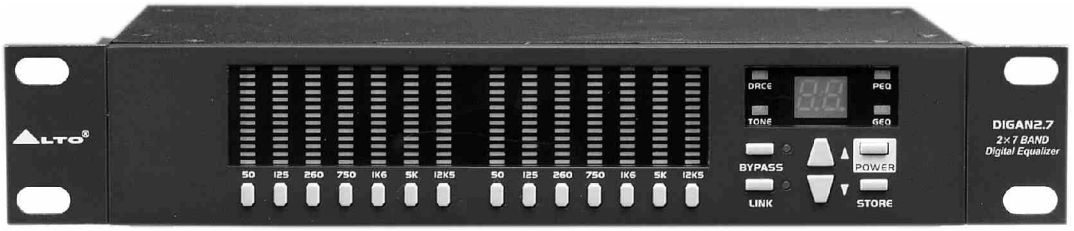
User's Manual

DIGAN2.7

2 x 7 BAND
DIGITAL EQUALIZER



ALTO®

www.altoproaudio.com
Version 1.0 August 2005
— English —

SAFETY RELATED SYMBOLS

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

~ AC mains (Alternating Current)

Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.

CAUTION

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

Disposing of this product should not be placed in municipal waste and should be Separate collection.

WARNING

- **Power Supply**

  Ensure that the mains source voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user.

  Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

- **External Connection**

  Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

- **Do Not Remove Any Covers**

  Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed.

  Covers should be removed by qualified service personnel only.
  No user serviceable parts inside.

- **Fuse**

  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.

- **Protective Ground**

  Before turning the product ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

  Never cut internal or external Ground wires. Likewise, never remove Ground wiring from the Protective Ground Terminal.

- **Operating Conditions**

  Always install in accordance with the manufacturer's instructions.

  To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture. Do not use this product when in close proximity to water.

  Do not install this product near any direct heat source.

  Do not block areas of ventilation. Failure to do so could result in fire.

  Keep product away from naked flames.

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions

Follow all instructions

Keep these instructions. Do not discard.

Heed all warnings.

Only use attachments/accessories specified by the manufacturer.

- **Power Cord and Plug**

  Do not tamper with the power cord or plug. These 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.

- **Cleaning**

  When required, either blow off dust from the product or use a dry cloth.

  Do not use any solvents such as Benzol or Alcohol. For safety, keep product clean and free from dust.

- **Servicing**

  Refer all servicing to qualified service personnel only.

  Do not perform any servicing other than those instructions contained within the User's Manual.

PREFACE

Dear Customer:

Thanks for choosing ▲LTO DIGAN2.7 and thanks for choosing one of the results of ▲LTO AUDIO TEAM job and researches.

For our ▲LTO AUDIO TEAM, music and sound are more than a job...are first of all passion and let us say our obsession!

We have been designing professional audio products for a long time in cooperation with some of the major brands in the world in the audio field.

The ▲LTO line presents unparalleled analogue and digital products made by Musicians for Musicians in our R & D centers in Italy, Netherlands, United Kingdom and Taiwan. The core of our digital audio products is a sophisticated DSP (Digital Sound Processor) and a large range of state of the art algorithms, which have been developed by our software team for many years.

Because we are convinced you are the most important member of ▲LTO AUDIO TEAM and the one confirming the quality of our job, we would like to share with you our work and our dreams, paying attention to your suggestions and your comments.

Following this idea we create our products and we will create the new ones! From our side, we guarantee you and we will guarantee you also in future the best quality, the best fruits of our continuous researches and the best prices.

Our ▲LTO DIGAN2.7 is the result of many hours of listening and tests involving common people, area experts, musicians and technicians.

Besides, we offer you a number of factory EQ curves that we collected and transformed in presets now available in our small, efficient and easy to use ▲LTO DIGAN2.7.

Nothing else to add, but that we would like to thank all the people that made the ▲LTO DIGAN2.7 a reality available to our customers, and thank our designers and all the ▲LTO staff, people who make possible the realization of products containing our idea of music and sound and are ready to support you, our customers, in the best way, conscious that you are our best richness.

