

# User Manual



# ULTRALINK PRO MX882

Ultra-Flexible 8-Channel Splitter/Mixer



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**EN Important Safety Instructions**

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.

Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

**Caution**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

**Caution**

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

**Caution**

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Use only attachments/accessories specified by the manufacturer.



12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid

injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

**LEGAL DISCLAIMER**

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# 1. Introduction

With the BEHRINGER ULTRALINK PRO you have purchased an ultra-flexible “problem solver” in signal distribution applications, designed to meet highest requirements: professional recording, broadcast and television studios, CD and digital production facilities, etc. Much like an all-in-one tool, it provides virtually unlimited configurations. Be it the distribution of a stereo signal to several outputs (splitter); the combination of separate signals to one stereo output (mixer), or the specific level adaption of individual signals (buffer amplifier): the ULTRALINK PRO can perform all of these functions easily - and simultaneously.

## Future-oriented BEHRINGER technology

Our ULTRALINK range of devices has been a hit ever since we introduced our first model several years ago. This splitter/mixer is based on many years of experience and findings in mixing technology and is used throughout the world in renowned studios, sound reinforcement systems as well as in broadcast and television studios.

It was a real challenge to improve the well-known ULTRALINK even further, and we are proud of our success. Compared to its predecessor models, the ULTRALINK PRO not only has additional features, but also comes with dramatically improved functionality. For example, it now has input and output level meters and balanced in- and outputs.

## The architecture of the ULTRALINK PRO

Basically, the unit consists of six mono channels, which can be used either as a splitter or as a mixer. For instance, a stereo program source can be inserted via the main input to be subsequently routed to any of the mono channels that are set to SPLIT mode. Using the individual BALANCE/PAN control, you can—for each channel—determine the ratio between the left and right main input signals that are routed to the corresponding output of the channels. Thus, the stereo input signal coming from the main input section can be distributed selectively among the six mono output channels.

In MIX mode, the input signals from the respective channel(s) can be mixed at the stereo main output, with the individual BALANCE/PAN control determining the signal ratio between the left and right main outputs (pan function). It is of particular advantage that, in MIX mode, the stereo input signal from the main input section is alternatively routed to the main outputs. By using this feature a total of up to 8 single signals can be combined.

In MIX mode, the mono input signals are simultaneously applied to the respective mono outputs, which permits each channel to be used as an individual matching amplifier. The LEVEL controls in the corresponding channels enable the user to adapt the levels at will, with a maximum gain of +15 dB. Levels used in home-recording can therefore be converted into studio levels (+4 dBu), and vice versa.

## Typical applications

The ULTRALINK PRO MX882 is one of the most flexible systems of its type. The following applications can be realized:

2 IN/8 OUT splitter, 8 IN/2 OUT mixer, 6 IN/6 OUT matching amplifier or any other combination.

- Keyboard submixer
- Distribution amplifier for P.A. systems, discotheques, theatres, churches, hotels, communication systems, etc.
- Add-on module for mixer channels
- Add-on module for effect and monitor paths
- Level translator from -10 dBV to +4 dBu etc.

By combining several ULTRALINK PROs you can set up, for instance, a 24-channel mixer or splitter.

◆ **The following operational manual will introduce you to the BEHRINGER ULTRALINK PRO and its various functions. After reading the manual carefully, make sure it is always on hand for future reference.**

# 2. The Design Concept

## 2.1 High quality components and design

The philosophy behind BEHRINGER products guarantees a no-compromise circuit design and employs the best choice of components. The operational amplifiers NJM4580 which are used in the ULTRALINK PRO, are exceptional. They boast extreme linearity and very low distortion characteristics. To complement this design the choice of components includes high tolerance resistors and capacitors, detent potentiometers and several other stringently selected elements.

For the first time, the ULTRALINK PRO MX882 uses SMD technology (Surface Mounted Device). These sub-miniature components known from aerospace technology allow for an extreme packing density and improved reliability. Additionally, the unit is manufactured in compliance with a ISO9000 certified management system.

## 2.2 Inputs and outputs

### 2.2.1 Balanced inputs and outputs

As standard, the BEHRINGER ULTRALINK PRO is installed with electronically servo-balanced inputs and outputs. The new circuit design features automatic hum and noise reduction for balanced signals and thus allows for trouble-free operation, even at high operating levels. Externally induced mains hum etc. will be effectively suppressed. The automatic servo-function recognizes the presence of unbalanced connectors and adjusts the nominal level internally to avoid level differences between the input and output signals (correction 6 dB).

