EXPEDITION DIVE GEAR

EXCURSION

User manual

Metric / Edition 0.8 Beta

Part 1 / Deep6 In-House Technical Beta Firmware
Part 2 / Legacy Technical Single Gas Nitrox Firmware (5C)

EDITION 0.8 BETA / 24 SEPTEMBER 2026
Reconstructed displays and supplied legacy reference artwork.
Hardware and exact 5C validation remain outstanding.

Find the task

PART 1 /
Read this before diving 5

PART 1 /
Find your way around 6

PART 1 /
Prepare the computer for a dive 7

PART 1 /
Set time, units and the display 8

PART 1 /
Enter and select your breathing gases 9

PART 1 /
Plan gas density and narcosis 10

PART 1 /
Understand oxygen exposure 11

PART 1 /
Set conservatism and use the planner 12

PART 1 /
Understand gradient factors 13

PART 1 /
Understand helium and model predictions 14

PART 1 /
Read the scuba dive screen 15

PART 1 /
Read stops, ceilings and ascent information 16

PART 1 /
Understand decompression predictions 17

PART 1 /
Use the underwater information pages 18

PART 1 /
Recognize warnings and alarms 19

PART 1 /
Switch gas during a dive 20

Find the task

PART 1 /
Understand gas-switch consequences 21

PART 1 /
Use the CCR displays and actions 22

PART 1 /
Use gauge mode 23

PART 1 /
Use apnea mode 24

PART 1 /
Review the dive and surface information 25

PART 1 /
Read the Pressure Altitude Ceiling 26

PART 1 /
Compare PA Ceiling and no-fly time 27

PART 1 /
Sync and download to DiveHub 28

PART 1 /
Update firmware 29

PART 1 /
Enter a Tech Plus unlock code 30

PART 1 /
Use the timer and maintenance controls 31

PART 1 /
Screen reference and release review 32

PART 2 /
Identify the legacy interface 33

PART 2 /
Wake and prepare the computer 34

PART 2 /
Set the clock, units and lighting 35

PART 2 /
Set the scuba gas and alarms 36

Find the task

PART 2 /
Read the legacy scuba display 37

PART 2 /
Understand stops and alarms 38

PART 2 /
Use the legacy gauge timer 39

PART 2 /
Use apnea and its surface pages 40

PART 2 /
Review records and sync 41

PART 2 /
Update firmware and activation 42

PART 2 /
Care, clear records and reset 43

Screen workflow reference 44

Eight illustrated route maps follow the chapters. The separate screen atlas provides individual display states and their source notes.

Sources and review limits 52

Scientific references 53

Read this before diving

An electronic aid in a demanding environment

The Excursion is an electronic instrument used in water, under pressure and in conditions that can make a small fault difficult to manage. Batteries, sensors, buttons, seals and software can fail. A display may go blank, freeze or show incorrect information. Plan every dive so that a computer failure can be managed safely.

Prepare for failure

Carry appropriate independent instruments and a backup plan, and know how to use them. If a computer fails or its information becomes unreliable, follow the failure procedures established by your training and dive plan. Do not continue a dive simply because another screen still appears to work.

This manual is not a substitute for proper dive training

A decompression model estimates exposure; it cannot measure your individual susceptibility or guarantee that a dive is safe. This manual explains controls and displays. It is NOT a replacement for proper dive training, sound judgment or an appropriate dive plan. Mixed-gas, decompression, rebreather and overhead diving require the corresponding training and equipment.

About this edition

Edition 0.8 Beta, 24 September 2026. Part 1 covers the Deep6 In-House Technical Beta Firmware, developed by Deep6. It describes the ccr development source, not a certified production release. LCD images are reconstructed from firmware fonts and drawing routines. All example readings are illustrative; they are not calculated dive plans. Read the validation notes before using this draft as operating documentation.

Watch

OC - ndl

Find your way around

Four controls

This manual uses the firmware button names POWER, DOWN, MODE and UP. POWER is at upper left. UP, MODE and DOWN are at upper right, middle right and lower right respectively, as shown by the supplied Deep6 chapter ring and case artwork. A short press is intended unless a combination is explicitly stated. The same button can do different things on the surface and underwater.

From the watch

Press MODE to open the main menu. Use UP or DOWN to move the cursor, then MODE to open the selected function. POWER returns from the main menu to the watch. The standard menu contains WATCH, SCUBA, APNEA, GAUGE, PLAN, TIMER, LOG, SETTINGS and SYNC. Tech Plus adds CCR.

Change a setting

Open SETTINGS, select an item and press MODE. The current value is shown below the three-row list. UP and DOWN change a choice or digit; MODE accepts a choice or advances through a multi-digit entry. A blinking field identifies what is being edited. Gas lists and other dedicated editors have their own return behavior; finish the edit and check the resulting value.

Use the screen atlas

The companion atlas includes selectable menu rows, value choices, blinking phases, dive states and diagnostic branches. A repeated layout with a different value is a frame, not a separate computer function. Search the HTML atlas by the words shown on the LCD.

Menu - SCUBA / Tech Plus

UNIT / main / Tech Plus

Prepare the computer for a dive

Check before entering the water

Check the case, display and controls. Confirm adequate battery charge, available log memory, the correct time and date, the intended dive mode and the units. Resolve damage, unreadable information or abnormal behavior before diving. Charging equipment, battery servicing, rated depth and seal procedures require the approved hardware instructions; they cannot be established from the LCD source.

Choose the mode deliberately

Select SCUBA for the open-circuit decompression display, CCR for the Tech Plus setpoint-based display, GAUGE for depth and time without decompression guidance, or APNEA for breath-hold timing. AUTO MODE chooses the automatic dive mode. Verify the mode symbol on the watch and inspect the corresponding pre-dive screen.

Check the settings that affect the dive

Verify gas composition and active gas, conservatism, oxygen limits, last decompression stop and water type. Review alarm switches and thresholds, then BEEPING, VIBRATION, BACKLIGHT and CONTRAST. An enabled threshold and an enabled sound output are separate settings.

Confirm logging and restrictions

LOG START sets the depth threshold; LOG STOP sets the surface delay used for ending a dive. Inspect no-dive and no-fly indicators and the surface information pages. MEMORY FULL is an explicit warning; download and check your logs before clearing them. Do not clear tissue history to make a restriction disappear.

Battery / memory - normal

Scuba pre-dive

Set time, units and the display

Set the clock on the computer

From WATCH press UP, or open SETTINGS. DATE and TIME use successive editable digits; UP/DOWN changes the active digit and MODE advances. FORMAT changes the date order. 12H/24H changes the clock format. UTC is a separate offset setting. Check both the displayed local time and the offset after travel.

Select readable information

Set UNIT to M/C for this metric edition. The alternative is FT/F. WATCH TEXT selects DEEP SIX, ATM PRESSURE or SURF INTERVAL at the bottom of the watch screen. Restriction icons can occupy that area. BACKLIGHT has five selectable levels; CONTRAST is separately adjustable. POWER selects the surface power-saving interval.

Choose the water setting

WATER TYPE offers FRESH WATER, BRACKISH, EN13319 and SALT WATER. It affects the pressure-to-depth interpretation. Choose the setting appropriate to your operating procedure and verify it before the dive; the examples in this manual are not defaults or recommendations.

