OEX-400S
STEREO FULL-RANGE COMPACT PORTABLE SOUND SYSTEM
WITH 24-BITS DIGITAL EFFECTS
9. 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 cannot 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.
**8. TECHNICAL SPECIFICATION**

**FAT analysis**
- Supports FAT 16 and FAT 32.
- Supports VFAT (long file name).
- Supports multi partition up to 1.

**MP3 DECODE**
- Supports sample rates 8kHz, 32kHz, 11.025kHz, 22.05kHz, 44.1kHz, 12kHz, 24kHz, and 48kHz.
- Supports bit rate B to 320 kbps and VBR (Variable Bit Rate) except free format.

**Electric Specification**
- Frequency Response 20Hz~20kHz
- Output level 0 dB
- SNR Ratio > 90 dB
- Distortion (at 1 kHz) <0.05%

**Power Section (SPK.OUT)**
- Distortion <0.1% (at 1W & 1 kHz)
- <0.15% (at 100W & 1 kHz)
- Frequency Response 20kHz to 22kHz, +/- 2dBu (at 100W)

**SNR (Line IN)**
- ≥100 dBu

**Output level**
- 30.5dBu +/- 1dBu (+10 Led Light & COMP. Start)
- 2 X 200W @ 4Ω
- 2 X 110W @ 8Ω

**Power EIAJ 1kHz,THD 1%**
- 2 X 250W @ 4Ω
- 2 X 130W @ 8Ω

**Thermal protection**
- Temperature controlled 12V DC fan output
- Thermal shutdown

**Short protection**
- Short circuit protection
- Overload output protection
- DC offset shutdown

**Voltage protection**
- Over voltage protection
- Protective Ground Terminal
- Hazardous Live Terminal
- AC mains (Alternating Current)
- Protective Ground Terminal
- ON: Denotes the product is turned on.
- OFF: Denotes the product is turned off.

**Speaker Section**
- Passive System Type
- Continuous Power 150W AEB standard (each speaker)
- Peak Power 300W Peak (each speaker)
- Max SPL at 1M 117.5dB SPL calculated
- Overload output protection
- Over voltage protection
- Electronic on the Driver
- Neutral driver / 1 Voice Coil
- Power Input with mono Jack

**Voltage**
- 220 240VAC~50Hz
- 110~120V: T10A 250V
- 220~240V: T5A 250V
- 250VAC at Test, Frequency 50/60Hz, Leakage 3000VAC at Test, Frequency 50/60Hz, Leakage 1500VAC at Test, Frequency 50/60Hz
- 1500VAC at Test, Frequency 50/60Hz, Leakage 2000VAC at Test, Frequency 50/60Hz, Leakage
- Current: 5mA for 1 minute
- Current: 5mA for 1 minute
- Between Live + Negative =Earth
- Between Live + Negative = Terminal(Positive) + Negative
- Between Live + Negative = Terminal(Positive) + Negative
- (A Voltage of 500VDC)

**Power supply**
- Main voltage
- 100~120VAC~60Hz
- 220~240VAC~50Hz
- 100~120V: T10A 250V
- 220~240V: T5A 250V

**Power Consumption**
- No Output power state at 230V ≤32W

**DIELECTRIC STRENGTH**
- Between Live + Negative + Earth
- Terminal(Positive) + Negative ≥2500V
- (A Voltage of 500VDC)

**Dimension (W D H)**
- 964mm x 440mm x 480mm (38.7” x 17.3” x 18.1”)

**Net Weight**
- 18.6 kg

**Cross Weight**
- 25.4 kg

**9. IMPORTANT SAFETY INSTRUCTION**

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

**CAUTION**
- Pleas 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.
- Electrical equipment shall be connected to a mains socket outlet with a protective earthing connection.

**DISPOSE OF THIS PRODUCT**
- Do not dispose of this equipment with household waste. Dispose of this equipment in accordance with local regulations. This equipment contains electrical equipment and is therefore not suitable for landfill disposal. If you are in doubt, please contact your local waste disposal agency.

