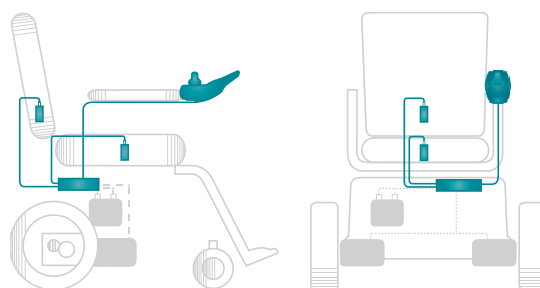




# advanced joystick remote

**dx2™**  
THE  
ULTIMATE  
POWERCHAIR  
CONTROL  
SOLUTION



dynamic™ 

**DX2-REM550/REM551**  
From software v2.03 onwards

**INSTALLATION MANUAL**

GBK60348: Issue 3

## About this Manual

This manual can help you understand and install the Dynamic DX2 Advanced Joystick Remote (AJR). It describes the general principle, but it gives no guidelines for specific applications. If there is a specific requirement for your application, please contact Dynamic Controls or one of the sales and service agents to assist you.

The DX2 AJR is part of the DX System. This manual must be read together with the DX System Manual and all other relevant DX component manuals.

In this manual there are a few symbols that will help you quickly identify the purpose of the paragraph that follows:



### Notes & Cautions:

Notes provide supporting information in order to install, configure, and use the product. Not following the instructions given in notes or precautions can lead to equipment failure.



### Warnings:

Warnings provide important information that **must** be followed in order to install, configure, and use the product safely and efficiently. Not following the instructions given in a warning can potentially lead to equipment failure, damage to surrounding property, injury or death.

The term '**programming**' used in this manual refers to adjusting parameters and configuring options to suit an application. 'Programming' does not change or alter any software within the controller and is performed using a controlled programming tool available only to authorised personnel.

The term '**accessory**' used in this manual refers to equipment that is ancillary to the main functioning of the DX system. It does not refer to an accessory of the powerchair. The DX System is a component of the powerchair.

DX is not user serviceable. Specialised tools are necessary for the repair of any component.

Do not install, maintain or operate this equipment without reading, understanding and following this manual – including the Safety and Misuse Warnings – otherwise injury or damage may result. This manual contains integration, set-up, operating environment, test and maintenance information needed in order to ensure reliable and safe use of the DX System.

Due to continuous product improvement, Dynamic reserves the right to update this manual. This manual supersedes all previous issues, which must no longer be used.

Dynamic reserves the right to change the product without notification.

Any attempt to gain access to, or in any way abuse the electronic components and associated assemblies that make up the powerchair system, renders the manufacturer's warranty void and the manufacturer free from liability.

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## *Acronyms and abbreviations*

4Q	Four Quadrant
AJR	Advanced Joystick Remote
ECU	Environmental Control Unit
EMC	Electromagnetic Compatibility
OBP	On-Board Programming
SBM	System Backup Mirror
UCI	Universal Control Input
XLR	An industry-standard 3-pin connector; this is used for wheelchair charging.

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# 1 Introduction to the DX2 AJR

The DX2 Advanced Joystick Remote (AJR) is the front-runner in a new generation of DX Modules that sets a new standard for Dynamic and the powerchair industry.

The DX2 AJR is a fully DX-compatible Master Remote that offers many new features and enhancements, including:

- Large and clear colour LCD screen
- Easy-to-follow menu setup; icon-based so no translation required
- Programmable function buttons that give direct access to chair functions
- Access to mouse control and environmental control
- Refined 4Q control makes joystick-only mode easy to operate
- Low force joystick: typically less than 2.2 N
- Field replaceable drop-in joystick
- Left and right handed mounting/operation
- Cables can be routed out the left hand side, right hand side, or both
- Serial number is visible when mounted
- 3 jack sockets increase flexibility for connecting external switches
- 24-hour clock
- Full range of audible feedback options, including reversing beeper



## Notes:

The AJR is part of the DX System. Read the DX System manual before reading this manual. When this manual refers to sections in the DX System manual, it does so in the format 'see **DSM** section ...'

## 2 DX2 AJR Operation

### 2.1 The keypad



Variant	Properties
DX2-REM550	<ul style="list-style-type: none"> <li>• Colour screen</li> <li>• 7 buttons</li> </ul>
DX2-REM551	<ul style="list-style-type: none"> <li>• Colour screen</li> <li>• 5 buttons</li> </ul>



**Note:**

The function of the plus/minus button and the up/down button can be swapped with the **Left-Right Mounting** parameter (see 4.2.1.1).

**All the menu navigation descriptions and screen layouts in this manual are applicable to the '[+ -]Drive [^ v]Accessory' setting.**



## 2.2 The Screen

### 2.2.1 Screen Layout

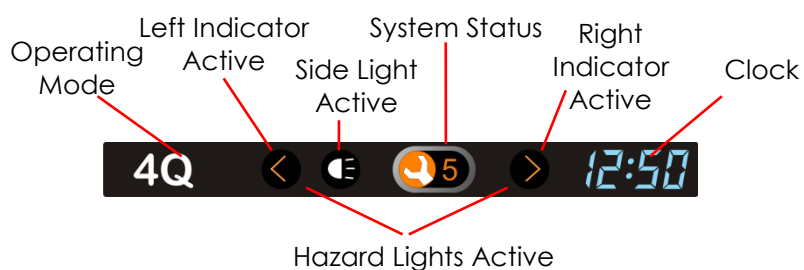


The screen layout varies depending on the selected mode – Drive Mode (left-hand screen above), and Accessory Mode (right-hand screen above).

The area at the centre of the screen shows the mode that is currently active.







### 2.2.2 The Status Bar

The status bar is located at the top of the screen. The status bar shows the operating mode (standard or 4Q), the lighting icons, the System Status and the clock.



### 2.2.2.1 The Battery Gauge



The Battery Gauge indicates how much battery charge remains.

Battery Gauge	Meaning
	Battery full
	Battery almost full
	Battery half full, drive towards a charger
	Battery low, recharge soon
	Battery almost empty, recharge now
	Battery empty, recharge immediately

The remaining battery capacity does not translate directly to remaining physical range of the powerchair. The remaining physical range depends on the ambient temperature, the capacity and age and state of the battery, the driving style of the operator and the terrain that the powerchair is being used in. Most of these factors can vary between, or within, one journey.

### Battery Warnings

Battery warnings are shown at the centre of the screen, in the "Active Mode" area.

Warning Icon	Meaning
	Battery overcharged. <ul style="list-style-type: none"> <li>Slow down and turn on the lights (if fitted).</li> </ul>
 + Horn beeps	Battery completely empty. System turns off. <ul style="list-style-type: none"> <li>Recharge.</li> </ul>

### 2.2.2.2 The System Status

The System Status icon is normally hidden. If a fault occurs, a wrench icon will show, together with the fault code number. See the DX System Manual for a description of the fault codes (DSM section 9.6).



### 2.2.2.3 The Lighting Icons

The indicator icons and the side light icon will show when the lights are on. Section 2.5.1 describes how to operate the lights.

### 2.2.2.4 The Clock

22:50

The clock shows the time in 24-hour format. The time can be adjusted with the On-Board Programming menu. See **Adjust the clock** (2.5.3.3).

## 2.3 Turning the DX System on and off with the AJR

### To turn on the DX System



Press the power button.

- The AJR will beep twice (if the **Mode Change Beep** parameter, see 4.2.1.10, is set to 'Yes') and the system will start up in **Drive Mode** (see 2.5.1) with the Drive Profile that has been set with the **Power-Up Profile Number** parameter (see 4.2.1.13).

### To turn off the DX System



Press the power button.

- The DX System will turn off.



#### Note:

*If the power button is pressed while the chair is driving, the chair will perform an emergency stop before it turns off.*

## 2.3.1 System Lock



If the **Lock Enable** parameter (see DSM section 5.3.9.7) is set to 'Yes', the system can be locked by pressing the power button for more than 4 seconds.

### To lock the DX System



Press the power button for 4 seconds when the DX System is turned on.

- The DX System will turn off in a locked state.

### To unlock the DX System



Press the power button.

- The AJR will show a lock on the display.



Press the horn button twice within 10 seconds.

- The DX System will turn on normally.

## 2.3.2 Sleep mode



If the **Sleep Mode Enable** parameter (see DSM 5.3.9.8) is set to 'Yes', the DX System will go to sleep after a period of inactivity. This period can be set with the **Sleep Timeout** parameter (see DSM 5.3.8.5). When the DX System sleeps, it is partially turned off to reduce energy consumption.

### To wake up the DX System

**Any key**  
or  
**Joystick**

Press any button on the AJR, or, if the **Enable Joystick Wakeup** parameter (see DSM 5.3.9.10) is set to 'Yes', move the joystick.

- The DX System will turn on.

## 2.4 Menu Navigation Modes

### 2.4.1 Standard Mode

In Standard Mode the menu navigation is mostly performed with the **plus/minus** (Drive Profile selection) and **up/down** (Accessory Mode selection) buttons. Some functions can be accessed directly with other buttons (for example the indicator buttons or the function buttons).

The joystick is used in some modes to operate within that mode. For example, in Actuator Mode the joystick operates a selected actuator.

In this manual, a menu map is included with each menu mode. The menu map shows the exact menu navigation for each mode.

For menu navigation in Standard Mode, see section **2.5.1**.



**Note:**

*The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.*

*The description of the menus in this manual assumes that this parameter has the value 'Normal'.*

### 2.4.2 Attendant Mode



Attendant Mode is selected when the attendant switch on the attendant control is switched to local. When the Attendant Mode is selected, the attendant icon will be shown on the screen. Use the Accessory Mode selection button to select different operating modes.

During Attendant Mode all menu navigation is identical to Standard Mode (all buttons on the AJR will work the same) with the only difference being that the joystick navigation (for example when using actuators) is taken over by the attendant joystick. For this reason no separate menu navigation is given for Attendant Mode.



**Note:**

*If the Drive Profile selection buttons on the AJR are pressed during Attendant Mode, the AJR will return to Drive Mode (if it currently is not in Drive Mode), but it will not change the Drive Profile. The attendant Drive Profile will stay active until the attendant releases control back to the user.*

## 2.4.3 Four-Quadrant (4Q) Mode



Four-quadrant mode is a joystick-only mode for navigating the menus. All menus are accessible by deflecting the joystick.

Each Drive Profile can be set to 4Q Mode or Standard Mode separately. Set the Joystick Only Operation parameter (see 4.2.1.15) to 'Yes' in all Drive Profiles for which 4Q Menu Navigation Mode is desired.

The 4Q menu structure has extra features such as 'horn' and 'force sleep'. These features are in Standard Mode too, but are only accessible with the buttons of the AJR.

The menu structure of 4Q mode starts at the 'home level'.

- Scroll through the desired Modes (drive, accessory, etc.) with joystick left/right.
- Enter the desired Mode with joystick forward.
- To exit a Mode:
  - If **Reverse Escape Enable** (4.2.1.16) has the value 'yes': deflect the joystick reverse to return to the home level.
  - Wait for **Escape Timeout** (4.2.1.17) seconds and the menu will automatically return to the home level.
  - Press the accessory button to return to the home level.

Most AJR buttons will still work the same as in Standard Mode.

For 4Q menu navigation see section 2.6.



### Notes:

*The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.*

*The description of the menus in this manual assumes that this parameter is set to 'Normal'.*



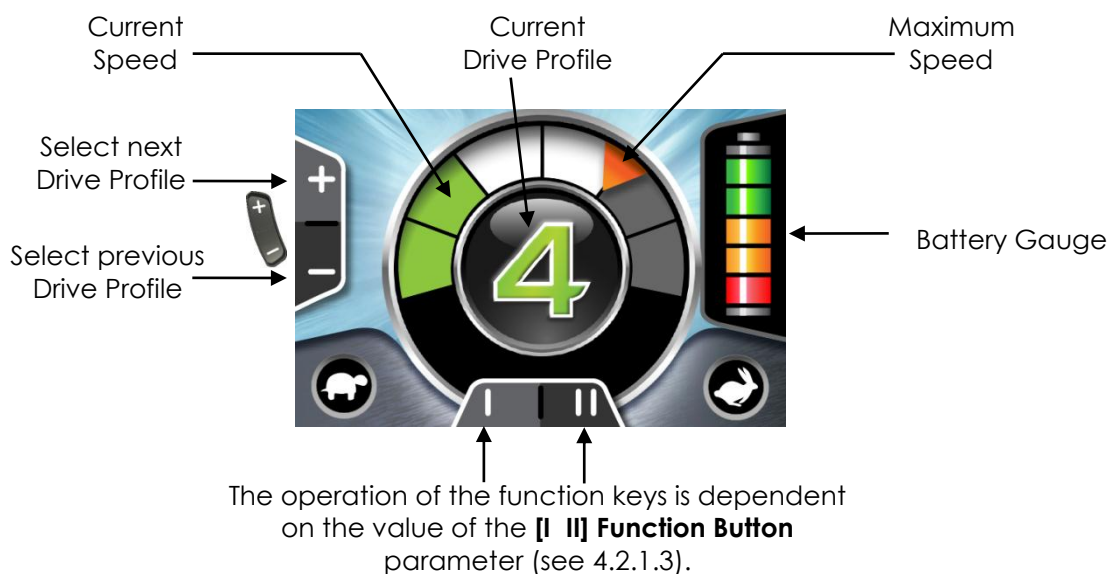
### Warning:

*If in 4Q menu navigation mode, and **Reverse Escape Enable** (4.2.1.16) and **Escape Timeout** (4.2.1.17) are both disabled, it is only possible to return to the home level by using the applicable buttons on the keypad.*

*If the user is not able to use the buttons on the keypad, make sure to either set **Reverse Escape Enable** to 'yes' or set **Escape Timeout** to a value greater than zero when using 4Q menu navigation mode.*

## 2.5 Standard Menu Navigation

### 2.5.1 Drive Mode - Standard



The colour of the current Drive Profile, shown in the middle of the screen, is dependent on the chair's status.



A green Drive Profile shows a normal drive operation.






















An orange Drive Profile is displayed to indicate that a chair can drive, or is driving in a restricted capacity – that is, reduced speed.

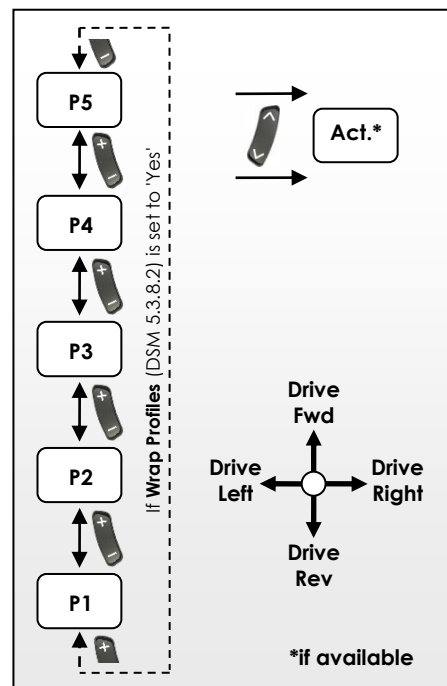


A red (flashing) Drive Profile indicates that the chair is in an inhibited state – the chair cannot be driven in this state.

The Function Button allows hot key access to favourite functions during normal operation. Common uses include fine tuning of speed within a drive profile, or instant access to one or two favourite seating functions e.g. tilt or recline. The function button allows simultaneous operation with drive commands so users can adjust seat positions whilst driving.

Button	Function		
	Left Indicator >2s: Side lights		
	Right Indicator >2s: Hazard lights		
	Function	I	II
	Speed Pot	 slower	 faster
	Warning + Actuator	 Side lights	 Actuator Aux1
	Actuator up + down	 Actuator Aux1 up	 Actuator Aux1 down
	Two Actuators	 Actuator Aux1	 Actuator Aux2
	Full Lighting	 Left indicator > 2s: Side lights	 Right indicator >2s: Hazard lights
	Warning + Hazard	 Side lights	 Hazard lights
	Warning + ECU alarm	 Side lights	 ECU Alarm
	ECU Alarm + Toggle ECU Al.	 ECU Alarm	 ECU Alarm Latched

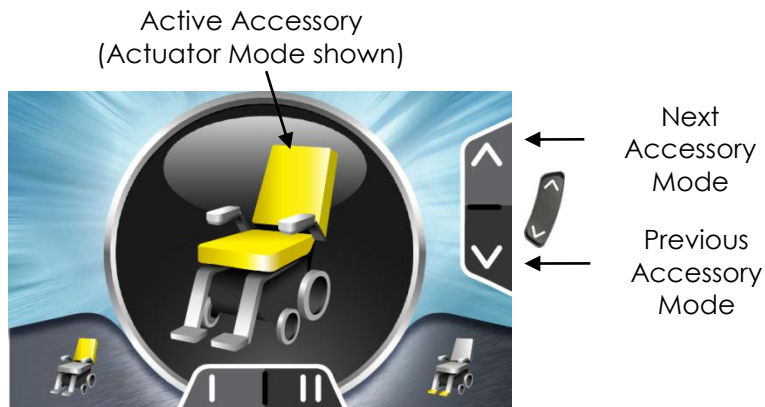
### Drive Mode Menu Map



## 2.5.2 Accessory Mode – Standard

Accessory Modes are available:

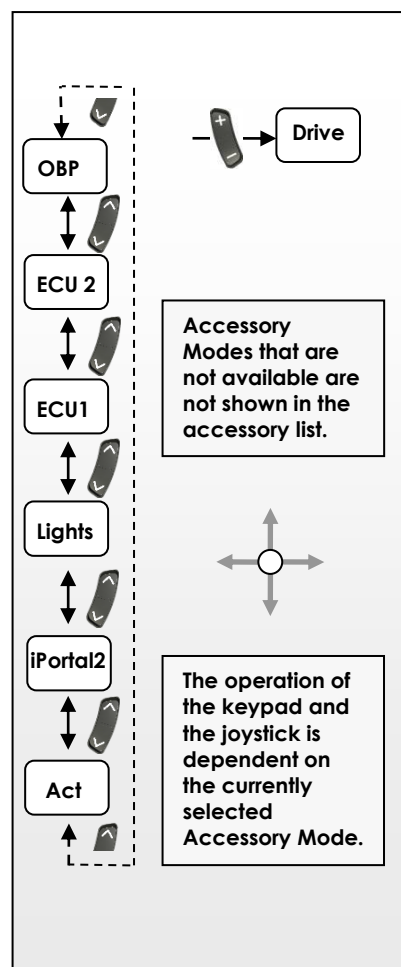
- when the presence of that accessory is detected in the DX System;
- when the menu of that accessory has been enabled with its corresponding menu enable parameter (see sections 4.2.1.7 to 4.2.1.9).



