

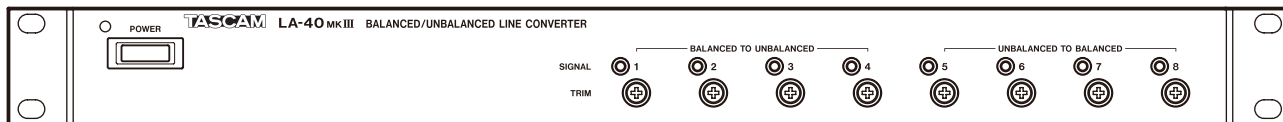
TASCAM[®]

TEAC PROFESSIONAL

LA-40MKIII

Balanced/Unbalanced Line Converter

OWNER'S MANUAL



IMPORTANT SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

For U.S.A.

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION

Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

CE Marking Information

- a) Applicable electromagnetic environment: E4
- b) Peak inrush current: 4.2 A

In North America use only on 120V supply.

For the customers in Europe

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

产品有毒有害物质或元素的名称及含量

机种: LA-40MKIII		有毒有害物质或元素					
	品名	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
1	CHASSIS部份	×	○	○	○	○	○
2	线材部份	○	○	○	○	○	○
3	PCB Assy部份	○	○	○	○	○	○
4	电源部份	○	○	○	○	○	○
5	附属品部份	○	○	○	○	○	○
6	SEAL部份	○	○	○	○	○	○
7	包装部份	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含有量均在 SJ/T11363-2006 标准规定的限量要求以下。
 ×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。
 (针对现在代替技术困难的电子部品及合金中的铅)

IMPORTANT SAFETY INSTRUCTIONS

- 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 Only use 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.
- Do not expose this apparatus to drips or splashes.
 - Do not place any objects filled with liquids, such as vases, on the apparatus.
 - Do not install this apparatus in a confined space such as a book case or similar unit.
 - The apparatus draws nominal non-operating power from the AC outlet with its POWER or STANDBY/ON switch not in the ON position.
 - The apparatus should be located close enough to the AC outlet so that you can easily grasp the power cord plug at any time.
 - The main plug is used as the disconnect device, the disconnect device shall remain readily operable.
 - An apparatus with Class I construction shall be connected to an AC outlet with a protective grounding connection.
 - Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.
 - Excessive sound pressure from earphones and headphones can cause hearing loss.



- 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.

Contents

1–Introduction	5
Overview	5
Supplied accessories	5
Precautions for placement and use	5
Cleaning the unit.....	5
Rack-mounting the unit	5
2–Names and Functions of Parts	6
Front panel	6
Rear panel	6
Bottom panel.....	7
Block diagram	8
Level diagram	9
3–ADA Functions	10
Example 1	10
Example 2	10
Example 3	11
Example 4	11
4–Specifications	12
Inputs and Outputs	12
Performance	12
Other specifications	13
Dimensional drawings.....	13

1-Introduction

Thank you very much for purchasing a TASCAM LA-40MKIII. Please read this Owner's Manual carefully and understand how to operate the device correctly before use. We hope that you will fully use

the features of this unit for many years to come. After reading this manual, please keep it in a convenient place for future reference.

Overview

The LA-40MKIII has 4 internal circuits to convert unbalanced inputs to balanced outputs and 4 internal circuits to convert balanced inputs to unbalanced outputs. In addition, the Audio Distributed Amplifier (ADA) function allows single inputs to be assigned to multiple outputs using the INPUT LINK switches between each channel.

Moreover, the LA-40MKIII also has the following functions.

- **GND LIFT** switches to turn the ground ON and OFF for each balanced connector
- **ALL LIFT** switch that turns the ground ON and OFF

for the entire unit

- Each channel has an **INPUT/OUTPUT LEVEL** switch that allows input and output levels to be switched between -20 dBu and +4 dBu
- Level indicator LEDs that show signal presence
- Semi-fixed **TRIM** controls for fine level adjustment of ± 12 dB
- Rack mount brackets
- Three-prong AC power outlet (Not on EUR model)

Supplied accessories

The following items are included with this product.

- Main unit 1
- Power cord set..... 1
- Rack mount screw set..... 1
- Owner's Manual (this document) 1
- Warranty card..... 1

Contact your TASCAM supplier if any of these items are missing.

Precautions for placement and use

- Use this unit within its operating temperature range of 5–40° C (40–104° F). In addition, please avoid placement in locations that are very dusty or humid because this could cause malfunction.
- Do not give the unit a violent shock. This could cause damage to the internal circuitry or the case.

NOTE

Please be aware that, as a result of improvements or other changes to the product, photographs, illustrations and other depictions in the Owner's Manual may differ from the actual product.

Cleaning the unit

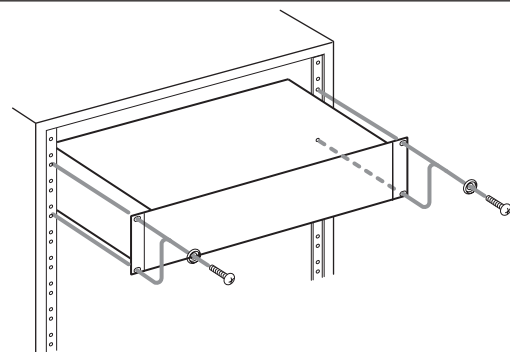
Use a soft cloth to wipe the unit clean. Do not clean it with chemical-based wipes, benzene, thinner, alcohol or similar substances. This could damage the surface or cause the color to change.