Thank you very much
▲LTO AUDIO TEAM

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1. INTRODUCTION

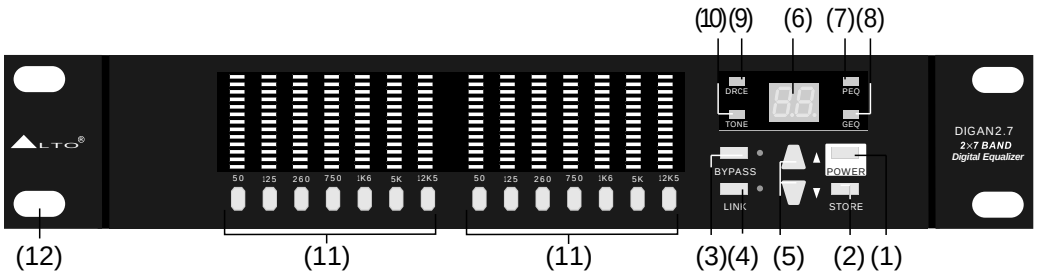
Purchasing ▲LTO DIGAN 2.7, you purchase a very powerful digital equalizer, easy to use and contain in a very efficient a half unit rack package. Our new is a versatile and very powerful parametric & graphic equalizer. It will provide precise audio signal control to fixed sound installation, live performance and studio applications. Thanks to the use of selected and expensive components, the performance of ▲LTO DIGAN 2.7 are worth much more than its price.

2. FEATURES

- Digital control and DSP technology with graphic display 7 bands Graphic or parametric equalizer.
- Dynamic range processing with Ratio, Threshold, Attack and Release time control.
- Tone adjustment with Bass and Treble control.
- 100 presets: 30 factory presets and 70 user-programmable presets.
- 32x24 bit DSP processing with 48KHz sampling rate.
- Stereo channels processing with or without link control.
- +/- 12 dB boost/cut for every bands adjustment.
- Master volume control.
- EQ Bypass function support.
- USB control interface for easy operating with PC editor.
- Balanced 1/4” TRS jacks.

3. CONTROL ELEMENTS

3.1 The Front Panel



1. POWER switch

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

2. STORE key

This key is used to store the user's presets.

3. BYPASS key

This key is used to bypass the process, sending the input signal to the DIGAN 2.7 outputs directly. When the DIGAN 2.7 in this mode, the BYPASS LED will be on.

4. LINK(exit) key

This key is used to link the two stereo channels or exit from menu.

5. Up/Down key

These keys are used to select the preset and modify the parameter's value.

6. LED display

This LED display shows the selected preset number or the parameter's value.

7. PEQ LED

When the unit is in parameter equalizer mode, the LED lights up.

8. GEQ LED

When the unit is in graphic equalizer mode, the LED lights up.

9. DRCE LED

When the compressor is engaged, the LED lights up.

10. TONE LED

When the TONE adjustable function is engaged, the LED lights up.

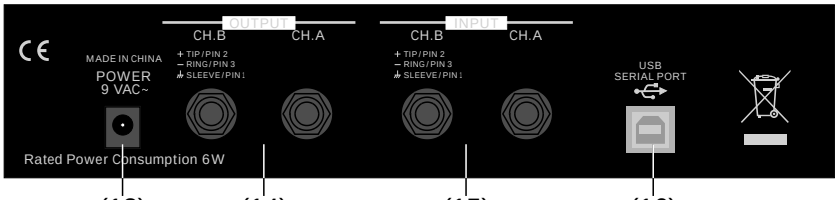
11. Band keys

These keys are used to select the frequency band that you need to modify its gain value.

12. Mounting ear

This detachable mounting ear is used for your convenient installation.

3.2 The Rear Panel



(13) (14) (15) (16)

13. POWER INLET

This jack is used to connect the AC power supply with the supplied 9V AC adapter.

14. OUTPUT

These two 1/4”TRS balanced connectors are used to connect sources such as the channel inserts of a mixing console or power amplifier's inputs.

15. INPUT

These two 1/4”TRS balanced connectors are used to connect devices such as the channel inserts of a mixing console.

16. USB SERIAL PORT

This serial port is used to connect the unit to PC with the supplied transmission line.

4. INSTALLATION & CONNECTION

4.1 Mains Connection

The 9VAC adapter that meets all the international safety regulations is supplied with your ▲LTO DIGAN2.7. Before power on the DIGAN2.7, please make sure all connections have been made correctly and the volume controls of the amplifier or mixer are turned down.

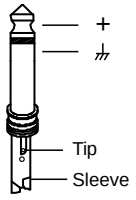
4.2 Audio Connection

These 1/4 " TRS connectors are available on your ▲LTO DIGAN2.7. In this way you can interface your DIGAN2.7 in several different ways without experiencing any noise or signal loss. You can use your DIGAN2.7 with single instruments using the mixer's main insert or on "in-line" between a mixing console's output and a power amplifier.