## 3. Installation

Your BEHRINGER ULTRALINK PRO was carefully packed in the factory and the packaging was designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage, which may have occurred in transit.

- ◆ If the unit is damaged, please do not return it to us, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted. Shipping claims must be made by the consignee.

### 3.1 Rack mounting

The BEHRINGER ULTRALINK PRO fits into one standard 19" rack unit of space (1 3/4"). Please allow at least an additional 4" depth for the connectors on the back panel. Be sure that there is enough air space around the unit for cooling and please do not place the ULTRALINK PRO on high temperature devices such as power amplifiers etc. to avoid overheating.

### 3.2 Mains voltage

**Before you connect your ULTRALINK PRO to the mains, please make sure that your local voltage matches the voltage required by the unit!** The fuse holder on the female mains connector has 3 triangular markers, with two of these triangles opposing each other. Your ULTRALINK PRO is set to the operating voltage printed next to these markers, and can be set to another voltage by turning the fuse holder by 180°. **CAUTION: this instruction does not apply to export models exclusively designed, e.g. for 115 V operation!**

### 3.3 Audio connections

The audio inputs and outputs on the BEHRINGER ULTRALINK PRO are fully balanced. If possible, connect the unit to other devices in a balanced configuration to allow for maximum interference immunity.

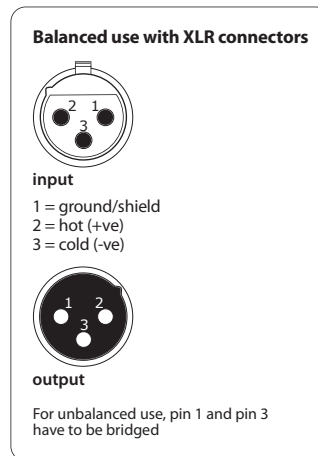
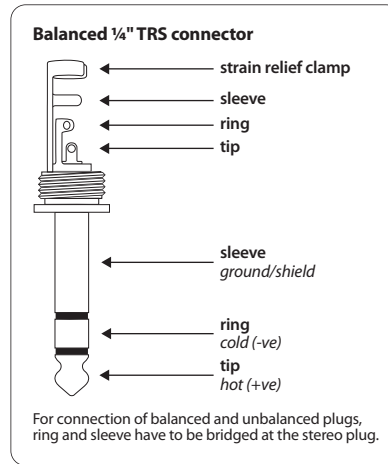
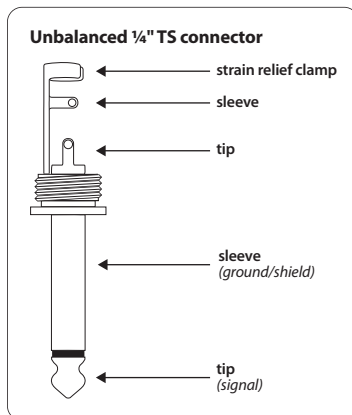


Fig. 3.1: Different plug types

- ◆ Please ensure that only qualified persons install and operate the ULTRALINK PRO. During installation and operation the user must have sufficient electrical contact to earth. Electrostatic charges might affect the operation of the ULTRALINK PRO!

## 4. Control Elements

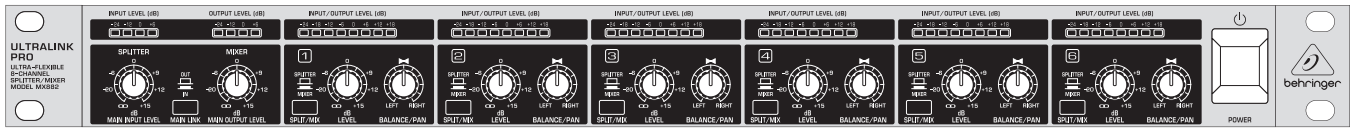


Fig. 4.1: ULTRALINK PRO front panel

The Behringer ULTRALINK PRO has six identical channels. Each channel is equipped with two rotary controls, one button and eight LEDs. Moreover there is a main section with two rotary controls, one button and eight LEDs.

