User's Manual

AU-800R/800H
800P SERIES

WIRELESS MICROPHONE SYSTEM

ALTO®

www.altoproaudio.com
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— **English** —

SAFETY RELATED SYMBOLS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

The symbol is used to indicate that some hazardous live terminals are involved within this apparatus, even under the normal operating conditions.

The symbol is used in the service documentation to indicate that specific component shall be only replaced by the component specified in that documentation for safety reasons.

⏚ Protective grounding terminal.

∼ Alternating current /voltage.

⚡ Hazardous live terminal .

ON: Denotes the apparatus turns on.

OFF: Denotes the apparatus turns off, because of using the single pole switch, be sure to unplug the AC power to prevent any electric shock before you proceed your service.

WARNING: Describes precautions that should be observed to prevent the danger of injury or death to the user.

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

CAUTION: Describes precautions that should be observed to prevent danger of the apparatus.

WARNING

• **Power Supply**

Ensure the source voltage matches the voltage of the power supply before turning ON the apparatus.

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

• **External Connection**

The external wiring connected to the output hazardous live terminals requires installation by an instructed person, or the use of ready-made leads or cords.

• **Do not Remove any Cover**

There are maybe some areas with high voltages inside, to reduce the risk of electric shock, do not remove any cover if the power supply is connected.

The cover should be removed by the qualified personnel only.
No user serviceable parts inside.

• **Fuse**

To prevent a fire, make sure to use fuses with specified standard (current, voltage, type). Do not use a different fuse or short circuit the fuse holder.

Before replacing the fuse, turn OFF the apparatus and disconnected the power source.

• **Protective Grounding**

Make sure to connect the protective grounding to prevent any electric shock before turning ON the apparatus.

Never cut off the internal or external protective grounding wire or disconnect the wiring of protective grounding terminal.

• **Operating Conditions**

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

Do not use this apparatus near water. Install in accordance with the manufacturer's

instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not block any ventilation openings.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Follow all instructions.
- Keep these instructions.
- Heed all warnings.
- Only use attachments/accessories specified by the manufacturer.

- **Power Cord and Plug**

  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.

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

- **Cleaning**

  When the apparatus needs a cleaning, you can blow off dust from the apparatus with a blower or clean with rag etc.

  Don't use solvents such as benzol, alcohol, or other fluids with very strong volatility and flammability for cleaning the apparatus body. Clean only with dry cloth.

- **Servicing**

  Refer all servicing to qualified personnel. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so .

  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.

TABLE OF CONTENTS

1. Introduction

You are now the happy owner of the AU-800 ▲LTO wireless system.

Your AU-800 is based on a new revolutionary UHF PLL (phase loop locked) circuit which allows the simultaneous use of 144 different channels (depending on your country regulations). The Receiver is provided with 2 antennas that constantly monitor the incoming RF (radio frequency) signal and send only the stronger RF signal to the AU-800 Receiver.

Your AU-800 system is full of key features such as AUTO-SCAN function, battery level monitoring and others. You will familiarize all the features of your new AU-800 reading this Manual carefully.

Depending on the options available your AU-800 system consists of:

1 AU-800R, PLL UHF Diversity Receiver,
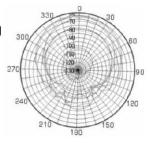

Either one of the following transmitters:

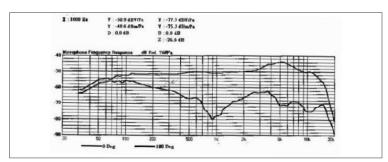AU-800H: It is a handheld transmitter with rubberised finished and hi-fi level microphone capsule.

Type: Dynamic Mic.
Frequency response: 50Hz~16kHz(±3dB)
Impedance: 300Ω ±20% at 1kHz
Sensitivity: -71dB ±3dB
Direction: Omni-directional

AU-800P: A bodypack transmitter with belt clip. The bodypack transmitter will come with either:

1. A cable to be connected to an electric guitar or bass.
2. A Lavalier Microphone. This is the little "bug" to be clipped on ties, shirts, nipples, etc.
3. A Headset Microphone that is fit like a pair of sunglasses so that the player has both hands free to play an instrument, dance, shot the audience, etc.

