Stealth Products

Alternative Drive Controls

USER MANUAL

i-Drive® Head Array

Stealth's User Manual and Maintenance Guide for i-Drive Alternative Control Head Array

Stealth Products strives for 100% customer satisfaction. Your complete satisfaction is important. Please contact us with feedback or suggested changes that will help improve the quality and usability of our products.

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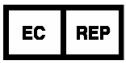

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Schiffgraben 41
30175 Hannover, Germany

CE

General

Read and understand all instructions prior to the use of the product. Failure to adhere to instructions and warnings in this document may result in property damage, injury, or death. Product misuse due to failure of the following instructions will void the warranty.

Immediately discontinue use if any function is compromised, parts are missing, loose, or shows signs of excessive wear. Consult with your supplier for repair, adjustment, or replacement.

If this document contains information you do not understand, or there are concerns about safety or operation, contact your supplier.

Important Information!

All persons responsible for fitting, adjustment, and daily use of the devices discussed in these instructions must be familiar with and understand all safety aspects of the devices mentioned. In order for our products to be used successfully, you must:

- Read and understand all instructions and warnings.
- Maintain our products according to our instructions on care and maintenance.
- Devices should be installed and adjusted by a trained technician.

Supplier Reference

Supplier: _____

Telephone: _____

Address: _____

_____

Purchase Date: _____

Model: _____

Before you install or begin using this product, it is important that you read and understand the content of these installation and operating instructions. The installation instructions will guide you through the options and possibilities with the product.

Instructions are written with the expressed intent of use with standard configurations. They also contain important safety and maintenance information, as well as describe possible problems that can arise during use. For further assistance, or more advanced applications, please contact your supplier or Stealth Products at (512) 715-9995 or toll free at 1-800-965-9229.

Always keep the operating instructions in a safe place so they may be referenced as necessary.

All information, pictures, illustrations, and specifications are based on the product information that was available at the time of printing. Pictures and illustrations shown in these instructions are representative examples and are not intended to be exact depictions of the various parts of the product.

NOTICE

Instructions are designed with the intended purpose of use with the standard configurations of i-Drive Head Arrays. Further assistance or more advanced steps in setup, please contact Stealth Products, LLC.

Ordering Documentation

You can download additional copies of this user manual on the Stealth website:

www.stealthproducts.com/gui/docs/?type=usr&

Or search:

i-Drive User Manual in the search bar at the top of the page.

Our products are designed, manufactured, and produced to the highest of standards. If any defect in material or workmanship is found, Stealth Products will repair or replace the product at our discretion. Any implied warranty, including the implied warranties of merchantability and fitness for a particular purpose, shall not extend beyond the duration of this warranty. Stealth Products, LLC does not warrant damage due to, but not limited to:

- Misuse, abuse, or misapplication of products.
- Modification or product without written approval from Stealth Products, LLC.
- Any alteration or lack of serial number, where applicable, will automatically void this warranty.
- Stealth Products, LLC is liable for replacement parts only.
- Stealth Products, LLC is not liable for any incurred labor costs.

No person is authorized to alter, extend, or waive the warranties of Stealth Products, LLC.

Stealth Products warrants against failure due to defective materials or workmanship:

Covers: 180 days

Hardware: 5 years

Electronics: 3 years

In Case of Product Failure

In the event of product failure covered by our warranty, please follow the procedures outlined below:

1. Call Stealth at +1 (512) 715-9995 or toll free +1-800-965-9229.
2. Request the Returns Department or obtain an RA from the Returns Department and follow department or documentation instructions.

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Warning Labels 6.1

Warnings are included for the safety of the user, client, operator and property. Please read and understand what the signal words **SAFETY, NOTICE, CAUTION, WARNING** and **DANGER** mean, how they could affect the user, those around the user, and property.

⚠ **DANGER**	Identifies an **imminent** situation which (if not avoided) will result in **severe injury**, **death**, and **property damage**.
⚠ **WARNING**	Identifies a **potential** situation which (if not avoided) will result in **severe injury**, **death**, and **property damage**.
⚠ **CAUTION**	Identifies a **potential** situation which (if not avoided) will result in **minor** to **moderate injury**, and **property damage**.
NOTICE	Identifies important information not related to injury, but possible **property damage**.
SAFETY	Indicates steps or instructions for safe practices, reminders of safe procedures, or important safety equipment that may be necessary.

