Compact Amplifiers
for modern trunk and distribution networks

Connecting of present and future

HUBER+SUHNER BKtel develops and produces active and passive components for modern FTTH and HFC broadband networks.
A key focus lies on technological and high-performance solutions for the transition from modern fiber-optic access networks to existing HFC structures. With our products, the capacities of coax networks can be increased many times over and equipped for future data, telephony and TV services.

With more than 20 years of experience in research, development and production of communication technology, HUBER+SUHNER BKtel is the best partner to creates flexible solutions to connect existing and new network structures.

Compact amplifiers
Best performance

HUBER+SUHNER BKtel offers a wide range of compact amplifiers for modern ineractive HFC networks who are upgrading network capabilities for DOCSIS 3.1 transmission. They inherit an innovative commissioning and maintanance concept, high intermodulation free output levels and wast remote monitoring and control functions.

The compact amplifiers with electronic set-up
BKTEL® is delivering a compact amplifier class of the very latest generation with its VGx product range, combining comprehensive setting options, electronic operation and outstanding technical data with an unrivalled price-performance ratio.

"Plug-and-Play" redefined
Electronic set-up of all significant parameters, automatic levelling and option of remote configuration via HMS or DOCSIS monitoring minimise commissioning and maintenance times. Thanks to the copy function supported by the HTE 20, all settings can be saved and transferred to other devices. As well as speeding up commissioning on site, not having to use plug-in cards for attenuation and slope simplifies logistics and reduces storage costs.

Compact amplifiers
General properties

Modern compact amplifiers upgrade existing HFC networks. The remote monitoring function makes it possible to configure all tuning parameters by means of a monitoring system. Alternatively, settings can be made by means of an innovative operating concept using a handheld device that can operate and store the electronic actuators.

Thanks to the built-in frequency-agile 2-pilot ALSC (Automatic Level and Slope Control), commissioning is accelerated. Automatic leveling on the forward path eliminates the need for time-consuming manual calibration. Furthermore, the return path can be pre-adjusted automatically.

The amplifier gain reaches up to 46 dB (unregulated), and adjustments can be made in steps. Despite the high reachable output level the intermodulation performace is best in class even if interstage attenuation is used.
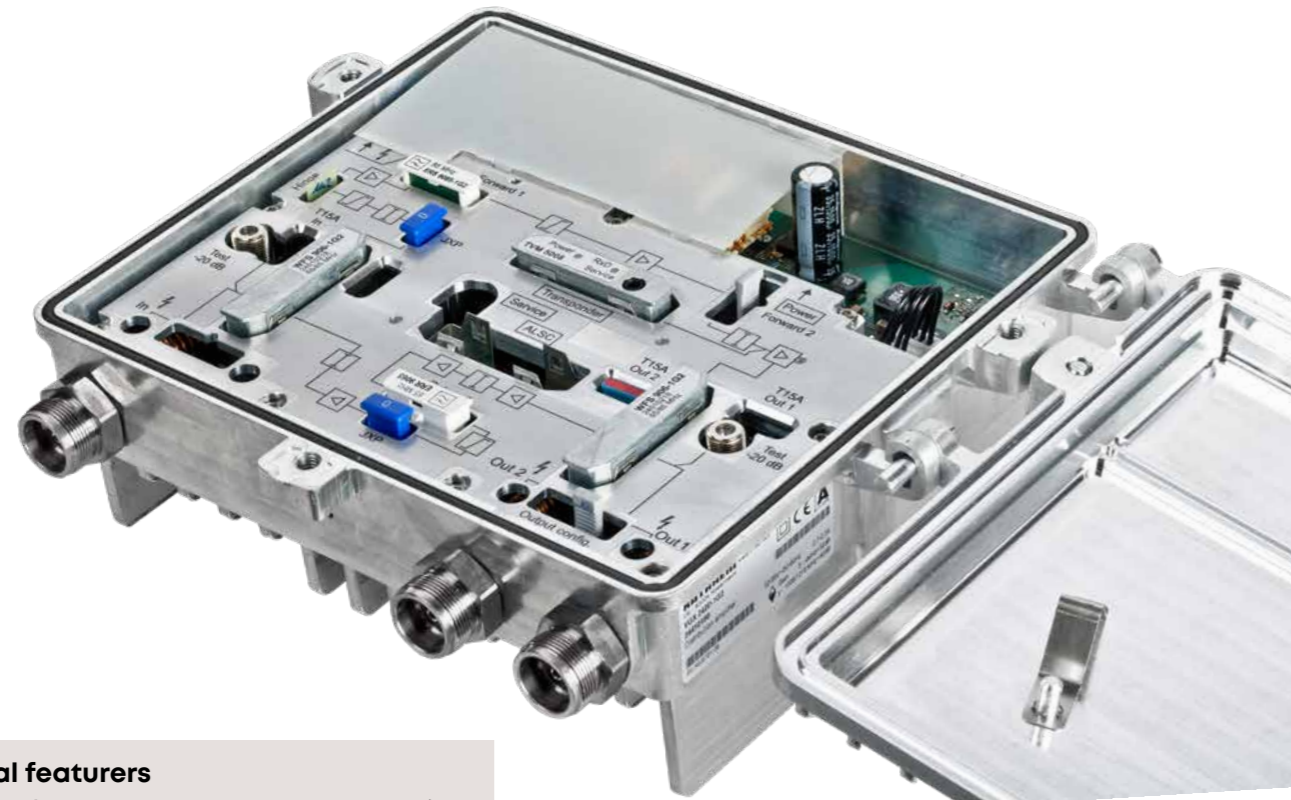
Technical featurers
- Remote feed capability at each input/output, local feed: 10 A
- Insert position for monitoring transponder
- Test sockets at input/output and in the return path amplifier
- Plug-in diplexers
- Built-in return path amplifier, adjustable gain
- Ingress control switch
- Die cast aluminum housing

