



**DIVE COMPUTER SYSTEM  
INSTRUCTION MANUAL  
(iOS version)**

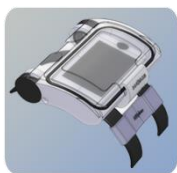
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## 1. WELCOME TO DIVEPHONE SYSTEM

### 1.1. System components



#### **The HOUSING for your PDA**

Divephone system has a rugged, robust housing that guarantees the safety of your smartphone underwater. To minimize the risks of flooding, it is developed as a mono block housing with single sealing. To ensure full pressure resistance, DivePhone housing has no external connectors for sensors which could be a weak point; instead it uses an external module with wireless data transfer. The DivePhone Housing is pressure tested and can safely be used to depths of 80 meters. It is made of PPS, making the maintenance easy.



#### **The EXTERNAL MODULE**

The Divephone system uses an external module to collect crucial dive data and send it to the smart phone. It uses the wireless protocols and capabilities of your smartphone to transmit the data.

The module has its battery supply with approximately 8 hours of life when fully charged. It is easily rechargeable via a standard USB connection. Innovasub R&D department manufactures custom designed research modules that measure physiological parameters such as heart rate ECG, EMG and EEG.



#### **The DEPTH MONITOR APPLICATION**

The third component, the Depth Monitor Application is supported by any kind of mobile device that runs on Android or iOS (iPhone Operating System). This enables nearly any smartphone device to be used with DivePhone (including many PDAs, iPod Touch, iPhone, or any kind of smartphone using above operating systems).

### 1.2. How it works?

The PDA receives the pressure, temperature and battery information from the External Module via Wi-Fi.

This information is used to display the depth, temperature and external module battery condition by the Depth Monitor Application.

The depth information is also used to perform decompression and oxygen related calculations.

During dives, all the information is displayed in one screen so that there is no need to enter menus or alternative screens.

The Divephone has the capacity of displaying one or two model's no deco times, up to three decompression stop depths and their decompression time in minutes and seconds at the same time.

The Depth Monitor application can be downloaded and installed from iTunes.

#### **DepthMonitor Software Requirements**

You can use the Depth Monitor Software in all versions of iPhone 3s, iPhone 4, iPhone 4S, 3rd and 4th generation iPod Touch.

The Android version is available as well.

## 2. WARNINGS (READ ME)

**IMPORTANT!** - Do not touch the wet contacts or try to turn on the device during charging. That may cause damage to the device.

**DO NOT FORGET** that the Opening Warning will be displayed only after closing the application completely. If the application is open at background, no warning will be displayed at the opening.

### **WARNING!**

**READ THIS MANUAL!** Carefully read this instruction manual in its entirety. Make sure that you fully understand the use, displays and limitations of the Divephone. Any confusion resulting from improper use of this device may cause diver to commit errors that may lead to serious injury or death.

### **WARNING**

Never fly within 24 hours of your last dive, or in any case wait until the No-Fly icon and counter disappear.

Further, the Divers Alert Network (DAN) advises as follows:

- A minimum surface interval of 12 hours would be required in order to be reasonably assured a diver will remain symptom free upon ascent to altitude in a commercial jetliner (altitude up to 2400 m [8000 ft]).
- Divers who plan to make daily, multiple dives for several days, or make dives that require decompression stops, should take special precautions and wait for an extended interval beyond 12 hours before flight. Further, the Undersea and Hyperbaric Medical Society (UHMS) suggests divers using standard air tanks and exhibiting no symptoms of decompression sickness wait 24 hours after their last dive to fly in an aircraft with cabin pressure up to 2400 m [8000 ft]. The only two exceptions to this recommendation are:
  - If a diver had less than 2 hours total accumulated dive time in the last 48 hours, then a 12 hour surface interval before flying is recommended.
  - Following any dive that required a decompression stop, flying should be delayed for at least 24 hours, and if possible, for 48 hours.

### **NOTE!**

IF YOU DIVE WITH THE GAUGE MODE, IT IS NOT POSSIBLE TO CHANGE BETWEEN THE MODES WITHIN 48 HOURS.

### **WARNING!**

**ONLY DIVERS TRAINED IN THE PROPER USE OF SCUBA EQUIPMENT SHOULD USE THE DIVEPHONE!** No dive computer including the DIVEPHONE can replace the need for proper dive training. Insufficient or improper training may cause diver to commit errors that may lead to serious injury or death.

### **WARNING!**

**NOT FOR PROFESSIONAL USE!** Divephone are intended for recreational use only. The demands of commercial or professional diving often expose the diver to depths and prolonged exposures including multiday exposures that tend to increase the risk of decompression sickness. Therefore, we specifically recommend that the device be not used for commercial or other severe diving activity.

### **WARNING!**

**PERFORM PRECHECKS!** Always activate and check the Divephone before diving in order to ensure that the device has not run out of battery power and all personal adjustments are correct.

### **WARNING!**

**NO PROCEDURE, DIVE COMPUTER OR DIVE TABLE WILL PREVENT THE POSSIBILITY OF DECOMPRESSION SICKNESS (DCS) OR OXYGEN TOXICITY!** You must understand and accept that there is no procedure, dive computer or dive table that will totally prevent the possibility of a decompression accident or that oxygen toxicity will not occur, even within accepted limits. For example, the individual physiological make up can vary within an individual from day to day. The dive computer cannot account

for these variations. As an added measure of safety, you should consult a physician regarding your fitness before diving with the dive computer. Decompression sickness can cause serious injury or death. DIVING WITH ENRICHED AIR MIXTURES (NITROX) EXPOSES THE USER TO RISKS DIFFERENT FROM THOSE ASSOCIATED WITH DIVING WITH STANDARD AIR. THESE RISKS ARE NOT OBVIOUS AND REQUIRE TRAINING TO UNDERSTAND AND AVOID. RISKS INCLUDE POSSIBLE SERIOUS INJURY OR DEATH. DO NOT ATTEMPT TO DIVE WITH ANY GAS MIX OTHER THAN STANDARD AIR WITHOUT FIRST RECEIVING CERTIFIED TRAINING IN THIS SPECIALTY.

**WARNING!**

USE BACK-UP INSTRUMENTS! Make sure that you use back-up instrumentation including a depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with the dive computer.

**WARNING!**

THE DIVEPHONE SHOULD NEVER BE TRADED OR SHARED BETWEEN USERS WHILE IT IS IN OPERATION! Its information will not apply to someone who has not been wearing it throughout a dive or sequence of repetitive dives. Its dive profiles must match that of the user. If it is left on the surface during any dive, it will give inaccurate information for subsequent dives. No dive computer can take into account dives made without the computer. Thus any diving activity 48 hours prior to initial use of the computer may give misleading information, which may substantially increase the risk of decompression sickness and must be avoided.

**WARNING!**

THE DIVEPHONE IS NOT INTENDED FOR USE AT ALTITUDES GREATER THAN 2400 m [7872 ft]! Diving at altitudes above this limit may significantly increase the risk of DCS.

**WARNING!**

SET THE CORRECT CONSERVATISM! The diver should use this option to make the calculations more conservative, whenever it is believed that factors, which tend to increase the possibility of DCS exist. Failure to properly select the Personal Adjustment Mode correctly will result in erroneous data and can greatly increase the risk of DCS.

**CAUTION!**

ENSURE THE WATER RESISTANCE OF THE DEVICE! Always check the water resistance of Housing and the External Module. Moisture inside the Housing or External Module will seriously damage the unit and your PDA or your mobile phone.

**CAUTION!**

Check after the first dives for possible moisture inside the housing and External Module.

**WARNING!**

DO NOT EXCEED THE MAXIMUM ASCENT RATE! Rapid ascents increase the risk of injury. Always ascent with a maximum ascent rate of 9 m/min (30 ft/min).

**WARNING!**

DECOMPRESSION DIVES ARE NOT RECOMMENDED! Decompression diving limits the divers ability to ascend directly to the surface and may substantially increase the risk of decompression sickness.

**WARNING!**

YOU SHOULD ASCEND AND BEGIN DECOMPRESSION IMMEDIATELY WHEN THE DIVEPHONE SHOWS YOU THAT DECOMPRESSION IS REQUIRED! Note the blinking arrow is for warning you to ascend.

**WARNING!**

NEVER ASCEND ABOVE THE DEEPESTDECO STOP DEPTH! Although the deco zone is between 1 meter (3 ft) deeper and shallower than the deco stop depth, always stay slightly below the deco depth.

**WARNING!**

DO NOT DIVE WITH A CYLINDER OF ENRICHED AIR IF YOU HAVE NOT PERSONALLY VERIFIED ITS CONTENTS AND ENTERED THE ANALYSIS VALUE INTO YOUR DIVE COMPUTER! Failure to verify cylinder contents and enter the appropriate O2% into your dive computer will result in incorrect dive planning information.

**WARNING!**

PPO2 Warning INDICATES THAT THE MAXIMUM LIMIT IS REACHED; YOU MUST IMMEDIATELY ASCEND UNTIL THE WARNINGDISAPPEARS! Failure to take action to reduce oxygen exposure after the WARNING is given can rapidly increase the risk of oxygen toxicity and the risk of injury or death.

**WARNING**

The MOD should not be exceeded. Disregarding the alarm can lead to oxygen poisoning.

**WARNING**

When the CNS O2 reaches 100% there is danger of oxygen toxicity. Start procedure to terminate the dive.

**WARNING!**

WE STRONGLY RECOMMEND THAT SPORT DIVERS LIMIT THEIR MAXIMUM DEPTH TO 40 M [130 FT] OR TO THE DEPTH CALCULATED BY THE COMPUTER BASED ON THE ENTERED O2 AND PO2 OF 1.4 BAR SETTINGS. Exposure to greater depths increases the risk of oxygen toxicity and decompression sickness.

**WARNING!**

THERE IS ALWAYS A RISK OF DECOMPRESSION SICKNESS FOR ANY DIVE PROFILE EVEN IF YOU FOLLOW THE DIVE PLAN PRESCRIBED BY DIVE TABLES OR A DIVE COMPUTER. You are advised to remain well within the exposure limits provided by the instrument to minimize the risk of DCS. Decompression sickness can cause serious injury or death.

**CAUTION!**

Do not use compressed air to blow water off the external unit.  
Do not use solvents or other cleaning fluids that might cause damage.  
Do not test or use the unit in pressurized air.

**WARNING**

When the omitted deco stop alarms are triggered, desaturation of the simulated tissues is halted; it resumes when the diver returns to the correct decompression stop depth.

**WARNING**

The Divephone functions to a depth of 80 m only.

**WARNING**

Do not start a dive if the **LOW BATTERY** message is displayed on the screen on the surface. The computer may fail to function during the dive and this could lead to serious injury or death.



### 3. ESTABLISHING CONNECTION

#### 3.1. Wi-Fi Settings

Your Divephone Unit connects to your mobile device via Wi-Fi. First, Turn ON the Airplane mode and turn ON your Wi-Fi. If the mobile device is connected to any other Wi-Fi network, you should first disable this connection (Step 4). Then you must configure your mobile device correctly in order to have your Divephone working. The configuration for Divephone should be done only once but you have to disable any Wi-Fi connection before you want to use the Divephone again (Step 4). Follow the steps described below to be able to connect to Divephone's external module.



**Step 1.** Before establishing the connection, close completely (double clicking the iPhone's/iPod Touch's button to open the "Fast App Switcher") all the applications including the Depth Monitor application (Figure 3.1).

**Step 2.** Open Settings/Wi-Fi.

**Step 3.** Set Wi-Fi ON (if it is OFF).

**Step 4.** "Forget" other networks to avoid unwanted connections to other Wi-Fi networks. To do this:

- In the networks list, touch on the arrow next to the network you want to disable (Figure 3.2).
- Then touch on "Forget this Network" button (you can reconnect to this network anytime) and back to Wi-Fi Networks by the Wi-Fi Networks Button at top left (Figure 3.3).

Figure 3.1



Figure 3.2



Figure 3.3

**Step 5.** Bridge the wet contact edges with your finger for **at least 5 seconds** to activate the external module (Picture 3.1).

**IMPORTANT!** - Do not touch the wet contacts or try to turn on the device during charging. That may cause damage to the device.

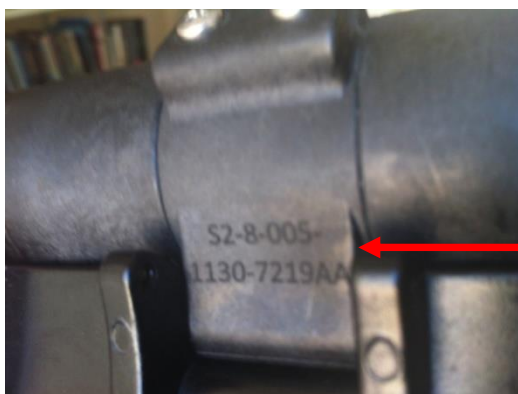
**Step 6.** Back to Wi-Fi Networks, the external module's name will appear in the networks list. You can see the module's serial number at the middle, below the wet contact edges (Picture 3.2). Touch on the



External Module's Name (the last 4 characters of the network name will match to the last 4 characters of the serial number). The connection check icon "✓" will appear at left and the network name will turn blue (Figure 3.4 and Figure 3.5).



Picture 3.1



Picture 3.2



Figure 3.4



Figure 3.5

Set "Ask for Join Networks" OFF (see Fig. 3.5) to establish the connection with the external module automatically.

**Step 7.** You can now open the Depth Monitor Application. (DO NOT USE THE DEPTH MONITOR LITE APPLICATION for diving. LITE edition is only for reviewing the Depth Monitor features and dive simulation. It is NOT SUITABLE FOR DIVING). The Depth Monitor Application will connect to the external module automatically. This can be checked by the animated connection icon at the top left (Figure 3.6).

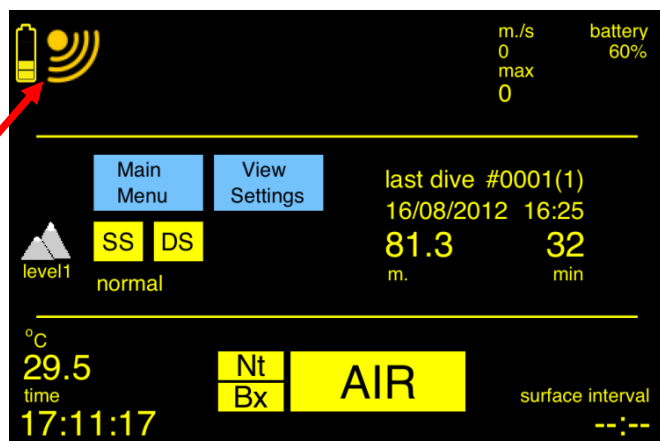


Figure 3.6

The External Module Battery indicator (top-left) will show the battery status of the External Module only when the wet contacts are bridged. When the wet contacts **are not bridged**, an empty battery icon will be displayed.