If syncing the clock from DiveHub

The companion app reads back the UTC offset before writing the local clock. This firmware branch rejects some offset values through Bluetooth. If verification fails, stop and check the clock on the computer; do not assume it was synchronized. An already-correct offset does not require rewriting.

Watch - ambient pressure

TIME editor

Enter and select your breathing gases

Enter the analyzed mixture

Use EDIT GASES, or OC GASES with Tech Plus. In CCR settings use CCR DIL GASES for the diluent list. Rows show the zero-based gas number, oxygen percentage, helium percentage and ON/OFF status. Enter the analyzed cylinder composition and confirm it against the cylinder label and dive plan.

Work through the gas editor

Use UP/DOWN to select a row, then MODE to edit. The editor advances through enabled status, oxygen tens, oxygen units, helium tens and helium units. UP/DOWN changes the flashing field. MODE advances. The source rejects a total oxygen-plus-helium percentage above 100 by returning to the first edit field.

Choose the gas actually in use

Return to ACTIVE GAS and select an enabled gas with MODE. Verify the gas shown on the pre-dive display. Enabling a gas makes it available to the computer; it does not mean that you are breathing it. Before diving, remove unavailable gases from the enabled list and verify the active mixture.

CCR review point

ACTIVE DIL GAS appears in the Tech Plus menu, but the shared selection handler contains references to the OC gas fields. This draft cannot establish correct diluent selection on hardware. CCR gas selection and the return path from underwater gas switching require validation before these instructions become production guidance.

Gas editor / phase 1

Active gas list

Plan gas density and narcosis

Check more than oxygen MOD

An oxygen-based maximum operating depth addresses one constraint. Gas density, narcosis, exposure duration, breathing equipment and available gas also matter. Helium reduces mixture density and nitrogen content. Equivalent narcotic depth depends on the narcotic-gas assumptions used by the planner; state those assumptions when comparing plans. [1]

Why density matters in open circuit

Dense gas and breathing resistance can limit ventilation and contribute to carbon dioxide retention, especially during exertion. This can impair physical and mental performance. Open-circuit equipment does not eliminate the problem. The computer cannot establish adequate ventilation from a depth, gas or oxygen reading. [2]

Use published guidance with its limitations

Anthony and Mitchell recommend an ideal maximum of 5.2 g/L and an upper maximum of 6.2 g/L. Their workshop analysis includes limited high-density data and was not a dedicated threshold trial. Treat these as planning guidance, not a boundary that guarantees safety below it. [3]

Apply this to the Excursion

Use your trained planning procedure to check the actual mixture at the greatest planned pressure. This beta does not establish a Deep6 gas-density display or alarm. The comparison below is a calculation example, not a suggested gas selection or a firmware screen. Gas density remains in g/L in both editions.

Illustrative density comparison at 30 m / approximately 4 ATA

Same pressure, different density. Dashed lines: 5.2 and 6.2 g/L guidance [3].

Calculated from the reference gas densities in [3], scaled by absolute pressure at constant temperature. Approximate seawater pressure; not a complete gas plan or a computer prediction. Retain g/L in either measurement edition.

Understand oxygen exposure

PO2 describes pressure, not remaining safe time

For an open-circuit mixture, dry-gas PO2 is approximately the oxygen fraction multiplied by absolute ambient pressure. A selected oxygen limit therefore defines an oxygen-based MOD; it does not establish a safe duration or eliminate toxicity risk. Keep analyzed composition, depth and the selected gas consistent. [1]

Read CNS and OTU as different estimates

CNS percentage expresses accumulated exposure against the oxygen-exposure schedule used by the computer; it is not a percentage chance of a seizure. OTU is a cumulative oxygen-dose index associated with pulmonary exposure. Neither field measures damage or individual tolerance. A low OTU does not rule out CNS toxicity. [6,7]

Account for conditions and uncertainty

Oxygen toxicity varies between exposures and divers. CO2 retention can aggravate risk; workload and breathing conditions therefore matter alongside the displayed PO2. Published exposure guidance also changes: the 2025 consensus specifically addresses 1.3-atm exposures and must not be generalized to all PO2 values or silently treated as a Deep6 firmware change. [2,6,8]

Use the exposure page deliberately

The Excursion exposure page groups CNS, OTU, gas and PO2 or setpoint. Review it with the configured gas and your plan. This beta does not validate the exposure equations, recovery calculation or adoption of newer limits. In CCR, a configured setpoint is not a measured oxygen-cell reading. References [6-8] explain the physiological and guidance limits.

OC - po2

OC information - cns

Set conservatism and use the planner

Conservatism

The interface offers CONSERVATIVE, MILD, EXTRA CRISPY and CUSTOM. The source pairs the first three with 35/75, 40/85 and 45/95 gradient factors. CUSTOM exposes the low and high digits. These are the firmware labels, not a recommendation for a particular diver or dive. Use the settings established by your training and planning procedure.

Other decompression settings

LAST DECO STOP selects 3 M or 6 M in this edition. PO2 and DECO PPO2 are separate limits. This branch renders the latter choices as 1.21, 1.31, 1.41, 1.51 and 1.61. That extra final digit is present in the source strings and requires product review; do not silently treat the screen text as a different value.

Preview a depth

Open PLAN. UP/DOWN changes the selected depth. Press UP and DOWN together to switch focus between depth and surface interval. MODE opens the planner settings, including SURF INTVL, gas and conservatism; POWER returns to the menu. Check the active gas and surface interval before interpreting the preview.

Interpret the result

PLAN is an NDL preview, with the displayed NDL capped at 99. It is not a complete staged decompression or bailout planning tool. The screenshot values here were inserted to illustrate the layout and were not produced by the decompression engine.

MILD gradient factors

Planner - depth

Understand gradient factors

What the model represents

A compartment model estimates inert-gas uptake and elimination using mathematical tissues with different response times. The controlling compartment can change through an ascent. The sixteen bars on the Excursion tissue page are model information, not measurements from sixteen organs. [4]

Read the two numbers separately

In a conventional gradient-factor model, GF Low limits the fraction of the M-value gradient allowed at the first stop; GF High limits it on surfacing. Lower GF Low generally moves the first stop deeper. Lower GF High generally increases shallow decompression. The percentages are model settings, not percentages of DCS risk. [4]

Deeper is not automatically safer

Evidence comparing decompression strategies does not support assuming that redistributing time into deeper stops always reduces risk. Slow compartments may continue taking up inert gas there. This does not identify one universally best GF pair or justify omitting prescribed stops. Select settings through your training and planning process. [4,5]

Recognize the actual settings

The reviewed interface offers 35/75, 40/85 and 45/95 under its named presets, plus CUSTOM. These are documented choices, not recommendations. A preset label does not constitute clinical validation. Compare both numbers when matching a planner, and retain the same intended configuration across primary and backup instruments.

MILD gradient factors

OC information - gf-ndl

Understand helium and model predictions

What people mean by helium penalty

The expression commonly describes extra decompression predicted by some models when helium replaces nitrogen in otherwise comparable dives. A schedule difference is a model result; it is not, by itself, proof that helium always imposes greater physiological decompression requirements. [5,9]

What the experimental evidence says

Doolette, Upton and Grant measured nitrogen and helium exchange in the brain and hind limb of anesthetized sheep. Their results challenged assigning substantially different exchange time constants to the gases in every compartment. This is relevant mechanistic evidence, but it is not a human trial validating every trimix profile or computer algorithm. [9]

Do not compensate by entering a false gas

Enter the analyzed oxygen and helium fractions actually breathed. Do not remove helium from the computer entry, alter gas fractions or shorten required stops to cancel a perceived penalty. Research questioning an assumption does not validate an improvised schedule. The firmware review has not established a selectable helium-penalty setting or a validated removal of such a penalty.

