

iPortal™



iPortal[®]2

your communication bridge to the world

Installation Manual





GBK52981 iPortal2 Installation Manual Issue 1.0, January 2013

1 About this manual

This manual is an **Installation Manual**, which is primarily targeted towards the manufacturer/dealer. There is also a **User Manual** available, which is targeted towards the powered-wheelchair user.

This **Installation Manual** is for manufacturers/dealers. It is assumed that you are an approved manufacturer/dealer preparing to install the iPortal2 module, mounting arm and cradle. It is recommended that you read the User Manual, the Apple iPhone User Guide, and the relevant DYNAMIC CONTROLS installation manual for the Shark, DX or DX2 system, as applicable.

The iPortal2 connects with a Shark, DX, or DX2 System. This manual must be read together with the Shark, DX or DX System Manual and all other relevant Shark, DX and DX2 component manuals as applicable.

iOS device(s) in this manual refers to iPhone, iPad, and iPod touch.

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



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.

(1) Key information follows such as a mechanical or electrical specification.





WARNING

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 product.



CAUTION

The iPortal, 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 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.

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

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"Made for iPod" means that an electronic accessory has been designed to connect specifically to iPod and has been certified by the developer to meet Apple performance standards.

"Made for iPhone" means that an electronic accessory has been designed to connect specifically to iPhone and has been certified by the developer to meet Apple performance standards.

"Made for iPad" means that an electronic accessory has been designed to connect specifically to iPad and has been certified by the developer to meet Apple performance standards.

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3 Introduction

The iPortal Dashboard for iOS devices displays wheelchair information in real-time using Bluetooth® technology to communicate with the wheelchair system. The iPortal2 is fully compatible with the Shark, DX, and DX2 control systems.

The iPortal Dashboard has the following features:

- speed and speed range indicator
- compass heading
- seat adjustment indicator
- battery state indicator
- a log of wheelchair faults
- emergency call function
- drive profile indicator



The iPortal2 also features:

- connection with DYNAMIC CONTROLS Shark, DX or DX2 wheelchair control systems without reprogramming the wheelchair
- an adjustable mounting arm and cradle for iPhone or iPod touch that attaches to the wheelchair and conveniently positions the iPhone or iPod touch for the user
- an Apple USB charging-only port that keeps the iOS device fully charged
- an auxiliary USB charging-only port that keeps other devices fully charged





NOTE

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

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NOTE

iPortal2 is the new, updated module in Dynamic Controls' iPortal system. In this manual, **iPortal** refers to the complete system, that is: iPortal2 module, cradle, cables and software etc., where **iPortal2** just refers to the latest electronic module, that is, the electronics that the iPortal system connects to.

4 Specifications

The specifications for the iPortal2 module should be read and understood in conjunction with the specifications for the host control system.

4.1 Electrical specifications

Parameter	Min	Nom	Max	Units
DK and DX BUS				
Battery voltage (powered-on non-operating)	12		40	V
Battery voltage (operating)	17	24	34	V
Battery voltage (powered-off)	0		45	V
Reverse supply voltage	-40			V
Quiescent current		35	100	mA
Powered-off current		0.25	0.5	mA
Operating current			1000	mA
iOS device USB charging				
Output voltage at 30pin Apple connector	4.55	5.1	5.25	V
Operating current		2100		mA
Auxiliary USB charging				
Output voltage at USB port	4.75	5.1	5.25	V
Operating current		500		mA



4.2 Mechanical specifications



DJ-BTINT



SHORT VARIANT

DJ-GNKS-IPH



Specifications



5 Installation

The installation instructions for the iPortal2 module should be read and understood in conjunction with the installation manual for the Shark, DX or DX2 host system.

CAUTION

(P

Chemical cleaning agents may cause damage to the iPortal2 module, mounting arm and cradle. To clean the iPortal2 system, wipe with a damp cloth, using only warm soapy water. For cleaning instructions for the iOS device refer to the iPhone, iPad, or iPod touch User Guide.

5.1 Mounting and connecting

The iPortal system includes a connection module and a USB cover, and an optional mounting arm and cradle. In addition, a DX BUS cable (for DX and DX2) or a DK BUS cable and Y-cable (for Shark) is needed. These must be ordered separately. The iOS device is not included.

