# 6 deepblu



# Product Manual V2.0 COSMIQ Dive Companion

Firmware Version 0.7

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# **SECTION 1 - INTRODUCTION**



#### Congratulations on the ownership of your new COSMIQ Dive Companion!

The COSMIQ Dive Companion is a multi-purpose dive computer for scuba divers and freedivers designed to enhance your recreational diving experience. It performs all of the necessary functions of a dive computer, providing you with the real-time information you need to dive safely. Plus, it offers wireless connectivity with the Deepblu mobile app, via Bluetooth, allowing you to effortlessly create digital dive logs. COSMIQ and the Deepblu app work together to make your diving experience easy and hassle-free.

#### Main Features of COSMIQ:

- Measures all vital dive data and performs decompression, saturation and desaturation calculations, for Standard Air and Nitrox dives.
- Deepblu Decompression Algorithm based on the calculations on the Bühlmann ZH-L16C model. Three Safety Factor settings: Conservative, Normal or Progressive.
- Nitrox-capable: the oxygen level (FO<sub>2</sub>) is adjustable between 21% and 40%.
- Dive Plan function for planning dives in advance.
- Freedive Mode built specifically for apnea/freediving.
- Gauge Mode setting for use as a depth gauge and timer.
- Sound and visual alarm warnings.
- Dive logbook saves dive data for up to 25 dives.
- Bluetooth 4.0 for uploading and saving dive data to the Deepblu mobile app to create digital dive logs.
- 2.2 inch high contrast LCD screen with pixel-less EBTN technology.
- Rechargeable lithium-ion battery with magnetic USB connector.
- Built-in clock and calendar.
- Ability to adjust settings by syncing COSMIQ with the Deepblu mobile app.

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# 1.1 PRODUCT MANUAL

Please take the time to read and digest this product manual and pay attention to all the instructions and warnings contained within. Save it for future reference. We recommend that you upload it to a cloud storage service or save it to your computer or mobile device to enable access to it anytime, wherever you are.

The COSMIQ Product Manual contains vital information for you to become familiar with your device. Ensure that you fully understand the displays, functions, settings and limitations that govern the use of this dive computer. If you have any questions about the Product Manual or the dive computer, contact the Deepblu Sales Ambassador or COSMIQ Reseller who sold you the dive computer, speak to a trained dive instructor or contact Deepblu's support team before diving with it.

Be mindful that you are responsible for your own safety. When used correctly, in accordance with your dive training and the instructions provided in this manual, the COSMIQ Dive Companion is a powerful instrument for supporting recreational/sport diving.

If you attempt to dive deeper than 40 meters/130 feet, do decompression or staged dives, or dive in any enclosed or challenging environments such as in caves, wrecks, ice, high altitude lakes, or any sort of penetration diving using trimix, or any other kind of air mix with oxygen levels lower than 21% or higher than 40%, or any technical diving, please DO NOT use this device as your primary recording device, gauge or computer. The COSMIQ Dive Companion is only designed and intended for use in recreational scuba diving and apnea/freediving.

# 1.2 COSMIQ FIRMWARE

COSMIQ's operating system is constantly being improved by Deepblu's development team to enhance the features and functions of the dive computer. Firmware updates to the operating system are offered periodically over-the-air (OTA) and can be installed by pairing and syncing COSMIQ with the Deepblu app.

It is very important that you update the firmware on your COSMIQ each time an update is available, as each firmware update contains new improvements, modifications and bug fixes which can help to optimize your diving experience with COSMIQ.

The instructions contained in this Product Manual are consistent with the features and functions available with COSMIQ Firmware Version 0.7. If your COSMIQ is not running Firmware Version 0.7, please sync your COSMIQ with the Deepblu app and install the firmware update as soon as possible.

The firmware version currently installed on COSMIQ is indicated in the bottom right hand corner of the display screen when COSMIQ is in **Sync Mode** 2.

To update COSMIQ's firmware:

- 1. Ensure that you have the latest version of the Deepblu app installed on your smartphone.
- 2. Log in to your personal Deepblu account.
- 3. Pair COSMIQ with the Deepblu app.
- For the iOS app, access the Settings page in the main menu. On the Android app, access the Settings page in the COSMIQ Options menu. Go to COSMIQ Firmware and press Update. The update process should take 7 to 8 minutes.

For full instructions on how to pair COSMIQ with the Deepblu app see Section 4.5 below.

# 1.3 FIRMWARE UPDATE HISTORY

Please see the table below for details about each firmware update currently released to date, as well as the major functions and features which were improved or modified.

Release Date	Version	Improvements/Modifications
July 20 <sup>th</sup> , 2016	0.7	<ul> <li>Added deepest depth reding in Scuba Mode</li> <li>Alarms added to remind users to charge COSMIQ's battery when the battery power is extremely low.</li> <li>'Err' warnings indicating a lockout from Scuba Mode changed to 'SUF', advising users to stay on the surface.</li> </ul>
June 15 <sup>th</sup> , 2016	0.6	<ul> <li>Added timeout setting for OTA firmware upgrade process.</li> <li>Optimized battery consumption and adjusted battery power indicator.</li> </ul>
May 24 <sup>th</sup> , 2016	0.5	<ul> <li>Added Safety Factor function, allowing users to set COSMIQ's algorithm to Conservative, Normal or Progressive.</li> <li>Added option to set PPO<sub>2</sub> level between 1.2 bar and 1.6 bar.</li> <li>Added 'Err' display message in Dive Plan mode when Scuba Mode is locked.</li> <li>NDL bar shown above the surface.</li> <li>Time and depth of last freedive shown in Freedive Mode above the surface.</li> </ul>
April 12 <sup>th</sup> , 2016	0.4	<ul> <li>'NO FrEE' display warning added to Freedive Mode after a dive in Scuba Mode.</li> <li>No Fly Time adjusted to 24 hours after a dive in Freedive Mode.</li> <li>Added the ability access the Dive Plan function through Watch Mode.</li> <li>Set the deepest depth to be shown in Dive Plan to 40 meters/130 feet or the maximum operating depth (MOD).</li> <li>Modified the formula determining Surface Interval Time after a dive in Freedive Mode.</li> <li>Surface Interval Time shown in both Watch Mode and Freedive Mode.</li> </ul>
April 9 <sup>th</sup> , 2016	0.3	Restricted ability to shutdown COSMIQ to Watch Mode only.
March 25 <sup>th</sup> , 2016	0.2	<ul> <li>COSMIQ able to show temperatures below -10°C/14°F.</li> <li>Added automatic reboot function after upgrading firmware.</li> <li>Introduced Scuba Mode lockdown if No Dive Time is over 30 minutes.</li> </ul>

# SECTION 2 - WARNINGS AND SAFETY MEASURES

#### \*\*\*If you are taking COSMIQ on a flight, you MUST turn it off before boarding and make sure to store it in the pressurized cabin.\*\*\*