When schedules disagree

Compare gas fractions, enabled gases, tissue history, GF pair, surface pressure, ascent assumptions and final-stop depth before attributing differences to helium. Use a suitable independent technical planner for the dive and contingencies. The Excursion PLAN page documented here previews NDL; it is not a complete staged-decompression or gas-reserve planner.

OC - trimix

Gas editor / phase 1

Read the scuba dive screen

Before descent

The SCUBA pre-dive page shows zero depth/time, gradient factors, the oxygen limit, MOD and the active gas. UP opens scuba settings, MODE opens active-gas selection, and POWER returns to the menu. Confirm these values before the automatic transition into an active dive.

During a normal dive

Depth occupies the top of the display. The large left field shows NDL, the estimated time remaining before required decompression at the current conditions. The right side shows ascent/descent information and the gas field. The lower band shows time and temperature; some states replace fields with TTS or ascent information.

Gas and units

A simple oxygen mixture and an oxygen/helium mixture use different gas presentations. PO2 can replace the normal gas information when its display condition is active. Read the unit symbols: depth may be metres or feet, and temperature Celsius or Fahrenheit. The edition label identifies the matching depth and temperature units.

Buttons underwater

DOWN opens the extra information pages. UP opens the mode settings. MODE opens gas switching. POWER can open CCR/OC actions only when Tech Plus and the source eligibility conditions allow it; it is not a universal underwater Home button. Practice the controls in an appropriate controlled setting before relying on them.

OC - ndl

OC - trimix

Read stops, ceilings and ascent information

Safety stop

The display alternates SAFETY and STOP above the countdown, with the stop-depth field alongside. Read both phases as one message. Completion changes the state to CLEAR. A safety-stop indication is distinct from an obligatory decompression stop.

Required decompression

The normal NDL layout changes as decompression becomes required. The travel/calculation layout shows TTS and CEILING. Stop management shows the countdown and ceiling, with DECO and STOP alternating. TTS is estimated time to surface including the modeled ascent and stops; it is not the same as remaining stop time.

Ceiling and gas prompts

OVER and CEILING alternate when the ceiling-warning state is active. SWITCH and GAS alternate when the modeled stop logic calls for a gas change. A gas prompt does not verify the cylinder in your hand or operate the breathing equipment. Follow your planned and trained response, and verify the actual gas before confirming a switch.

Completion is a display state

CLEAR identifies the source completion/exit state. It does not certify that all diving risk has ended. Continue monitoring the computer and follow the ascent and post-dive procedures established for your dive. Examples in the atlas show the two wording phases separately.

OC - safety

OC - deco

Understand decompression predictions

Ceiling, stop depth and time are different

A ceiling is the shallowest depth currently permitted by the model. A stop depth is a scheduled ascent pause. The displayed stop countdown applies to that stop; TTS estimates the remaining modeled ascent and stops. Do not read a stop countdown as total remaining dive time.

Why an estimate changes

Depth, elapsed time and the gas represented in the model affect the result. A projection also depends on future ascent and gas-use assumptions. Delays, deeper excursions or a gas that cannot be used can make an earlier estimate inappropriate. This beta has not independently validated the exact future-gas and ascent assumptions in the Excursion engine; do not substitute another brand's assumptions.

Plan for gas and equipment failures

TTS does not tell you how much breathing gas remains or demonstrate an adequate reserve. Prepare gas-loss, delay and instrument-failure contingencies using your trained procedures. A shorter displayed schedule cannot establish that the selected gas is available, correctly analyzed or actually being breathed.

Completion does not measure health

CLEAR is a display state, not a medical assessment. Following a modeled schedule cannot guarantee freedom from decompression sickness. If symptoms suggest a diving injury, use the emergency response established by your training and seek diving-medical advice; an apparently completed schedule does not exclude injury. [4]

OC - deco

OC information - stops-short

Use the underwater information pages

Move between pages

From the main scuba/CCR dive page press DOWN. UP/DOWN moves through five information pages. POWER returns to the main dive display. These pages retain depth at the top; the CCR version uses the source inversion treatment.

1. Gradient factors

SURF GF and CUR GF show the current estimates and the +5 projection. The lower fields change between NDL-related values and TTS-related values with decompression state. A projection assumes the model conditions; it is not a guaranteed future exposure or exit time.

2. Tissues; 3. Clock

The tissue page shows sixteen compartment bars, reference lines and a ceiling value. The clock page shows current time and estimated surface arrival. These are model/status pages, not independent depth or oxygen measurements.

4. Exposure; 5. Stops

The exposure page groups maximum/average depth, CNS, OTU, gas and PO2 or setpoint. The stop page can show NO STOPS REQUIRED, a safety stop, a short decompression list including gas information, or a longer two-column list. CNS and OTU describe modeled oxygen exposure. The atlas contains each layout and both OC/CCR presentations.

OC information - gf-ndl

OC information - stops-short

Recognize warnings and alarms

Watch the changing fields

Warnings usually modify the dive display instead of opening a separate alert box. The source includes flashing depth, elapsed time and NDL; a PO2 field; an inverted fast-ascent area; alternating OVER/CEILING; and alternating SWITCH/GAS. The atlas includes illuminated and blank phases where the reconstruction covers them.

Set the intended thresholds

NDL-ALM controls the NDL warning. SDPTH-ALM and SDPTH-THD control the scuba depth alarm and threshold. STIME-ALM and STIME-THD control elapsed-time alarming. APNEA SETTINGS has separate time, depth and surface-interval alarms, each with three thresholds. BEEPING and VIBRATION independently affect output.

Do not wait for a sound

The inspected display code directly invokes the ascent alert path. Other visible conditions use flags, logging events or separate handlers; this review does not prove the audible/vibration pattern for every condition. Treat the visible warning as meaningful even if there is no sound or vibration. No universal silence/acknowledge button is documented by these drawing routines.

Surface warnings

PLS CHARGE requests attention to battery charge. Low free memory shows PLS SYNC & CLR LOG. MEMORY FULL can block a mode-entry path. NO DIVING shows a restriction countdown. Download and verify logs before clearing memory; resetting a counter does not reverse the physical exposure from previous dives.

OC - fast ascent

OC - over ceiling / second word

Switch gas during a dive

Open the selector

Press MODE from the active scuba/CCR dive display. UP/DOWN moves through the available gas list. The page retains depth and shows source symbols for current/best gas, with normal and decompression MOD information. The suggested gas is based on stored settings and the model.

Verify before confirming

Identify and verify the breathing gas using your trained switching procedure. Check the selected row against that gas. Press MODE once to request the switch. The display asks PRESS AGAIN / TO SWITCH. Press MODE again only when the intended gas selection is correct.

Check the result

The source draws a transient GAS SWITCHED message and returns toward the dive display. Confirm the gas field on the main page. POWER leaves the selector. Selecting a mixture changes the computer model; it cannot verify or change the cylinder or regulator.

