

OWNER'S MANUAL

L-6 6-CHANNEL MIXING CONSOLE WITH DIGITAL EFFECTS



www.altoproaudio.com Version 2.0 SEPTEMBER 2007 **English**

IMPORTANT SAFETY INSTRUCTION



TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT. THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.

This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

- Protective Ground Terminal
- \sim AC mains (Alternating Current)
- 4 Hazardous Live Terminal
- ON: Denotes the product is turned on.
- OFF: Denotes the product is turned off.

CAUTION

Describes precautions that should be observed to prevent damage to the product.

- 1. Read this Manual carefully before operation.
- 2. Keep this Manual in a safe place.
- **3.** Be aware of all warnings reported with this symbol.



- Keep this Equipment away from water and moisture.
- 5. Clean it only with dry cloth. Do not use solvent or other chemicals.
- 6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufacturer's instructions.
- 7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electrician. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do not place heavy objects on the power cord. This could cause electric shock or fire.
- **8.** Unplug this equipment when unused for long periods of time or during a storm.
- Refer all service to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.
- 10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

WARNING

To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.



Dispose of this product should not be placed in municipal waste and should be separate collection.

11. Move this Equipment only with a cart,

stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment. When a cart is used, use caution when moving the cart / equipment combination to avoid possible injury from tip-over.



 Permanent hearing loss may be caused by exposure to \ extremely high noise levels. The US. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level.

These are shown in the following chart:

HOURS X DAY SPL EXAMPLE

8	90	Small gig
6	92	train
4	95	Subway train
3	97	High level desktop monitors
2	100	Classic music concert
1,5	102	
1	105	
0,5	110	
0.25 or less	115	Rock concert

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

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

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

IN THIS MANUAL:

1. INTRODUCTION	1
2. FEATURES	1
3. QUICK START	4
4. CONTROL ELEMENTS	5
5. INSTALLATION & CONNECTION	11
6. APPENDIX	13
7. PRESET LIST	13
8. BLOCK DIAGRAM	14
9. TECHNICAL SPECIFICATIONS	15
10. WARRANTY	16

1. INTRODUCTION

Thank you for purchasing the \bot LTO L-6 6-channel mixing console with 24-bit digital multi-effect. It is just one of the many Alto products that a talented, multinational Team of Audio Engineers and Musicians have developed with their great passion for music. Your L-6 is a remarkable compact mixing desk that does not find many equals in the market today. With 2 microphone and 2 stereo Line-level inputs for small live performances, small studio recording and general PA applications, your L-6 also includes a 24-Bit digital multi-effect with 16 Factory Presets and separate level for digital reverb. There is a three bands EQ on all input channels and separate Main Mix and Control Room outputs for Multizone operation with different volume settings. Use it for small GIGs and RECORDING. Your L-6 also is a flexible tool for your Multi-media presentations.

Enjoy your L-6 and make sure to read this Manual carefully before operation!

2. FEATURES

- ▲ 2 MIC input channels with gold plated XLR and balanced LINE input
- ▲ 2 stereo input channels with balanced TRS jacks
- ▲ Ultra-low noise discrete MIC pre-amps with +48V Phantom power
- ▲ Extremely high headroom offering extra dynamic range
- ▲ Balanced inputs for optimal signal integrity
- ▲ Warm, natural 3-band EQ on each channel
- ▲ Built-in 24 bits digital effects processor
- ▲ Peak LED on each channel
- ▲ AUX send for internal/external effects or stage monitoring
- ▲ Main output, Control room and headphone outputs
- ▲ 2-Track inputs assignable to main mix, control room/headphone outputs
- ▲ Highly accurate 6-segment bar graph meters







3. QUICK START

This is the fastest way to get something out from your L-6, if you have a keyboard and a microphone.

- a. With the Main switch in OFF position, connect the supplied AC Adapter to your L-6 first and then into the AC outlet, making sure that the available voltage is the same with your L-6.
- b. Before turning on the L-6, you shall connect it to a power amplifier and speakers. Turning off the mixer BEFORE the power amplifier.
- c. Plug the microphone into Channel 1 MIC IN.
- d. Turn down AUX and LEVEL controls on the input channel.
- e. Put the EQ controls on center position.
- f. Turn on your L-6.
- g. With LEVEL control on "O" position, sing or speak in to the microphone with normal volume and adjust the TRIM control so that the PEAK LED only blink occasionally.
- h. If you like, you can adjust the equalization at this stage.
- i. Turn up MAIN MIX LEVEL until you get a comfortable volume.
- j. Connect your stereo keyboard into CH 3/4 and repeat the same sequence.

