dynamic™

iPortal™

iPortal

the wheelchair display interface for powered wheelchairs

User Manual

compatible with

DX™ dx2 SHARK

CE

Made for iPod iPhone

iPortal User Manual Issue 5.06, May 2012

1. About this manual

This User Manual describes how to use *DYNAMIC CONTROLS'* iPortal system; the intended audience is the user of a powered-wheelchair, with the iPortal system already installed on the wheelchair.

The iPortal connects with a *DYNAMIC CONTROLS'* Shark, DX, or DX2 Control System.

Please note that the words ***iOS device*** in this manual refer to *iPhone, and iPod touch*.

The following symbols are used throughout this manual to outline important and helpful information:

WARNING

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.

CAUTION

Cautions provide supporting information in order to install, configure, and use the product. Not following the instructions given in cautions can lead to equipment failure.

NOTE

Notes provide supporting information that may be important to the user, but which does not involve risk to life, or injury, or damage to the equipment.

REFERENCE

Reference directs the reader to a source of further or more detailed information on a given topic.

ⓘ *Key information follows such as a mechanical or electrical specification.*

CAUTION

The Shark, DX and DX2 Systems are not user serviceable. Specialised tools are necessary for the repair of any component. Any attempt to gain access to, or in any way abuse the electronic components and associated assemblies that make up the powered wheelchair system, renders the manufacturer's warranty void and the manufacturer free from liability.

NOTE

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

NOTE

DYNAMIC CONTROLS reserves the right to change the product without notification.

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3. Introduction

3.1. iPortal overview

DYNAMIC CONTROLS' iPortal is a powered-wheelchair display interface. When combined with an iOS device, the iPortal provides the powered-wheelchair user with essential information such as battery state, driving speed, seating adjustments, and an emergency call function.

With additional, and optional software (see the iPortal Accessibility section, later on), the powered-wheelchair's remote joystick can be used to navigate and interact with your iOS device.

3.2. The iPortal in detail

The iPortal is the front-runner of a new generation of powered-wheelchair accessories that present a whole new approach to meeting a powered-wheelchair user's needs and wishes.

The iPortal, which is compatible with *DYNAMIC CONTROLS'* Shark, DX, and DX2 wheelchair controllers, can connect to an iOS device to display powered-wheelchair information in real time.

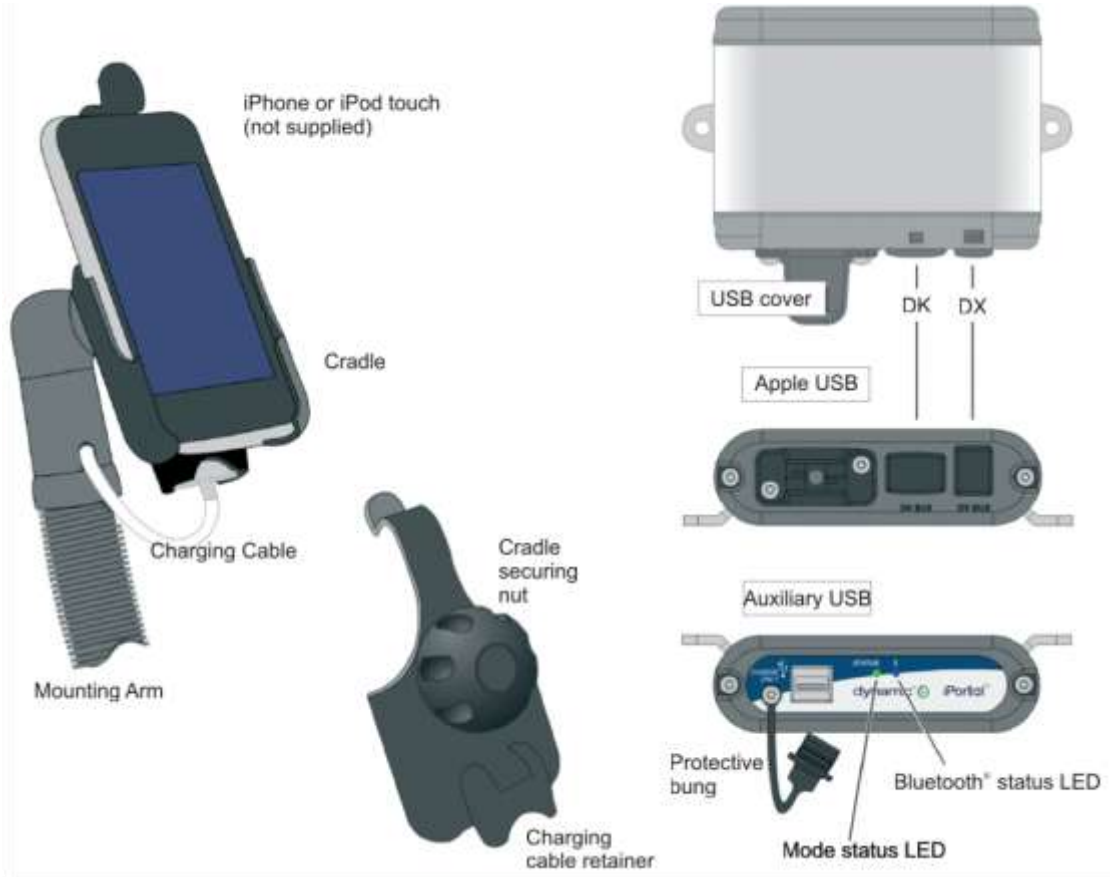
The iPortal has the following features:

- connects with DYNAMIC CONTROLS' Shark, DX or DX2 wheelchair control systems without reprogramming the wheelchair
- an adjustable mounting arm and cradle that attaches to the wheelchair and conveniently positions the iOS device for the user
- an Apple USB charging port to keep the iOS device fully charged

- an auxiliary USB port (charging-only), for other devices
- wheelchair fault logging
- the iPortal Dashboard application displays wheelchair information in real time. Using Bluetooth® technology to connect with the wheelchair system, the following is provided:
    - speed and speed range indicator
    - compass heading (iPhone 3GS (or later) only)
    - seat adjustment indicator
    - battery state
    - drive profile indicator
    - emergency call function (iPhone only)

3.3. The iPortal system components

The following components are provided with the iPortal system. Note the names of the components, as they will be referred to throughout the rest of this manual.



Note: iPhone and iPod touch are <u>not</u> included in the packages. The cables (DK BUS, DX BUS, and Y-cable (for Shark)) must be ordered separately.

4. Setting up the iPortal with your iOS device

Before you can use your iPortal system, you will need to set up the iPortal with your iOS device by placing your iOS device securely in the cradle, and then making sure that the iPortal and your iOS device can communicate correctly. As a one-off set-up process, you will also have to download the iPortal Dashboard application to run on your iOS device.

The following section describes how to get your iPortal working with your iOS device for the first time. The process is as follows:

- **step 1 - place your iOS device in the iPortal cradle**
- **step 2 - pair the iPortal and the iOS device (this means establish a Bluetooth connection)**
- **step 3 - download the iPortal Dashboard application**
- **step 4 - optionally activate the iPortal Accessibility feature**

These topics are explained in more detail, in the sections following.

REFERENCE

For more details of iOS device features, capability, and minimum system requirements visit www.apple.com

The iPhone, and iPod touch User Guides are available from www.apple.com/support

NOTE

Dashboard can only display information it receives from your wheelchair control system. Dashboard does not send any information back to your control system, and cannot control the wheelchair.

4.1. Step 1 - place your iOS device in the iPortal cradle

Make sure that you have the correct cradle for your device. Check the identifier as shown below. Put your iPhone or iPod touch into the iPhone or iPod touch cradle on your wheelchair. When your device is in position, you will feel a click.

Put your iPhone or iPod touch into the cradle at the bottom first. Be sure that your device is correctly located.

Push the top of your device into the cradle. You will feel the device click into position.

✓ Be sure your device is secure in the cradle before driving your wheelchair.

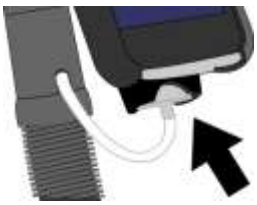
The cradle identifier is on the back of the cradle above the charging cable park.

iPhone

iPod touch

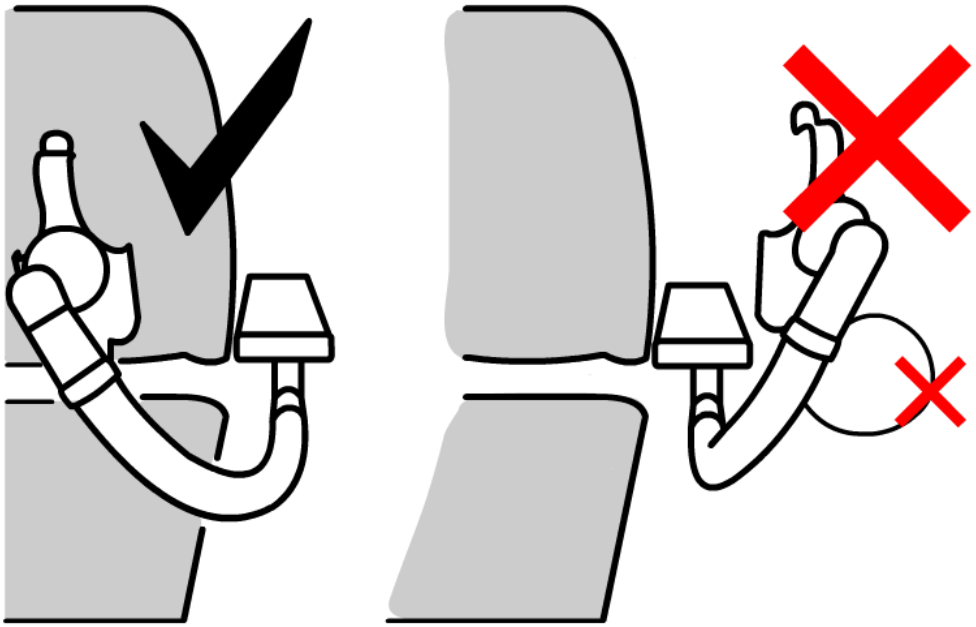
CAUTION

iOS devices are not intended for use in the rain or other wet environments. To protect the iOS device from damage when in a wet environment, remove it from the cradle and store it in a dry place. Put the charging cable connector in the charging cable park.