**HOURS X DAY SPL EXAMPLE**

<table>
<thead>
<tr>
<th>Hour</th>
<th>SPL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>90</td>
<td>Small gig</td>
</tr>
<tr>
<td>6</td>
<td>92</td>
<td>Train</td>
</tr>
<tr>
<td>4</td>
<td>95</td>
<td>Subway train</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
<td>High level desktop monitors</td>
</tr>
<tr>
<td>1.5</td>
<td>102</td>
<td>Classic music concert</td>
</tr>
<tr>
<td>0.5</td>
<td>110</td>
<td>Rock concert</td>
</tr>
<tr>
<td>0.25</td>
<td>115</td>
<td>Rock concert</td>
</tr>
</tbody>
</table>

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of hearing. 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.

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment.

12. 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 levels. These are shown in the following chart.
Congratulations! Now you are the owner of the OEX-400S. The OEX-400S is a plastic reinforced trolley that includes a versatile mixer with DSP effects, L&R full range speaker cabinets. Besides, this package also includes some essential accessories such as power cord, signal cables, speaker cables. In order to ensure high versatility and excellent audio performances, the OEX-400S adopts optimal crossover frequency and advanced power amplifier technologies.

The L&R speaker cabinets are tightly hooked on the trolley. When you operate the OEX-400S, first of all take care of the setting of the L&R cabinets. It is the development of AL TO's experience and knowledge in speakers field, in order to faithfully reproduce sound for each kind of applications.

Inlaid in OEX-400S panel there's a compact extractable 8-channel mixer, which adopts 24-bit A/D&D/A converters and 24-bit DSP effects with accurate algorithms (16 presets). It also provides 4 MIC inputs with ultra low noise microphone pre-amplifiers, natural 2-band EQ; AUX send/return and 2TK in/out and optional MP3 and 9 band EQ and so on.

In a word, it is ideally suited for live sound applications, small venues applications, live recording and many other musical purposes. In order to get the best performances from your OEX-400S, we recommend you to thoroughly read this owner's manual before installation and operation.
7. PRESET LIST

<table>
<thead>
<tr>
<th>NO.</th>
<th>Preset</th>
<th>Description</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WARM HALL</td>
<td>Simulate a small acoustic space of the sound.</td>
<td>Rev. Decay time: 360ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 45ms</td>
</tr>
<tr>
<td>2</td>
<td>BRIGHT HALL</td>
<td>Simulate a large acoustic space of the sound.</td>
<td>Rev. Decay time: 290ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 23ms</td>
</tr>
<tr>
<td>3</td>
<td>WARM ROOM</td>
<td>Simulate a small acoustic space of the sound.</td>
<td>Rev. Decay time: 210ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 45ms</td>
</tr>
<tr>
<td>4</td>
<td>BRIGHT ROOM</td>
<td>Simulate a studio room with many early reflections.</td>
<td>Rev. Decay time: 210ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 23ms</td>
</tr>
<tr>
<td>5</td>
<td>VOCAL 1</td>
<td>Simulate a room with without delay time.</td>
<td>Rev. decay time: 450ms</td>
</tr>
<tr>
<td>6</td>
<td>VOCAL 2</td>
<td>Simulate a room with small delay time.</td>
<td>Rev. decay time: 240ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 25ms</td>
</tr>
<tr>
<td>7</td>
<td>VOCAL 3</td>
<td>Simulate a small space with slight decay time.</td>
<td>Rev. decay time: 100ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre delay: 114ms</td>
</tr>
<tr>
<td>8</td>
<td>PLATE</td>
<td>Simulate the transducers sound like classic bright vocal plate.</td>
<td>Pre delay: 10ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 290ms</td>
</tr>
<tr>
<td>9</td>
<td>STEREO DELAY 1</td>
<td>Recreate the input sound on the stereo output with different time.</td>
<td>Period: 352ms</td>
</tr>
<tr>
<td>10</td>
<td>STEREO DELAY 2</td>
<td>Recreate the input sound on the stereo output with different time.</td>
<td>Period: 238ms</td>
</tr>
<tr>
<td>11</td>
<td>REV+DELAY 1</td>
<td>Delay with room effect.</td>
<td>Delay period: 326ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 290ms</td>
</tr>
<tr>
<td>12</td>
<td>REV+DELAY 2</td>
<td>Delay with room effect.</td>
<td>Delay period: 211ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 240ms</td>
</tr>
<tr>
<td>13</td>
<td>REV+DELAY 3</td>
<td>Delay with room effect.</td>
<td>Delay period: 375ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 210ms</td>
</tr>
<tr>
<td>14</td>
<td>REV+DELAY 4</td>
<td>Delay with room effect.</td>
<td>Delay period: 277ms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 150ms</td>
</tr>
<tr>
<td>15</td>
<td>REV+CHORUS 1</td>
<td>Simulate the sound effect achieved by rotating horn speakers and a bass cylinder.</td>
<td>Chorus rate: 3.67Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 290ms</td>
</tr>
<tr>
<td>16</td>
<td>REV+CHORUS 2</td>
<td>Simulate the sound effect achieved by rotating horn speakers and a bass cylinder.</td>
<td>Chorus rate: 3.02Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rev. decay time: 150ms</td>
</tr>
</tbody>
</table>