5.1.1 Mounting the arm and cradle

The iPortal mounting arm and cradle can be mounted anywhere on the wheelchair. However, when choosing the location of the mounting arm and cradle, the following should be taken into consideration:

- ease of access by the wheelchair user
- the length of the charging cable
- mechanical interference with other equipment
- protrusion beyond the frame of the wheelchair
- crushing by the moving parts of the wheelchair



WARNING

Route the cables and fasten all DYNAMIC CONTROLS' components in a position so that the cables, the connectors and the connector sockets do not allow water entry or are not subjected to physical strain, abuse or damage, such as cutting or crushing. Take particular care on vehicles with movable structures such as seat raise/tilt or swing-away arms. Make sure that the cables do not extend from the wheelchair to prevent them getting caught or damaged by external objects.





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 outline of the chair.

Leave enough charging cable so that the user can adjust the angle of the cradle from portrait to landscape orientation. Do not allow a loop of excess cable to hang down. Secure any excess cable at or near the iPortal2 connection module in accordance with general wiring recommendations.





WARNING

When not in use, protect the charging cable connector by putting it in the cable park. The cable park prevents the ingress of dirt and moisture.



There are two packages available for the mounting arm, and cradle: long, and short.

The long mounting arm and cradle package includes:

- mounting arm (Part No. DJ-GNKL-IPH)
- cradle for iPhone
- cradle for iPod touch

The short mounting arm and cradle package includes:

- mounting arm (Part No. DJ-GNKS-IPH)
- cradle for iPhone
- cradle for iPod touch



NOTE

The cradles listed above support the iPhone 3 & 4 variants, and the iPod touch 3. For mounting solutions with other Apple iOS devices, please consult your local Dynamic Controls office or mobility dealer.



To change the cradle:



To increase or decrease the force required to tilt/rotate the cradle, tighten or loosen the nut. If the nut becomes loose over time and the cradle starts moving about too easily, tighten the nut until the force required to adjust the cradle position is as desired.



CAUTION

Use only the charging cable supplied by DYNAMIC CONTROLS. Do not substitute this cable with one that looks similar. The characteristics of the supplied cable are essential to the correct operation of the iPortal.

① The charging cable is available in only one length: 950 mm / 37.4 inches.



To attach the mounting arm to the chair:



WARNING

A mounting bracket is not supplied. It is the responsibility of the manufacturer/dealer to design and make a suitable bracket for attachment to the chair. The mounting arm must be attached to this bracket using only the M10 bolt and washers supplied by DYNAMIC CONTROLS.

① Torque the M10 bolt to 15 Nm.





WARNING

Use only the M10 bolt and washers supplied by DYNAMIC CONTROLS. Do not substitute with parts of lesser quality. This bolt must be tightened to a torque of 15 Nm. Do not omit the washers. The mounting arm may become loose if these instructions are not followed.

5.1.2 Mounting the module

The iPortal2 module can be mounted anywhere on the wheelchair, using two M4 bolts and lock nuts to secure the module to the frame of the chair. However, the following should be taken into consideration:

- ease of access by the wheelchair user
- the length of the charging cable
- the orientation of the module
- routing of the DX or DK bus cable
- sufficient clearance around the Apple USB port
- sufficient clearance around the auxiliary USB charging port

Only two orientations of the module are permitted, as shown in the diagrams on the next page.





Permitted module orientation 1.



Permitted module orientation 2.



NOTE

As shown in the diagram above, leave at least 50 mm / 2 inches clearance for the user to insert a USB plug into the auxiliary USB connector on the module.



WARNING

Mount the module only with the Apple USB connector, DK and DX BUS connectors facing down or towards the rear of the chair. It is important for the routing of cables and protection from the ingress of dust and moisture that the module is only mounted as shown above.



5.1.3 Connecting the module



WARNING

Do not use damaged or abused cables or connectors. A damaged cable can potentially produce localised heat, sparks or arcing and can cause burning or fire resulting in injury or death.



WARNING

Prevent water or dirt entering the module through the unused DX or DK connector. The module is supplied with rubber bungs for both connectors.

5.1.3.1 Connect the charging cable

Step 1: Assemble the USB cover (see diagram below) around the USB end of the charging cableStep 2: Insert the charging cable into the Apple USB connector of the iPortal2 moduleStep 3: Attach the USB cover to the iPortal2 module using the two screws provided





5.1.3.2 Connect the BUS cable

The iPortal2 module connects with either the Shark or the DX BUS. Do not connect the module to both Shark and DX at the same time. No damage will result if both are accidently connected, but the system will not work correctly until one is disconnected. The iPortal2 module automatically detects which bus is connected.