When the Accessory Mode button is pressed (either Next or Previous) the menu will always start at the Seating Accessory screen (if actuators are active).

Mode	Active	Parameter(s)
Actuators		Depends on enabled actuators
iPortal2		Set 'Allow non-driving profile' to 'Yes'. See DSM section 5.3.8.4 Allow Non-Driving Profile
Lights		<b>Lighting Menu</b> (0)
ECU 1 Mouse		<b>ECU Menu</b> (4.2.1.9)
ECU 2		<b>ECU Menu</b> (4.2.1.9)
Program Screen Settings		<b>OBP Menu</b> (4.2.1.7)

### Accessory Mode Menu





## 2.5.3 On-Board Programming (OBP) Mode – Standard

The OBP menu is available when **OBP Menu** (see 4.2.1.7) has the value 'Yes'.

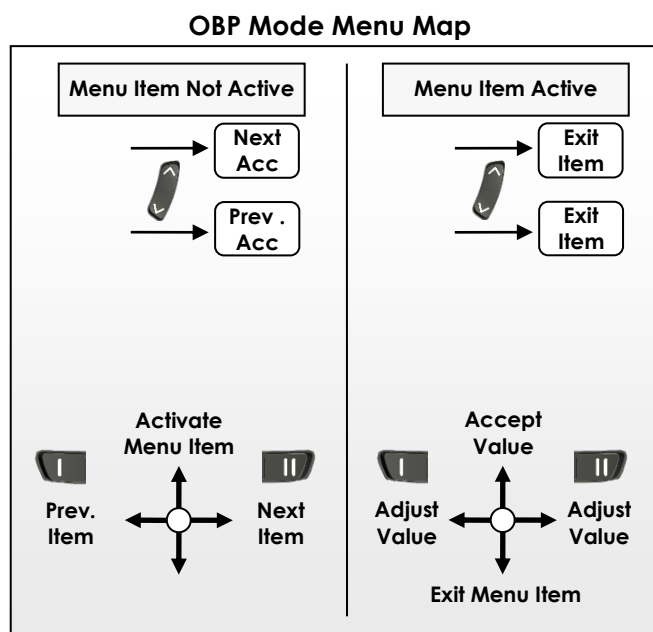


The cog, displayed above, indicates the OBP top-level menu item. To activate (or drill down to) the OBP menu, deflect the joystick forward.

OBP Menu Items	
Menu Item	Icon
Screen Brightness	
Clock adjustment	
Clock visible (yes/no)	
Screen Environment (inside/outside)	

### OBP menu navigation:

- Use the function buttons or joystick left/right to select the next or the previous menu item. To activate the desired menu item, deflect the joystick forward.
- In the active menu item, use the function buttons or joystick left/right to adjust the value of the selected item.
- Deflect the joystick forward to accept the new value.
- Deflect the joystick reverse to exit the menu item and return to the OBP main menu.

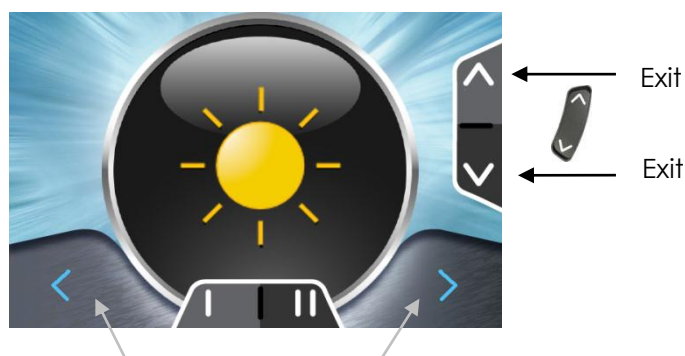


#### Note:

The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.

The description of the OBP menu assumes that this parameter has the value 'Normal'.

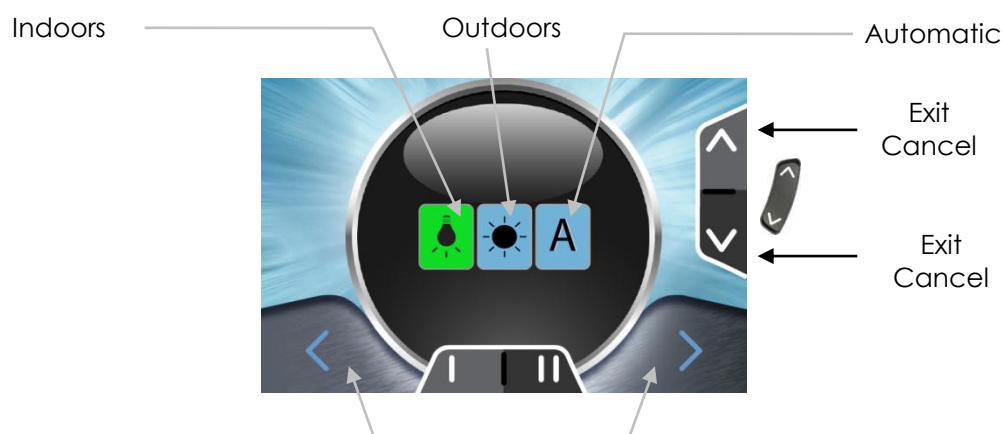
### 2.5.3.1 OBP Screen Brightness



The function keys change the screen brightness value.

- Use either the function buttons or joystick left/right to change the screen brightness.
- Use joystick forward/reverse or the accessory buttons to accept the new setting and return to the main OBP menu.

### 2.5.3.2 OBP Screen Environment Setting (Indoors/Outdoors)

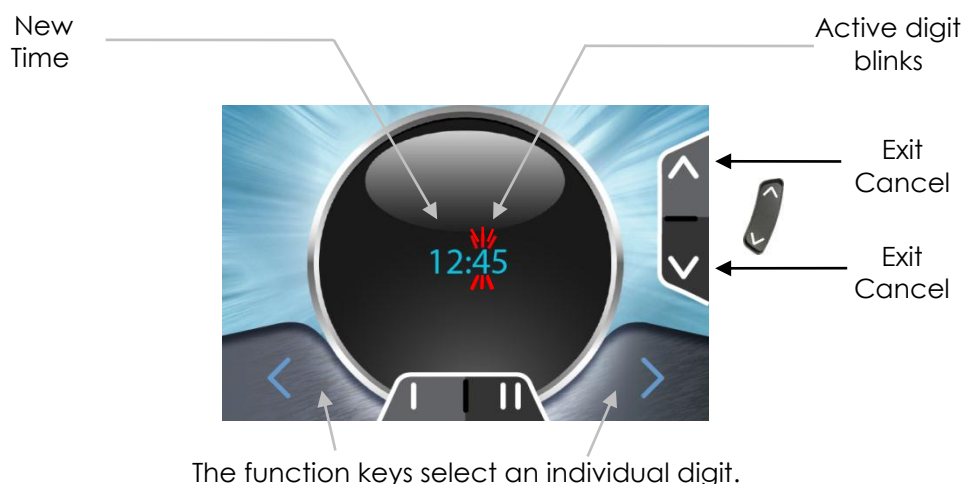


The function keys select the screen environment.

Setting	Result
Indoors	The screen has a black background.
Outdoors	The screen has a white background.
Automatic	The environment setting (inside or outside) is set automatically depending on the amount of ambient light.

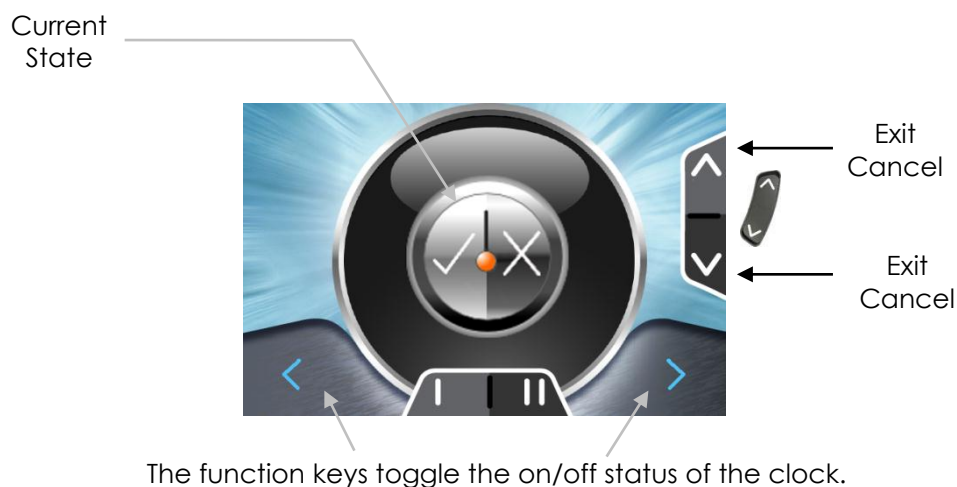
- Use either the function buttons or joystick left/right to select the environment.
- Use joystick forward to accept the new setting and return to the main OBP menu.
- Use joystick reverse or the accessory buttons to cancel the new setting and return to the main OBP menu.

### 2.5.3.3 Adjust the clock



- Use either the function buttons or joystick left/right to select a different digit.
- Deflect the joystick forward to increase the value of the digit.
- Deflect the joystick reverse to accept the new time and return to the main OBP menu.
- The accessory buttons cancel the new time (keep the original time) and returns the display to the main OBP menu.

### 2.5.3.4 Clock Visible



- Use either the function buttons or joystick left/right to toggle the on/off status.
- Deflect the joystick forward to accept the new status and return to the main OBP menu.
- Use the accessory buttons to cancel the new status and return to the main OBP menu.



## 2.5.4 Actuator Mode – Standard

Active Actuator Function

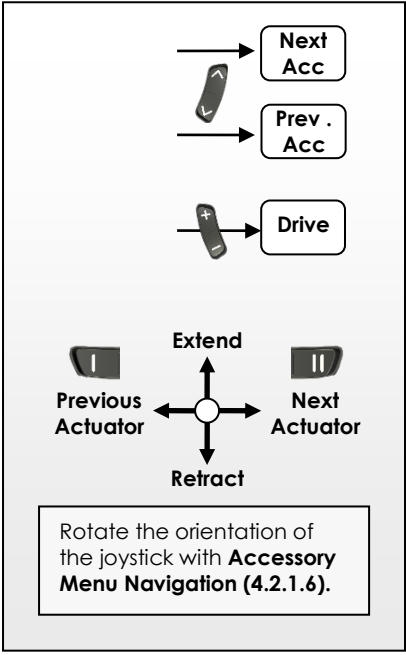
Next Accessory Mode

Previous Accessory Mode

The function keys scroll through the available actuator functions.

Function	Active	Function	Active
F1 - Tilt		F14 - Arm rest	
F2 -Recline		F26 - Head	
F3 - Left leg		F28 - Lie down	
F4 -Right Leg		F33 - Stand up	
F5 - Seat		F34 - Sit down	
F6 - AUX1		F35 - AUX2	
F9 - Both legs		F36 - AUX3	
F11 - Footplate		F37 - AUX4	

**Actuator Mode Menu**



Next Acc

Prev. Acc

Drive

Extend

Retract

Previous Actuator

Next Actuator

Rotate the orientation of the joystick with **Accessory Menu Navigation (4.2.1.6)**.

### DX2 Mode (for the DX2 Actuator Modules)

You can assign any of the icons listed above to a programmed Actuator Function/Profile by setting the **Input Function Number** parameter of that Actuator Profile accordingly.

For example, if an Actuator Profile has **Input Function Number** 28, the lie down icon will be shown for that Actuator Profile. Only the icons that have been assigned to an Actuator Profile are shown in the menu, if the Actuator Module that contains this Actuator Profile is actually detected in the system.

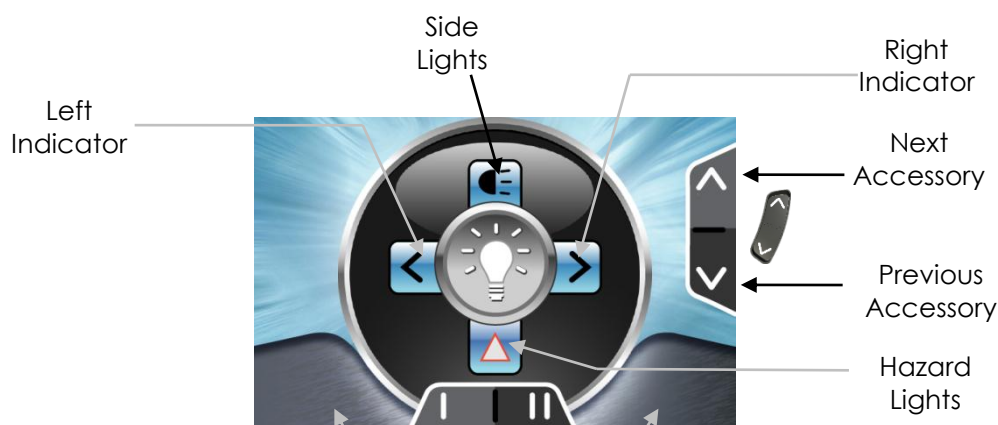
## DX Mode (for the CLAM/TAM)

Functions F1 - F5 operate actuators 1 - 5. Function F9 operates actuators 3 + 4 simultaneously. Only the actuators that have been enabled are shown in the menu. If actuator 3 and 4 are both enabled, function 9 is added to the menu automatically.

## 2.5.5 Lighting Mode – Standard

The lighting menu is available when:

- the **CLAM Lighting Enable** parameter (see DSM section 6.6.2.1) has the value 'Yes';
- a CLAM or lighting module is detected in the system;
- the **Lighting Menu** parameter (4.2.1.8) is set to 'Yes'.

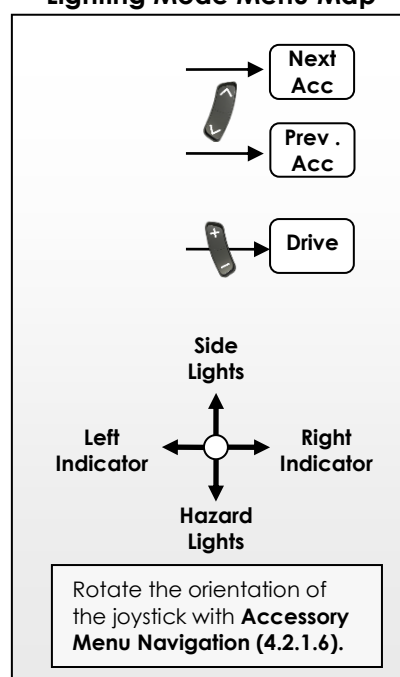


The function keys are not active in this mode.

Deflect the joystick to turn the associated light on or off.

Button	Function
	Left Indicator >2s: Side lights
	Right Indicator >2s: Hazard lights
	Not active

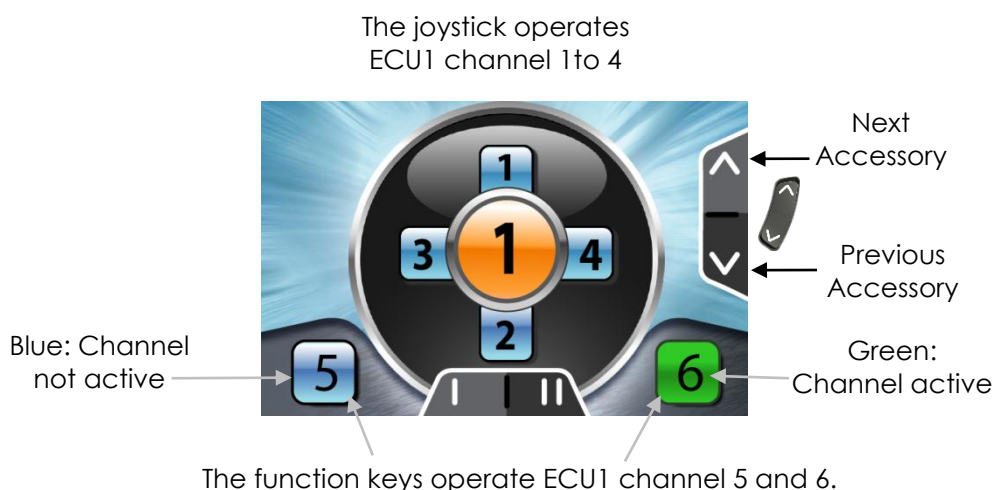
### Lighting Mode Menu Map



## 2.5.6 ECU1 Mode (ECU mouse control) – Standard

ECU1 Mode gives access to the first 6 channels of an Environmental Control Unit Module (ECU) that has been setup as ECU1. These channels are generally used for mouse or communications control. For access to channels 7 and 8 of ECU1 use the ECU2 menu.

This mode is only available if the **ECU Mouse Mode Menu** parameter (see 4.2.1.9) is set to 'Yes' and an ECU Module is detected in the system.

