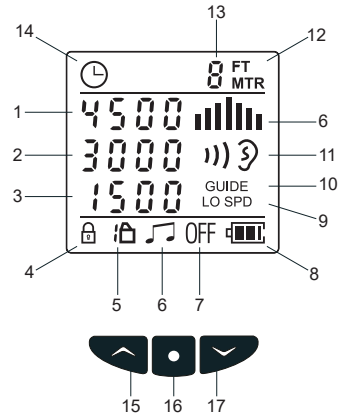
MANUAL

REV. 03.01, APRIL 2025



1 1st. warning altitude (1st. low speed alarm)
2 2nd. warning altitude (2nd. low speed alarm)
3 3rd. warning alarm (3rd. low speed alarm)
4 Lock icon
5 Warning bank
6 Pitch
7 OFF
8 Battery status
9 Low speed status
10 Guide tone icon
11 Ear/Sound Test icon
12 FT/MTR
13 Altitude/altitude offset
14 Clock
15 Up
16 Mode
17 Down

When testing the OPTIMA II™ on the ground the alarm's sounds may be perceived louder than in freefall, due to the lack of outside wind noise and pressure changes.

The device poses a risk for hearing damage due to high sound pressure (approximately 117dB) near the ears. Exposure to high-energy impulse noise can cause sudden loss of hearing. Exposure to noise is also associated with other hearing disorders such as tinnitus (perception of sound in the absence of an external source). Avoid using a higher volume setting than necessary.

The OPTIMA II™ must be mounted correctly, to ensure the alarms are audible during freefall. Always ensure the OPTIMA II™ is mounted correctly prior to jumping. The OPTIMA II™ must be active (powered on) prior to entering the airplane.

INTRODUCTION

Congratulations on purchasing your new OPTIMA II™!

The OPTIMA II™ audible altimeter is the latest in micro technology, and features the most advanced programming for accurately measuring freefall & canopy descent rates. The OPTIMA II™ allows the skydiver up to 4 sets of warning altitudes for high speed, and 3 for low speed flight. This provides added interactivity in configuring frequently used warning alarms. The OPTIMA II™ can be set for up to three climb to altitude warning alarms for ultimate altitude awareness.

The OPTIMA II™ raises the bar yet again to provide skydivers with the most accurate and useful functions available in an audible altimeter:

INSTRUCTIONS

Power ON

The OPTIMA II™ has been powered off prior to shipping from the factory. To turn the power ON, press and hold any key until the unit beeps, then release the key. The OPTIMA II™ runs a self-test and beeps three times, while flashing the screen three times.

After startup the OPTIMA II™ displays a screen configuration referred to henceforth as the "Main Window". This represents the starting point for all further OPTIMA II™ actions and subsequent displays.

Note: To save battery power, the screen display will switch OFF after 14 hours. However, the unit is still ready to jump.

Performing ACCESS

To avoid any unintentional changes in settings, all settings are "locked" behind an ACCESS sequence. ACCESS is required to unlock and change any settings.

1. Press and release ▪. The lock icon 🔒 turns off.
2. When the lock icon 🔒 turns back on, press and hold ▪. The lock icon 🔒 turns off again.
3. When the lock icon 🔒 turns back on, release ▪. The unit is now in ACCESS mode. If no button is pushed for 5 seconds, the OPTIMA II™ automatically leaves ACCESS mode.

Menu Function Sequence

By repeatedly pressing ▪ the OPTIMA II™ scrolls through the menu functions

To leave a menu function, wait until the display times out, or, press ▪ repeatedly until the lock icon flashes, then press ◂ or ▸ to exit.

1 Warning Alarm

It is possible to only have 1 warning alarm. The procedure is the same as above, but choose the same altitude for all 3 warning alarms (the OPTIMA II™ then sounds only the 3rd warning alarm).

Sound Pitch

Press ▪ again. The musical note icon and pitch bar graph will begin to flash.
Press ◂ or ▸ to change the pitch up or down.
The pitch bar graph will display the number of bars corresponding to the selected pitch and the selected pitch will sound.

Note: When selecting a pitch on either side of the center vertical bar (3,800 Hz), the output volume decreases about 5 dB because the speaker is no longer at its optimum resonance frequency.

Sound Volume

Press ▪ again.
Press ◂ or ▸ to select output volume.
"1" is the lowest volume (112 dB), "10" is the highest volume (117 dB) The OPTIMA II™ is factory preset to "7".

Note: In case of low battery the volume will automatically switch to "1" and it cannot be changed until the batteries have been replaced.