We recommend you to bridge the wet contacts and check the module's battery before diving. If you launch the Depth Monitor Application within 2 minutes after you bridged the wet contacts, the External Module will remain active as long as the application is running. Re-bridge the wet contacts to re-activate the External Module if the application will be launched after more than 2 minutes.

**NOTES:** If you click on the Home Button of your iPhone (Returning to Home Screen), the application will continue to run in background.

If you double click on Home Button and close the Depth Monitor Application by the “Fast App Switcher” (see Figure 3.1), the application will be closed completely.

In both cases, the External Module will be shut off in 2 minutes.

When the application is running in background if you return to application in 2 minutes, the Depth Monitor will perform the calibration again (see Figure 5.4) and continue to run, connected to the External Module.

After the 2 minutes elapsed and the external module is shut off, you will have to re-activate the external module by bridging the wet contacts to establish the connection again.

**Establishing the connection again may take time. Wait about 30 seconds. If the Depth Monitor is not connected to the External Module, double click on Home Button and close the Depth Monitor Application completely by the “Fast App Switcher” and launch it again.**

### 3.2. Connection Troubleshooting

Actions that can be applied if the connection is not established after following the steps described above:

- Turn OFF your iPhone or iPod Touch and turn it ON again.
- Close the Depth Monitor completely (double clicking on Home button).
- Go to wireless settings.
- Check if Wi-Fi is ON, if Wi-Fi is OFF, set it ON.
- If the Wi-Fi is connected to another device, forget it.
- Check if the External Module is connected.
- If the External Module is not connected, follow the steps of the section 3.1.
- If the External Module is connected, forget it and follow the steps of the section 3.1.
- If the External Module’s name does not appear on the Wi-Fi Networks list, charge the external module fully (continue charging about 15-10 minutes after the charge light goes off).
- Re-establish the connection
- If the problem persists, contact INNOVASUB.

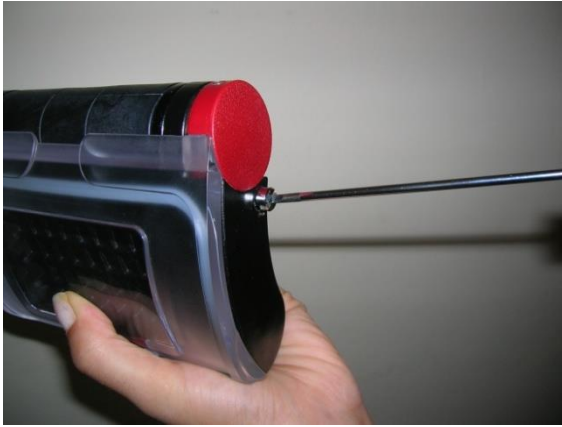
## 4. HOUSING AND EXTERNAL MODULE USAGE

### 4.1. Tools Required

- Standard USB cable for charging the external Module
- A coin or a screwdriver to remove the pin holding securing the external module.
- A coin (1 euro size) to open and close the external module’s cap

### 4.2. Removing the External Module from the Housing

In order to remove the external module from the housing, first remove the screw at the right side of the housing (Picture 4.1) then remove the pin holding the external module (Picture 4.2).



Picture 4.1



Picture 4.2

### 4.3.Charging the External Module

You can use a large screwdriver or a coin to open and close the external module's cap (Picture 4.3).



Picture 4.3

Use a standard USB cable to charge the external module's battery. The charging light will go OFF when it is charged, however we recommend to charge about half one more hour to be sure that the battery is fully charged (Picture 4.4).



Picture 4.4

**IMPORTANT!** - Do not touch the wet contacts or try to turn on the device during charging. That may cause damage to the device.

When closing the external module's cover, be sure that the cover is closed completely as seen in Picture 4.5. Do not leave it rift (Picture 4.6), otherwise water can penetrate.



Picture 4.5 (correct)



Picture 4.6 (wrong)

#### 4.4. Directives for Power Management

##### The External Module

- Once activated by bridging the wet contacts, the module will remain active for 2 minutes.
- If during these two minutes, the Depth Monitor Application is launched, the External Module will remain active until the application is closed.
- **Close the Monitor Application when you are not using it, otherwise the External Module will remain active and its battery may run out.**
- The External Module battery level is shown only when the wet contacts are bridged; **do not forget to bridge the wet contacts just before the dive** to check the battery.

##### The iPhone/iPod Touch

- Be sure that the battery of the iPhone/iPod Touch is fully charged before entering the dive.
- Set the screen brightness to a minimum level, however you should still be able to see the screen easily.
- Do not forget to close (completely) the application after dives.
- Deactivate the Wi-Fi, Bluetooth and other modules when you are not using them.

## 5. DEPTHMONITOR AT A GLANCE

### 5.1. Launching the Application

Before starting up make sure you turn off any other application including the telephone. Adjust your screen brightness to a minimum to save power. However you should still be able to see the screen.

The Depth Monitor software displays a confirmation screen to ask the user if he/she is a certified diver (Figure 5.1). You must clearly read and understand this manual before starting the use of the Depth Monitor Software.

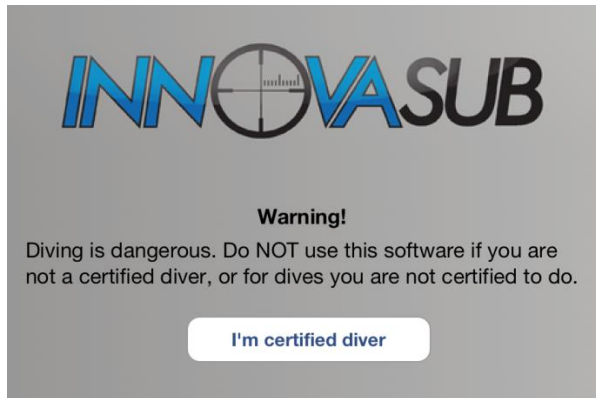


Figure 5.1

Once you activate the external unit by touching the wet contacts, you will see the connection icon animation (Figure 5.2).

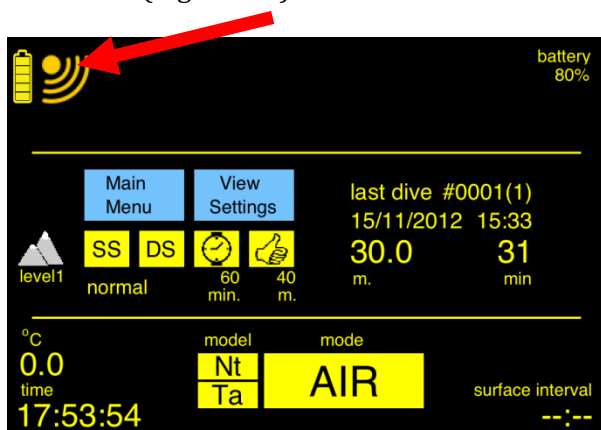


Figure 5.2

If there is a red cross (see Figure 5.3) over the connection icon despite activating the wet contacts, close the application and check the Wi-Fi connection (Section 3.2).



Figure 5.3

Upon wakeup, the external module will begin to sense the pressure (depth), temperature and send the data to the PDA. The Depth Monitor application will display the atmospheric pressure ( $P_o$ ) (Figure 5.4).



Figure 5.4

If the  $P_o > 1166$  milibar, the following warning will be displayed:

*Pressure READ Error*

*SYSTEM MALFUNCTION OR MODULE ACTIVATED AT DEPTH.*

*NO DIVING*

*CONTACT INNOVASUB*

## 5.2. Surface Main Screen

The main screen that you will see upon start up is shown in Figure 5.5. Note that the main screen layout might change according to the settings.

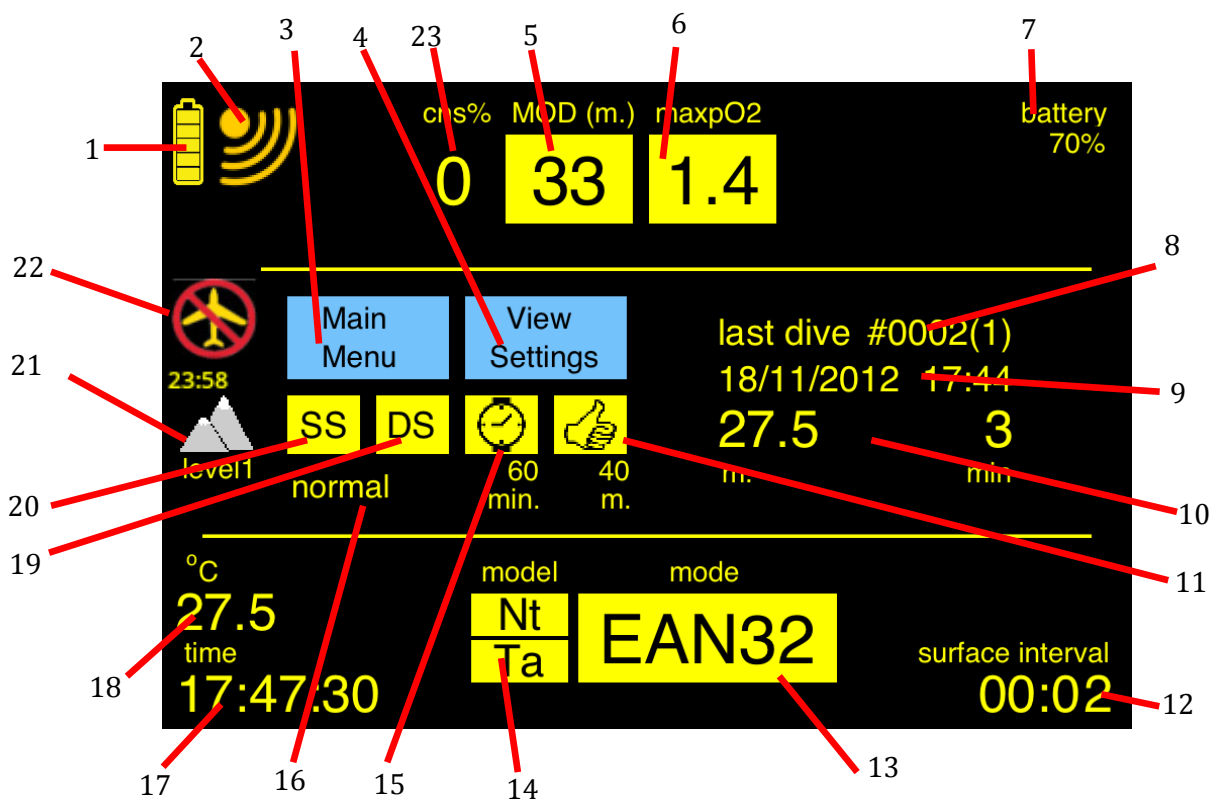


Figure 5.5

In Figure 5.5, all the Surface Main Screen items are numbered to be explained:



### 1. External Module Battery Indicator

Indicates the battery charge level of the external module.

When there is only 1 bar, it will be red and blinking as shown in Figure 5.6.



Figure 5.6

#### Low External Module Battery At Surface:

In this situation a warning will be displayed:

“Warning! Low External Module Battery. Do NOT dive before recharging the External Module battery”

The user is to acknowledge by clicking “OK”.

“DO NOT DIVE!” shall be displayed at the place of connection icon.

Only the Logbook and the Dive Site Maps shall be available. The application will not enter to dive mode.

#### Low External Module Battery Underwater:

A Low Battery Message will be displayed near the battery icon.

### 2. Connection Icon

Animated when there is connection with external module.

If there is a red cross on it (see Figure 5.3), that means there is no connection.

### 3. Menu Button

Used to access to Main Menu.

### 4. View Settings Buttons

Used to access to Setting Details Screen.

### 5. MOD (Maximum Operating Depth)

Depth at which the ppO2 is equal to the ppO2 MAX set by the user.

Example:

PO2 MAX = 1.4 ATA

Mode EAN32 (meaning that O2 percentage is 32%)

$MOD = [(1.4/0.32) - 1] * 10 = 33.74$  meter (rounded to 33 meters)

Displayed only in Nitrox Mode, blank in AIR or GAUGE Modes.

### 6. ppO2 MAX

The limit for the partial pressure of oxygen as set by the user. When the ppO2 MAX is exceeded during dive, the ppO2 digits will blink in red and yellow to warn the diver.

### 7. PDA Battery Indicator

Indicates the battery charge level of the PDA or Mobile Phone.

When it is  $\leq 25\%$ , it will be red and blinking.

#### Low PDA Battery at Surface:

In this situation a warning will be displayed:

“Warning! Low PDA Battery. Do NOT dive before recharging the PDA battery”

The user is to acknowledge by clicking “OK”.

“DO NOT DIVE!” shall be displayed at the place of connection icon.

Only the Logbook and the Dive Site Maps shall be available.

#### Low PDA Underwater:

A Low Battery Message will be displayed near the battery icon.

### 8. Last Dive #

Dive Number. The first number is assigned cumulatively (since beginning), meaning that it is the total number of dives. The second number (in brackets) is assigned daily.

### 9. Date and Time of the Last Dive

The date and the start time of the last dive.

### 10. Max Depth and Total Dive Time of the Last Dive

The time is rounded to the next greater minute. For example if the dive time is 25 minutes and 18 seconds, "26 min" will be displayed as dive time.

### 11. Depth Alarm Indicator and Set Point

Displayed when depth alarm is set ON. The alarm depth (set point) is also displayed.

### 12. Surface Interval

Surface interval (hours:minutes) since the last dive. Dashes (---) will be displayed after 48 hours from a dive.

### 13. Dive Mode

- "AIR" if the mode is set for AIR
- "GAUGE" if the mode is set for GAUGE
- "EAN(xx)" if the mode is set for NITROX. The "xx" stands for the oxygen (O<sub>2</sub>) percentage. For example in the Figure 3.4 the O<sub>2</sub> is set for 32%.

### 14. Deco Model(s)

Displays short names of the Deco Model(s) set ON by the user. The short names are:

- "Bx" for B-GFx
- "Nt" for Ne-OX
- "Ta" for Table
- "Co" for Continuous

Single or dual short name can be displayed in this field (14). For example, by the Figure 3.4, we understand that the deco models Ne-OX and Table are set ON.

### 15. Dive Time Alarm Indicator and Set Point

Displayed when dive time alarm is set ON. The alarm time (set point) is also displayed.

### 16. Conservatism

Shows the conservatism level (Liberal, Normal or Conservative) set by the user.

### 17. Time of Day

Equal to the PDA's time.

### 18. Temperature

Shows the current temperature sensed by the external module. (--) is displayed when there is no connection with the external module.

### 19. Deep Stop Indicator

Displayed when deep stop is set ON. When it is displayed, will prompt for a deep stop according to following rules:

Deep Stops will start when dive depth is greater than 20 meters.