Source limitation

The gas-switch return path is hard-coded to DIVE_MODE in this branch. Its interaction with CCR needs a device test. The atlas shows the source drawing states; it is not evidence that the complete CCR switching sequence has been exercised on a computer.

Gas switch - list

Gas switch - confirm

Understand gas-switch consequences

The physical switch and the recorded switch

Changing ACTIVE GAS updates the mixture represented by the computer. It does not change the gas delivered by a regulator. Identify the cylinder, analyze and label it before diving, follow the trained switching procedure, and verify the computer reflects the gas actually in use.

An unavailable gas changes the plan

Do not keep interpreting a projection as if a lost or unusable decompression gas will be available. Follow the preplanned gas-loss procedure and verified computer controls. This beta documents gas editing and selection, but does not establish the engine's complete lost-gas recalculation behavior. Resolve that before relying on it operationally.

Why helium-to-nitrogen changes need planning

Counterdiffusion describes different inert gases moving in opposing directions during a mixture change. Models and reported deep-diving cases implicate helium-to-nitrogen switches in transient inner-ear supersaturation. The evidence does not provide a universal shortcut for a safe switch depth. A normal PO2 alone does not answer that question. [5,10]

Avoid a misleading shortcut

Do not assume that replacing helium with nitrogen at unchanged oxygen content automatically accelerates decompression. Oxygen enrichment and the inert-gas substitution are different changes. Use planned gases and switch depths established by your training and an appropriate planner, rather than changing mixtures underwater solely to reduce the displayed time. [5]

Active gas list

OC - trimix

Use the CCR displays and actions

Tech Plus and CCR setup

CCR appears when Tech Plus is enabled. Its settings include diluent gases, low and high setpoints and switching behavior. The pre-dive page alternates low/high setpoint information. The underwater display uses inverted depth/footer areas to distinguish its CCR presentation.

Understand the setpoint

The display and decompression model use a configured setpoint. This source review does not establish a live oxygen-cell input or rebreather control connection. Do not interpret the setpoint field as a measured loop oxygen reading, or as proof that the breathing apparatus is delivering it.

Open actions underwater

POWER opens the action menu when Tech Plus is enabled and the source permits it: during the early dive window, while currently in CCR, or after launching in CCR. The menu offers switching OC/CCR, and in CCR a low/high setpoint change. UP/DOWN chooses; MODE requests; a second MODE confirms. POWER returns.

Automatic setpoint switching

CCR SP SWITCH has separate L>H and H>L rows with AUTO/MANUAL and depth fields. Review both directions and the low/high setpoints. A pointer-handling issue in this editor and shared gas-selection references remain hardware-validation blockers. This chapter documents intended/source-visible controls, not approved operational CCR guidance.

CCR pre-dive

CCR actions - confirmation

Use gauge mode

Choose gauge deliberately

GAUGE displays depth and timing information. Its layout contains current depth, average depth, total dive time, a resettable timer and temperature. It does not present NDL, a decompression ceiling or a decompression schedule. Use the independent planning and monitoring appropriate to the dive.

Prepare and descend

Select GAUGE from the menu and inspect the pre-dive page. Confirm units, battery and the intended logging thresholds. During an active gauge dive the display changes to the running layout. The atlas shows pre-dive and underwater states separately.

Reset the timer

Underwater, DOWN resets the gauge timer. Distinguish that timer from the total logged dive duration. Resetting it is useful only when consistent with your dive procedure; it does not reset your exposure or create a new safe-dive allowance.

After the dive

The source uses the shared profile display for the post-dive view. Review the recorded duration and depth and download the log if needed. Returning to a decompression mode does not establish that its model correctly accounts for an independently managed gauge dive; verify the applicable production instructions.

Gauge - pre-dive

Gauge - underwater

Use apnea mode

Prepare a breath-hold session

Select APNEA. On the surface the display includes the session dive count, clock, temperature, surface interval and the last depth/duration. UP opens apnea settings; DOWN opens session statistics; POWER returns to the menu.

Set session alarms

APNEA SETTINGS provides time, depth and surface-interval alarm switches and three thresholds for each category. The time fields use seconds; the surface-interval fields use minutes; depth follows the selected units. These values are prompts you configure, not advice about a safe breath-hold duration or recovery interval.

During the dive

The active layout emphasizes depth and elapsed time, with temperature retained. The short-duration and longer-duration time formats differ. Depth and time can flash during alarm phases. The local active-apnea handler does not provide the normal scuba information-page controls.

Between dives

Use the surface interval and the last-dive fields to review the session. DOWN cycles to average and maximum information, including ascent/descent rates and maximum depth/time. The atlas includes those pages and surface-interval blink behavior. Follow your breath-hold training and supervision procedures; the computer cannot monitor loss of consciousness.

Apnea surface

Apnea - run

Review the dive and surface information

Check the surface pages

From WATCH, DOWN cycles through last-dive information, tissue saturation, tissue graph, ambient information, scuba/apnea history, battery/memory and version. The last-dive page shows the end time, no-fly/no-dive timers and surface interval. MODE from the tissue graph opens raw tissue values; those are diagnostic readings.

Browse the logbook

Open LOG. UP/DOWN browses records; MODE opens the profile. The header identifies the mode, date, temperature, maximum depth, duration and record index. OC, CC, GA and FD distinguish record types. The profile plots depth and temperature; DOWN opens further details.

Read the details

Details include average depth, starting/ending CNS and OTU where the record format supplies them. Older records can display dashes for unavailable fields. A missing field is not a zero exposure. No dive logs. is the empty state; Please wait. is a loading state.

Delete only after checking your copy

From profile/details, MODE opens actions. Select Delete log and review the confirmation before the second MODE press. POWER backs out. Download and inspect important records first. Deleting a log and clearing modeled tissues are different operations.

Last dive / surface interval

Log details

Read the Pressure Altitude Ceiling

Find the two different indicators

From WATCH, use DOWN to reach LAST DIVE and TISSUE SATURATION. No fly is a time countdown on LAST DIVE. PA Ceiling is an altitude on TISSUE SATURATION; PA Current is the pressure-derived altitude of the stored surface pressure. Desat is a separate modeled desaturation estimate. These fields answer different questions.

How PA Ceiling is produced

The reviewed source updates nitrogen and helium tissue pressures at the surface, calculates the ambient pressure tolerated by the modeled tissues using the configured gradient factors, and converts it to pressure altitude. PA Ceiling expresses that instantaneous modeled pressure boundary as a maximum altitude. It is not a flight-duration simulation or a prediction of your personal DCS risk.

Pressure altitude is not GPS elevation

The conversion uses a standard-atmosphere reference of 1013.25 mbar and displays metres or feet. Weather can therefore make it differ from geographical elevation. A higher pressure altitude means lower ambient pressure. Compare the ceiling with the pressure altitude you would experience, including a flight cabin or the highest point on a road route, not the aircraft cruising altitude.

Understand a missing or extreme value

The formatter returns dashes for a zero computed altitude or when tolerated pressure exceeds the stored surface pressure. Dashes are not unlimited clearance. The conversion also caps the result at 62,000 ft (about 18,898 m); that is a software display cap, not an operational altitude rating. Tissue resets, untracked dives and invalid pressure history undermine interpretation.