Rack-mounting the unit

Use the supplied rack-mounting kit to mount the unit in a standard 19-inch rack, as shown below. Remove the feet of the unit before mounting.

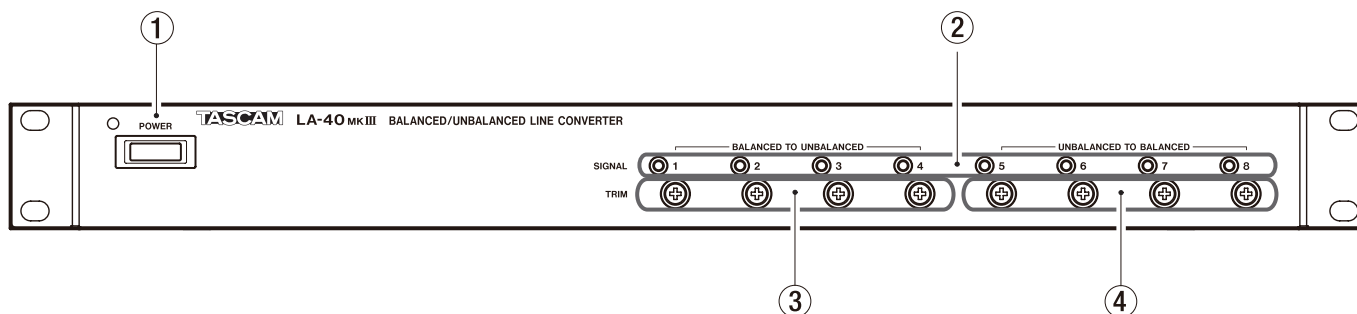
NOTE

- Leave 1U of space above the unit for ventilation.
- Allow at least 10 cm (4 in) at the rear of the unit for ventilation.



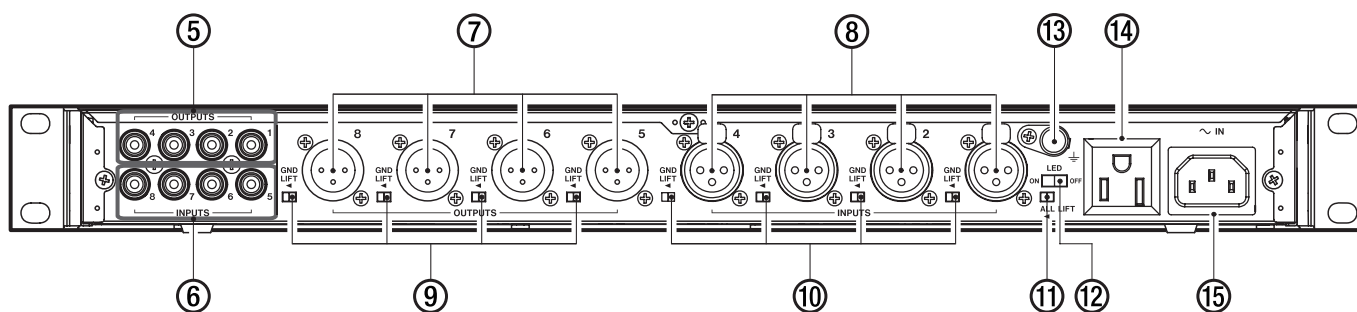
2-Names and Functions of Parts

Front panel



- ① **POWER switch and LED**
Turns power ON and OFF.
- ② **LED indicators**
Indicate the presence of input signals.
- ③ **TRIM (BALANCED TO UNBALANCED) 1-4**
These semi-fixed trim controls allow output signal levels to be adjusted in a range of ± 12 dB.
- ④ **TRIM (UNBALANCED TO BALANCED) 5-8**
These semi-fixed trim controls allow input signal levels to be adjusted in a range of ± 12 dB.

Rear panel



- ⑤ **OUTPUTS 1-4**
RCA pin jack type output connectors with nominal output levels of -10 dBV (0.3 V).
- ⑥ **INPUTS 5-8**
RCA pin jack type input connectors with nominal input levels of -10 dBV (0.3 V).
- ⑦ **OUTPUTS 5-8**
XLR type output connectors with nominal output levels of $+4$ dBu (1.23 V) or -20 dBu (0.0775 V).
- ⑧ **INPUTS 1-4**
XLR type input connectors with nominal input levels of $+4$ dBu (1.23 V) or -20 dBu (0.0775 V).
- ⑨ **GND LIFT switches**
In a studio or other place where multiple units are connected, a ground loop can occur through the wiring, and this loop can cause a hum or other noise. If this occurs, engage **GND LIFT** switches to cut ground loops from the (balanced) **OUTPUTS** ⑦.
- ⑩ **GND LIFT switches**
Engage these **GND LIFT** switches to cut ground loops from the (balanced) **INPUTS** ⑧.
- ⑪ **ALL LIFT switch**
When other equipment is mounted in the same metal rack, for example, a ground loop can occur through the panel or chassis, and this loop can cause a hum or other noise. If this occurs, engage the **ALL LIFT** switch to cut the loop.
- ⑫ **Level indicator LED switch**
If this switch is ON, LEDs light when input signals are present. If this switch is OFF, the LEDs do not light regardless of the presence of input signals.
- ⑬ **GND connector**
When multiple pieces of equipment are connected, use this to make the chassis of each piece of equipment have the same electrical potential.

NOTE

The **GND LIFT** switches do not cut the ground for the **INPUTS** ⑥.

2-Names and Functions of Parts

⑭ Power outlet (see NOTE below)

Use this three-prong outlet, which is not affected by the power switch, to connect AC equipment with a maximum power consumption of 400 W (or 3A). This connector is convenient when using multiple LA-40MKIII units. The specifications are displayed on the top of the unit.