Limited Liability 6.2

Stealth Products, LLC accepts no liability for personal injury or damage to property that may arise from the failure of the user or other persons to follow the recommendations, warnings, and instructions in this manual.

Testing 6.3

Initial setup and driving should be done in an open area free of obstacles until the user is fully capable of driving safely.

The i-Drive Head Array should always be tested without any person sitting in the wheelchair until every alteration of the physical installation or adjustment is complete.

Purpose 7.1

The i-Drive is designed with the intent to provide mobility to those who need it most. Utilizing Stealth's tried and true head positioning systems and revolutionary technology developed by Trident Research, the i-Drive provides great support to the head with the most diverse programmable head array ever.

Ultra– Pro

Tri– Array

i-Drive Control Unit

About The Technology 7.2

Integrated circuit and digital signal processing has advanced significantly since the invention of the modern microprocessor. Today's smart phone and tablet devices are driving the state of technology in this area, making it affordable to apply sophisticated technologies by combining reliable integrated circuits with modern electronics board design and signal processing.

Technology Driven 7.3

A proximity sensor provides the ability to detect the presence of nearby objects without any physical contact. Proximity sensor designs have demonstrated high MTBF (Mean Time Between Failure) numbers primarily through an absence of mechanical parts and minimized physical contact between sensor and sensed object.

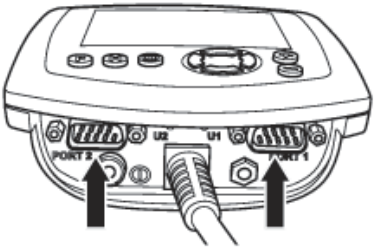
Factory Settings 7.4

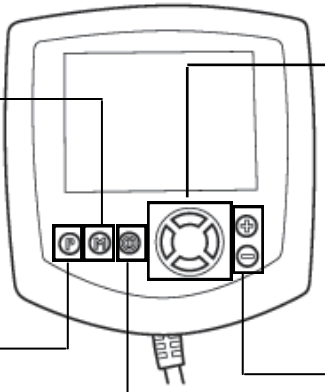
Port 1	Left	Proximity Sensor
Port 2	Forward	Proximity Sensor
Port 3a	Mode/Reset	1/8" Mono
Port 3b	Not Assigned	1/8" Mono
Port 4a	Not Assigned	1/8" Mono
Port 4b	Not Assigned	1/8" Mono
Port 5	Reverse	Proximity Sensor
Port 6	Right	Proximity Sensor

With six available input ports, the i-Drive interface gives access to four proximity sensors and four mechanical switches allowing for eight independent function switches. A dongle with two 1/8" mono ports is provided in every interface package, and additional dongles may be purchased directly from Stealth. The associated i-Drive Advanced Programming Software allows for quick port assignability and a higher level of sensor adjustability.

The i-Drive plugs into the 9 pin port on the power chair's control interface. The location of the port depends on the manufacturer of the interface. Follow the instructions for your interface manufacturer in these next sections.

R-Net™ Omni Setup 8.1





Mode

Switch mode to drive, power seating, or OBP (onboard programming)

Navigation

Up & Down button to navigate the menus, *Right* button to open a menu item and *Left* button to return to previous menu.

Profile

Switch between preset drive profiles and activate device as control.

Power

Turns chair *ON/OFF*.

Plus & Minus

Toggle settings or changes value of the highlighted parameter.

NOTICE	An R-Net™ Programming Dongle is required.