HM-38, Condenser microphone
Preset impedance: 600ohm;
Freq. response: 80-12KHz;
Sensitivity: -68dB+/-3dB at 1KHz;
Directional: Uni-directional;
Weight: 52g (0.12lb)

LM-10, Clip microphone
Preset impedance: 680ohm;
Freq. response: 50-12KHz;
Sensitivity: -65dB ±3dB at 1KHz
Directional: Φ12×180mm
            (Φ0.47"×7.1")
Weight: 22g(0.049lb)

2. Features

- FEATURES OF AU-800R, PLL UHF DIVERSITY RECEIVER

- User Friendly interface including a large blue back lighted display and an intuitive MENU system for easy operation
- Auto Scan Function
- 2 Antennas and switching diversity circuit
- Selector for three different audio output levels depending of kind of mixer used
- Squelch control to minimize RF interferences

- FEATURES OF AU-800H AND AU-800P TRANSMITTERS

- Soft touch rubberised painting to avoid handling noise
- Rechargeable battery design
- Selector for three different output levels depending of kind of receiver used
- LCD display
- Battery status display
- Mute function (this function is very welcomed by Politicians…)
- Lock function to avoid miss action during a live performance

Each AU-800 System complies with EMC regulations and includes 144 different channels. (Not all channels may be available in certain Countries depending on local regulations).
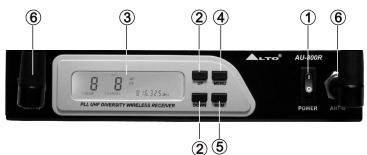
They are manufactured under ISO9000:2000, ISO/TS 16949:2002 quality management system.

3. Control Elements

Ok, enough with numbers. Let's start to familiarize with your AU-800 System. First of all, the AU-800R Receiver:

3.1 AU-800R, PLL UHF Diversity Receiver

THE FRONT PANEL

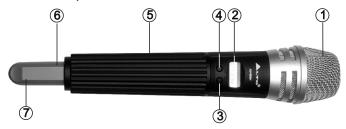① **Power Switch:** We are afraid you can not use the AU-800R if you don't switch the Power ON.

② **UP/DOWN Keys:** You can adjust the right values through these two keys once the MENU is activated.

③ **Display:** All the key functions of your AU-800 Receiver are monitored through this big, sexy, blue back lighted display such as: Radio Signal, Audio Signal, Battery life (yes with some little magic you can see the battery life of the transmitter directly on the receiver!), group value, channel value and the selected frequency.

④ **MENU Key:** Via this key you can activate the desired function described above.

⑤ **MEM Key:** You can enter the selected frequency via this Key, moreover you can also activate the AUTO-SCAN function via the same key.

⑥ **Antenna Input Sockets:** Yes, you must connected the two cute antennas you found in the box if you want to get proper RF transmission.

THE REAR PANEL

① **Audio Output XLR:** to connect a balanced cable with XLR connector (we forgot to tell you that although your AU-800 system is wireless, you still need to connect the receiver to your Mixing Desk and to a wall plug!)

② **Audio Output Jack:** To be used with an unbalanced cable and standard 1/4" mono jack.

③ **DC Input:** You can connect the supplied AC Adapter to this socket.

3.2 AU-800H, Handheld Transmitter

① **Front Grill:** This spring steel mesh grill will protect the microphone capsule during a live performance. Especially made for heavy metal players, alcohol, drugs, etc.

② **LCD Display:** This nice blue LCD will indicate the current operation status.

③ **CH/ON Key:** If you press this key for a few seconds, your Transmitter will switch ON or OFF. Once you have switched the unit ON, just press this key again slightly and you can edit various parameters such as CHANNEL, GROUP, RF POWER LEVEL and LOCK/UNLOCK. Once you are in the LOCK position, no further operation is allowed and, in a few seconds, the display will show the current frequency selected (In MHZ). Battery level will also be shown.