### 4.1 The front panel control elements

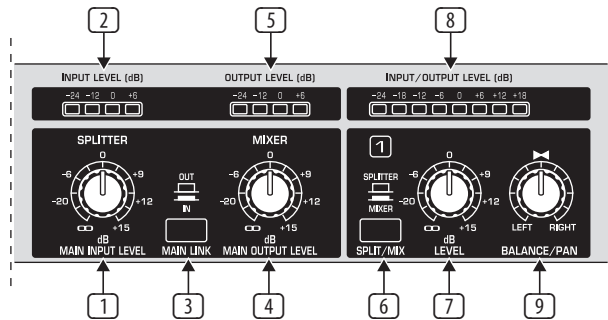


Fig. 4.2: Control elements on the front panel

- 1 The **MAIN INPUT LEVEL** control sets the main input gain, before the signal reaches the input bus. In SPLIT mode, the MAIN INPUT LEVEL control determines the common output level for all mono outputs.
- 2 The 4-digit **INPUT LEVEL** meter informs you about the input level of the main input within a range from -24 to +6 dB.
- 3 By depressing the **MAIN LINK** switch you can route the MAIN INPUT signal to the MAIN OUT. This way it is possible to route a maximum of eight input channels to the main mix.
- 4 The **MAIN OUTPUT LEVEL** control adjusts the output level applied to the main outputs. The levels present at the six mono outputs are not affected. Summing the signal levels of several mono channels can overload the main output stage. The MAIN OUTPUT LEVEL control is therefore used to adjust the overall output level.
- 5 The 4-digit **OUTPUT LEVEL** meter informs you about the output level of the main input within a range from -24 to +6 dB.
- 6 This **SPLIT/MIX** switch sets the respective channel to SPLITTER or MIXER mode.
- 7 The **LEVEL** control determines the signal level of the individual channels. In SPLIT mode, the LEVEL control sets the output level of the mono channels. In MIX mode, however, it controls the amount of the mono channel's input signal feeding into the main output section; at the same time, the level of the mono channel can be determined, which—owing to the maximum gain

of +15 dB—allows for converting, e.g., home recording levels (-10 dBV) into studio levels (+4 dBu).

- 8 The 8-digit **OUTPUT LEVEL** meter informs you about the output level of each channel within a range from -24 to +18 dB.
- 9 With the **BALANCE/PAN** control you can set the balance between the left and right main signals. In SPLIT mode, the main input signal is routed to the mono output, with the BALANCE control determining the balance between the left and right main signal portions. In MIX mode, the mono inputs are mixed and routed via the LEVEL control to the main outputs, with the PAN controls determining the allocation of the mono inputs to the left and right main outputs.

### 4.2 The rear panel elements

- 10 **FUSE HOLDER / VOLTAGE SELECTOR**. Please make sure that your local voltage matches the voltage indicated on the unit, before you attempt to connect and operate the ULTRALINK PRO. Blown fuses may only be replaced by fuses of the same type and rating.
  - 11 **MAINS CONNECTION**. Use the enclosed power cord to connect the unit to the mains. Please also note the instructions given in chapter 3 "Installation".
  - 12 **MAIN INPUTS**. These are the main audio inputs of your ULTRALINK PRO, available as balanced XLR connectors. They may feed the mono outputs of all channels which are operated in SPLIT mode.
  - 13 **MAIN OUTPUTS**. These are the main outputs, available as balanced XLR connectors. They may be fed either by the left and right main inputs or by any of the six mono inputs (or a combination of both).
  - 14 **MONO INPUTS** (channel 1 to 4). These are the mono inputs. Connection takes place via balanced XLR connectors.
  - 15 **MONO OUTPUTS** (channel 1 to 4). These are the mono outputs, available as balanced XLR connectors.
  - 16 **MONO INPUTS** (channel 5 to 6). These are the mono inputs. Connection takes place via balanced phone jacks.
  - 17 **MONO OUTPUTS** (channel 5 to 6). These are the mono outputs, available as balanced phone jacks.
- ◆ Please take the time to fill in and return the warranty card within 14 days after the date of purchase, so as to benefit from our extended warranty. Or use our online registration option available on the World Wide Web at [behringer.com](http://behringer.com).