5.1.3.3 Connecting the module into a Shark system

Note that the iPortal2 module has only one DK BUS socket.

Connecting with the Shark system

Use one Y cable (GSM80951) as shown in the diagram below.



Connecting with the Shark system when there is an Attendant Control Unit (ACU)

If an Attendant Control Unit (ACU) is in the system, use two Y cables (GSM80951) as shown in the diagram below.





Connecting with the Shark system using a Y cable at the remote

If there is no ACU, and if it is more convenient for cable routing, a Y cable (GSM80951) may be used from the Shark remote, as shown in the diagram below.



Connecting the Shark system for Accessibility or Mouse Mover

To use the Accessibility feature, and/or the Mouse Mover feature with the Shark system, a normally-open, latching switch will need to be added, as shown below. The switch should be connected to the DCI input and configured for Drive Inhibit. For more information on configuring the DCI input for Drive Inhibit, see the Shark power module installation manual.





WARNING

The drive inhibit switch must be included in the system to avoid unintentional mode changes.



NOTE

DK BUS extensions and cables are available in a range of lengths. See the DYNAMIC CONTROLS product catalogue for more information. Always use the shortest cable that can be routed without it being stretched or pinched.

5.1.3.4 Connecting the module into a DX or DX2 system

Note that the iPortal2 module has only one DX BUS socket.

Connecting with the DX system using any available DX BUS connector

Use an available connector on any DX module and a short DX cable such as the GSM63005.

Alternatively, use an available connector on a DX splitter box (DX-SKT-X4) and a short DX cable such as the GSM63005.



Some DX-compatible modules have only one DX BUS socket, for example the DX2-REM42x Remote. If this is the case, use a Y cable (GCB65231) to connect to the iPortal2.





NOTE

DX BUS extensions and cables are available in a range of lengths. See the DYNAMIC CONTROLS' product catalogue for more information. Always use the shortest cable that can be routed without it being stretched or pinched.

5.1.4 Connecting the iOS device

5.1.4.1 Connecting the charging cable

Connect the charging cable to the Apple USB port on the iPortal2 module and to the iOS device. Depending on the way the user has set-up the iOS device, it may beep or vibrate to indicate that the USB port is charging the device.



Charging is by cable, data is by Bluetooth® link.

Check the iOS device battery level and Bluetooth® connection status from the icons on the top right of the iOS device's screen; these are visible at all times.





NOTE

The charging cable does not carry data. The iOS device connects to the iPortal2 module using a Bluetooth[®] wireless connection. You must first pair the iPortal2 with the iOS device. For instructions on pairing, please refer to the next section.



NOTE

The word iOS device refers to the iPhone, iPad, or iPod touch belonging to the wheelchair user and used to connect to the iPortal2.

5.1.4.2 Pairing the iOS device with the iPortal2

An iOS device communicates with the iPortal2 module using a Bluetooth® wireless connection. Before using an iOS device with the iPortal2, a Bluetooth® wireless connection needs to be established between the two; this is called **pairing**. Pairing is normally a one-off procedure: that is, once an iOS device has been paired with the iPortal2, it will remain paired during normal operation.

To pair the devices, follow the steps below. (The numbers in square brackets refer to the images below).

Step 1: Turn the iOS device's Bluetooth On. The iOS device will start searching for nearby devices



Step 2: Turn the wheelchair's power **off** and then **on** [5]. This will switch on the iPortal2's Bluetooth.







Step 3: When the iPortal2 is displayed on the screen, tap on it to connect to it.

After the iOS device and the iPortal2 have successfully paired, the connection is listed on the Bluetooth® menu.

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

If the 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, increase the sleep timeout value.

5.1.4.3 Pairing a different iOS device with the iPortal2

To pair a different iOS device with the iPortal2, it may be necessary first to un-pair the previous device.

To un-pair a device previously paired with the iPortal2:

Step 1: on the device to be un-paired, set Airplane Mode to ON

Step 2: on the device to be paired, follow the procedure "Pairing the iOS device with the iPortal2" in the section above



NOTE

Allow approximately 60 seconds for the iPortal2 to find the new device.