Between 20-25 m; a fixed deco stop of 1 min at 15 meters.

Between 25-30 m; a fixed deco stop of 2 min at 15 meters.

If the dive depth is greater than 30 m, each model has its own Deep Stop Algorithm. In this case the deep stop duration is always 2 minutes. Pyle Stops will be used for the remaining models.

## 20. Safety Stop Indicator

Displayed when safety stop is set ON. When it is displayed, the Depth Monitor will prompt for a safety stop (3 minutes at 5 meters) for dives deeper than 10 meters (33 ft).

## 21. Altitude Level Indicator

Shows the altitude level set by the user (Figure 5.7, 5.8, 5.9):



Figure 5.7 - For Level 1 : Sea Level, 0 - 800 m (0 – 2624 ft)



Figure 5.8 - For Level 2 : 801 - 1600 m (2625 – 5248 ft)



Figure 5.9 - For Level 3 : 1601 - 2400 m (5249 – 7872 ft)

## 22. No Fly Icon and Countdown

It will appear only after dives, together with a time to flight counter starting from 24:00 to 00:00 (hr:min). When the flight timer reaches 0 (zero) the no flight icon will disappear.

## 23. Current CNS (Central Nervous System) Toxicity

Displayed only in Nitrox Mode, blank in AIR or GAUGE Modes.

## 6. MENU STRUCTURE

The Depth Monitor's menu structure is designed to enable the user to make the settings and access the information screens intuitively. The menus are accessed using the touch screen of the PDA. The Menu Structure is given in the Figure 6.1.

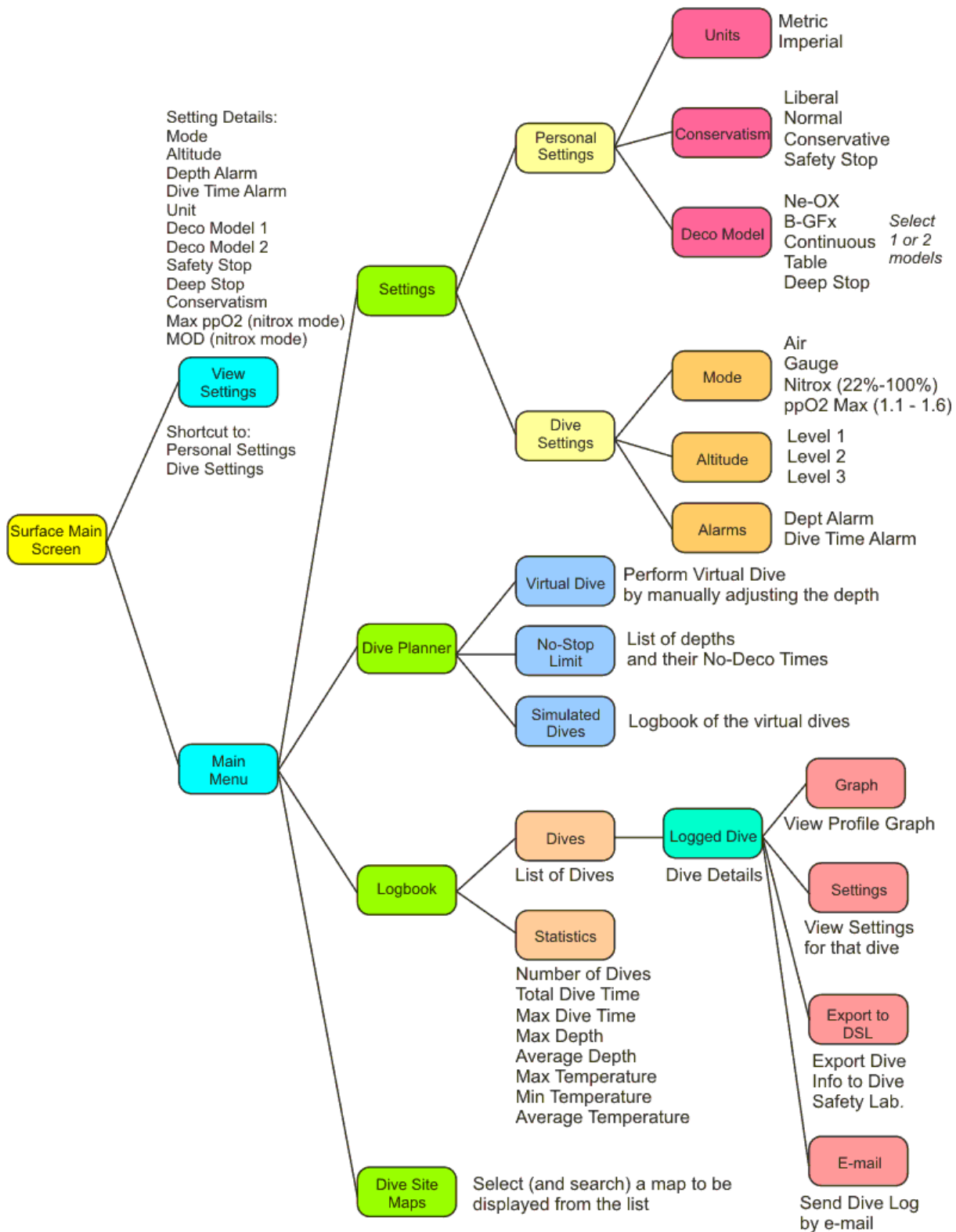


Figure 6.1. Depth Monitor Menu Structure

## 7. HOME and BACK BUTTONS

In all menus, you will see these two buttons. They function as described below.



**HOME BUTTON**  
Click to back to Main Screen directly



**BACK BUTTON**  
Click to back to Previous Menu

## 8. VIEW SETTINGS

Click on the “View Settings” button on Main Screen (4) to review the current dive settings details (Figure 8.1).

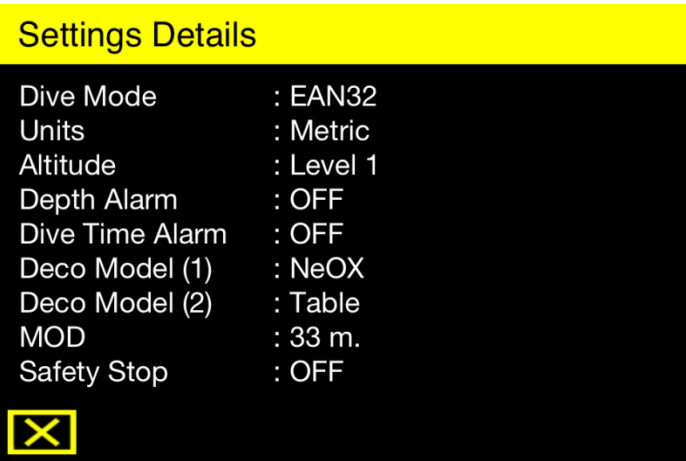


Figure 8.1

Slide your finger up on the screen to scroll the screen.

### SETTING DETAILS FOR AIR MODE

Dive Mode: AIR  
Units: (default: Metric)  
Altitude: (default: Level 1)  
Depth Alarm: (default: OFF)  
Dive Time Alarm: (default: OFF)  
Deco Model (1): (default: B-GFx)  
Deco Model (2): (default: OFF)  
Safety Stop: (default: ON)  
Deep Stop: (default: OFF)  
Conservatism: (default: Conservative)

### SETTING DETAILS FOR NITROX MODE

Dive Mode: EAN32  
Units: (default: Metric)  
Altitude: (default: Level 1)  
Depth Alarm: (default: OFF)  
Dive Time Alarm: (default: OFF)  
Deco Model (1): (default: B-GFx)  
Deco Model (2): (default: OFF)  
MOD: (default: 33m)  
Safety Stop: (default: ON)  
Deep Stop: (default: OFF),  
Conservatism: (default:  
Conservative)  
Max ppO2: (default: 1.4)  
O2 percentage: (default: 32)

### SETTING DETAILS FOR GAUGE MODE

Units: (default: Metric)  
Altitude: (default: Level 1)  
Depth Alarm: (default: OFF)  
Dive Time Alarm: (default: OFF)

## 9. UNITS SETTING (METRIC or IMPERIAL)

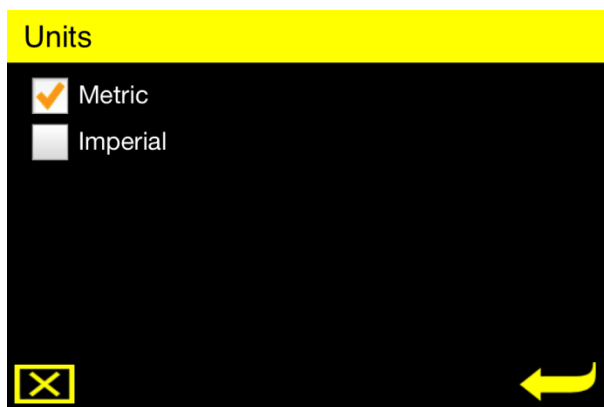


Figure 9.1

Click on **Main Menu > Settings > Personal Settings>Units**. You can select Metric or Imperial (Figure 9.1).

All the units, including recorded dives and statistics will be displayed according to the unit preferred by the user.

## 10. CONSERVATISM LEVEL SETTING



Figure 10.1

Click on **Main Menu > Settings > Personal Settings>Conservatism**. You can select Liberal, Normal or Conservative (Figure 10.1).

Setting "Conservative" is recommended for safer dives.

**The conservatism settings cannot be changed for 48 hours after a dive.** If you try, you will see a message: "You cannot change conservatism for 48hours after a dive!"

## 11. SAFETY STOP SETTING



Figure 11.1

Click on **Main Menu > Settings > Personal Settings>Conservatism**. You can set Safety Stop ON or OFF (Figure 11.1).

If set ON, the Depth Monitor will prompt for a safety stop, 3 minutes at 5 meters (17 ft) for **NO DECO** dives deeper than 10 meters (33 ft).



## 12. DECO MODEL SETTING

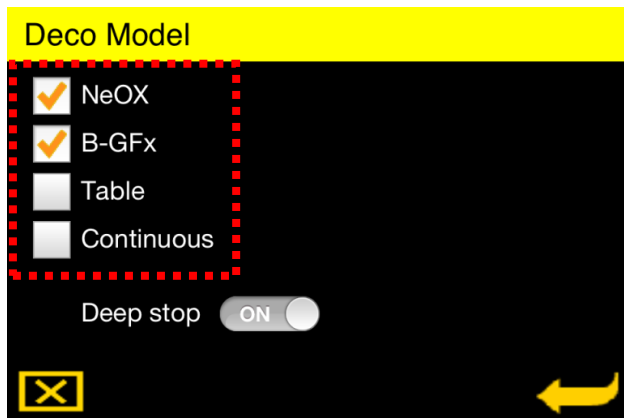


Figure 12.1

Click on **Main Menu > Settings > Personal Settings>Deco Model**.

You can select 1 or 2 of the four Decompression Algorithms checking the boxes near model names (Figure 12.1).

If you select 2 models, the decompression information according to both models will be displayed on Dive Screen.

If you try to check a 3rd model when two models are checked you will see a warning: **“Warning! You can select at most 2 models”**.

We remind that **you cannot change the deco model settings for 24 hours after a dive**. If you try to change the models before 24 hours you will see a warning: **“YOU ARE NOT ALLOWED TO CHANGE ‘MODEL NAME xxx’ (xx:xx time left)”**.

## 13. DEEP STOP SETTING

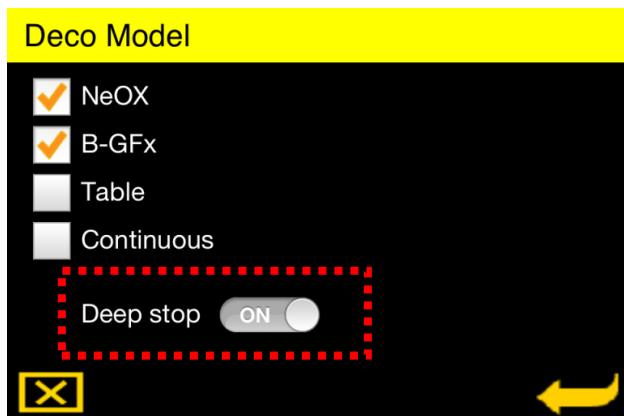


Figure 13.1

Click on **Main Menu > Settings > Personal Settings>Deco Model**.

You can set Deep Stop ON or OFF (Figure 13.1).

When set on the Depth Monitor will prompt a deep stop for dives deeper than 20 meters.

Between 20-25 m; a fixed deco stop of 1 min at 15 meters.  
Between 25-30 m; a fixed deco stop of 2 min at 15 meters.

If the dive depth is greater than 30 m, each model has its own Deep Stop Algorithm. In this case the deep stop duration is always 2 minutes.

Gradient Factors is used for B-GFx  
Pyle Stops is used for the remaining models.

We remind you that **you cannot set deep stop ON if the O2 percentage of the breathing gas is greater than 40%**. If you try, you will see a warning: **“Warning Nitrox is set above 40%, you cannot set Deep Stop ON”**.

## 14. DIVE MODE SETTING (AIR, GAUGE, NITROX)

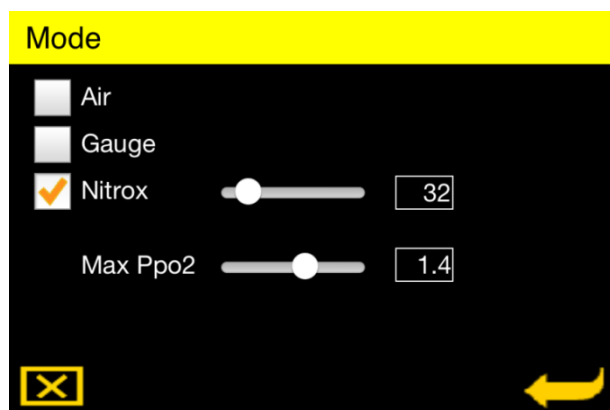


Figure 14.1

Click on **Main Menu > Settings > Dive Settings>Deco Model.**

You can set dive mode Air, Gauge or Nitrox (Figure 14.1).

You can adjust the O2 percentage (FO2) of Nitrox and the Max ppO2 (maximum partial pressure of oxygen that you consent to be exposed to) by the sliding bars.

We remind you that **you cannot set FO2 greater than 40% if deep stop is set ON**. If you try you will see a warning: "Warning! Deep Stop is enabled, you cannot set Nitrox above 40% !".

In Gauge Mode the Depth Monitor will function as a digital depth gauge, without displaying any decompression or O2 related information.

In Gauge Mode, decompression related menus such as Deco Model and Conservatism is not available.