Here you are. It is your first mix with your L-6.

Once you have finished your working session you shall turn the mixer off AFTER the power amplifier. Before disconnecting the AC Adapter always turn-off your L-6. Do not use solvents to clean your L-6. A dry and clean cloth will be OK.





MIC INPUT (1 to 2)

Your L-6 is equipped with 2 low-noise microphone preamplifiers with optional phantom power, 60 dB of Gain and 115 dB of S/N ratio. You can connect almost any type of microphone. Dynamic microphones do not need phantom power. Use phantom power only with condenser microphones but make sure that the phantom power button is disengaged before connecting the microphone. Phantom power will not damage your dynamic microphones but it may damage tube or ribbon microphones so make sure to read the microphone instructions manual before engaging phantom power. Use switch (24) to activate/deactivate phantom power. These two channels are also equipped with 1/4" TRS balanced/ unbalanced LINE-IN plugs to connect line-level instruments such as keyboards, drum machines and effect devices.

NOTE: Never try to connect a line-level signal to the XLR MIC input when the phantom power is engaged or you may seriously damage your equipment.

STEREO LINE INPUTS (3 to 6)

These are channels 3/4, and 5/6. They are organised in stereo pair and provided with 1/4" TRS phone sockets. If you connect only the left jack, the input will operate in mono mode, that is the mono signal will appear on both input channels. You can use these inputs with a stereo keyboard, drum machine, etc.

3 TRIM

This control is provided with 2 different indication rings: one is for the MIC and the other for the LINE input. When you use a Microphone, you shall read the MIC ring (0~60 dB); when you use a line level instrument, you shall read the LINE ring (+15~-45 dB). For optimum operation, you shall set this control in a way that the PEAK LED will light up only occasionally in order to avoid distortion on the input channel.





4 AUX SEND

This 1/4" phone socket is used to send out the signal from the AUX bus of the input channels into external devices such as effect units and/or stage monitors. The AUX SEND is wired post-fader to control the signal of the internal multi-effects unit. You can also connect an external effect unit. In such case, the internal effect unit will be automatically disconnected. If you want to wire the AUX circuit as pre-fader, read Chapter 6. of this Manual. In the pre-fader mode, the AUX bus can send the signal to a stage monitor.

STEREO AUX RETURNS

You can use these stereo 1/4" phone sockets to return the stereo signal of an effect unit to the Main Mix. Alternatively you can use them as an extra auxiliary input and using the AUX RETURN level control as volume control. The signal will be sent directly to MAIN MIX control.

6 CTRL ROOM OUTPUT

These 1/4" phone sockets will be used to send the signal to a pair of powered Studio Monitor speakers or to a second set of PA.

7 MAIN MIX OUTPUTS

This stereo output is controlled by the Main Mix Level on the Master section and will send the audio signal to an amplifier or to a pair of active speakers. The output level can be varied from $-\infty$ to +15 dB.

8 TAPE IN

Use the Tape input to connect a CD Player, Tape, DAT, iPOD or any other linelevel source. You can send this signal either to CONTROL ROOM OUTPUT and/ or to the MAIN MIX OUTPUT using the relative 2TK TO select buttons.

9 TAPE OUT

These RCA jacks will route the main mix signal into a tape or DAT recorder.

10 PHONES

This socket will be used to send the signal to a pair of headphones.

CHANNEL STRIP

11 LEVEL

This knob controls the channel's level from - ∞ to +15 dB.

12 PEAK LED

This red LED will let you know about the status of the signals processed into your L-6. Connect a microphone or an instrument to your L-6 and sing/play at normal volume. Set the level control of that channel so that the PEAK LED lights-up only occasionally. If this LED is always on, you are experiencing a lot of distortion and you should turn the TRIM control down or reduce the EQ boosting. If this led never lights up, turn the TRIM control up again.



13 PAN/BAL

This is the PANORAMA control, or balance control. You can adjust the stereo image of the signal via this control. Keep this control in center position and your signal will be positioned in the middle of stage. Turn this control fully counter clockwise and the signal will be present only on the left speaker and vice-versa. Of course a large number of intermediate positions is available.