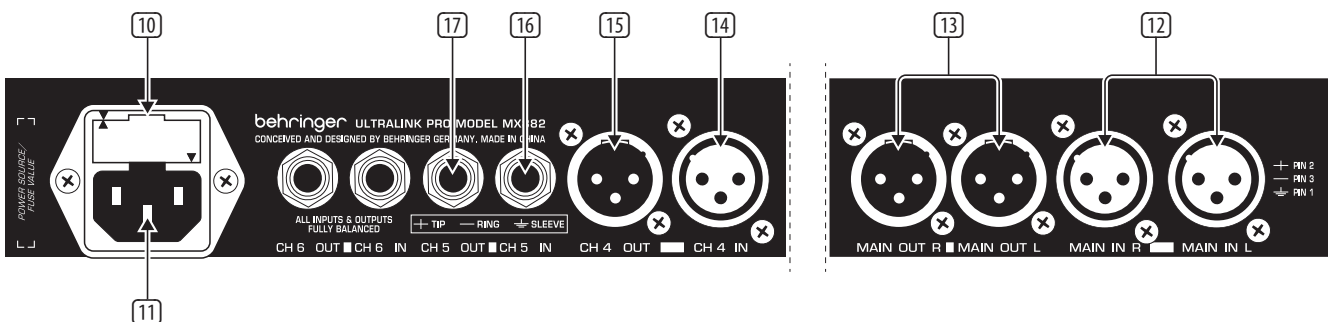


Fig. 4.3: Rear panel elements

## 5. Block Diagram

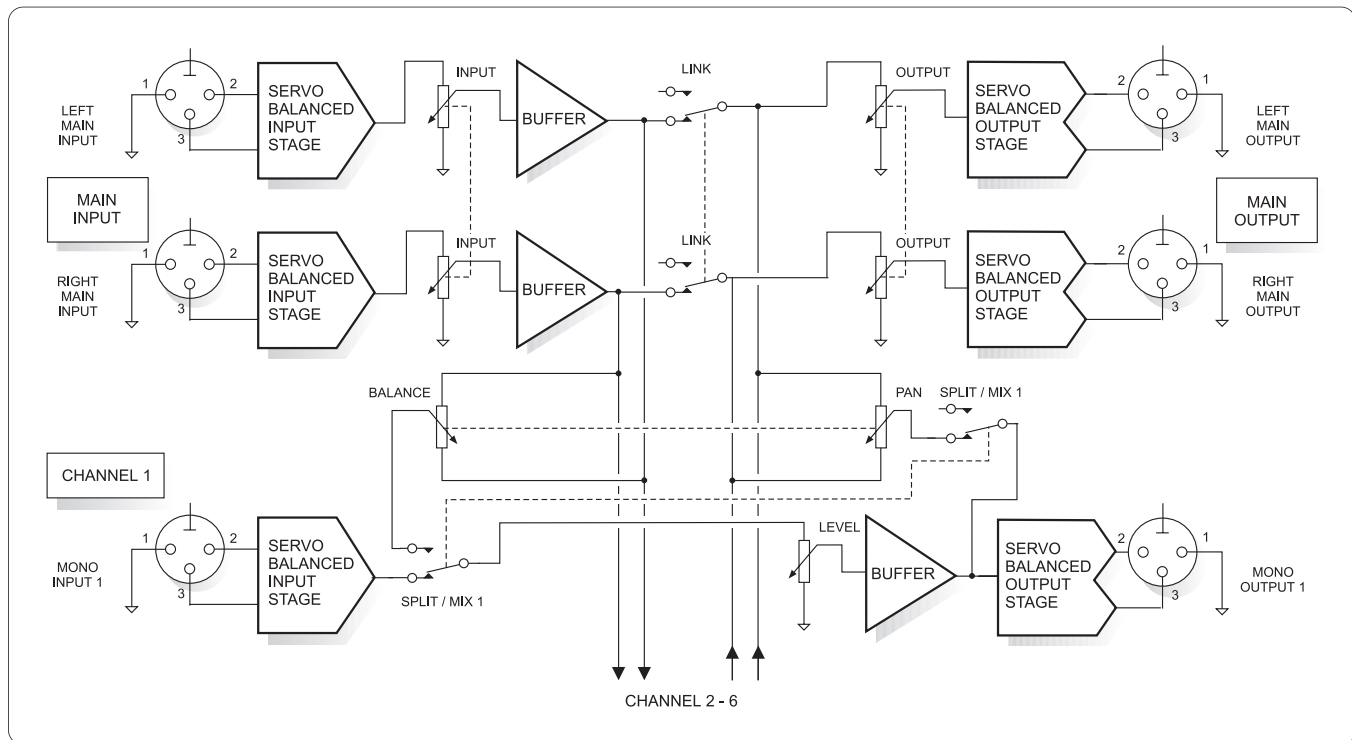


Fig. 5.1: Block diagram of the BEHRINGER ULTRALINK PRO MX882

### MAIN Section

Both main inputs interface via the MAIN INPUT LEVEL control with the input bus as well as with the main outputs. The MAIN OUTPUT LEVEL control determines the output level of the signals which are summed by the second bus (i.e., the output bus) and are subsequently routed to the main outputs.