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Easy Commissioning of uncontrolled amplifiers
The setting is made with the HTE 20 adapter. Thanks to automatic levelling, it takes only a few steps to put the compact amplifiers into operation:
- Simply enter the required output level for the upper and lower pilot frequency and start the levelling process.
- The device automatically sets itself to the required values in just a few seconds. The technical data is adjusted to the optimum settings. After this, manual fine adjustment is possible at any time.
- Next, automatic pre-adjustment can be started on the return path too.
- Levelling takes even less time to complete on subsequent devices. The copy function transfers the desired settings directly.

Characteristics of individual amplifier devices

VGX2143D-1G2

- Frequency range 1006/1218 MHz switchable
- Plug-in diplexers
- Latest GaN technology (Second Generation)
- Power supply unit with power factor correction
- Loop-through output (VGX2143-1G2 only)

VGP2143D-1G2

- Frequency range 1218 MHz
- Latest GaN technology (Second Generation)
- Power supply unit with power factor correction
- High gain (up to 44 dB uncontrolled)

VGP3243D-1G2

- Two active outputs with configuration of up to 3 high levels distribution outputs or one trunk output and up to two distribution outputs (via internal output splitter field)
- Gain and slope of the distribution network output can be set separately

VGE 12xxx-1G2 (Equaliser amplifier)

- Fixed gain and slope
- Passive or active return path up to 204 MHz
- Compact housing for easy retrofitting on the network

VGX2143D-1G2
Distribution network amplifier

The VGX2143D-1G2 is a distribution network amplifier designed for current and future DOCSIS 3.1 HFC networks. The amplifier features up to two outputs and an additional loop-through output. All electronic settings of the amplifier can be configured using the HTE 20 module. The return path bandwidth is determined by the plug-in diplex filter sets.


Block diagram
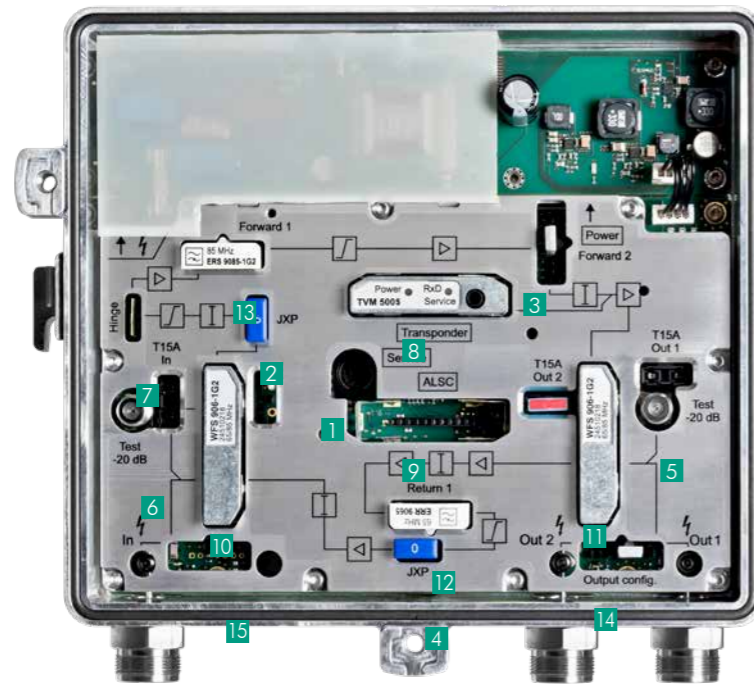
Standard version:

1. Connection socket for the hand held module
2. "Forward 1" insert position
3. "Forward 2" insert position
4. "Return" insert position
5. F test socket internal (-20 dB) output
6. F test socket internal (-20 dB) input
7. "Hingepoint" insert position

Modules for the following insert positions are not included in the product package:

8. Insert position for FSK multi-band transponder module
9. Insert position for 2-pilot control module
10. Plug-in input diplex filter
11. Plug-in output diplex filter
12. Plug-in low-pass filter
13. Plug-in high-pass filter
14. Splitter field output
15. Splitter field input "Loop-Through"
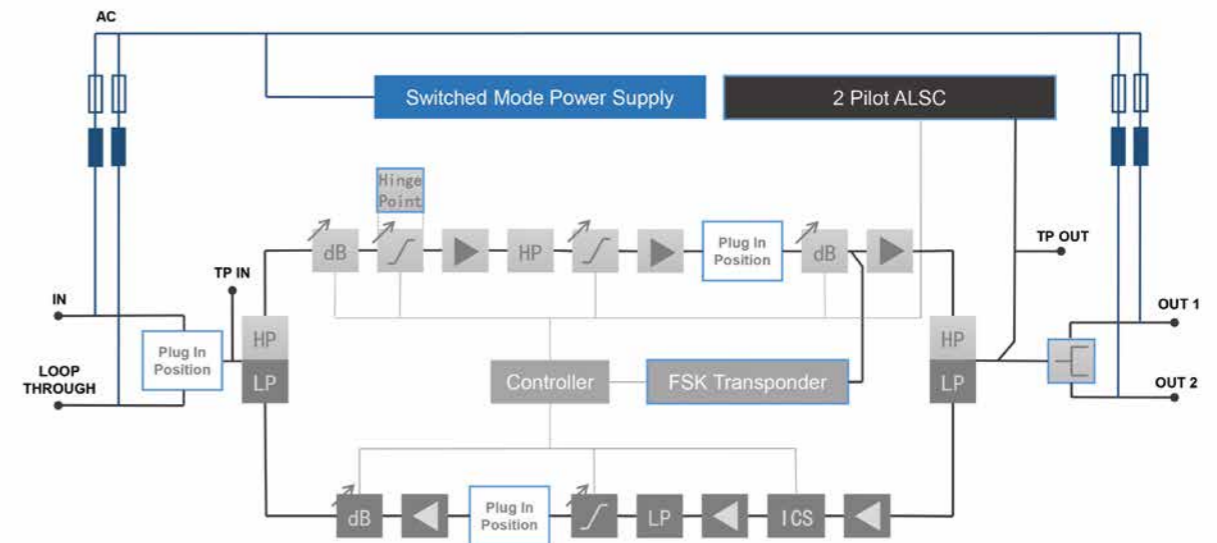
Features

- Modern compact amplifier for DOCSIS 3.1 HFC networks
- Frequency range: up to 1218 MHz
- High gain (up to 44 dB)
- Loop-through output, configurable via the input splitter field "Loop-Through"
- Two distribution outputs, configurable via the output splitter field
- End stage in the latest GaN technology
- Innovative operating concept: Electronic actuators, setting via a HTE 20 module
- Optional ALSC module with frequency-agile 2-pilot control speeds up commissioning
  · Automatic levelling on the forward path saves time-consuming manual calibration

· Return path can be pre-adjusted automatically
- Very high output level with lowest inter-modulation products even with interstage attenuation
- Insert positions in the forward and return path
- Remote feed capability: 7 A at each input/output
- Insert position for TVM 500S FSK transponder
- Test sockets at the input/output and in the return path amplifier
- Built-in return path amplifier, adjustable electronically
- Ingress control switch (ICS)
- Die-cast aluminium housing with $5/8"$ connections

Notice

During operation, an EBC/EAC xx must be plugged into the insert position at the output. Zero cards are already plugged into the insert positions No. 2, 3, 4.

For an overview of accessories, see page 21..

VGX2143D-1G2
Additional properties in detail

Power supply unit
- State-of-the-art switched-mode power supply unit technology with very long service life
- Active power factor correction with a factor of almost 1
- Improved dissipation of waste heat from the entire power supply unit thanks to the heatsink coating. This results in a lower heat load in the device itself and also helps to increase the maximum operating temperature range
- The power supply unit is easy to replace in the event of maintenance:
  - Easily accessible plug-in contacts and screw   connections
  - No thermal pad required. This removes the need for positioning the pad and eliminates the risk of losing it

Single-chamber shielding system
- High mutual shielding between forward path, return path and other functional areas in the device. This prevents cross modulation and other unwanted coupling effects
- Improved temperature discharge thanks to the built-in thermal dissipation domes on the bottom and top of the components. This results in a lower heat load in the surrounding components and also helps to increase the maximum operating temperature range

New modularity
- Insert position for 2-pilot control module. This enables cost-effective use of the device for controlled and uncontrolled operation
- FSK transponder insert position for TVM 500S for controlling the ICS switch and for carrying out base unit updates remotely
- Customer-specific insert positions in the forward and return path enable additional manual signal adjustment for built-in electronic set-up
- Insert position for operation in different frequency ranges (1.2 GHz/1 GHz) (Hingepoint for 1.2 GHz pre-mounted)

Familiar modularity
- Customer-specific interstage forward insert position for plug-in cards such as system equalisers
- Plug-in diplexers for adjusting the frequency split of forward and return path
- Output insert field, individually configurable for one to two outputs with EBC/EAC xx-1G2 splitter or tap plug-in cards
- Splitter field input (VGX2143D-1G2 only) for individual loop-through output configuration using EBC/EACxx-1G2 splitter and respectively tap plug-in cards

VGP3243D-1G2
Trunk / distribution amplifier

The VGP3243D-1G2 is a dual mode trunk / distribution network amplifier designed for current and future DOCSIS 3.1 HFC networks. Two active output stages can be configured for up to 3 high level distribution network, or 1 trunk level