- 1. PLEASE CAREFULLY READ THE ENTIRE CONTENTS OF THE PRODUCT MANUAL BEFORE USING THE COSMIQ DIVE COMPANION. Be sure that you fully understand the purpose, technical functions, settings and limitations of the COSMIQ Dive Companion before you dive with it. Failure to do so may cause you to misunderstand the instructions and failure to heed the warnings and instructions may cause you to engage in behavior that might lead to serious injury, harm, sickness or even death.
- 2. THE COSMIQ DIVE COMPANION IS INTENDED TO BE USED FOR RECREATIONAL AND SPORT DIVING ONLY. It is not recommended for professional or technical diving, which require longer dive times and deeper depths than is recommended for recreational sport dives. Commercial or professional diving may subject the diver to depths and conditions that result in an increased risk of decompression illness and/or other pressure-related complications. Therefore, Deepblu strongly advises that the device not be used for any activities other than recreational/sport diving.
- 3. ONLY SCUBA DIVERS TRAINED AND CERTIFIED BY AN INTERNATIONALLY ACCREDITED DIVE AGENCY IN THE APPROPRIATE USE OF SCUBA EQUIPMENT AND TECHNIQUES, AND WHO ARE FAMILIAR WITH THE USE AND FUNCTIONS OF DIVE COMPUTERS, SHOULD USE THE COSMIQ DIVE COMPANION. Using a dive computer is not a substitute for receiving adequate and proper training. Inadequate or improper training may cause a diver to engage in behavior that may lead to serious injury or death.
- 4. ONLY FREEDIVERS TRAINED AND CERTIFIED BY A RECOGNIZED AGENCY IN THE APPROPRIATE USE OF FREEDIVING TECHNIQUES SHOULD USE THE COSMIQ DIVE COMPANION. Using a dive computer is not a substitute for receiving adequate and proper training. Inadequate or improper training may cause a diver to engage in behavior that may lead to serious injury or death.
- 5. USING COSMIQ DOES NOT REMOVE THE RISK OF DECOMPRESSION ILLNESS (DCI). The risk of decompression illness may still be present even with a dive profile based on dive tables or which is deemed safe by a dive computer. COSMIQ does not take into account the unique biological characteristics of individual divers, including physiological disposition, alcohol consumption, dehydration, or use of medication or other drugs, all of which may cause a diver to be more susceptible to decompression illness. Deepblu strongly advises that you dive safely within the limits prescribed by dive tables and COSMIQ, and that you consult a doctor before diving to determine your fitness for diving.
- 6. THE COSMIQ DIVE COMPANION DOES NOT REPLACE THE NEED FOR OTHER INSTRUMENTS. COSMIQ is intended to supplement the use of other instruments, including a depth gauge, pressure gauge, timer and watch. Deepblu further recommends that COSMIQ be used in conjunction with dive planning based on dive tables.
- 7. COSMIQ IS INTENDED FOR PERSONAL USE ONLY. It is NOT to be shared among divers during dives or exchanged between two dives in a series. The information displayed applies only to the diver who has been using it throughout a dive or series of dives, therefore the

recorded information will not be accurate for someone who has not been using it continuously.

- 8. DO NOT USE COSMIQ FOR DIVES DEEPER THAN 40 METERS/130 FEET. Deepblu strongly recommends that divers do not dive below 40 meters/130 feet, the limits for recreational diving. Doing so greatly increases the risk of oxygen toxicity and decompression illness.
- 9. ALWAYS ENSURE THE PROPER FUNCTIONING OF COSMIQ BEFORE DIVING. Before diving, check the display screen to confirm that information is being displayed clearly. Toggle between modes to check that it is functioning properly. Additionally, make sure that there is sufficient battery power to complete your dive. DO NOT dive if the computer's display is not clearly visible, if it is frozen in one mode, or if the battery power is low.

# SECTION 3 - COSMIQ DISPLAY REFRENCE GUIDE



- 1 Watch Mode
- 2 Scuba Mode
- 3 Gauge Mode
- 4 Freedive Mode
- 5 Log Mode
- 6 Sync Mode

- 7 Battery Power Indicator
  - <sup>8</sup>) Water Temperature
  - Dive Time
  - Ascent Rate Bar
  - No Decompression Limit (Scuba/Gauge Mode) Current Depth (Freedive Mode)
- 12 NDL Graphic Bar



Time (Watch Mode) Current Depth (Scuba Mode) Nitrox % (Scuba Mode) Dive Time (Freedive Mode) Sync Time (Sync Mode)

- Surface Interval (Watch Mode) Last Dive Date (Watch Mode) Current Date (Watch Mode) Surface Interval (Watch Mode) Current Time (Scuba Mode) Current Time (Gauge Mode) Time-In (Log Mode)
- 5 No Dive icon

- 16 No Dive Time (Watch Mode) Max Depth or Ceiling Depth (Scuba Mode) Max Depth (Freedive Mode) Depth (Dive Plan)
  - 7 Ascend / Descend icon
  - No Fly Time (Watch Mode) Stop Countdown Time (Scuba Mode) Max Time (Freedive Mode) Log Number (Log Mode) No Decompression Limit in mins (Dive Plan)
- 19 No Fly icon
- Freedive Mode icon
- 🕦 Nitrox icon

# SECTION 4 - OVERVIEW

# 4.1 OPERATING MODES

The functions of the COSMIQ Dive Companion are organized into 6 operating modes. You can always tell which mode COSMIQ is in by looking at the icon indicator at the top of the display screen.

#### **COSMIQ Operating Modes**

- Watch Mode: The default mode for COSMIQ. Time and date are displayed along with the battery level indicator. COSMIQ will enter **Standby** after 20 seconds of inactivity in **Watch Mode**. The Dive Plan function can be accessed from this mode.
- **Scuba Mode**: COSMIQ measures current depth, dive time, water temperature and performs all decompression calculations. It also monitors ascent rate and determines required stop times. COSMIQ monitors CNS oxygen toxicity and initiates visual and audible alarms to warn of potentially dangerous situations. Divers can pre-set the oxygen level between 21% and 40% and set a depth and/or time alarm.
- **Gauge Mode**: COSMIQ acts as a depth gauge and timer ONLY. It does not perform any calculations related to decompression, saturation or desaturation. **Scuba Mode** will be locked for 24 hours after a dive in **Gauge Mode**.
- **Freedive Mode**: COSMIQ measures current depth, dive time and water temperature. Freedivers can set a Max Depth and/or Max Time alarm.
- **Log Mode**: Allows you to access all dive data from previous dives. Maximum depth, dive time, water temperature, time in, date and the number of the dive are all displayed for each saved dive.
- **Sync Mode**: Use this mode to upload dive data from COSMIQ to the Deepblu app via Bluetooth. The firmware version that your COSMIQ is running is indicated in the bottom right corner of the screen.

# 4.2 BATTERY AND CHARGING

COSMIQ has a lithium-ion battery that is rechargeable using the magnetic USB connector, which is compatible with all standard USB inputs.

Charge COSMIQ before using it. To charge COSMIQ, connect the magnetic USB cable with the gold-plated contact points on the bottom of COSMIQ and plug the USB charging cable into any standard USB port. Check the screen to ensure that the battery indicator is running on the battery icon. COSMIQ will enter into **Standby** during the charge period, but it will continue charging.

COSMIQ displays a battery power indicator that allows you to track the amount of battery power at all times and to give you advance warning of an impending need to charge the battery. The battery power indicator is visible in the top right hand corner of COSMIQ's display screen in all modes except for **Standby**.

COSMIQ's battery has an estimated continuous run time of 6 to 7 hours, but given the various factors that affect battery usage, it is best to exercise caution and charge COSMIQ as often as possible. The battery will last for 500 full-cycle charges of use before gradually diminishing in capacity.

Please see the following table for the technical details related to COSMIQ's battery status:

Battery Indicator	Battery Power	Status/Instruction
	60% - 100%	Battery power is at high level.
	30% - 60%	Battery power is at medium level.
	10% - 30%	Battery is at low level. Charge COSMIQ when possible.
battery indicator flashing	0% - 5%	Battery is about to expire. Charge COSMIQ immediately. Do not attempt to dive.

Please note that when COSMIQ's battery is extremely low and showing 0 segments, it will beep once every minute as a reminder that you should charge COSMIQ immediately. It will also beep once right before it shuts down due to lack of battery power.

WARNING: DO NOT DIVE WITH COSMIQ IF THE BATTERY LEVEL INDICATOR IS DISPLAYING 0 SEGMENTS. Doing so may cause COSMIQ to fail during a dive, and may lead to serious injury or death.

WARNING: THE ACTUAL STATUS OF THE BATTERY DEPENDS ON THE OVERALL HEALTH OF THE BATTERY. A number of different factors affect the quality of the battery and therefore the actual battery power may be lower than indicated by the battery indicator.

# 4.3 BUTTONS AND NAVIGATION

COSMIQ has two buttons used for navigation and setting selection. The buttons are used in the same way across all screens.

The left button is the **MODE** button. Press **MODE** to navigate between operating modes and to confirm setting selections.

The right button is the **ADJUST** button. Press **ADJUST** to navigate within modes and to change settings.