14 AUX

This control is used to adjust the level of the signal sent to AUX SENDS output (if nothing is connected to AUX SEND socket, the signal will be sent to the resident digital multi-effect), and such adjustment doesn't affect the main mix output signal at all. AUX is configured as POST fader, however, it can also be configured as PRE fader through internal modification. (For more detail, please refer to chapter 6)



3-BAND EQ

You have three EQ control for each mono and stereo input channel each providing +/-15 dB of boost and cut (MID is +/-12 dB). The signal will be unaffected when the controls are on center position. You may use an external equalizer to make up a mix properly but a master equalizer will not have effect on a single channel and you may overload the signal easily. Individual EQ will give you a much better control on single tracks.

15 HI

If you turn this control up, you will boost all the frequencies above 12 kHz (shelving filter). You will add transparency to vocals and guitar and also make cymbals crispier. Turn the control down to cut all frequencies above 12 kHz. In such way, you can reduce sibilances of human voice or reduce the hiss of a Tape player.

16 MID

This is a peaking filter and it will boost/cuts frequencies with their center at 2.5 kHz. This control will affect especially upper male and lower female vocal ranges and also the harmonics of most musical instruments.



17 LOW

If you turn this control up, you will boost all frequencies below 80 Hz. You will give more punch to bass drums and bass guitar; and you will make the male vocalist more "macho". Turn it down and you will cut all the frequencies below 80 Hz. In this way you can avoid low-frequency vibrations and resonance thus preserving the life of your woofers.

MASTER SECTION

18 MAIN MIX LEVEL

This knob controls the level of the signal sent to MAIN OUTPUTS and TAPE OUT. Also AUX RETURNS signals will be sent to this control.

19 PHONES/CONTROL ROOM LEVEL

This knob controls the signal sent to CONTROL ROOM OUTPUT & PHONES OUTPUT.



20 OUTPUT LEVEL METERS

These consist of two column of 6 LEDs each ranging from -30 dB to +18 dB (CLIP). The 0 LED corresponds to a level output of 0 dBu. The CLIP LEDs come to life when the output reaches +18 dBu. Set the MAIN MIX level control so that the CLIP LEDs only flashes occasionally. In general, you get a good mix level when the Meter LEDs operate in the range 0 to +10. If you exceed +10, you will get distortion. If even -30 LEDs are sleeping your signal-to-noise ratio will suffer.



21 AUX RETURNS (DFX)

This knob controls the level of effects received from the STEREO AUX RETURN sockets. Such signals will be routed directly into the MAIN MIX. If you have no need to connect an external multi-effect, you can use the AUX RETURN inputs as additional instrument inputs and use this control as Volume control.

22 2TK TO CTRL ROOM

If you push down the 2TK TO CONTROL ROOM button, the 2 TRACK IN signal will be routed into the Control Room output and the level will be adjusted by the Control Room knob nearby the Main MIX LEVEL knob.

23 2TK TO MIX

If you push down the 2TK TO MIX button, the 2 TRACK IN signal will be routed into the MAIN output and will be adjusted by the MAIN MIX LEVEL knob.

24 PHANTOM PWR Switch

This button will apply +48 Volt Phantom Power only to the 2 XLR MIC input sockets. When condenser microphones are not used, please make sure that the Phantom Power is disengaged.

25 PHANTOM LED

This LED indicates when the PHANTOM POWER is engaged.

26 POWER LED

This LED indicates when your L-6 is switched-on.

24-BIT DIGITAL MULTIEFFECT

DSP SECTION

Your L-6 includes a quite unique and innovative digital multi-effects with 24-bit resolution and high dynamic range. Unlike other multi-effects where all the presets are available in a sequence and vice a single control, L-6 multi-effect unit is organized with a 16 presets control and relative Level control for vibrato and modulation controls such as chorus and flanger. You can add reverb at any time with a separate Level control or you can just use the reverb keeping the FX level control turned down.

27 PRESETS

Adjust this control to select the desired effect. There are a total of 16 Factory presets available including pitch-variations, Vibratos, Flanger, Chorus, etc.



9



28 FX LEVEL

This control is used to adjust the output level of FX signal, which can be varied from 0 dB to 10 dB.