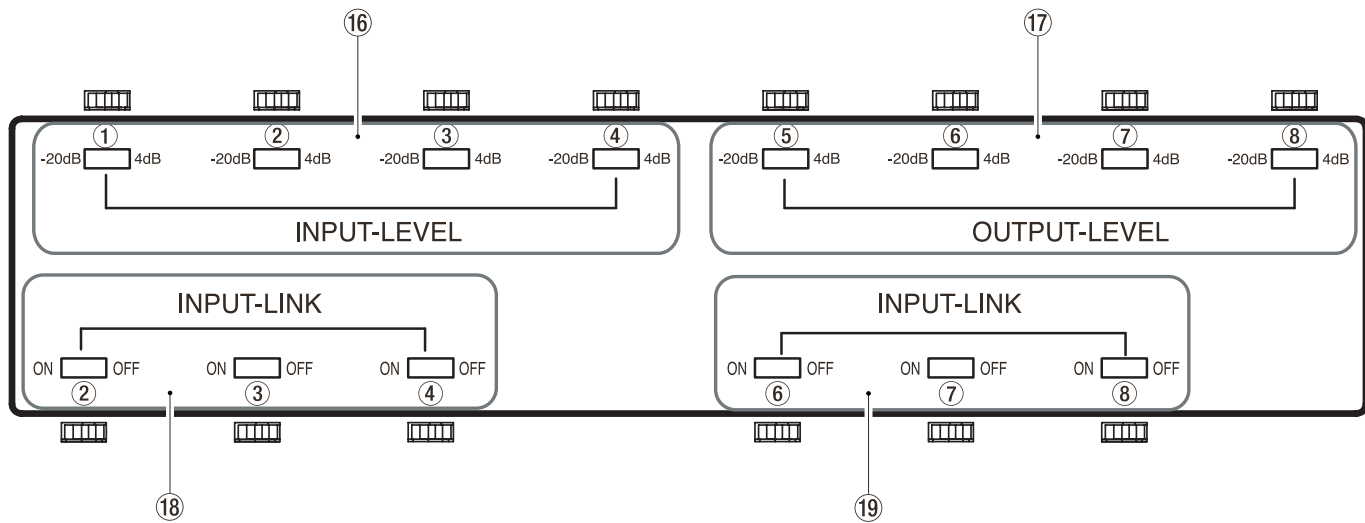
NOTE

The EUR model does not have this power outlet, so the panel here is blank.

⑮ AC IN connector

Connect the included power cord.

Bottom panel



⑯ INPUT LEVEL switches 1-4

Switches that set whether the signal levels input to the **INPUTS** ⑧ are +4 dBu (1.23 V) or -20 dBu (0.0775 V). This setting can be made for each channel independently.

⑰ OUTPUT LEVEL switches 5-8

Switches that set whether the signal levels output from the **OUTPUTS** ⑦ are +4 dBu (1.23 V) or -20 dBu (0.0775 V). This setting can be made for each channel independently.

⑱ INPUT LINK switches 2-4

These switches allow an input signal to be routed to any higher numbered output from 2-4. Two or more inputs can also be assigned to multiple outputs in sequence (see "3-ADA Functions" for examples.)

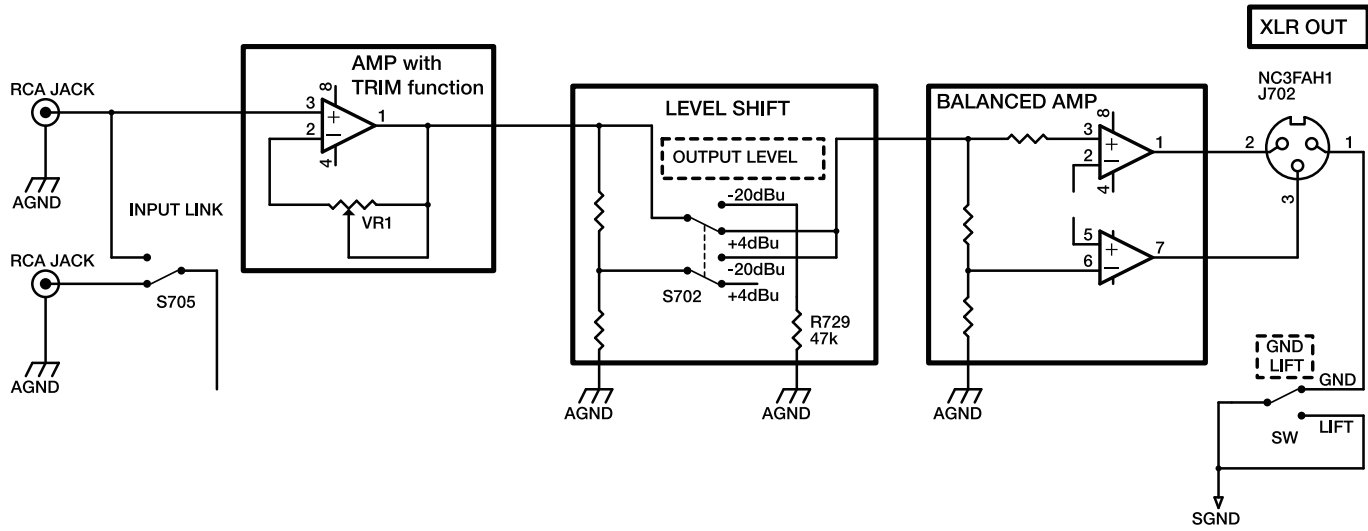
⑲ INPUT LINK switches 6-8

These switches allow an input signal to be routed to any higher numbered output from 6-8. Two or more inputs can also be assigned to multiple outputs in sequence (see "3-ADA Functions" for examples.)