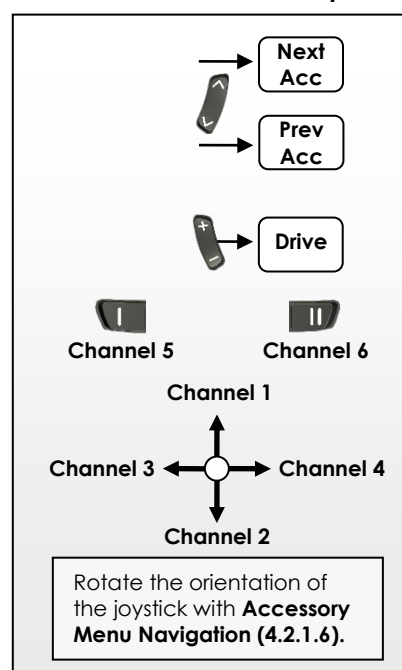


### Notes:

Channel operation is not latched in ECU1 Mode. The channel will return to the 'off' state when the joystick is returned to neutral.

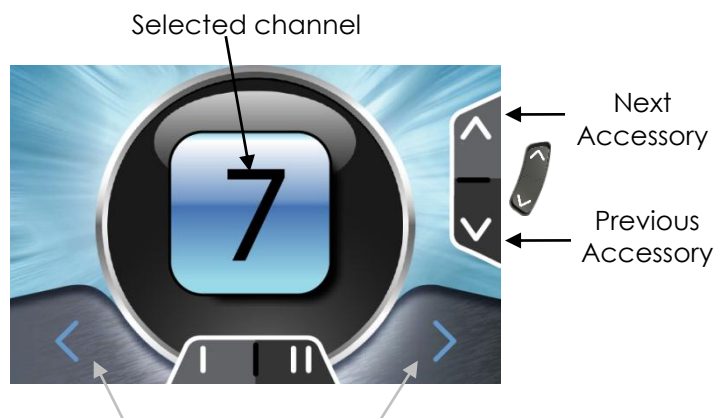
Button	Function
	Left Indicator >2s: Side lights
	Right Indicator >2s: Hazard lights
	I
	II
	Channel 5
	Channel 6

### ECU1 Mode Menu Map



## 2.5.7 ECU2 Mode – Standard

ECU2 Mode gives access to channel 7 and 8 of an ECU Module that has been setup as ECU1, and to all 8 channels of an ECU Module that has been setup as ECU2. The 8 channels of ECU2 are numbered 9-16.



The function keys scroll through the available channels.



**Note:**

*This mode is only available if one of the **ECU Menu** parameters (see 4.2.1.9) is set to 'Yes' and an ECU Module is detected in the system.*

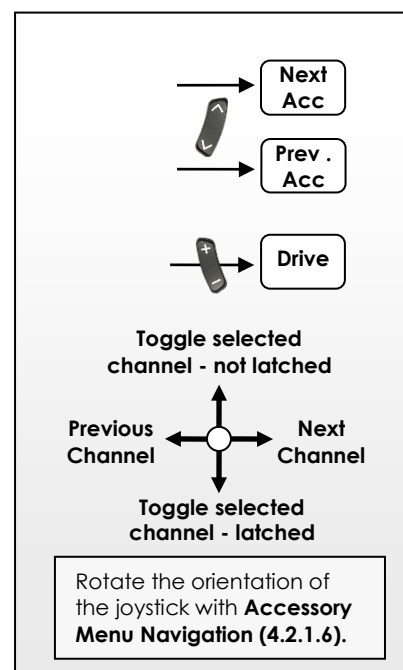
*Only the enabled channels will be shown.*

- Deflecting the joystick forward or reverse toggles the selected channel: when the channel is off, it turns on, when the channel is on, it turns off.
- If the joystick is deflected reverse, the channel will stay in the new state (on or off) when the joystick is returned to neutral (latched operation).
- If the joystick is deflected forward, the channel will return to its original state when the joystick is returned to neutral (not-latched operation).

Icon	Meaning
	Channel is off
	Channel is on

iPortal Accessory Mode – Standard  
iPortal Accessory Mode – Standard

### ECU2 Mode Menu Map



## 2.5.8 iPortal Accessory Mode – Standard

The iPortal accessory screen appears in the menu if "Allow Non-Drive Profile" has been set to YES (Drive Profile 0). This profile uses the input source allocated to Drive Profile 1. The intended use of this mode is for proportional control of iPortal from a joystick source. For switch input control of iPortal, such as with a head control, it is best to use ECU1 as the operating channels.



For a full description of iPortal functionality refer to the relevant iPortal user guides and installation manuals.



## 2.6 4Q Menu Navigation - Home Level

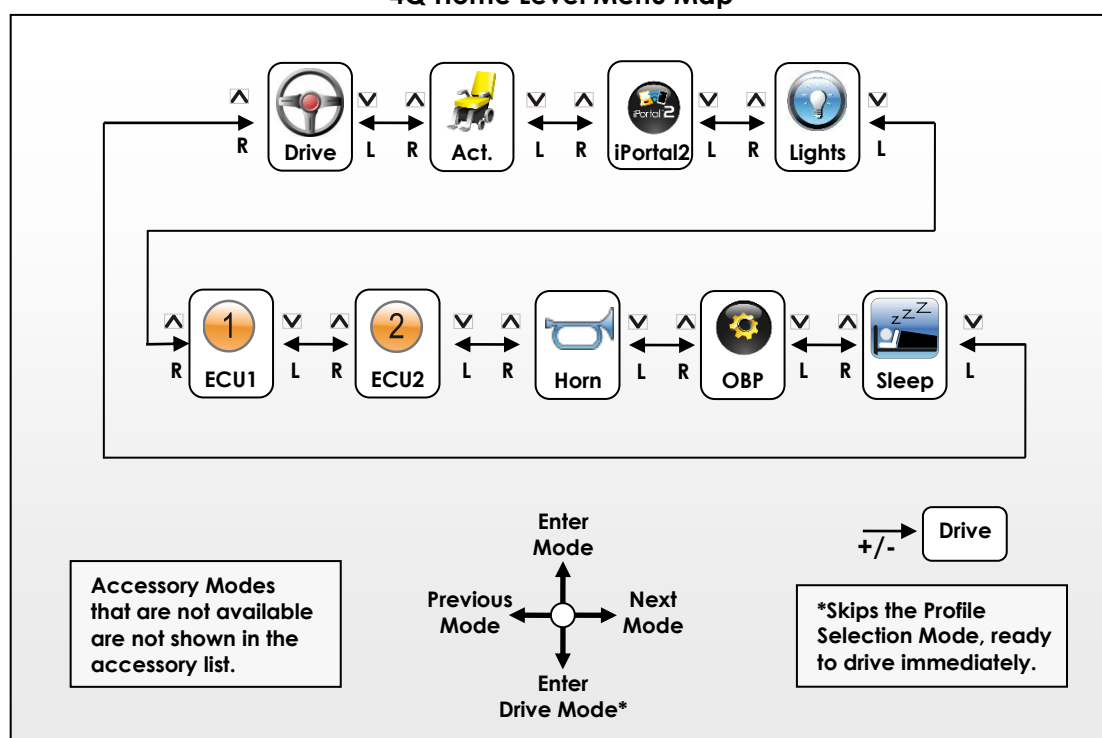


The menu structure of the 4Q navigation mode starts at the 'Home Level'. The Home Level of the 4Q menu is very similar to the standard Accessory Mode (see 0).

- the up/down buttons or joystick left/right scrolls through the different accessories;
- the plus/minus buttons or joystick reverse enters Drive Mode.

Drive Mode is inserted in the 'accessory' list, as well as Sleep Mode and Horn Mode. In Standard Mode these features are only accessible with the keypad.

4Q Home Level Menu Map



To exit from a Mode to the Home Level:

- If **Reverse Escape Enable** (4.2.1.16) has the value 'yes': deflect the joystick reverse to return to the Home Level.
- For all modes, except iPortal2, wait for **Escape Timeout** (4.2.1.17) seconds and the menu will automatically return to the home level. For iPortal2, the menu returns to the home level after **Mouse Inactivity Timeout** has expired.
- Press the accessory button to return to the Home Level.



**Warning:**

If in 4Q menu navigation mode, and **Reverse Escape Enable** (4.2.1.16) and **Escape Timeout** (4.2.1.17) are both disabled, it is only possible to return to the home level by using the applicable buttons on the keypad.

If the user is not able to use the buttons on the keypad, make sure to either set **Reverse Escape Enable** to 'yes' or set **Escape Timeout** to a value greater than zero.

## 2.6.1 Drive Mode – 4Q



Drive Mode starts at the Drive **Home Level** (see 2.6).

- Deflect the joystick forward to enter the **Drive Profile Selection Mode**.



In **Drive Profile Selection Mode** the Drive Profile flashes.

- Select the desired Drive Profile by deflecting the joystick left/right.
- Deflect the joystick forward to enter Drive Mode\*.

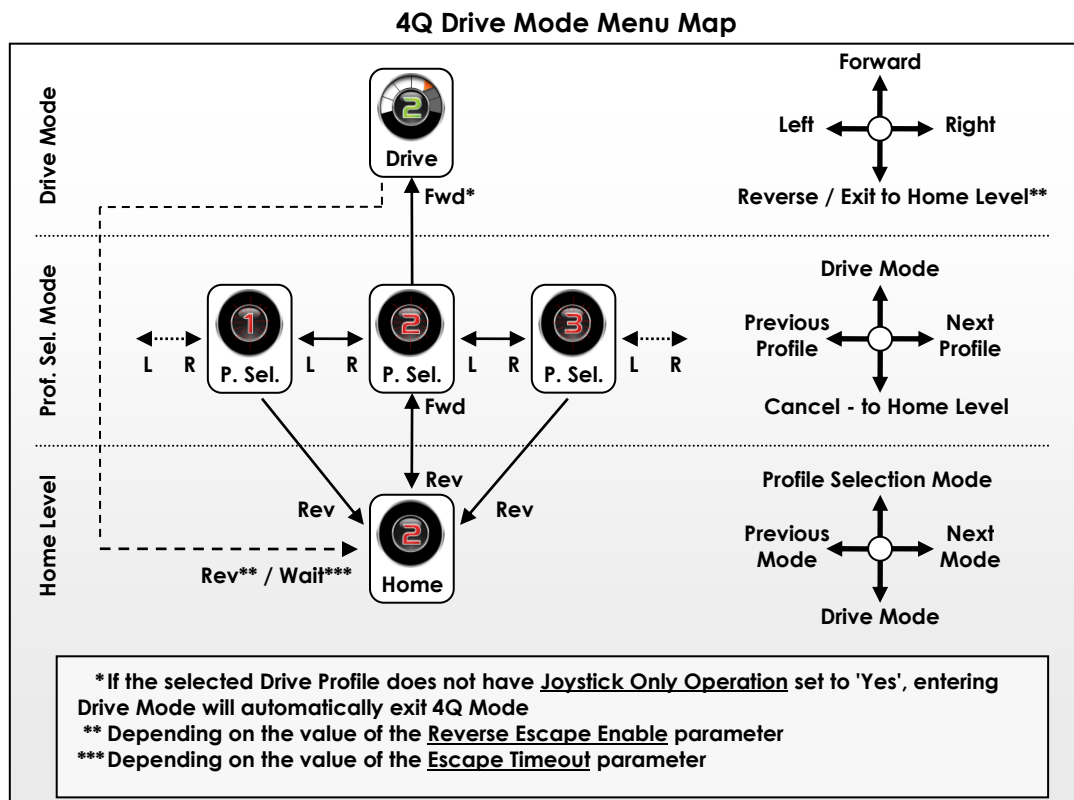


In **Drive Mode** the speedometer appears.

- Deflect the joystick to drive.
- Use the **plus/minus** buttons to change the Drive Profile.

### To exit Drive Mode:

- If **Reverse Escape Enable** (4.2.1.16) has the value 'yes': deflect the joystick reverse to return to the Drive Home Level.
- Wait for **Escape Timeout** (4.2.1.17) seconds and the menu will automatically return to the Drive Home Level.
- Press the up/down button to return to the Home Level of the next/previous Mode.



## 2.6.2 Force Sleep Mode – 4Q

In addition to the automatic sleep timeout that can be set with the **Sleep Mode Enable** parameter (see DSM 5.3.9.8), the Force Sleep Mode can put the AJR to sleep immediately.



Sleep Mode starts at the Sleep **Home Level** (see 2.6).

- Deflect the joystick forward to enter Sleep Mode (go to sleep)



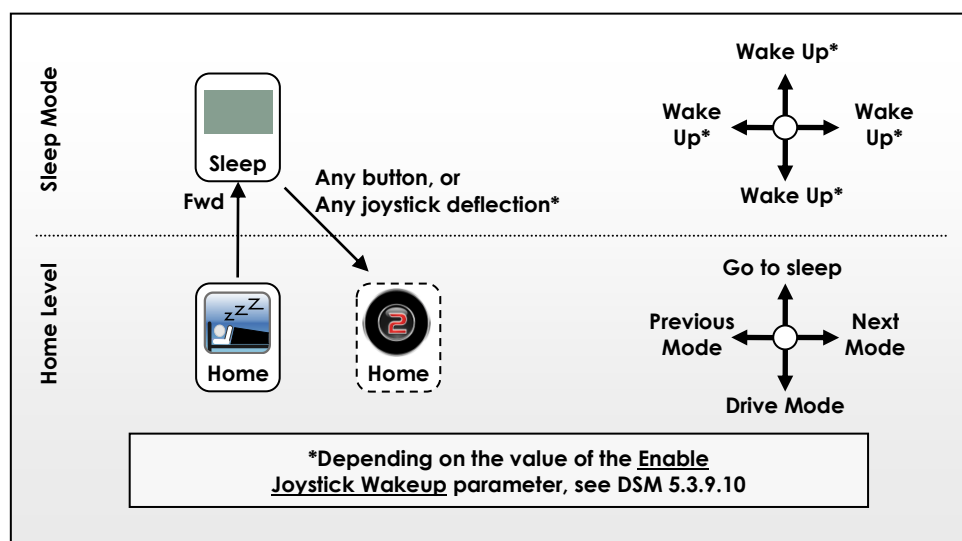
The DX System switches off.

To wake up (switch on) the DX System:

- Press any button on the keypad.
- If **Enable Joystick Wakeup** (DSM 5.3.9.10) has the value 'yes', deflect the joystick in any direction.

The AJR starts up in the Drive Home Level (see 2.6.1).

4Q Sleep Mode Menu Map



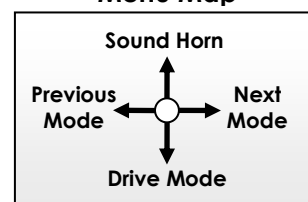
## 2.6.3 Horn Mode – 4Q



Horn Mode starts at the Horn **Home Level** (see 2.6).

- Deflect the joystick forward to sound the horn.

Menu Map



## 2.6.4 On-Board Programming (OBP) Mode – 4Q

The OBP menu is available when **OBP Menu** (see 4.2.1.7) has the value 'Yes'.

OBP Menu Items			
Menu Item	Icon	Menu Item	Icon
Screen Brightness		Clock adjustment	
Screen Environment (inside/outside)	A	Clock visible (yes/no)	



OBP Mode starts at the OBP **Home Level** (see 2.6).

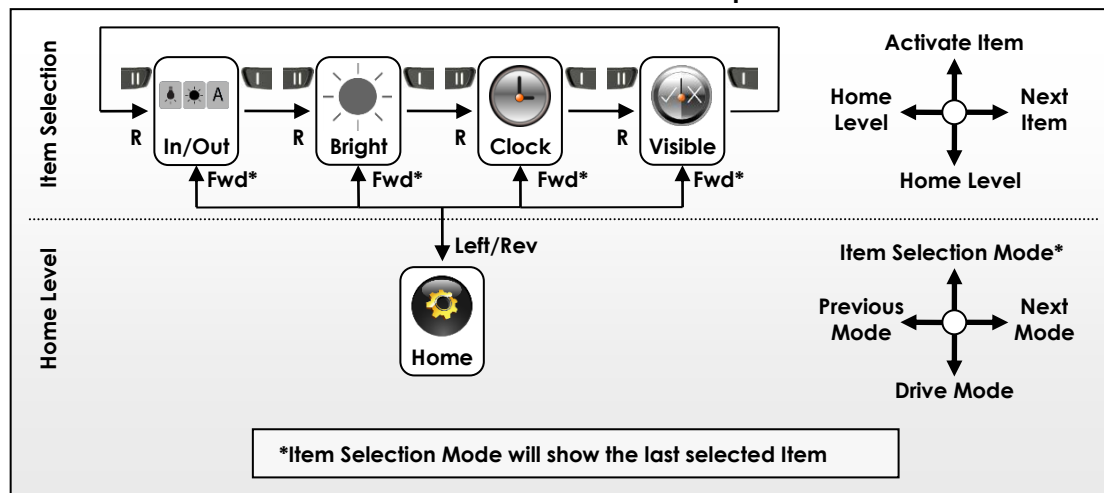
- Deflect the joystick forward to enter the OBP Item Selection Mode



Item Selection Mode will start up with the item that was last selected.

- To select the desired menu item, deflect the joystick to the right. Alternatively, the function buttons (I/II) can also be used to scroll through the available menu items.
- To activate the selected menu item, deflect the joystick forward.

4Q OBP Mode Menu Map

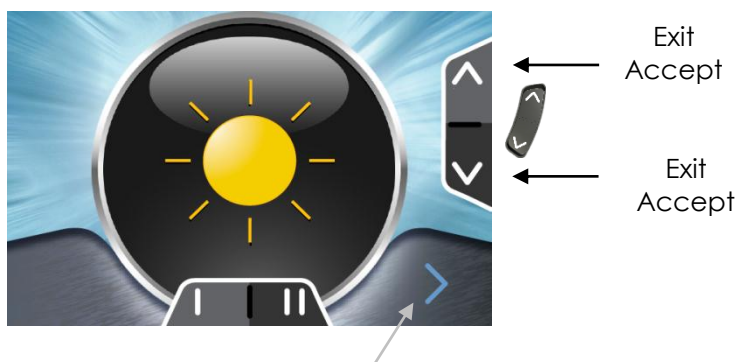


**Note:**

The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.

