CJSM2

21.0 R-Net CJSM2 Control System

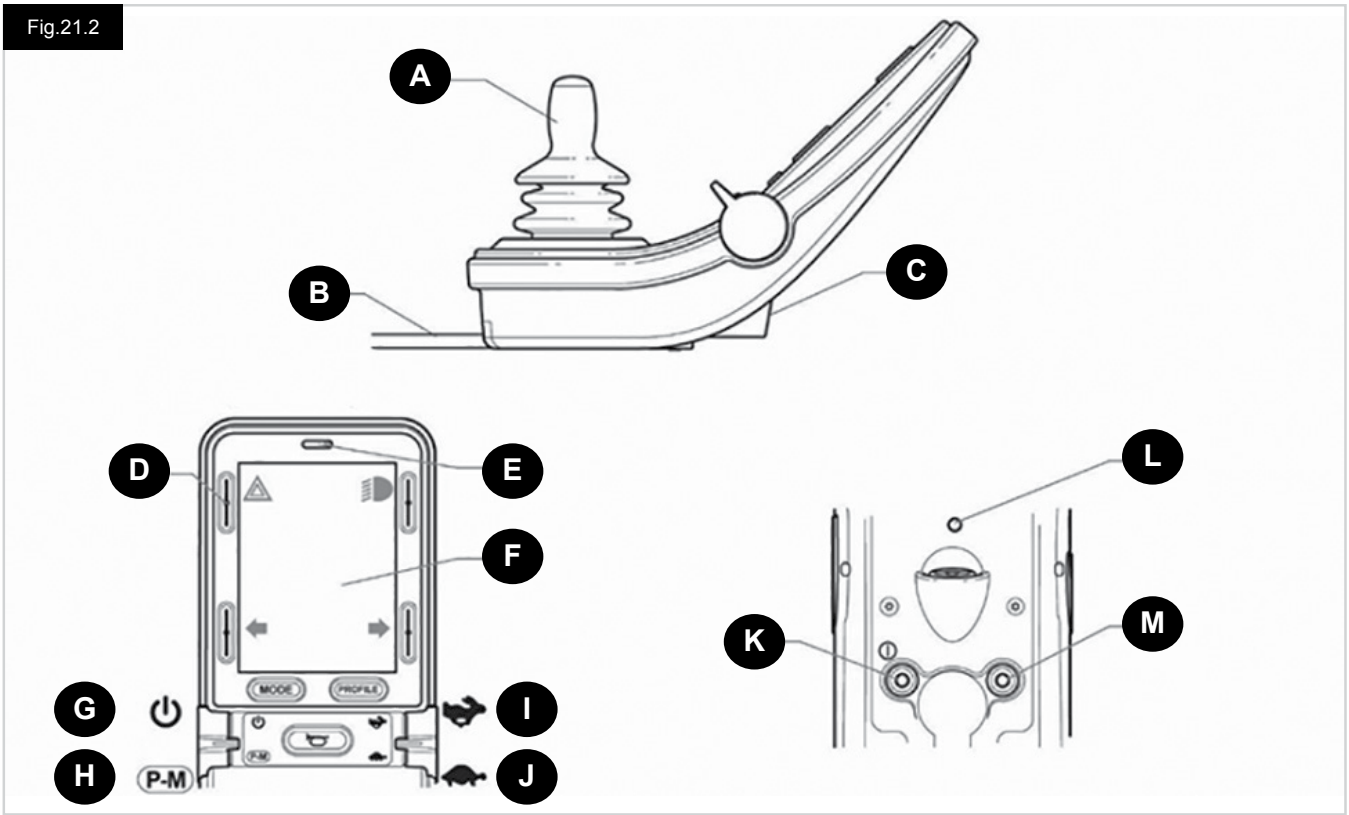
21.1 Introduction

The operation of the R-Net wheelchair control system is simple and easy to understand. The control system incorporates state-of-the-art electronics, the result of many years of research, to provide you with ease of use and a very high level of safety. As with other electronic equipment, correct handling and operation of the unit will ensure maximum reliability.

Please read this chapter carefully - it will help you to keep your wheelchair reliable and safe.

Fig.21.1

Fig.21.2



21.2 Controls (Fig. 21.1, Fig.21.2, Fig.21.3)

The Joystick Module is available with and without lighting control.

The controls are common to both; however, the lighting buttons symbols only appear on the lighting control version.

JOYSTICK
The primary function of the joystick is to control the speed and direction of the wheelchair. The further you push the joystick from the center position the faster the wheelchair will move. When you release the joystick the brakes are automatically applied.

COMMUNICATION CABLE
The Communication Cable carries the electrical signals to and from the Power Module.

CHARGER SOCKET
This socket should only be used for charging or locking the wheelchair. Do not connect any type of programing cable into this socket.

This socket should not be used as a power supply for any other electrical device. Connection of other electrical devices may damage the control system or affect the E.M.C. performance of the wheelchair.

CAUTION!

The control system's warranty will be void if any device other than the battery charger supplied with the wheelchair or the lock key is connected into this socket.

SCREEN BUTTONS
These buttons operate the lighting functions: 1.Hazards, 2. Lights, 3. Left Indicator and 4. Right Indicator. The function of each button is illustrated by an icon displayed on the LCD screen next to the button (Fig.19.3). Pressing the relative button activates and deactivates its function. Once the function is activated, the icon on the LCD will illuminate or flash depending on the function.

NOTE:
If no lighting system is fitted to the wheelchair, these buttons will be inactive. In all instances, the top left button, when held for a short time, will open the Settings Menu. Refer to section Settings Menu for more details.