2. FEATURES
- Lightweight, Luggage style, Trolley appearance portable system
- Two 10" speakers + 8-channel powered mixer in super combination
- Stereo full-range speaker system
- 4 XLR MIC input with ultra low noise microphone pre-amplifiers
- +48V Phantom power
- 1 stereo LINE input & 1 stereo CD/TAPE input
- Warm, natural 2-band EQ, PAN(BAL) for each channel
- Precision level control
- 24-bit DSP effects with powerful algorithms (16 presets)
- MP3 player & 9-Band EQ for option
- 2 speaker cables & 2 microphone and cables
- Amp. System with 250W *2 @ 4ohm in EIAJ; 200W * 2 @ 4ohm in RMS

3. QUICK START

This is the fastest way to get something out from your OEX-400S, if you have a keyboard and a microphone.

a. Please check the AC voltage available in your country before connecting your OEX-400S to the AC socket.
b. Be sure that the main power switch is turned off before connecting the powered mixer to the AC socket. Also, you should make sure that all input and output controls are turned down. This will avoid damages to your speakers as well as excessive noise.
c. Please connect a passive speaker to your OEX-400S speaker connector or 1/4" jack(#35). Otherwise, you can connect a pair of active speakers directly to your OEX-400S Main Out Left & Right 1/4" jacks(#18).
d. Complete these connections as illustrated.
e. Before disconnecting the OEX-400S always turn-off the Power switch.
f. Do not use solvents to clean your OEX-400S. A dry and clean cloth will be OK.

Here you are. It is your first GIG with your OEX-400S.
5. INSTALLATION AND CONNECTION

**Option NO.1**

- **Sleeve Ground/Screen**
  - To Channel Insert
  - To Tape or FX Input
  - To Processor Input
  - To Processor Output

- **Tip**
  - Sleeve Ground/Screen
  - Tip Signal
  - Tip Send Signal
  - To Channel Insert
  - To Processor Input
  - To Processor Output

- **Ring**
  - Sleeve Ground/Screen
  - Ring Return Signal
  - To Processor Input
  - To Processor Output

**Tapped** Connection Direct Output Lead
(Enables the Insert to be used as a Direct (Output while maintaining the channel signal flow)

**Y Stereo lead for Insert Connection**
(To be used when the processor does not employ a single jack connection for the In/Out Connections)