**Switching from gauge mode to Air or Nitrox requires 48 Hours period after surfacing** from the last Gauge Mode dive. If you try, you will see a message: "Change Mode Warning – You are not allowed to change mode (xx hour, xx minutes left)".

## 15. ALTITUDE SETTING

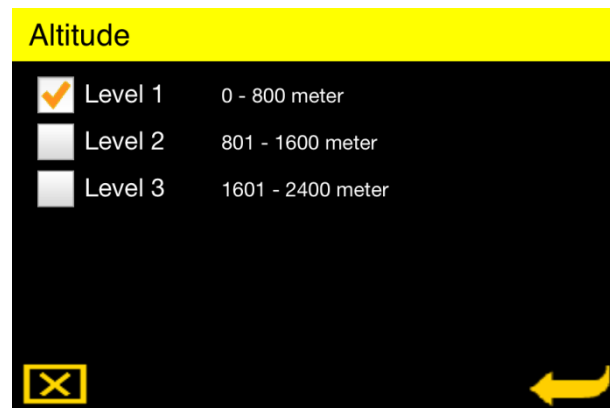


Figure 15.1

Click on **Main Menu > Settings > Dive Settings>Altitude.**

You have to set the altitude to a proper level (Figure 15.1).

From Sea Level to 800 meters (2624 ft) set to Level 1.  
From 801 meters to 1600 meters (2625 to 5248 ft) set to Level 2.

From 1601 meters to 2400 meters (5249 to 7872 ft) set to Level 3.

We remind you that diving at a higher altitude than 2400 meters is not recommended.

Note that the Divephone system adjusts the altitude setting automatically. The altitude setting is for virtual dives only.

## 16. DEPTH ALARM SETTING



Figure 16.1

Click on **Main Menu > Settings > Dive Settings>Alarms.**

Using this menu, you can set a depth alarm from 10 to 99 meters (33 to 325ft). (Figure 16.1)

Check in the box and set the alarm depth using the “+” and “-” buttons.

During dive, if you go deeper than the depth alarm you set, the depth digits will blink in red and yellow. Press and hold the “+” or “-” buttons to increase and decrease the alarm depth faster.

## 17. DIVE TIME ALARM SETTING



Figure 17.1

Click on **Main Menu > Settings > Dive Settings>Alarms.**

Using this menu, you can set a dive time alarm from 10 to 99 minutes (Figure 17.1).

Check in the box and set the alarm depth using the “+” and “-” buttons.

During dive, when the elapsed dive time reaches the dive time alarm you set, the dive time digits will blink in red and yellow.

Press and hold the “+” or “-” buttons to increase and decrease the alarm time faster.

## 18. PERFORMING A VIRTUAL DIVE

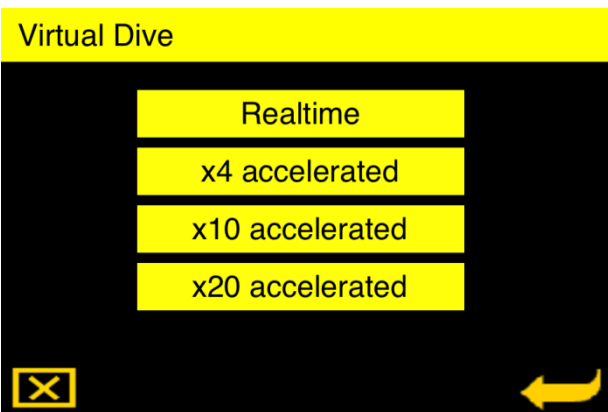


Figure 18.1

The Depth Monitor enables the user to perform virtual dives.

All the features of a real dive (except displaying the temperature) are available in a virtual dive.

The current setting of the Depth Monitor will be valid. You can increase or decrease depth sliding your finger down and up on the screen.

Click on **Main Menu > Dive Planner > Virtual Dive.**

You will see the time acceleration selection screen (Figure 18.1)

This screen is for adjusting the time acceleration of the virtual dive. For example, if you select “x4 accelerated”, the dive time will advance 4 times faster.

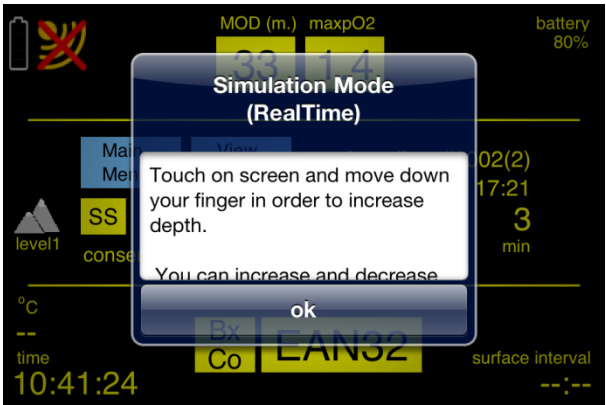


Figure 18.2

After selecting a time acceleration, an explanation message will appear (Figure 18.2).

Click “ok” and then you will be able to increase depth sliding your finger down on screen.

The virtual dive screens are the same as real dive screens that will be explained later on this manual.

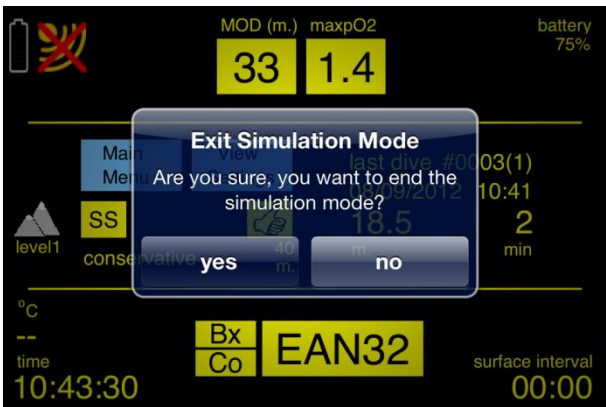


Figure 18.3

After surfacing from a virtual dive, Surface Main screen will be displayed with the last (virtual) dive information.

To exit from virtual dive mode, click on the Main Menu button. A confirmation message will appear asking if you are sure to end the simulation mode (Figure 18.3).

If a violation occurs in virtual dive, only Logbook and Dive Site Maps will be available as in real dive (Error Mode). However this error mode will be cleared when exit from Simulation Mode clicking on Main Menu Button. And the depth Monitor will function normally\*.

\*Note that the error mode will remain for 24 hours after a real dive if a violation occurred even if you exit from the application.

## 19. NO-STOP LIMITS REVIEWING

No-stop Limit		
Depth (meter)	Bx (min.)	Co (min.)
9	199	199
12	199	141
15	199	86
18	119	55
21	80	37
24	61	26
27	39	18
30	30	13

Figure 19.1

Click on **Main Menu > Dive Planner >No-Stop Limit** .

You will see the depth list and the current No-Stop Limits for the Deco Models that are currently selected (Figure 19.1).

The times at the depth’s line are the times you can spend at these depths and surface by 9 m/min (30 ft/min) ascent rate without decompression stop. If a one of the deco models is “Locked” because of violation, the No-Stop times for this model will not be displayed for 24 hours.

## 20. LOGBOOK



Figure 20.1

Click on **Main Menu > Logbook>Dives**.

The (real, not virtual) dives will be listed.

The oldest at the top and the latest at bottom.

The dives are named by date and time  
(year,month,day-time)

For example a dive made at September 6, 2012, 5:21 PM will be names as 20120906-1721 as seen on Figure 20.1.

You can scroll the list touching the screen.

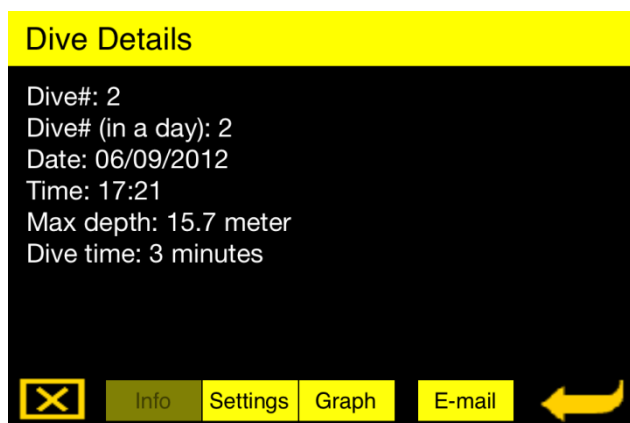


Figure 20.2

Click on a dive to review Info Screen (Figure 20.2):

Dive #

Dive # (in a day)

Date and starting time of the dive

Max Depth

Dive Time (rounded to next greater minute)

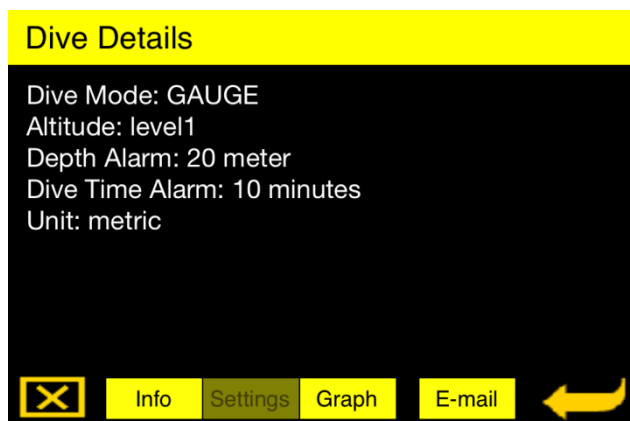


Figure 20.3

Click on Settings button to review the setting that applied for the dive (Figure 20.3):

Dive Mode

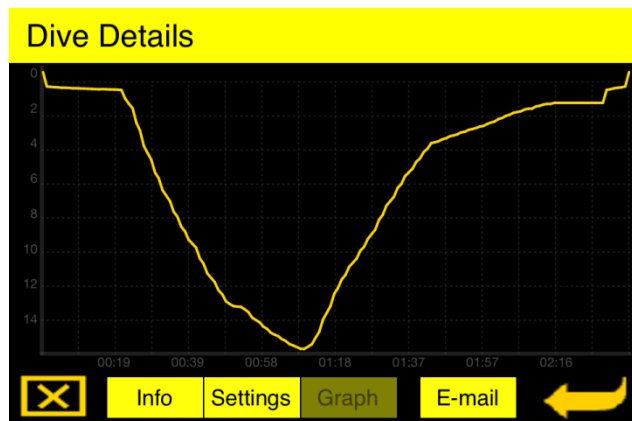
Altitude

Depth Alarm

Dive Time Alarm

Unit

(You can go back to Info Screen by pressing the Info button).



Click on Graph button to review the Dive Profile Graph (Figure 20.4).

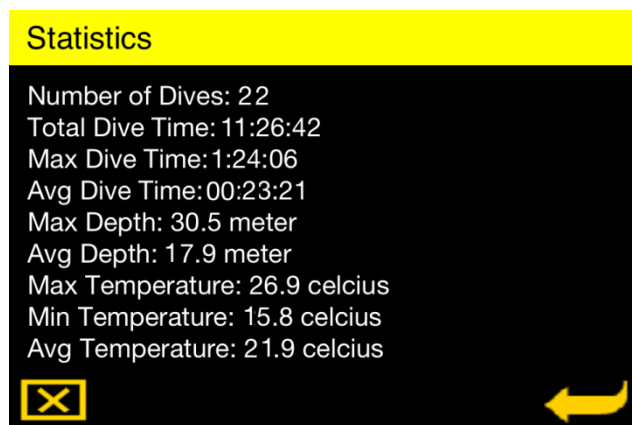
Figure 20.4

To e-mail the dive log to any e-mail address, click on the E-Mail Button.

The e-mail client will open (Figure 20.5) and the log file will be automatically attached to e-mail.

Figure 20.5

## 21. STATISTICS



Click on **Main Menu > Logbook>Statistics** (Figure 21.1).

The information is for all the (real) logged dives performed.

Figure 21.1



## 22. SIMULATED DIVES LOG

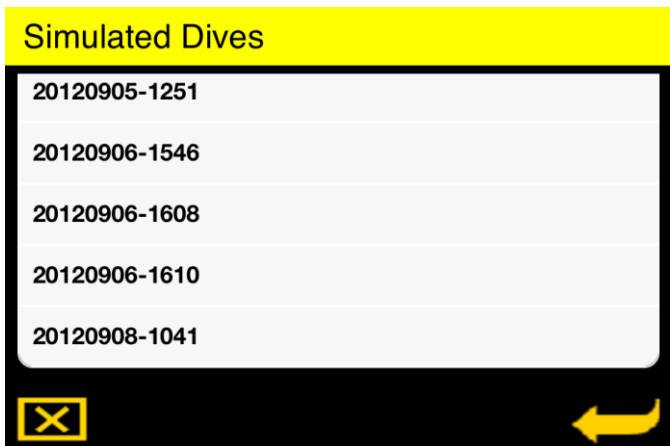


Figure 22.1

Click on **Main Menu > Dive Planner>Simulated Dives**(Figure 22.1).

The Simulated Dives Menu structure is same as the Logbook>Dives Menu.

However here, Virtual Dives are listed instead of real dives.

## 23. DIVE SITE MAPS REVIEWING

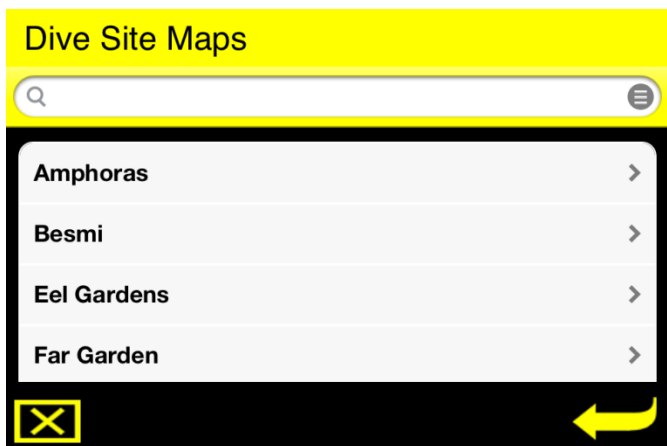


Figure 23.1

Click on **Main Menu > Dive Site Maps** (Figure 23.1).

In this menu, the underwater maps are listed.

The Depth Monitor comes with 24 maps from Egypt and Turkey. You will be able to download other dive site maps from our website soon.

The maps are listed alphabetically (Country – Town – Dive Site) and you can perform map search by keywords using the search field at the top.