Tissue saturation

Last dive / surface interval

Compare PA Ceiling and no-fly time

What the coded timer actually does

At scuba/CCR dive exit, the reviewed branch sets 18 hours when there is no existing no-fly interval, or 24 hours when the no-fly flag is already active. Gauge dive exit sets 24 hours. The display subtracts time since the last dive. These branches do not select a separate interval according to whether mandatory decompression occurred.

Why the two indicators can disagree

No fly follows a fixed timing rule; PA Ceiling changes with modeled tissue loading, surface pressure and GF settings. A ceiling above an intended travel altitude does not cancel a running timer. Timer expiry does not establish that an intended altitude is acceptable. Review both, alongside the applicable post-dive travel guidance; do not treat either as permission to fly.

Published guidance is a separate layer

DAN recommends at least 12 hours after a single no-decompression dive and 18 hours after multiple dives or multiple diving days. For decompression dives it advises substantially longer than 18 hours, rather than guaranteeing that a fixed 24 hours is enough. These recommendations have defined recreational-diving and cabin-altitude scope and do not validate this PA feature for technical profiles. [11]

Plan the journey, not just the flight

Road ascent also reduces ambient pressure. Include mountain passes, destination altitude and cabin conditions in post-dive planning. Do not ascend or fly with suspected DCS symptoms; obtain diving-medical advice. [11] The 18/24-hour code and PA feature described here belong to the reviewed Deep6 in-house technical beta firmware; they are not established for legacy 5C. This beta has no hardware validation of altitude guidance.

Tissue saturation

Last dive / surface interval

Sync and download to DiveHub

Connect the right computer

On the Excursion choose MENU > SYNC. In Deep6 DiveHub open Dive Computers > Deep6 Excursion, choose Find Dive Computers and select the intended unit. Confirm its serial/identity before linking or writing settings. A discovered Bluetooth name alone is not sufficient identity.

Download and inspect

Open Download Logs for the connected computer. Let the transfer finish and inspect the imported records in Dive Logs. Check that the expected dives are present. A transfer error is not a completed backup. Removing a computer link preserves separately imported dives in the current app implementation.

Export for another logbook

Dive Logs supports selected/all UDDF export. Export All stops rather than silently omitting an undecodable record; supported records can be explicitly selected. UDDF is an interchange file, not a byte-for-byte computer backup or a restore image. Original raw records are retained by the app.

Settings and connection problems

Use Device Settings for the fields supported by the app, apply the intended changes and check readback. The app does not expose every gas/CCR setting. If the unit is not found, check Bluetooth availability, permissions and SYNC mode, then retry discovery. Companion procedures reflect the current app source; physical transfer/update validation remains separate.

Sync - searching

Sync - connected

Update firmware

Prepare before installation

Read the release notes and confirm compatibility with the exact computer. Download and inspect your logs, record important settings, and ensure the computer and host have adequate power. Perform updates on the surface, well before a planned dive. A 5-series to 6-series upgrade is documented by this project as erasing the computer, including logs; its backup acknowledgement is mandatory.

Select and confirm the target

Enter SYNC and connect the intended unit. In DiveHub open Firmware Update, select the approved release and download it. The app verifies the downloaded image and stores a cached copy. Use Install on Computer, review the serial and selected release, and complete any transition-specific acknowledgement.

Let the update complete

Keep the app open and the Bluetooth connection available. Progress is shown in the app; no LCD percentage screen has been invented for this manual. Completion requires transfer completion, activation and reconnection checks. A lost connection, rejected image or missing acknowledgement is an unconfirmed or failed outcome, not success.

Verify before returning to use

Reconnect after restart and check identity and firmware version. The computer reports a version such as D01-6D, not the exact dated build or its hash. Review mode, gases, setpoints, units, time, alarms and other settings again. If activation or reconnect is unconfirmed, check the computer and re-enter SYNC; do not assume repeated installation is a validated recovery procedure.

Hardware, firmware and serial number

Sync - connected

Enter a Tech Plus unlock code

Open the unlock field

From SETTINGS select TECH PLUS. LOCKED means a valid key has not been accepted. Press MODE to enter the editor. ENTER KEY appears below a seven-character field. Use the code issued for the computer serial number; the sample zeros in the atlas are not a working code.

Enter seven hexadecimal characters

Use UP/DOWN to change the current character among the hexadecimal characters 0-9 and A-F. MODE advances to the next position. The current character flashes. After the seventh position, MODE causes the firmware to check the entered key against the unit serial.

Check the outcome

A valid result sets Tech Plus unlocked and enabled. The menu can then expose CCR and additional gas/setpoint settings. A failed check returns the editor cursor to the start; this source does not draw a separate INVALID CODE dialog. Check the serial, all seven characters and the returned state.

Enabled and unlocked are different

After unlocking, TECH PLUS can show ENABLED or DISABLED. Confirm ENABLED when you expect the extra features. The source increment logic has an edge case at the end of the hexadecimal array; this requires device validation. If a character behaves unexpectedly, stop and resolve it with support rather than relying on an uncertain feature state.

Tech Plus - LOCKED

Unlock - character 4

Use the timer and maintenance controls

Run the surface timer

Open TIMER. UP starts or stops it. MODE resets it while stopped, and POWER exits while stopped. The display changes format after an hour. This is a surface tool distinct from the total dive time and the gauge stopwatch.

Understand destructive actions

TISSUE CLR resets modeled tissue pressures. LOG CLR removes dive logs. SYS RST resets settings and, in this branch, also calls the tissue reset routine. ALL RST reformats the log filesystem, reinitializes settings and resets tissues. The implementation takes precedence over older comments suggesting narrower behavior.

Confirm deliberately

These items offer NO/YES. Leave NO unless the action is intentional and appropriate. LOG CLR and ALL RST use WAIT/DONE processing branches. Tissue history must continue to represent the diver; clearing it does not remove nitrogen or helium from the body. Keep verified copies of logs before clearing them.

Service and care boundaries

The atlas separates factory/service screens from customer functions. Some service tests erase or write flash, so their presence in the source is not an invitation to run them. Approved charging, cleaning, storage, pressure rating, battery/seal service and warranty details must be supplied from the hardware documentation before publication.

Timer - 03:25

LOG CLR = YES

Screen reference and release review

What the images represent

The images use the original font/icon tables and a reconstruction of the 110 x 120 logical framebuffer, including the source orientation, character spacing, clipping and inversion. The source-derived LCD is shown in the approved C housing illustration; the cover perspective follows its chapter ring. Physical LCD optics and cropping remain subject to hardware comparison. Sample readings are injected independently; numerical consistency across frames is not asserted.

Coverage

The atlas covers English operational layout families, the main and mode-specific settings menus, selectable values, representative edit/blink phases, OC/CCR/gauge/apnea states, logs, sync, startup and service branches. It is not an enumeration of every number, gas-list position, language translation, animation phase or simultaneous warning combination. Conditional tuner output has source font defects and is marked accordingly.

Before a customer release

Confirm button positions, actual LCD cropping, startup/build configuration and all normal entry/exit routes on the target hardware. Exercise alarms and verify sound/vibration behavior. Resolve the listed CCR, unlock, UTC and display-string defects. Validate representative log transfers and firmware-update/recovery paths on supported units. Add the approved hardware specifications and care procedures.

Evidence

Firmware: LandonL82/D6-Excursion-Firmware, ccr at 6b8c0db680b767a960507181cbe0fe711ae4a467.
Companion behavior: local Deep6ComputerSetup sources and firmware audit documents.