and up to 2 distribution network outputs. The output level of the amplifier are 2 pilot controlled. All amplifier settings are made electronically using the hand held or Wi-Fi module with a Web browser.
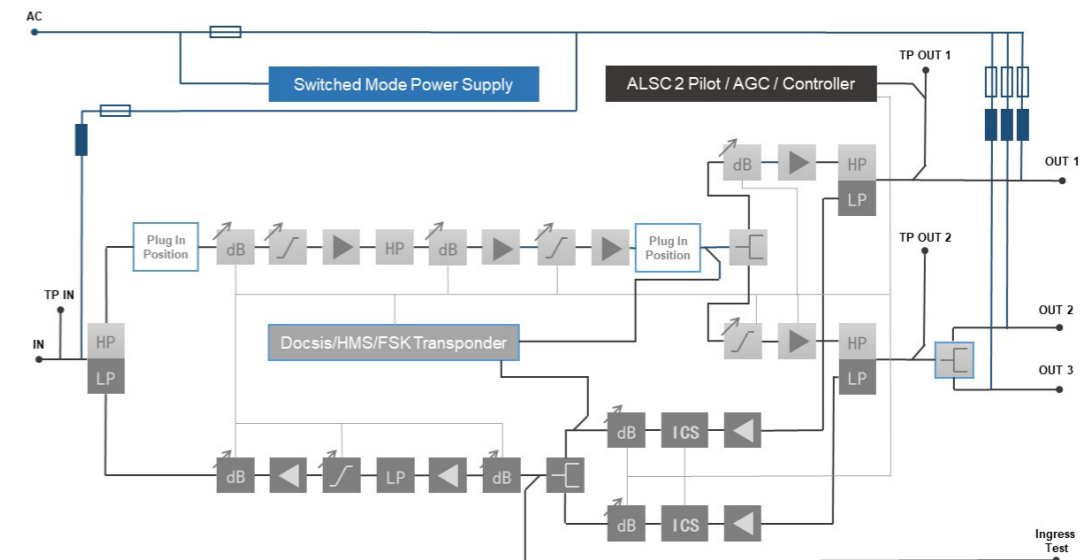
Block diagram
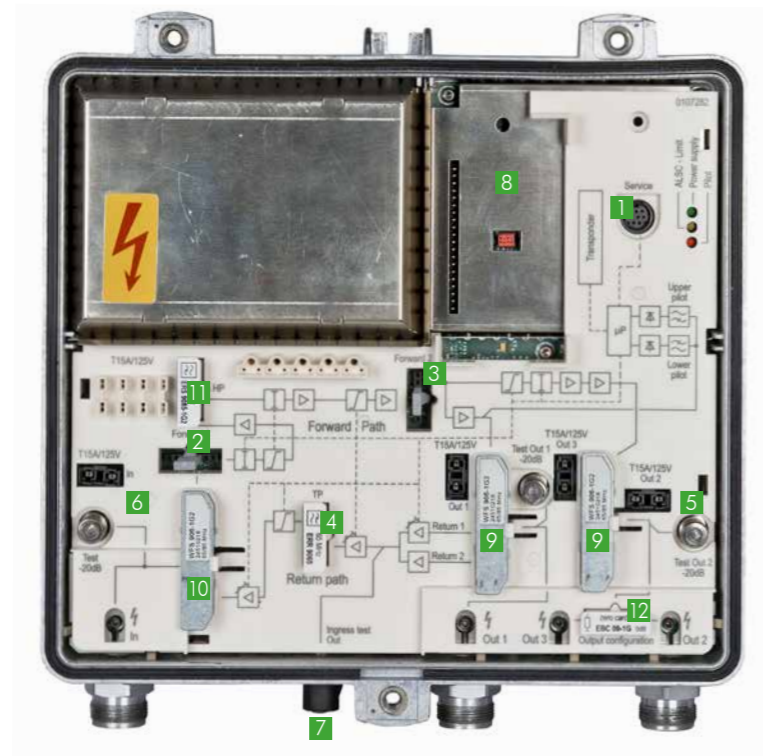
Standard version:

1 Connection socket for handheld adapter
2 "Forward 1" insert position
3 "Forward 2" insert position
4 Plug in low pass filter "TP Return Path"
5 F test socket internal (-20 dB) output
6 F test socket internal (-20 dB) input
7 Ingress test point external

Modules for the following insert positions are not included in the product package:

8 Insert position for monitoring transponder module
9 Plug-in output diplex filter
10 Plug-in input diplex filter
11 Plug-in high pass filter "HP Forward Path"
12 Splitter field output (splitters, taps)

Features

- Modern controlled amplifier with remote monitoring for DOCSIS 3.1 HFC networks
- Frequency range: up to 1218 MHz (selectable between 1006 MHz and 1218 MHz)
- Configuration of up to 3 high level distribution or 1 trunk level and up to 2 distribution network outputs
- GaN second generation 2 active outputs amplifier
- Innovative operating concept: Electronic actuators setting by handheld module (minimizing plug in cards and attenuation pads. Exactly readable and reproducible settings)
- Built in frequency agile 2 pilot control speeds up commissioning:
  · Automatic levelling on the forward path saves time consuming manual setting
  · Return path can be adjusted automatically

- Remote configuration of all tuning parameters supported by monitoring system (can be deactivated)
- Very high output level (115 dBμV) with very low intermodulation products even with interstage attenuation
- Remote feed capability: Up to 10 A at each input/output, local feed: 10 A
- Insert position for monitoring transpoder (FSK/HMS/DOCSIS)
- Test sockets at the input/output and in the return path amplifier
- Built in return path amplifier, adjustable electronically
- Ingress control switches (ICS)
- Die cast aluminum housing with PG 11 connections

Notice

During operation, an EBC/EAC xx must be plugged into the output splitter field. Pass through cards are already plugged into the insert positions no. 2 and 3. The optional HMS monitoring transponder TVM 850 can only be used up to a maximum return path frequency of 65 MHz.

VGP2143D-1G2
Distribution amplifier

The VGP 2143D-1G2 is a distribution network amplifier designed for current and future DOCSIS 3.1 HFC networks. One active output stage can be configured for up to 2 high level distribution network outputs.