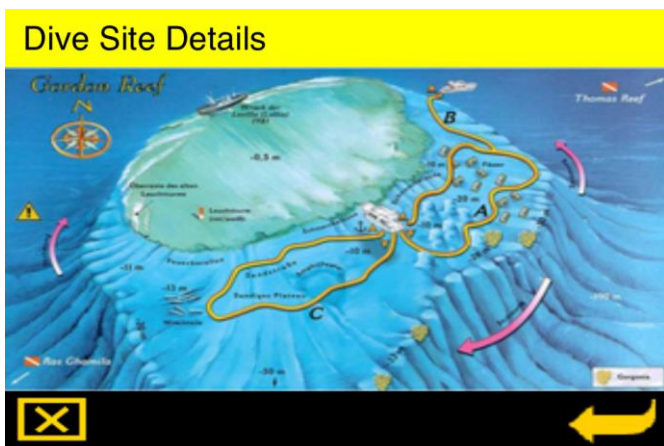


Figure 23.2

Clicking on a map on the list will open the underwater map of the dive site (Figure 23.2).

## 24. DIVING WITH DIVEPHONE

### **ATTENTION: Before dive,**

- Close all other applications.
- Set the screen brightness of iPhone/iPod to a minimum level to save battery. However you should still be able to see the screen easily.
- Charge fully the batteries of your iPhone/iPod and your External Module
- Do not forget that Depth Monitor will not enter dive mode when iPhone/iPod battery level is less than 25%.
- Do not forget that Depth Monitor will not enter dive mode when the external Module's battery level is 1 bar.

### **Making ready for the dive,**

- Establish connection as explained in Section 3.
- Launch the Depth Monitor application.
- If the connection were already established, bridge the wet contacts to check the External Module battery.
- Put your iPhone (or iPod Touch) in the housing, close the housing, make sure that you have closed the cover latch into its locked position.

The Depth Monitor will enter Dive Mode when the depth is deeper than 0.9 meters (3 ft) for 3 seconds.

The Dive Mode will be terminated upon ascent to shallower than 0.9 meters.

If you go deeper than 0.9 meters again in 3 minutes after surfacing, the dive will continue and dive time will continue from the point where you surfaced plus surface time (less than 3 minutes). This will be recorded as single dive.

For example, if the dive time was 22 min 15 seconds when surfacing, and you surface interval is 2 minutes 20 seconds, the dive time will begin from 24:35 when you go deeper than 0.9 meters again.

Dives between which the surface interval is greater than 3 minutes will be recorded separately as different dives.

## 24.1. DIVE SCREEN (DUAL MODEL)

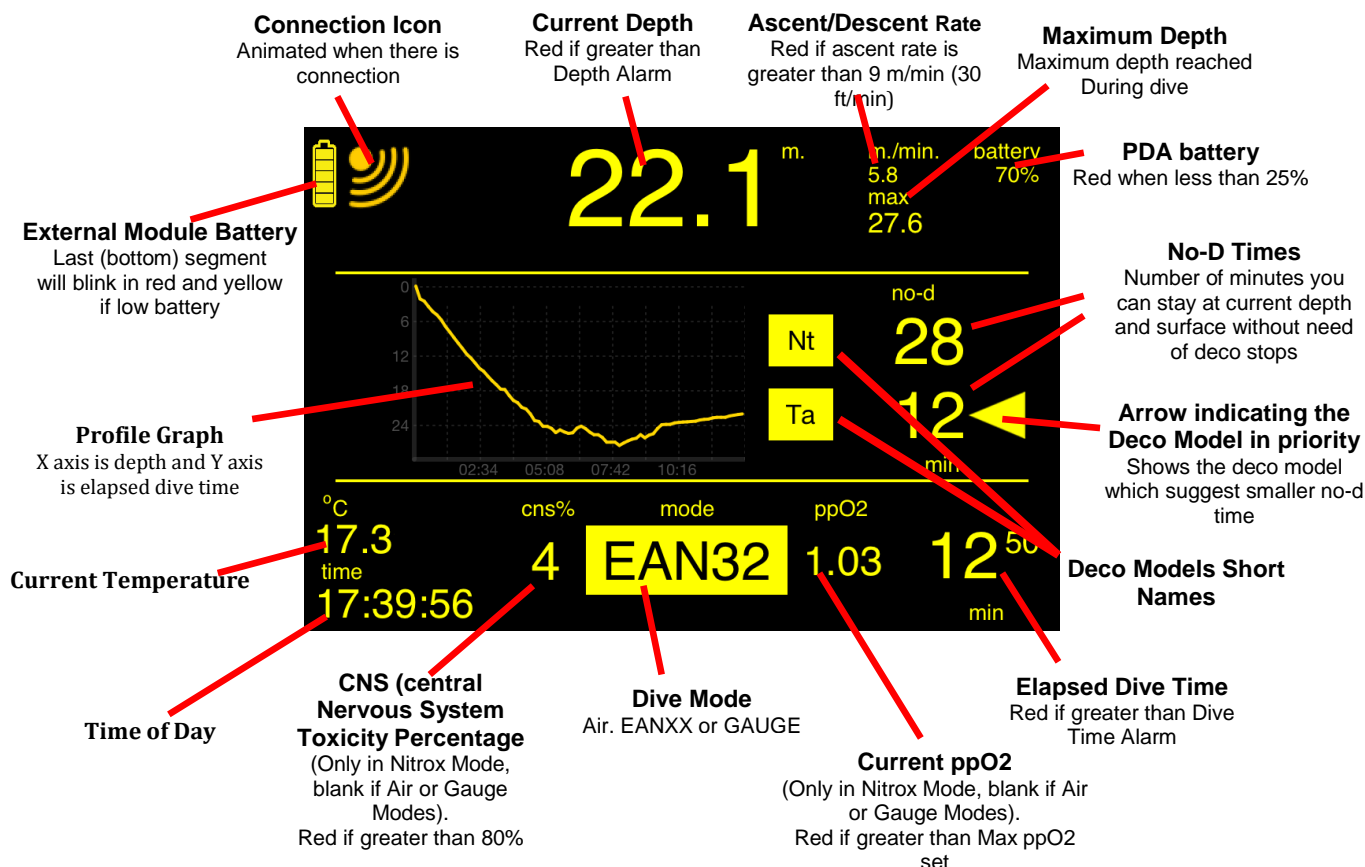


Figure 24.1

The no-d times are rounded to next smaller whole minute.

For example if the no-d time for a model is 22 minutes 45 seconds, 22 will be displayed.

Similarly, if the no-d time is less than a minute, 0 will be displayed.

## 24.2. DIVE SCREEN (SINGLE MODEL)

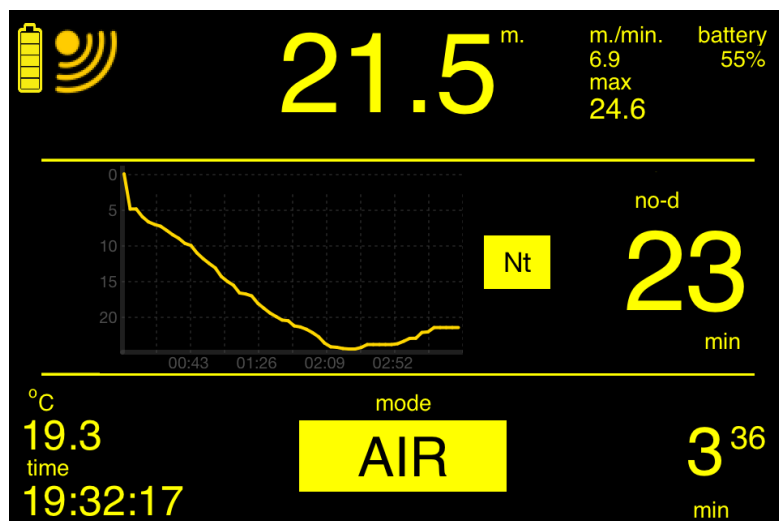


Figure 24.2

Note that the CNS% and ppO2 are not displayed in Figure 24.2 because the dive mode is "AIR".

### 24.3. DECO MODE (SINGLE MODEL)

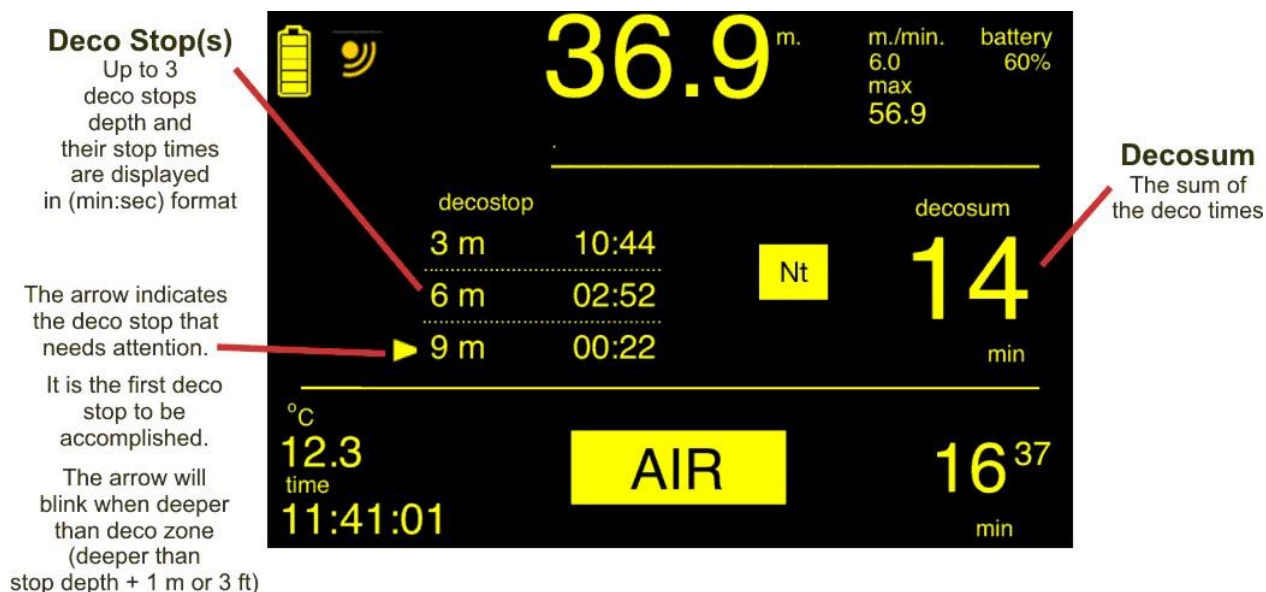


Figure 24.3

Note that the deco stop times may decrease and deco stop(s) may disappear due to gas discharge during ascent.

### 24.4. DECO MODE (DUAL MODEL)



Figure 24.4

The deco stops for the both models are displayed.  
The model short names and the decosums are above the deco stops.

Note that the arrow indicates the deepest deco depth. It will blink when you are deeper than stop depth + 1m (3 ft).

If the deepest stop depth for both models is the same, the arrow will indicate the deco with longest stop time as seen in Figure 24.5.

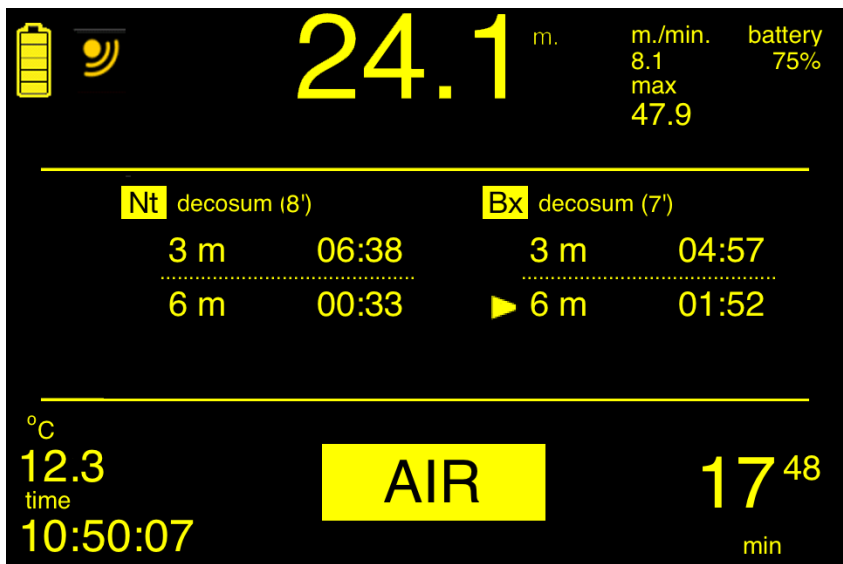


Figure 24.5

If only one of the models is suggesting deco stop(s) and the other is not, the deco stop(s) of one model will be displayed, and for the other model, the no-d time will be displayed as seen in Figure 24.6.



Figure 24.6

## 24.5. DECO STOP ZONE

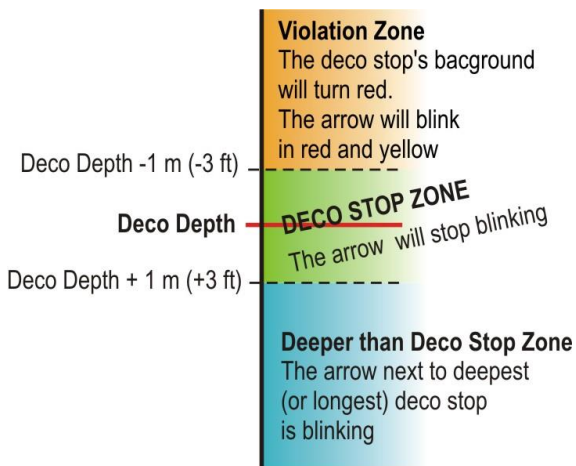


Figure 24.7

The deco stop zone is the zone where you have to wait that the deco time reaches to 00:00 and disappear (Figure 24.7).

The bottom limit is 1 meter (3 ft) than the deco depth and the top limit is 1 meter (3 ft) shallower than the deco depth.

If you are deeper than the deco zone, the arrow indicating the deepest (or longest if both model's deepest deco depth are the same) deco stop will blink.

In the deco zone, the arrow will stop blinking. You have to wait there until the deco time reaches to zero (00:00) and disappears.

If you go more than 1 meter (3 ft) shallower than the deco stop depth, you are out of deco zone which means you are in the violation zone.

The details of the violations will be explained in detail later in this manual.

## 24.6. SAFETY STOP

If the safety stop is set ON, the Depth Monitor will prompt for a safety stop at 5 meters (15 ft) for 3 minutes for the dives deeper than 10 meters (33 ft).

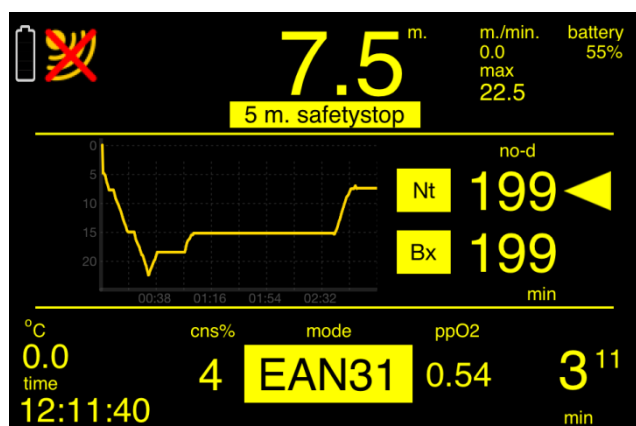


Figure 24.8

During ascent, a safety stop warning (with blinking yellow background) will appear below the depth digits between 6 and 10 meters (20 – 33 ft).