To turn on COSMIQ, hold both buttons simultaneously for 3 -5 seconds. To turn off COSMIQ, make sure it is in **Watch Mode** or **Standby**, and hold both buttons simultaneously for 3-5 seconds.

When turned on, COSMIQ will enter into **Watch Mode**. As you press the **MODE** button, it will toggle to **Scuba Mode**, **Gauge Mode**, **Freedive Mode**, **Log Mode**, **Sync Mode** and back to **Watch Mode** again.

## 4.4 STANDBY

COSMIQ automatically enters **Standby** after 20 seconds of inactivity in **Watch Mode** to conserve battery power. When it does, the screen goes blank but the computer is still active. Press any button to turn on the display and bring the computer out of **Standby**. You can adjust the time before COSMIQ enters **Standby** by changing the Screen Timeout setting in the **Settings** menu of the Deepblu app.

# 4.5 SETTING UP COSMIQ USING THE DEEPBLU APP

COSMIQ has a built-in clock and calendar that are both customizable based on your location and the current date. Additionally, the measurement system can be set to the Metric system (meters/°C) or the Imperial system (feet/ °F). When you receive COSMIQ, the time and date will be set to UTC +8. The default distance measurement units will be set to the Metric system.

Syncing your COSMIQ with the Deepblu mobile app is necessary for adjusting the majority of COSMIQ's settings, including time and date, distance measurement units, underwater alarms and more.

Syncing with the app also necessary for creating digital dive logs and linking the product with your personal Deepblu account for registration and warranty purposes.

You MUST download and install the Deepblu app in order for COSMIQ to operate properly. Only a limited number of settings can be changed manually using COSMIQ so it is imperative that you download the Deepblu app and sync your COSMIQ to properly adjust your settings.

Please follow these steps in order to set up and customize the settings for your COSMIQ:

#### Step 1: Install the Deepblu App

Download and install the Deepblu iOS app from the Apple App Store or the Deepblu Android app from the Google Play Store. Register for a Deepblu account or sign in using Facebook or with your email and create a personal profile.



#### Step 2: Pair COSMIQ Using Bluetooth

To use the Deepblu app to change the settings on your COSMIQ, you must pair your COSMIQ with the app by establishing a Bluetooth connection. It is very important that you are signed into your personal Deepblu account before you do this. First, ensure that Bluetooth is enabled on your smartphone. Place COSMIQ close to your smartphone. With COSMIQ, navigate to **Sync Mode** vising the **MODE** button. A countdown of 1 minute and 30 seconds will begin on the screen.

#### For the Deepblu iOS app:

At the same time, access the Deepblu app and press **Pair COSMIQ** in the main menu. When you're ready to pair, press **Scan**. Select your COSMIQ. A running rectangle will appear on COSMIQ to show that the devices are pairing. When it is finished a checkmark will appear beside the name of your COSMIQ, indicating that the pairing process is complete.

You only need to pair COSMIQ with your smartphone once. After it has been successfully paired the first time, your phone will automatically establish a Bluetooth connection with COSMIQ when you sync them in the future.

#### For the Deepblu Android app:

Access the Deepblu app and press **COSMIQ** in the main menu. When you're ready to pair, press **Scan**. Press the Sync icon  $\bigcirc$  in the top right hand corner. Select your COSMIQ. A running rectangle will appear on COSMIQ to show the devices are pairing and the app screen will show "Connecting COSMIQ." When the pairing process is complete, the COSMIQ Options menu will appear with 3 options:

- **New Logs**: Create dive logs from scratch or using dive data from COSMIQ.
- **Settings**: Adjust the settings on your COSMIQ.
- **Rename COSMIQ**: Personalize your COSMIQ by giving it a name.

With the Android app, you need to pair COSMIQ with the app every time you want to sync to change the settings.

#### **Step 3: Perform Sync to Adjust Settings**



After pairing COSMIQ with your phone, you must choose your preferred settings. Navigate to **Sync Mode** on COSMIQ using the **MODE** button.

#### For the Deepblu iOS app:

Access the main menu of the Deepblu app and choose **Settings**. Press **Next**.

For the Deepblu Android app:

Choose **Settings** from the COSMIQ Options menu.

In the **Settings** menu you can change the following:

#### General

- **COSMIQ Firmware:** Periodic firmware upgrades to COSMIQ's operating system will be made available for download. Press **Update** to upgrade the firmware on your COSMIQ. The current firmware version is V0.7.
- Screen Timeout: Adjust the time before COSMIQ reverts to Standby in Watch Mode. The default is 20 seconds.
- **Measurement Units:** Change the distance and temperature units from the Metric system (meters/°C) to the Imperial system (feet/°F). The default is the Metric system.
- **Date Display:** Choose to have the current date or the date of your last dive displayed in **Watch Mode**. The default setting is to display the current date.
- **Default Underwater Mode:** Set the mode COSMIQ will activate upon entering the water to **Scuba Mode**, **Gauge Mode** or **Freedive Mode**. The default underwater mode is first set to **Scuba Mode**.

#### Scuba Mode

- **Safety Factor:** Choose to alter COSMIQ's algorithm to Conservative, Normal or Progressive. The default is Normal.
- **Partial Pressure of Oxygen (PPO<sub>2</sub>):** Change the maximum PPO<sub>2</sub> limit from 1.2 bar to 1.6 bar. The default is 1.4 bar.
- Air Mix: Choose the oxygen level based on the type of gas being used in your cylinder (Standard Air or Nitrox). The minimum is 21% and the maximum is 40%. This setting can also be adjusted manually using COSMIQ. The default is 21%.
- **Time Alarm:** Set an alarm to sound once you reach a certain dive time. You can set the Time Alarm between 10 minutes and 2 hours. The default Time Alarm is 1 hour.
- **Depth Alarm:** Set an alarm to sound once you reach a certain depth. You can set the Depth Alarm between 18 meters/60 feet and 50 meters/165 feet. The default Depth Alarm is 40 meters/131 feet.

#### Freedive Mode

- **Max Time Alarm:** Set an alarm to sound once you reach a certain dive time. The Max Time Alarm can be set from 30 seconds to 3 minutes. The default is set at 1 minute and 30 seconds. This setting can also be adjusted manually using COSMIQ.
- **Max Depth Alarm:** Set an alarm to sound once you reach a certain depth. The Max Depth alarm can be set from 15 meters/50 feet to 80 meters/265 feet. The default is 15 meters/50 feet. This setting can also be adjusted manually using COSMIQ.

Choose all of your preferred settings while COSMIQ is in **Sync Mode** and they will be automatically uploaded to COSMIQ. The running rectangle on COSMIQ indicates that your settings are being synced. Once the sync is complete COSMIQ is ready to use.

# 4.6 ADJUSTABLE SETTINGS USING COSMIQ

Most settings for COSMIQ can only be adjusted using the Deepblu mobile app. Only a limited number of settings can be adjusted directly from COSMIQ. The following settings can be changed manually using COSMIQ:

#### Scuba Mode

• Oxygen level (21% to 40%).

#### **Freedive Mode**

- Max Depth Alarm (15 meters/50 feet to 50 meters/165 feet).
- Max Time Alarm (30 seconds to 3 minutes).

To change the above settings, use the **MODE** button to toggle to the correct operating mode. Press the **ADJUST** button repeatedly to adjust the settings. Press the **MODE** button to save your preferred settings.

In addition to changing the above settings, the **ADJUST** button can be used to access the following functions:

#### Watch Mode

• Dive Plan function – access projected depth and no decompression limit for an upcoming dive.

#### Log Mode

• Toggle between saved dive logs.

To access the Dive Plan and Dive Log functions, use the **MODE** button to toggle to the correct operating mode. Use the **ADJUST** button repeatedly to toggle within the mode. Press the **MODE** button to exit.

Please see below (Section 5) for a detailed description of each mode, and instructions for adjusting the settings within the various modes.

