DEV 3480



- ▮ Up to 18 Active Modules + 2 Power Supplies
- ▮ Up to 22 1:8/8:1 Splitter/Combiner
- ▮ Up to 44 1:4/4:1 Splitter/Combiner
- ▮ Up to 66 1:2/2:1 Splitter/Combiner
- ▮ Higher Density than Conventional Products
- ▮ Cable Relief on the Rear

3 RU Frame



DEV 3483



- ▮ Only for Active Modules
- ▮ Up to 8 Active Modules + 2 Power Supplies
- ▮ Higher Density than Conventional Products
- ▮ Cable Relief on the Rear

Demand Superior RF Solutions!



Ready to work with us?

We're always excited about meeting new challenges from our customers – and we believe you'll enjoy working with us. To discuss your future requirements, contact us today:

DEV Systemtechnik GmbH

Grüner Weg 4A
D-61169 Friedberg
Germany

Phone: +49(0) 60 31/6975 100
Fax: +49(0) 60 31/6975 114
www.dev-systemtechnik.com
info@dev-systemtechnik.com

Technical specifications are subject to change
© DEV Systemtechnik · 10/2017

MODULO - HFC

The Passive Headend Toolkit



Passive Modules

The passive Modules DEV 3402, DEV 3407 and DEV 3411 are Splitter and Combiner in one module. They can be either a Splitter or a Combiner. The regarding functionality can be easily selected by a jumper. This unique feature saves rack space and CapEx, as it is not necessary to decide which functionality shall be stocked.

All MODULO modules are ready for DOCSIS 3.1 and come with adjustable gain and slope. They are designed with the highest standard of technical specifications. Up to 22 modules fit into the passive MODULO chassis. These modules can also be combined with active modules in one chassis.

Splitter/Combiner 1:8/8:1



DEV 3411



- 5...1218 MHz
- Jumper to Select Splitter or Combiner Functionality
- In- and Outputs at the Rear
- Monitor Ports at the Front
- Adjustable Attenuation for each Input/Output
- Adjustable Slope at Common Port

Splitter/Combiner 2x 1:4/4:1



DEV 3407



- 5...1218 MHz
- Jumper to Select Splitter or Combiner Functionality
- In- and Outputs at the Rear
- Monitor Ports at the Front
- Adjustable Attenuation for each Input/Output
- Adjustable Slope at Common Port

Splitter/Combiner 3x 1:2/2:1



DEV 3402



- 5...1218 MHz
- Jumper to Select Splitter or Combiner Functionality
- In- and Outputs at the Rear
- Monitor Ports at the Front
- Adjustable Attenuation for each Input/Output
- Adjustable Slope at Common Port

4 Path Equalizer

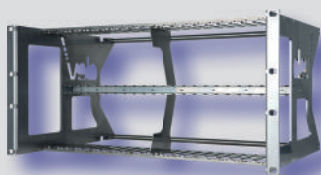


DEV 3463



- 5...1218 MHz
- In- and Outputs at the Rear
- Adjustable Attenuation
- Adjustable Slope

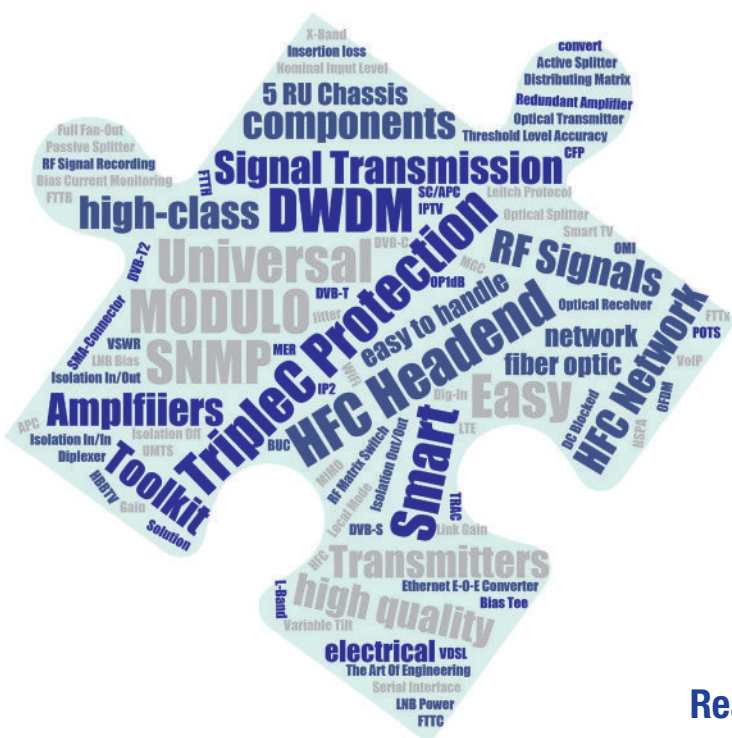
5 RU Passive Frame



DEV 3481



- Up to 22 1:8/8:1 Splitter/Combiner
- Up to 44 1:4/4:1 Splitter/Combiner
- Up to 66 1:2/2:1 Splitter/Combiner
- Higher Density than Conventional Products
- Cable Relief on the Rear



Ready to work with us?