Figure 24.9

The safety stop screen will appear at 6 meters (20 ft) and the safety stop zone is between 3 and 6 meters (10 – 20 ft) (Figure 24.9).

A safety stop counter (counting down from 3:00 min:sec) and depth will be displayed at the place of the dive profile graph as seen in Figure 24.9.

If you go deeper than safety stop zone during the safety stop, between 6 and 10 meters (20 and 33 ft), the counter will stop and the safety stop warning will re-appear (Fig. 24.8). The counter will continue when you ascend back to safety stop zone.

If you go deeper than 10 m (33 ft) before the counter reaches to zero, the normal dive screen will be displayed and if you turn back to safety stop zone the counter will begin from 3:00 again.

After the safety stop counter reaches to zero, if you go deeper than 10 meters, the safety stop will be triggered again.





Figure 24.10

If you ascent shallower than safety stop zone before the counter reaches to zero, between 2 and 3 meters (7 – 10 ft) the counter will stop and blink in red and yellow as seen in figure 24.10.

In this case, if re-enter to safety stop zone (between 4 and 6 meters) in 30 seconds, the blinking will stop and the counter will continue to countdown from where it stopped.

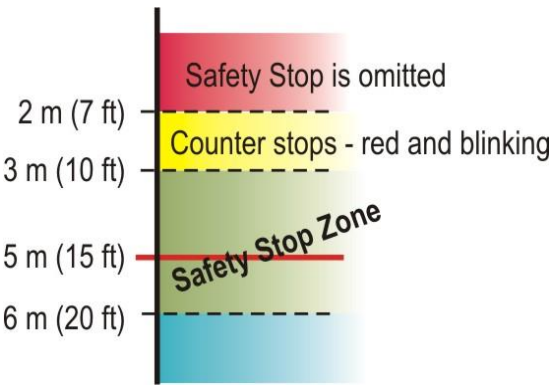


Figure 24.10

If you stay longer than 30 seconds between 2 and 3 meters, the safety stop is omitted. It will not re-appear unless you go deeper than 10 meters (33 ft) and ascent to 6 meters (20 ft) again.

If you go shallower than 2 meters (7 ft) the safety stop is omitted directly. It will not re-appear unless you go deeper than 10 meters (33 ft) and ascent to 6 meters (20 ft) again.

No sanction or error mode will emerge if you omit the safety stop, however we strongly recommend that you set the safety stop ON and wait for the counter reaches to zero for every dive.

### 24.7. DEEP STOP

If set ON, the Depth Monitor will prompt for deep stop for dive deeper than 20 meters (65 ft).

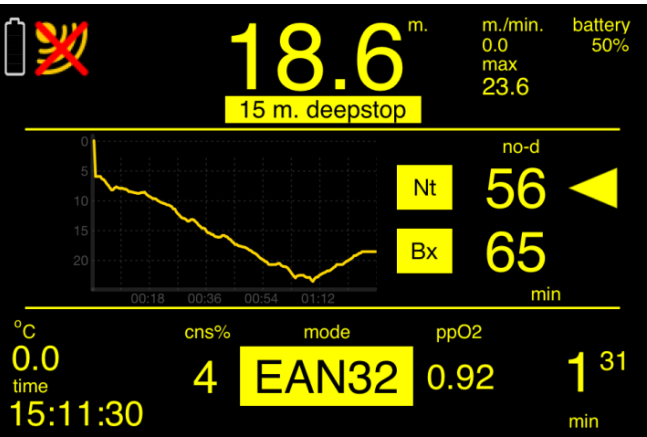


Figure 24.11

In this case, during ascent, a deep stop warning (with blinking yellow background) will appear between +5 and +1 meters deeper than the deep stop depth (for example, if the deep stop is at 15 meters (50 ft) the warning will be displayed between 16 and 20 meters) (Figure 24.11).



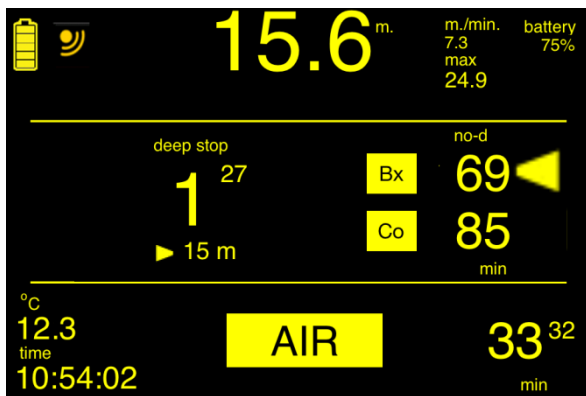


Figure 24.12

In the deep stop zone (deep stop depth -1 and +5 meters), a deep stop counter and depth will replace the dive profile graph as seen in Figure 24.12.

#### Deep Stop Rules:

If there is no deco stop or deco stops are at 3 and 6 meters (10 and 20 ft) depth:

- For max depth between 20 and 25 meters (65 – 82 ft): 1 minute at 15 meters (50 ft)
- For max depth between 25 and 30 meters (83 – 100 ft): 2 minutes at 15 meters (50 ft)

If max depth is deeper than 30 meters (100 ft) or deco stops are deeper than 6 meters, Pyle Stops will be used and stop time is always 2 minutes.

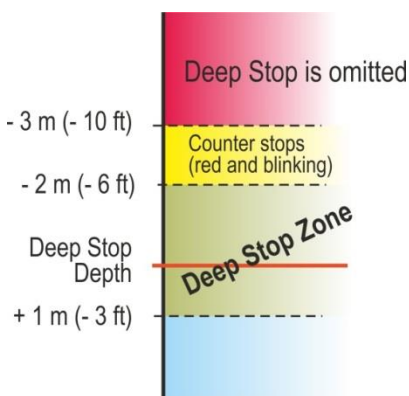


Figure 24.13

When arriving 1 meter (3 ft) deeper than the deep stop depth, the deep stop screen (Figure 24.12) will be displayed.

Between 1 meter (3 ft) deeper and 2 meters (3ft) shallower than deep stop depth, the counter will be counting down (Figure 24.13).

If you ascend to more than 2 meters (6 ft) shallower than deep stop depth, the counter will stop and blink in red and yellow (Figure 24.14). It will continue if you return to deep stop zone in 30 seconds, otherwise it will be omitted.

If you ascend more than 3 meters (10 ft) shallower than the deep stop depth, the deep stop will be omitted directly.

No sanction or error mode will emerge if you omit the deep stop.

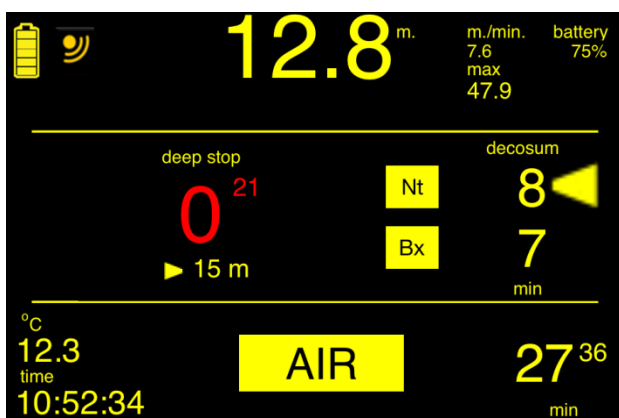


Figure 24.14

In deco mode, the deep stop will replace the model at left and deco sum of the models will be displayed at right as seen in Figure 24.14.

After completed or omitted, the deep stop will not re-appear for the rest of the dive.

## 25. DECO VIOLATIONS

If you ascent 1 meter (3 ft) shallower than deco stop depth, deco violation will occur.

Deco violations are grouped into categories:

### 25.1. Primary Deco Violation

Can occur when diving with only one model (or when one of the models is violated and only one model is left), if you ascend more than 1 meter (3 ft) shallower than the deco stop depth.

### 25.2. Secondary Deco Violation

Can occur when diving with two models, if you ascend more 1 meter (3 ft) shallower than the deco stop depth suggested by one of the models.

### 25.3. Temporary Deco Violation

Means that you have still time to descend back to deco stop depth and accomplish the deco requirement.

### 25.4. Permanent Violation

Means that the model is violated, it will not suggest any deco stop and will be locked for 48 hours.

### 25.5. DECO VIOLATIONS WITH SINGLE MODEL

When diving with single model, only primary deco violations can occur.

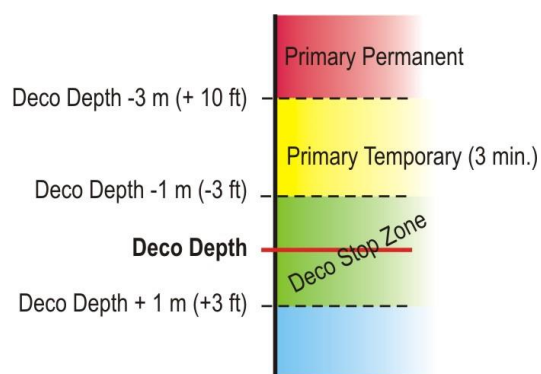


Figure 25.1

The Deco Stop Zone is between 1 meter (3 ft) shallower and 1 meter (3 ft) deeper than the stop depth (Figure 25.1).

If you ascent more than 1 meter (3 ft) shallower than the deco stop depth, between 1 m and 3 m (3 – 10 ft) shallower, you are in the **Primary Temporary Violation** for 3 minutes (Figure 25.2).

#### 25.1.1. PRIMARY TEMPORAY VIOLATION (SINGLE MODEL)

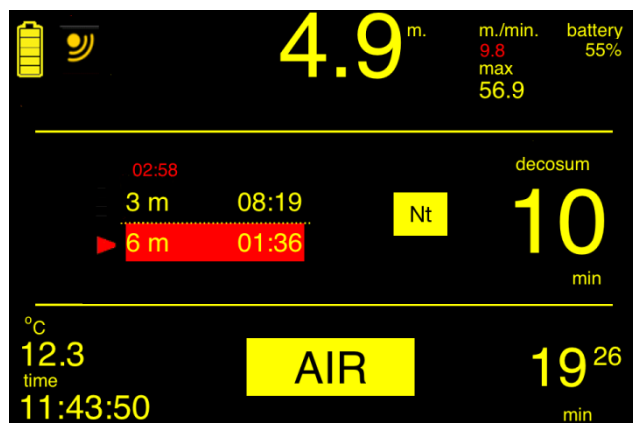


Figure 25.2

During these 3 minutes, deco time will not decrease and the background of the deco stop depth and time will turn red. The arrow next to deco stop depth and time will blink in red and yellow as seen in Figure 25.2.

A **Primary Temporary Violation Counter** (in red) will appear and begin to countdown from 3:00 above the deco stops.

If you descend to Deco Stop Zone before the counter reaches to zero (00:00), you can continue to deco stop. The violation will disappear.

### 25.1.2. PRIMARY PERMANENT VIOLATION (ERROR MODE GAUGE)



Figure 25.3

When the Primary Temporary Violation Counter reaches to zero, the Depth Monitor will enter **Primary Permanent Violation** mode (Figure 25.3).

If you ascend more than 3 meters (10 ft) shallower than the deco stop depth, the Depth Monitor will enter **Primary Permanent Violation** mode as well.

No more decompression information will be displayed, the screen background will turn red and “MISSED DECO” message will be displayed (Figure 25.3). This is also called **ERROR MODE – GAUGE**.

If you surface when there is decompression stop at 3 meters (no deeper stops), the Primary Temporary Violation will remain until the counter reaches to zero (0:00). If you re-descend to deco zone before the counter reaches to zero you can continue to decompression. After the counter reaches to zero, the depth Monitor will enter ERROR MODE MISSED DECO (see 25.1.3).

### 25.1.3. ERROR MODE MISSED DECO

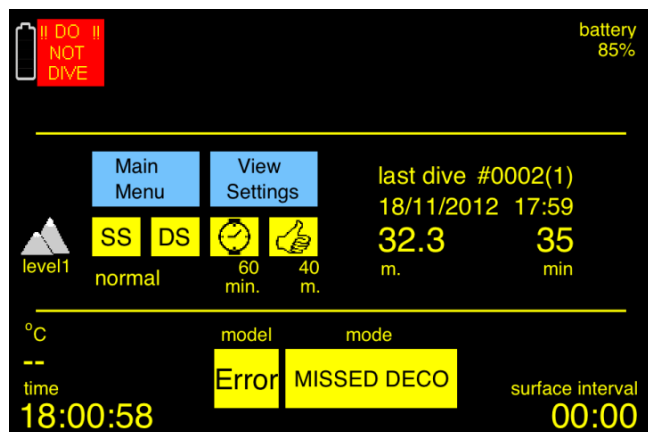


Figure 25.4

After surfacing from a Primary Permanent Violation, the Depth Monitor will enter Error Mode – Missed Deco (Figure 25.4).

“Error” will replace the model short name and “MISSED DECO” will replace the Dive Mode.

“DO NOT DIVE” warning will replace the connection icon.

The Error Mode – Missed Deco will remain for 48 hours, during which the Depth Monitor will not enter Dive Mode. Only Logbook and Dive Site Maps will be available among surface menus.

## 25.6. DECO VIOLATIONS WITH DUAL MODEL

With dual model, secondary and primary violations can occur. If only one of the deco models is in violation, this is called Secondary Violation.

After a model is violated, only one model will be active. In this case the Depth Monitor will operate as single model mode. As the result, the procedure explained in the Section 25.1. Deco Violations with Single Model will apply.

### 25.1.4. SECONDARY TEMPORARY VIOLATION

As explained in the Section 24.4, the Depth Monitor will give priority to the deco model which suggests deeper deco stops.

If both models suggest the deepest stop at same depth, the priority is given to the model which suggests longer deco time for deepest deco stop.

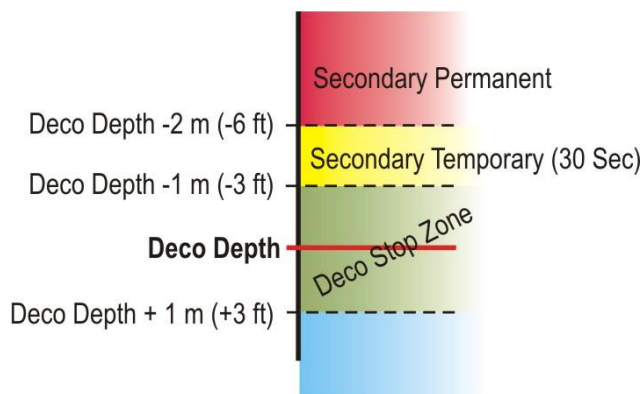


Figure 25.5

The Secondary Violations apply for the model with priority.