Test Warning Sounds

Press ▪ again. The ear icon will begin to flash.
Press ◂ or ▸. The OPTIMA II™ will sound the preset alarm sequence at the selected pitch. To stop the Test Warning Sounds, press ▪, ◂ or ▸.

Feet/Meters

Press ▪ again. The **FT** or **MTR** indicator located in the altitude area of the Main Display will begin to flash.
Press ◂ or ▸ to switch between feet (FT) or meters (MTR).

ALTIMETERS

Visit lbaltimeters.com for manual and support

Instructional videos and YouTube channel

WARRANTY

The following conditions apply:

If within 24 months of the purchase of your instrument, a defect or damage is identified by faulty manufacture, LB Altimeters will repair the unit at no cost the end user.

To make a claim under this warranty, send the unit to an authorized dealer or to our service center together with the dated purchase invoice or receipt.

The warranty becomes void if damage is caused by external circumstances or if the unit has been serviced or repaired by third parties unauthorized by our national agents or LB Altimeters.

All further claims, especially for defects after skydiving accidents, are excluded.

LB Altimeters has no obligation to honor any extension of warranty granted by any national agent.

For more info please visit LBAltimeters.com/warranty

WAIVER OF LIABILITY

The buyer and user of the OPTIMA II™ indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument.

WARNING!

The OPTIMA II™ is intended to be a complementary source for altitude awareness and must not be relied upon as your primary means of maintaining altitude awareness. Use the OPTIMA II™ at your own risk.

- **3 High Speed warnings:** Allows settings up to 19990 feet and can be used for large formations, wingsuit flight setup and other precision skydives where multiple high speed warnings are needed and desired.
- **3 Canopy Descent / Low Speed warnings:** The Canopy Descent warnings are essentially low speed warnings, and can also be used by wingsuit flyers to keep track of altitude in preparation for separation and canopy deployment.
- **Swoop Guide:** a unique series of beeps between the 2nd and 3rd canopy descent warning altitudes that increase in tempo as the canopy pilot approaches the 3rd warning altitude.

The OPTIMA II™ is fully automatic and can be manually turned ON or OFF. The OPTIMA II™ continually reads ambient air pressure for real-time accuracy and attention to ground level.

The OPTIMA II™'s small and ergonomic design provides the user with comfort and less bulk when used inside a soft or hard-shell helmet.

The OPTIMA II™ is specifically designed for advanced skydiving disciplines: Large Formations, Relative Work, Free Flying, Wingsuit Flying, Student, Tandem, AFF, and also canopy related activities such as accuracy and CRW.

OPTIMA II™ sets the standard as being the most advanced audible altimeter available with more features, greater accuracy and the ability to finely tune your altitude awareness.

For further information or to ask questions about OPTIMA II™ or any other LB Altimeters altitude awareness instruments, please visit LBAltimeters.com

High Speed Warnings, Setup Selector, and Altitude Offset

Perform ACCESS in the Main Window

Warning Bank Menu Functions

The OPTIMA II™ has 4 freefall warning banks. When the warning bank icon 🔒 is flashing, press ◂ or ▸ to select warning bank 1 to 4.

Setting the Warning Altitudes

The setting of altitudes in each warning bank can be performed either on the ground or in the airplane during the climb to jump altitude.

3 Warning Alarms

1. Press ▪ until 1st warning altitude flashes
2. Press ◂ or ▸ to change 1st warning altitude
3. Press ▪ again and the 2nd warning altitude flashes
4. Press ◂ or ▸ to change 2nd warning altitude
5. Press ▪ again and the 3rd warning altitude flashes
6. Press ◂ or ▸ to change 3rd warning altitude

Sequence of Warning Alarm Altitudes

Please note that when setting the warning altitudes, it is possible to set the 1st warning alarm altitude lower than the 2nd, or even the 3rd, warning altitudes. The 2nd warning altitude could be set to a higher value than the 1st warning altitude, or a lower value than the 3rd warning altitude, and so on. This is not a problem – when the OPTIMA II™ exits ACCESS mode, it will automatically sort and store the warning alarms such that the highest warning altitude become the 1st warning alarm, the next highest warning altitude becomes the 2nd warning alarm, and the lowest warning altitude becomes the 3rd warning alarm.

2 Warning Alarms

It is possible to have only 2 warning alarms. The procedure is the same as above, but choose the same altitude for the for the 1st and 2nd warning alarms (the OPTIMA II™ then sounds only the 2nd and 3rd warning alarms).

