

User Guide

High Output Distribution Amplifier

892281 EN

GPV 950 Series

GPV 950

Best.-Nr. 323170

GPV 950 L, remote fed

Best.-Nr. 323174



TRIAX - your ultimate connection

Contents/Description

In the box

- 1 Amplifier including setting elements
- 2 Brackets for wall mounting
- 1 User Guide

Description

GPV 950 / 950 L are High Output Distribution Amplifiers for use primarily in CATV distribution networks in multi-dwelling premises. Basic gain switching permits configuration of the amplifiers as line extenders or as cascade amplifiers in a trunk position. All functional parts and setting elements are implemented on the printed board and additional external accessories are not required to configure and operate these amplifiers.

- State of the art 1 GHz technology
- One-board technology: all functionality implemented on printed board
- Rotary switches in 1 dB steps for precise attenuation/equalization setting
- Downstream: 85...1006 MHz @ max. output level 112 dB μ V
- Upstream: 5-65 MHz, max. output 120 dB μ V (high load performance for DOCSIS 3.1)
- Basic gain selection via jumpers
- Return path mode selectable: active / passive / off
- Switch on attenuation (ATT) of 0/4/8/12 dB in return path input in case of very high US level on input
- Fine-tuning ATT of signal level and EQ of frequency response by Rotary switches in steps of 1dB
- Cable Simulator be activated by plug in a common PAD module (1...10 dB)
- GPV 950 L: remote feeding only via RF input. There is not a pass through of AC/DC to RF output
- Implemented Cable Simulator
- High quality F connectors complying with IEC 61169-24
- -20 dB test points on input and output of the amplifier
- Extensive ESD and Surge protection
- Low power consumption due to high efficient switching PSUs
GPV 950 mains fed 190-264 VAC, 50/60 Hz
GPV 950 L remote fed via RF input 28-65 VAC, 50/60 Hz
- Developed for multi-service CATV networks requiring high level return path amplifier for full load (DOCSIS 3.1) and low noise US signals.

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Table of Contents

Table of Contents

	page
1. Introduction	12
1.1 Description	12
1.2 Who should read this?	12
1.3 Abbreviations and Symbols	12
1.4 Warranty	12
2 . Security	12
2.1 Important	12
2.2 Requirements and wrong handling	12
2.3 Safety precautions	13
3. Installation	13
3.1 Local Setup	13
3.2 Mounting	13
4. Settings	14
4.1 Open the Amplifier	14
4.2 Overview	14
4.3 Settings	15
4.4 Setup switches and jumpers	15
5. Technical Specifications	16
6. Maintenance/Service	16
7. Recycling	16

Introduction

1 Introduction	High Output Broadband Amplifier for CATV distribution networks in multi-dwelling homes and blocks
1.1 Description	
1.2 Target audience?	This User Guide is intended for technicians, installers and other authorized personnel who configure or maintain cable network distribution networks.
1.3 Abbreviations and Symbols	<ul style="list-style-type: none">• Important Points☞ Actions⇒ Conclusions👉 Info: Remarks and tips for the practical use of the units.
1.4 Warranty	Refer to local sales representatives for the Warranty Terms of this product. Unauthorized handling, installation and setup voids any warranty claim.
2 Security	WARNING! Non-compliance to the safety precautions for this unit can cause injuries, death and can also result in damage to the unit.
2.2 Requirements and incorrect handling	Only technicians, installers and other authorized personnel should install, setup, repair or maintain. Damage caused by unauthorized, incorrect installation or usage, bad connections or other unauthorized actions voids the warranty.
2.3 Safety precautions	WARNING: Safety Precautions EN 60728-11 must be followed. <ul style="list-style-type: none">• Ensure mains power is not supplied to the entire network before to commencing the installation.• Main power plug installation (if required) must only be performed by an authorized Electrician.• Never perform installation or maintenance during thunder storms.• Ensure that the unit is earthed by using the earth terminal on the unit (Diameter min. 4 mm²) or via the building's earthing terminal.• Caution: 65 V is input into remote fed Amplifiers.• Open the GPV 950 L only when RF-cables have been connected to the Input and Output terminals.