# 4.7 NON-ADJUSTABLE SETTINGS

Please note that the following settings are pre-programmed into COSMIQ and cannot be changed at any time:

- Altitude: The altitude level for COSMIQ is programmed from 0 meters/0 feet (sea level) to 300 meters/985 feet above sea level. COSMIQ does not take into account the extraneous factors which may affect decompression schedules at altitudes above 300 meters/985 feet. If you plan to dive at an altitude higher than 300 meters/985 feet, DO NOT use COSMIQ as your primary device.
- **Multi-Gas:** COSMIQ does not offer a multi-gas function. COSMIQ only supports calculations for Standard Air (21% oxygen) or Nitrox (up to 40% oxygen). If you are planning a multi-gas dive, DO NOT use COSMIQ as your primary device.
- Water Type: COSMIQ does not offer the ability to change the algorithm based on the type of water you are diving in. The algorithm is programmed to perform calculations based on the

effects of diving in salt water. If you are planning to dive in fresh water, please note that the depth readings and decompression calculations will not be 100% accurate. Therefore, we recommend that you do not use COSMIQ as your primary device if you are diving in freshwater.

WARNING: DO NOT USE COSMIQ AS YOUR PRIMARY DEVICE IF YOU PLAN TO DIVE AT AN ALTITUDE ABOVE 300M. COSMIQ cannot accurately calculate decompression schedules for dives at altitudes greater than 300 meters/985 feet. Failure to heed this instruction will result in inaccurate measurements and therefore may cause you to dive beyond safe limits, increasing your risk of serious injury or death.

WARNING: DO NOT ATTEMPT MULTI-GAS DIVING WITH COSMIQ. COSMIQ does not have the capability to support calculations for multi-gas diving and therefore should only be used for Standard Air or Nitrox dives.

WARNING: ONLY DIVERS WHO HAVE UNDERGONE SPECIALIZED TRAINING FROM AN ACCREDITED AGENCY SHOULD ATTEMPT MULTI-GAS DIVING. Diving with two or more gases poses different risks than those of diving with a single gas mixture. To understand and avoid these risks, divers should undergo proper training from an internationally recognized agency. Failure to do so can result in errors that can lead to serious injury or death.

# SECTION 5 - INSTRUCTIONS FOR USE

# 5.1 WATCH MODE

The default surface mode for COSMIQ is **Watch Mode**. The display screen will enter **Standby** automatically after 20 seconds of inactivity in **Watch Mode**. To turn on the display, press any button. To navigate to other modes, press the **MODE** button.

**Watch Mode** is pre-programmed to display the current time and the current date. You can change the settings so that COSMIQ will show the date of your last dive instead of the current date by accessing **Settings** in the Deepblu app.

#### 5.1.1 Dive Plan Function

The Dive Plan function allows you to prepare for an upcoming dive by calculating how long you can safely remain at various depths without surpassing no decompression limits and requiring a decompression stop. As you scroll through the various depths, a corresponding no decompression limit will show for that depth.

The Dive Plan function can be accessed before your first dive as well as during a surface interval between dives. During a surface interval, or within 24 hours of a previous dive, COSMIQ takes into account the calculated residual nitrogen levels in your body when determining no decompression limits. COSMIQ also takes into consideration the the percentage of oxygen in the gas you will be breathing, calculating no decompression limits based on the percentage of oxygen currently set in **Scuba Mode**.

#### 5.1.2 Planning a Dive

To access the Dive Plan function, press the **ADJUST** button one time if COSMIQ's display is in **Watch Mode** or two times if it is in **Standby**. You will hear a beep and the screen will change to show the word 'PLAN' as well as a value for depth and a value for the corresponding no decompression limit.

When you first enter the Dive Plan screen the minimum depth displayed is 9 meters/30 feet. It is visible in the bottom left corner of the display screen. Press the **ADJUST** button to scroll though different depths in increments of 1 meter/3 feet. The deepest depth it will display is 40 meters/135 feet. You can hold the **ADJUST** button to toggle through the depth and time continuously.

The corresponding no decompression limit is displayed in minutes in the bottom right corner of the display screen. No decompression limits will be shorter depending on the presence of residual nitrogen in your body. COSMIQ will show a series of three horizontal dashes (---) instead of a time value if the no decompression limit is greater than 300 minutes.

The Dive Plan function will not display depths beyond the no decompression limit or beyond the maximum operating depth (MOD). If you reach a depth with a corresponding no decompression limit of zero (0), or if a combination of depth and oxygen level exceeds the safe MOD, you will not be able to scroll further than that depth. The depth will go back to 9 meters/30 feet and start the cycle again. You should limit your dive plan to depths shallower than the deepest depth that is displayed in the Dive Plan screen.

When you are finished using the Dive Plan function, press the **MODE** button at any time to switch back to **Watch Mode**.

WARNING: DO NOT PLAN DIVES DEEPER THAN THOSE FOR WHICH COSMIQ DOES NOT DISPLAY A NO DECOMPRESSION LIMIT. Doing so greatly increases your chances of exceeding no decompression limits and may cause decompression sickness or central nervous system oxygen toxicity and may lead to serious death or injury.

# 5.2 SCUBA MODE

**Scuba Mode** is meant to be used for scuba diving and not apnea/freediving. It is used to calculate depth, dive time, water temperature, no decompression limit, safety stop time and ascent rate. Additionally, it will calculate the depth and time required for a mandatory decompression stop if the no decompression limit is exceeded. You can adjust the settings for the level of oxygen depending on the type of air mixture in your cylinder.

## 5.2.1 Preparing to Dive

There are two ways to prepare for a dive in **Scuba Mode**: water activation or manual activation.

**Water activation:** If **Scuba Mode** is your default underwater mode, then simply enter in the water when COSMIQ is in Standby or **Watch Mode**. COSMIQ will automatically activate **Scuba Mode** once you descend past 2 meters / 6.5 feet.

**Manual activation:** Alternatively, navigate to **Scuba Mode** using the MODE button. Enter the water and begin descent while in **Scuba Mode**.

NOTE: On the surface, COSMIQ refreshes its sensors and captures data at 15 second intervals in **Watch Mode**. Therefore, there may be a slight delay between descending below 2 meters/6.5 feet and **Scuba Mode** activating.

## 5.2.2 Adjusting the Oxygen Settings

COSMIQ is programmed with a default oxygen level of 21%. You are able to change the oxygen level based on the air mixture you will be breathing during the dive – Standard Air or Nitrox - with the default being 21% and the maximum being 40%. Oxygen levels have to be set on the surface BEFORE the descent. It is not possible to adjust the oxygen settings during a dive.

There are two ways to adjust the oxygen settings for COSMIQ:

- 1. Using COSMIQ (see below)
- 2. Using the Deepblu mobile app (see above section 4.5)

Using COSMIQ to adjust the oxygen settings:

You can change the oxygen settings on COSMIQ based on the air mixture in your cylinder before a dive begins. Remember to always check that the air mixture in your cylinder matches the percentage inputted into COSMIQ.

To change the settings for oxygen level, use the **MODE** button to enter into **Scuba Mode**. Once

# SECTION 5 - INSTRUCTIONS FOR USE

you are in **Scuba Mode**, press the **ADJUST** button to change the oxygen level. The default is 21% and the maximum amount is 40%. Press the **ADJUST** button repeatedly to achieve the desired percentage. You can hold the **ADJUST** button to toggle continuously.

When you reach the correct percentage, press the **MODE** button to save your changes and return to the **Scuba Mode** screen. The Nitrox icon N will be displayed in **Scuba Mode** when the oxygen level is set above 21%.

Note: The settings for oxygen level remain the same indefinitely until you change them. So the default is 21% and will remain so until you change it. If you make a change to 36% before your first dive, it will remain at 36% for your second and third dives unless you change it.

WARNING: ONLY DIVERS WHO HAVE RECEIVED SPECIALIZED TRAINING FROM A RECOGNIZED AGENCY SHOULD DIVE WITH NITROX. Diving with Nitrox poses risks that are different from those associated with using Standard Air, and therefore require specialized training in order to understand and avoid. Nitrox diving without proper training may result in errors that can lead to death or serious injury.