Setup

1. Power off the chair with the power button on the joystick or display.
2. Disengage the motors.
3. Plug the programming dongle in line with the cord from display to chair electronics.
4. Ensure all the cords for the display are properly connected to the chair.
5. Connect i-Drive Alternative Control into *Port 1* or *Port 2* on the bottom of the display with 9 pin connector.
6. Power on the chair from the display's power button.
7. Press the *Mode* button. An hourglass will appear. Wait for the *OBP* menu to load.
8. In the *OBP* menu, navigate with the *Up & Down* buttons to the *Omni* menu option and select with the *Right* button.
9. In the *Omni* menu, navigate with the *Up & Down* buttons to *Global* on the menu and select with the *Right* button.
10. In the *Global* menu, navigate with the *Up &* Down buttons to *Sleep 12V* then toggle to *On* with the *Right* button.
11. Press the *Left* button until you return to the *Omni* menu.
12. In the *Omni* menu, navigate with the *Up &* Down buttons to the port you have connected the i-Drive to (*Port 1* or *Port 2*) and select with the *Right* button.
13. In the *Port* menu, navigate with the *Up &* Down buttons to *SID* and toggle with the *Plus & Minus* buttons ± to *3Swi.*
14. In the *Port* menu, navigate with the *Up & Down* buttons to *Switches* and select with the *Right* button.
15. In the *Switches* menu, navigate to *Switch Detect* with the *Up & Down* buttons and toggle with the *Plus & Minus* buttons ± to *Off.*
16. In the *Switches* menu, navigate with the *Up &* Down buttons to *9 Way Detect* and toggle with the *Plus & Minus* buttons ± to *Off.*
17. Press the *Left* button until you return to the *Omni* menu.
18. In the *Omni* menu, navigate with the *Up & Down* buttons to *Profiled* and select with the *Right* button.
19. Configure a profile to use the port you have connected the i-Drive Alternative Control to.
20. Press the *Left* button until you have exited all programming menus.
21. Power off the chair.
22. Remove programming dongle.
23. Reconnect display, and ensure all the cords for the display are properly connected to the chair.
24. The chair is now programmed to recognize the i-Drive. Re-engage the motors before operation.

Q-Logic™ Interface Setup 9.1

Bookmark Buttons

Select *Options* in the main menu. Button actions are displayed on screen above corresponding buttons. In other menus hold button to bookmark settings, and press button to quickly go to bookmark.

Navigation

Arrows navigate the main menu. *Up & Down to* navigate the menus, *Right* to open a menu item and *Left* to return to previous menu.

Plus & Minus

Toggle settings or changes values of the highlighted parameter.

NOTE: Q-Logic™ Enhanced Display and Q-Logic™ Handheld Programmer required.

Help Button

Displays information about options selected on screen.

Setup

1. Power off the chair with the power button on the joystick or display.
2. Disengage the motors.
3. Ensure all the cords for the display are properly connected to the chair.
4. Connect i-Drive Alternative Control into the port on the bottom of the display with 9 pin connector.
5. Power on the chair from the display's power button.
6. On the Q-Logic™ Programmer, select *Program Adjustments* option.
7. In the *Program Adjustments* menu, navigate with the *Up & Down* buttons .
8. In the *Program Adjustments* menu, navigate with the *Up & Down* buttons to *Specialty Control* and with the *Right* button, select.
9. In the *Specialty Control* menu, navigate with the *Up & Down* buttons to *Active Device* and toggle with the *Plus & Minus* buttons ± to *3 Switch Head.*
10. Press the *Left* navigation button until you have returned to the main menu.
11. Unplug the Q-Logic™ Handheld Programmer.
12. Power off the chair.

⚠ WARNING

Powering off the chair completely before operation is mandatory.

13. The chair is now programmed to recognize the i-Drive. Re-engage the motors before operation.

Q-Logic™ Drive Control System Further Configuration 9.2

Back Pad Toggle

If you want to disable or enable the back pad's ability to toggle into forward and reverse:

1. Reconnect the Q-Logic™ Handheld Programmer. Follow *Steps 1-7* from *Setup*.
2. On the Q-Logic™ Programmer, select the *Program Adjustments* option.
3. In the *Program Adjustments* menu, navigate with the *Up & Down* buttons to *Specialty Control,* and with the *Right* button, select.
4. In the *Specialty Control* menu, navigate with the *Up & Down* buttons to *3 Switch Head*, and with the *Right* button, select.
5. In the *3 Switch Head* menu, navigate with the *Up & Down* buttons to *Back Switch Toggle* and select with the *Right* navigation button.

6. In the *Back Switch Toggle* menu, navigate with the *Up & Down* buttons ▲▼ to *m: Back Toggle* and with the *Plus & Minus* buttons ±, toggle to *Enable* to enable *forward/reverse* toggle with the back pad, or with the *Plus & Minus* buttons ±, toggle to *Disable* to disable toggle.
7. After configuring the back pad, disconnect the Q-Logic™ Programmer and restart the chair's electronics (follow *Steps 10-13*), or continue to configure other operations.

