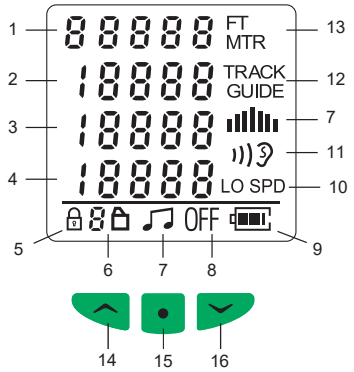
# MANUAL

REV. 03.01, APRIL 2025




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

## 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 QUATTRO™ indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument.

## WARNING!

The QUATTRO™ 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 QUATTRO™ at your own risk.

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

## INTRODUCTION

Congratulations on purchasing your new QUATTRO™!

The QUATTRO™ audible altimeter is the latest in micro technology, and features the most advanced programming for accurately measuring freefall & canopy descent rates. The QUATTRO™ 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 QUATTRO™ can also be set up to three climb warning alarms for the ultimate precision altitude awareness.

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

- **4 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.
- **Track Guide:** 0.5 second pulsating tones between the 1st and 2nd warnings help keep track of altitude separation, in tracking groups or waves.

- **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.

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

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

QUATTRO™ 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 QUATTRO™ or any other LB Altimeters altitude awareness instruments, please visit LBAltimeters.com

## INSTRUCTIONS

### Power ON

The QUATTRO™ 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 QUATTRO™ runs a self-test and beeps three times, while flashing the screen three times.

After startup the QUATTRO™ displays a screen configuration referred to henceforth as the "Main Window". This represents the starting point for all further QUATTRO™ 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 QUATTRO™ automatically leaves ACCESS mode.

### Menu Function Sequence

By repeatedly pressing the QUATTRO™ 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.

### 3 Warning Alarms

It is possible to only have 3 warning alarms. The procedure is the same as above, but choose the same altitude for the 1st and 2nd warning alarms (the QUATTRO™ then sounds only the 2nd, 3rd and 4th warning alarms).

*Note: Track Guide is then disabled.*

### 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, 2nd and 3rd warning alarms (the QUATTRO™ then sounds only the 3rd and 4th 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 4 warning alarms (the QUATTRO™ then sounds only the 4th warning alarm).

### Track Guide

Press again. The Track Guide icon will start flashing
Press or until the Track Guide icon is ON or OFF.

When Track Guide is activated, a series of 0.5 second beeps sound between the 1st and 2nd high speed warning.

*Note: When Track Guide is enabled, the Track Guide icon will show in the warning bank area of all warning bank displays and in the Main Window.*

### 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 QUATTRO™ is factory preset to "7".

## High Speed Warnings and Setup Selector

Perform ACCESS in the Main Window

### Warning Bank Menu Functions

The QUATTRO™ 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.

### 4 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 again and the 4th warning altitude flashes
8. Press or to change 4th 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 4th, 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 QUATTRO™ 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 4th warning alarm.

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

### Sound Volume Track Guide

Press again. One output value will begin to flash.
Press or to select output volume for Track Guide. "1" is the lowest volume (112 dB),"10" is the highest volume (117 dB) The QUATTRO™ is factory preset to "3".

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

### 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.*

### Test Warning Sounds

Press again. The ear icon will begin to flash.
Press or . The QUATTRO™ will sound the preset alarm sequence at the selected pitch.

If Track Guide is enabled, the Track Guide will simulate "real-time" based on the difference between 1st and 2nd warning at speed 120mph (176 feet/sec) or 193 km/h (54 m/sec). To stop the Test Warning Sounds, press , or .

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

ALTIMETERS

Visit lbaltimeters.com for manual and support

Instructional videos and YouTube channel

### 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).

### Power OFF
The QUATTRO™ 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 QUATTRO™ is powered OFF. When powered OFF, the QUATTRO™ 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 QUATTRO™ will shut off.

## Canopy Descent and Low Speed Warnings Selector

### Description
The QUATTRO™ includes 3 canopy low speed warning sounds (short beeps sound when passing through 1, 2 or 3 selectable altitudes) which can be selected to sound while under canopy descent or during wing suit flight.

### Setting Canopy Descent and Low Speed Warnings
*Note: Minimum selectable height is 100 ft (30 meters). Default values 1200 ft., 900 ft., and 600 ft. have been factory preset for Canopy Descent Warning altitudes.*

*Note: When Canopy Descent is 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 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 QUATTRO™ 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.

### 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 QUATTRO™ 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 QUATTRO™ 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 QUATTRO™ 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.*

### Test Warning Sounds
Press ▪ again. The "Ear" icon will begin to flash. Press ◀ or ▶. This causes the QUATTRO™ to sound the preset alarm sequence at the selected pitch.

## Climb to Altitude Warnings and Altitude Offset Selector

The QUATTRO™ 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 QUATTRO™ can also be set for up to three different altitude beeps during the climb to jump altitude.

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

1. The beeps indicate that the QUATTRO™ 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 QUATTRO™ 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 QUATTRO™ displays the current altitude at the top of the display.

### 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 QUATTRO™ 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.

### 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 altitude (normally 0) next to the FT or MTR 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 QUATTRO™ enters Jump Mode and retains the altitude offset for 14 hours, if no jump is made. After 14 hours the QUATTRO™ recalibrates to the field elevation where it is currently located and once again displays 0. The altitude offset is not retained when the QUATTRO™ is powered OFF.*

## OPERATIONAL CONSIDERATIONS

### Prior to Jumping
The QUATTRO™ 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.

### Mounting the QUATTRO™
The QUATTRO™ 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 QUATTRO™ loudspeaker hole and your ear.*

### Resetting the QUATTRO™
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 troubleshooting, and when verifying software version number.*

### Air Filter
The QUATTRO™ 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 QUATTRO™ dry in a warm place for 48 hours.

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

### QUATTRO™ 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.

### 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 QUATTRO™ 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 QUATTRO™ 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 QUATTRO™ resets to factory settings and sounds three beeps.

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

## 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 1.5 second pulsating alarm if vertical airspeed exceeds 13 m/ sec at preset altitude.

Sound sequence: Pulsating, low repetition.

**2nd warning:** One 3 second pulsating alarm if vertical airspeed exceeds 13 m/ sec at preset altitude.

Sound sequence: Pulsating, low repetition.

**3rd warning:** One 4 second pulsating alarm if vertical airspeed exceeds 13 m/sec at preset altitude.

Sound sequence: Pulsating, high repetition.

**4th 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.

**Track Guide:**

0.5 second beeps between 1st and 2nd warning.

**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 19,990 feet (30 to 6,000 meters)

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

**Climb to Altitude calibration range setting:** 1,000 to 9,990 feet (300 to 3,330 meters)

**Altitude selection interval:** 10 feet (10 meters)

**Operating altitude:** 0 to 40,000 feet

**Accuracy:** ± 1.2 %

**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.: 205233

NATO Stock no.: 6610-22-628-4277