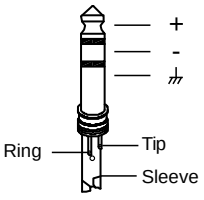
- Wiring Configuration

These 1/4" TRS phone jack can be wired in balanced and unbalanced modes, which will be determined by the actual application status, please wire your system as the following wiring examples:

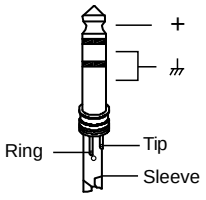
- For 1/4" Phone jack



TS Type Unbalanced



TRS Type Balanced



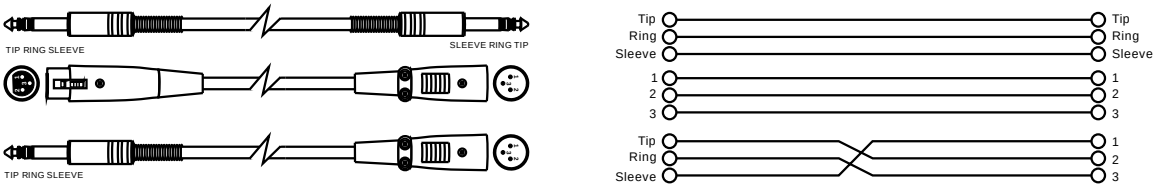
TRS Type Unbalanced

- In-line Connection

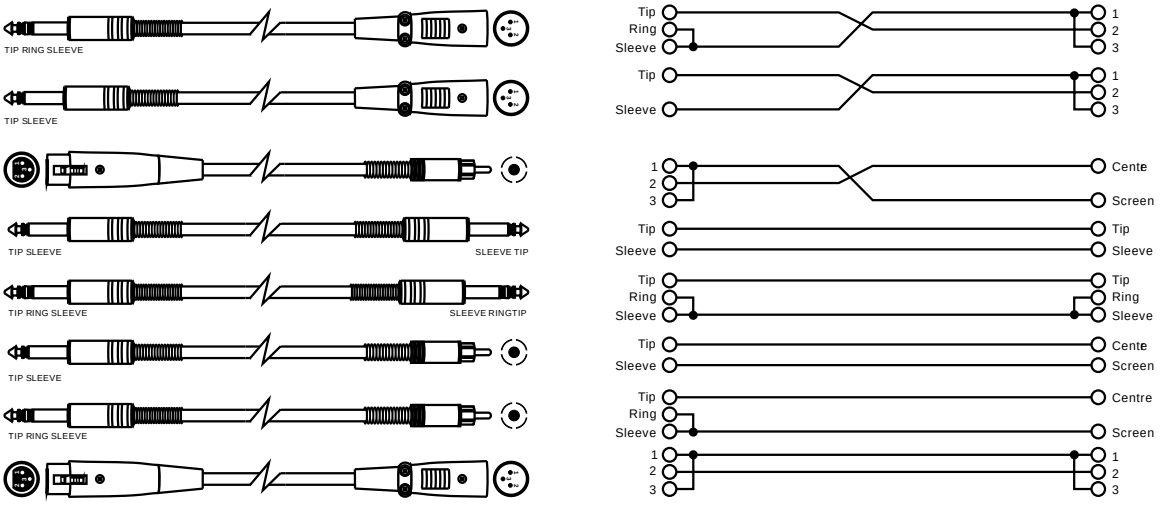
For these applications the ▲LTO DIGAN2.7 Parametric/Graphic Equalizer provides 1/4" TRS connectors to easily interface with most professional audio devices. Follow the configuration examples below for your particular connection.

- Insert Points Connection

• Balanced

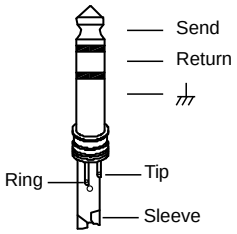


• Unbalanced

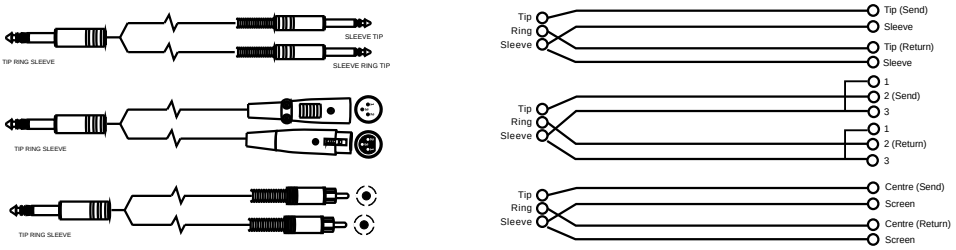


If you are connecting to a mixing console's main inserts, you may have a single TRS jack for Send and Return, in this case, use an insert "Y" cable that configured like the examples below.