Altitude Offset

If the DZ elevation differs from that of the airport of takeoff, use the altitude offset capability to set the DZ elevation prior to entering the airplane or set the altitude offset to zero when climbing through the DZ elevation (positive altitude for higher DZ elevation, negative altitude for lower DZ elevation).

Press ▪ again. The displayed altitude (normally 0) in front of the FT or MT indicator will begin to flash.
Press ◂ or ▸ to set an altitude offset to match the altitude of the landing DZ relative to the takeoff airport.

Note: When performing manual altitude offset the OPTIMA II™ enters Jump Mode and retains the altitude offset for 14 hours, if no jump is made. After 14 hours the OPTIMA II™ recalibrates to the field elevation where it is currently located and once again displays 0. The altitude offset is not retained when the OPTIMA II™ is powered OFF.

Power OFF

The OPTIMA II™ can be manually powered OFF to further extend the battery life time when not in use. Customer settings (except altitude offset) are stored in nonvolatile memory when the OPTIMA II™ is powered OFF. When powered OFF, the OPTIMA II™ cannot be used for jumping.

Press ▪ again. The OFF icon in the icon area of the Main Display will begin to flash.
Press and hold both ◂ and ▸ until the display flashes, then release. The OPTIMA II™ will shut off.

Canopy Descent and Low Speed Warnings Selector

Description

The OPTIMA II™ includes two types of warning sounds which can be selected to sound while under canopy descent or during wing suit flight.

1. Canopy Descent and Low Speed Warnings:
Short beeps sound when passing through 1, 2 or 3 selectable altitudes during canopy descent or wing suit flight.

2. Guide Tones:
A unique series of guide beeps sound when flying from the 2nd through the 3rd selected Canopy Descent Warning altitudes.

Setting Canopy Descent and Low Speed Warnings

Note: Minimum selectable height is 100 ft (30 m).

Note: When Canopy Descent and Low Speed Warnings are enabled, the LO SPD icon will show in the warning bank area of all warning bank displays and in the Main Display. To disable LO SPD, first disable Guide Tones, then set all warnings to ---

In the Main Window, press ▼ to access the Canopy Descent and Low Speed Warnings Selector.
In this window perform ACCESS.

Warning Bank Menu Functions

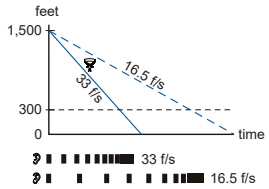
The OPTIMA II™ has 4 canopy descent/low speed warning banks. When the warning bank icon is flashing, press ◄ or ► to select warning bank 1 to 4.

Setting the Warning Alarm Altitudes

The setting of altitudes in each warning bank can be performed either on the ground or in the airplane during climb to jump altitude.

3 Warning Alarms

1. Press ● until 1st warning altitude flashes
2. Press ◄ or ► to change 1st warning altitude
3. Press ● again and the 2nd warning altitude flashes
4. Press ◄ or ► to change 2nd warning altitude
5. Press ● again and the 3rd warning altitude flashes
6. Press ◄ or ► to change 3rd warning altitude
7. Press ● to ensure saving of low speed altitude settings.



The series of beeps can be compared to an aircraft ILS approach. The first beep sounds when passing through the 2nd warning altitude, the next beep 30% into the glide corridor, then after 55% and so on as depicted in the diagram. The diagram shows an example where the 2nd warning is set to 1,500 ft. and the 3rd warning to 300 ft. A long beep sounds when passing through the 3rd selected altitude. The steeper a glide angle the shorter time between beeps.

Note: For safety reasons, the minimum selectable swoop height is 100 ft (30 m) and the minimum selectable altitude difference between the 2nd and the 3rd warnings is 300 ft (90 m).

Press ● again.
The Guide icon will start flashing
Press ◄ or ► until the Guide icon is ON or OFF

Note: When Guide Tones are enabled, the GUIDE icon will show in the warning bank area of all warning bank displays and in the Main Display.

Test Warning Sounds

Press ● again. The "Ear" icon will begin to flash. Press ◄ or ►. This causes the OPTIMA II™ to sound the preset alarm sequence at the selected pitch.

Note: When GUIDE is enabled, a series of beeps sound which simulates a 10m/sec canopy descent and when GUIDE is disabled, three warning beeps sound.

Setting Climb to Altitude Warnings and Altitude Offset

The setting of warning altitudes can be performed either on the ground, or in the airplane during climb to jump altitude.

Note: Minimum selectable height is 1000 ft (300 m). Default values '1000 ft'., '--- ft.', and '--- ft.' have been factory preset for Climb to Altitude Warnings.