WARNING: DO NOT CONDUCT A NITROX DIVE WITHOUT FIRST CHECKING YOUR CYLINDER(S) AND ENTERING THE OXYGEN PERCENTAGE INTO COSMIQ. Failure to authenticate the contents of your cylinder and set the appropriate oxygen percentage will cause COSMIQ to calculate and display inaccurate information.

## 5.2.3 Safety Factor

The Safety Factor controls the decompression algorithm COSMIQ uses to perform decompression calculations. It allows you to set the level of conservativeness based on your personal preference and unique risk factors. There are three levels to choose from: Conservative, Normal and Progressive. The Safety Factor can only be changed through the Deepblu mobile app. Access **Settings** in the main menu of the Deepblu app to adjust the Safety Factor.

## 5.2.4 Partial Pressure of Oxygen (PPO<sub>2</sub>)

COSMIQ is originally set to a PPO<sub>2</sub> level of 1.4 bar in order to ensure maximum safety. The PPO<sub>2</sub> level is adjustable between 1.2 bar and 1.6 bar, in intervals of 0.1 bar. The PPO<sub>2</sub> settings can only be changed through the Deepblu mobile app. Access **Settings** in the main menu of the Deepblu app to adjust the PPO<sub>2</sub> level.

#### 5.2.5 During a Dive

When COSMIQ detects pressure at 2 meters/6.5 feet it will begin recording dive data and calculating the decompression schedule for the dive. COSMIQ will lock into **Scuba Mode**, disabling the **MODE** and **ADJUST** buttons for the duration of the dive. No settings can be changed and no other modes can be accessed during a dive.

During a dive within the no decompression limit using Standard Air (21% oxygen) the following information will be displayed on the screen:

• Water temperature (Temp in °C/°F)

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- Current depth (Depth in meters/feet)
- Deepest depth reached (Max in meters/feet)
- Dive time (Dive Time in hours:minutes)
- No decompression limit (No Deco in minutes)
- No decompression limit bar (graphic bar on right hand side)
- Ascent rate bar (graphic bar on left hand side)
- Safety stop time (seconds) and Stop indicator. This will be shown only once COSMIQ detects a depth of between 3 to 7 meters or 10 to 23 feet.

During a dive within the no decompression limit using Nitrox (above 21% oxygen) all of the above information will be shown in addition to the Nitrox icon.

## 5.2.6 Central Nervous System (CNS) Oxygen Toxicity

COSMIQ constantly monitors your exposure to oxygen, by estimating the amount of oxygen in your body and how it affects your central nervous system (CNS). Your CNS oxygen toxicity level is calculated in accordance with your exposure to high partial pressure of oxygen ( $PPO_2$ ) levels. It is represented as a percentage ranging from 0% to 100%. CNS levels reaching 100% are considered dangerous and should therefore be avoided.

If COSMIQ calculates a CNS level of 80%, the alarm will sound. The letters 'CNS' will flash on the screen along with the arrow indicator instructing you to ascend to a shallower depth. The alarm will become more frequent if you do not ascend to a shallower depth and the calculated CNS level increases to 85% or higher.

In the case of a CNS alarm, you should conduct a safety stop and end the dive immediately.

WARNING: DO NOT ALLOW YOUR CNS LEVEL TO REACH 100%. Doing so greatly increases the risk of oxygen toxicity. Oxygen toxicity may cause your body to suffer from convulsions, which can possibly lead to drowning.

## 5.2.7 Maximum Operating Depth (MOD)

COSMIQ also calculates the safe maximum operating depth (MOD) - a depth limit, below which the  $PPO_2$  level in the gas mixture you are breathing may become toxic. The MOD is determined based on both the  $PPO_2$  limit and the percentage of oxygen you've set. Diving below the MOD may lead to oxygen poisoning and should therefore be avoided.

If you exceed the MOD during a dive, the alarm will sound and 'PO2' will flash on the screen along with the arrow indicator instructing you to ascend to a shallower depth. The alarm will continue to sound until you ascend above the MOD.

In the case of an MOD alarm, you must obey the alarm warnings and ascend to a shallower depth. Consider ending the dive.

WARNING: DO NOT EXCEED THE MAXIMUM OPERATING DEPTH (MOD). Exceeding the MOD greatly increases the risk of oxygen toxicity. Oxygen toxicity may cause your body to suffer from convulsions, which may lead to drowning.

WARNING: ONLY DIVERS WHO HAVE RECEIVED SPECIALIZED TRAINING FROM A RECOGNIZED AGENCY SHOULD DIVE WITH NITROX. Diving with Nitrox poses risks that are different from those associated with using Standard Air, and therefore require specialized training in order to understand and avoid. Nitrox diving without proper training may result in errors that can lead to death or serious injury.

## 5.2.8 Ascent Rate

COSMIQ constantly monitors your ascent rate at all times throughout a dive. Your ascent rate is represented by a graphic bar on the left hand side of COSMIQ's display screen. COSMIQ's algorithm considers an ascent rate slower than 12 meters/40 feet per minute to be a safe ascent rate. If the safe ascent rate is exceeded, the alarm will sound and will continue to beep until you slow your ascent rate. The ascent rate bar operates according to the table below:



Ascent Rate	Ascent Speed
No bars	Slower than 4 meters/13 feet per minute
1 bar	4 – 6 meters per minute 13 – 20 feet per minute
2 bars	6 – 8 meters per minute 20 – 26 feet per minute
3 bars	8 – 10 meters per minute 26 – 33 feet per minute
4 bars	10 – 12 meters per minute 33 – 40 feet per minute
5 bars	Faster than 12 meters per minute Faster than 40 feet per minute

# WARNING: NEVER ASCEND FASTER THAN THE SAFE ASCENT RATE OF 12 METRES/40 FEET PER MINUTE.

Rapid ascents faster than 12 meters/40 feet per minute may result in increased chances of decompression illness.

## 5.2.9 Safety Stop

COSMIQ is programmed to automatically count a safety stop at the end of each dive. A 3 minute (180 seconds) safety stop should be conducted between 3 to 7 meters/10 to 23 feet at the end of every dive. COSMIQ will begin automatically counting the safety stop upon reaching a depth of 7 meters/23 feet.

The Stop Countdown Time will be displayed under the Stop indicator in the bottom right corner of the display screen when COSMIQ detects a depth of 7 meters/23 feet. It will be counted downwards in minutes and seconds. The countdown will continue as long as you remain within the range of 3 to 7 meters/10 to 23 feet. If you ascend above or descend below that depth range, the countdown will pause until you return to the depth range, at which point it will continue the countdown where it left off.

#### 5.2.10 Exceeding the No Decompression Limit

During a dive in **Scuba Mode**, the no decompression time limit is visible in the top right hand corner of COSMIQ's display screen underneath the 'No Deco' indicator. The no decompression limit is also represented by a graphic bar on the right hand side of COSMIQ's display screen. The bar represents the no decompression limit according to the following formula:



NDL Graphic Bar	No Decompression Limit
0 bars	NDL exceeded
1 bar	0~5 min
2 bars	5~15 min
3 bars	15~30 min
4 bars	30~60 min
5 bars	> 60 min

COSMIQ will sound the alarm when you are nearing the no decompression limit. The alarm will begin to sound 3 minutes before the no decompression limit is reached. It will then sound every minute until the no decompression limit is exceeded.

In the event of exceeding the no decompression limit, the letters 'CEL' will be flash on the screen. Additionally, the following information will be displayed in order to assist you with safely performing a mandatory decompression stop:

- Ceiling indicator
- Ceiling Depth
- Stop indicator
- Stop Countdown Time

The Ceiling Depth value will be shown under the Ceiling indicator in the bottom left corner of the display screen. The Ceiling Depth value represents the shallowest depth to which you can ascend to in order to complete a decompression stop. Do not ascend above this depth before completing your decompression stop.

Additionally, the Stop Countdown Time will flash on the display screen under the Stop indicator, in the bottom right corner of the display screen. The arrow icon will appear instructing you to ascend to the ceiling depth.

The alarm will beep 10 times for a duration of 20 seconds and will continue this cycle every 10 seconds for a total of 3 minutes. The Ceiling Depth and Stop Countdown Time will both flash at the same time.