29 REVERB LEVEL

This control is used to adjust the output level of the REVERB signal, which can be varied from 0 dB to 10 dB. The digital reverb is independent from the other 16 Factory Presets so you can add reverb in any amount over chorus, flanger, etc or just use reverb turning down the FX LEVEL control.

30 PEAK LED

This LED lights up when the input signal is too strong.

REAR PANEL



31 POWER SWITCH

This switch is used to turn the main power ON and OFF.

32 AC INPUT

This connector is used to connect the supplied AC Adapter.

5. INSTALLATION AND CONNECTION



Ok, you have got to this point and you are now in the position to successfully operate your L-6. However, we advise you to read carefully the following section to be the real master of your own mix. Not paying attention enough to the input signal level, to the routing of the signal and the assignment of the signal will result in unwanted distortion, a corrupted signal or no sound at all. So you should follow this procedure for every single channel:

- 1. Turn down all Input and Output Gain Controls.
- 2. Connect phantom powered microphones before switching on the +48 Volt phantom power switch.
- 3. Set the output level of your L-6 or the connected power amplifier at no more than 75%.
- 4. Now, set the CONTROL ROOM/PHONE level at no more than 50%.
- 5. Position HI, MID and LOW EQ controls on middle position.
- 6. Position panoramic (PAN/BAL) control on center position.
- 7. With a pair of headphones or studio monitor speakers connected apply a Line Level input signal so that the PEAK LED does not light up.
- 8. While speaking into the microphone (or playing the instrument), adjust the channel level control so that the PEAK LED will blink occasionally, in this way you will maintain good headroom and ideal dynamic range.
- 9. Now repeat the same sequence for all input channels. The Main LED Meter could move up into the red section. In this case, you can adjust the overall output level through the MAIN MIX control.

Audio Connections

You can connect unbalanced equipment to balanced inputs and outputs. Simply follow these schematics.







6. APPENDIX

PREFADER AND POSTFADER CONSIDERATIONS

Interesting consideration! Where are the faders in your L-6?? Actually a fader is usually regarded as a slider, that is a linear potentiometer. All potentiometers in your L-6 are of rotary type but we keep the pre-fader/post-fader description that is quite industry standard and easily understandable. When your L-6 leaves the Alto Factory, the AUX bus of all input channels is wired post-fader. In this way, the Aux bus can be used for the internal or external multi-effect. If you want to use the L-6 Aux bus for powered stage monitors, you should disconnect the above-indicated POST route track and solder the PRE route track like in this drawing. In this way, the signal is routed to the AUX SENDS output before the Channel Level control.





7. PRESET LIST

NO.	Preset	Description	Parameter
1	VibraFlange	Slight pitch variation with Flanger effect.	Mode Level: 90%
2	Funky	Large pitch variable with heavy Flanger effect.	Mode Level: 68%
З	Rockabilly	Simulate a stage space with slight Flanger effect.	Rate: 0.1 Hz
4	Big stage	Simulate a stage space of the sound.	Decay time: 5.4s
5	Vibrato 4	Slight variation of pitch resulting from the free oscillation of the vocal cords.	Rate: 4.8 Hz
6	Vibrato 3	Slight variation of pitch resulting from the free oscillation of the vocal cords.	Rate: 3.8 Hz
7	Vibrato 2	Slight variation of pitch resulting from the free oscillation of the vocal cords.	Rate: 3.0 Hz
8	Vibrato 1	Slight variation of pitch resulting from the free oscillation of the vocal cords.	Rate: 2.0 Hz
9	Flanger 4	Simulate to play with another person carrying out same the notes on the same instrument.	Rate: 4.9 Hz
10	Flanger 3	Simulate to play with another person carrying out same the notes on the same instrument.	Rate: 3.21 Hz
11	Flanger 2	Simulate to play with another person carrying out same the notes on the same instrument.	Rate: 0.9 Hz
12	Flanger 1	Simulate to play with another person carrying out same the notes on the same instrument.	Rate: 0.56 Hz
13	CHORUS 4	Recreate the illusion of more than one instrument from a single instrument sound	Rate: 3.6 Hz
14	CHORUS 3	Recreate the illusion of more than one instrument from a single instrument sound	Rate: 1.79 Hz
15	CHORUS 2	Recreate the illusion of more than one instrument from a single instrument sound	Rate: 0.82 Hz
16	CHORUS 1	Recreate the illusion of more than one instrument from a single instrument sound	Rate: 0.39 Hz