### SPLIT Mode

In SPLIT mode, the main input signal is sent via the BALANCE control to the output buffer amplifiers of the mono channels, with the LEVEL control determining the output level of the respective channel. The maximum gain is +15 dB.

### MIX Mode

In MIX mode, the input signals of the mono channels are “collected” via the LEVEL and PAN controls and are routed to the output bus. In this mode, the LEVEL control determines the amount of each channel at the output bus, while the PAN control is responsible for the allocation of the input signal to the left and right main outputs.

Additionally, the input signal is routed to the respective mono outputs, i.e., the circuit acts as a matching amplifier. The LEVEL control allows for level compensation of up to +15 dB.

## 6. Applications

### 6.1 Application as a mixer

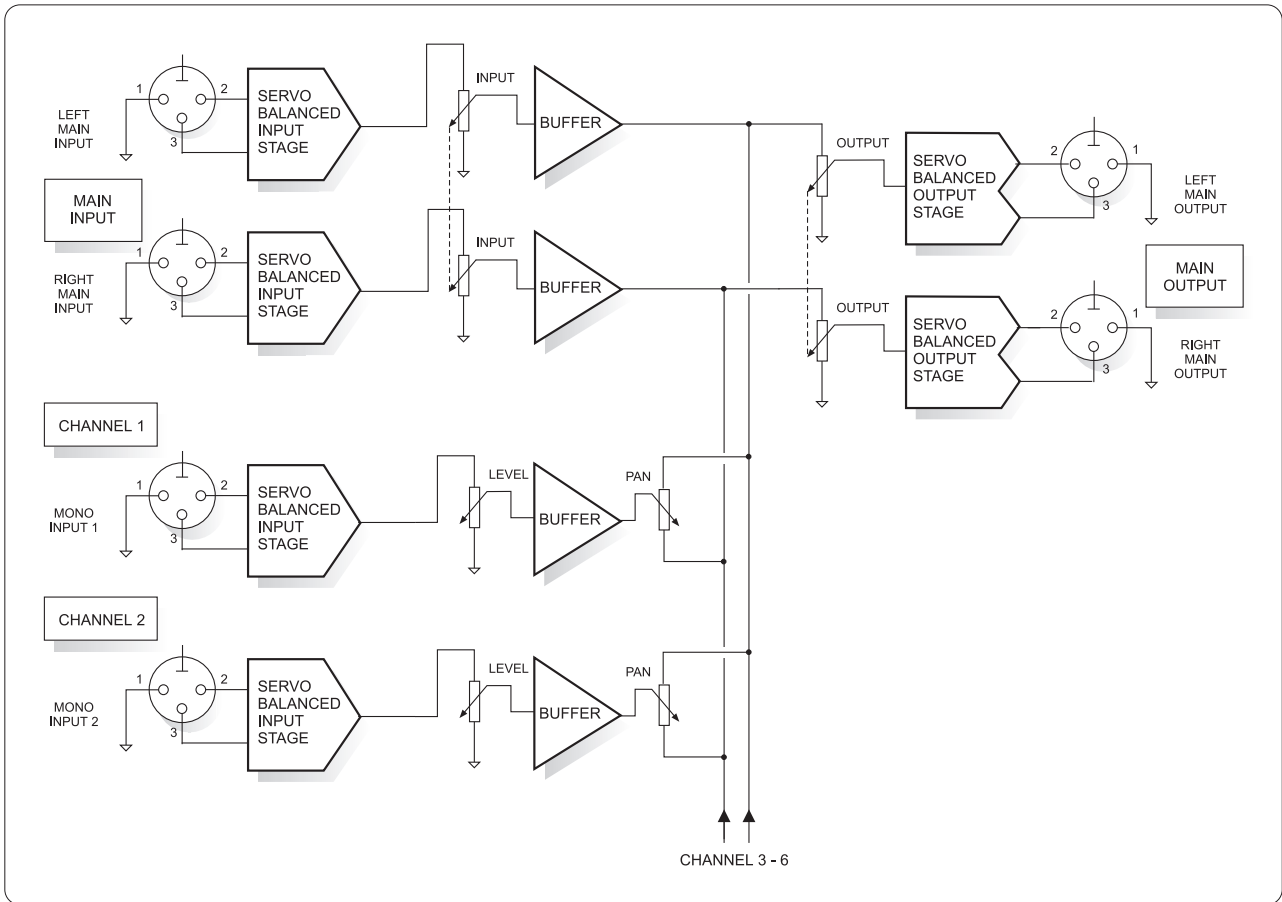


Fig. 6.1: Block diagram of the MIXER function

When the mono channels are operated in MIX mode, a maximum of 8 (6+2) mono input signals can be summed and routed to the main outputs. In this mode, the individual signal sources are connected to the mono inputs on the BEHRINGER ULTRALINK PRO. Each channel has a LEVEL knob to control the amount of its signal relative to others in the main section. Via the corresponding PAN control, each mono input signal can be routed either to the left or right main output. Of course, any intermediate pan settings can be achieved as well. The MAIN OUTPUT LEVEL control determines the overall level of the main output signal.

Since the two main inputs are alternatively routeable to the main outputs, two additional input signals can be added using the main inputs. For this you have to depress the MAIN LINK switch. However, as these inputs do not feature a PAN control, the left main input will always be routed to the left main output; similarly, the right main input can only be sent to the right main output. A total of 8 mono channels can thus be routed to two main outputs.