If you begin to ascend within 3 minutes of exceeding the no decompression limit, the Ceiling Depth and Stop Countdown Time values may disappear from the screen if COSMIQ calculates that your nitrogen levels have receded back to safe levels. You should still conduct a regular safety stop at the end of your dive.

If you do not begin to ascend within 3 minutes of exceeding the NDL, the decompression stop becomes mandatory. The Ceiling Depth value and the Stop Countdown Time will continue to flash until you ascend to the ceiling depth and conduct a decompression stop.

Obey the warnings and ascend to the ceiling depth to complete a decompression stop in accordance with the time shown on the Stop Countdown Time. Do not ascend above the ceiling depth until the Stop Countdown Time has elapsed. Once the stop countdown time is over, it is safe to ascend to the next ceiling depth (if required) or to the surface if it is safe.

WARNING: STAY WITHIN THE NO DECOMPRESSION LIMIT AND AVOID DIVES THAT REQUIRE DECOMPRESSION STOPS. Deepblu advises against exceeding no decompression time limits and dives that require decompression stops. In the event that you exceed the no decompression time limit and a decompression stop is required, you should begin your decompression stop immediately. Remember to never ascend above the ceiling depth until your decompression stop is complete.

WARNING: IN THE EVENT OF EXCEEDING THE NO DECOMPRESSION LIMIT, ALWAYS CONDUCT A DECOMPRESSION STOP AND DO NOT ASCEND ABOVE THE CEILING DEPTH UNTIL YOU HAVE COMPLETED THE REQUIRED STOP(S). Follow the instructions above, and conduct the necessary decompression stop in accordance with the Ceiling Depth and Stop Countdown Time values displayed on COSMIQ.

## 5.2.11 After Diving

Upon surfacing from a dive, COSMIQ will remain in **Scuba Mode** for 2 minutes. If you surface for less than 2 minutes and then descend again, COSMIQ will consider this a continuation of the previous dive and the calculations and measurements will continue from where they left off.

After 2 minutes passes, COSMIQ will begin to count the Surface Interval Time. It will be displayed on the **Watch Mode** screen and counted upwards in hours and minutes. Any additional descent will be considered a new dive.

When no pressure is detected by COSMIQ for 3 minutes upon surfacing from a dive, it will switch automatically to **Watch Mode**.

The dive data recorded during each dive will be logged and accessible in **Log Mode**.

## 5.2.12 No Dive Time and No Fly Time

Upon surfacing from a dive, COSMIQ calculates and displays a No Dive Time value underneath the No Dive icon a in the bottom left corner of the display screen. This value is the minimum amount of time you must spend on the surface before conducting another dive.

The length of the No Dive Time depends on calculations of residual nitrogen levels in your body. The No Dive Time will be counted downwards in intervals of half an hour, so 30 minutes is represented as 0.5 and 1 hour is represented as 1.0.

If your No Dive Time is longer than 30 minutes COSMIQ will display the error screen with the letters 'SUF' and will go into lockdown after you reach the surface. The letters 'SUF' are a reminder that you should stay on the surface in order to allow for nitrogen desaturation. The length of the lockdown time will depend on calculations of residual nitrogen levels in your body, and is equal to the No Dive Time value.

The No Fly icon will also be shown in the bottom right corner of the display screen after every dive. The No Fly Time is based on the calculations of your desaturation time according to your actual dive profile. The No Fly Time will be counted downwards every half hour.

WARNING: DO NOT DIVE WHEN THE NO DIVE ICON AND A NO DIVE TIME VALUE IS SHOWN. Diving while COSMIQ displays the No Dive icon and a No Dive Time value may result in increased risk of decompression illness, serious injury or death.

WARNING: DO NOT BOARD A PLANE IF THE 'NO FLY' ICON IS SHOWING ON THE COSMIQ DISPLAY SCREEN. Flying while COSMIQ displays the No Fly symbol may result in serious injury or death.

# 5.3 GAUGE MODE

When diving with **Gauge Mode**, only depth, time and temperature are displayed. No decompression calculations are done in **Gauge Mode**. Use this mode when COSMIQ is being used as a secondary dive computer or as a depth gauge and timer only.

## 5.3.1- Gauge Mode - Preparing to Dive

There are two ways to prepare for a dive using **Gauge Mode**: water activation and manual activation.

**Water activation**: If **Gauge Mode** is your default underwater mode, then simply enter in the water when COSMIQ is in **Standby** or **Watch Mode**. COSMIQ will automatically activate **Gauge Mode** once you descend past 2 meters / 6.5 feet.

**Manual activation**: If **Gauge Mode** is not your default underwater mode, you must activate it manually. Navigate to **Gauge Mode** using the **MODE** button. Enter the water and begin descent while in **Gauge Mode**.

Note: When doing manual activation, remember to navigate to **Gauge Mode** 3 minutes or less before you begin your descent. If you set COSMIQ to **Gauge Mode** more than 3 minutes before you descend, COSMIQ will revert back to **Watch Mode**, and will therefore automatically switch to the default underwater mode upon detection of pressure.

NOTE: On the surface, COSMIQ refreshes its sensors and captures data at 15 second intervals. Therefore, there may be a slight delay between descending below 2 meters/6.5 feet and **Gauge Mode** activating.

#### 5.3.2 Gauge Mode - During a Dive

Once you descend past 2 meters/6.5 feet, COSMIQ will lock into **Gauge Mode**. The **MODE** and **ADJUST** buttons will be disabled for the duration of the dive. No settings can be changed and no other modes can be accessed during the dive.

During a dive using **Gauge Mode**, the following information will be displayed:

- Current depth
- Dive time
- Water temperature
- Ascent rate bar

#### 5.3.3 Gauge Mode - After Diving

Upon surfacing from a dive, COSMIQ will remain in **Scuba Mode** for 2 minutes. If you surface for less than 2 minutes and then descend again, COSMIQ will consider this a continuation of the previous dive and the calculations and measurements will continue from where they left off.

After a dive in **Gauge Mode**, COSMIQ will begin to count the Surface Interval Time. It will be displayed on the screen when COSMIQ is in **Watch Mode**.

Dive data recorded during the dive will be saved in **Log Mode**.

When no pressure is detected by COSMIQ for 3 minutes upon surfacing from a dive, it will switch automatically to **Watch Mode**.

#### 5.3.4 Lockdown for 24 Hours

After completing a dive in **Gauge Mode**, **Scuba Mode** will be locked for the next 24 hours.

The letters 'SUF' will appear on the screen when COSMIQ is in **Scuba Mode** and it will not be functional. COSMIQ will not be able to perform any decompression, saturation or desaturation calculations for 24 hours after a dive in **Gauge Mode**. If you attempt a dive while **Scuba Mode** is locked, it will automatically switch to **Gauge Mode** upon detection of pressure.

Additionally, the letters 'SUF' will appear on the screen when you access the Dive Plan function and it will not be functional either.

**Gauge Mode** may still be used during this period of time.

# 5.4 FREEDIVE MODE

**Freedive Mode** is designed specifically for apnea/freediving. During a dive, COSMIQ measures the current depth, dive time and water temperature. You can set a Max Depth and/or Max Time alarm.

## 5.4.1 - Freedive Mode - Preparing to Dive

There are two ways to prepare for a dive in Freedive Mode: water activation or manual activation.

**Water activation:** If **Freedive Mode** is your default underwater mode, then simply enter in the water when COSMIQ is in Standby or **Watch Mode**. COSMIQ will automatically activate **Freedive Mode** once you descend past 2 meters / 6.5 feet.

**Manual activation:** If **Freedive Mode** is not your default underwater mode, you must activate it manually. Navigate to Freedive Mode using the **MODE** button. Enter the water and begin descent while in **Freedive Mode**.

NOTE: On the surface, COSMIQ refreshes its sensors and captures data at 15 second intervals. Therefore, there may be a slight delay between descending below 2 meters/6.5 feet and **Freedive Mode** activating.