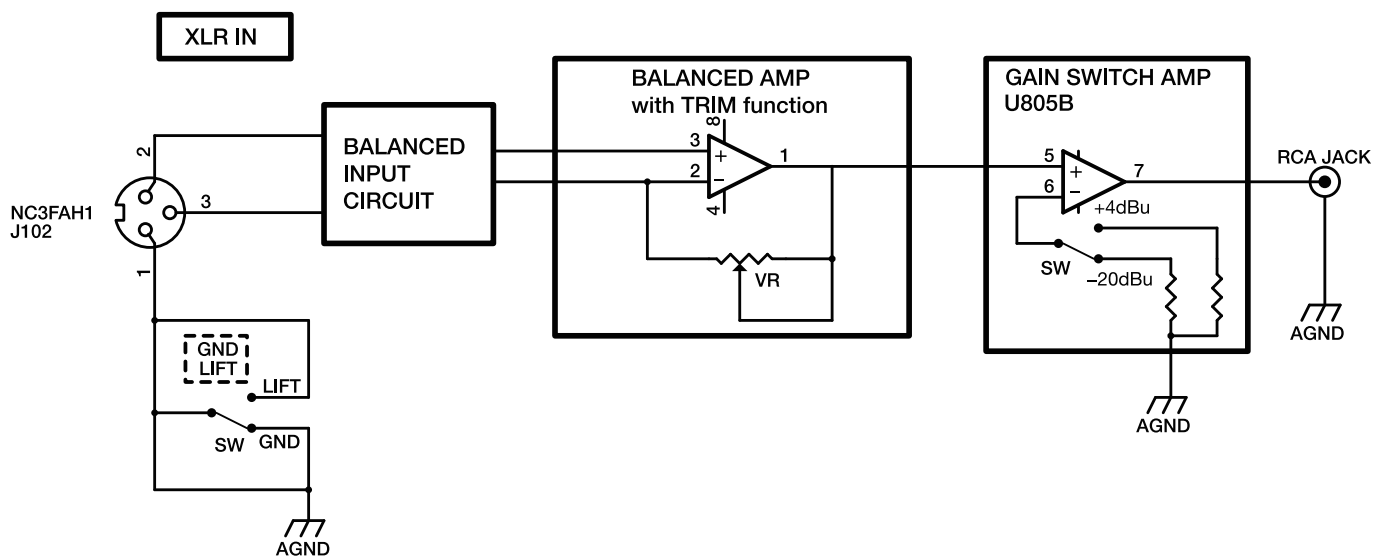
2-Names and Functions of Parts

Block diagram

UNBALANCED TO BALANCED



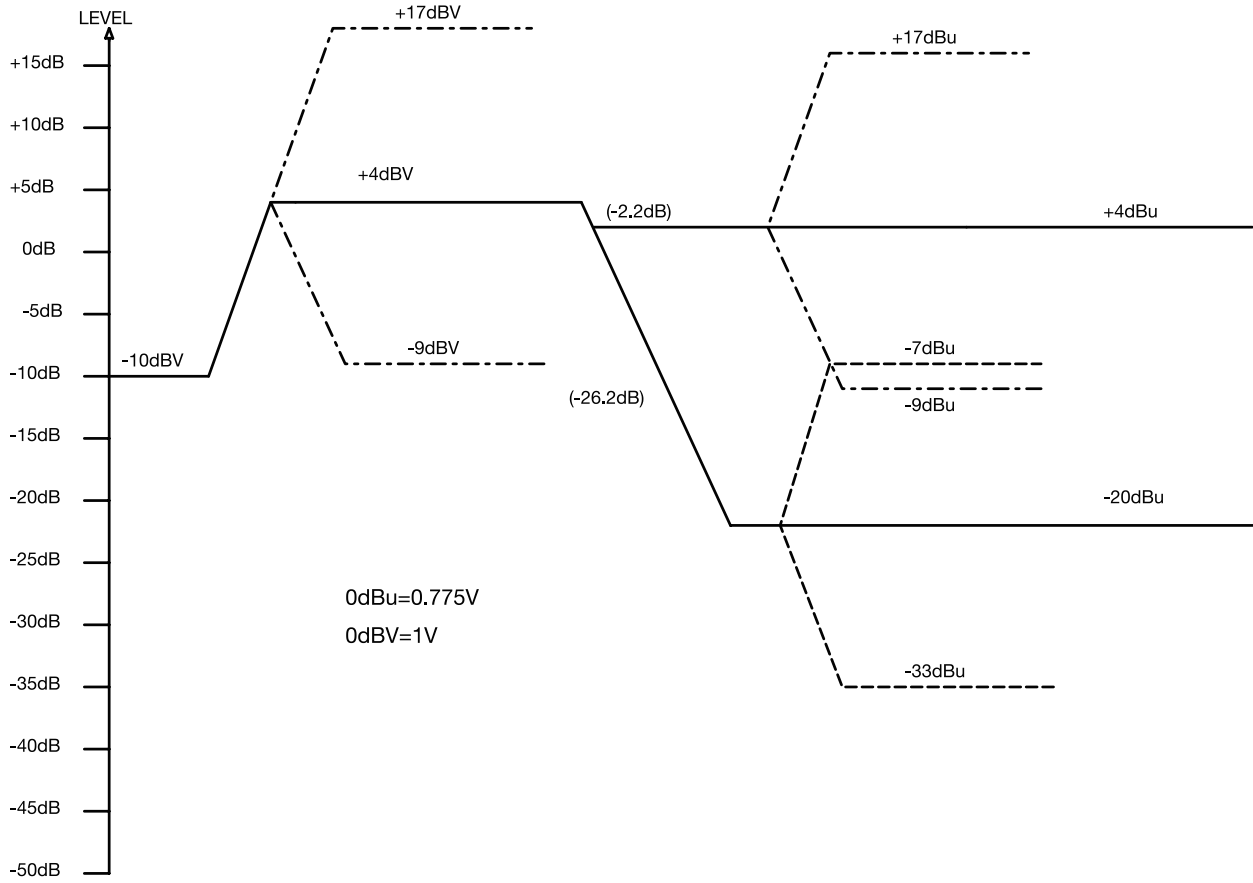
BALANCED TO UNBALANCED



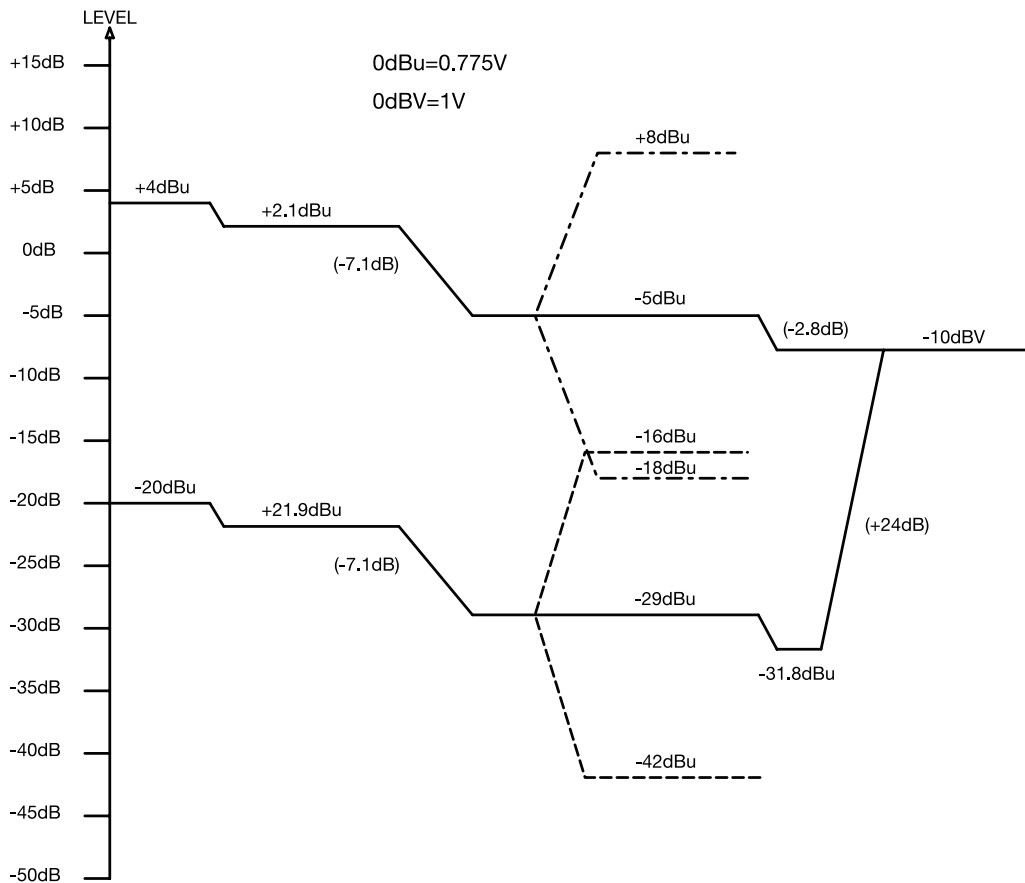
2-Names and Functions of Parts

Level diagram