Step 3: On the un-paired device, reset Airplane mode to OFF



REFERENCE

For more details of how to manage Bluetooth[®] on an iOS device refer to the online help available at <u>www.apple.com/support</u>



To clear the iPortal2 from the iOS device Bluetooth® list:

From the iOS device Home screen, choose Settings ► General ► Bluetooth ► Forget this Device, and tap Forget Device.

Bluetooth	ON	
Devices 💥		
Dynamic iPor	tal Not Connected 📀	
NZCH2086	Not Connecter	Forget this Device
Now	Discoverable	
		4
		Forget Device
		Canaal
		Cancer



5.1.5 Status LEDs

5.1.5.1 Bluetooth® wireless link flash codes (blue LED)



Pattern	Status
On steady	Connected to at least one device
Off	Bluetooth® off, or power off, lost all connections
Slow flash	Listening for devices to connect to
Fast flash	Trying to re-establish known connections/firmware upgrade in progress

5.1.5.2 iPortal2 connection module flash codes (green LED)

The status of the iPortal2 system is indicated by a green LED on the iPortal2 connection module.

Pattern	Status
Steady green light	The iPortal2 is operating normally
Flashing green light	An internal error has occurred; contact DYNAMIC CONTROLS

5.2 Dashboard software application

See the **iPortal2 User Manual** for instructions on downloading, installing and using the iPortal Dashboard application.

6 Programming

The iPortal2 module can be added to any Shark or DX/DX2 System without reprogramming the wheelchair's control system.

New firmware may be downloaded to the iPortal2 module by the Dashboard application. Downloading a new version of the iPortal Dashboard application will check the iPortal's firmware on the module and automatically upgrade it, if you choose. More information is available in the iPortal2 User Manual. It is recommended that you carry out any upgrade as soon as possible.

7 Troubleshooting

7.1 Bluetooth® connection fails

If you are experiencing difficulty establishing a Bluetooth® connection between the iOS device and the iPortal2 module, try the following:

7.1.1 Restart the iOS device's Bluetooth®:

Step 1: From the iOS device's Home screen, select Settings ► General ► Bluetooth

Step 2: Set Bluetooth to Off

Step 3: Set Bluetooth to On

Step 4: Turn the wheelchair's power off and then on

Step 5: On the iOS device's list of Bluetooth devices, tap **Connect** on your uniquely numbered iPortal (the number is the serial number of your iPortal2 module)

7.1.2 Wait longer for Bluetooth® to establish a connection:

After Step 4 above, allow up to 60 seconds for pairing to complete.

7.1.3 Clear the iPortal2 from the iOS device's Bluetooth® list:

From the iOS device Home screen choose Settings ► General ► Bluetooth ► Forget this Device, and tap Forget Device. After the device has been un-paired, follow the procedure for pairing in section 3.1.4.2 Pairing the iOS device with the iPortal.

7.1.4 Increase the sleep timeout of the chair:

If the wheelchair's sleep-mode timeout value is too small, and the wheelchair enters sleepmode whilst pairing, then pairing will fail. To overcome this, increase the sleep timeout value of the chair.

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8 Appendices

8.1 Intended use and regulatory statement

Intended Use

The iPortal2 is a one-way communication module intended to provide an interface between a Dynamic Controls wheelchair control system and third party communication devices that serve as an optional display, as well as the ability to operate a mobile technology device through the wheelchair controls. The iPortal2 is intended for wheelchair users who have difficulty viewing the display or interface on the regular Dynamic Controls Remotes and would benefit from a heads up display of visual feedback on the operational state of the controller system.

It is not intended to operate diagnostic or life support devices or similar safety critical applications.

Additionally, the iPortal2 offers users who have little or no ability to directly operate an iDevice (iPhone, iPod Touch, iPad) or personal computer with Bluetooth connectivity (Windows PC or Mac), the functionality to navigate and control features and functions of an iOS, Android or Windows based device through the wheelchair control system.

Regulatory Classification

• Europe

The iPortal2 is an optional output display from either the Shark System or the DX/DX2 System, with functionality to navigate and control an iOS, Android or Windows device, classified as an accessory of a Class I medical device (Powered Wheelchair) as detailed in Directive 93/42/EEC concerning Medical Devices (as amended by Council Directive 2007/47/EC).

• USA

The iPortal2 is an optional output display from the Shark System or DX-System, with functionality to navigate and control an iOS, Android or Windows device, classified as an accessory of a Class II medical device (Powered Wheelchair) as detailed in 21 CFR § 890.3860. Accordingly, the iPortal2 is itself categorized as a 'wheelchair accessory' as detailed in 21 CFR § 890.3910 - Class I, 510(k) exempt.