CCR information - tissues

Log memory full

Identify the legacy interface

Use the right part of the manual

Part 2 covers Legacy Technical Single Gas Nitrox Firmware (5C), using the supplied legacy materials. The shared safety introduction appears once, in Part 1. Check the version on your computer before following a procedure. The legacy main menu contains WATCH, SCUBA, GAUGE, APNEA, LOG, SETTINGS and SYNC.

Find the four buttons

POWER is at upper left; UP, MODE and DOWN are at upper right, middle right and lower right. MODE opens or accepts a selection. UP/DOWN moves through choices or changes the active value. POWER leaves a menu or returns toward the previous display. Underwater controls are described separately below.

What the legacy evidence supports

The supplied legacy manual and illustrations establish this interface family. The artwork includes an older C01-1D version example, and the earliest inspected firmware identity is D01-5D. Neither establishes every detail of D01-5C. This is a review draft pending comparison with a 5C unit; ranges or behavior that conflict in the references are identified.

Features belong to their firmware

Do not apply the Deep6 technical beta multi-gas editor, CCR actions, gradient-factor presets, profile deletion or unlock sequence to this interface. A shared case and similar screen do not imply identical functions. The shared science in Part 1 applies where relevant; it does not add gradient factors, PA Ceiling or multi-gas controls to 5C.

WATCH in the main menu

SETTINGS in the main menu

Wake and prepare the computer

Wake the display

Use POWER to wake a sleeping computer. The legacy guide also describes movement-based wake when G-SENSOR is enabled. After extended hibernation, use POWER. Wake and inspect the computer before entering the water rather than relying on automatic activation.

Inspect before diving

Check the case, display, controls and battery. Confirm time, units, the intended mode and available log space. Select SCUBA from the main menu and inspect the pre-dive screen. It includes surface pressure, the safety-factor label, oxygen limit, MOD, gas percentage and time.

Choose automatic mode and logging

AUTO MODE selects the dive mode used for automatic activation. LOG START controls the starting-depth threshold; LOG STOP controls the wait after surfacing before ending the record. Verify the actual settings on the computer. The legacy guide describes adjustable thresholds, so one fixed activation depth does not describe every configuration.

Check the gas and limits

Verify the analyzed oxygen percentage, PO2 limit and selected safety factor before descent. Check alarm switches and their thresholds separately. Example values in the illustrations are display examples, not recommended settings or calculated dive plans.

Watch face

SCUBA pre-dive

Set the clock, units and lighting

Set date and time

From WATCH, UP opens watch settings. Select DATE or TIME with UP/DOWN and MODE. Change the blinking digit with UP/DOWN; MODE moves through the entry. FORMAT selects the date order, UTC selects the offset, and 12H/24H changes clock presentation. Recheck the watch after editing.

Choose the units

In SETTINGS, UNIT selects M/C or FT/F. Use M/C for this edition. Depth and temperature examples use metres and Celsius. Time remains seconds or minutes according to the field. Gas percentages and oxygen partial pressure are not converted when depth units change.

Adjust display and alerts

The legacy guide lists BACKLIGHT choices of 25, 50 and 75, unlike the Deep6 technical beta five-level menu. BUZZER and VIBRATION control their respective outputs. POWER is the surface screen-off interval, not an instruction to turn off the computer during a dive.

Other surface options

G-SENSOR controls movement-based wake. Some supplied documentation lists LARGE and NORMAL UI options, but it does not provide enough evidence to reconstruct every large-layout screen. Use only options actually present on the target device.

Date entry

Backlight setting

Set the scuba gas and alarms

Enter the analyzed oxygen fraction

Open SCUBA settings before the dive and select NITROX. Use UP/DOWN and MODE to set and accept the oxygen percentage shown on the computer. This legacy material describes a single mixture; it does not establish the Deep6 technical beta underwater multi-gas switching workflow.

Set PO2 and safety factor

PPO2 sets the oxygen limit used with the stored mixture. The supplied guide gives conflicting selectable ranges, so use the values actually offered by the device and verify them against approved 5C instructions. SF offers NORM, CONS and AGGR. These labels must not be equated with the Deep6 technical beta gradient-factor presets.

Set depth and time alerts

SDPTH-ALM enables the scuba depth alert and SDPTH-THD sets its threshold in metres. STIME-ALM enables the time alert and STIME-THD sets its threshold in minutes. Enabling an alarm and entering its threshold are separate actions.

Finish on the pre-dive page

Review the resulting oxygen fraction, PO2 limit, MOD and SF before entering the water. The legacy guide limits scuba-setting changes to the pre-dive state. It does not substantiate importing the Deep6 technical beta UP-settings shortcut into an active 5C scuba dive.

NITROX oxygen fraction

Safety factor

Read the legacy scuba display

Normal underwater display

Current depth is at the top. NDL occupies the large left field. The right-hand area shows ascent information and PO2. Dive time and temperature appear at the bottom. NDL is an estimated remaining no-decompression time, not a guarantee about the outcome of a dive.

When NDL is exceeded

The supplied legacy guide depicts a negative NDL value and a CEILING field. It describes the overrun initially in seconds and later in minutes. This differs from the Deep6 technical beta TTS and stop-management presentation. Confirm the exact timing format on the target 5C build before release.

Read the units with the value

Depth and ceiling use metres; temperature uses Celsius; ascent rate uses metres per minute. PO2 retains its own meaning and scale. The original legacy images are design references, not captured decompression calculations.

Button behavior underwater

Do not assume the Deep6 technical beta information-page cycle, MODE gas-switch selector or POWER CCR actions exist here. The supplied legacy guide does not establish those scuba routes. This draft leaves those unverified actions out of the navigation tree.

SCUBA / NDL

NDL exceeded / ceiling

Understand stops and alarms

Stop presentation

The supplied stop illustration shows STOP with a countdown and a CEILING depth. Read the displayed requirement in the context of your dive plan and training. The reference does not establish a distinct, complete 5C safety-stop state machine for every condition.

Clear presentation

The legacy CLEAR example includes a CNS percentage. CLEAR is a display state; it does not measure an individual diver's susceptibility or establish that all risk has ended. The sample values across the supplied illustrations do not form one continuous dive.

Recognize an alert

The legacy guide describes ascent-rate, oxygen-limit, configured depth and configured time warnings. The exact flashing, sound and vibration sequence for each 5C condition is not established by the artwork. Do not infer a universal alarm-acknowledgement button.

Set alerts on the surface

Review the depth and time alarm switches, their thresholds, BUZZER and VIBRATION before the dive. A disabled output may prevent a sound or vibration even though a screen condition is visible. Follow the procedures established by your training and dive plan when a warning occurs.

Stop countdown / ceiling

CLEAR / CNS

Use the legacy gauge timer

Select GAUGE

Choose GAUGE from the main menu. The screen groups current depth, average depth, a stopwatch, total dive time and temperature. It does not provide the scuba NDL or decompression display.

Read the two times

TIME is the dive-duration field. STPW is the separate stopwatch used for a stage or interval. AVG is the associated average-depth field in the supplied legacy description. Keep the stopwatch distinct from the complete dive record.