The description of the OBP menu assumes that this parameter is set to 'Normal'.

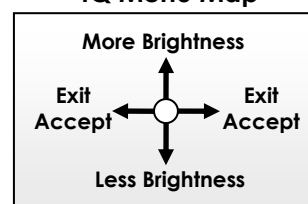
## 2.6.4.1 OBP Screen Brightness



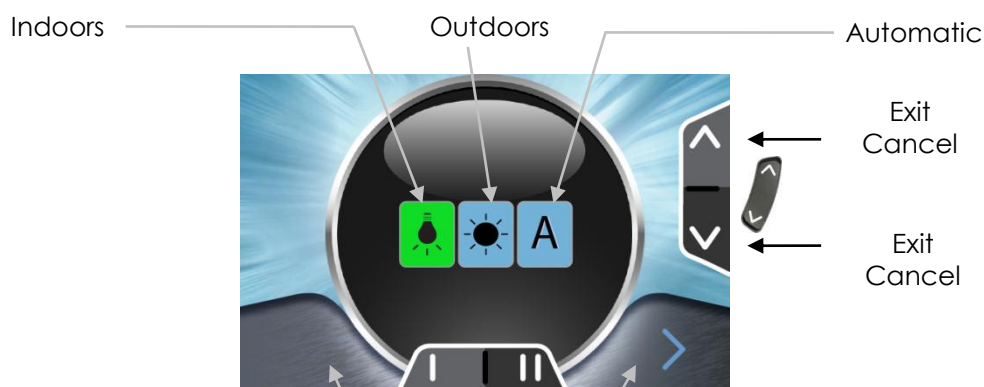
The function key changes the brightness value.

- Deflect the joystick forward/reverse or use the function buttons to change the screen brightness.
- Deflect the joystick left/right or the accessory buttons to accept the new setting and return to the OBP Item Selection menu.

### 4Q Menu Map



## 2.6.4.2 OBP Screen Environment Setting (Indoors/Outdoors)

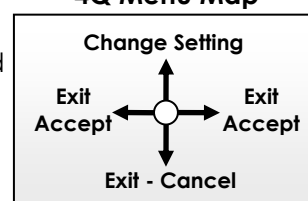


The function keys select the environment.

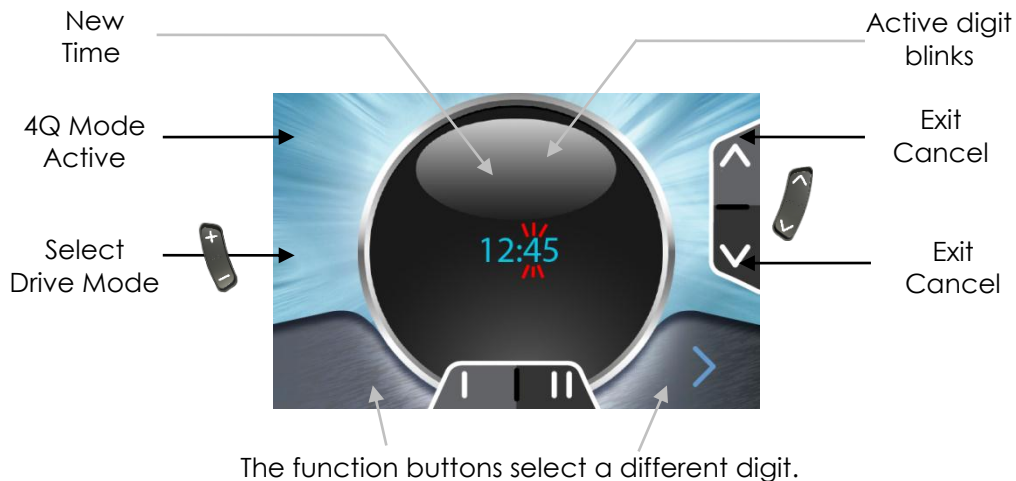
Setting	Result
Indoors	The screen has a black background.
Outdoors	The screen has a white background.
Automatic	The environment setting (indoors or outdoors) is set automatically depending on the amount of ambient light.

- Deflect the joystick forward or the function buttons to select the environment.
- Deflect the joystick left/right to accept the new setting and return to the OBP Item Selection menu.
- Deflect the joystick reverse to cancel the new setting and return to the OBP Item Selection menu.
- Use the accessory buttons to cancel the new setting and return to the OBP Home Level.

### 4Q Menu Map

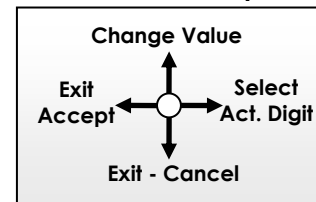


### 2.6.4.3 Adjust the clock

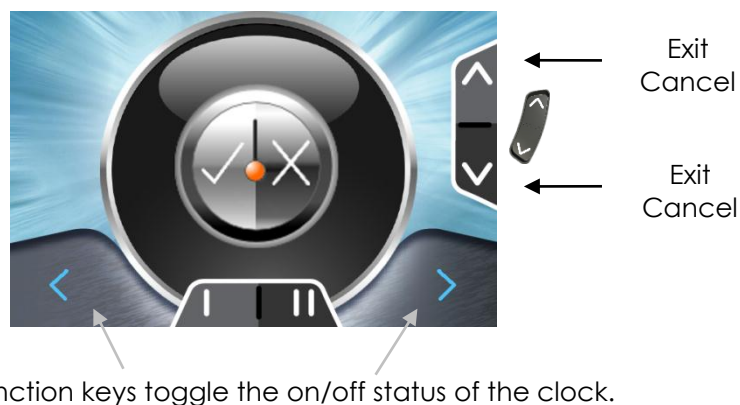


- Deflect the joystick right or use the function buttons to select the active digit.
- Deflect the joystick forward to increase the value of the digit.
- Deflect the joystick left to accept the new time and return to the OBP Item Selection menu.
- Deflect the joystick reverse to cancel the new time and return to the OBP Item Selection menu.
- Use the accessory buttons to cancel the new time and return to the OBP Home Level.

#### 4Q Menu Map

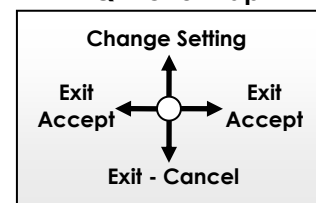


### 2.6.4.4 Set Clock Visible



- Deflect the joystick forward or use the function buttons to toggle the on/off status.
- Deflect the joystick left/right to accept the new status and return to the OBP Item Selection menu.
- Deflect the joystick reverse to cancel the new status and return to the OBP Item Selection menu.
- Use the accessory buttons to cancel the new status and return to the OBP Home Level.

#### 4Q Menu Map



## 2.6.5 Lighting Mode – 4Q

The lighting menu is available when:

- the **CLAM Lighting Enable** parameter (see DSM section 6.6.2.1) has the value 'Yes';
- a CLAM or lighting module is detected in the system;
- the **Lighting Menu** parameter (4.2.1.8) is set to 'Yes'.



Lighting Mode starts at the Lighting **Home Level** (see 2.6).

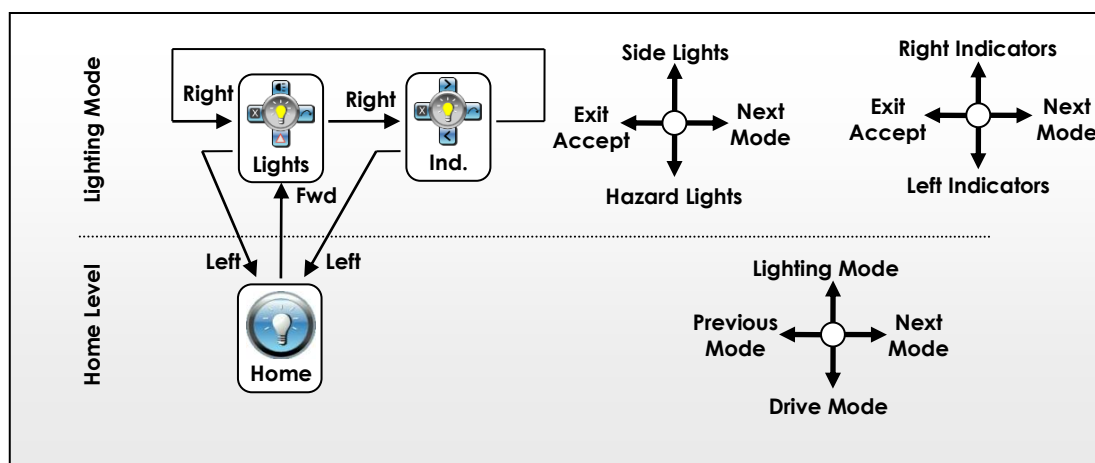
- Deflect the joystick forward to enter Lighting Mode.



Lighting Mode starts up in the Lights Mode.

- Deflect the joystick right to enter the next Lighting Mode.
- Deflect the joystick Forward or Reverse to turn the associated light on or off.
- Deflect the joystick left to return to the Lighting Home Level.

4Q Lighting Mode Menu Map



**Note:**

In 4Q Lighting Mode the lights can also be operated with the indicator buttons on the keypad:

Button	Function
	Left Indicator >2s: Side lights
	Right Indicator >2s: Hazard lights

## 2.6.6 Actuator Mode – 4Q

The Actuator menu is available when actuators are enabled. Only actuators that have been detected are shown. For a list of possible actuators and their corresponding channels see **Actuator Mode – Standard** (section 2.5.4).



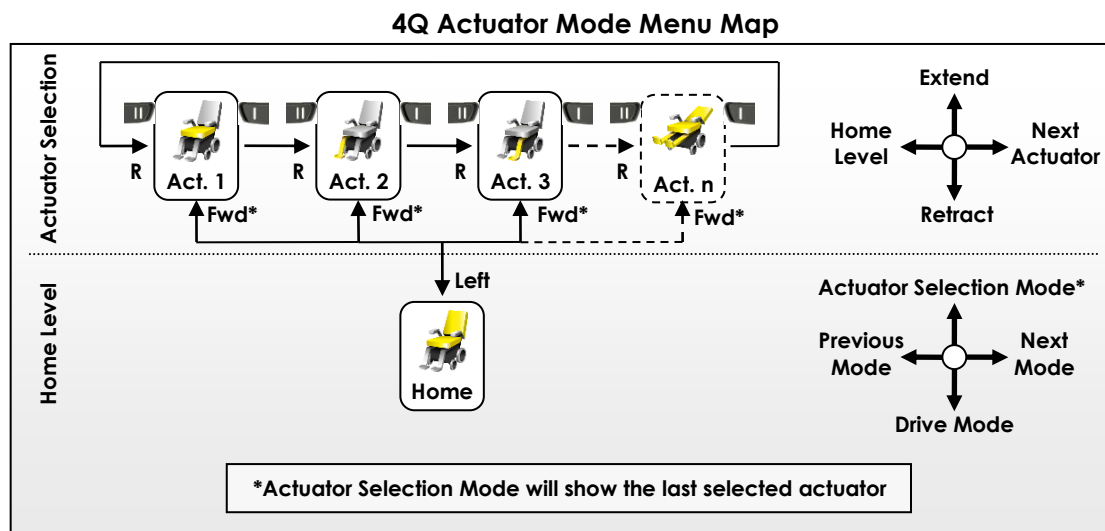
Actuator Mode starts at the Actuator **Home Level** (see 2.6).

- Deflect the joystick forward to enter the Actuator Selection Mode.



Actuator Selection Mode starts up with the actuator that was last selected.

- Deflect the joystick right to select the desired actuator.
- Deflect the joystick forward to extend the actuator.
- Deflect the joystick reverse to retract the actuator.
- Deflect the joystick left to return to the Actuator Home Level.



**Note:**

The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.

The description of the 4Q actuator menu assumes that this parameter has the value 'Normal'.



## 2.6.7 ECU1 Mode (ECU mouse control) – 4Q

ECU1 Mode gives access to the first 6 channels of an Environmental Control Unit (ECU) Module that has been setup as ECU1. These channels are generally used for mouse or communications control. For access to channels 7 and 8 of ECU1 use the ECU2 menu.

This mode is only available if the **ECU Mouse Mode Menu** parameter (see 4.2.1.9) is set to 'Yes' and an ECU Module is detected in the system.



ECU1 Mode starts at the ECU1 **Home Level** (see 2.6).

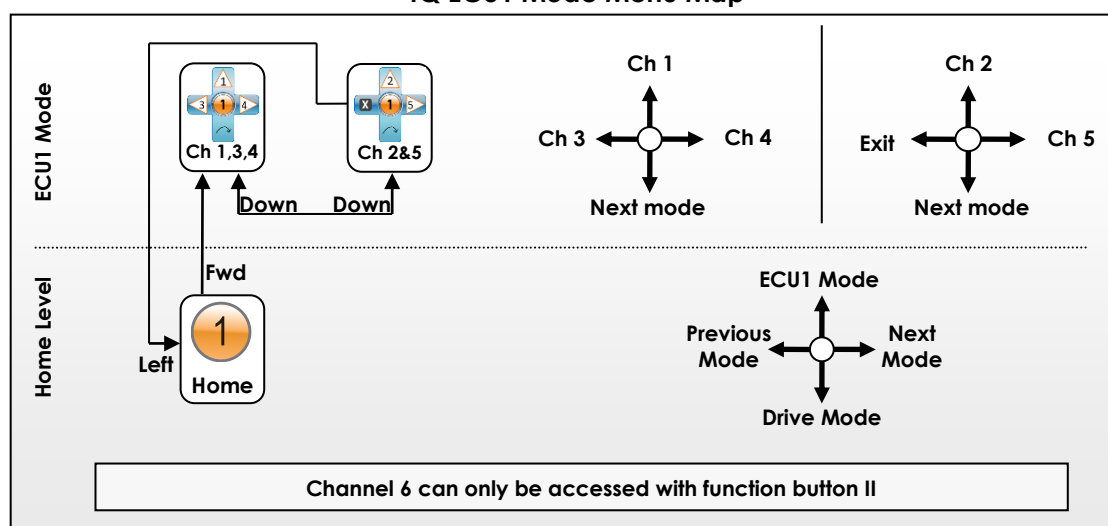
- Deflect the joystick forward to enter the ECU1 Channel 1,3,4 Mode.



ECU1 Mode starts up in Channel 1,3,4 Mode.

- Deflect the joystick forward to activate Channel 1.
- Deflect the joystick left to activate Channel 3.
- Deflect the joystick right to activate Channel 4.
- Deflect the joystick reverse to select Channel 2 & 5 Mode.
- Deflect the joystick forward to activate Channel 2.
- Deflect the joystick right to activate Channel 5.
- Deflect the joystick reverse to select Channel 1,3,4 Mode.
- Deflect the joystick left to return to the ECU1 Home Level.
- Use the function buttons to activate Channel 5 and 6.

### 4Q ECU1 Mode Menu Map



#### Note:

Channel operation is not latched in ECU1 Mode.

## 2.6.8 ECU2 Mode – 4Q

ECU2 Mode gives access to channel 7 and 8 of an ECU Module that has been setup as ECU1, and to all 8 channels of an ECU Module that has been setup as ECU2. The 8 channels of ECU2 are numbered 9-16.

This mode is only available if one of the **ECU Menu** parameters (see 4.2.1.9) is set to 'Yes' and an ECU Module is detected in the system.

Only the enabled channels will be shown.



ECU2 Mode starts at the ECU2 **Home Level** (see 2.6).

- Deflect the joystick forward to enter the ECU2 Channel Selection Mode

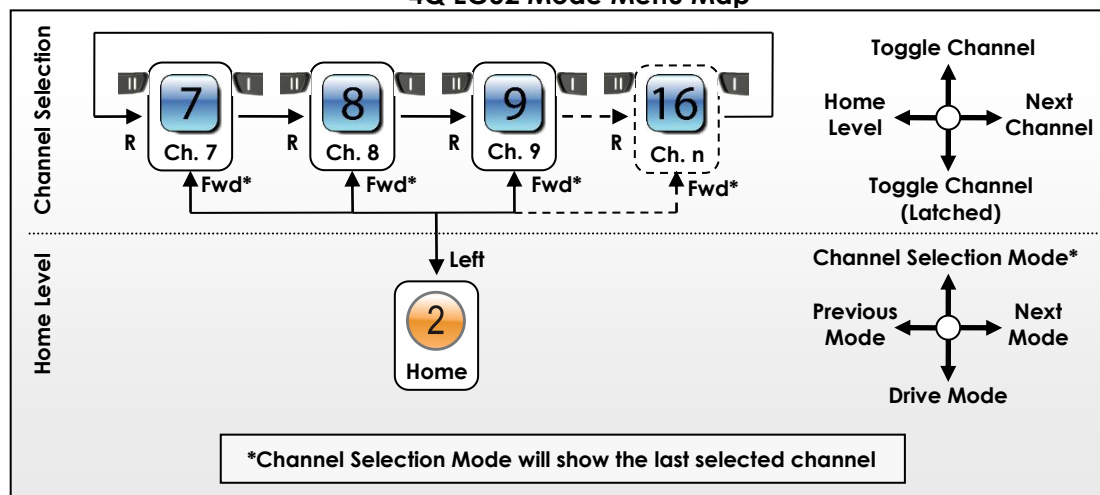


ECU2 Channel Selection Mode starts up with the ECU channel that was last selected.

Icon	Meaning
	Channel is off
	Channel is on

- Deflect the joystick right to select the desired channel.
- Deflect the joystick forward to toggle the selected channel (not latched).
- Deflect the joystick reverse to toggle the selected channel (latched).
- Deflect the joystick left to return to the ECU2 Home Level.

### 4Q ECU2 Mode Menu Map



#### Note:

The orientation of the joystick depends on the value of the **Accessory Menu Navigation** (4.2.1.6) parameter.