Installation

3. Installation

3.1 Local setup

- ☞ Disconnect mains power from the entire network.
- ☞ Identify a suitable mounting position for the unit; meeting the following requirements:
 - Horizontal
 - Airflow to and from the unit must not be compromised
 - Non-flammable surface (e.g. concrete or brick wall)
 - Dust free environment
 - Protected against moisture and fluids, both directly and high humidity
 - Unexposed to direct sunlight
 - Unexposed to temperature ranges exceeding the specified highest permitted working temperature (measured at the air intake under the Amplifier)

3.2 Mounting

- ☞ Fasten the attached mounting taps to the back of the unit, see **D** (Screws attached)
- ☞ Fasten the unit to the wall as per specified measurements (194mm between holes), see Fig. 1)
- ☞ Earth the unit by connecting an approved (diameter min. 4 mm²) cable between screw **A** on the unit and an approved earthing point
- ☞ Connect the RF-Input **B** and the RF-Output **C** cables.
- ☞ Turn on the mains power to the entire network.

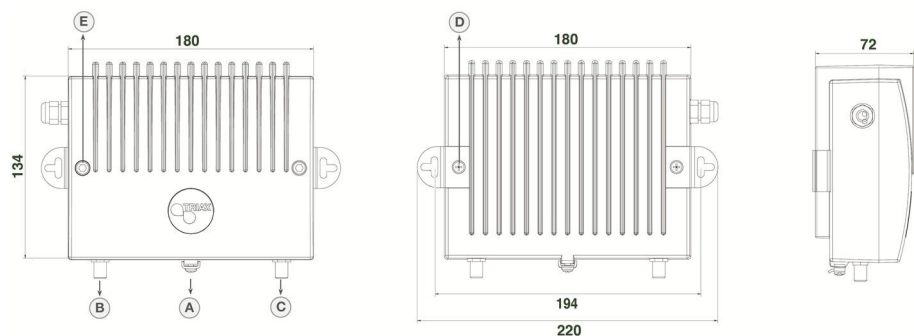


Fig. 1 Mounting

Settings

4. Settings

4.1 Open amplifier

4.2 Overview

☞ Remove the top cover of the Amplifier by removing the 2 screws E (see Fig. 1)