④ **SELECT Key:** Once you are in operation mode you can access this key to edit certain parameters. Press this key for a few seconds and the unit will enter in the MUTE mode. (In this way, you can tell your Bass Player what you think about the Sound Engineer without anybody knowing that!). Press it again for a few seconds and you will unmute the unit.

⑤ **Battery Compartment:** This unit may be powered from one pair of dry or rechargeable batteries, Um3 size AA 1.5V.

⑥ **Charge Jack:** With the rechargeable batteries putting inside, use the charger supplied in your system to recharge the batteries.

⑦ **Antenna:** The Antenna of your AU-800H is integrated in the microphone body. Please do not cover the antenna for optimal RF transmission.

3.3 AU-800P, Body Pack Transmitter

① **LCD Display:** This nice blue LCD will indicate the current operation status.

② **CH/ON Key:** If you press this key for a few seconds your Transmitter will switch ON or OFF. Once you have switched the unit ON, just press this key again slightly and you can edit various parameters such as CHANNEL, GROUP, RF POWER LEVEL and LOCK/UNLOCK. Once you are in the LOCK position no further operation is allowed and, in a few seconds, the display will show the current frequency selected (in MHZ). Battery level will also be shown.

③ **SELECT Key:** Once you are in operation mode you can access this key to edit certain parameters. Press this key for a few seconds and the unit will enter in the MUTE mode. (In this way, you can tell your Bass Player what you think about the Sound Engineer without everybody knowing that!). Press it again for a few seconds and you will unmute the unit.

④ **Mini 4P Connector:** This connector is used to connect the unit with the clip microphones, for example, HM-38 condenser microphone or LM-10 clip microphone.
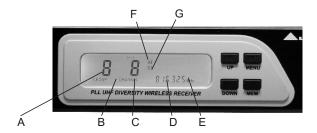

Pin 1, for guitar, bass and keyboards
Pin 2, GND
Pin 3, Phantom power supply for Condenser microphone
Pin 4, for Dynamic or Condenser microphone

⑤ **Charge Jack:** With the rechargeable batteries put inside, use the charger supplied in your system to recharge the batteries.

⑥ **Battery Compartment:** This unit may be powered from one pair dry or rechargeable batteries, UM3 size AA 1.5V.

⑦ **Belt Clip:** It is a detachable belt clip for easy carry during the live applications.

⑧ **Antenna:** It is a flexible antenna. To get effective transmission, never cover the antenna with hand, clothes, etc during the operation, and always position the transmitter nearby the receiver.

4. Operation

OK, if so far you remember all the functions and features of your AU-800 system you are ready to operate the Unit. Let's start from the Receiver:

4.1 For the AU-800R, PLL UHF Diversity Receiver

A. This indicates the Frequency Group. There are 12 Groups and each Group includes 12 different channels (frequencies).

B. This indicates the Channel Number. There are 12 channels for each one of the 12 Groups for a total of 144 channels.

C. MUTE: If the Display shows ▲LTO, the Mute function is disengaged. If the display shows MUTE, the Mute function is engaged.

D. This shows the selected frequency.

E. This shows you the remaining life of the Battery of your Transmitter. 3 segments means full life, 1 segment means it is time to replace or recharge the battery. Cute, isn't it? If this icon disappeared, it means that your transmitter is switch OFF.

F. This bar indicates the level of the audio signal coming into the Receiver.

G. This bar indicates the level of radio signal coming into the Receiver.

H. This indicates which of the 2 antennas is operating. Radio signal will automatically switch from Ant 1 to Ant 2 indicating that the diversity circuit is operating properly.

- And now, let's see the four keys in detail:

MEM key: The first function of this key is to activate the AUTO-SCAN function. Suppose that you have more than one ▲LTO transmitter in front of you able to operate with your AU-800R Receiver and you want to start to operate one of them with your AU-800 Receiver.