**USB Connection**
4. CONTROL ELEMENTS

Accessory List:
1. Power cord  1 x IEC power cord
2. Customized Speaker Cable  2 x 7m
3. MIC  2 x 5m
4. F-8 stands (optional)
5. F-3 stands (optional)
6. F-3 stand adaptor (optional)

5. INSTALLATION AND CONNECTION

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

- **Use for Headphone**
  1/4" Stereo (TRS) Jack Plug

- **Use for Mono Line In, Mono 1/4" Jack Plugs**
  1/4" Mono (TS) Jack Plug

- **Use for Insert Points**
  1/4" Stereo (TRS) Jack Plug

- **Use for Balanced Mic Inputs**
  (For unbalanced use, connect pin 1 to 3)
  3 pin XLR Male Plug (seen from soldering side)

- **Use for Main output**
  (For unbalanced use, leave pin 3 unconnected)
  3 pin XLR Line Socket (seen from soldering side)
4. CONTROL ELEMENTS

9 BAND EQ selective mode

Please connect the 8PIN row-wire on the 9BAND EQ model to the CN9 header on the main mixer board. Then fix the 9BAND EQ model on the mixer panel with two screws.

34 POWER ON/OFF
This switch is used to turn the main power on/off.

35 AC SELECT
Before connecting the OEX-400S to the mains supply first check that the Voltage Selector is showing the correct voltage for your country.

36 AC INLET
This jack is used to connect the unit to the mains with the enclosed power cord. (Depends on applicable country regulators)

1 PHANTOM POWER Switch
This button will apply +48 Volt Phantom Power only to the 4 XLR MIC input sockets. When condenser microphones are not used, please make sure that the Phantom Power is disengaged.

NOTE: When switch on/off the phantom power, please firstly turn the level control knob to min.

2 MONO INPUT CHANNELS(CH1 TO CH4)
There is CH1 through CH4, which comes with balanced MIC IN and LINE IN connectors. Use the XLR (MIC IN) socket to connect low impedance microphone or low level signal. Use the 1/4" TRS (LINE IN) jack to connect either a microphone or a line level instrument such as synthesizers, drum machines, effect processors or any other line level signal.

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.

3 STEREO INPUT CHANNEL(CH5/6)
These are channels 5/6. They are organised in stereopair 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.

4 MIC / LINE switch
When using XLR socket, please put the switch at the MIC position; When using 1/4" TRS jack, please put the switch at the LINE position.

5 MP3/LINE switch
Pushing this switch to left will route the signal from MP3 IN to CH5/6 path, while to right will route the signal from 1/4" TRS jack.

6 LEVEL CONTROL
This control is used to adjust the overall level of respective Channel. The adjustable range goes from -∞ to +10dB.
4. CONTROL ELEMENTS

7 PAN/ BAL CONTROL
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.

8 DSP/FX control
This control is configured as POST-FADER, so the audio signal will be affected by channel level control. Via the FX SEND socket, the AUX1 signal can be sent to an external effect device.

EQUALIZER
Your OEX-400S features a 2-band equalizer allowing you to adjust the high and low frequencies separately on each mono channel. Both bands provide up to +15dB of boost or cut.

9 HIGH
This is the treble control. You can use it to get rid of high frequency noises or to boost the sound of cymbals or the high harmonics of the human voice. The gain range goes from -15dB to +15dB with a center frequency of 12kHz.

10 LOW
This is the bass control. It is used to boost male voice or kick-drum and bass guitar. Your system will sound much bigger than what it is. The gain range goes from -15dB to +15dB and the center frequency is 80Hz.

DSP SECTION
Your OEX-400S features the special 16-preset digital effect, further details please refer to following content.
4. CONTROL ELEMENTS

27 USB PORT
For connecting with USB memory.

28 PREVIOUS
In pause state, press this button it will go to the previous song and keep in pause state. In play state, press this button it will go to the previous song and start playing.

29 NEXT
In pause state, press this button it will go to the next song and keep in pause state. In play state, press this button, it will go to the next song and start playing.