NOTE

The iPod touch 4 is slimmer than the iPod touch 3. If *you are using the iPod touch 4, add some padding to the iPod cradle to make sure that the iPod fits securely into the cradle.*



Adjust the mounting arm to position your device for comfortable operation.

WARNING
Do not position the cradle outside the frame of the wheelchair otherwise it can strike objects or passers-by, causing injury. Adjust the cradle such that it remains inside the frame of the wheelchair.

Connect the charging cable to your device. When you turn on the power at your Remote, your iOS device will beep or vibrate to confirm that it is receiving a charge from the wheelchair battery.

4.2. Step 2 - pair the iPortal and the iOS device

Your iOS device communicates with the Shark, DX or DX2 wheelchair control system via the iPortal module, using a Bluetooth® wireless link. Before using your iOS device with your wheelchair control system, you must first **pair** (this means establish a Bluetooth connection) your iOS device with the iPortal.

To pair the devices, start from your iOS device **Home** screen. (The numbers in square brackets refer to the images below).

- Browse to **Settings** [1] ► **General** [2] ► **Bluetooth** [3]
- Turn on Bluetooth [4]. Your iOS device will start searching for nearby devices
- On the wheelchair, turn the power off and on [5]
- On your iOS device, when asked for a PIN, enter **7654** [6]
- Tap **Connect** at the top of the iOS device's screen [6]

NOTE
Allow between 30 and 60 seconds for the Enter PIN screen to be displayed.

NOTE
When you see an instruction on your iOS device to "cycle the power", turn the power off at your Remote, and then turn it on again.

After your device and the iPortal have successfully paired, the connection is listed on the Bluetooth® menu [7].

Note that sometimes when attempting to pair your iOS device with the iPortal, one or the other may time out waiting for input from you. If the procedure does not work the first time, repeat the steps above.

Make a note of the PIN (**7654**) in case your iOS device becomes unpaired and you do not have this manual with you.

If your chair is programmed to go into sleep mode after only one minute of inactivity, the chair may enter this mode during pairing, causing pairing to fail. If this is the case, ask your therapist or dealer to increase the sleep time-out value.

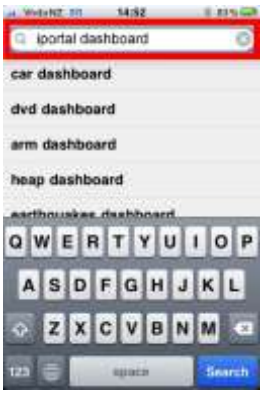
4.3. Step 3 - download the iPortal Dashboard application

To download the iPortal Dashboard application you must have an iTunes Store account and an active internet connection. You can use either your iOS device or your computer to connect to the Internet and the iTunes Store. You can set up an iTunes account at *www.apple.com/itunes*.

To download the iPortal Dashboard using your iOS device:

Start from the iOS device **Home** screen.

- Browse to the **App Store**
- Search for **iPortal Dashboard**
- Select **iPortal Dashboard** from the search results
- Tap **INSTALL**



If you use your iPhone to download the iPortal Dashboard application, the application is installed automatically on your iPhone and is ready to use.

REFERENCE
For more details of how to download and install an application from the iTunes Store refer to the iPhone or iPod touch User Guides.
The iPhone, and iPod touch User Guides are available from www.apple.com/support

To download iPortal Dashboard using your computer:

Start your Internet connection and start iTunes.

- Browse to the **iTunes Store**, and then browse to the **App Store**
- Search for **iPortal Dashboard** and select **iPortal Dashboard** from the search results
- Click **INSTALL**

If you use your computer to download the iPortal Dashboard application, the application will be installed automatically on your iOS device next time you sync.

After downloading

When a new Dashboard application is started for the first time, it will check the firmware on the iPortal module. If the firmware of the iPortal module is out-of-date, the iPortal Dashboard application will ask you to upgrade the firmware of the iPortal module.

If you see this screen, and if the time is convenient for you, press **Upgrade Now**. The process can take several minutes, after which the Dashboard application will restart.

DO NOT CYCLE THE POWER during the upgrade process, even if the screen shows "unable to connect" and advises you to cycle the power. The connection will automatically resume after the upgrade process is complete.

If you press **Later**, the Dashboard application will start normally. You will be asked again to upgrade the next time Dashboard is started after 24 hours has passed.

4.4. Step 4 - optionally activate the iPortal Accessibility feature

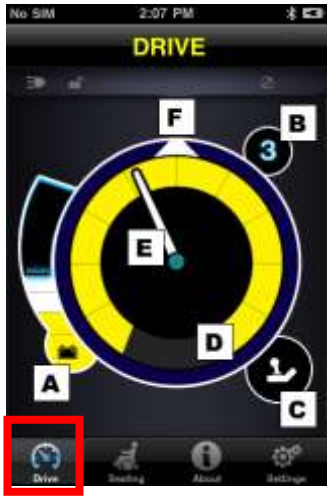
Please see the **iPortal Accessibility** section, later on.

5. Using the iPortal Dashboard features

The iPortal Dashboard is simple and intuitive to use. Change between **Drive** and **Seating** modes on your Remote and Dashboard will follow.

To navigate to the **About** menu screen or to the **Setting** menu screen simply tap an icon on the navigation bar along the bottom of your screen.

5.1. Drive mode



To change to Drive mode switch your Remote to Drive and Dashboard will follow.

When in Drive mode, Dashboard displays the following information:

A Wheelchair battery state
B Drive profile
C Master / Attendant Remote control indicator
D Speed pot setting
E Speed
F Compass heading (iPhone 3GS (or later) only)

5.2. Seating mode

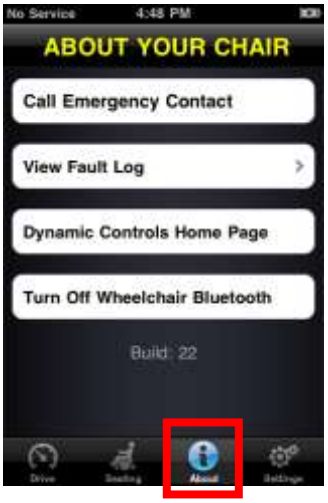
To change to Seating mode, switch your Remote to Seating and Dashboard will follow.

When in Seating mode, Dashboard displays the following information:

- Wheelchair battery state
- The active part of the seat is highlighted
- While the seat moves, the graphic flashes

Note On some systems it may be necessary to tap Seating on the navigation bar at the bottom of the application screen.

5.3. About menu



To enter the About menu, tap the About icon on the navigation bar along the bottom of your screen.

When in the About Your Chair menu, the following options are available:

1. Call a pre-set Emergency Contact number (iPhone only).
2. Inspect your chair's fault log. Tap any list item to see a brief description and suggested actions.
3. Visit the DYNAMIC CONTROLS' Home Page. Access product and product support information.
4. Turn off the Bluetooth® wireless link in the iPortal module. The Bluetooth® link will remain disabled until you next cycle the power on your chair.

CAUTION
*In areas where wireless is restricted, you must set **Airplane Mode** to **ON** on your iPhone.*

CAUTION
Except in an emergency, do not cycle the power of your chair in areas where wireless is restricted. When the power is switched on at the Remote unit, the iPortal module activates its Bluetooth® wireless link and searches for an iOS device to connect to. Cycling the power of the chair resets the Bluetooth® disabled state that was previously set in Dashboard.

To call the pre-set Emergency Contact number (iPhone only):

- In the **About** menu, tap **Call Emergency Contact**
- your iPhone dials the number

To inspect the Fault Log:

- In the **About** menu, tap **View Fault Log**
- Tap on a fault listing for more information about the fault.

The most recent fault is shown at the top of the fault list.

5.4. Settings menu

To enter the Settings menu, tap the Settings icon on the navigation bar along the bottom of your screen.

When in the Settings menu, the following options are available:

1. Set an Emergency Contact number ready to call for help in an emergency (iPhone only).
2. Adjust the length of time Alerts stay on screen.
3. Switch between smooth 3D on-screen graphics and flat high contrast graphics that may be easier to see in difficult lighting conditions. Users with poor eyesight may prefer to set High Contrast UI to ON.

To set an Emergency Contact number (iPhone only):

- In the **Settings** menu, tap **Set Emergency Contact**
- Select one contact to be your Emergency Contact
- Select the number to call (a contact may have more than one listed number)

5.5. System messages

Unable to Connect

You need to set up your Bluetooth® connection. Cycle the power on your chair, and allow 30 seconds for re-connection. If the message persists check that the iOS device is paired correctly with the iPortal (see ***Step 2 - pair the iPortal and the iOS device***, in the section ***Setting up the iPortal with your iOS device***).

No Drive Info Available

Your wheelchair battery may be charging. If you see this message momentarily, you can ignore it. If the message persists contact an approved dealer.

Can't Drive in this Mode

Your Remote unit is in a mode that does not permit driving. On your Remote unit, select a drive profile. This screen will show when your wheelchair is charging.