First of all you should turn your Transmitter ON. Then, with your AU-800R Receiver turned ON, press the MEM key for at least one second. Your AU-800R will automatically look for the frequency where your ▲LTO Transmitter is operating. It will scan all the 12 Groups and Channels for a total of 144 frequencies available.

During this process the audio output will be muted and the display will show you the Group Number scanned, the channel number scanned and the frequency that is being scanned. Once the transmitter frequency has been found, the display will flash and the RF bar indicator and Battery life icon will appear. Press MEM again slightly and such frequency will be stored into your AU-800R Receiver. Please note that frequencies can be scanned manually using the UP/DOWN key. See the Annex for more details.

MENU key: This key activates several functions:
Press this key slightly once and you will get into the MANUAL SELECT for the 144 frequencies. When the GROUP indicator is flashing you can press the UP/DOWN keys to select manually the desired Group. Then, you can press the MEM key to store this setting.

Press the MENU key twice and the CHANNEL indicator will flash. Use the UP/DOWN keys to selected the desired channel and then press MEM key to store this setting.

Press the MENU key three times and you can adjust the OUTPUT LEVEL. Using the UP/DOWN keys you have the choice to select three different levels:

PL O indicates that the output level is 1.1mV
PL 1 indicates that the output level is 575mV
PL 2 indicates that the output level is 250mV

Fig 1

Note: This function is only available using the XLR balanced output.

Press the MENU key four times and you will get into the MUTE function. Use the UP/DOWN keys to mute/unmute the Unit. When the display shows ▲LTO the unit is unmuted. When the display shows MUTE, the unit is muted.

Fig 2 mute function off

Fig 3 mute function on

Press the MENU key five times and you will activate the SQUELCH function. To squelch or not to squelch, this is the issue…
Squelch is a complicated name to express a simple concept: The threshold above or below that a signal is made pass through the receiver or not.

No.	squelch threshold
1	95.0dB
2	91.7dB
3	88.3dB
4	85.0dB
5	81.7dB
6	78.3dB
7	75.0dB
8	71.7dB
9	68.3dB
10	65.0dB

Table

Fig 4

4.2 For the AU-800H/800P transmitters

Press the CH/ON key for a few seconds and the transmitter will be powered ON.
At this point the blue back lighted display will show:
 · The frequency at which the unit is operating
 · The Battery Status

Preset frequency ◄——— ———► Remaining battery life

Fig 5

And now that you know how to operate your AU-800R Receiver, let's learn how to use the AU-800 Transmitters. The following instructions apply both to the handheld version and to the bodypack version.
There are 2 keys on the Transmitter labelled CH/ON and SELECT.
With the Transmitter switch ON you can slightly press the CH/ON key again and you will access to the following parameters:

 · Preset Group   · Preset Channel

Fig 6   Fig 7

Note: Why ▲LTO wireless systems come with 144 different frequencies? Not because you will need to use 144 different microphones at the same time. It is unlikely that you will use more than 8 systems at the same time so why 144 frequencies? This depends mainly of Countries regulations. We offer frequencies from 470 to 900 MHZ. Some of these frequencies are illegal in certain Countries and vice versa. Offering such a wide range of frequencies we make sure that each single Country on the planet will have more than enough choice of frequencies available. Not only: A certain frequency is close to the frequency generated by lighting equipment, a computer, a fax machine and so on. Therefore, thanks to the large number of frequencies available you can easily switch to another frequency that is interference-free.

In your Transmitter there are 12 frequency bands or GROUPS. Each Group contain 12 channels according to EMC regulations.

To select a Group you must first switch your Transmitter ON by pressing the CH/ON key for a few seconds until you hear the beep and the blue display is lighted. Then press the CH/ON key again slightly and you will access the GROUP menu. At this point use the SELECT key to change the GROUP value from 1 to 12. Now, to access the CHANNEL menu, press again slightly the CH/ON key two times and use the SELECT key to change frequency from 1 to 12. Your setting will be automatically saved in a few seconds and the display will go back to the main menu showing the operating frequency.