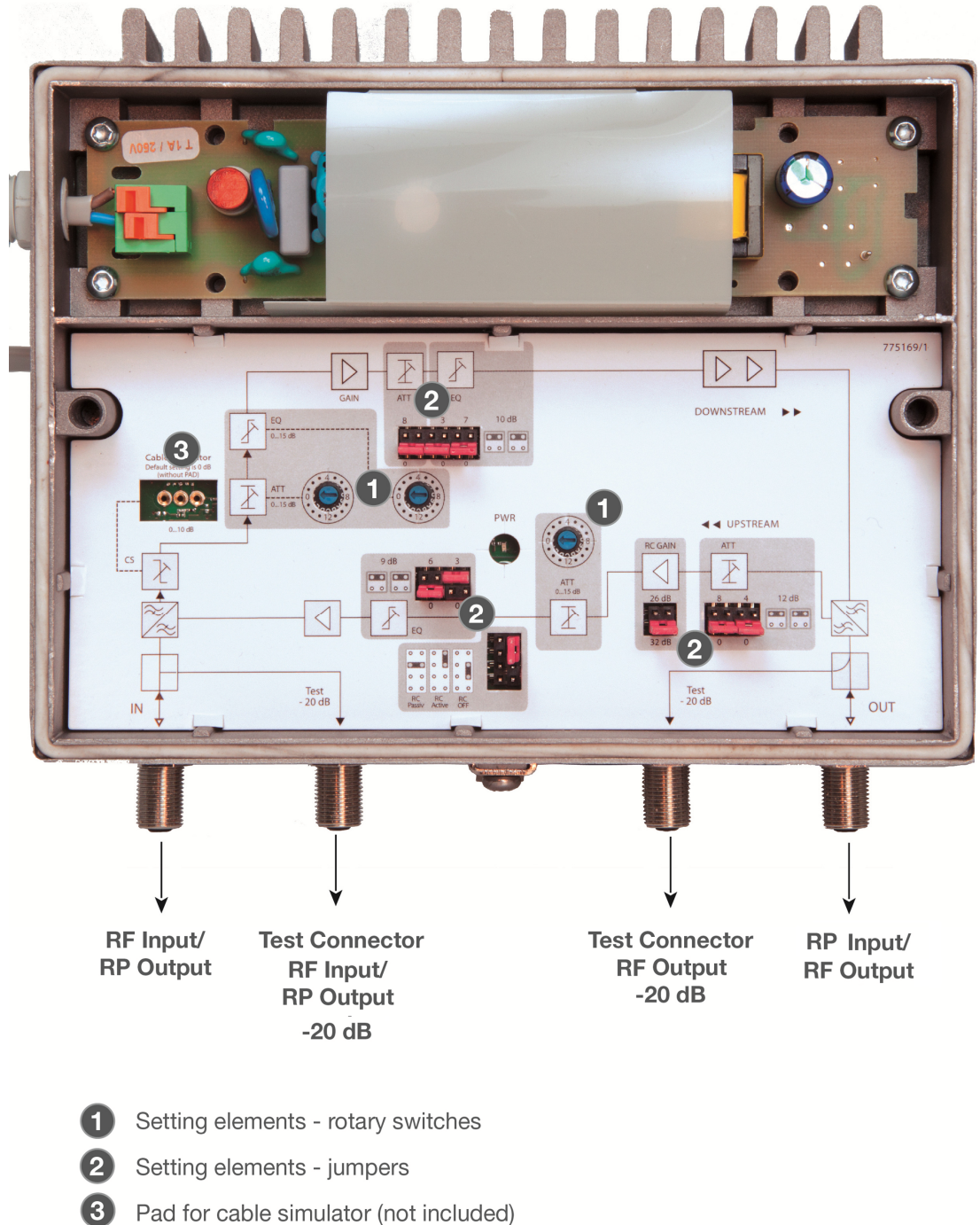


Fig. 2 Inside view of GPV 950 in delivery state

Adjustment

4.3 Setting possibilities

The Amplifier is configured with the Rotary Switches and Jumpers as shown:

See Fig. 3	Downstream	Setting range	Default setting	Type of setting element
1	Gain setting (Interstage)	0 / -8 dB	0 dB (G=41dB)	Jumper
2	Level control (Input) 1dB steps	0-15 dB	0 dB	Rotary switch
3	Equalizer (Input) 1dB steps	0-15 dB	0 dB	Rotary switch
4	Cable simulator 1 dB steps	0...10 dB	0 dB	Pad*
5	Slope (Interstage)	0 /3/7/10	0 dB	Jumper
Upstream				
6	Return path mode	active/passive/ off	active	Jumper
7	Gain setting (pre-stage)	32/26 dB	32dB	Jumper
8	Level control (Input)	0 / 4 / 8 / 12	0 dB	Jumper
9	Level control (Interstage) 1 dB steps	0-15 dB	0 dB	Rotary switch
10	Slope (Interstage)	0 / 3 / 6 / 9	3 dB	Jumper

*) 0dB without Pad (JXP-OT). Pad (JXP-OT) please order optional: 4 dB = Ord. No. 322204, 7 dB = Ord.-No. 322207, 10 dB = Ord.-No. 322210. Further attenuation values on request.