OONAPU Detected

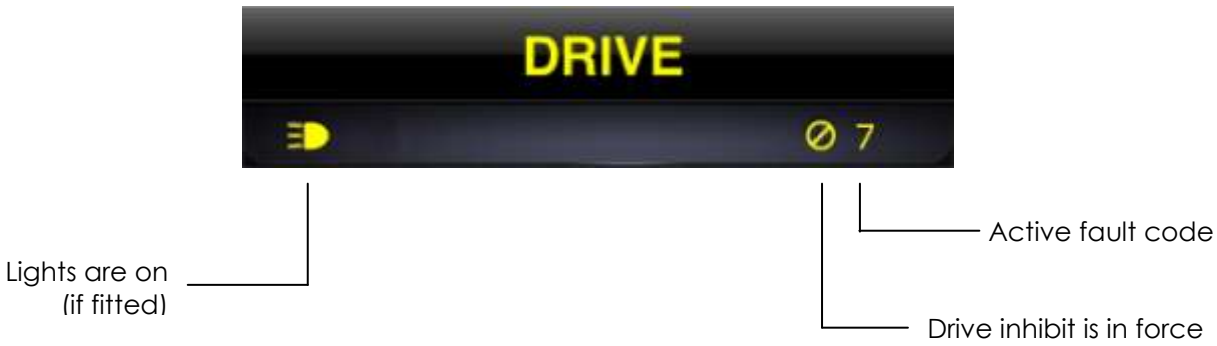
OONAPU means Out Of Neutral At Power Up. Your Remote is not in the neutral position, and you are trying to power up your system. This is a safety feature. Place your Remote in the neutral position, and try again.

Locked

Your wheelchair control system is locked. To unlock it, follow the normal procedure for your system.

5.6. Status icons

In Drive and Seating mode, three icons are visible at the top of the Dashboard screen. If inactive, the icons are greyed out. If active, they are yellow. Also, a number indicating a fault code appears if a fault is active on the wheelchair control system.



NOTE

Not every feature is available on every device. For example, the compass feature is only available on iPhone 3GS and later, and the Emergency Contact number is only available on iPhone, not on iPod touch. The chair lock status may not be available on some DX Remotes. For further information about a specific installation contact an approved dealer or DYNAMIC CONTROLS.

NOTE

Dashboard can only display information it receives from your wheelchair control system. Dashboard does not send any information back to your control system.

6. Charging or powering a second device

A second device can be charged or powered by connecting it to the auxiliary USB charging port on the top of the iPortal module. This USB port provides power only.

When the auxiliary USB connector is not in use, please make sure that the protector is inserted. The word "TOP" on the USB protector plug refers to the top of the USB connector socket, not the top of the iPortal.

NOTE
Not all devices can be charged by this port. Check your device to make sure that it is being charged when connected.

CAUTION
No Apple devices should be connected to the top auxiliary USB charging port. Only Apple devices should be connected to the bottom USB port. Do not connect your device to the wrong USB port. Damage will not be caused to your device or the iPortal module, but your device battery will not be charged until the correct connection is made.

CAUTION
The protector shown in the diagram above must be replaced when the auxiliary USB charging port is not in use. The purpose of the protector is to prevent dirt and moisture getting into the auxiliary USB connector. If water enters the USB connector the module will not be damaged, but it will not work until it is fully dry.

7. iPortal Accessibility

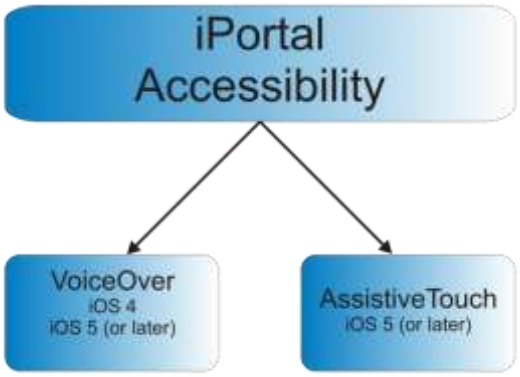
The iPortal Accessibility feature is an optional upgrade* for the iPortal unit that provides you with the ability to navigate and control your iOS device using a DX/DX2 Remote. Wheelchair users with limited hand function can operate iOS devices using this feature. iPortal Accessibility is very easy to configure and operates in one of two modes:

- **with Apple's VoiceOver, or**
- **with Apple's AssistiveTouch**

iPortal Accessibility with VoiceOver can be used with iOS devices using Apple's operating systems iOS 4 or later.

iPortal Accessibility with AssistiveTouch can only be used with iOS 5 or later.

The operation of both modes is described in the following section in this manual.



iOS devices with iOS 5 (or later) installed can easily switch between the two modes of operation The mode that you choose to work with depends on what you want to achieve and what you feel comfortable with.

NOTE

- *The iPortal Accessibility feature is not currently available for Shark remotes.*
- *No Wizard reprogramming is required for the Accessibility feature.*

* The iPortal Accessibility feature is an optional software upgrade for the iPortal, which can be purchased from the AppStore via 'In App Purchase' within the Dashboard application. The iPortal is also available with the iPortal Accessibility feature already enabled from the factory (Dynamic Part No: ***DJ-BTINT-ACC***). Please see your dealer / therapist for more details.

7.1. Firmware Upgrade

An upgrade to the iPortal firmware may be required to access the Accessibility feature. If this is the case, then first, go to iTunes and download the latest Dashboard version. After this, refer to the After downloading section on Page 13 to upgrade the iPortal firmware.

If the firmware of the iPortal module is up-to-date and the iPortal Dashboard application does not ask to upgrade the firmware of the iPortal module, then proceed to the ***Purchasing iPortal Accessibility*** section.

7.2. Supported remotes and operating modes

The following table identifies the supported remotes and how they can be set up to use the Accessibility feature. For more information on setting up your Remote to work with the Accessibility Functionality, see section **Quick Start Guide to iPortal Accessibility** (8.1).

Remote	To use iPortal Accessibility
DX-ACU3B	Drive Profile 0
DX-REM24SD	ECU1
DX-REM34	Drive Profile 0
DX-REM34B	Drive Profile 0
DX-REM41D	Drive Profile 0
DX-REM41E	Drive Profile 0
DX-REMG90	ECU1
DX-REMG91	ECU1
DX2-REMA-ACS2	Drive Profile 0
DX2-REMB-ACS2	Drive Profile 0
DX2-REM420	Drive Profile 0
DX2-REM421	Drive Profile 0
DX2-REM550	ECU1
DX2-REM551	ECU1

WARNING

The iPortal Accessibility feature is seen by the DX system as an "ECU1". For this reason, ensure that there are no DX-ECUs in the system configured as "ECU1".

7.3. Activating iPortal Accessibility

To activate the iPortal Accessibility feature you must have an active internet connection on your iOS device, and be paired with the iPortal module (see section 4.2 to see how to pair the iOS device with the iPortal).

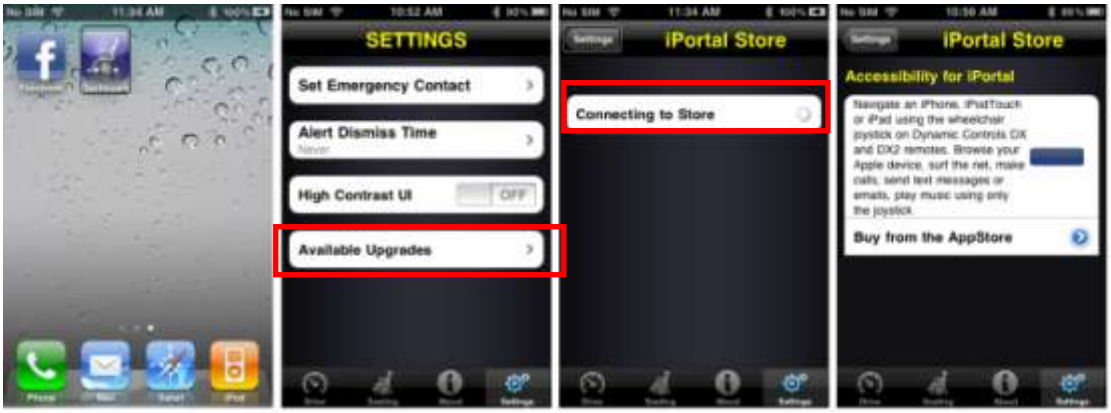
NOTE

*When activating the iPortal Accessibility feature, it is important that you **DO NOT**:*

- *press the iOS device Home button*
- *turn off the wheelchair's power*
- *drive the wheelchair*

To activate the iPortal Accessibility feature, proceed as shown below:

- Start the **Dashboard** application.
- Browse to **Settings -> Available Upgrades**
- Connect to **iPortal Store**
- Buy the Accessibility feature



After performing the steps above,

- Select **Buy from the AppStore**
- Tap **Buy** on the confirm purchase screen
- Tap **Use Existing Apple ID** on the Sign In screen (To buy from the AppStore, you must have an active AppStore account. If you do not have an AppStore account, you can create one by selecting **Create New Apple ID** on the **Sign In** screen)
- Enter your Apple ID and password and tap **Ok**
- Wait for the **Thank You** screen to pop up to confirm your successful purchase
- Click **Ok**

7.3.1. Completion of purchase

When the purchase is successfully completed, the iPortal module will restart.

Once the iPortal reconnects to the iOS device, the iPortal Store screen on your iOS device will show the Accessibility feature as **Installed** and will automatically be activated on your iOS device.

NOTE

If the unit does not restart automatically, then you can power-cycle the unit (power off, then power on) to enable the Accessibility feature.

7.4. Using iPortal Accessibility with Apple's VoiceOver

iPortal Accessibility with Apple's VoiceOver allows you to access most of the functionality of the iOS devices with the help of the Remote or speciality input device. With this feature, operating in conjunction with the iOS device's 'VoiceOver' accessibility feature, you can control the iOS device to navigate Left, Right, Enter, Home and operate alphanumeric text entry; iPhone users can even make calls with the help of this feature.