30 REPEAT
Press this button the player will change between the following four modes. REP ALL means to repeat all songs in the memory, the mark on the screen is . REP 1 means to repeat one song, the mark on the screen is . Play in order means to play the songs according to the order, the mark on the screen is blank. Random play means to play the songs at random, the mark on the screen is A.

31 PLAY/PAUSE
In play state, press PLAY/PAUSE button to pause the player. In pause state, press PLAY/PAUSE button to start playing.

32 STOP
In play state, press STOP button to stop playing and the whole quantity of Mp3 songs in the USB memory will display on the screen. In STOP state, press the PRE/NEXT button or press the STOP button again to go to the first songs and the player will keep in pause state, then press down the PLAY/PAUSE button to play it.

33 POWER
When the unit is off, press this button and hold for about 2 or 3 seconds to turn on the power supply of the player. Repeat the above operation, you can turn off the power supply of the player.

NOTE: Basic interface instruction.
When the player isn't connected to a USB memory equipment, the interface is as follows:

4. CONTROL ELEMENTS

11 PRESETS
Adjust this knob to select the right effect you wish to perform. There are total 16 options for you: WARM HALL, BRIGHT HALL, WARM ROOM, BRIGHT ROOM, VOCAL 1, VOCAL 2, VOCAL 3, PLATE, STEREO DELAY1, STEREO DELAY2, REV+ DELAY1, REV+ DELAY2, REV+ DELAY3, REV+ DELAY4, REV+ CHORUS1 and REV+ CHORUS2.

12 PEAK/MUTE LED
This LED lights up when the input signal is too strong. In case of the digital effect module being muted, this LED also lights up.

13 DSP MUTE SWITCH
This switch is used to activate/deactivate the effect facility.

14 POWER LED
When you switch on the apparatus, the LED will light on.

15 MASTER LEVEL CONTROL
This control is used to adjust the overall volume of main mix output, and the signal also input to the preamplifier.

16 MASTER LEVEL LED
The 4-segment LED metre is used to indicate the master output level. When the red LED lights on, it means that the MIX OUT reaches +10dB, or start the compressor from the build in AMP.
**4. CONTROL ELEMENTS**

17 FX RTN. Jack
Use the stereo phone jack to return the sound of an effect unit to the main mix. You can also use it as a extra auxiliary stereo input.

18 FX RET CONTROL
This control is used to control the volume of the processed signal sent to Main Mix bus, which can be varied from -\(\infty\) to +10 dB.

19 FX SEND
This jack is used to send out the signals from AUX bus.

20 CD/TAPE IN
Use the Tape input to connect a CD Player, Tape, DAT, iPod or any other line-level source.

21 CD/TAPE LEVEL CONTROL
This knob controls the signal sent from CD/TAPE IN, which can be varied from -\(\infty\) to +10 dB.

22 CD/TAPE OUT
These RCA jacks will route the main mix signal into a tape or DAT recorder.

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

24 SPK. OUT
The SPEAKER L&R phone jacks output the main signal from the internal power amplifier and are used to connect speakers. They are internally connected in parallel and output the same signal.

Connecting two speakers

**Note:** The total impedace of the connected speaker system must be between 4 and 8 ohms. Do not connect anything other than speakers to these jacks.

25 EQ Switch
Engage this button to add the stereo graphic EQ to the main mix output circuit. It can be used to modify the frequency "contour" of a sound. If you release the button, the stereo graphic EQ will be bypassed.

26 STEREO GRAPHIC EQ
Each one of these faders will boost or attenuate (+/-12 dB) the selected frequency at a preset bandwidth. When all the faders are in the center position, the output of the equalizer is flat response.

**MP3 section (Optional)**
The file system of USB memory for USB-MP3 player is FAT16 and FAT32. The player can only decode MP3. It can have 7 rank subordinate folders at most, and the maximum quantity of folders within MP3 files is 24. In the whole USB memory, the total folders can not beyond 256 (including those folders without MP3 songs).