4.4 Setup switches and jumpers

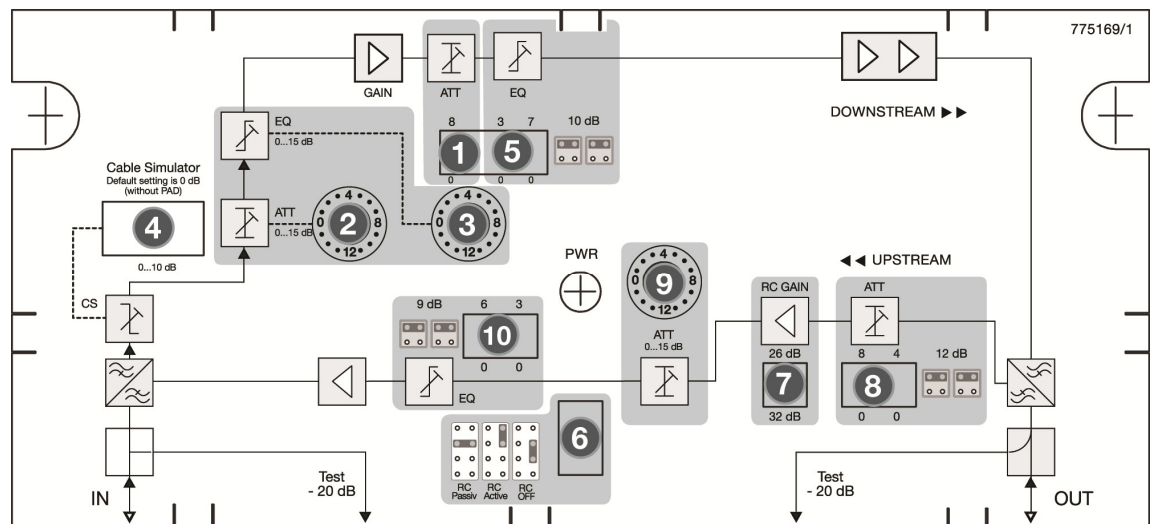


Fig. 3 Position of setting elements

Technical Data

5. Technical Data

Type		GPV 950	GPV 950 L
Article number		323170	323174
Frequency range			
Downstream	MHz	85-1006	85-1006
Upstream	MHz	5-65	5-65
Gain, Downstream			
Gain @ 1006 MHz	dB	41/33	41/33
Level control Input (Rotary switch, 1 dB steps)	dB	0-15	0-15
Equalizer Input (Rotary switch, 1 dB steps)	dB	0-15	0-15
Gain setting Interstage (Jumper)	dB	0/8	0/8
Slope Interstage (Jumper)	dB	0/3/7/10	0/3/7/10
Cable simulator (Pads, optional)	dB	1-10*	1-10*
Gain, Upstream			
Gain @ 60 MHz, setting (Jumper)	dB	32/26	32/26
Level control Input (Jumper)	dB	0/4/8/12	0/4/8/12
Level control Interstage (Rotary switch, 1 dB steps)	dB	0-15	0-15
Slope Interstage (Jumper)	dB	0/3/6/9	0/3/6/9
Linearity			
5...65/87...1006 MHz	dB	± 1.0	± 1.0
Noise Figure (typical)			
Downstream	dB	6.0	6.0
Upstream	dB	5.0	5.0
Return Loss @ 40 MHz, -1.5 dB/Octave, min. Cat B			
Downstream, Upstream	dB	> 18	> 18
Max. Output Level Downstream			
CSO (42 Kan. 852 MHz) Slope 0/7 dB	dB μ V	114/116	114/116
CTB (42 Kan. 852 MHz) Slope 0/7 dB	dB μ V	113/115	113/115
Max. Output Level Upstream			
16 QAM (KDG1TS140 - class D: full load)	dB μ V	120	120
RF Connectors (75 Ohm)			
RF-Input/RP-Output/RP-Test connectors		F-female	F-female
RP-Test connector input (bi-directional)	dB	-20	-20
RP-Test connector output (uni-directional)	dB	-20	-20
Operating conditions			
Power supply (50-60 Hz)	V	190-264	28-65
Power Requirements	W	< 17	< 17
Operating temperature	°C	-25+55	
ESD-/Surge protection	KV	10/4,5	
Safety class, safety type		II / IP 65	
Dimensions (W x H x D)	mm	170x145x70	
Weight	kg	1,6	
Standards			
Product standard/Safety/EMV		EN 60728-3 Class 2 / EN 60728-11 / EN 60065 / EN 50083-2	
RoHS 2002/95/EG conformity		✓	
Type class KDG			
KDG 1TS140		D 4.4	

* Pad JXP-OT, optional available, 1-10 dB (Default 0 dB without Pad)

6. Maintenance / Service

Repairs may only be made by an authorized technician.
Refer to sales representative for more info.

7. Recycling

Adhere to local legal requirements when recycling this product.