When you navigate to **Freedive Mode**, COSMIQ will stay in **Freedive Mode** for 30 minutes. It will enter **Standby** after 10 minutes, turning off the screen, but it will remain active in **Freedive Mode**, ready to activate upon detection of pressure. After 30 minutes of inactivity in **Freedive Mode** COSMIQ will revert back to **Watch Mode**.

#### 5.4.2 Setting Alarms for Maximum Depth and Maximum Time

You can set alarms for maximum time and maximum depth in **Freedive Mode**. There are two ways to set the Max Depth and Max Time in **Freedive Mode**:

- 1. Using COSMIQ (see below)
- 2. Using the Deepblu mobile app (see above section 4.5)

Using COSMIQ to set Max Depth and/or Max Time alarms:

To set the Max Depth and Max Time alarms using COSMIQ, navigate to **Freedive Mode** using the **MODE** button. Once in **Freedive Mode**, press the **ADJUST** button to access the maximum depth settings. The minimum is 15 meters/49 feet and the maximum is 80 meters/265 feet. Press the

**ADJUST** button repeatedly to achieve the desired depth. Each time you press **ADJUST**, the depth will increase by 5 meters/16 feet. When you reach the desired depth, press the **MODE** button to save your changes.

Next, press the **ADJUST** button to set the maximum time. Press the **ADJUST** button repeatedly to achieve the desired time. The minimum is 30 seconds and the maximum is 3 minutes. Each time you press **ADJUST**, the time will increase by 10 seconds. Press the **MODE** button to save your changes and return to **Freedive Mode**.

You can hold the **ADJUST** button to toggle through the depth and time continuously.

## 5.4.3 Freedive Mode - During a Dive

Once pressure is detected, COSMIQ will lock into **Freedive Mode**. The **MODE** and **ADJUST** buttons will be disabled for the duration of the dive. No settings can be changed and no other modes can be accessed during the dive.

During a dive using **Freedive Mode**, the following information will be displayed:

- Current depth
- Dive time
- Water temperature

During a dive, once you reach the depth set on your Max Depth alarm, the alarm will beep continuously until you ascend above that depth.

When you reach the dive time set on your Max Time alarm, the alarm will sound for 6 cycles of 3 beeps per cycle.

#### 5.4.4 Freedive Mode - Surface Interval

Upon surfacing from a dive in **Freedive Mode**, COSMIQ will begin to count the Surface Interval Time. It will be displayed on the display screen in **Freedive Mode** and **Watch Mode**.

COSMIQ will calculate a safe Surface Interval Time for you based on the profile of your last dive. The Surface Interval Time is calculated according to a formula that is designed to ensure maximum safety. The formula is as follows:

#### Surface Interval Time = (max depth / 10 + 1) x dive time

An alarm will sound halfway through the surface interval, as well as at the end of the surface interval.

For example, if you dove to 30 meters/99 feet for a total of 2 minutes, your safe Surface Interval Time will be 8 minutes. The first alarm will sound 4 minutes after your dive. The second alarm will sound after 8 minutes.

COSMIQ considers the minimum safe Surface Interval Time to be 3 minutes.

For example, if you dove to 15 meters/50 feet for a total of 1 minute, technically your safe Surface Interval Time will be 2 minutes and 30 seconds, but COSMIQ will count your Surface Interval Time

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as 3 minutes. The first alarm will sound at 1 minute and 30 seconds, and the second alarm will sound at 3 minutes.

## 5.4.5 Freedive Mode - After Diving

After 30 minutes of inactivity in **Freedive Mode**, COSMIQ will switch automatically to **Watch Mode** to display the current time and Surface Interval Time. The deepest depth you dove to and your dive time will be shown in **Freedive Mode** after the dive.

Dive data recorded during the dive will be logged in **Log Mode**. The No Fly icon 🗼 and the No Fly Time will also be displayed, counting down for 24 hours from the last dive.

## 5.4.6 Mixing Scuba Diving and Freediving

Deepblu recommends that you do not attempt to mix scuba diving and freediving on the same day. As a result, if you attempt to enter **Freedive Mode** after completing a dive in **Scuba Mode**, the letters 'NO FrEE' will appear on the screen. The purpose of this warning is to remind you of the dangers associated with mixing freediving and compressed gas diving on the same day.

You may still use COSMIQ for a freedive, and **Freedive Mode** will still function properly, but Deepblu strongly recommends against freediving on the same day as a scuba diving. Remember, you are responsible for your own safety.

WARNING: FREEDIVING AND SCUBA DIVING SHOULD NOT BE CONDUCTED ON THE SAME DAY. Conducting freedives and scuba dives on the same day increases your risk of decompression illness.

# 5.5 LOG MODE

Dive data measured from previous dives is recorded and saved in **Log Mode**. You can only access the **Log Mode** when you are above the surface.

To access previous dive data, navigate to the **Log Mode** screen using the **MODE** button. Press the **ADJUST** button to toggle between your dive logs. Dives are logged in chronological order ranging from the most recent to the oldest dive. So log #1 is your most recent dive, and the highest number will be your oldest dive.

The following information will be displayed for each dive:

- Water temperature (Temp in °C/°F)
- Dive time (Dive Time in hours:minutes)
- Deepest depth (Depth in meters/feet)
- Time in (hour:minutes)
- Current date (month/day)
- Log number

COSMIQ will save dive data for up to 25 dives at a time. Dive logs cannot be deleted from COSMIQ itself. Once 25 dives are logged, the newest log will overwrite the oldest log. Deepblu suggests that you upload dive data to the Deepblu app as often as possible so you don't lose any of your log data.

If you have over 25 logs and you haven't performed a sync to upload your previous logs to the

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Deepblu app, the letters 'MAX' will appear on the bottom of the screen and the **Sync Mode** icon will appear in **Watch Mode**. The purpose of this is to remind you to perform a sync to upload your logs. Please see the next section for instructions on how to upload your dive data to the Deepblu app.

# 5.6 SYNC MODE

**Sync Mode** allows you to upload your dive data to the Deepblu app, via Bluetooth, to create digital dive logs. Before you can upload dive data, you must first pair COSMIQ with your mobile device.

Remember: iOS users only need to pair COSMIQ once. After the first pair, the app will recognize COSMIQ as long as the Bluetooth setting is enabled on your mobile device. Android users need to pair COSMIQ each time before syncing.

See above Section 4.5 for instructions on how to pair COSMIQ with your smartphone.

To upload dive data from COSMIQ to the Deepblu app, follow these instructions:

#### Step 1: Navigate to Sync Mode

With COSMIQ, navigate to **Sync Mode** using the **MODE** button. A countdown time of one and a half minutes will begin automatically.

#### Step 2: Turn on Bluetooth on your Smartphone

Enable the Bluetooth setting on your mobile device. Make sure the two devices are close to each other.

#### Step 3: Sync Dive Data

#### For the Deepblu iOS app:

Access the Deepblu app on your mobile device. In the main menu of the Deepblu app, press **Create Log**. Next, press the **Sync** icon  $\bigcirc$  in the top right corner of the app. Dive data will be uploaded automatically. Your phone will show the progress of the syncing process. Maintain the connection while COSMIQ uploads your logs. The process should take no more than 2 minutes.

#### For the Deepblu Android app:

Pair COSMIQ with the app according the instructions above. When the COSMIQ Options menu appears, press **Sync Logs**. The dive data from COSMIQ will automatically be uploaded and accessible in the Create Logs section of the app.

After the syncing process is complete, your logs will be accessible in the **Create Log** section of the Deepblu app. You can edit them at any time to create digital dive logs.

# 5.7 DIVE ALARMS

COSMIQ uses visual and audible alarms to warn you of potentially dangerous situations while diving. It also includes the option of setting depth and time alarms according to your own preference. It is very important for you to understand the purpose and function of the alarm warnings in order for you to take the appropriate action and to avoid danger. There are many different situations where an alarm will sound. See below for a quick summary of each alarm and how it works.