Side Pad Toggle/Control

To disable or enable *Mode* switching with the side pad:

1. Reconnect the Q-Logic™ Handheld Programmer (follow *Steps 1-7* from *Setup*).
2. On the Q-Logic™ Programmer, select the *Program Adjustments* option.
3. In the *Program Adjustments* menu, navigate with the *Up & Down* buttons ▲▼ to *Specialty Control* and with the *Right* button, Σ select.
4. In the *Specialty Control* menu, navigate with the *Up & Down* buttons ▲▼ to *3 Switch Head* and with the *Right* navigation button, Σ select.
5. In the *3 Switch Head* menu, navigate with the *Up & Down* buttons ▲▼ to *Device Options/Timing* and select with the *Right* button. Σ
6. In the *Device Options/Timing* menu, with the *Up & Down* buttons, ▲▼ navigate to *m:Device Double Command* and with the *Plus & Minus* buttons ± toggle to *Enable* to enable the mode switch with the side pad, or with the *Plus & Minus* buttons ± toggle to *Disable* to disable the mode switch.
7. After configuring the back pad, disconnect the Q-Logic™ Programmer and restart the chair's electronics (follow *Steps 10-13* from *Setup*), or continue to configure other operations.

Egg Switch Function

If you would like to change the function of the egg switch to *Mode* or *Toggle* forward and reverse:

1. Reconnect the Q-Logic™ Handheld Programmer (follow *Steps 1-7* from *Setup*).
2. On the Q-Logic™ Programmer, select *Program Adjustments* option.
3. In the *Program Adjustments* menu, with the *Up & Down* buttons, ▲▼ navigate to *Specialty Control* and select with the *Right* button. Σ
4. In the *Specialty Control* menu, navigate with the *Up & Down* buttons ▲▼ to *3 Switch Head* and with the *Right* button, Σ select.
5. In the *3 Switch Head* menu, navigate to *Switch Options/Timing* with the *Up & Down* buttons ▲▼ and select with the *Right* button. Σ
6. In the *Switch Options/Timing* menu, navigate with the *Up & Down* buttons ▲▼ to *m:Mode Jack Switch Type* and toggle with the *Plus & Minus* buttons ± to Mode to enable mode switch with the egg switch, or *Toggle* for forward/reverse toggle.
7. After configuring the back pad, disconnect the Q-Logic™ Programmer and restart the chair's electronics (follow *Steps 10-13* from *Setup*) , or continue to configure other operations.

i-Drive Advanced Programming Software 10.1

The i-Drive's Advanced Programming Software is not required to operate the drive control, but is available to ensure a customized fit and driving experience. Programming the i-Drive is simple. By connecting a tablet or smartphone and using the i-Drive Advanced Programming Software application you can:

- Dynamic Channel Assignment– any port can control any of the 5 outputs
- Adjust Activation Proximity– Change the range of motion required for switch activation
- Provide an adjustable double tap feature that extends chair double tap limits
- Configuration– Programmed by Bluetooth (available soon)
- Attendant control via Bluetooth (available soon)

Getting Started 10.2

The first step to begin use of the i-Drive Head Array Programmer is downloading the software. Included with your i-Drive head control system should be a card with a link to download the application. If there are any difficulties obtaining the software, contact Stealth Products, LLC.

After the software has been installed onto your device, you can begin utilizing the Advanced Programming Software. Launch the "i-Drive Head Array Programmer" application on your device, and with a USB to Mini-USB cable, connect the i-Drive to your PC or Tablet. Allow time for the i-Drive to make a full connection with your computer.

⚠ WARNING

Please manually disengage both drive motors before utilizing the *Setup Wizard, Diagnostics,* and *Config*. If motors are not disengaged, the chair could move during setup.

Connecting To The i-Drive 10.3

After adequate time is given to allow the i-Drive to connect to your computer and you have launched the application, click the *Connect* button.