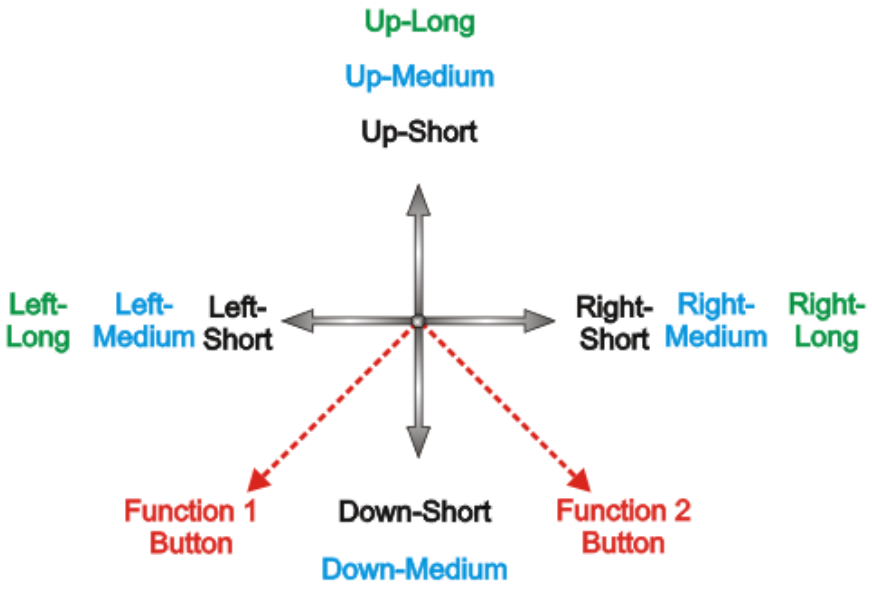
7.4.1. Joystick Commands

To use iPortal Accessibility with VoiceOver, there are three types of joystick commands to learn:

1) **Short**: with this command, the joystick position is held for less than 1s.
2) **Medium**: with this command, the joystick position is held for 1s to 2s.
3) **Long**: with this command, the joystick position is held for 2s to 3s.

These commands are shown in the image below. The purpose of each command changes depending on the Mode (Navigation, Text Entry, Number Entry) as described in the following sections.

Note that the commands shown with the diagonal red lines are not joystick commands – these are alternative mode actions which are described in section **Alternative mode actions** (7.4.5).



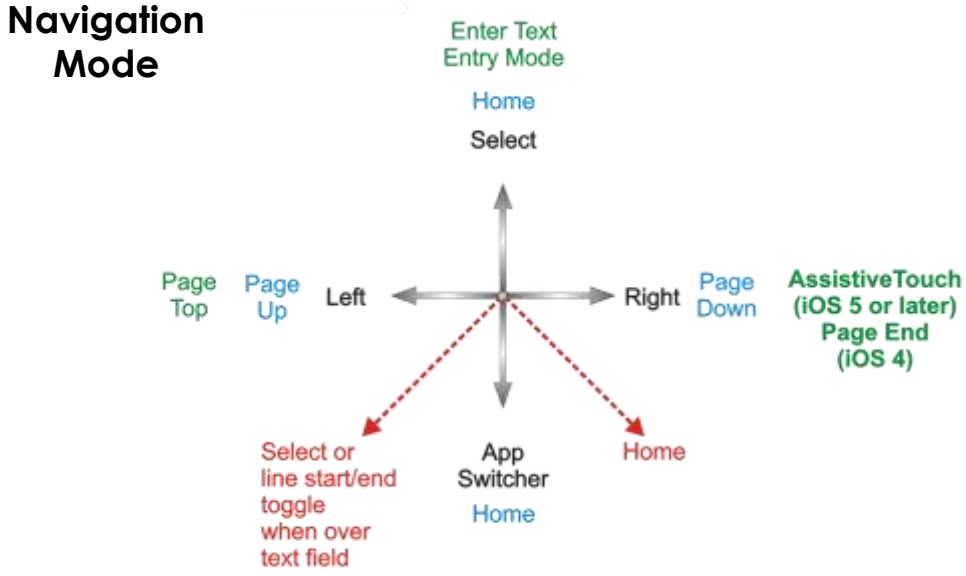
NOTE
*To avoid the iOS device going to sleep, set the Auto-lock (**Settings->General**) to **Never**.*

7.4.2. Navigation mode

The **Navigation mode** allows you to navigate through the iOS device screens and access various applications on the iOS device. The joystick commands and iOS device actions for this mode are as below:

Joystick Command	iOS device Action
Left-Short	Move Cursor Left
Right-Short	Move Cursor Right
Up-Short	Select
Down-Short	App Switcher
Left-Medium	Page Up
Right-Medium	Page Down
Up-Medium	Home
Down-Medium	Home
Left-Long	Page top
Right-Long	AssistiveTouch (iOS 5 and later, otherwise Page End)
Up-Long	Enter "Text Mode"
Down-Long	No action

The diagram below summarises the joystick movements for the table above. Note that the red actions refer to alternative 'Select' and 'Home' options depending on which mode you are in (navigation, text etc.), and which remote you are using. For more information, see the **Alternative mode actions** table in section 7.4.5.



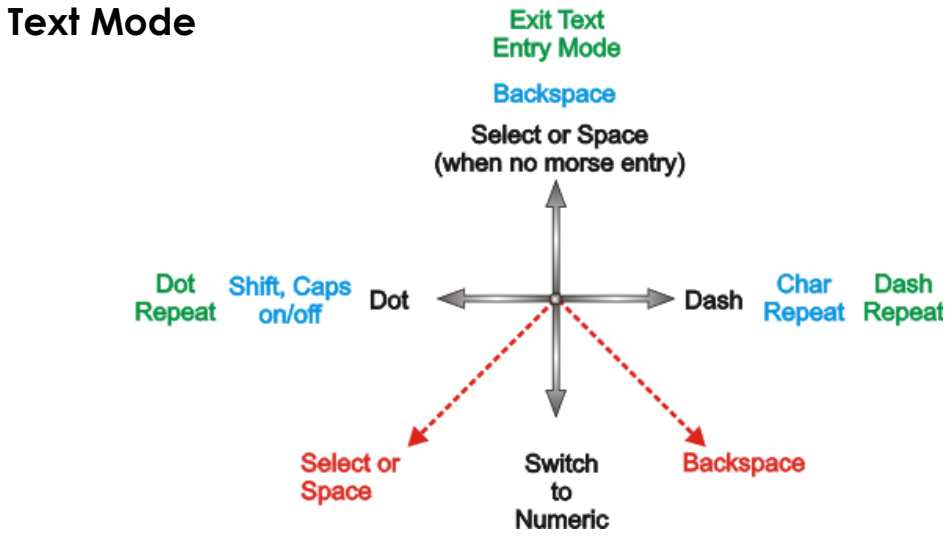
7.4.3.Text mode

Text mode is used for text input to various applications of your iOS device, such as writing messages, notes, iTunes search etc. This is a faster alternative to using the iOS device's on-screen keyboard. Morse code is used to enter text to your iOS device in Text mode. This mode is activated by holding the joystick "Up-Long". The joystick commands and iOS device actions for this mode are as below:

Joystick Command	iOS device Action
Left-Short	**Morse code dot**
Right-Short	**Morse code dash**
Up-Short	**Confirm character: enters current Morse entry, or space if no character selected**
Down- Short	**Enter "Number Mode"**
Left-Medium	**Cycles : Shift, Caps lock on, Caps lock off**
Right-Medium	**Repeat last Morse character**
Up-Medium	**Backspace**
Down-Medium	**No action**
Left-Long	**Morse code dot repeat**
Right-Long	**Morse code dash repeat**
Up-Long	**Exit "Text Mode"**
Down-Long	**No action**
Centre-Long	Cancels current Morse character entry

Leaving the joystick centred for 1s-2s cancels the last Morse character entry, if it was not selected.

The diagram below summarises the joystick movements for the table above. Note that the red actions refer to alternative 'Select' and 'Home' options depending on which mode you are in (navigation, text etc.), and which remote you are using. For more information, see the **Alternative mode actions** table in section 7.4.5.



The Morse code for entering text characters is given below:

Character	Code	Character	Code
a	●▬	n	▬●
b	▬●●●	o	▬▬▬
c	▬●▬●	p	●▬▬●
d	▬●●	q	▬▬●▬
e	●	r	●▬●
f	●●▬●	s	●●●
g	▬▬●	t	▬
h	●●●●	u	●●▬
i	●●	v	●●●▬
j	●▬▬▬	w	●▬▬
k	▬●▬	x	▬●●▬
l	●▬●●	y	▬●▬▬
m	▬▬	z	▬▬●●
return (CR)	●▬●▬	Full stop (FS)	●▬●▬●▬
comma	▬▬●●▬▬	$	▬●●●▬●
?	●●▬▬●●	!	▬●▬●▬▬
&	▬●●▬▬	/	▬●●▬●
“	●▬●●▬●	‘	●▬▬▬▬●
@	●▬▬●▬●	_	●●▬▬●▬
;	●●●▬●	:	▬▬▬●●●
-	▬●●●●	=	▬●●●
+	●▬●▬●	*	●▬●●●
(	●●●▬▬●	)	▬●●▬▬●
1	●▬▬▬▬	6	▬●●●●
2	●●▬▬▬	7	▬▬●●●
3	●●●▬▬	8	▬▬▬●●
4	●●●●	9	▬▬▬▬●
5	●●●●●	0	▬▬▬▬▬