UNBALANCED TO BALANCED



BALANCED TO UNBALANCED



3-ADA Functions

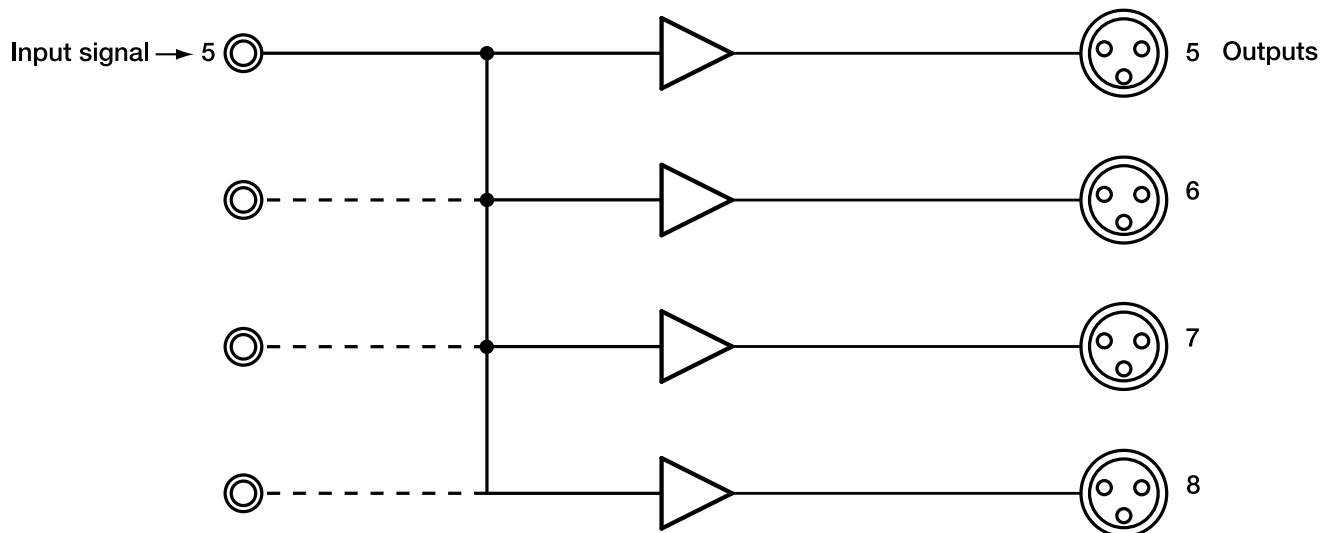
By using the LA-40MKIII INPUT LINK switches ⑱⑲, the signals input from single connectors can be routed to other channels and output as desired.