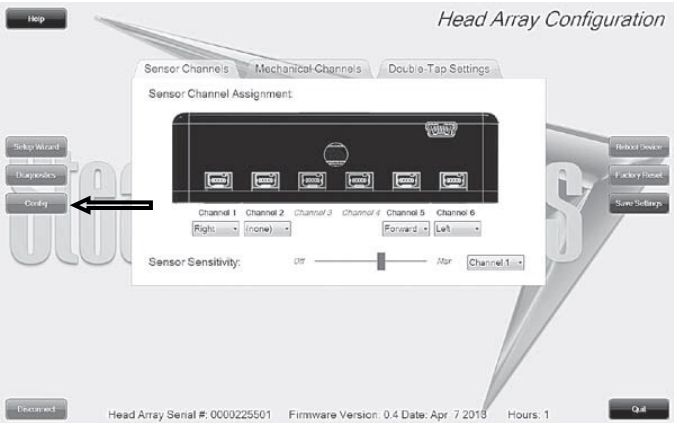
NOTICE
If may be required to change the *COM* in the drop-down menu next to the *Connect* button.

Setup Wizard Feature

The *Setup Wizard* will guide you through the initial port configuration and channel assignment of the i-Drive Head Array.

Diagnostics Feature

With real time *Diagnostics*, you are able to observe pad behavior as the head array is activated by the user. This is useful to fine tune the i-Drive and confirm it is operating properly.



Configuration Feature

Head array *Configuration* allows you to adjust the way the i-Drive activates and allows you to fine tune the function and sensitivity of the head array.

Help Feature

Clicking the *Help* button will activate help. When help is active, the help button will be green and a question mark (?) will be displayed next to your cursor. With help mode active, clicking buttons and menu items will pop up with an explanation of what the clicked object is and how it can be utilized. To disable *Help*, click on the *Help* button again.

NOTICE
The *Help* button will appear black when inactive and green when active.

Closing The i-Drive Head Array Programmer

When you are finished configuring the i-Drive, you can click on the *Quit* button on the bottom right of the screen to close the application.

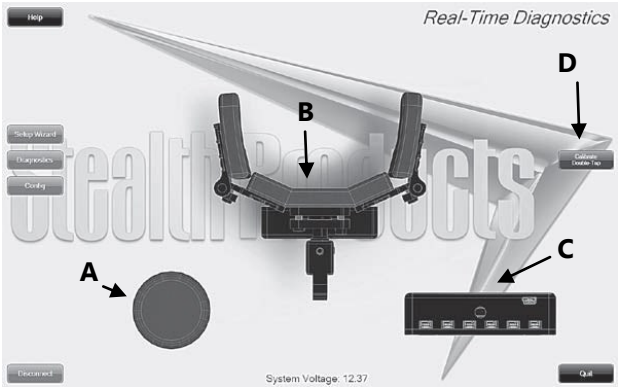
Running The Setup Wizard 10.4

The *Setup Wizard* will guide you through the initial configuration and channel assignment of the i-Drive Head Array. To begin the *Setup Wizard*, click the *Setup Wizard* button on the left of the screen.

The *Setup Wizard* window will pop-up on the screen (*See above*). The *Setup Wizard* will walk you through a 7 step setup process. Follow the instructions on the screen or push *Cancel* to quit the setup.

Running Real Time Diagnostics 10.5

To begin the *Diagnostics,* click the *Diagnostics* button on the left of the screen.



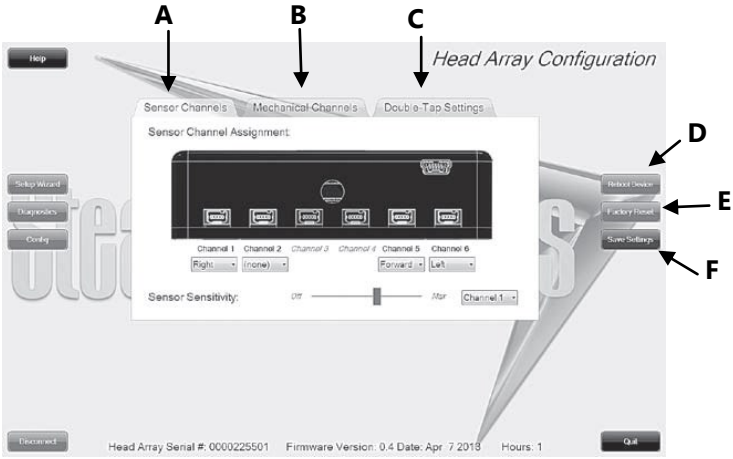
A. Mode Switch activation
B. Left, Right, and Back pad activation
C. Corresponding i-Drive port when switch is pressed
D. Double Tap Calibration

⚠ CAUTION

Double Tap needs to be enabled in the *Configuration* menu *Double Tap Settings* before *Double Tap Calibration* can be used.

i-Drive Configuration Settings 10.6

To begin the *Config*, click the *Config* button on the left of the screen.