We're always excited about meeting new challenges from our customers – and we believe you'll enjoy working with us. To discuss your future requirements, contact us today:

DEV Systemtechnik GmbH

Grüner Weg 4A
D-61169 Friedberg
Germany

Phone: +49(0) 60 31/6975 100
Fax: +49(0) 60 31/6975 114
www.dev-systemtechnik.com
info@dev-systemtechnik.com

Technical specifications are subject to change
© DEV Systemtechnik · 10/2017

Demand Superior RF Solutions!



MODULO - HFC

The Fiber Headend Toolkit



Your Choice of Fiber Modules

Superior-quality RF transmission modules are available for use in HFC networks to transmit RF signals over fiber optic cables. All modules have been designed and engineered with operator functionality in mind, regardless of customer network variations and requirements. All products are Made in Germany and built to meet the highest standards of system availability, reliability and manageability.

Power Supplies



DEV 3490
DEV 3491



- Available as AC/DC and DC/DC Power Supply
- 100...240 V AC or 36...72 V DC with Selectable Polarity
- 220 W @ 45 °C
- 1+1 Redundant Configuration
- Local LED Monitoring (Prime OK, Temp OK)

Downstream Transmitter



DEV 3501
DEV 3502
DEV 3503



- 47...1218 MHz
- MGC and AGC for an Optimized OMI
- 2 RF Inputs at the Rear
- Optical Output and Monitor Port at the Front
- Local Control of OMI Level
- DWDM Product with 49 Different Wavelengths
- Different Optical Output Power available (7...13 dBm)

Upstream Receiver



DEV 3550



- 5...204 MHz
- 15.5 dB Variable Gain, 5 dB Variable Slope
- 2 RF Outputs at the Rear
- Optical Input at the Front
- Automatic Level Control for Wide Input Power Range
- Monitor Port at the Front
- Local Control of Gain and Slope

A/B Auto Sensing Switch



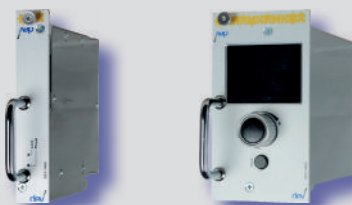
DEV 3460



- 5...1218 MHz
- In- and Outputs at the Rear
- Switch with two Input Ports and one Output Port
- RF Detector at each Input
- Manual and Automatic Switching Based on RF level
- ClassA+10dB

MODULO - HFC THE FIBER HEADEND TOOLKIT

Controller



DEV 3464
DEV 3465



- ▮ Available with or without Local User Interface
- ▮ Monitoring and Control of all Active Components
- ▮ Prepared for Clustering
- ▮ SNMP Support
- ▮ DEV Web Interface

EDFA Boost Amplifier

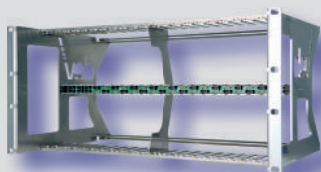


DEV 3530



- ▮ Stand-Alone Device
- ▮ 1 RU Chassis with Single EDFA Boost Amplifier
- ▮ High Gain and Low Noise Figure
- ▮ Automatic Output Power Control (APC) Mode
- ▮ Monitoring of Input and Output Level
- ▮ Front Panel Status and Alarm LEDs
- ▮ Power Supply Redundancy

5 RU Frame



DEV 3480



- ▮ Up to 18 Active Modules + 2 Power Supplies
- ▮ Up to 22 1:8/8:1 Splitter/Combiner
- ▮ Up to 44 1:4/4:1 Splitter/Combiner
- ▮ Up to 66 1:2/2:1 Splitter/Combiner
- ▮ Higher Density than Conventional Products
- ▮ Cable Relief on the Rear

3 RU Frame



DEV 3483



- ▮ Only for Active Modules
- ▮ Up to 8 Active Modules + 2 Power Supplies
- ▮ Higher Density than Conventional Products
- ▮ Cable Relief on the Rear

Demand Superior RF Solutions!



Ready to work with us?

We're always excited about meeting new challenges from our customers – and we believe you'll enjoy working with us. To discuss your future requirements, contact us today:

DEV Systemtechnik GmbH

Grüner Weg 4A
D-61169 Friedberg
Germany

Phone: +49(0) 60 31/6975 100
Fax: +49(0) 60 31/6975 114
www.dev-systemtechnik.com
info@dev-systemtechnik.com

Technical specifications are subject to change
© DEV Systemtechnik · 10/2017