## 6.2 Application as a splitter

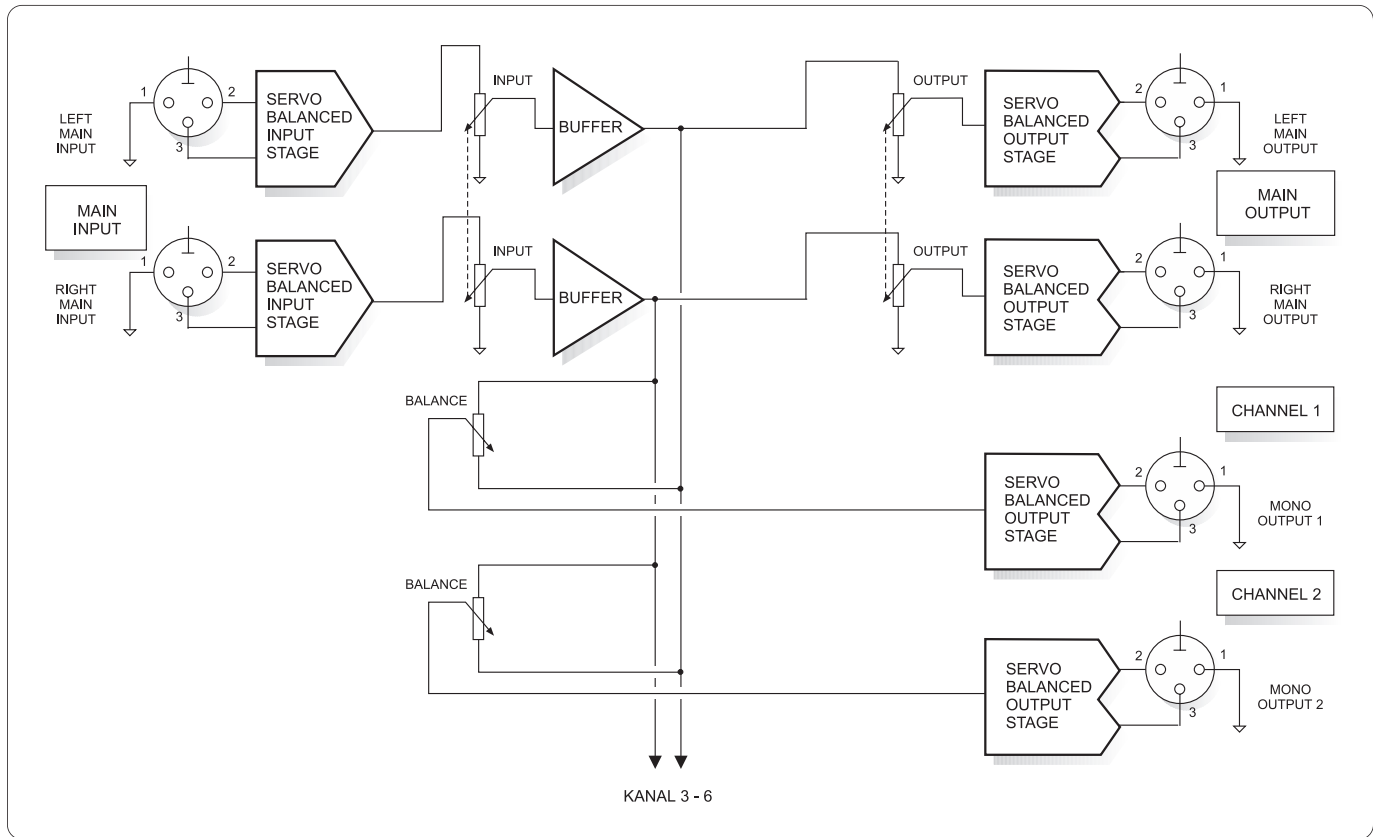


Fig. 6.2: Block diagram of the SPLITTER function

A splitter is a distribution amplifier which allows for splitting a specific input signal to several outputs. This function is of use, e.g., in a large-scale sound reinforcement system where the mixer's output signal needs to be allocated to several power amplifiers. Another field of application is in tape duplication systems, where one master tape machine is to be interfaced with several tape duplication recorders.

In this mode, the output signal from the mixer is applied to the main inputs of the BEHRINGER ULTRALINK PRO. If the SPLIT/MIX switches are set to "SPLIT", the mono outputs of the respective channels provide either the left or the right main signal. Depending on the setting of the BALANCE control, any balance between left and right main signal can be adjusted.

At the same time, the main input signal is also sent to the left or right main output, so that here two additional splitter outputs are available. Please note that these outputs do not feature a balance routing function. The left main input is routed exclusively to the left main output; similarly, the right main input feeds the right main output only.

### 6.2.1 The ULTRALINK PRO as a 4-channel stereo splitter

For this special application, the splitter function configures the unit as a 4-channel stereo splitter. Here, the stereo signal source is connected to the two main inputs. If all mono channels are operated in SPLIT mode, the BALANCE controls of channels 1, 3, and 5 are set to "LEFT", and the BALANCE controls of channels 2, 4, and 6 to "RIGHT": thus, the corresponding stereo output pairs are routed through channels 1+2, 3+4, and 5+6. This kind of application is particularly useful for tape duplication systems.