Compliance and Conformance with Standards

In accordance with the regulatory classification, the iPortal2 is designed to comply with the requirements of the European Council Directive 93/42/EEC and US Quality System Regulations of 21 CFR § 820.

The iPortal2 has been designed such that the combination of the wheelchair and the control system (Shark System or DX/DX2 System) including the iPortal2 – but excluding the third party display equipment – complies with the relevant clauses of the MDD Harmonized Standards EN12184 and EN12182 and applicable parts of the FDA Consensus Standard ANSI/RESNA 7176 for performance.

8.2 Service life

If the product has been installed, used and maintained as recommended, all instructions contained in this manual have been properly followed, and the unit has not been abused, the expected service life period (i.e. serviceable life expectancy) of the product is five (5)

dynamic 🕞

years. After this period, DYNAMIC CONTROLS recommends the product be replaced for safety reasons. DYNAMIC CONTROLS accepts no responsibility or liability for product failure if the product is retained in use beyond the stated service life period.

8.3 Maintenance

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

- Keep all DYNAMIC CONTROLS products free of dust, dirt and liquids. To clean the product, use a cloth dampened with warm soapy water. Do not use chemicals, solvents or abrasive cleaners, as this may damage the product.
- Every month, check all vehicle components for loose, damaged or corroded components, such as connectors, terminals, or cables. Restrain all cables to protect them from damage. Replace damaged components.
- Once every 6 months, test all switchable functions on the DYNAMIC CONTROLS electronics system to ensure they function correctly.
- There are no user-serviceable parts in any DYNAMIC CONTROLS electronic product. Do not attempt to open any case or undertake any repairs, else the warranty will be void and the safety of the system may be compromised.
- If any doubt exists with any of the above, consult your nearest service centre or agent.



WARNING

It is the responsibility of the end user to maintain the product in a state of good repair at all times. 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.

8.4 Warranty

All equipment supplied by Dynamic Controls is warranted by the company to be free from faulty workmanship or materials. If any defect is found within the warranty period, the company will at its sole discretion refund, replace or repair the equipment without charge for materials or 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 (if any) have been correctly adjusted for safe operation prior to use
- has been used solely in accordance with this manual and all other manuals of the Dynamic Controls products that are used on the mobility vehicle
- has not been subjected to misuse or accident, or been modified or repaired by any unauthorised personnel
- has not been connected to non-specified third party devices without the specific approval of Dynamic Controls
- has been used solely in combination with electrically powered mobility vehicles in accordance with the intended use and the recommendations of the vehicle manufacturer

8.5 Safety and misuse warnings

Please reference the user manual and/or installation manual of the wheelchair that the iPortal2 is installed on for the warnings that apply to that particular wheelchair and control system.

In addition, the following warnings apply to the wheelchair in combination with the iPortal2 accessory:

- 1. Do not install, maintain, or operate this equipment before you have read and understood all the instructions and all the manuals for this product and all the other products that you use or install together with this product. Follow the instructions of the manuals. If you do not follow all instructions, injury or damage could result.
- 2. Do not try to open or disassemble any case there are no user-serviceable parts inside.
- 3. Do not touch the connector pins. If you touch the pins, they can become dirty and/or the system's electronic components can be damaged by electrostatic discharge.
- 4. DYNAMIC CONTROLS has tested the iPhone to confirm that Radio Frequency Interference (RFI) caused by the iPhone does not change the behaviour of the wheelchair control systems in any way. In the very unlikely case that the iPhone or another mobile communications device would cause the wheelchair to behave erratically, turn off the control system. When you turn off the control system, the chair will halt.
- 5. It is the responsibility of the installer to make sure that accessories that are installed on the vehicle do not interfere with the operation of the vehicle or the control system.

8.6 Electromagnetic Compatibility (EMC)

DYNAMIC CONTROLS Electronic controllers and accessories have been tested on typical representative 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 / ISO7176-21

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



WARNING

Minimising emissions

To minimise emissions and to maximise the immunity to radiated fields and ESD, follow the general wiring recommendations in the DX or Shark System Manuals.



8.7 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.

Do not dispose of this product in fire.

8.8 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.

8.9 EU Authorised Representative

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9 Notes

(Use this page to add your own notes.)

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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.

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