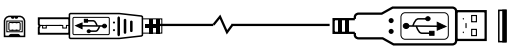
• 1/4" TRS insert



• Insert Leads



- USB Connection



5. OPERATION OVERVIEW

Switching on the DIGAN2.7, the last selected preset and settings will be loaded, the number of last preset will appear on the display.

5.1 Modify the parameters

- Select one of the presets using UP/DOWN keys.
- Select the frequency band that you want to modify its gain value.
- Using UP/DOWN keys to modify its gain value.

Note: You can select as many as bands that you wish to change, once the indicators of selected bands are

all blinking, then you can adjust the gain value of all these selected bands simultaneously via UP/DOWN keys. when Release Edit Group (see 6.1) is set ON, if you want to modify the others frequency bands, select it, and adjust the gain value via UP/DOWN keys separately, it doesn't affect the frequency bands, which has been selected and modified before. On the other hand, if you set Release Edit Group OFF, all the selected frequency bands, which include the modified and unmodified will be adjusted together at the same time via UP/DOWN keys.

5.2 Store preset

- Press STORE key after you finish the change.
- Using UP/DOWN keys to select between preset 30-99 (user preset).
- Press STORE again to store the new preset.
- If you don't want to save your new preset, press LINK key to exit from this menu.

Note: Factory preset (0-29) can be used normally, temporarily modified, but can't be cancelled, overwritten or permanently modified. User preset (30-99) can be programmed by users and used to save your own settings.

5.3 Bypass mode

- Press BYPASS key to enter bypass mode, the bypass indicator will light up.
- Press BYPASS key again to exit bypass mode, the bypass indicator will go out.

Note: In bypass mode, the output signal has not been processed, so this function will be quite useful for you to compare the processed signal with unprocessed signal.

5.4 Link mode

- Press LINK key to enter link mode, the link indicator will light up.
- Press LINK key again to exit link mode, the link indicator will go out.

Note: In link mode, these two channels are "linked together", so the changes will be simultaneously applied to both channels. Also, the LINK key has "Exit" function.

5.5 Select preset fast

- Press and hold DOWN key, then press UP key, the current preset will change to 0, the preset will increase 10 with each press of UP key again.
- Press and hold UP key, then press DOWN key, the current preset will change to 0, the preset will decrease 10 with each press of DOWN key again.
- Release DOWN or UP key, your selected preset will be loaded (for example preset 30), then use UP/DOWN keys to select the right preset you want (for example preset 32).

5.6 Demo mode

Press and hold LINK key, then press UP key, the current preset will be displayed one by one. The bypass indicator will be ON in demo mode, you can press LINK to exit from demo mode.

5.7 Level Control

Press and hold the key of 125Hz (CH.A), then press BYPASS, “L R + ”displays while “L” is flashing, it allows you to adjust the level of CH A via UP/DOWN keys, if you want to adjust the level of CH B, please press the key of 50Hz (CH. A), then “R” will be flashing, it allows you to adjust the level of CH B via UP/DOWN keys. “L” and “R” will be switched by pressing the key of 32Hz.

6. SYSTEM SETTING

6.1 Setup mode

When power on this unit, the front panel will show DIAGAN2.7 for a few seconds, press STORE key timely before the show is finished to enter setup mode. It concludes Master Level, Release Edit Group, Audition Auto, Edit Time Out and Lock Key settings. In setup mode, you can use STORE key to cycle above settings, then use UP or DOWN key to change the settings.

6.1.1 Release Edit Group (R.)

1: It allows you to choose as many as frequency bands to modify their gain values simultaneously.
0: You can select one frequency band at a time.

6.1.2 Edit Time Out (T.)

1: If you don't operate the unit for 60 seconds, the unit will cancel your selection and settings that you haven't stored, and reload the settings before storing the preset.

0: Disable the "Auto cancel" function.

6.1.3 Lock: avoid unauthorized tampering (L.)

1: When power on the unit, the unit can not be operated. If you press any of the buttons, the LED display will show "Lo" to indicate that the unit is locked.

0: Cancel the function of locking.

6.2 Reset Mode

When power on this unit, the front panel will show DIAGAN2.7 for a few seconds, press and hold UP then press DOWN key timely to enter reset mode. Now, all the stored presets will be reset to defaults.