Example 1

In this example, the signal input through channel 5 is routed to channels 5–8.

- 1 Input a signal through the (unbalanced) INPUT 5 ⑥.
- 2 Turn INPUT LINK switches 6–8 ⑲ ON.

- 3 The signal input through channel 5 is output through (balanced) OUTPUTS 5–8 ⑦.

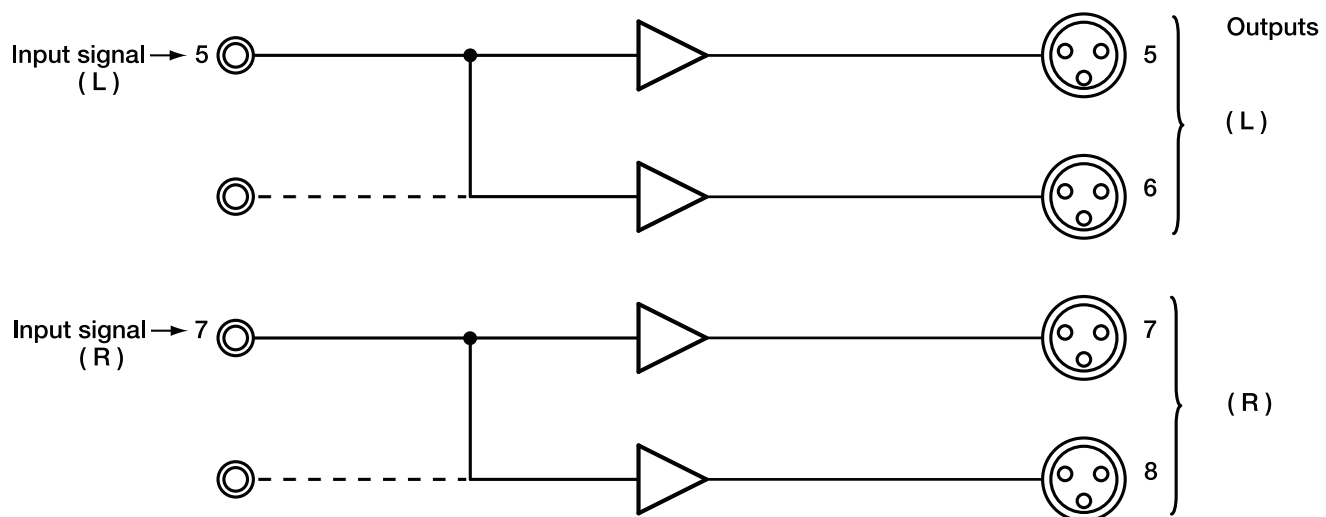


Example 2

In this example, a stereo pair of signals input through channels 5 and 7 are output in parallel to 2 channels each.

- 1 Connect the left stereo signal to the (unbalanced) INPUT 5 ⑥ and the right stereo signal to the (unbalanced) INPUT 7 connector ⑥.

- 2 Turn INPUT LINK switches 6 and 8 ⑲ ON.
- 3 The left stereo signal input to channel 5 is output through (balanced) OUTPUTS 5–6 ⑦, and the right stereo signal input to channel 7 is output through (balanced) OUTPUTS 7–8 ⑦.