Note: Once you have changed the operating frequency on your Transmitter you need to activate the SCAN function in your AU-800R Receiver. In this way the Receiver with synchronize automatically on the Transmitter frequency.

- **RF Output Power Select**

Your Transmitter can operate on three different levels of output power. These are different from the Handheld Model and the Bodypack model.

For the Handheld model the levels are
- PL 0, the output power is 5dBm;
- PL 1, the output power is 10dBm;
- PL 2, the output power is 15dBm;

and for the Bodypack version the levels are
- PL 0, the output power is 3dBm;
- PL 1, the output power is 5dBm;
- PL 2, the output power is 12dBm;

- **LOCK Function**

   You don't want accidental change of frequency or other setting in the middle of a performance, do you? Any miss-operation during a live performance can be easily avoided thanks to the LOCK function. With the LOCK function ON no further change of setting is allowed until the Transmitter is unlocked. To access the LOCK menu press the CH/ON key four times and then press the SELECT key to lock or unlock the Transmitter Settings. Your choice of setting will automatically be saved into the Transmitter in a few seconds. The blue display shows "lock" and "unlock" depending on the operating mode.

Fig 1O: LOCK

Fig 11: UNLOCK

- **Mute Function**

   Sometimes, there are things that you want to tell to your Friends on stage or your nearby Companion during a Meeting but not necessarily to the rest of the world especially if you are ON LIVE on CNN... A smart feature on your Transmitter allows you to easily MUTE the microphone so you are free to talk to the people next to you without the rest of the world hearing what you say. To enter into MUTE function simply press the SELECT key for a few seconds and the Transmitter will mute any audio signal going to the Receiver. Press SELECT again for a few seconds and you will UNMUTE the Transmitter.

5. Technical Specifications

MODEL	AU-800R
Channel	Multi-channels, up to 144 frequency presets for each frequency bands
Frequency band	UHF 470-900 MHz Dependent on applicable country regulations
Receiver type	PLL UHF SYNTHESIZED
Frequency response	50 Hz-15KHz (±3dB)
Frequency stability	±0.005% (-10℃-50℃)
T.H.D.	1KHZ＜0.8%
Modulation mode	FM (F3E)
S/N Ratio	＞90dB
Dynamic	＞100dB
RF sensitivity	-100 dBm/30dB SINAD
Audio output	Unbalanced 6.3mm phone jack 550mV ; ±20KHz deviation
Balance output	1.1V , 20KHz deviation
Power supply	DC 15V/ 500mA (AC 115V/230V 50/60Hz adaptor)
Dimensions	210(W)x55 (D)x44(H)mm; (8.2" x 6.1" x 1.7)
Weight	0.99Kg

MODEL SPECIFICATION	AU-800H	AU-800P
Oscillation mode	PLL UHF SYNTHESIZED	
Carrier frequency band	UHF 470-900 MHz	
	Dependent on applicable country regulations	
Frequency response	50 Hz-15KHz (±3dB)	
Frequency stability	±0.005% (-10℃~ 50℃)	
T.H.D.	1KHz<0.8%	
Modulation mode	FM (F3E)	
RF output power	5-50mW(adjustable 3 bands)	
Dynamic	>100dB	
Tone frequency	30-33 KHz	
Current drain	100mA	
Max. Deviation	±35KHz	
Battery	"AA" type × 2	
Optional	Nickel hydrogen battery +charger	
Mic. Capsule(optional)	Condenser or Dynamic Capsule	Condenser or Dynamic Capsule
Dimensions	277x Φ36.5mm (10.9"xΦ1.44")	97mmx 68mmx 22mm(3.82"x2.68"x0.87")
Weight	0.246Kg	0.082Kg

6. Annex

Frequency Band Selection:

Most countries closely regulate the radio frequencies used in the transmission of wireless information. These regulations state which devices can use which frequencies, and help to limit the amount of RF(radio frequency)interference in all wireless communications. To be flexible enough to operate worldwide, AU-800R Wireless receivers are available in a number of models, each with a unique frequency range. Each frequency range, or band, spans up to 24MHz of the wireless broadcast spectrum. Available bands are:

F7: 798.000~822.000(798~827)MHz

	Group1	Group2	Group3	Group4	Group5	Group6
1	798.125	798.325	798.525	798.725	798.925	799.125
2	800.525	800.725	800.925	801.125	801.325	801.525
3	802.925	803.125	803.325	803.525	803.725	803.925
4	805.325	805.525	805.725	805.925	806.125	806.325
5	807.725	807.925	808.125	808.325	808.525	808.725
6	810.125	810.325	810.525	810.725	810.925	811.125
7	812.525	812.725	812.925	813.125	813.325	813.525
8	814.925	815.125	815.325	815.525	815.725	815.925
9	817.325	817.525	817.725	817.925	818.125	818.325
10	819.725	819.925	820.125	820.325	820.525	820.725
11	822.125	822.325	822.525	822.725	822.925	823.125
12	824.525	824.725	824.925	825.125	825.325	825.525

	Group7	Group8	Group9	Group10	Group11	Group12
1	799.325	799.525	799.725	799.925	800.125	800.325
2	801.725	801.925	802.125	802.325	802.525	802.725
3	804.125	804.325	804.525	804.725	804.925	805.125
4	806.525	806.725	806.925	807.125	807.325	807.525
5	808.925	809.125	809.325	809.525	809.725	809.925
6	811.325	811.525	811.725	811.925	812.125	812.325
7	813.725	813.925	814.125	814.325	814.525	814.725
8	816.125	816.325	816.525	816.725	816.925	817.125
9	818.525	818.725	818.925	819.125	819.325	819.525
10	820.925	821.125	821.325	821.525	821.725	821.925
11	823.325	823.525	823.725	823.925	824.125	824.325
12	825.725	825.925	826.125	826.325	826.525	826.725

Remark:

1. The values with underlines should be scanned manually by adjusting UP/DOWN key.
2. The following channels can be used simultaneously without any interference.

Group 1-1: 798.125	Group 2-1: 798.325
Group 2-2: 800.725	Group 2-5: 807.925
Group 3-4: 805.725	Group 5-1: 798.925
Group 5-8: 815.725	Group 7-1: 799.325
Group 8-6: 811.525	Group 12-2: 802.725

F8: 850.000~874.000(850~879)MHz

	Group1	Group2	Group3	Group4	Group5	Group6
1	850.125	850.325	850.525	850.725	850.925	851.125
2	852.525	852.725	852.925	853.125	853.325	853.525
3	854.925	855.125	855.325	855.525	855.725	855.925
4	857.325	857.525	857.725	857.925	858.125	858.325
5	859.725	859.925	860.125	860.325	860.525	860.725
6	862.125	862.325	862.525	862.725	862.925	863.125
7	864.525	864.725	864.925	865.125	865.325	865.525
8	866.925	867.125	867.325	867.525	867.725	867.925
9	869.325	869.525	869.725	869.925	870.125	870.325
10	871.725	871.925	872.125	872.325	872.525	872.725
11	874.125	874.325	874.525	874.725	874.925	875.125
12	876.525	876.725	876.925	877.125	877.325	877.525

	Group7	Group8	Group9	Group10	Group11	Group12
1	851.325	851.525	851.725	851.925	852.125	852.325
2	853.725	853.925	854.125	854.325	854.525	854.725
3	856.125	856.325	856.525	856.725	856.925	857.125
4	858.525	858.725	858.925	859.125	859.325	859.525
5	860.925	861.125	861.325	861.525	861.725	861.925
6	863.325	863.525	863.725	863.925	864.125	864.325
7	865.725	865.925	866.125	866.325	866.525	866.725
8	868.125	868.325	868.525	868.725	868.925	869.125
9	870.525	870.725	870.925	871.125	871.325	871.525
10	872.925	873.125	873.325	873.525	873.725	873.925
11	875.325	875.525	875.725	875.925	876.125	876.325
12	877.725	877.925	878.125	878.325	878.525	878.725

7. 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 any of 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 insur-ance.

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.

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