All amplifier settings are made electronically using the handheld. The return path bandwidth is determined by various plug in diplex filter sets.
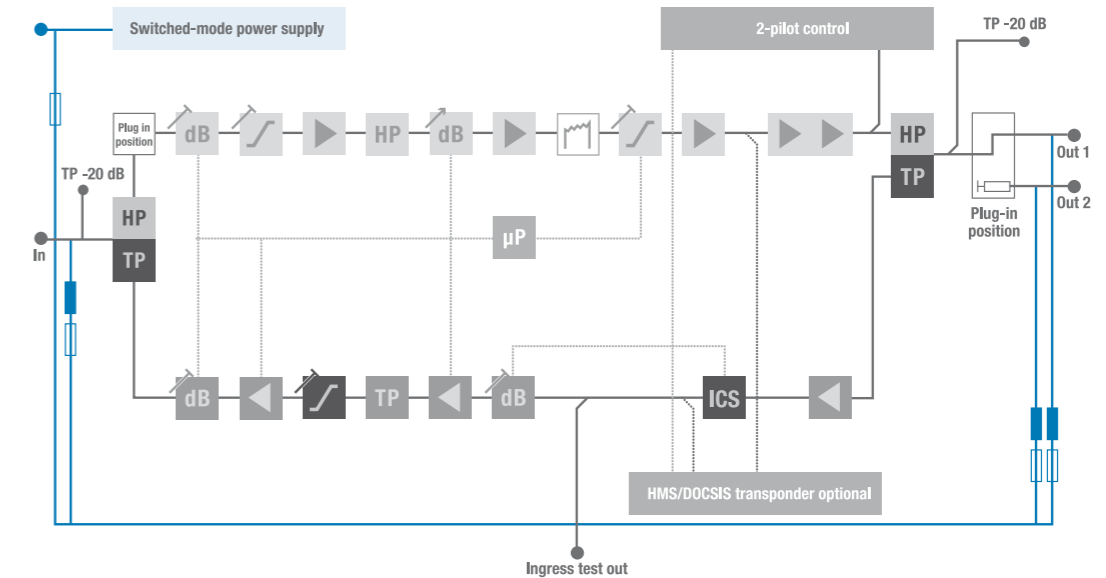
Block diagram

Standard version:

1 Connection socket for the HTE 20 adapter
2 "Forward 1" insert position
3 "Forward 2" insert position
4 Plug in low pass filter "TP Return Path"
5 F test socket internal (-20 dB) output
6 F test socket internal (-20 dB) input
7 Ingress test point external

Modules for the following insert positions are not included in the product package:

8 Insert position for monitoring transponder module
9 Plug-in output diplex filter
10 Plug-in input diplex filter
11 Plug-in high pass filter "HP Forward Path"
12 Splitter field output (splitters, taps)

Features

- Modern controlled amplifier with remote monitoring for DOCSIS 3.1 HFC networks
- Frequency range: up to 1218 MHz (selectable between 1006 MHz and 1218 MHz)
- Configuration of up to 2 distribution network outputs
- High gain: up to 43 dB controlled
- GaN second generation 1 active output amplifier
- Innovative operating concept: Electronic actuators setting by handheld module (minimizing plug in cards and attenuation pads. Exactly readable and reproducible settings)
- Built in frequency agile 2 pilot control speeds up commissioning:
  · Automatic levelling on the forward path saves time consuming manual setting
  · Return path can be adjusted automatically

- Remote configuration of all tuning parameters supported by monitoring system (can be deactivated)
- Very high output level (115 dBμV) with very low intermodulation products even with interstage attenuation
- Remote feed capability: Up to 10A at each input/output, local feed: 10 A
- Insert position for monitoring transpoder (FSK/HMS/DOCSIS)
- Test sockets at the input/output and in the return path amplifier
- Built in return path amplifier, adjustable electronically
- Ingress control switches (ICS)
- Die cast aluminum housing with PG 11 connections

Notice
During operation, an EBC/EAC xx must be plugged into the output splitter field. Pass through cards are already plugged into the insert positions no. 2 and 3. The optional HMS monitoring transponder TVM 850 can only be used up to a maximum return path frequency of 65 MHz.

VGE 1285-1G2 / 12105-1G2 / 12258-1G2
Uncontrolled equalizer amplifiers

The VGE equaliser amplifier is ideal for supplementary compensation of cable attenuation in the case of a network upgrade.

The forward range starts at 85 MHz or 258 MHz respectively and goes up to 1218 MHz. A slope of 10 dB or 11 dB respectively on the upstream cable network resulting from long cable lengths is compensated. As the amplifier requires no manual set-up, it offers an plug-and-play solution that is easy to install. The return path, which goes from 5 to 65 MHz or 5 to 204 MHz respectively, is passive with a low attenuation of max. 2.5 dB. Power can be supplied to the amplifier by connecting a remote feed to the input or output. The input or output can also be used to supply looped-through remote feed currents up to 7 A to the upstream or downstream amplifiers.