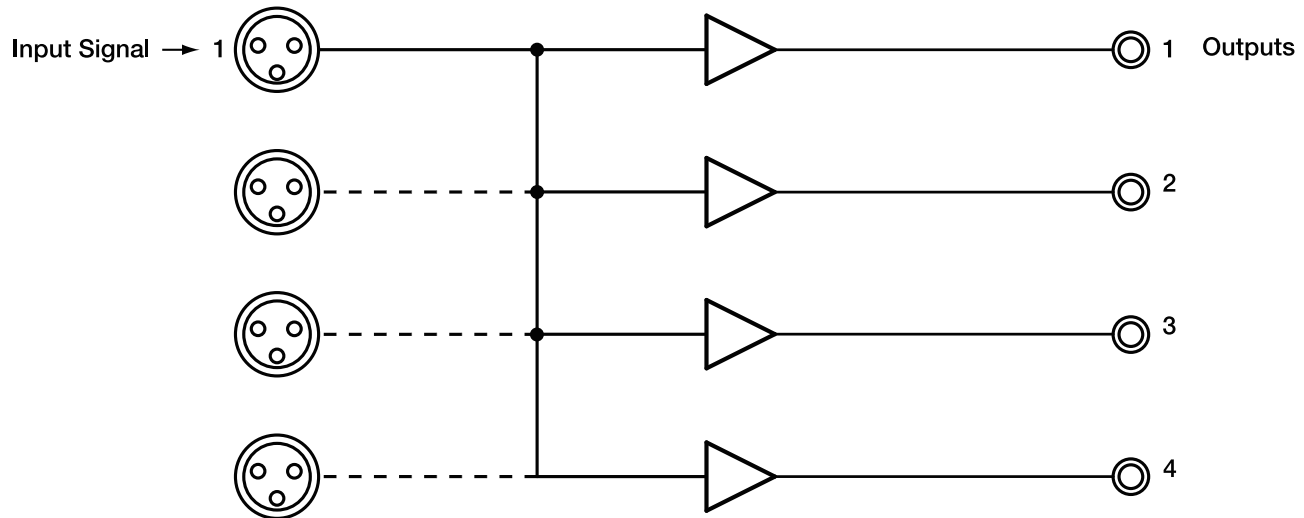
3-ADA Functions

Example 3

In this example, the signal input through channel 1 is routed to channels 1-4.

- 1 Input a signal through the (balanced) INPUT 1 ⑧.
- 2 Turn INPUT LINK switches 2-4 ⑱ ON.

- 3 The signal input through channel 1 is output through (unbalanced) OUTPUTS 1-4 ⑤.

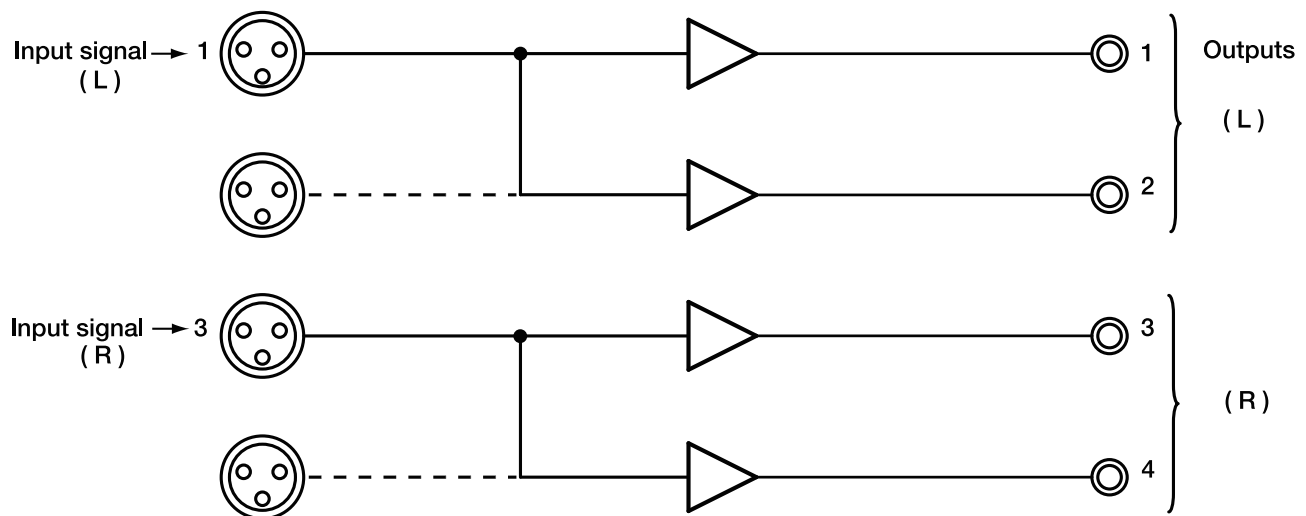


Example 4

In this example, a stereo pair of signals input through channels 1 and 3 are output in parallel to 2 channels each.

- 1 Connect the left stereo signal to the (balanced) INPUT 1 ⑧ and the right stereo signal to the (balanced) INPUT 3 ⑧.
- 2 Turn INPUT LINK switches 2 and 4 ⑱ ON.

- 3 The left stereo signal input to channel 1 is output through (unbalanced) OUTPUTS 1-2 ⑤, and the right stereo signal input to channel 3 is output through (unbalanced) OUTPUTS 3-4 ⑤.



4-Specifications

Inputs and Outputs

UNBALANCED TO BALANCED

Inputs (4 unbalanced RCA pin jacks)	
Input impedance	23 k Ω (when all INPUT LINK switches are OFF) 5.7 k Ω (when all INPUT LINK switches are ON)
Nominal input level	-10 dBV \pm 1 dB
Maximum input level	+4.8 dBV
Indicator detection level (unbalanced input)	-38 dBV or more (OUTPUT LEVEL switch set to +4 dB or -20 dB)
Outputs (4 balanced XLR type connectors)	
	(Pin assignment: 1 = ground, 2 = hot, 3 = cold)
Output impedance	94 Ω
Nominal load impedance	10k Ω
Minimum load impedance	600 Ω
Nominal output level	+4 dBu \pm 1 dB (OUTPUT LEVEL switch set to +4 dB) -20 dBu \pm 1 dB (OUTPUT LEVEL switch set to -20 dB)
Maximum output level	+23 dBu

BALANCED TO UNBALANCED

Inputs (4 balanced XLR type connectors)	
	(Pin assignment: 1 = ground, 2 = hot, 3 = cold)
Input impedance	54 k Ω (when all INPUT LINK switches are OFF) 13.5 k Ω (when all INPUT LINK switches are ON)
Nominal input level	+4 dBu \pm 1 dB (INPUT LEVEL switch set to +4 dB) -20 dBu \pm 1 dB (INPUT LEVEL switch set to -20 dB)
Maximum input level	+30 dBu (INPUT LEVEL switch set to +4 dB) +8 dBu (INPUT LEVEL switch set to -20 dB)
Indicator detection level (balanced input)	-24 dBu or more (INPUT LEVEL switch set to +4 dB) -48 dBu or more (INPUT LEVEL switch set to -20 dB)
Outputs (4 unbalanced RCA pin jacks)	
Output impedance	200 Ω
Nominal load impedance	10 k Ω
Minimum load impedance	1 k Ω
Nominal output level	-10 dBV \pm 1 dB
Maximum output level	+18 dBV