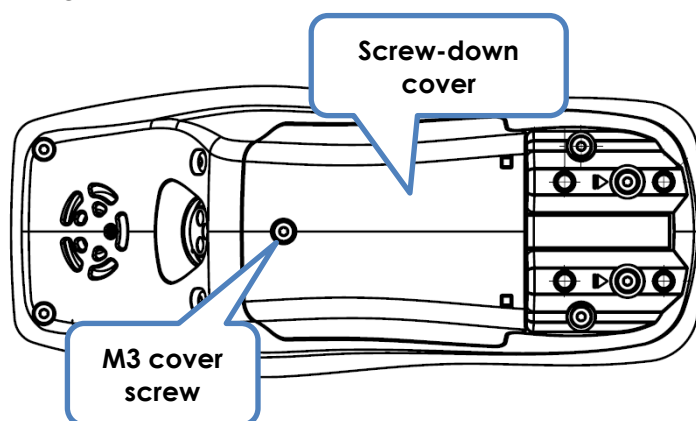
The description of the 4Q ECU2 menu assumes that this parameter has the value 'Normal'.

## 2.7 Jack sockets for external connections

The AJR has three jack sockets for the connection of external switches.



A screw-down cover protects the jack sockets and the DX BUS connectors. When 3<sup>rd</sup> party switches are connected, make sure to route the wiring suitably to exit from the notches in the cover. Carefully replace the cover and retighten the screw. Maximum tightening torque for the M3 cover screw is 0.6 Nm.



**Warning:**

*Do not operate the DX2 AJR if the cover is not installed correctly.  
The cover is an essential part of the water entry protection.*

### 2.7.1 The On / Off switch

- 2-pole jack input.
- Works identically to the on/off button on the AJR keypad.
- Normally-open operation.

## 2.7.2 Universal Control Inputs (UCI 1/UCI 2)

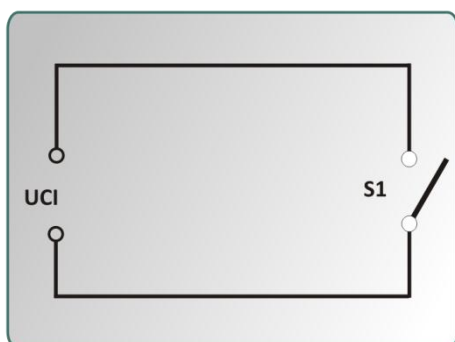
The REM55x features two programmable 'UCI' 2-pole jack inputs. Each input can be used to provide access to a single option using a single switch or to provide access to multiple functions by switching different valued resistances across the outputs.

There are two modes of operation for each jack input: **open circuit** and **fail-safe**.

### 2.7.2.1 Open Circuit Operation

#### 2.7.2.1.1 Open Circuit Operation with a Standard Normally Open Switch

In their simplest form the UCI inputs can be used with a single, normally open switch, such as the buddy button shown below, to give access to **Select Drive** modes (UCI 1), **Select Accessory** modes (UCI 2) or switch between Drive and Accessory Modes (UCI 1 and UCI 2). Refer to the table later for programming options.

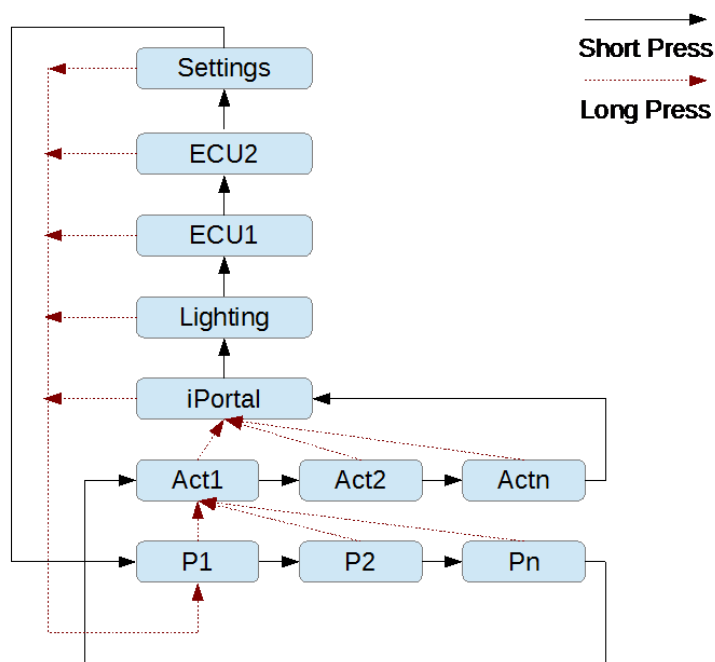


#### 2.7.2.1.2 Open Circuit with switched resistances

By switching different resistance values across the UCI inputs, additional functions can be accessed according to the value selected for the UCI 1 and UCI 2 Jack Socket parameters in Wizard. The available options are explained in the table below.

Programmable settings	Nominal resistance across UCI input				
	Short Circuit (Standard Switch Closed)	150Ω	300Ω	450 Ω	Open Circuit (Switches Open)
UCI1 and UCI2: Off	No Function	No Function	No Function	No Function	No Function
UCI1: Drive Up + Drive Down + Alarm + Horn	Drive Mode Up	Drive Mode Down	Alarm	Horn	No Function
UCI1: Drive-Accy Up + Drive-Accy Down + Alarm + Horn	Drive Mode Up (Including Accessory Menu)	Drive Mode Down (Including Accessories Menu)	Alarm	Horn	No Function
UCI2: Accessory Up + Accessory Down + Alarm + Horn	Accessory Mode Up	Accessory Mode Down	Alarm	Horn	No Function
UCI2: Accy-Drive Up + Accy-Drive Down + Alarm + Horn	Drive Mode Up (including Accessory Menu)	Drive Mode Down (Including Accessory Menu)	Alarm	Horn	No Function

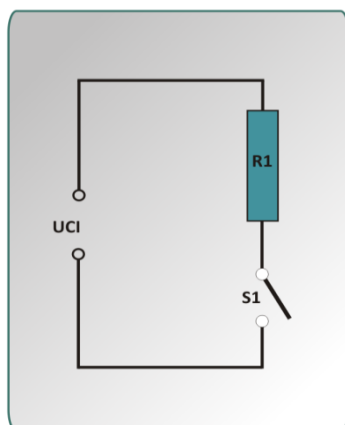
When using the settings **UCI1: Drive-Accy Up + Drive-Accy Down + Alarm + Horn**, or **UCI2: Accy-Drive Up + Accy-Drive Down + Alarm + Horn**, a normally-open switch, such as the buddy button, can be used to navigate through the menu with a short or long press as shown in the image right. A short press is less than half a second; a long press is greater than half a second. This functionality is similar to the DX REMG90/G91 Mode Switch behaviour.



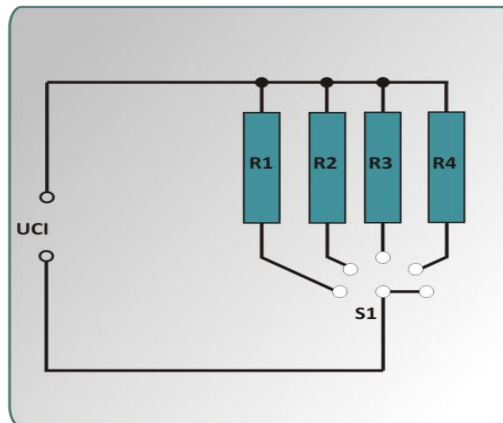
### 2.7.2.1.3 Recommended Switch Configurations

The circuits shown below are example open circuit configurations:

**To access a single function**



**To access multiple functions**



**Note:**

Multiple single switch and resistor combinations can be used in parallel but the effects of pressing more than one switch at once should be considered.

#### 2.7.2.1.4 Open Circuit Resistance Bands

The resistances stated in the '**Nominal resistance across UCI input**' table, above, are nominal values only. The actual resistances should be in the ranges shown in the following table.

Nominal resistance (Ω)	Acceptable resistance range (Ω)
0	< 100
150	100 – 270
300	270 – 412
450	412 – 575
Open Circuit	> 575



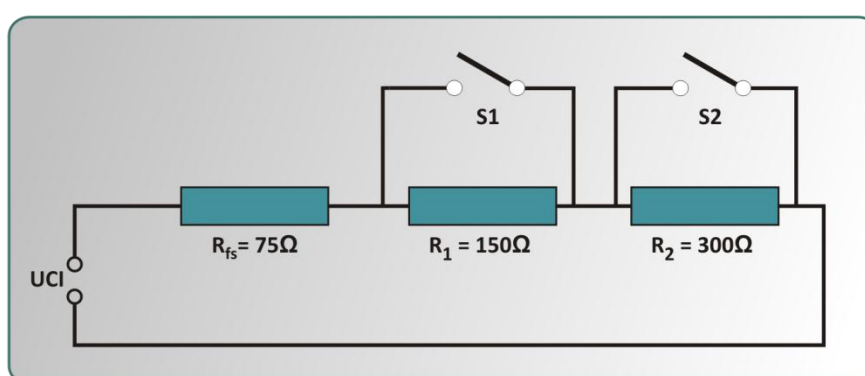
**Warning:**

With the open circuit configuration, it is not possible to detect if the switched-resistor circuit is plugged in to the UCI socket when all the switches are open. If the application requires that this situation should be detected, then the fail-safe circuit (see **Fail-safe Operation** (2.7.2.2)) should be used instead.

### 2.7.2.2 Fail-safe Operation

The fail-safe operation option provides additional protection against faults including disconnected jack sockets (open circuit) and damaged switch circuit cables that result in the UCI connections being either open circuit or short-circuit.

Failsafe UCI circuits are based on the following circuit. Note that either switch may be omitted if not required.



When operating in fail-safe mode the UCI inputs detect the following resistance bands.

Event	Nominal Resistance (Ω)	Acceptable Resistance Band (Ω)
Fault	Short Circuit	< 40
S1 and S2 closed	75	40-100
S2 closed	225	170 - 270
S1 closed	375	330 - 412
No switches closed	525	480 - 575
Fault - Cable broken or plug disconnected	Open Circuit	>575

### 2.7.2.2.1 Fail-safe settings for Jack Inputs

When using any fail-safe UCI option, a **Stop** function will be activated if the UCI circuit is either open circuit or short circuit.



Whenever a UCI Stop function is activated, a warning triangle will be displayed on the LCD in the status bar, as shown left.

Other functions are activated according to the following tables.

#### UCI 1 - Functions performed when switch closed

Programmable setting	UCI 1 - Functions performed when switch closed					
	Short circuit < 40Ω	S1=closed S2=closed 75Ω	S2=closed 225Ω	S1=closed 375Ω	S1=open S2=open 525Ω	Open circuit >575Ω
(Fail-safe) Alarm + Emergency Stop	Stop	Stop + Alarm	Alarm	Stop	No function	Stop
(Fail-safe) Drive Mode: Up + Down	Stop	Stop	Drive Mode Up	Drive Mode Down	No function	Stop
(Fail-safe) Drive Mode Accessories Menu: Up + Down	Stop	Stop	Drive Mode up (including accessories menu)	Drive Mode Down (including accessories menu)	No function	Stop
(Fail-safe) Accessory Mode: Up + Down	Stop	Stop	Accessory Mode Up	Accessory Mode Down	No function	Stop
(Fail-safe) Drive Mode Up + Accessory Mode Up	Stop	Stop	Drive Mode Up	Accessory Mode Up	No function	Stop

#### UCI 2 - Functions performed when switch closed

Programmable setting	UCI 2 - Functions performed when switch closed					
	Short circuit < 40Ω	S1=closed S2=closed 75Ω	S2=closed 225Ω	S1=closed 375Ω	S1=open S2=open 525Ω	Open circuit >575Ω
(Fail-safe) Alarm + Emergency Stop	Stop	Stop + Alarm	Alarm	Stop	No function	Stop
(Fail-safe) Drive Mode: Up + Down	Stop	Stop	Drive Mode Up	Drive Mode Down	No function	Stop
(Fail-safe) Drive Mode Accessories Menu: Up + Down	Stop	Stop	Drive Mode up (including accessories menu)	Drive Mode Down (including accessories menu)	No function	Stop
(Fail-safe) Accessory Mode: Up + Down	Stop	Stop	Accessory Mode Up	Accessory Mode Down	No function	Stop
(Fail-safe) Drive Mode Up + Accessory Mode Up	Stop	Stop	Drive Mode Up	Accessory Mode Up	No function	Stop



## 3 Installation and testing

### 3.1 Specifications

#### 3.1.1 Electrical Specifications

Parameter	Value
Operating voltage range	18V – 32V DC (nom. 24V)
Charger rating	max 12A RMS continuous, limited by DXBUS rating
Quiescent current	< 0.25mA Off, typically 200mA On

#### 3.1.2 Mechanical Specifications

Parameter		Value			
Material		Polycarbonate / PET injection-moulded plastic			
Protection rating		IPx4			
Shipping weight		650 g (excluding packing material)			
Operating forces		Less than 800 g			
		Min	Nominal	Max	Units
Tube mount diameter		15 (5/8)	19 (3/4)	22 (7/8)	mm (in)
Operating temperature range		-25 (-13)		50 (122)	°C (°F)
Storage temperature range		-40 (-40)		70 (158)	°C (°F)
Operating humidity range		0		95	%RH



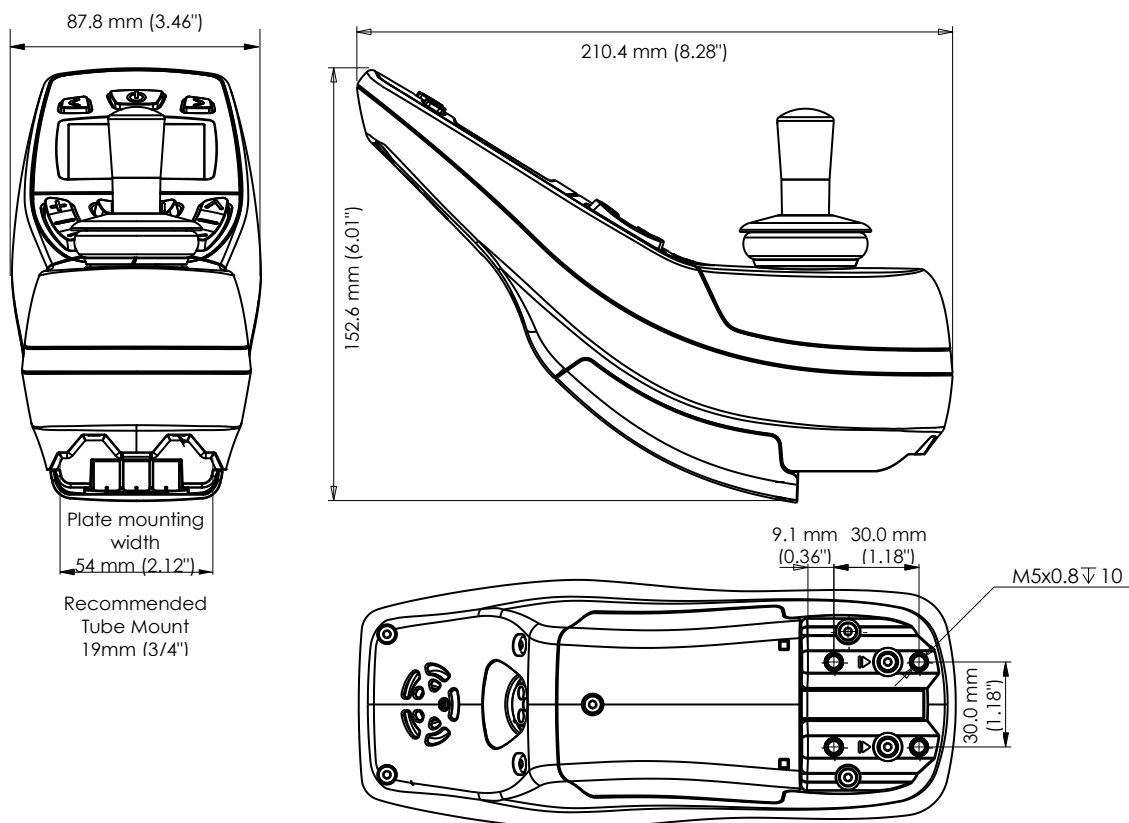
**Warning:**

*Do not operate the DX2 AJR if the cover is not installed correctly.  
The cover is an essential part of the water entry protection.*

## 3.2 Mounting

The mounting of the DX2 AJR is backwards compatible with the SHARK product range. The Remote can be mounted on either side of the wheelchair to accommodate left-handed or right-handed users.

Mount the DX2 AJR on a flat plate of 54 mm (2.12") width, or on a tube with an outside diameter between 15 mm (5/8") and 22 mm (7/8"). It is possible to use either of the two mounting channels for tube mounting.



Tighten the M5 screws to a torque of approximately 3 Nm (27 lbf in).



### Warnings:

- For safe installation, select a screw length that protrudes between 7mm and 11mm into the case. Do not over-tighten.
- All DX2 AJR variants are not waterproof. Make sure to protect the AJR from water entry if necessary.



### Note:

If external switches are fitted, make sure that there is enough room for the cables of the switches. Take care that the cables cannot be trapped or damaged.

### 3.3 AJR connection with the DX System

The DX BUS connector sockets are located at the bottom of the AJR. A cover protects the DX BUS sockets and the external switch sockets.

After connecting the DX BUS cables, carefully replace the cover and retighten the screw. Do not over-tighten the screw. The maximum tightening torque for the M3 cover screw is 0.6 Nm.