### 6.3 Application as a matching amplifier

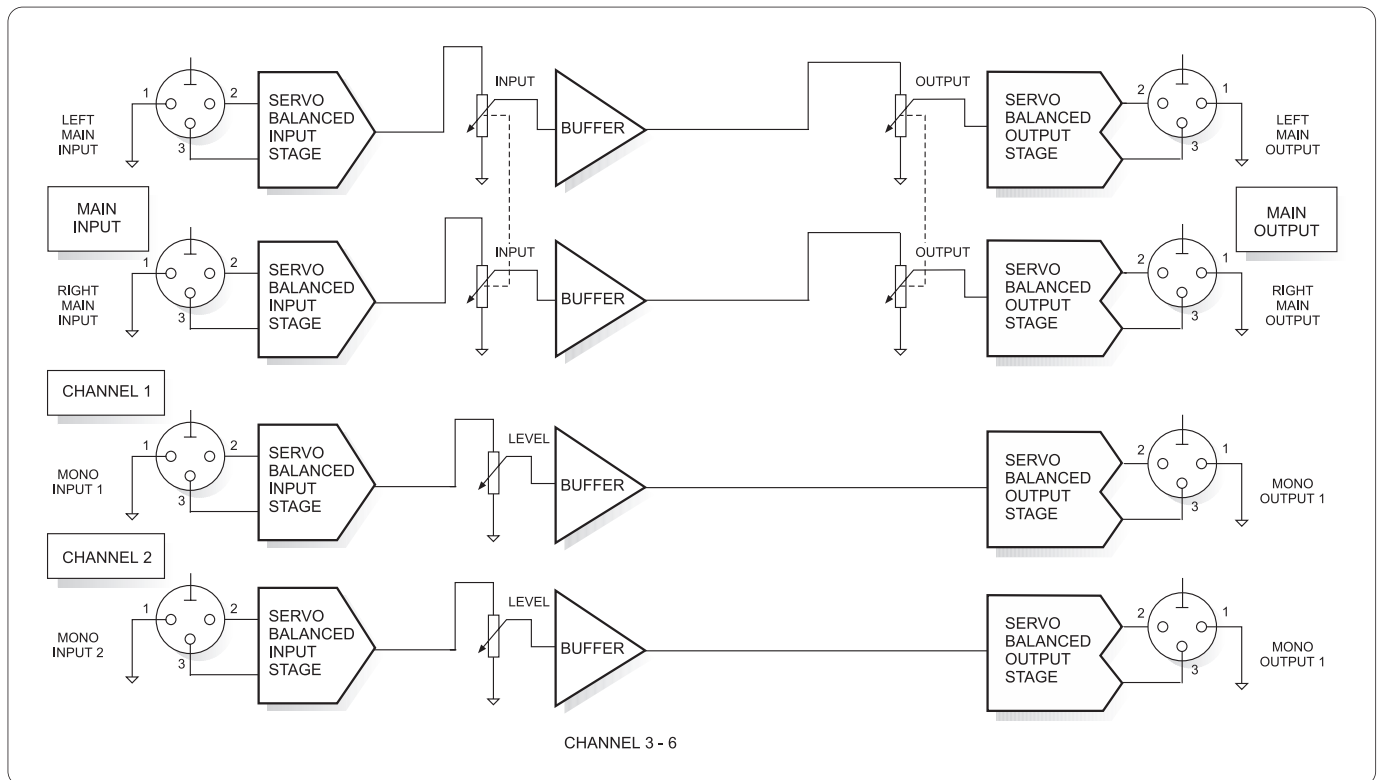


Fig. 6.3: Block diagram of the MATCHING AMPLIFIER function

The BEHRINGER ULTRALINK PRO can also be used as a multiple matching amplifier. The task of a matching amplifier is to convert the level of a signal source into another level. For instance, a cassette recorder with home recording level (-10 dBV) can be raised to studio level (+4 dBu). Of course, this process can also be reversed (level attenuation).

In this application, the ULTRALINK PRO is operated in MIX mode. The output of the signal source is connected to the mono input of the ULTRALINK PRO. The corresponding mono output provides the resulting output signal which can be raised or lowered in level. Each of the six mono channels is equipped with a LEVEL control. The control range is from  $-\infty$  (full attenuation) to a maximum gain of +15 dB.

## 7. Specifications

### Audio Inputs

Connectors	XLR and ¼" TRS
Type	RF filtered, servo-balanced input
Impedance	50 kOhms balanced, 25 kOhms unbalanced
Nominal operating level	-10 dBV to +4 dBu
Max. input level	+21 dBu balanced and unbalanced
CMRR	Typ. 40 dB, > 55 dB @ 1 kHz

### Audio Outputs

Connectors	XLR and ¼" TRS
Type	Electronically servo-balanced output stage