7. REMOTE CONTROL

To operate this unit while connected to a PC, you need to download a Windows compatible DIGAN Editor program from our website. To get a copy, please go to **http://www.altoproaudio.com/html/download.php**

IMPORTANT!

In remote control, all the controls on front panel are disabled.

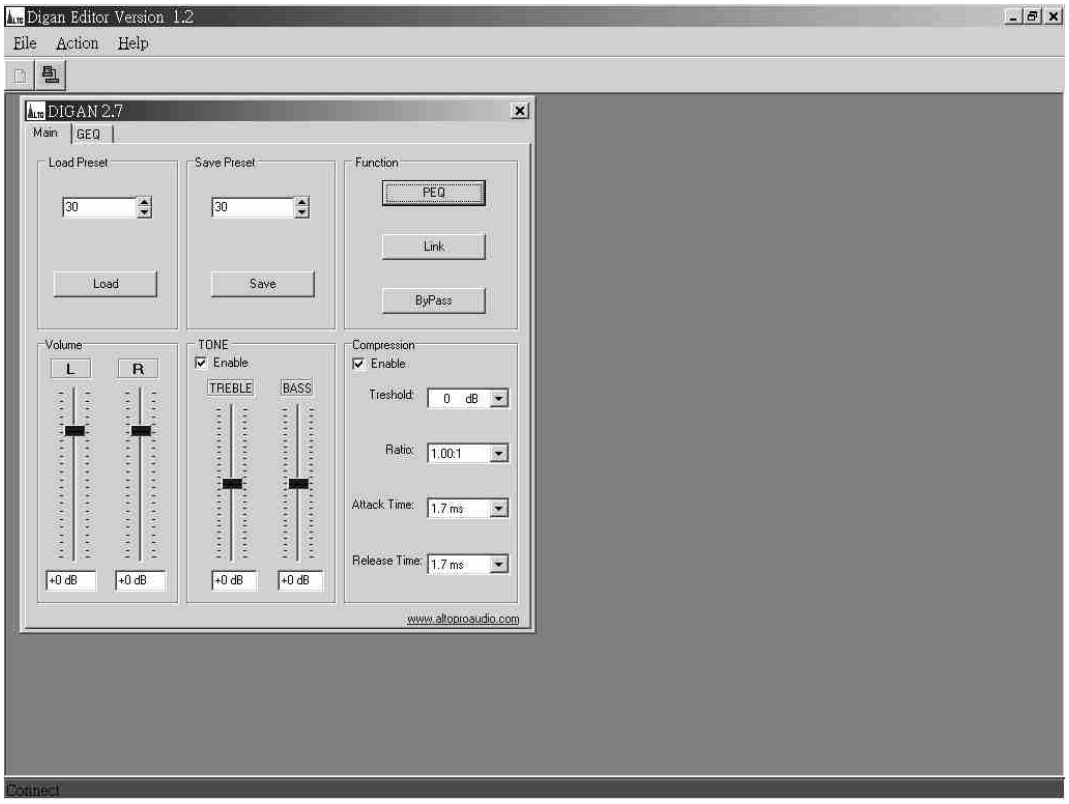
7.1 Software installation

a. Install Digan Editor program: run DiganEditor100.exe (latest version may differ), then select the folder where the program is installed and press NEXT, select the program location and press NEXT (it is suggested to use default setting), now verify your setup information and press NEXT to finish your last step.

b. Install USB driver: run PL-2303 Driver Installer.exe, then press N for next step, at last finish your installation and exit.

7.2 First steps with the PC Editor

With the DIGAN2.7 unit powered up and connected to the USB port on your PC, run the PC Editor program by selecting the DIGAN EDITOR icon in the Windows PROGRAMS menu. Select NEW from the FILE menu, then DIGAN2.7 and click OK, now select ON LINE from ACTION menu and the PC will scan its USB port to verify the DIGAN2.7 unit is correctly connected. The NETWORK SCAN window should show the system status (CONNECTED or DISCONNECTED). See following picture.



a. Main menu

- **Load Preset:** This function allows to load one of the 100 available presets, the first 30 (0-29) presets are factory configured presets, the presets (30-99) are user's programmable presets.
- **Save Preset:** You can store the new preset into one of user presets (30-99).
- **Bypass:** When you click BYPASS, only Load and Save preset functions are activated in the main menu, all the rest functions are disabled. The output signal is exactly same as the input signal.
- **LINK:** When you click LINK, you can operate both channels just at one operation.
- **PEQ/GEQ**: The unit has two mode equalizers: graphic equalizer (GEQ) and parameter equalizer (PEQ). You can select the equalizer according to you preference via the key.
- **Volume:** Adjust both channels' volume or together by link function, also the LED display on the front panel will show the channel's volume.
- **Tone:** The 2-band equalizer allowing you to adjust the high and low frequencies separately. You can use the treble control to get rid of high frequency noises or to boost the sound of cymbals or the high harmonics of the human voice; also you can use the bass control to boost male voice or kick-drum and bass guitar. This function can't be used until it is active.
- **Compressor**: it is for limiting and compressing the dynamic range of audio signal. It can be used effectively to protect the device or to cut off the noise and to avoid distortion as well as control audio signal dynamics range. This function can't be used until it is active.