8. BLOCK DIAGRAM



14

9. TECHNICAL SPECIFICATION

Mono input channels	
Microphone input	electronically balanced, discrete input configuration
Frequency response	10 Hz to 55 kHz. +/- 3 dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz
Gain range	O dB to 60 dB (MIC)
SNR (Signal to Noise Ratio)	115 dB
Line input	electronically balanced
Frequency response	10 Hz to 55 kHz, $\pm/-3$ dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz
Sensitivity range	+15 dBu to +/-45 dBu
Stereo input channels	
Line input	Balanced
Frequency response	10 Hz to 55 kHz, +/- 3 dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz
Impedances	
Microphone input	1.4 kOhm
All other inputs	10 kOhm or greater
Tape out	1 kOhm
All other output Equalization	120 Ohm
•	
Hi shelving Mid bell	+/ - 15 dB @12 kHz
	+/ - 15 dB @ 2.5 kHz
Low shelving DSP Section	+/ - 15 dB @ 80 Hz
	0415
A/D and D/A converters	24-bit
DSP resolution	24-bit
Type of effects	Vibraflange, Funky, Rockabilly, Bigstage, Vibrato1-4,
Duranta	Flanger1-4, Chorus1-4
Presets	
Controls	16-position PRESET Selector, FX level,
	REVERB level, CLIP LED
Main Mix Section	
Noise (bus noise)	Fader O dB, channels muted: - 100 dBr (ref.:+4 dBu)
	Fader O dB, all input channels assigned and set to
	UNITY gain: - 90 dBr (ref.:+4 dBu)
Max output	+22 dBu unbalanced, 1/4" jacks
AUX Returns gain range	-∞ to +15 dB
AUX Sends max out	+22 dBu
Power Supply (AC/DC Adaptor)	
Main voltage	USA / Canada 100-120 V~, 60 Hz
Fuse	Europe 210-230 V~, 50 Hz
	U.K. / Australia 240 V~, 50 Hz
Power Consumption	U.K. / Australia 240 V~, 50 Hz 15 Watts
Physical	15 Watts
Physical Dimension(WxDxH)	15 Watts 185 mm × 230 mm × 35/55 mm
Physical	15 Watts

10. WARRANTY

1. WARRANTY REGISTRATION CARD

To obtain Warranty Service, the buyer should first fill out and return the enclosed Warranty Registration Card within 10 days of the Purchase Date. All the information presented in this Warranty Registration Card gives the manufacturer a better understanding of the sales status, so as to provide a more effective and efficient after-sales warranty service. Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your warranty service.

2. RETURN NOTICE

- 2.1 In case of return for any warranty service, please make sure that the product is well packed in its original shipping carton, and it can protect your unit from any other extra damage.
- 2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine, and give detail information about your return address and contact telephone number.
- 2.3 A brief description of the defect will be appreciated.
- 2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

3. TERMS AND CONDITIONS

- 3.1 ▲LTO warrants that this product will be free from any defects in materials and/or workmanship for a period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.
- 3.2 The warranty service is only available to the original consumer, who purchased this product directly from the retail dealer, and it can not be transferred.
- 3.3 During the warranty service, ALTO may repair or replace this product at its own option at no charge to you for parts or for labor in accordance with the right side of this limited warranty.
- 3.4 This warranty does not apply to the damages to this product that occurred as the following conditions:
- Instead of operating in accordance with the user's manual thoroughly, any abuse or misuse of this product.
- Normal tear and wear.
- The product has been altered or modified in any way.
- Damage which may have been caused either directly or indirectly by another product / force / etc.
- Abnormal service or repairing by anyone other than the qualified personnel or technician.
- And in such cases, all the expenses will be charged to the buyer.
- 3.5 In no event shall ▲LTO be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.
- 3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws, you may also have other statutory rights that may vary from state to state.



SEIKAKU TECHNICAL GROUP LIMITED

NO. 1, Lane 17, Sec. 2, Han Shi West Road, Taichung 40151, Taiwan http://www.altoproaudio.com Tel: 886-4-22313737 email: alto@altoproaudio.com Fax: 886-4-22346757

All rights reserved to ALTO. All features and content might be changed without prior notice. Any photocopy, translation, or reproduction of part of this manual without written permission is forbidden. Copyright © 2007 Seikaku Group