Impedance	60 Ohms balanced, 30 Ohms unbalanced
Max. output level	+22 dBu balanced and unbalanced

### System Specifications

Frequency response	5 Hz to 200 kHz, +/-3 dB
S/N ratio	>95 dBu, unweighted, 22 Hz to 22 kHz
THD	0.002% typ. @ +4 dBu, 1kHz, gain 1

### Function Controls

Main input level	variable
Main output level	variable
Level	variable for each channel
Balance/pan	placing in the stereo field

### Function Switches

Main Link	links the main input signal to the main output
Split/mix	changeover from split to mix mode for each channel

### Indicators

Input level (main)	4-digit LED display: -24/-12/0/+6 dB
Output level (main)	4-digit LED display: -24/-12/0/+6 dB
Input/output level	8-digit LED display: -24/-18/-12/-6/0/+6/+12/+18 dB

### Power Supply

#### Mains Voltages

USA/Canada	120 V~, 60 Hz
U.K./Australia	240 V~, 50 Hz
Europe	230 V~, 50 Hz
General Export Model	100 - 120 V~, 200 - 240 V~, 50 - 60 Hz
Power Consumption	max. 35 Watts
Fuse	100 - 120 V~: T 630 mA H 200 - 240 V~: T 315 mA H
Mains Connection	Standard IEC receptacle

#### Physical/Weight

Dimensions (H x W x D)	approx. 8.5 x 1.75 x 19" approx. 217 x 44.5 x 483 mm
Net Weight	approx. 2.38 kg
Shipping Weight	approx. 3.5 kg

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.



We Hear You