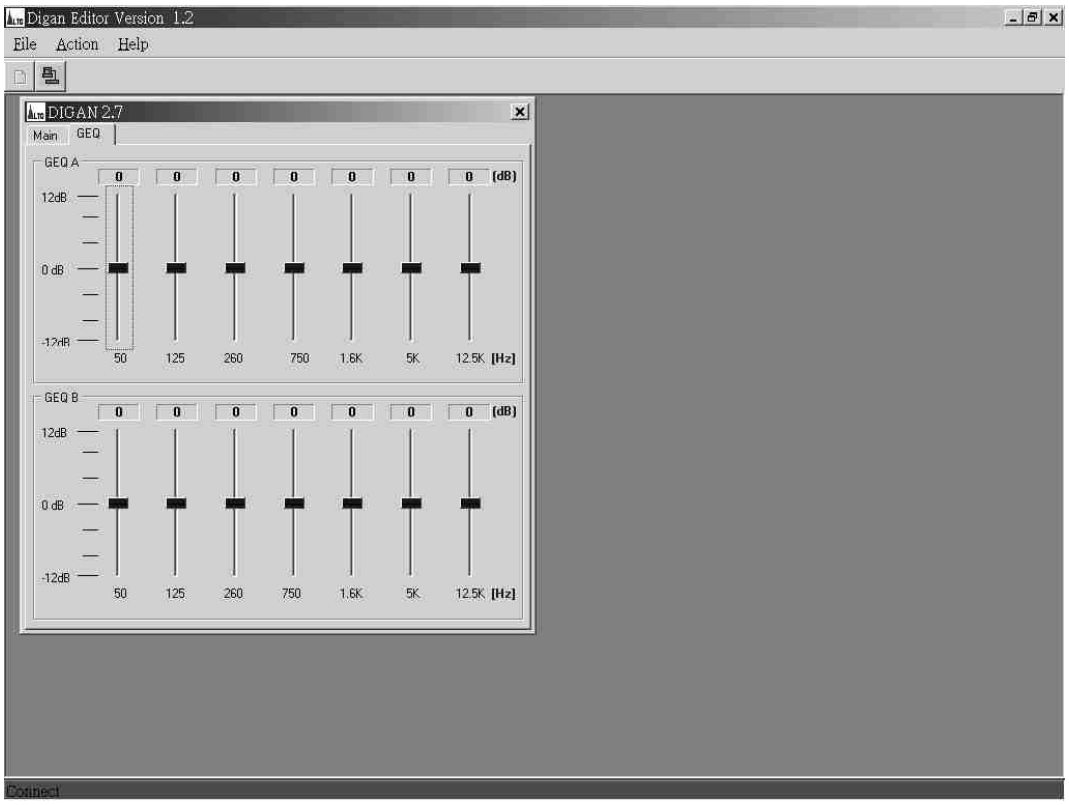
  Threshold: it decides when the compressor works. If the input signal level is above the threshold, the compressor will compress the signal. On the other hand, if the input signal level is below the threshold, the compressor won't open, it will leave the input signal unchanged.

  Ratio: it is input signal to output signal ratio. That is to say how the signal exceeding the threshold has to be reduced. When the ratio is 1:1, the signal hasn't been compressed at all. And the signal will be over-compressed with high compression rate, which results in much loss in dynamic range.