In the Main Window mode, press ◄ to access the Climb to Altitude Warnings and Altitude Offset Selector. In this window perform ACCESS.

3 Warning Alarms

1. Press ● until 1st warning altitude flashes
2. Press ◄ or ► to change 1st warning altitude
3. Press ● again and the 2nd warning altitude flashes
4. Press ◄ or ► to change 2nd warning altitude
5. Press ● again and 3rd warning altitude flashes
6. Press ◄ or ► to change 3rd warning altitude

Sequence of Climb Warning Alarm Altitudes

You may note that when setting the warning altitudes, it is possible to set the 1st warning alarm altitude lower than the second or even the 3rd warning altitudes. The 2nd warning altitude could be set to a higher value than the 1st warning altitude or a lower value than the 3rd warning altitude, and so on. This is not a problem – when the OPTIMA II™ exits ACCESS mode, it will automatically sort and store the warning alarms such that the highest warning altitude become the 1st warning alarm, the next highest warning altitude becomes the 2nd warning alarm, and the lowest warning altitude becomes the 3rd warning alarm.

1 or 2 Warning Alarms

If you only want 1 or 2 warning alarms, preset the alarm(s) not used to '--- ft.'

Mounting the OPTIMA II™

The OPTIMA II™ can be mounted on the outside of a helmet. Loop the wax cord through the four mounting holes and fasten with knots to the helmet.

Note: Make sure that there is no material between the OPTIMA II™ loudspeaker hole and your ear.

Resetting the OPTIMA II™

Press a paperclip into the tiny hole on the rear side of the unit and release. The unit restarts.

Note: Reset the unit after battery replacement, when trouble-shooting, and when verifying software version number.

Air Filter

The OPTIMA II™ is water resistant against minor splashes of water. The Air Filter is the white circular part mounted on the side of the unit. If it becomes wet, let the OPTIMA II™ dry in a warm place for 48 hours.

Note: The Air Filter must be replaced if jumping is resumed quickly or if the OPTIMA II™ has been submerged into water. The Air Filter removal tool kit is an accessory which can be purchased separately.

OPTIMA II™ Firmware Version

Perform reset. The version number is displayed at the upper part of the screen (altitude area). The numbers displayed in the middle of the screen are factory reference numbers.

SPECIFICATIONS

Dimensions: 52 x 40 x 12 mm
(2.16 x 1.57 x 0.47 inches)

Weight: 26 grams (0.9 oz.)

Battery type: 2 x Renata CR 2325

Battery Life Time: 2.5 years or 500 jumps

Freefall alarm sounds:

1st warning: One 3 second pulsating alarm if vertical airspeed exceeds 13 m/sec at preset altitude.

Sound sequence: Pulsating, low repetition.

2nd warning: One 4 second pulsating alarm if vertical airspeed exceeds 13 m/sec at preset altitude.

Sound sequence: Pulsating, high repetition.

3rd warning: Siren alarm as long as vertical airspeed exceeds 13 m/sec at or below the preset altitude. After deployment the trigger speed switches to 35 m/sec.

Sound sequence: High pitch continuous siren.

Low Speed alarm sounds:

1st warning: One short 0.2 second beep

2nd warning: Two short 0.2 second beeps

3rd warning: One long 1.3 second beep

Climb to Altitude Warnings: Two 0.2 second beeps

Alarm output volume: 117 dB at maximum pitch, 112 dB at minimum pitch

Freefall alarm calibration range: 1,000 to 9,990 feet (30 to 3,330 meters)

Low speed alarm calibration range: 100 to 9,990 feet (90 to 3,330 meters)

2 Warning Alarms

It is possible to only have 2 warning alarms. The procedure is the same as above, but choose the same altitude for the 1st and 2nd warning alarms (the OPTIMA II™ then sounds only the 2nd and 3rd warning alarms).

1 Warning Alarm

It is possible to only have 1 warning alarm. The procedure is the same as above, but choose the same altitude for all 3 warning alarms (the OPTIMA II™ then sounds only the 3rd warning alarm).

Sound Pitch

Press ● again. The musical note icon and pitch bar graph will begin to flash.
Press ◄ or ► to change the pitch up or down.
The pitch bar graph will display the number of bars corresponding to the selected pitch and the selected pitch will sound.

Note: When selecting a pitch on either side of the center vertical bar (3,800 Hz), the output volume decreases about 5 dB because the speaker is no longer at its optimum resonance frequency.