#### Dive Alarms Table

Situation	Visual/ Sound Alarm	Action
Safe Ascent Rate Exceeded	-Continuous beeping -Ascent rate bar full	Slow ascent until alarm stops.
CNS=80%	-5 beeps per minute -'CNS' flashing -Arrow indicator flashing	End the dive. Conduct a safety stop and ascend to the surface.
CNS=85%	-10 beeps per 3 seconds -'CNS' flashing -Arrow indicator flashing	End the dive. Conduct a safety stop and ascend to the surface.
MOD Exceeded	-Continuous beeping -'PO2' flashing -Arrow indicator flashing	Ascend above the MOD. Consider ending the dive.
No Decompression Limit Approaching	-3 minutes left : 3 beeps -2 minutes left: 3 beeps -1 minute left: 5 beeps	Ascend to a shallower depth.
No Decompression Limit Exceeded	<ul> <li>-10 beeps for 20 seconds, 10 second pause, repeat for 3 minutes</li> <li>-Arrow indicator flashing</li> <li>-Stop indicator and Stop</li> <li>Countdown Time flashing</li> <li>-Ceiling indicator and Ceiling</li> <li>Depth value flashing</li> </ul>	Perform a mandatory decompres- sion stop. Ascend to the Ceiling Depth indicated in the bottom left corner of COSMIQ and stay there until the Stop Countdown Time is over. Do not ascend above the Ceil- ing Depth until the Stop Countdown Time is over.
Battery Power Low	-1 beep every minute	Charge COSMIQ as soon as possible.
COSMIQ Shutting Down	-1 beep	Charge COSMIQ immediately.
Max Depth (Freedive Mode)	-Continuous beeping until you ascend above the set depth	
Max Time (Freedive Mode)	-6 cycles of 3 beeps	
Surface Interval Alarm (Freedive Mode)	-2 cycles of 2 beeps (surface interval half completed) -2 cycles of 3 beeps (surface interval completed)	
Depth Alarm (Scuba Mode)	-6 cycles of 2 beeps	
Time Alarm (Scuba Mode)	-6 cycles of 3 beeps	

# SECTION 6 - CARE AND MAINTENANCE

# 6.1 TAKING CARE OF COSMIQ

After every dive, wash COSMIQ thoroughly in fresh water, especially after diving in seawater. If the device is covered with ocean grime, soak COSMIQ overnight in fresh water. Do not use any cleaning agents or solvents. As with any precision instruments, do not drop it or subject it to impact by heavy objects. Do not leave it directly exposed to sunlight for extended periods of time.

#### 6.2 Disposal of Device

Electrical and electronic devices must not be disposed with consumer waste as they are considered hazardous. Their components must be recycled or disposed separately from regular waste to prevent contaminative and hazardous substances from polluting our environment.

Dispose of the COSMIQ Dive Companion as electronic waste. Do not throw it in the garbage with regular trash. Please locate the nearest recycling facility that accepts electronic waste or send the device back to us for disposal. At Deepblu, we prize our efforts to protect the environment and will do what is necessary to minimize any impact.

# SECTION 7 - TECHNICAL SPECIFICATIONS

Measurement Units	Matria (matara/°C) ar Imparial (fact/°E)	
	Metric (meters/°C) or Imperial (feet/°F)	
Water Resistance	100 meters / 330 feet	
Gases	1 Gas - Oxygen (21%-40%)	
Partial Oxygen Pressure (PO2)	Adjustable between 1.2 bar and 1.6 bar	
Algorithm	Deepblu Decompression Algorithm based on the Bühlmann ZH-L16 model	
Safety Factor	Conservative, Normal, Progressive	
Altitude	0 meters / 0 feet to 300 meters / 985 feet	
Battery Life	6 to 7 hours of continuous use	
Battery Charger	Standard USB	
Log Storage	Up to 25 logs unsynchronized	
Data Transfer	Bluetooth 4.0	
Dive Log Software	Deepblu iOS App and Deepblu Android App	
Firmware Upgrade	Free OTA firmware upgrades	
Housing Material	Fibreglass-reinforced polycarbonate	
Lens Material	Polycarbonate with 8h hardness coating	
Screen Technology	Enhanced Black Twisted Nematic (EBTN) Negative Image LCD Display	
Strap Material	<ul><li>24mm Ballistic Nylon NATO watch strap</li><li>Bungee cord</li></ul>	
Dimensions	70.6mm (2.78") x 48.6mm (1.91") x 20.9mm (0.82")	
Weight	Approx. 81 grams	

# SECTION 8 – WARRANTY

#### 8.1 Limited Warranty

The COSMIQ Dive Companion comes with a two-year global warranty covering all manufacturing defects, faults in design and workmanship. Deepblu will, during the warranty period, replace any damaged or defective COSMIQ Dive Companion with a new or refurbished unit, subject to the terms and conditions of this Limited Warranty.

For individuals purchasing COSMIQ directly from the Deepblu Webstore for their own personal use, the warranty period of two years begins at the time of purchase from the Webstore. It is non-transferable.

For individuals purchasing COSMIQ from a Deepblu Sales Ambassador or a COSMIQ Reseller, the warranty period begins at the time of purchase from the Sales Ambassador or the COSMIQ Reseller.

The warranty does not cover commercial or rental use, nor does it extend to units purchased from anyone other than an authorized Deepblu Sales Ambassador, COSMIQ Reseller, or the Deepblu Webstore.

The warranty specifically excludes battery depletion or other conditions resulting from normal wear and tear, improper use or handling, negligence, alteration, accide nt or unauthorized repair.

In the event that you experience a fault with COSMIQ within the warranty period, please submit a warranty claim through our website, to initiate the process of obtaining a replacement.

Deepblu retains sole discretion to determine, upon evaluation of the product, if your claim is legitimate and covered by the warranty.

# SECTION 9 – GLOSSARY

Ascent rate	The speed (measured in meters/feet per minute) at which a diver ascends towards the surface.
Ceiling Depth	The shallowest depth to which a diver can ascend in order to complete a mandatory decompression stop.
Central nervous sys- tem (CNS) oxygen toxicity	A measurement of the level of oxygen exposure in the body's central ner- vous system. The CNS oxygen toxicity level is expressed as a percentage. A CNS level of 100% is considered extremely dangerous.
Decompression illness (DCI)	Illness that results from a reduction in the ambient pressure surrounding one's body and the formation of nitrogen bubbles in the blood. DCI en- compasses two diseases, decompression sickness (DCS) and arterial gas embolism (AGE).
Dive series	A number of repetitive dives completed within a day or over a number of days.
Dive time	The amount of time that elapses between the beginning of a dive and the end of a dive.
Maximum operating depth (MOD)	The depth limit which the $PPO_2$ level exceeds the maximum allowable level, based on the limit set (1.2 bar to 1.6 bar). Diving below the MOD may expose the diver to unsafe $PPO_2$ levels.
Nitrox	Also called Enriched Air Nitrox, a mixture of nitrogen and oxygen used as a breathing gas by divers which contains a higher proportion of oxygen than is normally contained in Standard Air (above 21%).
No decompression limit (NDL)	The maximum amount of time a diver may remain at a certain depth be- fore requiring a decompression stop.
No Dive Time	Minimum amount of time a diver should wait before beginning another dive.
No Fly Time	Minimum amount of time the diver should wait before embarking on a flight.
Oxygen level	The percentage of oxygen contained in a breathing gas.

# **SECTION 9 - GLOSSARY**

Partial pressure of oxygen (PPO <sub>2</sub> )	The total pressure exerted by oxygen in a breathing mix. It is a measurement of the concentration of oxygen in a gas mixture. $PPO_2$ levels are determined by the percentage of oxygen in a gas mixture and the depth at which a diver breathes the gas. A $PPO_2$ level above 1.6 bar is considered extremely dangerous and may be toxic.
Residual nitrogen	The amount of excess nitrogen remaining in a diver's body after one or more dives.
Safety Factor	The level of conservativeness of the decompression algorithm. This allows the user to select a standard decompression algorithm, a conservative algorithm or a progressive algorithm.
Stop Countdown Time	The amount of time required to complete a safety stop or a mandatory decompression stop.
Surface interval	The amount of time that elapses between surfacing from a dive and be- ginning a new dive.

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