Reset an interval

The legacy guide assigns the reset of AVG and STPW to UP, the upper-right button. This differs from the Deep6 in-house technical beta firmware's DOWN timer control. Check the target version and practice the correct action before relying on it underwater.

Review afterward

Review the GA record in LOG and synchronize it if needed. Resetting an interval does not erase physical exposure or make a separately managed gauge dive part of a verified decompression-model history.

GAUGE in the menu

Gauge fields

Use apnea and its surface pages

Select APNEA

The legacy surface page shows depth, temperature, surface interval and the last depth/time. Confirm APNEA and the intended settings before a breath-hold session. The computer cannot supervise the diver or detect loss of consciousness.

Open the stopwatch page

From the legacy apnea surface display, DOWN opens TIMER. The guide assigns UP to start/pause and MODE to reset this stopwatch. These are legacy surface-page controls, not the Deep6 technical beta apnea statistics procedure.

Continue through statistics

DOWN continues to MAXIMUM RATE and AVERAGE RATE pages. These summarize ascent/descent rates; the maximum page also includes depth and time. Rate units are metres per second. The guide does not establish the same page-switch actions during an active breath-hold dive.

Set the three alarm groups

FTIME-ALM, FDPTH-ALM and FSI-ALM enable time, depth and surface-interval alerts. Each has three threshold entries. Dive time uses seconds, depth uses metres, and surface interval uses minutes. These are configured prompts, not safe-duration or recovery recommendations.

APNEA surface

Apnea surface timer

Review records and sync

Browse LOG

Open LOG from the main menu. UP/DOWN browses stored records. The legacy header shows mode, date/time, temperature, maximum depth, duration and record index. The supplied material identifies open-circuit, gauge and freediving records.

Use only documented log actions

This legacy material does not establish the Deep6 technical beta profile/detail/delete-per-record sequence. Do not add those buttons to a 5C workflow simply because they exist in Part 1. Use the companion app to inspect downloaded records where supported.

Enter SYNC

Choose SYNC on the computer. The disconnected and connected pictures represent link status. Start discovery in a compatible companion app and confirm the intended computer's identity. The legacy guide does not identify every current app or establish compatibility with every phone or operating system.

Download and verify

The current Deep6 DiveHub source includes a legacy transfer path. For supported devices, connect through Dive Computers, download the logs and inspect the imported records before clearing anything. The supplied LCD artwork has no transfer-progress percentage; progress belongs to the app. A timeout or error is not a completed backup.

Legacy log header

SYNC / waiting

Update firmware and activation

Preserve the legacy records first

Download and inspect important logs before a firmware transition. The current companion implementation treats the 5-series to 6-series transition as destructive and requires a backup acknowledgement. Do not assume a backup automatically restores the computer after an update.

Use the supported update workflow

For a recognized, supported unit, enter SYNC, connect the intended serial in DiveHub and open Firmware Update. Select the approved compatible release, download it and review the target before installation. The current app distinguishes transfer, activation and reconnect; one completed stage does not prove the entire update succeeded.

Verify after restart

Reconnect and check the computer's reported firmware version. Recheck time, units, modes, gases and alarms. If the computer now uses the Deep6 in-house technical beta firmware, continue with Part 1. Do not keep applying the legacy controls after a successful change of firmware family.

Unlock codes are version-specific

No legacy 5C unlock-code entry is established by the supplied material. The Deep6 technical beta TECH PLUS seven-character workflow belongs to compatible Deep6 in-house technical beta firmware and is described in Part 1. Do not invent a hidden code-entry route for 5C.

SYNC / waiting

SYNC / connected

Care, clear records and reset

Care after use

The supplied legacy guide calls for freshwater rinsing after use and dry charging contacts before attaching the charging clip. Use approved Deep6 charging, seal and service instructions for the actual hardware. Reference-product ratings, warranty terms and certifications are not transferred to Deep6 by this manual.

Keep tissue and log operations distinct

TISSUE CLR clears modeled tissue history. LOG CLR clears stored dive records. Do not clear tissues to remove a restriction. Download and inspect logs before a log-clear operation. Review the displayed choice and leave it unconfirmed when the operation is not intended.

Legacy reset descriptions

The old guide describes SYS RST as restoring settings while retaining tissues/logs and ALL RST as a complete reset. This is a legacy-document claim requiring a 5C device check; the Deep6 technical beta source explicitly differs. Never use the older description to predict a Deep6 in-house technical beta firmware reset.

Before customer publication

Verify exact 5C version identity, unit rendering, thresholds, underwater button routes, reset behavior and transfers on hardware. The reference appendix records which pictures are supplied originals and which screens are Deep6 technical beta source reconstructions. No physical unit was updated, reset or submerged to produce this draft.

TISSUE CLR

LOG CLR

Surface navigation

Solid arrow: user action / Dashed arrow: condition or automatic transition

WATCH

Start at the watch face.

MODE

DOWN

Main menu

UP/DOWN selects; MODE opens.

Select SCUBA; MODE

SCUBA pre-dive

Verify the mode and setup.

POWER returns from the main menu to WATCH. Surface information has its own return handling. Source: watch and menu handlers.

Surface information

UP/DOWN browses the surface pages.

POWER

Back at WATCH

UP opens watch settings from this page.

Prepare for an open-circuit dive

Solid arrow: user action / Dashed arrow: condition or automatic transition

SCUBA pre-dive

Check gas, limits, units and battery.

UP

Scuba settings

Review gas setup, alarms and conservatism.

Finish; return and verify

Verify pre-dive

Finish settings and recheck the displayed values.

Dashed arrows summarize automatic conditions, not a button press. The descent transition starts from the pre-dive state after gas selection is finished.

MODE

Active gas

Select the stored mixture actually in use.

Return; descent

Active dive

Depth/logging conditions trigger the transition.

Underwater: information or gas selection

Solid arrow: user action / Dashed arrow: condition or automatic transition

Main scuba display

Controls depend on dive mode and firmware.

DOWN

MODE

Information pages

UP/DOWN cycles the five page families.

From the confirmation, a second MODE confirms. POWER leaves the gas selector. CCR return behavior requires hardware validation; this is the OC route.

Gas selector

UP/DOWN selects an available mixture.

POWER

MODE

Return to main

POWER closes the extra-information view.

Switch confirmation

MODE requests the selected gas; verify it.

Gas switch: verify, confirm or leave

Solid arrow: user action / Dashed arrow: condition or automatic transition

Choose the gas

UP/DOWN moves the selection.

MODE

POWER

Confirm the intended gas

Check the selected gas against the breathing gas.

The computer cannot identify or operate a cylinder or regulator. This map describes controls, not a gas-switch training procedure. Source: dcw_gui_gasswitch.c.

Leave the selector

Return without confirming a switch.

MODE again

UP / DOWN

Gas switched

Transient confirmation; check the main gas field.

Choose again

Changing the selection clears confirmation.

Sync, download and update

Solid arrow: user action / Dashed arrow: condition or automatic transition

SYNC: waiting

Open MENU > SYNC on the computer.

App connects

No connection / timeout

SYNC: connected

Companion app connects to the verified unit.

Text cards are app actions, not invented LCD screens. A completed transfer is not proof of firmware activation; reconnect and verify the reported version.

Not connected

Check identity, Bluetooth and SYNC mode.

Choose Download Logs

Choose Firmware Update

Download logs

APP ACTION

In the app: download, then inspect imported records.