Sound Volume

Press ● again.
Press ◄ or ► to select output volume for all three canopy low speed warnings. "1" is the lowest volume (112 dB), "10" is the highest volume (117 dB) The OPTIMA II™ is factory preset to "3".

Note: In case of low battery the volume will automatically switch to "1" and it cannot be changed until the batteries have been replaced.

Setting Guide Tones

When Guide Tones are activated, a unique series of beeps sound between the 2nd and 3rd Canopy Descent Warning altitudes.

Climb to Altitude Warnings and Clock Selector

The OPTIMA II™ is preset to beep at 1,000 feet on the climb to altitude. The altitude at which this beep sounds may be increased to the user's preferred altitude. The OPTIMA II™ can also be set for up to three different altitude beeps during the climb to jump altitude.

At the lowest preset altitude, the OPTIMA II™ sounds a sequence of beeps. These beeps have two functions:

1. The beeps indicate that the OPTIMA II™ has calibrated itself to the local ground elevation and is ready to jump.
2. The number of beeps indicates the altitude at which the highest warning alarm is set; for example: If set to 4,500 ft, the signal will sound: beep-beep-beep-beep-(pause)-beep. The number of rapid-sequence of beeps indicates the highest warning altitude in thousands of feet. The beep after a pause (if any), signifies a 500-foot altitude increment.

Should the battery voltage of the OPTIMA II™ show low capacity, the beep sequence is followed by 5 short beeps. This indicates that the batteries should be replaced.

Note: At the same time the output volume setting is automatically changed to low volume "1" and it cannot be changed until the batteries have been replaced.

While the aircraft is climbing to altitude, the OPTIMA II™ displays the current altitude at the top of the display.

Time Set Function

Built-in clock
In Main Display mode, press ◄ to display the time. The time is in 24-hour format. The time is displayed for 15 seconds and then reverts back to the Main Display.

Setting the time:

Perform ACCESS and press ● repeatedly until "clock" flashes. Then press ◄ or ► to set the time.

OPERATIONAL CONSIDERATIONS

Prior to Jumping

The OPTIMA II™ continually adjusts to the local elevation and displays 0 FT (MTR) at the top of the display. If the top of the display does not show "0" (or your selected altitude offset) prior to jumping, the unit has not adjusted itself to the local elevation and it must be manually zeroed. See the section, "Altitude Offset Function" under Menu functions above. Even when the display turns OFF, the unit is still ready for jumping.

Setting an Altitude Offset

If the drop zone (DZ) elevation is different from that of the take-off airport, you may compensate for this difference by setting an Altitude Offset – see the Altitude Offset menu function described above.

Battery Status

- Full capacity.
- Half capacity.
- Low capacity. Batteries should be replaced as soon as possible. As a reminder, 5 short beeps sound when climbing through the lowest preset climb altitude. At the same time, the output volume setting is automatically changed to low volume "1".
- Empty batteries. Empty battery icon flashing. Replace batteries immediately.

Battery replacement

Carefully remove screw from battery cover and remove batteries. Install new batteries and note polarity. Use only Renata CR 2325

Note: Reset the OPTIMA II™ after replacing batteries. Customer settings are kept in non-volatile memory when removing batteries. However, the built-in clock may need to be reset to the current time.

⚠ WARNING

KEEP BATTERIES OUT OF REACH OF CHILDREN
Swallowing can lead to chemical burns, perforation of soft tissue, and death. Severe burns can occur within 2 hours of ingestion. Seek medical attention immediately.

Trouble-shooting

When the OPTIMA II™ detects a fault, an error ("ERR") sign and trouble shooting number 2 to 4 are displayed in the upper part of the screen. At the same time the unit beeps every minute.

The "ERR" trouble shooting codes are as follows:
ERR 2, ERR 3, ERR 4 = unit is defective.
Remedy: perform reset.

If the unit does not function correctly even after replacing batteries and pressing reset, perform the following:
Press ● and hold while resetting.

The OPTIMA II™ resets to factory settings and sounds three beeps.

If the unit is still faulty, please contact your local dealer or LB Altimeters.

Minimum Climb to Altitude setting: 1,000 feet (300 meters)

Altitude selection interval: 10 feet (10 meters)

Operating altitude: 0 to 40,000 feet

Accuracy: ± 20 feet (+/- 6 meters) at MSL

Operating Temperature Range: -20° C to +50° C
(-4° F to +122° F)

Storage Temperature Range: -30° C to +60° C
(-22° F to +140° F)

Electromagnetic Compatibility: 2014/30/EU

LB Altimeters part no.: 205222

NATO Stock no.: 6675-22-620-6693