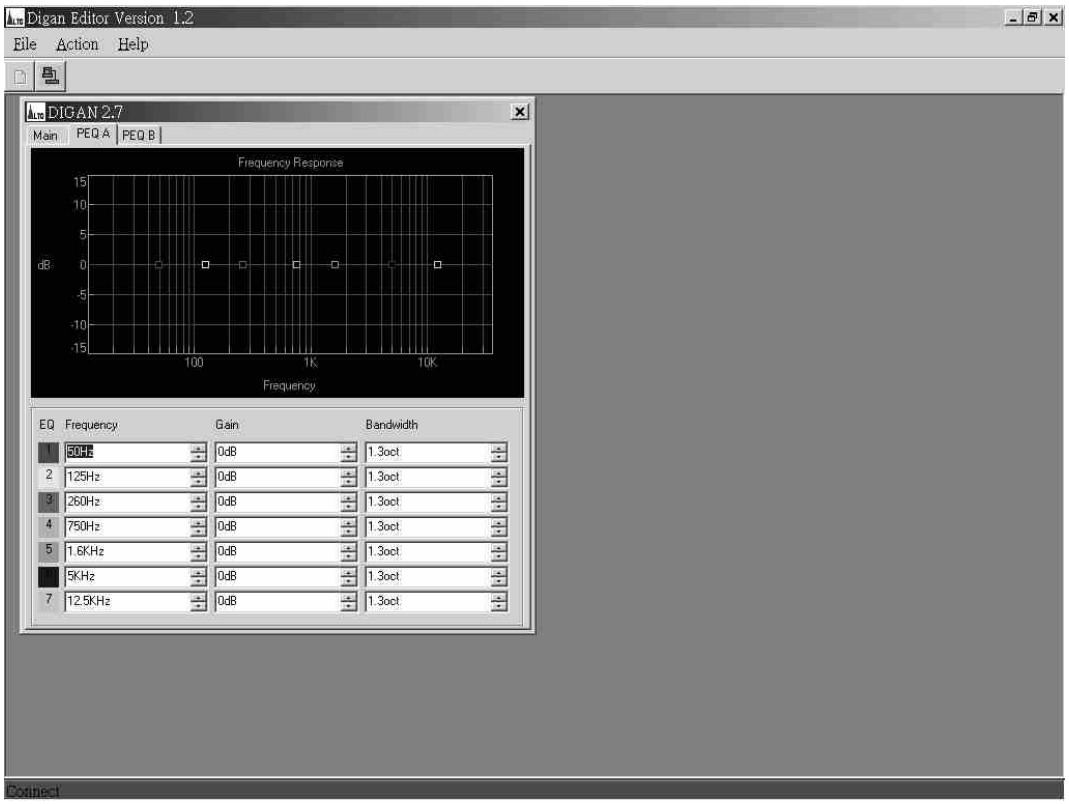
  Attack time: This is the amount of time that elapses before the compressor begins to attenuate the output level, after the threshold point has been exceed. there will be a finite while after the signal exceeds the threshold.

  Release time: the time that the compressor requires to return to its normal gain after the input signal has fallen below the threshold point.

b. EQ menu



When you go to graphic equalizer, the PC will display above picture. You can adjust each band's gain value, if this unit is in LINK function, the change on channel A will be applied to channel B also. The adjustable range goes from 12dB to +12dB.



When you go to parameter equalizer, the PC will display above picture, you can adjust the frequency, gain, and bandwidth according to the application. If this unit is in LINK function, the change on channel A will be applied to channel B also. What's more, there are some small squares in the frequency contour, you can use these squares to adjust frequency, bandwidth and gain to achieve fast-start.

Note: when you choose parameter equalizer, sometimes the frequency value displayed on the front maybe not the real value.

7.3 Upload or Download

You can use UPLOAD from FILE menu to upload all saved user presets (30-99) from DIGAN2.7 unit to your computer. DOWNLOAD from FILE menu will download all saved user presets in your computer to DIGAN2.7 unit.

7.4 Update system

If the version of DIGAN Editor program is different from that in DIGAN2.7unit, the window will show error to ask you to update your system in DIGAN2.7 unit, or your DIGAN2.7 can't be recognized by your computer. To update your system in DIGAN2.7, do the following:

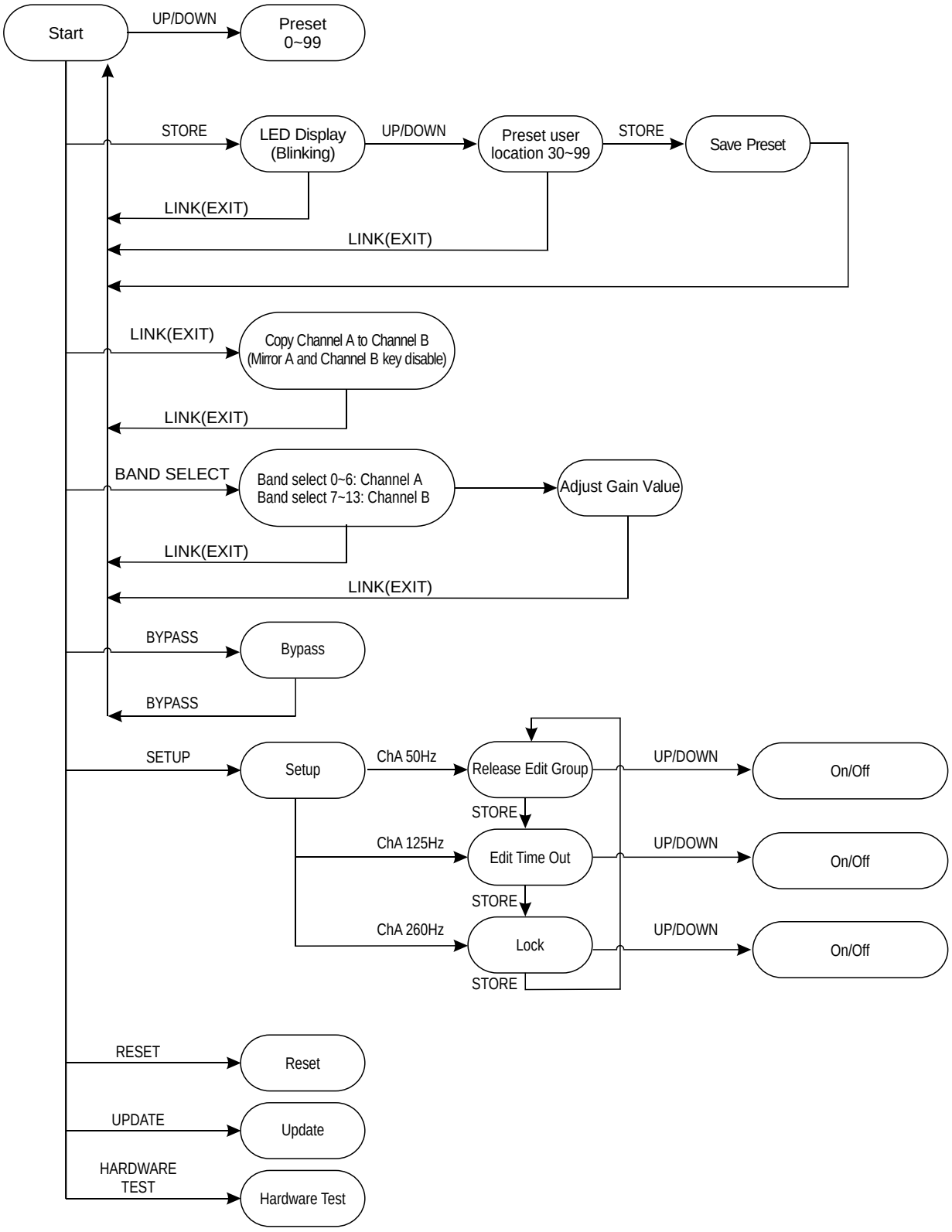
a. Turn on DIGAN2.7 while it is not connected with PC, then press 12.5k of channel B and BYPASS key at the same time to enter Update mode.

b. Now connect DIGAN2.7 to PC and run DIGAN Editor software, the window will ask whether you are sure to update your system, press OK to start.

c. If you have selected a wrong model (for example DIGAN2.14), you have to reselect the right model. If the updating process is terminated abnormally, please restart your updating from the beginning.

d. While this update is finished, firstly, disconnect the main power, and then connect to the main power again to restart your DIGAN2.7 unit.

8. Operation Flow Chart



9. TECHNICAL SPECIFICATION

System parametric	Band	2x7 bands,4/3octave
	Bandwidth	20Hz-20kHz
	THD+N%	<0.015%, Analog In to Analog Out
	Signal to noise ratio	>90dB A-Weighted, Analog In to Analog Out
	Input gain	+/-12dB
	Output gain	+/-6dB
	Preset	Factory preset: 30 , User preset: 70
Input section	Inputs	Two 1/4" TRS connectors
	Input impedance	Balanced > 50Kohm, Unbalanced > 25Kohm
	Input level	Maximum Input Level : +16dBu
Output section	Outputs	Two 1/4" TRS connectors
	Output impedance	Balanced>120ohm, Unbalanced > 60ohm
	Output level	Maximum Output Level : +16dBu
USB serial port		USB1.1
Power supply	Input voltage	9 Volt AC Power Transformer
(AC/AC adapter)	Power consumption	6W
Physical	Dimension (WxDxH)	261x150x44mm
	Net weight	2.67 lbs(1.21kg)

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 purport 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, ▲LTO 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.

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