**Warning:**

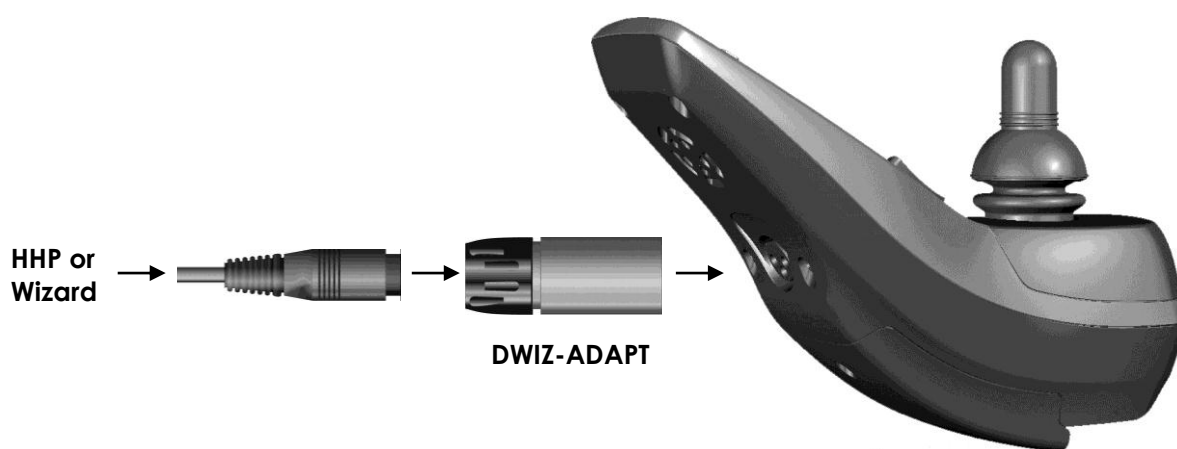
*Do not operate the DX2 AJR if the cover is not installed correctly.  
The cover is an essential part of the water entry protection.*

## 4 Programming the AJR

**Warning:**

*The DX2 AJR is part of the DX System. Read the DX System Manual programming chapter (DSM chapter 7) including all its warnings and notes before reading this chapter. The programming chapter of this AJR manual only describes AJR-specific programming.*

The XLR programming / charger socket is located at the back of the AJR. To use this socket with the HHP or the PC-Wizard programming cable, a DWIZ-ADAPT adapter plug is needed.



The DX2 AJR is the first DX Master Remote that uses UCM Rev. D software (for software revisions see DSM section 5.1.1). This revision adds several system parameters and AJR-specific parameters.

## 4.1 The System Backup Mirror (SBM)

The DX2 Power Module and the DX2 Master Remote both have a backup copy of all the system parameters. If either the DX2 Master Remote or the DX2 Power Module is replaced, the DX2 Master Remote displays an **SBM Selection Sequence** to the user to choose which module has the correct backup copy. **Choose the module that has NOT been replaced.**

After the user has selected the module with the correct backup copy, that module automatically copies the backup settings into the new module (System Restore). This makes it possible to replace any module including the Master Remote without re-programming the system.

When the backup settings have been copied successfully, Flash Code 1 is shown on the Remote to indicate that the system has just been programmed. Turn the power off and on to activate the settings.



**Note:**

*The System Backup Mirror only works when both the Power Module and the Master Remote belong to the DX2 family. If either the Power Module or the Master Remote is a DX Module (and not a DX2 Module), the System performs an Auto Download instead of a System Restore. See the DX System Manual for more information about Auto Download.*

The System Backup Mirror has been designed to facilitate in-the-field replacement of faulty modules/remotes with identical modules/remotes. Any other application such as programming several systems using SBM instead of Wizard, or replacing one module/remote with a different module/remote may give unexpected results.



**Warning:**

*Even if you intend to re-programme the system using either an HHP or the Wizard, to ensure reliable results you **MUST** choose one of the backup copies and **CYCLE** the power **BEFORE** re-programming.*

*The ONLY exception to this rule is if a Master Remote is being connected to a Power Module **SOLELY** for the purpose of reading out the Master Remote's programme by the Wizard. In this case, after reading the Master Remote's parameters, turn off the Master Remote without selecting either option.*

### 4.1.1 System Backup Mirror exceptions

- If a new (out of the box) Power Module that has not been programmed is connected to a DX2 Remote, the Remote will not show the SBM Selection Sequence. As the new Power Module does not have a backup copy of the parameters, the Remote will instead automatically\* copy its settings into the Power Module and show a Flash Code 1. Turn the power off and on to activate the settings.
- If the settings that are copied into the Power Module or the Remote (either by choice or automatically) are not compatible with that Power Module or that Remote, the system will show a Flash Code 12. Reprogram the system with the

Wizard to correct the problem. For more information, see Remote compatibility list (4.1.3).

- If a Master Remote is connected to a Power Module that it has been connected to before, in some cases the Remote may not show the SBM Selection Sequence. Instead, the Remote will copy its settings into the Power Module automatically\*. This also happens when the Remote has since been reprogrammed with the Wizard. For more information, see SBM Connection Memory (4.1.2).

\*After the settings have been copied into the Power Module, Flash Code 1 is shown on the Remote to indicate that the system has just been programmed. Turn the power off, **wait 10 seconds**, and turn the power back on to activate the settings.

## 4.1.2 SBM Connection Memory

If a Master Remote is connected to a Power Module that it has been connected to before, in some cases the Remote will not show the SBM Selection Sequence. Instead, the Remote will copy its settings into the Power Module automatically.

The Master Remote determines which Power Module it was last connected to with the System Configuration ID (SCID). The Master Remote and Power Module both have a SCID. If both modules have the same SCID, the SBM Selection Sequence will not be shown.

- If the Master Remote copies its settings into the Power Module, it copies its own SCID into the Power Module as well. As a result, both modules have the same SCID, the SCID of the Master Remote.
- If the Power Module copies its settings into the Master Remote, the SCID of the Master Remote is changed, and the new SCID is copied back into the SCID of the Power Module. As a result, both modules have the same, newly created, SCID.
- Programming the system with the Wizard does not change the SCID in either module.

## 4.1.3 Remote compatibility list

Not all DX2 Remotes accept the programs from other DX2 remotes.

Master Remote	Compatible Programs
DX2-REM550	All REM55x programs*. No REM42x programs.
DX2-REM551	All REM55x programs*. No REM42x programs.
DX2-REM420	All REM42x programs. No REM55x programs.
DX2-REM421	Only REM421 programs (REM420 programs contain lighting).

\*Please note that REM55x programs in DX mode (CLAM) and DX2 mode (DX2-ACT) will both be written to any REM55x without any problem. However, if a DX2 mode program is written to a REM55x that is connected to a CLAM, or a DX mode program is written to a REM55x that is connected to a DX2-ACT module, actuator functionality will be disabled.

The System Backup Mirror does not look at remote compatibility and will show the SBM Selection Sequence, even if a DX2-REM550 has been replaced with a DX2-REM421, for example. Once an incompatible program has been loaded into the Remote, the system will show Flash Code 12 to indicate that the Remote contains a program that is not compatible. Reprogram the DX System with the Wizard to clear this fault.

If the Wizard tries to write an incompatible program to a Remote, the Wizard will give a fault message and the program will not be written. Select another program, or convert the current program to the correct Remote type with:

- **Tools → Change Module Type**
- In the **Module** field, select **DX UCM Master Remote**
- In the **Convert to** field, select the correct Remote type
- Click **Convert**

It will now be possible to write the program to the Remote.

#### 4.1.4 Replacing modules other than a DX2 Master Remote or DX2 Power Module.

When replacing modules on an existing chair, you should always consult the relevant manual of the module that you are replacing. The following information is provided as a brief overview, and does not replace the more detailed information in the relevant manual.

The following modules do not hold any programming information and can be replaced without the need to re-programme:

- |           |           |
|-----------|-----------|
| ○ DX-CLAM | ○ DX-ECU  |
| ○ DX-TAM  | ○ DX-ARC  |
| ○ DX-RJM  | ○ DX-LM   |
| ○ DX-ACU  | ○ iPortal |

The following modules will download programming information from the Master Remote, as such they do not need to be re-programmed:

- DX-SLM
- DX2-ACT

The following modules store some parameters in the module itself and will need to have their programming checked, and, if necessary, be re-programmed via the Wizard when replaced:

- DX-IRIS2
- DX-5SW secondary remote

- DX-SNP secondary remote

Non DX2 Power Modules:

- Non DX2 Power Modules such as DX-GB will perform an Auto-Download from the Master Remote

Non DX2 Master Remotes:

- If a non-DX2 Master Remote is replaced, the values stored on the NEW Master Remote will overwrite the values stored in other modules. After replacement the chair MUST be re-programmed using the Wizard or HHP.
- If the replacement remote has been pre-programmed by the OEM then the system may not need reprogramming.



## 4.2 Parameter list










Key: ✓ Editable at this level (see section 7.1.2.1 of the DX System manual)




👁 Viewable at this level

Grey Look in the DX System Manual for the description of this parameter










Parameter	Possible Values	Default	HHP	Life	Std	Adv
<b>AJR User Options (DX Mode)</b>						
Left-Right Mounting	+/- Drive ^/V Accessory +/- Accessory ^/V Drive	+/- Drive ^/V Accessory	-	✓	✓	✓
[+ -] [^ v] Button Mode	Up only Up and Down	Up and Down	-	✓	✓	✓
[I II] Function Button	Speed Pot Full Lighting Warning + Hazard Warning + ECU Alarm ECU Alarm + Toggle ECU Alarm	Speed Pot	-	✓	✓	✓
External Mode Up/Down	Drive Up + Accessory Up Drive Up + Drive down Drive-Accy Up + Drive-Accy Down Accessory Up + Accessory Down	Drive Up + Accessory Up	-	✓	✓	✓
Jack Socket I (UCI-1)	Off  Drive Up + Drive Down + Alarm + Horn  Drive-Accy Up + Drive-Accy Down + Alarm + Horn  (Fail safe) Alarm + Emergency Stop  (Fail safe) Drive Mode: Up + Down  (Fail safe) Drive mode accessories menu: Up + Down  (Fail safe) Accessory Mode:	Drive↑ + Drive↓ + Alarm + Horn	-	✓	✓	✓

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
	Up + Down  (Fail safe) Drive Mode Up + Accessory Mode Up					
Jack Socket II (UCI-2)	Off  Accy Up + Accy Down + Alarm + Horn  Accy-Drive Up + Accy-Drive Down + Alarm + Horn  (Fail safe) Alarm + Emergency Stop  (Fail safe) Drive Mode: Up + Down  (Fail safe) Drive Mode: accessories menu: Up + Down  (Fail safe) Accessory Mode: Up + Down  (Fail safe) Drive Mode Up + Accessory Mode Up	Accy Up + Accy Down + Alarm + Horn	-	✓	✓	✓
Accessory Menu Navigation	Normal Swap ↑→ and ←↓	Normal	-	✓	✓	✓
OBP Menu	Yes/No	Yes	-	✓	✓	✓
Lighting Menu	Yes/No	Yes	-	✓	✓	✓
ECU1 CH1-6 Mouse Mode Menu	Yes/No	Yes	-	✓	✓	✓
ECU1 CH7 (Alarm) Menu	Yes/No	Yes	-	✓	✓	✓
ECU1 CH8 Menu	Yes/No	Yes	-	✓	✓	✓
ECU2 CH9-16 Menu	No CH9 CH9 to 10 CH9 to 16	CH9 - 16	-	✓	✓	✓
Mode Change Beep	Yes/No	No	-	✓	✓	✓
Reversing Beeper	Yes/No	No	-	✓	✓	✓
Indicator Auto Cancel	Off 5 s 10 s 20 s	Off	-	✓	✓	✓

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Lock Enable	Yes/No	No	-	✓	✓	✓
Drive Delay at Power-Up (s)	0 - 10 s	0 s	-	✓	✓	✓
Disable OONAPU Faults	Yes/No	No	-	✓	✓	✓
Maximum Profile Number	1 – 5	5	-	✓	✓	✓
Allow non-driving profile	Yes/No	No	-			✓
Power-Up Profile Number	Last used Profile 1 Profile 2 Profile 3 Profile 4 Profile 5 Profile 0	Last used	-		✓	✓
Return To Last Menu	Yes/No	No	-		✓	✓
Wrap Profiles	Yes/No	Yes	-			✓
Change Profile While Driving	Yes/No	No	-		✓	✓
<b>AJR User Profile Options</b>						
Joystick Only Operation	Yes/No	No	-	✓	✓	✓
Reverse Escape Enable	Yes/No	No	-		✓	✓
Escape Timeout	0 – 255 s	0 s	-	✓	✓	✓
Mouse Inactivity Timeout	Off 5 – 60 min	Off	-		✓	✓
Joystick Source	Master ACU RJM Display ARC ExtNV1 ExtNV2 None	Master	-	✓	✓	✓
Neutral Maximum	10 – 50 %	10 %	-	✓	✓	✓
Joystick Switch Threshold	20 – 80 %	50 %	-	✓	✓	✓
Short Throw Shape	100 – 200 %	200 %	-	✓	✓	✓
Short Throw Travel	100 – 200 %	100 %	✓	✓	✓	✓
Joystick Angle Compensation	-90° to +90°	0°	✓	✓	✓	✓
Joystick Swap Forward/Reverse	Yes/No	No	-	✓	✓	✓
Joystick Swap Left/Right	Yes/No	No	-	✓	✓	✓
Rotate Joystick 90°	Yes/No	No	-	✓	✓	✓
Sleep Mode Enable	Yes/No	No	-	✓	✓	✓
Sleep Timeout	1 – 60 min	5 min	-	✓	✓	✓

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Joystick Wake-up from Sleep (Enable Joystick Wakeup)	Yes/No	Yes	-	✓	✓	✓
<b>Drive Profiles</b>						
Forward Speed @ Maximum	10 – 100 %	N/A	✓	✓	✓	✓
Forward Speed @ Minimum	5 – 100 %	5 %	✓	✓	✓	✓
Forward Acceleration	10 – 70 %	40 %	✓	✓	✓	✓
Forward Deceleration	15 – 100 %	60 %	✓	✓	✓	✓
Reverse Speed @ Maximum	10 – 100 %	N/A	✓	✓	✓	✓
Reverse Speed @ Minimum	5 – 100 %	5 %	✓	✓	✓	✓
Reverse Acceleration	10 – 70 %	70 %	✓	✓	✓	✓
Reverse Deceleration	15 – 100 %	30 %	✓	✓	✓	✓
Turning Speed @ Maximum	20 – 100 %	N/A	✓	✓	✓	✓
Turning Speed @ Minimum	5 – 100 %	5 %	✓	✓	✓	✓
Turning Acceleration	10 – 70 %	40 %	✓	✓	✓	✓
Turning Deceleration	15 – 100 %	70 %	✓	✓	✓	✓
Non-Linear Turn	No / Yes	No	-		✓	✓
Turn Damping	10 – 100 %	40%	-	✓	✓	✓
Speed Damping	5 – 100 %	40 %	-	✓	✓	✓
Soft-Start Acceleration	100 – 200 %	200 %	-	✓	✓	✓
Soft-Start Time	100 – 200 %	100 %	-	✓	✓	✓
Min To Max Decel Ratio	4 – 100 %	20 %	-	✓	✓	✓
Load Compensation Response	0 – 100 %	100 %	✓	✓	✓	✓
Grip	5 – 100 %	100%	✓	✓	✓	✓
Speed x Turn for Grip	5 – 100 %	100 %	-			✓
Accel Out Of A Turn For Grip	0 – 200 %	100 %	-			✓
Accel Into A Turn For Grip	0 – 200 %	100 %	-			✓
Turning @ Full Speed	5 – 100 %	100 %	-			✓
Turning Accel @ Full Speed	100 – 300 %	100 %	-			✓
<b>System Settings</b>						
Actuator System Type	CLAM or TAM DX2 Actuators	DX2 Actuators	-		✓	✓
Actuator System is Critical	Yes/No	No	-		✓	✓
Actuator System Missing	Stop Drive Slowdown Drive	Stop Drive	-		✓	✓
System Slowdown (CLAM Slowdown)	0 – 100 %	20 %	-		✓	✓

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Neutral to PB Delay	20 – 5000ms	100ms	-			✓
Chair Speed Enable	No / Yes	No	-		✓	✓
Chair Speed	0 - 10	10	✓	✓	✓	✓
CANH Power Switch	No / Yes	Yes	-		✓	✓
CAN Terminator	No / Yes	Yes	-		✓	✓
UCM Joystick Swap Left/Right	No / Yes	No	-		✓	✓
Rotate UCM Joystick	No / Yes	No	-		✓	✓
ACU Enable	No / Yes	Yes	-		✓	✓
ACU Joystick Swap Left/Right	No / Yes	No	-		✓	✓
RJM Enable	No / Yes	Yes	-		✓	✓
RJM Joystick Swap Left/Right	No / Yes	No	-		✓	✓
RJM has Analog Joystick	No / Yes	Yes	-		✓	✓
<b>Actuator Settings (CLAM/TAM)</b>						
Actuator While Driving	No / Yes	No	-		✓	✓
Actuator 1 Enable	No / Yes	Yes	-		✓	✓
Actuator 2 Enable	No / Yes	Yes	-		✓	✓
Actuator 3 Enable	No / Yes	Yes	-		✓	✓
Actuator 4 Enable	No / Yes	Yes	-		✓	✓
Actuator 5 Enable	No / Yes	Yes	-		✓	✓
Actuator 1 Current Limit	2.1 - 14 A	6.1 A	-		✓	✓
Actuator 2 Current Limit	2.1 - 14 A	6.1 A	-		✓	✓
Actuator 3 Current Limit	2.1 - 14 A	6.1 A	-		✓	✓
Actuator 4 Current Limit	2.1 - 14 A	6.1 A	-		✓	✓
Actuator 5 Current Limit	2.1 - 14 A	6.1 A	-		✓	✓
Actuator Timeout	1 – 120 s	30 s	-		✓	✓
Actuator Open Circuit Test	No / Yes	No	-		✓	✓
<b>Lighting Settings (CLAM/LM/LMZ)</b>						
CLAM Lighting Enable	No / Yes	Yes	-		✓	✓
Lighting Module Enable	No / Yes	No	-		✓	✓
Lighting Module is Critical	No / Yes	Yes	-			✓
Side Lights Enable	No / Yes	Yes	-		✓	✓

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Indicators Enable	No / Yes	Yes	-		✓	✓
Hazard Lights Enable	No / Yes	Yes	-		✓	✓
Remember Hazard State	No / Yes	Yes	-			✓
<b>Remote Control Settings (ARC/RSM)</b>						
ARC Enable	No / Yes	No	-		✓	✓
ARC Channel 1&2	Actuator 1&2 ARC Switch Drive ARC Switch Drive + Act. 1&2 in Prof. 0	Actuator 1&2	-		✓	✓
ARC Channel 3	Actuator 3 L+R Indicator	Actuator 3	-		✓	✓
ARC Channel 4	Actuator 4 Horn + Light	Actuator 4	-		✓	✓
ARC Channel 5	Actuator 5 Profile Up + Profile Down	Actuator 5	-		✓	✓

## 4.2.1 AJR User Options (DX Mode)

### 4.2.1.1 Left-Right Mounting

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Left-Right Mounting	+/- Drive ^/v Accessory +/- Accessory ^/v Drive	+/- Drive ^/v Accessory	-	✓	✓	✓

Defines the function of the plus/minus  and up/down  buttons.