VGE 1285-1G2
- Forward path frequency range: 85-1218 MHz
- Forward path gain of 12 dB/10 dB pre-emphasis
- Return path frequency range: 5-65 MHz

VGE 12105-1G2
- Forward path frequency range: 105-1218 MHz
- Forward path gain of 12 dB/10 dB pre-emphasis
- Return path frequency range: 5-85 MHz

VGE 12258-1G2
- Forward path frequency range: 258-1218 MHz
- Forward path gain of 12,5 dB/ 11 dB pre-emphasis
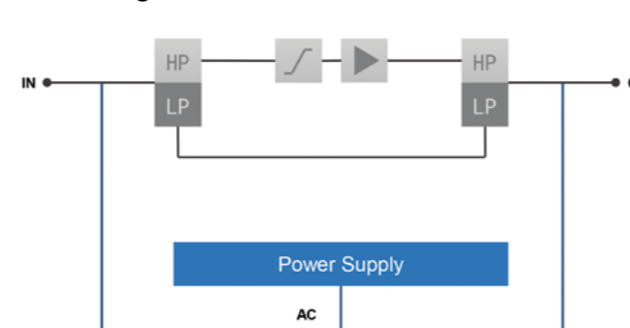- Return path frequency range: 5-204 MHz

Common features
- Low return loss of 2.5 dB
- Input and output can be fed remotely
- High screening factor - class A
- High corrosion resistance
- Protection class: IP 65 [1]
- Simple installation
- Connections: 5/8"-24 (socket)

Actual product not shown

Block diagram (VGE 1285-1G2)

VGE 12258-1G2-RA
Uncontrolled equalizer amplifiers

The VGE equalizer amplifier is ideal for the supplementary compensation of cable attenuation in the case of a network upgrade.

The forward range starts at 258 MHz and is used up to 1218 MHz. A slope of 11 dB on the forward path cable network resulting from long cable lengths is compensated. As the amplifier requires no manual set-up, it offers an easy to install plug-and-play solution. The return path, available with a bandwidth of 5 to 204 MHz, is active with a gain of 4.5 dB. A slope of 3.7 dB on the return path of the cable network resulting from long cable lengths is compensated.

The amplifier is powered by remote feed over the coaxial cable at the input or output. The input or output can also be used to supply looped-through remote feed currents up to 7 A to the upstream or downstream amplifiers.

- Forward path frequency range:
  258 to 1218 MHz
- Forward path gain:
  12 dB / 7 dB pre-emphasis
- Return path frequency range:
  5 to 204 MHz
- Return path gain:
  4.5 dB / 3.7 dB pre-emphasis
- Input and output can be feed remotely
- High screening factor - class A
- High corrosion resistance
- Protection class: IP 65 [1]
- Simple installation
- Connections: 5/8"-24 (socket)
- Optional mounting plate ZMP 200 for wall mounting

Block diagram (VGE12258-1G2-RA)
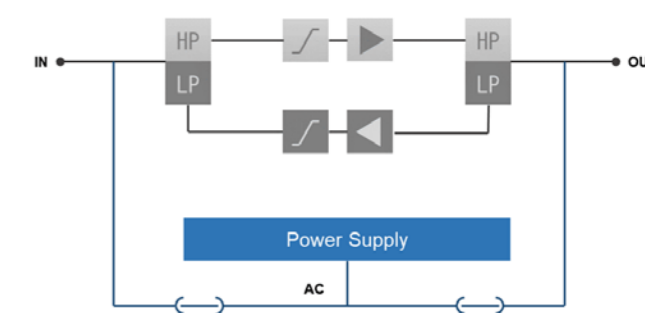
[1] Providing a suitable plug is used

Components

Handheld module: HTE 20

The handheld module HTE 20 permits direct access to fibre nodes and amplifiers in order to configure them.
The handheld module HTE 20 is attached to the controlling device; it is started by Plug & Play and is supplied with power by the controlling device.

- Controlling all device settings with a few button presses
- Display of all device settings
- Ambient conditions:
  · Operating temperature: -10°C to +40°C
  · Suitable for outdoor use
  · Housing protection class: IP 54
- Language: English
- Copy function for saving the device settings
- No additional power supply necessary
- Can be updated in order to support new devices and functions

WiFi module: WTE 10

The WTE 10 WiFi moduleallows connected amplifiers and fibre nodes to be accessed conveniently from a PC, tablet or smartphone for configuration purposes.
To view the configuration, only a Web browser supporting JavaScript is required. The WTE 10 Wi-Fi module simply has to be connected to the controlling device (plug-and-play connection); it draws its power supply from the controlling device.

- WiFi standard to IEEE 802.11 b/g/n
- Display of all device settings via a Web interface
- Ambient conditions:
  · Operating temperature: -20 to +50°C
  · Suitable for outdoor use
  · Housing protection class: IP 54
- Language: English
- Copy function for saving the device settings
- No additional power supply necessary
- Can be updated in order to support new devices and functions

FSK multi-band transponder module: TVM 500/TVM 500S

- FSK transponder for compact and house connection amplifiers and also optical compact receivers
- Control of the ingress control switch in devices that are equipped with this facility
- Interference-free FSK subrack
- Frequency-agile in selected frequency ranges

DOCSIS/Euro-DOCSIS 2.0 monitoring transponder, frequency-agile: TVM 1000

- Monitoring transponder for amplifiers and optical compact receivers
- Monitoring of various parameters such as voltage, current consumption, internal temperature, etc.
- Transmission in DOCSIS or EuroDOCSIS protocol
- 10/100 BaseT service interface
- Frequency-agile in the rang 5-65/90-862 MHz
- Additional monitoring functions

Tap/splitter plug-in cards: EAC 90-1G2, EAC 93-1G2, EAC 94-1G2, EBC 90-1G2

- Plug-in modules to expand the corresponding device to two outputs
- Can be used in the splitter field loop-through input
- Suitable for amplifiers and fibre nodes