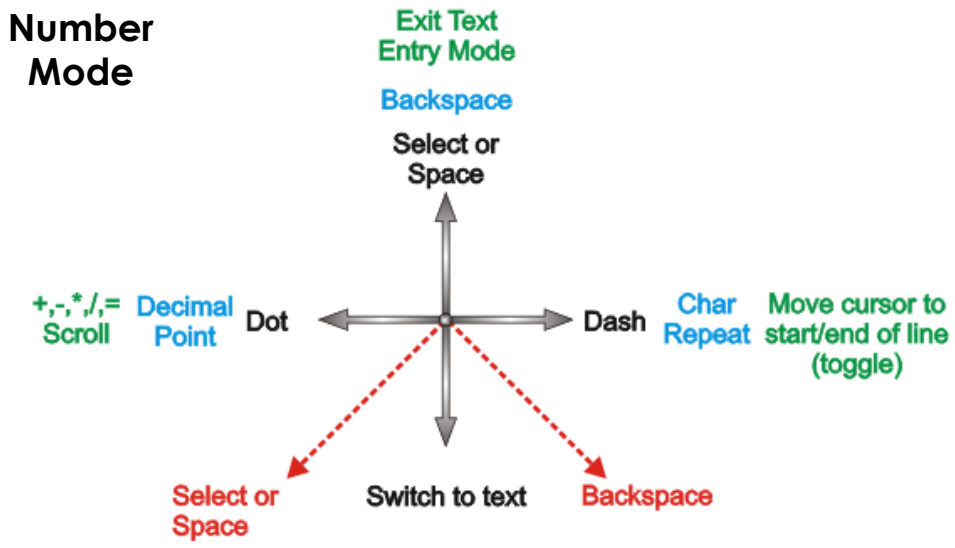
7.4.4. Number mode

While Text mode can be used to enter all numbers, Number mode allows faster entry of numeric characters and operators. Morse code is used for input to your iOS device in number mode. You can switch from Text mode to Number mode by holding the joystick "Down-Short". The joystick commands and iOS device actions for this mode are as below:

Joystick Command	iOS device Action
Left-Short	**Morse code dot**
Right-Short	**Morse code dash**
Up-Short	**Confirm character: enters current Morse entry, or space if no character selected**
Down-Short	**Enter "Text Mode"**
Left-Medium	**Decimal Point**
Right-Medium	**Repeat last Morse character**
Up-Medium	**Backspace**
Down-Medium	**No action**
Left-Long	**Cycles : + , - , * , / , =**
Right-Long	**Move cursor to start / end of line (toggle)**
Up-Long	**Exit "Text Mode"**
Down-Long	**No action**
Centre-Long	Cancels current Morse character entry

Leaving the joystick centred for 1s-2s cancels the last Morse character entry, if it was not yet selected.

The diagram below summarises the joystick movements for the table above. Note that the red actions refer to alternative 'Select' and 'Home' options depending on which mode you are in (navigation, text etc.), and which remote you are using. For more information, see the **Alternative mode actions** table in section 7.4.5.



The Morse code for entering numeric characters is given below:

Character	Code	Character	Code
1	●	6	▬▬
2	▬	7	●▬▬
3	●▬	8	●●▬
4	●●	9	●●●
5	▬●	0	▬●●
+	▬▬●	-	▬▬▬
/	▬●▬	X	●▬●
=	▬▬▬▬	Return (CR)	●▬●▬

7.4.5. Alternative mode actions

The table below outlines the alternative mode actions (the diagonal red lines in the joystick movement diagrams in sections 7.4.2 , 7.4.3 , and 7.4.4) available for specific Remotes.

Remote	Alternative 'Select' options	Alternative 'Home' options
DX2-REM55x	- Function 1 - ECU1 - channel 7 (UCI programmed 'Alarm' option)	- Function 2
DX-REMG91	- Auxiliary Input switch	
DX-REMG90	- Left Indicator (only while in ECU1 Mode)	- Right indicator (only while in ECU1 mode)
DX-REM24SD/C	- Left Indicator (only while in ECU1 Mode)	- Right indicator (only while in ECU1 mode)

7.5. Tutorials for iPortal Accessibility with VoiceOver

This section demonstrates how to use the iPortal Accessibility with VoiceOver feature with a typical iOS device. Please note, that as all iOS devices are highly customisable, the screen shots may look slightly different to your own. However, the fundamentals of the Accessibility feature are the same. The tutorials are split into two main sections:

- Navigating the iOS device
- Using Applications

It is recommended that you begin with the **Navigating the iOS device** (7.5.1) section.

7.5.1. Navigating the iOS device

In this section we'll learn how to do some basic navigation around the iOS device.

7.5.1.1. Basic Navigation – joystick

To move from one application icon to another on the **Home** screen, you have to move the screen cursor either left or right as shown in the image on the right – there is no ability to move through the icons vertically.

To move the screen cursor to the right by one application icon, move the joystick to the right (**Right-Short**) once.

Similarly, to move the screen cursor to the left by one application icon, move the joystick to the left (**Left-Short**) once.

As an example, in the image to the right (top screen), you can see that to get from the **Calendar** app, to the **App Store** app, you will have to move the screen cursor eleven (11) times to the right (that is: 11 x **Right-Short**).

7.5.1.2. Basic Navigation - function keys

A number of remotes support alternative shortcut navigation (**Select** and **Home**) through their function keys, or other input mechanisms.

As an example, the DX2-REM550, shown in the image to the right, uses the Function 1 button to **Select** an item or application, while the Function 2 button is used to take you to the **Home** page quickly.

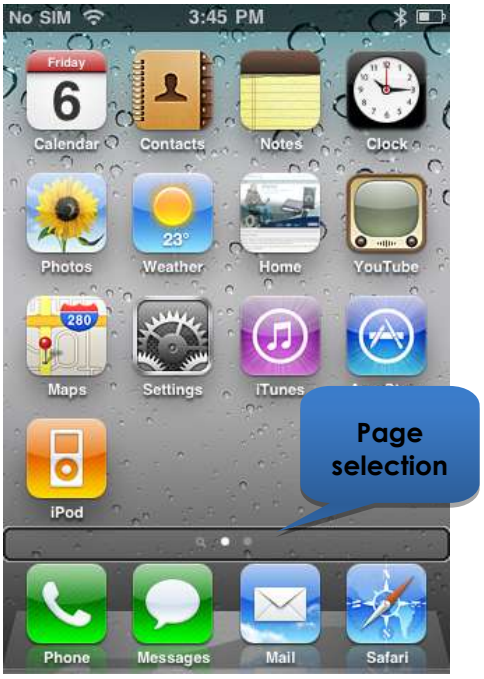
For a list of remotes and their alternative navigational abilities, see section **Alternative mode actions** (7.4.5).

7.5.1.3. Selecting another page

To select another page on your iOS device, simply navigate the screen cursor to the position shown in the image to the right.

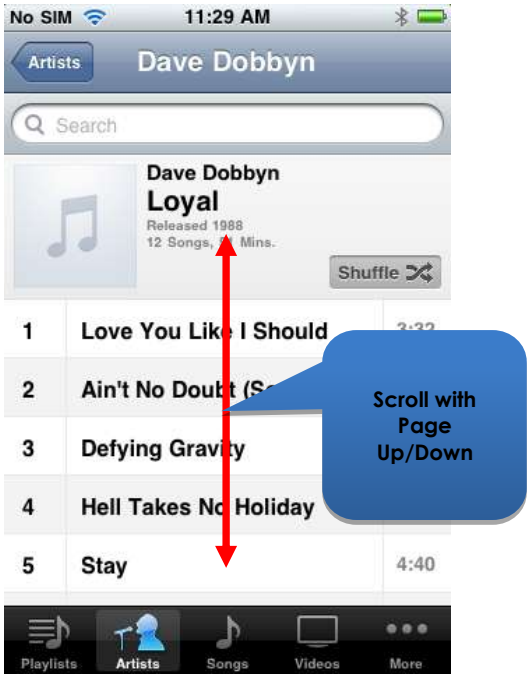
Select the next page by either moving the joystick up once (**Up-Short**), or, if your remote supports alternative navigation functions, press the **Select** shortcut button.

To return to the Home page, either move the joystick **Up-Medium**, or, if your remote supports alternative navigation functions, press the **Home** shortcut button.



7.5.1.4. Page Up/Down

To scroll through list type displays, such as the **Settings > General** page, or playlists in your iPod application, use the **Page Up** (**Left-Medium**) and **Page Down** (**Right-Medium**) commands. Each command will scroll the page up or down, one page at a time.



7.5.1.5. Page Top/End

To move quickly between the top and bottom of a page, use the **Page Top**, and **Page End** commands (iOS 4 devices only), or **Page Top** and **Page Top/ Left** for iOS 5 (and later) devices.

iOS 4 devices

To move the screen cursor from the Calendar icon to the Safari icon, in the image to the right, move your joystick to the right, and hold for one/two seco (**Right-Long**).

Similarly, to move the screen cursor f the Safari icon back up to the Caler icon, move your joystick to the left, and hold for one/two seconds (**Left-Long**).

iOS 5 (and later)

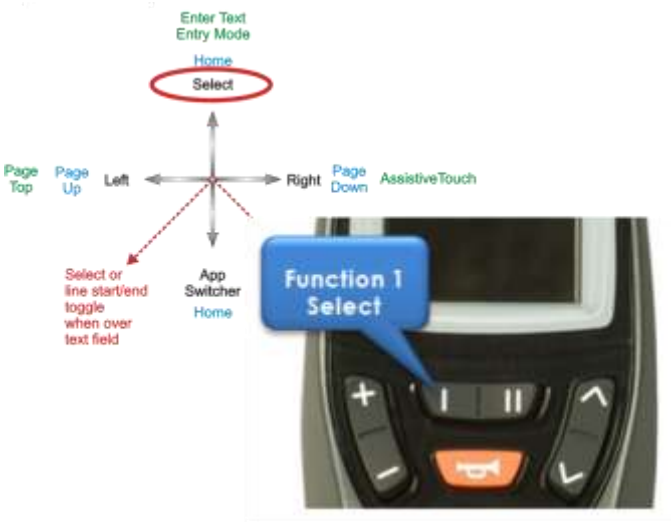
With iOS 5 (and later) devices, the Right-Long command is used for selecting the **AssistiveTouch** feature rather than **Page End**.

To perform a similar function to Page End, simply move and hold your joystick left for two seconds (**Left-Long**) to move the screen cursor to the topmost left position, and then move the cursor left again with a **Left-Short** – this will place the cursor at the bottom of the screen.

To move the screen cursor from the bottom of the screen back up to the Calendar icon, move your joystick to the left, and hold for one/two seconds (**Left-Long**).