When diving with dual model, if you ascent more than 1 meter (3 ft) shallower than the deco stop depth of the model with priority, between 1 m and 2 m (3 – 6 ft) shallower, you are in the **Secondary Temporary Violation** for 30 seconds (Figure 25.5).

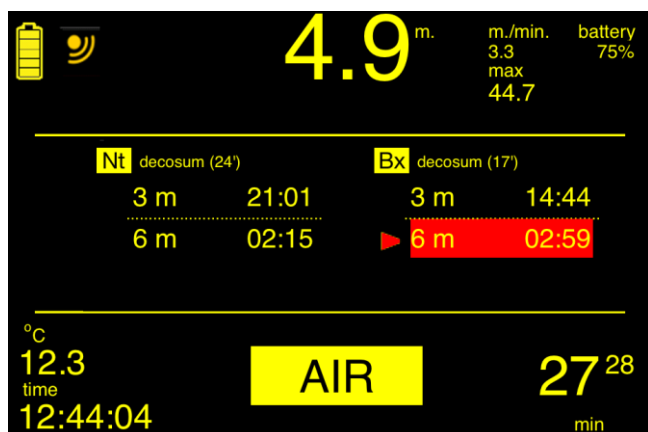


Figure 25.6

During the Secondary Temporary Violation (30 seconds), the background of the deco stop of the model with priority will turn red and the arrow next to deco stop will blink in red and yellow as seen in Figure 25.6.

If you descend back to deco stop zone in 30 seconds, you can continue to deco stop. The violation will disappear.

Note that in Figure 25.6, both models suggest deepest deco depth at 6 meters, the priority is in the “Bx” Model as its deco time at 6 meters is longer than the “Nt” Model’s deco time at 6 meters.

### 25.1.5. SECONDARY PERMANENT VIOLATION

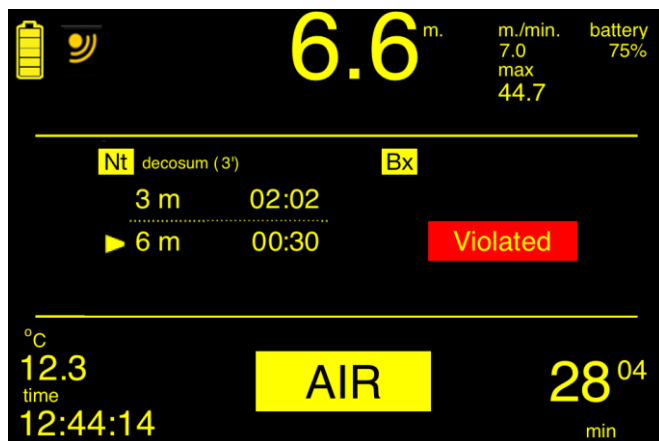


Figure 25.7

If you don’t descend back to deco zone in 30 minutes in Secondary Temporary Violation,

Or if you ascend more than 2 meters (6 ft) shallower than the deco stop depth,

The model will be violated permanently. This is the Secondary Permanent Violation.

The “Violated” caption with red background will replace the violated model’s deco stops as seen in Figure 25.7.

The deco stops of the other model are still displayed.

As in Secondary Temporary Violation only one (working) model is left (in the example of the Figure 25.7, this is the Nt Model), the rules explained in the Section 25.1. Deco Violations with Single Model will apply.

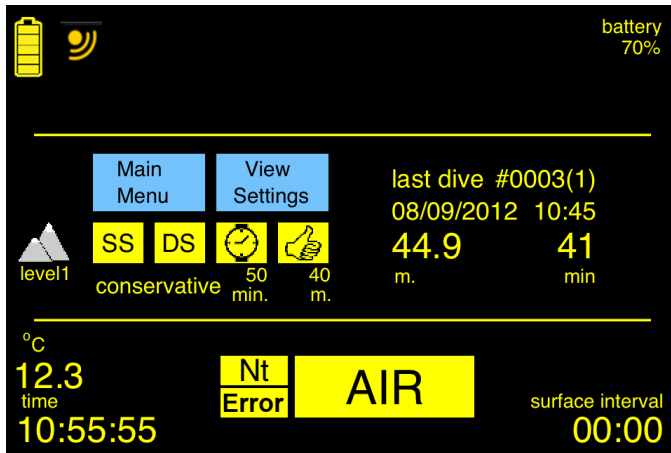


Figure 25.8

After surfacing from a Secondary Permanent Violation, “Error” will replace the violated model’s short name as seen in Figure 25.8.

As the other model is not violated, its short name will be displayed and you can still dive with this model.

The violated model will be “Locked” for 48 hours.



Figure 25.9

“Locked” caption with grey background will be displayed at the place of no-d time digits as seen in Figure 25.9.

## 26. MAXIMUM OPERATING DEPTH VIOLATION



Figure 26.1

In Air and Nitrox Mode, the maximum operating depth is 99.9 meters (330 ft).

When this limit is exceeded the Depth Monitor will enter ERROR MODE – GAUGE immediately.

No more decompression information will be displayed, the screen background will turn red, and “MAX OP. DEPTH IS EXCEEDED” message will appear (Figure 26.1).

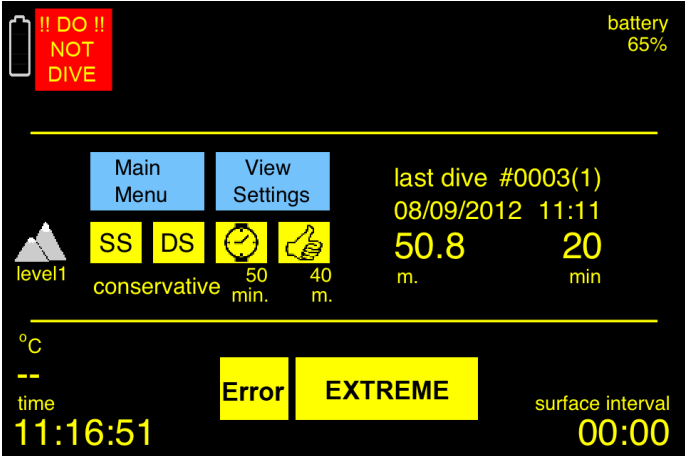


Figure 26.2

After surfacing from a Primary Permanent Violation, the Depth Monitor will enter Error Mode – Extreme (Figure 26.2).  
 “Error” will replace the model short name and EXTREME (extreme) will replace the Dive Mode.  
 “DO NOT DIVE” warning will replace the connection icon.

The Error Mode – Extreme will remain for 48 hours, during which the Depth Monitor will not enter Dive Mode. Only Logbook and Dive Site Maps will be available among surface menus.

### 27. MAXIMUM OPERATING TIME VIOLATION



Figure 27.1

When the Maximum Dive Time is exceeded, (199 min) in AIR or NITROX MODE, a notice The background will turn red and “MAXIMUM OPERATIONAL DIVE TIME IS EXCEEDED” shall appear on the screen immediately (Figure 27.1).  
 No error mode will emerge upon surfacing.

### 28. EXCEPTIONAL EXPOSURE

This is described for Table Model ONLY.

Exceptional exposure dives are those dives in which the risk of decompression sickness, oxygen toxicity, and/or exposure to the elements is substantially greater than on normal working dives. These exceptional exposure schedules are intended to be used only in emergencies such as diver entrapment. Exceptional exposures should not be planned in advance except under the most unusual operational circumstances.

Exceptional exposure dives are defined by the required decompression time for the decompression mode selected. The following dives are considered exceptional exposure:  
 Any dive with a DecoSum greater than 90 min or depth limits according to altitude as:

Altitude Zone	Depth Limit
1	51 m (170 ft)
2	45 m (150 ft)
3	42 m (140 ft)



Figure 28.1

When diving with single model (Table), in exceptional exposure, the background will turn red, "EXCEPTIONAL EXPOSURE" message will be displayed and "Exceptional Exposure" will replace the dive mode (Figure 28.1).

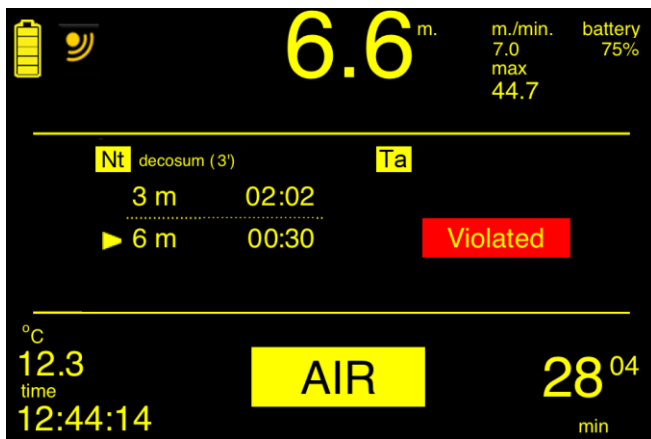


Figure 28.2

When diving in dual model mode, only the Table model will be violated (Secondary Permanent). The other model will function normally (Figure 28.2).

After surfacing, if the dive was in single model (Table) mode, the Depth Monitor will enter ERROR MODE – EXCEPTIONAL (Figure 28.3) for 48 hours.

If the dive was in dual model mode, the Table Model will be locked for 48 hours. "Error" will replace the Table Model short name (see Figure 25.8). The other model will function normally.

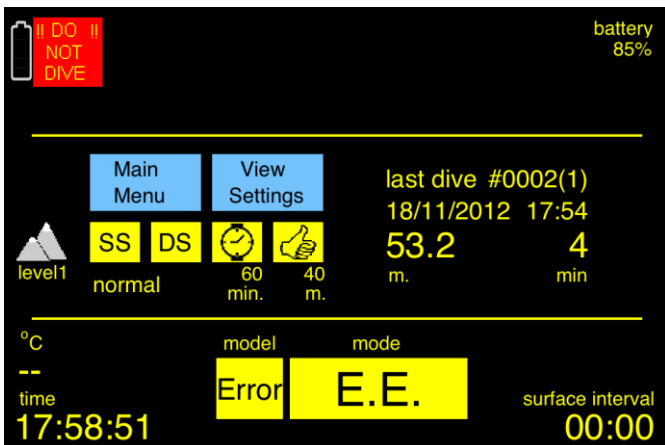


Figure 28.3



## 29. HARDWARE ERRORS, ERROR MODE – TIMER

The ERROR MODE - TIMER shall be activated in DIVE MODES in these conditions:

- Pressure Reading Rationality Problem
- Temperature Reading Rationality Problem
- Battery Level Reading Rationality Problem
- Interruption (more than 30 seconds) of the communication with the External Module

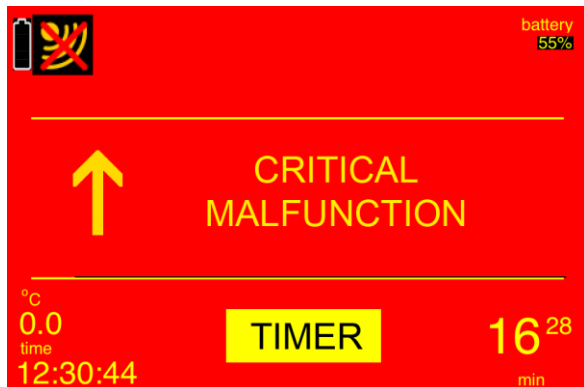


Figure 29.1

The background will turn red and only the dive time, PDA battery and time will be displayed as seen in Figure 29.1.

The timer will be stopped by touching the Main Menu Button, and the Divephone will exit the ERROR MODE TIMER.

The dive shall be logged as an unaccomplished dive with red captions.

## 30. ERROR MODE – CRITICAL MALFUNCTION (Surface)

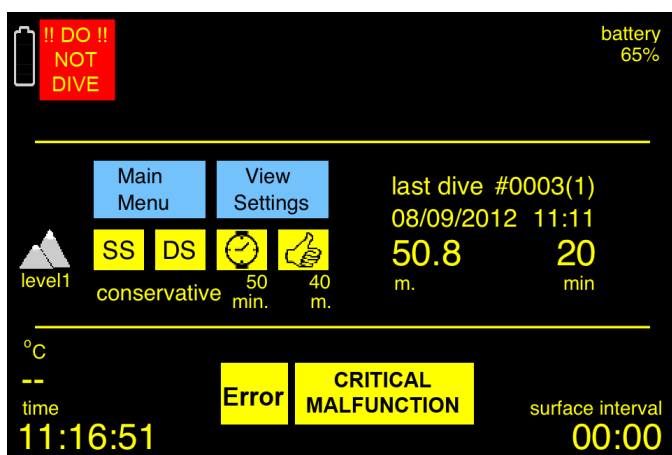


Figure 30.1

This is a surface error mode that is entered after surfacing from and Error Mode – TIMER.

The user will be required to return the unit to the Authorized Service or replace of battery in case of battery depletion.

The dive shall be logged as an unaccomplished dive with red captions.

Only Logbook and Dive Site Maps will be active.

## 31. ALARMS

### 31.1. DEPTH ALARM

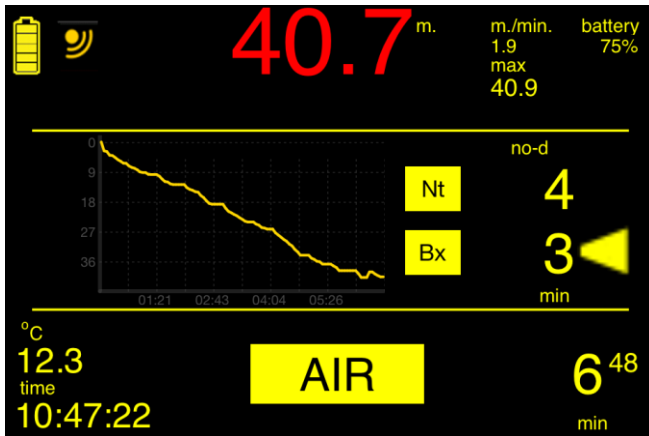


Figure 31.1

When you are deeper than the alarm depth set in Alarms Menu, the depth digits will blink in red and yellow as seen in Figure 31.1.

The alarm condition will be terminated when you ascend back shallower than the alarm depth.