Performance

TRIM range	\pm 12 dB
S/N ratio (nominal input and output level)	A-weight filter + 20 kHz LPF: 90 dB (OUTPUT LEVEL switch set to +4 dB) 20 Hz HPF + 20 kHz LPF: 87 dB (OUTPUT LEVEL switch set to +4 dB)
Total harmonic distortion (1 kHz, nominal input and output level)	0.007% or less
Frequency response (nominal input and output level)	20 Hz-100 kHz \pm 3 dB
Crosstalk	-90 dB or more (1kHz, nominal input and output level, terminated with a 600 Ω load)

4-Specifications

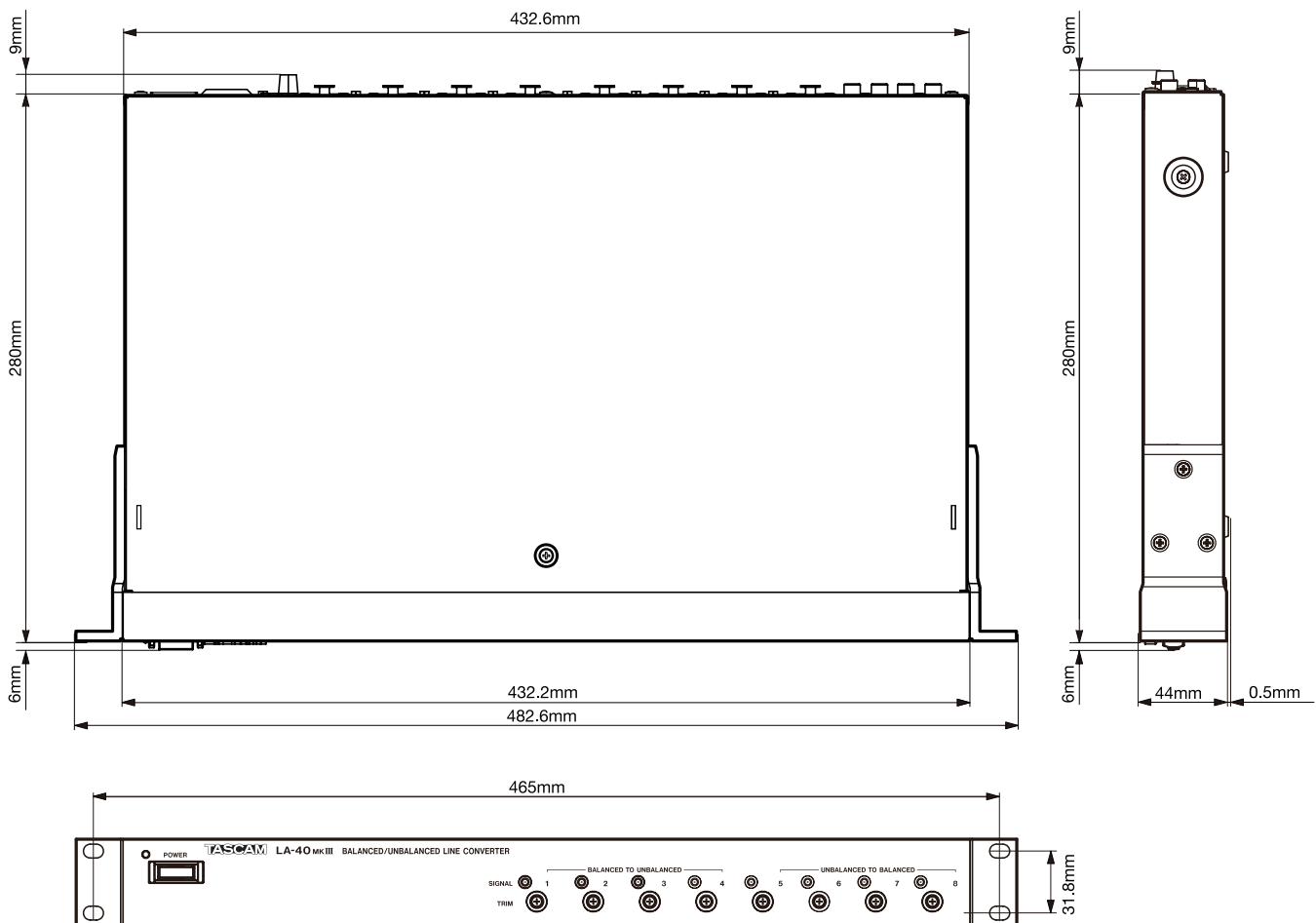
Other specifications

Power:	100-240 V~, 50/60 Hz
Power consumption:	6 W
Weight:	3 kg (main unit)
External dimensions (WxHxD):	482 x 44 x 280 mm

NOTE

- In order to improve these units, their specifications and external appearance may be changed without notification.
- Please be aware that, as a result of product improvements, illustrations and other depictions in the Owner's Manual may differ in part from the actual product.

Dimensional drawings



TASCAM LA-40MKIII 13

Memo

Memo

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TEAC PROFESSIONAL
LA-40MKIII

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