7.5.1.6. Selecting an application

To select (open) an application, simply navigate the screen cursor to the appropriate application icon, and either move the joystick up for one second (**Up-Short**), or, if available, use the appropriate **Select** shortcut button (see section **Alternative mode actions** (7.4.5)).



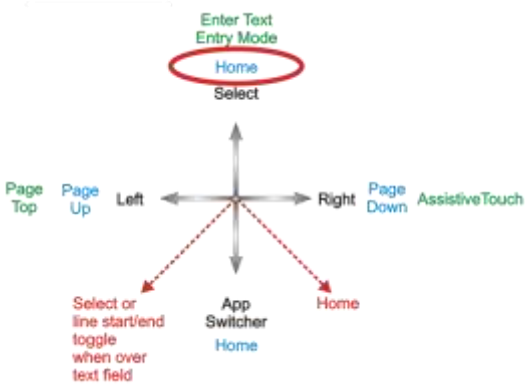
NOTE

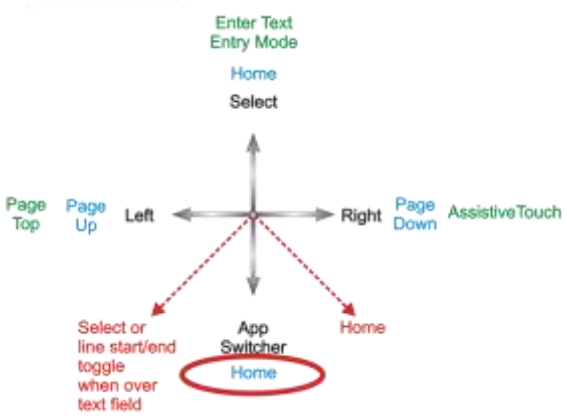
*The standard VoiceOver command "double-tap to open" refers to a double-tap on the iOS device screen – when using iPortal Accessibility, simply open or select with the **Up-Short** command as shown above.*

7.5.1.7. Exiting an application

To exit an application, use the **Home** command by either moving the joystick up for one/two seconds (**Up-Medium**), or moving the joystick down for one/two seconds (**Down-Medium**).

Alternatively, if your joystick supports **Alternative mode actions** (7.4.5), then you can exit the application with the **Home** shortcut button. For example, on the DX2-REM550 below, pressing function button 2 will exit the application and return you to your **Home** page.



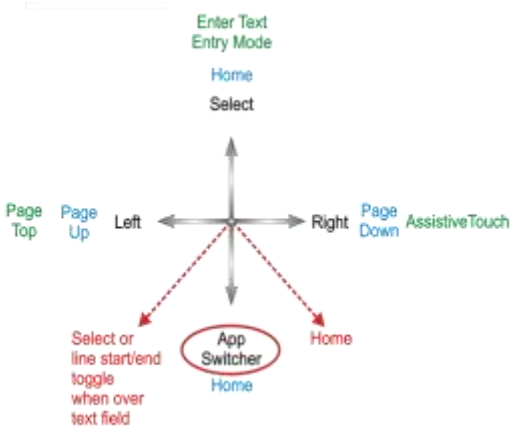


7.5.1.8. Using the application switcher

The application switcher provides a quick way of switching between open, or recently opened, applications.

To open the application switcher page, select the 'App Switcher' with a **Down-Short** command. Navigate to the application you want to open, and select it with an **Up-Short** command.

To exit the application switcher, enter a Home command (**Up-Medium**, or **Down-Medium**, or an appropriate function button).



7.5.1.9. Unlocking auto-lock mode

If the iOS device is asleep, then you can wake it up by moving the joystick up for two/three seconds (**Up-Long**) - this will wake up the iOS device, but it will still be locked. To unlock the iOS device, move the screen cursor to the unlock slider (move joystick three times to the right (3 x **Right-Short**)), and then slide the slider with a **Select** command (**Up-Short**).

7.5.2. Using Applications

In this section we'll see how we can accomplish some simple tasks with a few common applications.

7.5.2.1. Notes - adding a note

In this tutorial, we'll add a note in the Notes application as a reminder to "pick up bread". There are two ways to add alphanumeric text to your notes:

1. using the keyboard
2. using Morse code

Both methods will be shown in this tutorial. Although the keyboard method may be more familiar to you, we recommend that you use the Morse code entry as this can improve the speed of alphanumeric text entry. To add a new note in the Notes application, ensure that your joystick is in Navigation Mode, and from your **Home** page:

- navigate to the Notes app
- Select the Notes app (**Up-Short**)

When the Notes app opens:

- navigate to the 'Add' button
- Select the 'Add' button (**Up-Short**)

1. Using the keyboard

- Navigate to the keyboard by moving the joystick to the right for less than one second (**Right-Short**); the screen cursor will be on the 'Q' key.

To add text with the keyboard, simply navigate (left or right) to each character key, and select it with **Up-Short**. To write "*Pick up bread*", and with the screen cursor at the 'Q' key:

- Navigate to the 'P' key (**9 x Right-Short**)
- Select 'P' (**Up-Short**)
- Navigate to the 'I' key (**2 x Left-Short**)
- Select 'I' (**Up-Short**)
- Navigate to the 'c' key (**15 x Right-Short**)
- Select 'c' (**Up-Short**)
- Navigate to the 'k' key (**5 x Left-Short**)
- Select 'k' (**Up-Short**)

……and so on until the note is complete (Space,u,p,Space,b,r,e,a,d).

At this point, the screen cursor will be on the letter 'd' (last letter of *brea**d***). To complete the note, move the screen cursor to the '**Done**' button by sending the screen cursor to the top of the page with the **Page Top** command (**Left-Long**).

- Move the joystick left for two/three seconds (**Left-Long**) (**Page Top**)
- Navigate to the 'Done' button (**2 x Right-Short**)
- Select 'Done' (**Up-Short**)

That completes the note.

2. Using Morse code

To use the Morse code text input, change from **Navigation** mode to **Text** mode.

- Hold the joystick up for longer than two seconds (**Up-Long**)(Text mode)

To add the text, follow the table below:

Action	Code	Character/Operation
Left-Short Right-Short Right-Short Left-Short	• — — •	p
Up-Short		Select 'p'
Left-Short Left-Short	• •	I
Up-Short		Select 'I'
Right-Short Left-Short Right-Short Left-Short	— •— •	C
Up-Short		Select 'c'
Right-Short Left-Short Right-Short	— •—	K
Up-Short		Select 'k'
Up-Shor		Space

……and so on until the note is complete (u,p,Space,b,r,e,a,d).

Note that if you are not entering Morse code, then the **Up-Short** command is used to add a **Space** character, as shown in the last row of the table above.

To complete the note, change the mode back to **Navigation** (**Up-Long**), and move the screen cursor to the '**Done'** button by sending the screen cursor to the top of the page with the **Page Top** command (**Left-Long**).

- Change mode to Navigation (**Up-Long**)
- Move the joystick left for two/three seconds (**Left-Long**)(**Page Top**)
- Navigate to the 'Done' button (**2 x Right-Short**)
- Select 'Done' (**Up-Short**)

That completes the note.

7.5.2.2. Calculator – using Number Entry mode

The calculator can be used with Navigation mode, standard Text Entry mode or Number Entry mode. Number entry mode provides abbreviated Morse codes for numerals and quick access to mathematical operators for more efficient use when working with numbers. In this tutorial, we'll find the product of two numbers using the Number Entry mode.

In Number Entry mode, each number is entered in Morse code. Functions, such as multiply (*), subtract (-) etc., are selected by a **Left-Long** command – as the joystick is held to the left, the VoiceOver scrolls through the functions available. When the required function is mentioned, simply return the joystick to the neutral position, and then select the function with an **Up-Short** command.

The two numbers that we'll enter are: **617.28**, and **200**. Follow the instructions and table below to enter the two numbers and see the result.

- From your Home page, navigate to the **Calculator** app (this is found under the Utilities folder), and select it with the **Up-Short** command.
- Set your iPortal to **Number Entry** mode by first selecting **Text** mode (**Up-Long**), and then followed by a **Down-Short** command.

The table below shows the number and function entries:

Action	Code	Character/Operation
Right-Short Right-Short	— —	6
Up-Short		Select '6'
Left-Short	•	1
Up-Short		Select '1'
Left-Short Right-Short Right-Short	• — —	7
Up-Short		Select '7'
Left-Long Note: decimal point is		. (decimal point)

called “period”.		
Up-Short		Select ‘.’
Right-Short	—	2
Up-Short		Select ‘2’
Left-Short Left-Short Right-Short	• • —	8
Up-Short		Select ‘8’
Left-Long (Hold to scroll through options) Note: multiply is called “star”		* (multiply)
Up-Short		Select ‘*’
Right-Short	—	2
Up-Short		Select ‘2’
Right-Short Left-Short Left-Short	— • •	0
Up-Short		Select ‘0’
Right-Short Left-Short Left-Short	— • •	0
Up-Short		Select ‘0’
Left-Long (Hold to scroll through options)		= (equals)
Up-Short		Select ‘=’

That completes the calculation.

7.5.2.3. Camera - taking a picture

To take a picture or video navigate to the Camera app using **Left-Short** or **Right-Short** commands and select it with **Up-Short**.

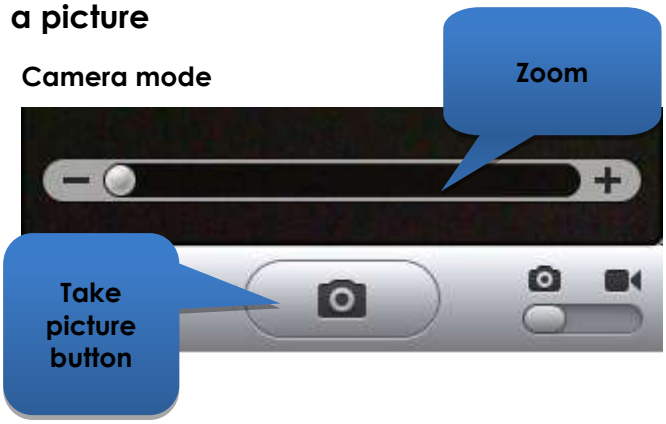
Take a picture

To take a picture, navigate to the '**Take picture**' button using **Left-Short** or **Right-Short** commands, and take the picture with **Up-Short**.