### 31.2. DIVE TIME ALARM

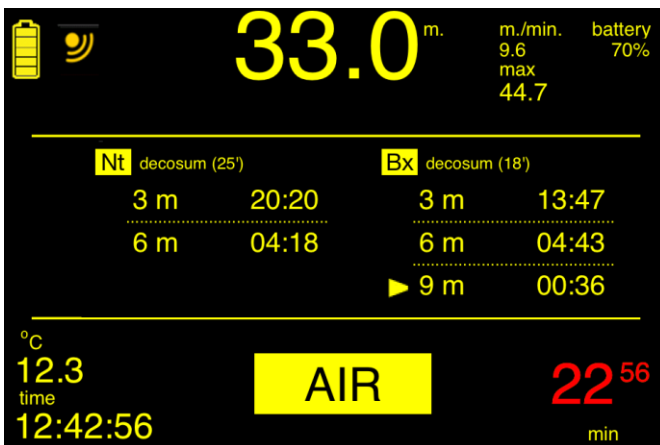


Figure 31.2

If the dive time is greater than the dive time alarm set in Alarms Menu, the dive time digits will blink in red and yellow as seen in Figure 31.2.

### 31.3. CENTRAL NERVOUS SYSTEM (CNS) TOXICITY (Greater than 80%)

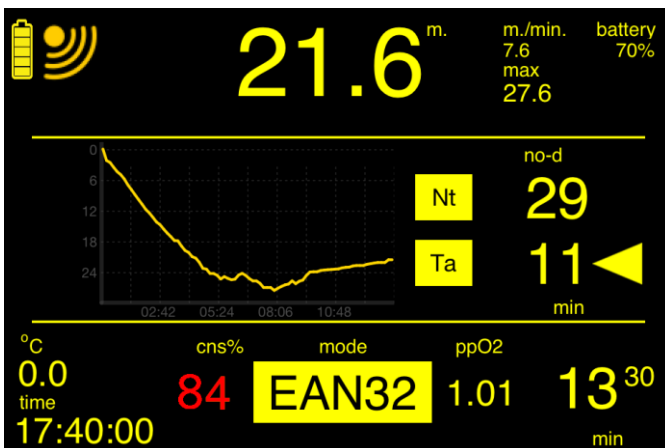


Figure 31.3

When the CNS is 80% (Nitrox Mode), the CNS % and digits will blink in red and yellow as seen in Figure 31.3.

The alarm will disappear when CNS <80%.

### 31.4. PPO2 WARNING

In Nitrox Mode, whenever the ppO2 (partial pressure of oxygen) is greater than the Max ppO2 set (in Mode) menu, the ppO2 digit will blink in red and yellow as seen in Figure 31.4.

The warning will disappear when ppO2 < Max ppO2.

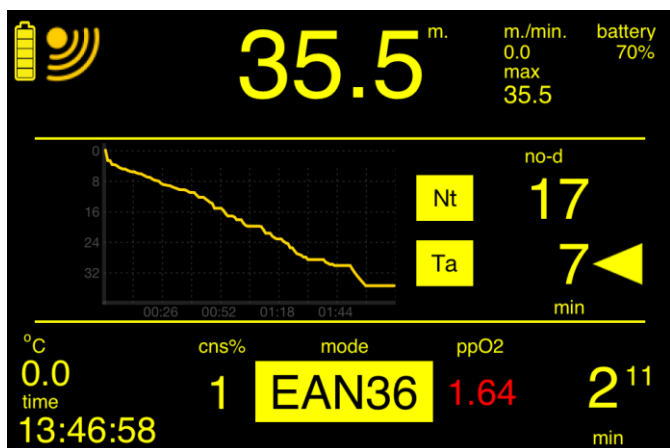


Figure 31.4

### 31.5. LOW BATTERY CONDITIONS

#### 31.5.1. LOW BATTERY AT SURFACE

When the PDA battery is  $\leq 25\%$ , a message will appear: "Warning! Low PDA Battery. Do NOT dive before recharging the PDA battery."

The user is to acknowledge by clicking "OK".

"DO NOT DIVE!" shall be displayed at the place of connection icon and PDA battery digits will turn red. Only the Logbook and the Dive Site Maps shall be available and the Depth Monitor will not enter to Dive Mode.

When the External Module Battery is 1 bar, a message will appear: "Warning! Low External Module Battery. Do NOT dive before recharging the External Module Battery".

The user is to acknowledge by clicking "OK".

"DO NOT DIVE!" shall be displayed at the place of connection icon and the External Module Battery segment (1 segment) will turn red.

Only the Logbook and the Dive Site Maps shall be available and the Depth Monitor will not enter to Dive Mode.

If both PDA and External Module batteries are low, the message will be: "Warning! Low PDA and External Module Battery. Do NOT dive before recharging the PDA and External Module Battery batteries."

### 31.5.2. LOW BATTERY DURING DIVE

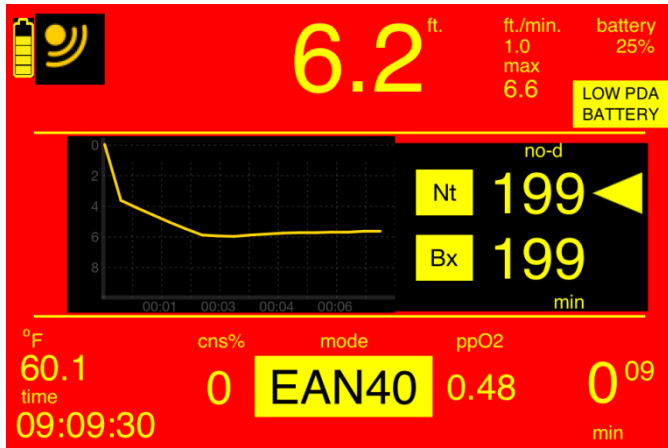


Figure 31.5

If a low battery condition occurs underwater (PDA battery <= 25%, External Module battery 1 bar or both), the Low Battery Warning Screen will be displayed. The background will turn red (except the middle area) and LOW PDA (Figure 31.5) or MODULE (Figure 31.6) BATTERY” message will appear.

After surfacing, Low Battery at Surface conditions will apply.

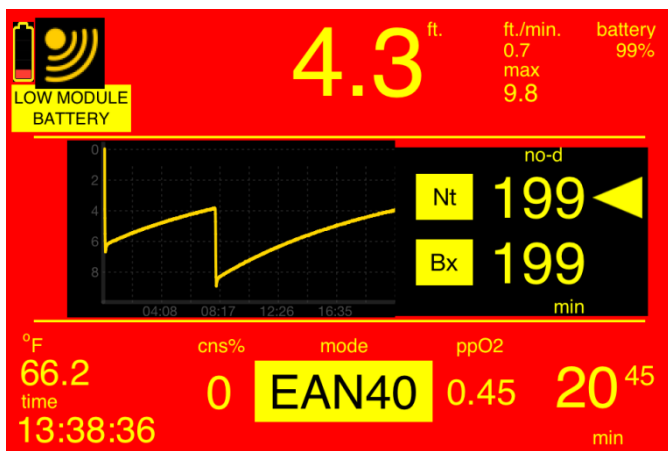


Figure 31.6

## 32. GAUGE MODE

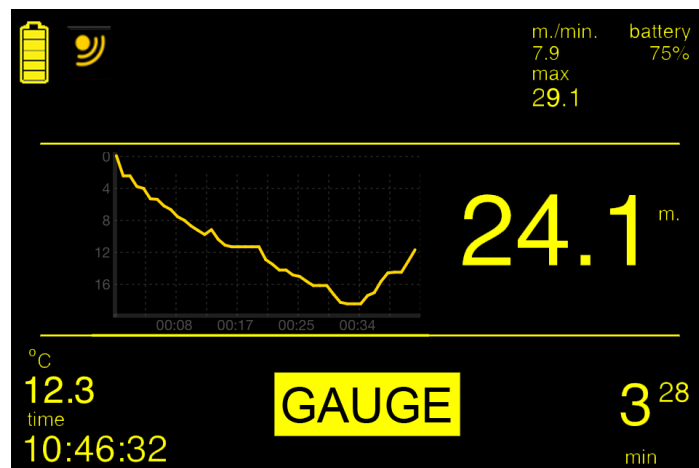


Figure 32.1

In Gauge Mode, the Depth Monitor will function as a digital depth gauge, without any decompression information.

The depth will be displayed at the place of no-d time(s) as seen in Figure 32.1.

The depth and dive time digits will blink in red and yellow when greater than alarms set.

Do not forget that, after a Gauge Mode dive, you cannot change the Mode Settings for 48 hours.

### 33. DISPLAY RANGES AND RESOLUTION

Numeric Displays	Range	Resolution
Current Depth	0-999.9 m (0-999.9 ft)	0.1 m (0.1 ft)
Maximum Depth	999.9 m (999.9 ft)	0.1 m (0.1ft)
Depth Alarm	10 - 99 m (33 - 325 ft)	1 m (1 ft)
Statistics Number of Dives	0- 9999	1
Statistics Total Dive Time	9999:59:59 hr:min: sec	1 seconds
Statistics Max Dive Time	9999:59:59 hr:min: sec	1 seconds
Stat. Average Dive Time	9999:59:59 hr:min: sec	1 seconds
Statistics Max Depth	999.9 m or ft	0.1 m or ft
Statistics Average Depth	999.9 m or ft	0.1 m or ft
Statistics Max Temp	999.9 C or F	0.1 C or F
Statistics Min Temp	999.9 C or F	0.1 C or F
Statistics Average Temp	999.9 C or F	0.1 C or F
Descent Rate	999.9 m(ft)/min	0.1 m (0.1 ft)
Ascent Rate	999.9 m(ft)/min	0.1 m (0.1 ft)
Elapsed Dive Time	0-999.59 min:sec	1 second
No-deco time	0-199 minute	1 minute
Dive Time Alarm	10-99 minute	1 minute
Deco Stop Time	Min:sec until 59:59	1 second
	Then hrs:min until 999:59	1 minute
Decosum	999 minutes	1 minute
Surface Interval	0-48:00 hours:min	1 minute
Logbook Dive Time	999 minutes	1 minute
Temperature	0°C (32°F)-60°C (140°F)	0.1°C (0.1°F)
FO <sub>2</sub>	22-99%	1%
CNS	0-99%	1%
PDA Battery	0-100%	1%
External Module Battery	1- 5 bar	1 bar
Deco Stop Depth	3- 18 m (10-70 ft)	3 m (10 ft)
No Fly Time	0-24:00 hours:min	1 min

## 34. SPECIFICATIONS

### **Application:**

Depth Monitor from iTunes or Samsung Apps

### **Decompression Algorithm Options:**

Four algorithm options

- Neo Haldanian with MARBEN low bubble score model
- Buhlmann ZHLc with preset Gradient Factors
- Straight Dive Table App
- Continuous Tissue with infinite number of compartments

### **Decompression information:**

Two algorithms run simultaneously in one display

Deco stop listing Air, Nitrox and Gauge Modes

### **Decompression Modalities:**

Deep Stops, Safety Stops

### **Predive Planning:**

No-D limits and Virtual Dive with depth/ time graphics

### **Altitude compensation :**

3 levels-Automatic: 0-800m, 801-1600m, 1600-2400m

### **Additional Graphics:**

Dive Site Maps

### **Housing Size:**

138mm x 108mm

### **Max PDA Size:**

118mm x 61mm

### **Housing Material:**

PPS and Polycarbonate

### **Maximum Depth:**

80 m / 262 FEET

### **External Module Battery Life:**

8 hours

### **External Module Battery Recharge Type:**

USB charged.

### **Operating Temperature:**

0-60 C (32-140 F)

### **Log capacity:**

Up to 27 000 hours / Gb of memory, Extended Statistics

### **Alarm Modes:**

Depth, Elapsed Dive Time, CNS Toxicity, ppO<sub>2</sub>, Fast Ascent, Deco Violations

### **Quality Assurance:**

ISO 9001:2008 certified production

## 35. HOUSING CARE AND MAINTENANCE

The following guideline will help you understand how to take care of your PDA housing. So you're equipment stays protected while diving and will last a lifetime.

### First Time Use

Every housing is pressure tested before leaving the factory to assure a watertight seal. However, it's recommends your first use of the housing be done without a PDA inside. Shipping, handling or air travel could cause shifting or unnoticed damage after leaving the factory, so taking this extra measure is an easy way to verify the seal and ensure your PDA is safe.

Follow all the directions as described below to prepare, execute and finish a dive. Then, completely dry the outside of the housing; open it up, and then look for any leakage. Water that has seeped in is usually quite visible. Also feel the inside for any moisture by running you finger across interior surfaces.

### Preparing to Dive

- Each time you prepare to enter the water with your housing there are several important checks to make.
- Install the PDA inside the housing. Make sure it is secured firmly to the housing and will not move around during use.
- Check all the o-ring. Make sure that it fits well in its seat and it is not turned".
- Close the housing, make sure that you have closed the cover latch into its locked position.
- Give the housing one last look for anything unusual. This could be a pinched o-ring, unseen damage from impact or drop, etc.

### During the Dive

- When you enter the water and during the dive, some important tips to remember:
- Do NOT jump into the water with housing in hand. Your housing is very durable and watertight, however a sharp impact with water and sudden increase in water pressure can cause an o-ring leak.
- Contrary to popular belief, a leaking housing will NOT spew a stream of bubbles to flag a leak. Water will be forced inside, but air will not escape. As a habit, look inside the housing from any viewport as you carefully submerge the housing.
- Naturally, take care to avoid severe impacts to rocks, coral or anything solid. Your housing is designed to withstand bumps and jars, but abusive handling could compromise the integrity of the seal.
- Make it a habit to occasionally look inside the housing. Should you encounter a heavy impact or other extreme conditions, take a look inside for leaks. It is highly recommended you exit the water and thoroughly inspect your equipment after such an event.

### After the Dive

As you may know, salt water is highly corrosive. Even though your housing is manufactured by a material that is not affected by salt water, it can be compromised when left exposed to salt water for extended periods of time. This is bad.

- When you are finished, diving, completely submerge your housing immediately into fresh water or wash it. If you cannot do so directly, then as soon as possible after the dive.
- If you submerge your housing into a dip tank, take care that other equipment do not adversely contact the housing.
- If you do not plan to open the housing between dives, then there is no need to remove the housing from the fresh water prior to you next dive.
- If you open the housing between dives, thoroughly dry the housing before opening.
- When you are ready to close the housing again for another dive, start with "Preparing to Dive" guidelines above.



## 36. PRECAUTIONS

- Do not open the module when wet.
- Do not unscrew the wet contact screws of the module.
- Do not remove the protection cap on the USB inside the module.
- Make sure to not insert any water inside the module.
- Protect the module from chocks (drops) and vibrations.
- Protect the module from high sources of heat.
- The module is equipped with a Lithium-Polymer battery which could explode in case of use out of its range. Therefore, respect the charge, discharge and storage temperatures ranges. Prevent from shocks and vibrations.
- Do not leave the module inside water when not in use. The battery may irreversibly deeply discharge.