Actual product not shown

Tap/splitter plug-in cards: EAC 90-1G, EAC 93-1G, EAC 94-1G, EBC 90-1G

- Plug-in modules to expand the corresponding device to two outputs
- Can also be used in the splitter field loop-through input depending on device type
- Suitable for amplifiers and legacy 1 GHz fiber nodes

Actual product not shown

Components

Zero cards: EBC 01E-1G, EBC 00-1G2

- Plug-in modules for trough connection e.g. for operation with one output

Actual product not shown

C-line pre-emphasis equaliser: ERC 22

- Creates a pre-emphasis based on the C-line specification for german networks
- For use in the universal input insert position ("Forward 1")

De-emphasis equaliser: ERZ 940

- Cable simulation, 7 dB
- 7 dB de-emphasis equaliser for VOS 95x and VGP 95x

Equaliser, 630 MHz: ERZ 630

- Equaliser, 47-630 MHz
- Adjustable from 2-18 dB in 2 dB steps (cable equivalent)
- For use in the input insert position of the VOS 95x and other amplifiers

System equaliser: ERS 800

- System equaliser for use in special application cases
- Characteristic: Cable-equivalent pre-emphasis in range 47-700 MHz: 3 dB (equivalent in range 47-862 MHz: 4 dB)
- Cable-equivalent pre-emphasis in range 700-862 MHz: 3 dB (equivalent to increase of 2 dB in range 700-862 MHz)
- Suitable for compact amplifiers and compact fiber nodes
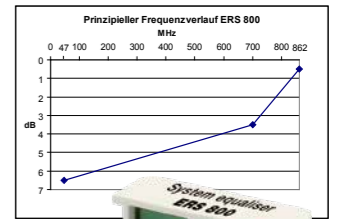
De-emphasis equaliser/attenuation attachment: ERD 813, ERD 814, ERD 815, ERP 101

Equalisers and attenuation pads

- Available types:
  - ERD 813: Cable-equivalent de-emphasis 7 dB [1]
  - ERD 814: 6 dB attenuation [1]
  - ERD 815: 10 dB attenuation [1]
- ERP 101: Tap 2/6 dB, de-emphasis 3 dB [1]
- Suitable for amplifiers and fiber nodes

[1] Based on 862 MHz

Order number overview

Type	Order no.
A	
ALSCM 10	24510232
E	
EAC 90-1G	24510116
EAC 90-1G2	24510215
EAC 93-1G	24510115
EAC 93-1G2	24510216
EAC 94-1G	24510114
EAC 94-1G2	24510220
EBC 00-1G2	24510217
EBC 01E-1G	24510119
EBC 90-1G	24510113
EBC 90-1G2	24510214
EMP 34	275289
EMP 35	275300
EMU 29	273243
ERC 22	24510085
ERD 813	24510117
ERD 814	24510120
ERD 815	24510127
ERP 101	24510128
ERR 9065	24510156
ERR 9085	24510158
ERR 9204	24510211
ERS 630	24510108
ERS 800	24510109
ERS 9085-1G2	24510219
ERS 9105-1G2	24510223
ERS 9258-1G2	24510210
ERZ 940	24510059

Type	Order no.
H	
HTE 20	690091
T	
TVM 1000	26210086
TVM 500	26210846
TVM 500S	26210868
V	
VGE12105-1G2	690099[1]
VGE 12258-1G2	24410184
VGE12258-1G2-RA	690110
VGE 1285-1G2	24410145
VGP2143D-1G2	690017-xx[1]
VGP3243D-1G2	690018-xx[1]
VGX2143D-1G2	690019-xx[1]
VGX 242D-1G2	24410188
VOS 952-1G	24410098
VOS 953-1G	24410099
W	
WFS 906-1G2	24510218
WFS 908-1G2	24510222
WFS 920-1G2	24510209
WTE 10	25010086

[1] Generic odering numbers. Please contact
info.bktel@hubershuhner.com for available configurations.

Accessories

Connectors as options for die cast housings
EMP 34, EMP 35, EMU 29

Transitions:
- EMP 34 (BN 275289): PG 11 to IEC connector (female)
- EMP 35 (BN 275300): PG 11 to F connector (female)
- EMP 53 (BN 25010011): PG 11 to 3.5 / 12 connector (female)
- EMU 29 (BN 273243): Adapter ring PG 11 to $5/8"$
- EMP 51 (BN 275351): 5/8" to F connector (female)

EMP

EMP

EMU

Plug-in diplex filters
WFS 906-1G2, ERS 9085-1G2, ERR 9065
WFS 908-1G2, ERS 9105-1G2, ERR 9085
WFS 920-1G2, ERS 9258-1G2, ERR 9204

Diplex filters and return path system equalisers for bandwidth selection.