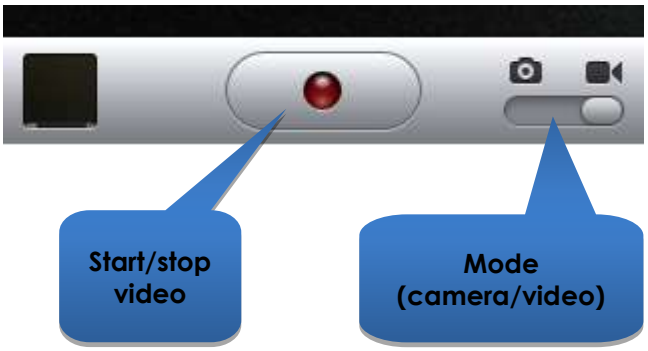
Zoom

To zoom in to your subject, navigate to the **Zoom** slider using **Left-Short** or **Right-Short** commands. When the slider is selected, increase the zoom by using the Up-Short command. Each **Up-Short** command will increase the zoom level by 1%.

Camera mode



Video mode



Start video

To record a video, navigate to the **Mode** slider and change the mode from camera to video using the **Up-Short** command. Navigate to the **Start/Stop** video button, and select start with an **Up-Short** command.

Stop Video

Stop recording a video by selecting the **Start/Stop** video button with the **Up-Short** command.

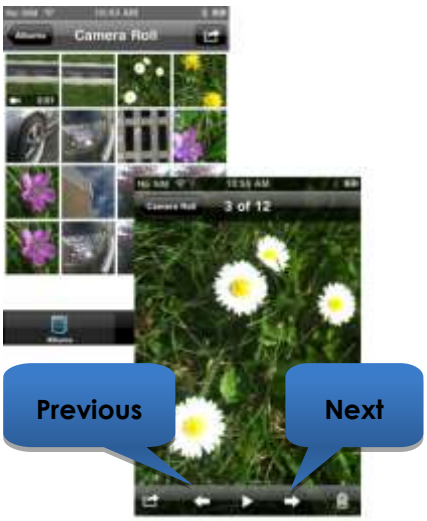
7.5.2.4. Photos - viewing your photos

To view your photos, navigate to the **Photos** app, and select it with the **Up-Short** command.

When the **Camera Roll** page opens, navigate to a photo and open it with the **Up-Short** command.

To view the next picture in the camera roll, navigate to the **Next** button, and select it with the **Up-Short** command.

Similarly, to view the previous picture, navigate to the **Previous** button and select it with the **Up-Short** command.



7.5.2.5. iPod - playing your music

Navigate to the iPod app (iPhone), or Music app (iPod), and select it with the **Up-Short** command.

Use the **Left-Short** and **Right-Short** commands to navigate through the playlists, artists, and songs. Select a song to play by using the **Up-Short** command.

Don't forget to use the **Page Down** (**Right-Medium**), and **Page Up** (**Left-Medium**) commands to navigate through long lists.

When a song is playing, you can move on to the next song or previous song by navigating to the **Next** and **Previous** buttons and selecting one of them with the **Up-Short** command.

7.5.2.6. Phone - making a call (iPhone only)

To make a phone call you can use the Navigation mode, Text Entry mode, or the Number Entry mode to enter the number. However, you will have to ensure that you are in Navigation mode to dial (call) the number.

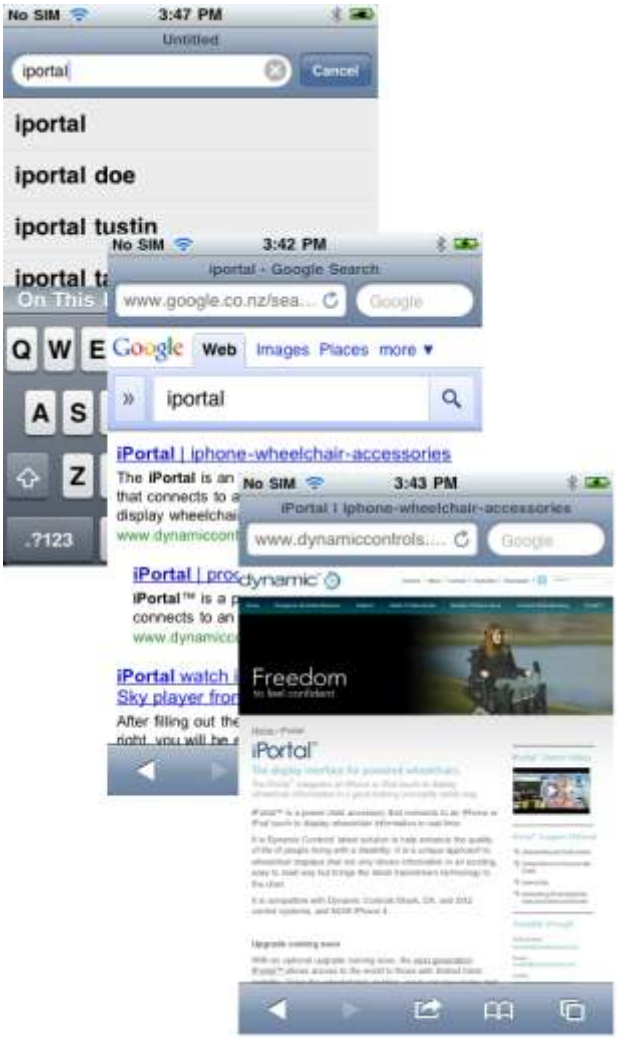
To enter and dial a number (using the Navigation mode):

- From your Home page, navigate to the Phone app.
- Navigate to each number and enter the number with the **Up-Short** command.
- When the number is complete, navigate to the Call button and select it with the **Up-Short** command.

7.5.2.7. Safari - searching the Internet

In this tutorial, we'll open the Safari application and use Google to search for the iPortal system.

- From your Home page navigate to the Safari application, and select it with the **Up-Short** command.
- Navigate to the Google search bar (**3 x Right-Short**), and select it with the **Up-Short** command.
- Enter "**iportal**" as a search term in the Google search box. Use either Text entry mode (Morse code), or alternatively use the Navigation mode to enter the text with the keyboard.
- Finally, navigate to the **Search** button, or select the search term from the suggestions list – select with the **Up-Short** command.



When Google presents its results, navigate to the appropriate link in the search results page and select with the **Up-Short** command.

7.6. Using iPortal Accessibility with Apple's AssistiveTouch

7.6.1. Introduction

iPortal Accessibility with Apple's AssistiveTouch allows you to access all the functionality of the iOS devices with the help of the Remote or speciality input device.

iPortal Accessibility with AssistiveTouch provides an intuitive, easy-to-learn, cursor-driven approach to navigating, selecting and running applications on your iOS device.

AssistiveTouch with the AssistiveTouch cursor, the blue circle in the images to the right, can be used for:

- Navigating the screens up, down, left and right
- Simulating a touch event to select an item
- Performing a flick, or drag that uses 2, 3, 4 or 5 fingers
- Performing a pinch gesture – ideal for zooming in or out of maps and pictures
- Creating your own gestures
- Locking the screen
- Rotating the screen
- Adjusting the volume
- Simulating an iOS device shake
- Simulating a Home button press

The rest of this section will show you how to enable AssistiveTouch on your iOS device, and then how to use some of the functionality with the joystick or other speciality input device.

NOTE

AssistiveTouch is only available for iOS devices that have Apple's iOS 5 (or later) operating system installed. Please refer to Apple's documentation for more information (www.apple.com/support).

7.6.2. Enabling AssistiveTouch

When the iPortal is powered up, iPortal Accessibility with VoiceOver is enabled by default. To enable AssistiveTouch simply move and hold the joystick right for two seconds. To revert back to VoiceOver, move and hold the joystick right for two seconds again.

7.6.3. Moving and selecting with the AssistiveTouch cursor

7.6.3.1. Mouse-click mode and cursor-move mode

The joystick can operate in two modes:

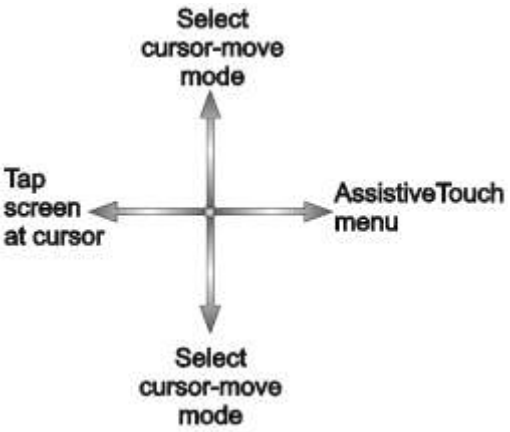
- Mouse-click
- Cursor-move

In mouse-click mode, which is the default mode, you can use the joystick to tap on the screen, open the AssistiveTouch menu, or change the mode to cursor-move mode. When cursor-move mode is selected, use the joystick to move the cursor around the screen. The joystick will automatically return to mouse-click mode from cursor-move mode when left in the neutral position for just under a second.

The tables below summarise the modes and iOS device actions.