**+/- Drive** - The plus/minus button selects the Drive Profile;  
**^/v Accessory** the up/down button selects the accessories.

**+/- Accessory** - The plus/minus button selects the accessories;  
**^/v Drive** the up/down button selects the Drive Profile.

The location of the accessory icons on the side of the screen does not change with the setting of this parameter.

### 4.2.1.2 [+ -] [^ v] Button Mode

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
[+ -] [^ v] Button Mode	Up only Up and Down	Up and Down	-	✓	✓	✓

This parameter defines the operation of the Drive Profile Selection button.

This button can either be the plus/minus  or the up/down  button, dependent on the value of **Left-Right Mounting**.

**Up Only** - The Up and Down buttons both perform 'Up'.

**Up and Down** - The Up button performs 'Up';  
the Down button performs 'Down'




















**Warning:**

If **[+ -] [^ v] Button Mode** has the value 'Up Only', **Wrap Profiles** (see DSM 5.3.8.2) **must** be set to 'Yes'. Otherwise the user will not be able to select a Drive Profile that is lower than the current Drive Profile.

#### 4.2.1.3 [I II] Function Button

Parameter	Possible Values	Default	HHP	Life	Std	Adv
[I II] Function Button	Speed Pot Full Lighting Warning + Hazard Warning + ECU Alarm ECU Alarm + Toggle ECU Alarm Warning + Actuator Actuator up+down Two Actuators	Speed Pot	-	✓	✓	✓

This parameter assigns the operation of the function button  during **Drive Mode - Standard** (see 2.5.1).

Parameter Value	I	II
Speed Pot	 slower	 faster
Full Lighting	 Left indicator > 2s: Side lights	 Right indicator >2s: Hazard lights
Warning + Hazard	 Side lights	 Hazard lights
Warning + ECU Alarm	 Side lights	 ECU Alarm
ECU Alarm + Toggle ECU Alarm	 ECU Alarm	 ECU Alarm Latched
Warning + Actuator	 Side lights	 Actuator Aux1 Up + Down toggle
Actuator up + down	 Actuator Aux1 up	 Actuator Aux1 down
Two Actuators	 Actuator Aux1 Up + Down toggle	 Actuator Aux2 Up + Down toggle



#### Note:

Some values can only be used when the configuration of the chair supports it.

Actuators Aux1 and Aux2 have function numbers F6 and F35 (see 2.5.4). For this reason, the function buttons can only operate actuators in combination with a DX2-ACT module.



When an actuator function is assigned to one or both of the function keys with one of the parameters: **Warning + Actuator**, **Actuator up + down**, or **Two Actuators**, the user can **simultaneously** drive the chair and operate the actuator(s). This could be useful, for example, when a user begins a descent on a slope, and without stopping the chair, can recline the back of the chair for balance.

If a function button has been assigned an actuator toggle control (**Actuator Aux1 Up + Down toggle**, or **Actuator Aux2 Up + Down toggle**), the actuator is extended or retracted by pressing and holding the function button. To reverse the direction of the actuator, simply release the button momentarily, and then press and hold it again. Each time the button is pressed, the actuator is driven in the opposite direction.

As an example, if function button II has been assigned **Actuator Aux1 Up + Down toggle**, and assuming the actuator is in the fully retracted position, pressing and holding function button II will start extending the actuator. When the button is released, the actuator stops. When the button is pressed again, the actuator will begin to retract.

#### 4.2.1.4 External Mode Up/Down

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
External Mode Up/Down	Drive Up + Accessory Up Drive Up + Drive down Drive-Accy Up + Drive-Accy Down Accessory Up + Accessory Down	Drive Up + Accessory Up	-	✓	✓	✓

This parameter defines the operation of all external modules that use the generic 'DX-Profile Up' and 'DX-Profile Down' signals. For example, the ARC and some RJM Secondary Remotes can generate this signal with their 'Up' and 'Down' buttons.

**Drive Up + Acc Up** - The 'Up' signal generates 'Drive Profile Up'; the 'Down' signal generates 'Accessory Up'.

**Drive Up + Drive Dn** - The 'Up' signal generates 'Drive Profile Up'; the 'Down' signal generates 'Drive Profile Down'.

**Accy Up + Accy Dn** - The 'Up' signal generates 'Accessory Up'; the 'Down' signal generates 'Accessory Down'.

**Drive-Accy Up + Drive-Accy Down** - This setting can be used during joystick-only mode. One button/signal scrolls through the home levels of all accessories including the drive home level, after which the joystick can be used to select and operate the selected accessory or Drive Mode.

#### 4.2.1.5 Jack Socket Operation

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Jack Socket I (UCI-1)	Off					
	Drive Up + Drive Down + Alarm + Horn					
	Drive-Accy Up + Drive-Accy Down + Alarm + Horn					
	(Fail safe) Alarm + Emergency Stop	Drive↑ + Drive↓ + Alarm + Horn	-	✓	✓	✓
	(Fail safe) Drive Mode: Up + Down					
	(Fail safe) Drive mode accessories menu: Up + Down					
	(Fail safe) Accessory Mode: Up + Down					
	(Fail safe) Drive Mode Up + Accessory Mode Up					
Jack Socket II (UCI-2)	Off					
	Accy Up + Accy Down + Alarm + Horn					
	Accy-Drive Up + Accy-Drive Down + Alarm + Horn					
	(Fail safe) Alarm + Emergency Stop	Accy Up + Accy Down + Alarm + Horn	-	✓	✓	✓
	(Fail safe) Drive Mode: Up + Down					
	(Fail safe) Drive Mode: accessories menu: Up + Down					
	(Fail safe) Accessory Mode: Up + Down					
	(Fail safe) Drive Mode Up + Accessory Mode Up					

This parameter defines the operation of the UCI Jack Socket inputs for the different input resistances. 'Off' disables the inputs completely.

The Drive-Accy option for UCI 1 will scroll through all available accessories and then return to Drive Mode, with the current Drive Profile selected.


See also **Universal Control Inputs (UCI 1/UCI 2)**, section 2.7.2.

#### 4.2.1.6 Accessory Menu Navigation

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Accessory Menu Navigation	Normal Swap ↑→ and ←↓	Normal	-	✓	✓	✓

This parameter can swap 'joystick forward' with 'joystick right' and 'joystick down' with 'joystick left'. Use this to adapt the navigation of the menus to the preference of the user.





**Note:**

*The axis is only swapped in Modes that use the joystick as a switched input. Modes that use the joystick as a proportional input (for example Drive Mode) ignore the value of **Accessory Menu Navigation**.*

#### 4.2.1.7 OBP Menu

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
OBP Menu	Yes/No	Yes	-	✓	✓	✓

This parameter can show or hide the **On-Board Programming** menu (see section 2.5.3) from the accessory menu list (see section 0).

**Yes** - The OBP menu is present in the accessory list.

**No** - The OBP menu is hidden from the accessory list.

#### 4.2.1.8 Lighting Menu

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Lighting Menu	Yes/No	Yes	-	✓	✓	✓

This parameter can show or hide the Lighting Mode (see section 2.5.5) from the accessory menu list (see section 0).

**Yes** - The Lighting menu is present in the accessory list.

**No** - The Lighting menu is hidden from the accessory list.

#### 4.2.1.9 ECU Menu

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
ECU1 CH1-6 Mouse Mode Menu	Yes/No	Yes	-	✓	✓	✓
ECU1 CH7 (Alarm) Menu	Yes/No	Yes	-	✓	✓	✓
ECU1 CH8 Menu	Yes/No	Yes	-	✓	✓	✓
ECU2 CH9-16 Menu	No CH9 CH9 to 10 ... CH9 to 16	CH9 - 16	-	✓	✓	✓

This parameter can show or hide the different ECU channels of the ECU Mode (see section 2.5.6 and 2.5.7) from the accessory menu list (see section 0).

**Yes** - The ECU channel is present in the ECU menu list.

**No** - The ECU channel is hidden from the accessory list.

If all the ECU parameters have the value 'No', the ECU menu will not be available in the accessory menu list.

#### 4.2.1.10 Mode Change Beep

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Mode Change Beep	Yes/No	No	-	✓	✓	✓

If this parameter has the value 'Yes', the AJR will produce an audible beep on the following instances:

- Power on
- Power off
- Lock
- Unlock
- Sleep
- Drive Profile change
- Accessory menu change

#### 4.2.1.11 Reversing Beeper

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Reversing Beeper	Yes/No	No	-	✓	✓	✓

If this parameter has the value 'Yes', the AJR will produce an audible beep once a second while the powerchair drives in reverse.


#### 4.2.1.12 Indicator Auto Cancel

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Indicator Auto Cancel	Off 5 s 10 s 20 s	Off	-	✓	✓	✓

**Off** - After the indicator lights are switched on, they will stay on until the user switches them off.

**5-20** - After the indicator lights are switched on, they will automatically switch off after **Indicator Auto Cancel** seconds.

#### 4.2.1.13 Power-Up Profile Number

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Power-Up Profile Number	Last used Profile Profile 1 – 5 Profile 0 (see note below)	Last used	-		✓	✓

The **Power-up Profile Number** is the Profile in which the DX System will start when the system is switched on. If Power-up Profile Number is set to 'Last Used Profile', the DX System will start up with the same Drive Profile that was active when the DX System was switched off.

**Note:** Since the introduction of software version 2.03, Profile 0 is no longer permissible as a possible value. If this is selected, it will automatically default to Profile 1.

#### 4.2.1.14 Return To Last Menu

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Return To Last Menu	Yes/No	No	-		✓	✓

If set to 'No', the Remote will power up into the Drive Menu. If set to 'Yes' and the Remote was in an Accessory Menu when it powered down, then the Remote will return to that Accessory Menu on power up.

This feature is only available on DX2 Master Remotes manufactured with serial numbers I13xxxxx or later, and older DX2 Master Remotes will always power up in the Drive Menu.

## 4.2.1.15 Joystick Only Operation

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Joystick Only Operation	Yes/No	No	-	✓	✓	✓

This parameter defines whether the AJR menu is operating in Standard Mode (see 2.4.1) or in Joystick-only Four-Quadrant (4Q) Mode (see 2.4.3).


**Joystick Only Operation** can be set for every Drive Profile separately, including attendant mode.

## 4.2.1.16 Reverse Escape Enable

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Reverse Escape Enable	Yes/No	No	-	👁	✓	✓

This parameter is only used in 4Q Drive Mode (see section 2.6.1).

- No** - Joystick reverse always makes the powerchair drive in reverse / the mouse cursor move down.
- Yes** - Joystick reverse exits from Drive Mode / Mouse Mode and returns to the 4Q Home Level, if the 'joystick reverse' movement is larger than the value of the **Joystick Switch Threshold** parameter (see DSM section 5.3.10.16). If the 'joystick reverse' movement is smaller than the threshold, the powerchair will drive in reverse / the mouse cursor will move down.



**Note:**

The values of the joystick rotation and axis swapping parameters have no effect on the operation of **Reverse Escape Enable**. Always use a physical 'joystick reverse' movement to exit from the 4Q Drive Mode.

## 4.2.1.17 Escape Timeout


Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Escape Timeout	0 – 255 s	0 s	-	✓	✓	✓

This parameter is only used in 4Q menu navigation mode (see section 2.4.3), and only during the following menus: Drive Mode (2.6.1), Actuator Mode (2.6.6), Lighting Mode (2.6.5) and OBP (2.6.4).

If the user has not moved the joystick out of the neutral location during the time that is set with the **Escape Timeout** parameter, the menu will exit the current mode and return to the 4Q Home Level.

- 0** - The menu does not exit to the Home Level at all (timeout is off).
- 1-255** - The menu exits to the Home Level after **Escape Timeout** seconds.
- Off** - The menu does not exit to the Home Level at all (timeout is off).
- 5-60** - The menu exits to the Home Level after **Mouse Inactivity Timeout** minutes.

#### 4.2.1.18 Mouse Inactivity Timeout

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Mouse Inactivity Timeout	Off 5 – 60 min	Off	-		✓	✓

This parameter is only used in 4Q menu navigation mode (see section 2.4.3), and only during the following menus: iPortal2, ECU1 (2.6.7) and ECU2 (2.6.8).

If the user has not moved the joystick out of the neutral location during the time that is set with the **Mouse Inactivity Timeout** parameter, the menu will exit the current mode and return to the 4Q Home Level.

**Off** - The menu does not exit to the Home Level at all (timeout is off).

**5-60** - The menu exits to the Home Level after **Mouse Inactivity Timeout** minutes.

## 4.2.2 Added/changed DX System parameters

### 4.2.2.1 Joystick Angle Compensation

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Joystick Angle Compensation	-90° to +90°	0°	✓	✓	✓	✓

If a user has difficulty with deflecting the joystick straight forward, **Joystick Angle Compensation** can correct for the amount of out-of-centre joystick deflection.

**Joystick Angle Compensation** must be set for every Drive Profile separately. The value only applies to the joystick that is used in that particular Drive Profile.

Different angle compensations can be applied to different joysticks. For example, the user joystick can be compensated while the attendant joystick is not compensated.



#### Notes:

1. If more than one Drive Profile is used for a particular joystick and the value of **Joystick Angle Compensation** differs between these Drive Profiles, the wheelchair user may experience confusion and drive erratically.
2. The value of **Joystick Angle Compensation** is additional to the value set by **Rotate Joystick 90°** (see 4.2.2.4)
3. Do not use **Veer Compensation** (see DSM section 4.3) to compensate for out-of-centre joystick deflection by the user.

#### 4.2.2.2 Joystick Swap Forward/Reverse

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Joystick Swap Forward/Reverse	Yes/No	No	-	✓	✓	✓

If this parameter is set to 'Yes', the forward and reverse operation of the joystick is swapped.



Set **Joystick Swap Forward/Reverse** to 'Yes' if a remote is mounted in a reverse orientation.

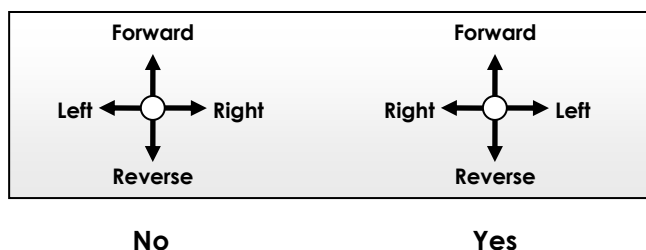
**Joystick Swap Forward/Reverse** must be set for every Drive Profile separately. The value only applies to the joystick that is used in that particular Drive Profile.

Different settings can be applied to different joysticks. For example, the attendant joystick can be forward-reverse swapped while the user joystick is not swapped.

#### 4.2.2.3 Joystick Swap Left/Right

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Joystick Swap Left/Right	Yes/No	No	-	✓	✓	✓

If this parameter is set to 'Yes', the left and right operation of the joystick is swapped.



Set **Joystick Swap Left/Right** to 'Yes' if a remote is mounted:

- upside-down (for example with chin or tray applications)
- vertically to give forward driving when the joystick is deflected reverse.

**Joystick Swap Left/Right** must be set for every Drive Profile separately. The value only applies to the joystick that is used in that particular Drive Profile.

Different settings can be applied to different joysticks. For example, the user joystick can be left-right swapped while the attendant joystick is not swapped.



#### 4.2.2.4 Rotate Joystick 90°

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Rotate Joystick 90°	Yes/No	No	-	✓	✓	✓

If this parameter is set to 'Yes', the operation of the joystick is rotated by 90°.



**Rotate Joystick 90°** must be set for every Drive Profile separately. The value only applies to the joystick that is used in that particular Drive Profile.

Different settings can be applied to different joysticks. For example, the user joystick can be rotated while the attendant joystick is not rotated.

To rotate the other way around (Forward → Left), set **Joystick Swap Forward/Reverse** (4.2.2.2) and **Joystick Swap Left/Right** (4.2.2.3) to 'Yes' as well.

Use a forward/backward symmetrical restrictor plate (for example, a circular or square restrictor plate) if this parameter is set to 'Yes'.

#### 4.2.2.5 Load Compensation Response

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Load Compensation Response	0 – 100 %	100 %	✓	✓	✓	✓



**Note:**

*This parameter is only used when a DX2 Power Module is present in the system, and the **LC Response Profiled** parameter in the Power Module section is set to 'Yes'; each Drive Profile can then be set separately. If **LC Response Profiled** is set to 'No', then the **Load Compensation Response** is overridden with the **LC Response Default** for all Drive Profiles.*

**Load Compensation Response** lowers the **Load Compensation** value when the powerchair drives at higher speeds. At lower speeds the **Load Compensation** setting is not affected.