A. *Sensor Channels* Tab– Navigates to the Sensor Channels menu

B. *Mechanical Channels* Tab– Navigates to the Mechanical Channels menu

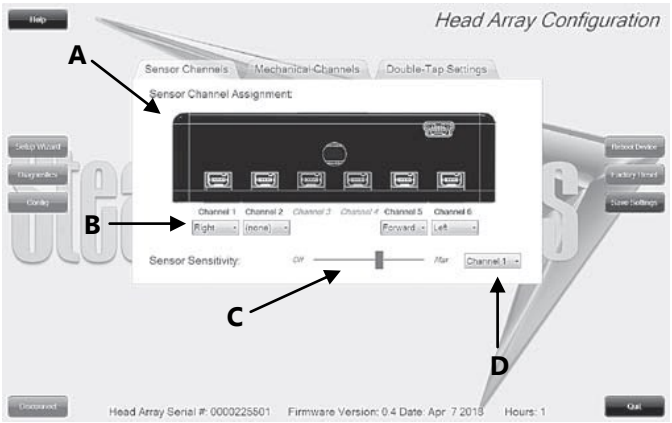
C. *Double Tap Settings* Tab– Navigates to the Double Tap Settings menu

D. *Reboot Device* Button– Reboots the i-Drive

E. *Factory Reset* Button– Resets all settings to factory default

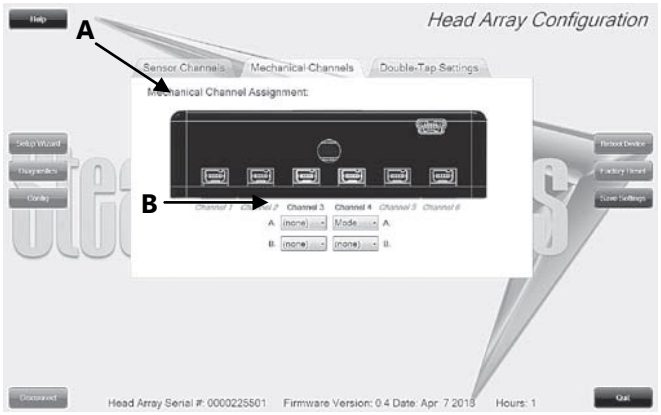
F. *Save Settings* Button– Saves your settings

NOTICE
Be sure to save your settings with the *Save Settings* button after all the desired changes have been made.



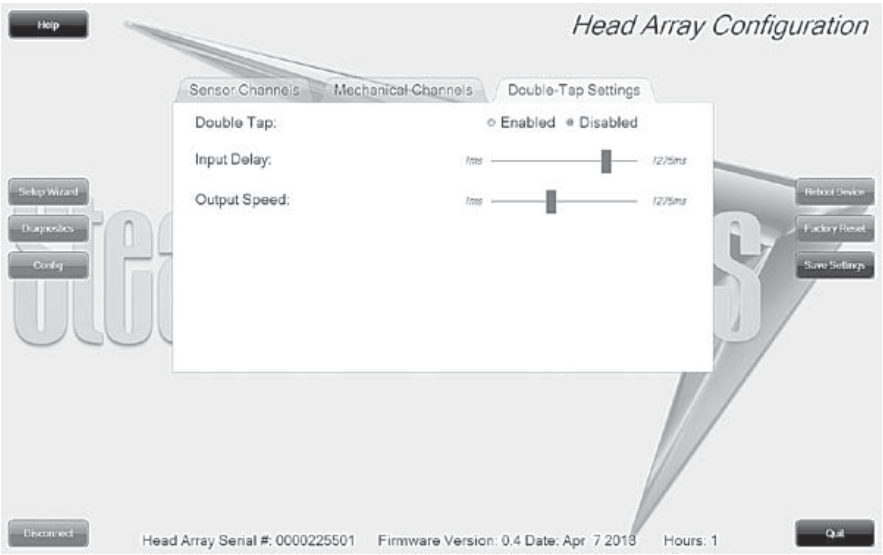
Configuration: Sensor Channels 10.7

A. Diagram that shows which channel switches are being modified
B. Drop down menus that allow you to assign function per channel
C. *Sensor Sensitivity*– Slider that changes the sensitivity of the selected channel
D. Changes the selected Channel for the sensitivity slider *C*



Configuration: Mechanical Channels 10.8

A. Diagram that shows which channel switches are being modified
B. Drop down menus that allow you to assign function per channel. Mechanical Channels have 2 inputs by a dongle.