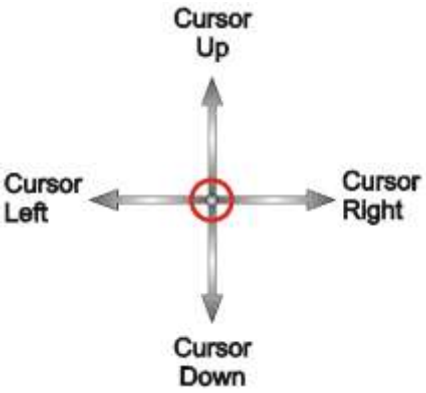
Mouse-click mode

Joystick Command	iOS device Action
Left for less than 1 second	Tap screen at cursor
Left for 2 seconds or greater	Select and hold
Right	Open AssistiveTouch menu
Right for 2 seconds or greater	Switch between VoiceOver and AssistiveTouch
Up	Select cursor-move mode
Down	Select cursor-move mode



Cursor-move mode

Joystick Command	iOS device Action
Left	Move cursor left
Right	Move cursor right
Up	Move cursor up
Down	Move cursor down
Pause in neutral	Return to mouse-click mode



7.6.3.2. Moving the cursor

To move the cursor around the screen:

- change from mouse-click mode to cursor-move mode by moving the joystick either up or down momentarily and then release the joystick back to the neutral position
- move the joystick in the required direction

As long as you maintain moving the joystick, the cursor will continue to move. When you release the joystick back to the neutral position for more than the timeout (less than 1 second), the mode will revert back to mouse-click mode.

NOTE

- *The cursor movement will accelerate in the held direction the longer the joystick is held out of neutral.*
- The first time 'cursor-move' is activated following a power cycle the iPortal will assume the presence of a 'Proximity Head Control' (See below) and until after cursor-move-down is used for the first time 'cursor-move-up' will toggle directions as for 'Proximity head controls' below.

7.6.3.3. Moving the cursor with a Proximity Head Control

To move the cursor around the screen with the proximity head control:

- change from mouse-click mode to cursor-move mode by activating the centre pad momentarily
- move the cursor in the required direction by activating the centre, left or right pads
- the vertical direction of the cursor is toggled each time the centre pad is activated. For example, if the cursor is moving up, briefly move your head away from the centre pad and then back again to cause the cursor to move in the down direction.

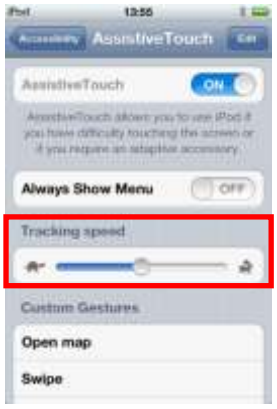
As long as you maintain activating the centre, left and right pads, the cursor will continue to move. When you stop activating the pads for more than the timeout, the mode will revert back to mouse-click mode.

7.6.3.4. Tracking speed

The speed at which the cursor moves around the screen depends on the **Tracking Speed** setting. If the speed of the cursor is not to your liking, then change the Tracking Speed setting by selecting from the Home page:

Settings → General → Accessibility → AssistiveTouch.

Move the Tracking Speed slider to the desired cursor speed – left is slowest, right is fastest.



7.6.3.5. Tap / Select

To tap on, or select an item, AssistiveTouch simulates a finger tap on the screen when you are in mouse-click mode (default) and when you momentarily move the joystick left (or activate the left pad on the proximity head control).

To indicate a tap, the cursor changes from a circle to a circle within a circle.

To tap on an item, simply position the cursor over the item, and after a second, tap on the item by moving the joystick left momentarily.

7.6.3.6. Scrolling

AssistiveTouch allows you to reposition and move items around your iOS device using a longer tap/select command. Repositioning and scrolling involves selecting and holding an item, moving the item, and then releasing the item. To hold an item, rather than just tapping it, hold the joystick left for longer than 2 seconds, and until an audible 'chirp' sound is heard.

In the example below, we will drag Page 3 of the Home page across to the right so that we can view Page 2:

1) **Move**: change the mode to cursor-move mode and position the cursor to the left of the screen – release the joystick back to the neutral position
2) **Hold**: after a second or two, move the joystick to the left and hold for a couple of seconds
3) **Drag**: drag the page to the right
4) **Release**: return the joystick to the neutral position, and after a couple of seconds, move the joystick momentarily to the left

7.6.3.7. Text Entry

Adding text is a straightforward task with AssistiveTouch. Using the on-screen keyboard, simply navigate the cursor to the appropriate key, and select it with a momentary left push of the joystick.

Remember to move the cursor in a vertical direction (to select cursor-move mode) after selecting a key so that you can start moving the cursor again.

7.6.4. The AssistiveTouch menu

7.6.4.1. Overview

The AssistiveTouch menu can be displayed by momentarily moving the joystick to the right (or activating the right pad on Dynamic Controls' Proximity Head Control). The menu is shown in the image, right, and provides the following further menus and actions:

- Gestures
- Home
- Device
- Favourites

Selecting a menu item

Use the AssistiveTouch cursor to select a menu item. Don't forget to move the cursor up or down first to select cursor-move mode. When the desired menu item turns blue, you can select it by returning the joystick to the neutral position for more than two seconds, and then moving the joystick momentarily left.

Closing the AssistiveTouch menu

To close the AssistiveTouch menu, simply move the joystick momentarily left or right.

7.6.4.2. Gestures

The Gestures menu offers a convenient way to simulate actions requiring more than one finger such as flicking or dragging.

When you select one of the gestures, as shown right, the AssistiveTouch cursor will display the corresponding number of circles on the screen, as shown below.

To drag or flick with the gesture, follow the **Move**, **Hold**, **Drag**, **Release** process described earlier in **7.6.3.6 Scrolling**.

7.6.4.3. Home

Select the Home icon in the AssistiveTouch menu to take you back to the Home page.

7.6.4.4. Device

When you select **Device** from the AssistiveTouch menu, a sub-menu is displayed with the following items:

- Rotate Screen* - rotate the screen left, right, portrait or upside down.
- Lock Screen – lock the screen
- Volume Up – increase the volume
- Volume Down – decrease the volume
- Shake* - shake the device

* If the application permits the action

7.6.4.5. Favourites

When you select **Favourites**, a sub-menu is displayed showing the Pinch action. The empty boxes with the addition (+) sign are used as placeholders for creating and storing your own gestures.

Using the Pinch action

The pinch action is used for zooming in or out in applications such as photos, maps or text documents.

It operates in two modes:

- Cursor-move mode
- Zoom mode

Cursor-move mode

Zoom mode

After selecting the Pinch action in Favourites, the screen cursor changes to the cursor-move mode cursor as shown above, left. When in this mode, you can position the cursor over the point at which to zoom in or out. When the cursor is in position, change to zoom-mode by momentarily moving the joystick left – the cursor will change as shown above, right.

- To zoom in, move the joystick up.
- To zoom out, move the joystick down.
- To change back to cursor-move mode, move the joystick left.
- To exit the pinch action, move the joystick right.

8. Appendices

8.1. Quick Start Guide to iPortal Accessibility

The following section provides a quick start guide for getting your particular Remote working with the iPortal Accessibility feature. Simply choose your type of Remote, and follow the instructions. For most cases, it's as simple as pressing the Drive, or Accessory button on your Remote, and waiting until a particular mode is displayed on your LED or LCD display.

If your wheelchair has been set up so that you do not get the required display, then contact your wheelchair specialist and ask them to enable the relevant mode using the Wizard notes that are detailed below each set-up instruction.

8.1.1. DX-ACU3B

Drive button

LED

Instructions:

Press the **Drive** button until it displays '**0**' on the **LED**.

Wizard note: set **Allow Non-Driving Profile** to **Yes**

8.1.2. DX-REM24SD

Accessory button

LEDs

Instructions:

Press the **Accessory** button until the LEDs display the pattern as shown in the image to the left.

Wizard note: set **ECU1 Mouse Mode Enable** to **Yes**, and **ECU1 Enable** to **Yes**

8.1.3. DX-REM34, DX-REM34B, DX-REM41D, DX-REM41E

Drive button

LED

Instructions:

Press the **Drive** button until it displays '**0**' on the **LED**.

Wizard note: set **Allow Non-Driving Profile** to **Yes**

8.1.4.DX-REMG90

ASK button

ECU Icon

Instructions:

Press the **ASK** button until the **ECU** icon lights up.

Wizard note: set **ECU1 Mouse Mode Enable** to **Yes**

8.1.5.DX-REMG91

ESK button

ECU1 Mode Indicator

Instructions:

Press the **ESK** button until the **ECU1 Mode Indicator** lights up.

Wizard note: No Wizard setup

8.1.6.DX2-REMA-ACS2, DX2-REMB-ACS2, DX2-REM420, DX2-REM421

Drive Profile button

Drive Profile LEDs

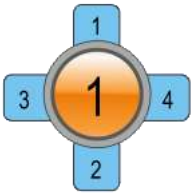
Instructions:

Press the minus (-) side of the **Drive Profile** button until the **Drive Profile LEDs** display the pattern as shown in the image to the left.

Wizard note: set **Allow Non-Driving Profile** to **Yes**

8.1.7.DX2-REM550, DX2-REM551

Drive Mode



LCD display

Instructions:

Press the **Drive Mode** button up until the LCD displays the **ECU1 mode** as shown in the image to the left.

Wizard note: set **ECU1 CH1-6 Mouse Mode Menu** to **Yes**

8.2. Apple disclaimer

You agree that the use of this software together with an iPod, iPhone or iPad ("Apple Product") shall only be as a personal organization or supplemental data display tool and not as a source of medical advice. You agree that this software will never be used to replace the advice of a doctor, or your own common sense and independent judgment, and that you will not at any time rely on any information presented on your Apple Product as the basis for health care, medical or other decisions that may result in injury or other ill effects. You agree to take sole responsibility for your health care decisions, including contacting a physician or other health care professional regarding all medical conditions, tests, diagnoses and treatment options and agree that Apple shall have no liability for any action You or anyone using the software may take, regardless of the information received, displayed, calculated or transmitted by your Apple Product. Apple assumes no risk for your use of the software and makes no warranties whatsoever, express or implied, regarding the accuracy, completeness or usefulness of any information presented on your Apple Product as a result of using the software.

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