Firmware update

APP ACTION

In the app: compatible release, backup checks, install and reconnect.

Unlock Tech Plus

Solid arrow: user action / Dashed arrow: condition or automatic transition

TECH PLUS: locked

Open SETTINGS > TECH PLUS.

MODE when locked

If already unlocked

Enter the supplied key

UP/DOWN changes a character; MODE advances.

The zero characters shown are placeholders, not an activation code. Successful validation unlocks the choice; it does not bypass the enabled-status check. Verify exact outcome on the unit.

Already unlocked

Use the available DISABLED / ENABLED choice.

MODE through 7 positions

Select ENABLED; MODE

Seven-character check

MODE after the final character checks the key.

TECH PLUS enabled

Confirm the enabled status and available menu.

Review a Deep6 technical beta log

Solid arrow: user action / Dashed arrow: condition or automatic transition

LOG record

UP/DOWN browses records.

MODE

UP / DOWN

Profile

Depth and temperature traces.

Back up and inspect important records before deleting. Older record formats can leave fields unavailable. This route is not established for legacy 5C.

Another record

Select the intended record before opening it.

DOWN

MODE

Details

Average depth, CNS and OTU when available.

Record actions

APP ACTION

MODE from profile/details opens actions; deletion has a confirmation.

Legacy apnea surface pages

Solid arrow: user action / Dashed arrow: condition or automatic transition

APNEA surface

Begin on the legacy surface display.

DOWN

UP

TIMER

UP starts or pauses; MODE resets.

Route from the supplied legacy manual; exact 5C hardware confirmation remains outstanding. These are surface controls, not verified active-apnea button actions.

APNEA settings

Configure the time, depth and SI alarm groups.

DOWN

MAXIMUM RATE

Review maximum rates, depth and time.

DOWN

AVERAGE RATE

Reached after MAXIMUM RATE using DOWN.

Evidence behind the pictures

Deep6 In-House Technical Beta Firmware

Pinned ccr source: LandonL82/D6-Excursion-Firmware, commit 6b8c0db680b767a960507181cbe0fe711ae4a467. Logical framebuffer: 110 x 120 pixels. Fonts, labels, menus and drawing coordinates were transcribed from this snapshot. Sample readings are injected; they are not decompression-engine output.

What was checked

The original text rasterizer passed 72 byte-for-byte comparisons with C drawing routines. Unit-specific layouts and document pages were rendered for review. This does not validate every screen, state transition, numerical range or decompression calculation. The full firmware was not emulated.

Housing and branding

Approved C housing treatment based on the supplied Deep6 photographs. The chapter ring is redrawn; the original Deep6 logo is placed as a separate document layer with its tagline clipped away on the ring. The cover uses the angled view and interior figures use the front view. This is rendered artwork, not CAD. LCD registration requires physical comparison.

Legacy Technical Single Gas Nitrox Firmware (5C) / Part 2

Source: the supplied reference archive, including the CR-4 V2 English guide, 0315.ai screen sheet and Deepsix CMF_white.pdf. Some artwork identifies C01-1D. The earliest inspected source identity is D01-5D; exact 5C source was not established. Legacy controls are documented separately from the Deep6 in-house technical beta firmware.

Imperial legacy illustrations

Original legacy numeric screens are metric artwork. In the imperial manual, those figures are explicitly labeled field maps using imperial units, not claimed 5C pixel captures. Unit-free legacy menu artwork is reused unchanged. An exact 5C build or verified imperial captures are needed to complete faithful imperial legacy renders.

Release review still required

No physical computer was operated, submerged, reset or updated. Verify the production build, reachable screens, button behavior, alarms, LCD mask, reset effects, transfer/update paths and hardware care specifications. Detailed source issues and remaining combinations are in coverage-notes.md.

Scientific references

Numbers in the technical chapters point to these sources. Journal reviews, experiments, models and consensus guidance are identified separately. None validates this firmware or an individual dive plan.

[1] Mitchell SJ, Doolette DJ. Recreational technical diving part 1: an introduction to technical diving methods and activities. Diving Hyperb Med. 2013;43(2):86-93.

Peer-reviewed review. Mixed gases, narcosis, oxygen and planning context. Open source

[2] Dunworth SA et al. Hypercapnia in diving: a review of CO2 retention in submersed exercise at depth. Undersea Hyperb Med. 2017;44(3):191-209. doi:10.22462/5.6.2017.1.

Peer-reviewed review. Ventilation, gas density and CO2 retention. Open source

[3] Anthony TG, Mitchell SJ. Respiratory physiology of rebreather diving. In: Pollock NW, Sellers SH, Godfrey JM, eds. Rebreathers and Scientific Diving. NPS/NOAA/DAN/AAUS workshop proceedings. 2016:66-79.

Workshop paper, not a journal trial. Density recommendations and calculations: printed pp. 73-74. Relevant test data include OC equipment. Open source

[4] Mitchell SJ. Decompression illness: a comprehensive overview. Diving Hyperb Med. 2024;54(1 Suppl):1-53. doi:10.28920/dhm54.1.suppl.1-53.

Peer-reviewed overview. Model compartments, gradient factors, deep stops and residual DCS risk. Open source

[5] Doolette DJ, Mitchell SJ. Recreational technical diving part 2: decompression from deep technical dives. Diving Hyperb Med. 2013;43(2):96-104.

Peer-reviewed review. Decompression strategies and helium-to-nitrogen switching. Open source

[6] Wingelaar TT, van Ooij PJAM, van Hulst RA. Oxygen toxicity and special operations forces diving: hidden and dangerous. Front Psychol. 2017;8:1263. doi:10.3389/fpsyg.2017.01263.

Peer-reviewed review. CNS and pulmonary toxicity; military context is not a recreational exposure prescription. Open source

Scientific references / continued

[7] van Ooij PJAM, Hollmann MW, van Hulst RA, Sterk PJ. Assessment of pulmonary oxygen toxicity: relevance to professional diving; a review. Respir Physiol Neurobiol. 2013;189(1):117-128. doi:10.1016/j.resp.2013.07.014.

Peer-reviewed review. Pulmonary injury and limitations of assessment. Open source

[8] Revised guideline for central nervous system oxygen toxicity exposure limits when using an inspired PO2 of 1.3 atmospheres. Diving Hyperb Med. 2025. PMID:40986922.

Consensus guidance, not a new randomized trial. The publication states it was not subject to further journal review. Scope is specifically 1.3-atm exposure. Open source

[9] Doolette DJ, Upton RN, Grant C. Altering blood flow does not reveal differences between nitrogen and helium kinetics in brain or in skeletal muscle in sheep. J Appl Physiol. 2015;118(5):586-594. doi:10.1152/japplphysiol.00944.2014.

Peer-reviewed animal experiment. Mechanistic evidence; not human schedule validation. Open source

[10] Doolette DJ, Mitchell SJ. Biophysical basis for inner ear decompression sickness. J Appl Physiol. 2003;94(6):2145-2150. doi:10.1152/japplphysiol.01090.2002.

Peer-reviewed modeling study. Explains a proposed mechanism, not a universal gas-switch rule. Open source

[11] Divers Alert Network. Flying After Diving. Current public guidance, accessed 24 September 2026.

DAN summary of research and workshop consensus. Recreational minimum intervals are not validation of a computer altitude-ceiling implementation. Open source