This makes it possible to set a **Load Compensation** value that is high enough to provide zero rollback and a fast response at a low speed, while a soft **Load Compensation Response** value retains smooth control at higher speeds.


The DX2 Power Module provides a default setting in the **LC Response Profiled** parameter. However, the **Load Compensation Response** parameter can override this default for each individual Drive Profile separately. This allows for responsive Drive

Profiles as well as smooth Drive Profiles in one wheelchair program. For example a responsive sports profile and a smooth cruising profile.

Load Compensation Response (if LC Response Profiled is set to 'Yes') Location: DX2 Master Remote (profiles) Set for each Drive Profile separately		LC Response Default (if LC Response Profiled is set to 'No') Location: DX2-PMA Power Module One value for all Drive Profiles together	
Value	Result	Value	Result
0 %	Profiled response disabled, use LC Response Default value for this profile	-	-
1 – 50 %	Too low; not recommended	-	-
50 – 70 %	Soft response	50 – 70 %	Soft response
70 – 90 %	Normal response	70 – 90 %	Normal response
90 – 99 %	Hard response	90 – 99 %	Hard response
100 %	Profiled response disabled, use LC Response Default value for this profile	100 %	Very hard response, Load Compensation value not lowered at any speed

For more information see the installation manual of the DX2 Power Module

#### 4.2.2.6 Actuator System Type

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Actuator System Type	CLAM or TAM DX2 Actuators	DX2 Actuators	-		✓	✓

It is not possible to use a CLAM/TAM and a DX2 Actuator Module simultaneously in a DX System.

**CLAM or TAM** - The CLAM or TAM Module is enabled.  
The DX2 Actuator Modules will not be detected, even if they are connected to the DX System.

**DX2 Actuators** - The CLAM or TAM Module is disabled and will not be detected, even if it is connected to the DX System.  
The DX2 Actuator Modules will be detected successfully if they are connected to the DX System.



#### Note:

A Wizard program (template) that is set up to include DX2 Actuator Modules is required to configure the operation of the DX2 Actuator System.


#### 4.2.2.7 Actuator System is Critical

Parameter	Possible Values	Default	HHP	Life	Std	Adv
Actuator System is Critical	Yes/No	No	-		✓	✓

- Yes** – The DX System slows down or stops the powerchair (depending on the value of **Actuator System Missing**) if:
- the DX System cannot detect the actuator system that has been set by **Actuator System Type**, or
  - the communication with the actuator system is lost.
- No** – The DX System considers the actuator system as optional and allows the powerchair to drive normally, whether or not an actuator system is detected.

**Actuator System is Critical** is normally set to 'No', unless the actuator system performs safety critical tasks such as slowing down or stopping the chair in some seating positions.

#### 4.2.2.8 Actuator System Missing

Parameter	Possible Values	Default	HHP	Lite	Std	Adv
Actuator System Missing	Stop Drive Slowdown Drive	Stop Drive	-		✓	✓

If the DX System cannot detect the actuator system that has been set by **Actuator System Type**, and **Actuator System is Critical** has the value 'Yes', the DX System performs the following action, depending on the value of **Actuator System Missing**:

- Stop Drive** – The DX System does not allow the powerchair to drive and generates a Module Fault (flash code 1).
- Slowdown Drive**– The DX System reduces all speeds by the value of the **System Slowdown** parameter.

If **Actuator System is Critical** has the value 'No', the value of **Actuator System Missing** is ignored.

## 5 Appendices

### 5.1 Programming Accessories

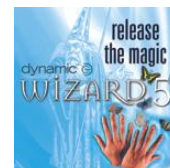
#### Dynamic DX Programming Accessories

Part Description	DC Part #	Qty/Unit
------------------	-----------	----------

Wizard Kit – Programming Kit Contains software, cables and DWIZ-ADAPT adapter (no dongle)

DWIZ-KIT

1



Wizard – Software Only (CD)

DWIZ-SW

1

#### Wizard Dongles – Parallel port

OEM/Advanced version

DWD-OEM

1

Enhanced dealer/Standard version

DWD-EDL

1

Dealer/Lite version

DWD-DLR

1

Factory version

DWD-FAC

1

#### Wizard Dongles – USB port

OEM/Advanced version

DWD-OEM-U

1

Enhanced dealer/Standard version

DWD-EDL-U

1

Dealer/Lite version

DWD-DLR-U

1

Factory version

DWD-FAC-U

1

DX Hand Held Programmer

DX-HHP

1



Programming cable adapter

DWIZ-ADAPT

1

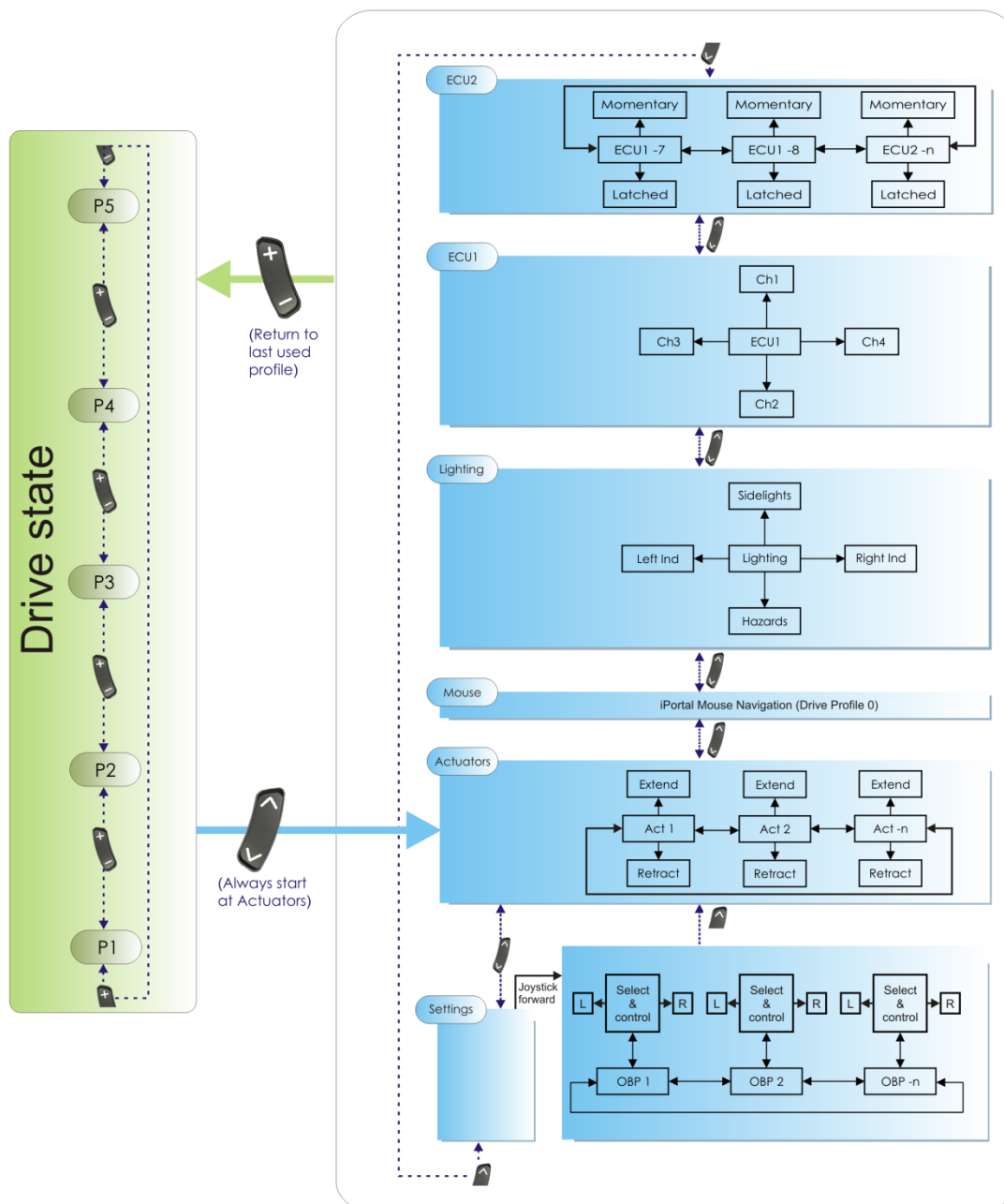


#### Note:

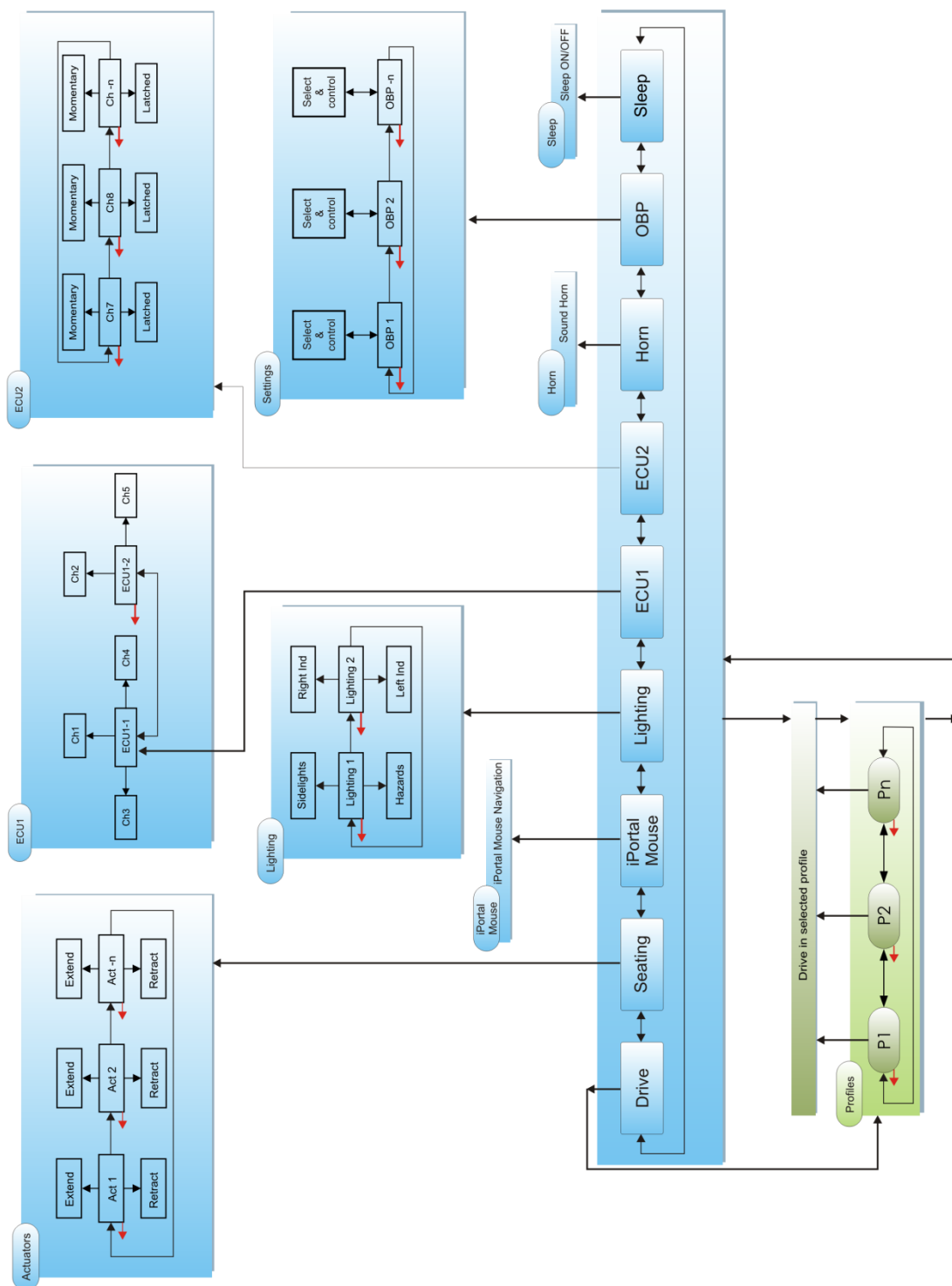
The DX2 AJR does not have a separate programming connector. Program the DX2 AJR through the charging connector. To connect the Wizard to the XLR charging connector, a DWIZ-ADAPT adapter is needed.

## 5.2 Full Menu Maps

### 5.2.1 Standard menu navigation



## 5.2.3 4Q menu navigation



## 5.3 **Intended Use and Regulatory Statement**

### **Intended Use**

The DX2-REM55x is a component of a DX system intended to allow powered wheelchair users interaction with the DX System. The DX2-REM55x offers flexibility in integrating compatible input and output devices, as configured and connected, and provides extensive adaptability to meet specific user needs through optimal programmability.

The DX system is intended to operate powered wheelchairs utilizing 24V motors with integrated park brakes.

The powerchair manufacturers are provided with the integration, set-up, operating environment, test and maintenance information needed to ensure reliable and safe use of the controller.

### **Device Classification**

#### **Europe**

The DX2-REM55x is a component of a Class I medical device as detailed in the Council Directive 93/42/EEC concerning Medical Devices.

#### **USA**

The DX2-REM55x is a component of a Class II medical device (Powered Wheelchair) as detailed in 21 CFR § 890.3860.

### **Compliance and Conformance with Standards**

In accordance with the device classification, the DX2-REM55x is designed to enable the powerchair manufacturer to comply with the relevant requirements of the European Medical Device Directive 93/42/EEC and 21 CFR § 820.

The DX2-REM55x has been designed such that the combination of the wheelchair and the DX Controller, along with accessories as applicable, complies with the Essential Requirements of the MDD by adopting relevant clauses of harmonised standards EN12184 and EN12182 and the FDA Consensus standard ISO 7176 for performance.

However, final compliance of the complete powerchair system with international and national standards is the responsibility of the powerchair manufacturer or installer.

## 5.4 Maintenance

1. All Dynamic electronic components should be kept free of dust, dirt and liquids. For cleaning the product, use a cloth dampened with warm soapy water. Do not use chemicals, solvents or abrasive cleaners, as this may cause damage to the product.
2. All vehicle components should be regularly checked for loose, damaged or corroded components such as connectors, terminals, or cabling. All cables should be restrained to protect them from damage. Damaged components should be replaced.
3. All switchable functions on the Dynamic electronics system should be regularly tested to ensure they function correctly.
4. There are no user-serviceable parts in any Dynamic electronic component. Do not attempt to open any case or undertake any repairs, else warranty will be voided.
5. Where any doubt exists, consult your nearest service centre or agent.

**Warning:**

*If any component is damaged in any way, or if internal damage may have occurred (for example by being dropped), have it checked by qualified personnel before operating.*

## 5.5 Warranty

All equipment supplied by Dynamic Controls is warranted by the company to be free from faulty materials or workmanship. If any defect is found within the warranty period, the company will repair the equipment, or at its discretion, replace the equipment without charge for materials and labour.

This Warranty is subject to the provisions that the equipment:

- has been correctly installed.
- has been thoroughly checked upon completion of installation, and all programmable options correctly adjusted for safe operation prior to use.
- has been used solely in accordance with this manual and the DX System Manual.
- has been properly connected to a suitable power supply in accordance with this manual and the DX System Manual.
- has not been subjected to misuse or accident, or been modified or repaired by any unauthorised personnel.
- has been used solely for the driving of electrically powered wheelchairs in accordance with the intended use and the recommendations of the wheelchair manufacturer.



## 5.6 Safety and Misuse Warnings

The DX2 AJR is part of the DX System and therefore all safety and misuse warnings that appear in the DX System Manual apply to the DX2 AJR as well.  
See DSM section 10.4.

### Additional warnings to be included in the User Manual

The following warnings must be passed on to the operator of the vehicle before use of the product.

- In the case of an emergency while the vehicle is driving, press the On/Off button to perform an emergency stop and turn the system off.
- When you operate the joystick, make sure that your hands and fingers stay on or above the Joystick Skirt.
- If operators of the vehicle are left with limited or no mobility because the vehicle loses electric power or breaks down, it is important that they can still call for assistance from wherever they may be.
- Do not store or operate the DX2 AJR at a temperature that is outside the temperature ranges specified in this manual.

### Service and Configuration Warnings

The following warnings are applicable to the installer and therapist only.

- It is the responsibility of the therapist/ installer to minimize any risk of use error, including those arising from ergonomic features and/or the environment in which the device is intended to be used.
- The DX2 AJR is designed for persons with good cognitive abilities. Users must also be able to move their head around reflections of ambient light on the display.
- The chair set up and configuration process should take into consideration the
  - technical knowledge, experience and education, and
  - medical and physical condition, including the level of disability and capability of each individual user.
- Prior to handing over the vehicle, make sure that users are fully able to operate the product by providing them appropriate training on functionality and safety features, and having them test-drive the vehicle in a safe area in the presence of their agent.

## 5.7 Electromagnetic Compatibility (EMC)

Dynamic Electronic Controllers have been tested on typical vehicles to confirm compliance with the following appropriate EMC standards:

USA: ANSI/RESNA WC/Vol:2 - 1998 Sec 21

Europe: EN12184: 1999 Sec 9.8.1-3

National and international directives require confirmation of compliance on particular vehicles. Since EMC is dependent on a particular installation, each variation must be tested.

### Minimising emissions

To minimise emissions and to maximise the immunity to radiated fields and ESD, follow the general wiring recommendations in section 2.1.1 of the DX System Manual.

## 5.8 Environmental statement



This product has been supplied from an environmentally aware manufacturer.

Please be environmentally responsible and recycle this product at the end of its life through your local recycling facility.

This product may contain substances that could be harmful to the environment if disposed of into a landfill.

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Dynamic Controls is the world's leading manufacturer of electronic controls for power wheelchairs and scooters.  
DYNAMIC was established in 1972 and is headquartered in New Zealand.  
Regional centres are located in Europe, United States, Asia, and Australasia.

ISO 13485 accredited –

DYNAMIC goes above and beyond industry standard expectations to ensure customers receive the best products possible.