- Components for frequency split 65/85 MHz:
  WFS 906-1G2: Input and output diplexer 65/85 MHz
  ERS 9085-1G2: Interstage downstream equaliser (downstream from 85 MHz)
  ERR 9065 return path system equaliser (upstream up to 65 MHz)
- Components for frequency split 85/105 MHz:
  WFS 908-1G2: Input and output diplexer 85/105 MHz
  ERS 9105-1G2: Interstage downstream equaliser (downstream from 105 MHz)
  ERR 9085: Return path system equaliser (upstream up to 85 MHz)
- Components for frequency split 204/258 MHz:
  WFS 920-1G2: Input and output diplexer 204/258 MHz
  ERS 9258-1G2: Interstage downstream equaliser (downstream from 258 MHz)
  ERR 9204: Return path system equaliser (upstream up to 204 MHz)

Accessories

Overview of accessories for the VGX distribution network amplifiers

Description	Type	Order no.	VGX xxxxD-1G2
Zero card for operation with one output 1.2 GHz	EBC 00-1G2	24510217	✓
Splitter (two symmetrical outputs) 1.2 GHz	EBC 90-1G2	24510214	✓
Tap (3/6 dB) 1.2 GHz	EAC 93-1G2	24510216	✓
Tap (1.5/10 dB) 1.2 GHz	EAC 90-1G2	24510215	✓
Tap (0.8/20 dB) 1.2 GHz	EAC 94-1G2	24510220	✓
FSK multi-band transponder module	TVM 500	26210846	-
FSK multi-band transponder module, small	TVM 500S	26210868	✓
DOCSIS monitoring transponder	TVM 1000	26210086	-
WiFi module for wireless setting via a Webbrowser	WTE 10	25010086	✓
Automativ level and slope control module	ALSCM 10	24510232	✓
PG 11 to 3.5/12 connector (female)	EMP 53	25010011	-
PG 11 to IEC connector (female) with M14 male thread	EMP 34	275289	-
PG 11 to F connector (female)	EMP 35	275300	-
Plug-in diplex filter sets			
Diplexer 65/85 MHz	WFS 906-1G2	24510218	✓
Forward path equaliser 85 MHz	ERS 9085-1G2	24510219	✓
Return path equaliser 65 MHz	ERR 9065	24510156	✓
Diplexer 85/105 MHz	WFS 908-1G2	24510222	✓
Forward path equaliser 105 MHz	ERS 9105-1G2	24510223	✓
Return path equaliser 85 MHz	ERR 9085	24510158	✓
Diplexer 204/258 MHz	WFS 920-1G2	24510209	✓
Forward path equaliser 258 MHz	ERS 9258-1G2	24510210	✓

Overview of accessories for controlled trunk / distribution network amplifiers

Description	Type	Order no.	VGX xxxxD-1G2
Zero card for operation with one output 1.2 GHz	EBC 00-1G2	24510217	✓
Splitter (two symmetrical outputs) 1.2 GHz	EBC 90-1G2	24510214	✓
Tap (3/6 dB) 1.2 GHz	EAC 93-1G2	24510216	✓
Tap (1.5/10 dB) 1.2 GHz	EAC 90-1G2	24510215	✓
Tap (0.8/20 dB) 1.2 GHz	EAC 94-1G2	24510220	✓

Description	Type	Order no.	VGX xxxxD-1G2
FSK multi-band transponder module	TVM 500	26210846	✓
FSK multi-band transponder module, small	TVM 500S	26210868	-
DOCSIS monitoring transponder	TVM 1000	26210086	✓
WiFi module for wireless via a Webbrowser	WTE 10	25010086	✓
Adapter ring PG 11 to ⅝"	EMU 29	273243	✓
Adapter PG 11 to 3.5/12 socket	EMP 53	25010011	✓
PG 11 to IEC connector (f) with M14 male thread	EMP 34	275289	✓
PG 11 to F-socket (female)	EMP 35	275300	✓
Plug-in diplex filter sets			
Diplexer 65/85 MHz	WFS 906-1G2	24510218	✓
Forward path equaliser 85 MHz	ERS 9085-1G2	24510219	✓
Return path equaliser 65 MHz	ERR 9065	24510156	✓
Diplexer 85/105 MHz	WFS 908-1G2	24510222	✓
Forward path equaliser 105 MHz	ERS 9105-1G2	24510223	✓
Return path equaliser 85 MHz	ERR 9085	24510158	✓
Diplexer 204/258 MHz	WFS 920-1G2	24510209	✓

## Overview of plug-in diplex filter sets

Return / Forward Frequency	Type	Order no.	VGXxxxxD-1G2	VGP2143D-1G2	VGP3243D-1G2
65 / 85 MHz	WFS 906-1G2	24510218	2	2	3
	ERS 9085-1G2	24510219	1	1	1
	ERR 9065	24510156	1	1	1
85 / 105 MHz	WFS 908-1G2	24510222	2	2	3
	ERS 9105-1G2	24510223	1	1	1
	ERR 9085	24510158	1	1	1
204 / 258 MHz	WFS 920-1G2	24510209	2	2	3
	ERS 9258-1G2	24510210	1	1	1
	ERR 9204	24510211	1	1	1

The table shows the number of plug in modules for full configuration of each amplifier type.

You have questions?

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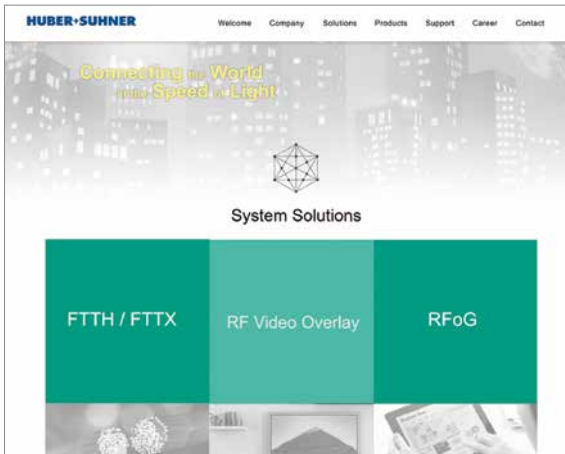
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