Configuration: Double Tap Settings 10.9

A. *Double Tap*-Enabling Double Tap allows for adjustment of Double Tap input and output timing

B. *Input Delay*– Amount of time for Double Tap command capture

C. *Output Speed*– Time period between Mode output pulses. This value should match the Double Tap Input Timing of the chair

NOTICE
It is recommended to use *Calibrate Double Tap* option in the *Diagnostics* to get a properly timed double tap setting for the user.

After the installation of the i-Drive, execute the following tests before the wheelchair is delivered or put into service:

- Operational Test
- Test Drive
- Stop Test

Operational Test 11.1

⚠ WARNING

Execute this test only on a level surface, in an open area free of obstacles.

1. Activate the wheelchair operating system.
2. Check for any error messages.
3. Apply pressure to head pad designated for moving the chair in a forward motion until you hear the parking breaks switch off.

⚠ CAUTION The wheelchair may start moving.

4. Immediately release the pressure from the head pad. You should hear the parking break react within a few seconds.
5. Repeat steps 3 & 4 three times, while carefully applying pressure to the left and right pads.
6. Check whether the double tap features function properly.

Test Drive 11.2

- Perform a test drive with the wheelchair.
- Check whether the wheelchair and all of its operations are fully functioning.
- Check that no cabling or parts may get damaged or hindered in any possible position of the wheelchair.

Stop Test 11.3

- Drive full speed ahead and shut off the wheelchair.
- The wheelchair may not suddenly stop, but must slow down to a gradual stop.

Dealer Assistance 12.1

During first time use by the client, it is advised that the dealer or service technician assists and explains the different drive configurations to the customer (the user and/or the attendant). If needed, the dealer can make final adjustments.

User Testing 12.2

It is important that the customer is fully aware of the installation of the i-Drive, how to use it, and what settings can be adjusted in order to gain as much mobility as possible. As a dealer, proceed as follows:

- Explain and show the customer how you have executed the installation, and explain the function of each pad on the Head Array.

Have the user test all positions of the head array:

- Are the Head Array pads within easy reach?
- Can the user safely operate the wheelchair with minimal effort?
- Is the placement of the head array in an optimal position for the user?

Conditions Of Use 12.3

The i-Drive Head Array is intended for use as installed by the dealer, in accordance to the installation instructions in this manual.

- The foreseen conditions of use are communicated by the dealer or service technician to the user and/or attendant during the first time use.
- If the conditions of use change significantly, please contact your dealer or a qualified service technician to avoid excessive wear and tear or unintended damage.

⚠ CAUTION

These products are designed to be fitted, applied, and installed exclusively by a health care professional trained for these purposes. The fitting, application and installation by a non-qualified individual could result in serious injury.

Care And Maintenance 13.1

Ensure the hardware you are using stays in working order by keeping it cared for and maintained.

- Keep electronics dry and out of the water.

⚠WARNING	Getting electronics wet will cause irreversible damage to the circuitry.

- Periodically check the hardware for looses screws or worn parts. Replace or repair the parts as needed.
- To clean the aluminum, use a mild, nonabrasive household cleaner.

⚠ WARNING	Do not get electronics wet.

- To wash covers, removed the cover from the pad, machine wash cold on a delicate cycle and drip dry afterwards.
- On the hardware, lightly tighten set screws until they are snug, then tighten an extra quarter turn.

⚠ WARNING
Do no overtighten set screws. Over tightening set screws will prevent hardware from functioning properly and could cause irreversible damage to the hardware.

Safety 13.2

Avoid getting electronics wet and working on electronics with wet or damp hands. This could cause minor to severe electrocution, resulting in personal injury and/or product damage.

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