NOTE:
When 2, 3, and 4 are held for a short time they can activate functions (e.g. lift, tilt, etc). Depending on the chair options.

IR RECEIVER - LIGHT SENSOR - LCD DIAGNOSTIC LED
The IR receiver enables IR codes and signals to be inputed from external equipment. Refer to IR Setup and Operation. The Ambient Light Sensor automatically adjusts screen brightness. Refer to Settings Menu. The LCD Diagnostic LED is to indicate the control system is switched on in the event of an LCD screen failure.

LCD SCREEN
The status of the control system can be understood by observing the LCD screen. The control system is on when the screen is back-lit. Refer to section Momentary Screens for details.

ON - OFF BUTTON (LEFT PADDLE
The On/Off paddle switch is operated via forward deflections of the left paddle.
Operate the On/Off paddle. The screen will go through an initializing process then show the base screen (Fig 21.1).

- Check that the Speed Setting is at a level that suits you.
- Push the joystick to control the speed and direction of the wheelchair.

Fig.21.3

STANDBY

ACTIVATED

NOTE:
If you push the joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen (Fig.19.32, pg 76). You must release and center the joystick to resume normal operation. If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and push it again. The screen will display the diagnostic screen at this time. You can reset this condition by switching the control system off and on again.

NOTE:
If you do not push the joystick as you switch the wheelchair on and the diagnostic screen is displayed (Fig.21.35, pg 77) then the R-Net has detected a problem somewhere in the wheelchair's electrical system

PROFILE - MODE BUTTON (LEFT PADDLE)
The Profile/Mode paddle switch allows the user to select the available drive Profiles and operating Modes for the control system. The selection sequence is through each of the available Profiles and then each of the available Modes.

Depending on the way the control system has been programmed a momentary screen may be displayed when a new Profile is selected. Refer to section Momentary Screens for details.

The available Profiles and Modes are dependent on how the control system has been programmed and the output devices that are connected.

The Profile/Mode paddle switch is operated via reverse deflections of the left paddle.

INCREASE SPEED (RIGHT PADDLE)

DECREASE SPEED (RIGHT PADDLE)
The Speed Paddle allows adjustment of the control system's speed setting.

Depending on the way the control system has been programmed a momentary screen may be displayed when the paddle is operated. Refer to section Momentary Screens for details.

The default operation of the Speed paddle is momentary, i.e. the speed setting will be increased upon forward deflections of the paddle and decreased upon reverse deflections of the paddle.

The unit may be programmed to alter the timing and operation of the Speed paddle, as well as changing it to operate continuously,

i.e. in a similar way to a rotary potentiometer, (also available).

EXTERNAL ON - OFF SWITCH JACK
This allows the user to turn the control system on and off using an external switch, such as a Buddy-Button.

⚠ CAUTION!

The Joystick Module is supplied with rubber plugs that must be inserted into the Jack Socket when no external device is connected.

TRANSMITTER
The CJSM2 includes an IR transmitter and receiver that allows the CJSM2 to replicate commonly used IR devices, such as remote controls for TV's, DVD's, Cable/Satellite or environmental controls such as automatic door openers. Once correctly configured IR Control can be performed using the Joystick (or other Input Device) or from a Specialty Input Device that is connected to the system.

EXTERNAL PROFILE SWITCH JACK
This allows the user to perform the function of the Profile/Mode paddle using an external switch, such as a Buddy Button.
If the control system is set for latched drive or latched actuator control operation, then this input will provide the Emergency Stop Switch function.

Alternative functions for this input are available via programing as described below:

- Switch pad to control multiple seat
- Switch pad to control Bluetooth functions.
- To set the operation of the control system in the event of a failure in the connected switch or its wiring to this input.

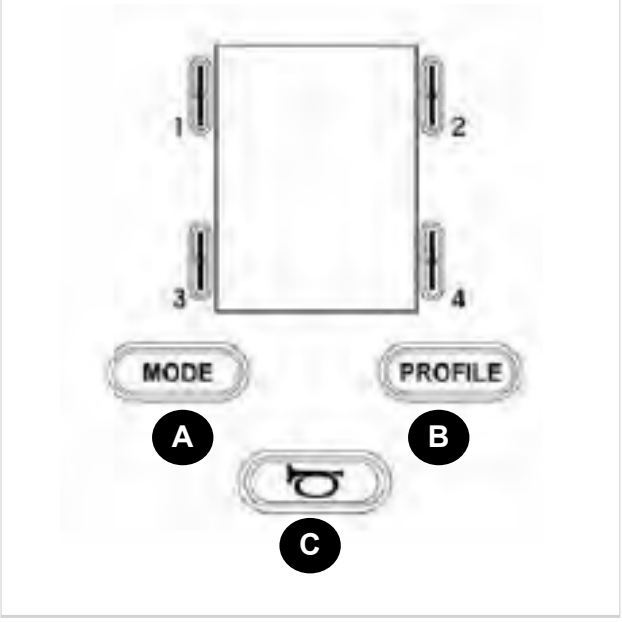
21.3 Buttons (Fig 21.4)

A. The Mode button allows the user to navigate through the available Modes for the control system. The number of available Modes is dependent on how the control system is programmed. Refer to your authorized Sunrise Medical dealer for programing.

B. The Profile button allows the user to navigate through the available Profiles for the control system. The number of available Profiles is dependent on how the control system is programmed. Depending on the way the control system has been programmed a momentary screen may be displayed when the button is pressed. Refer to your authorized Sunrise Medical dealer for programing.

C. The Horn will sound while this button is depressed.

Fig.21.4



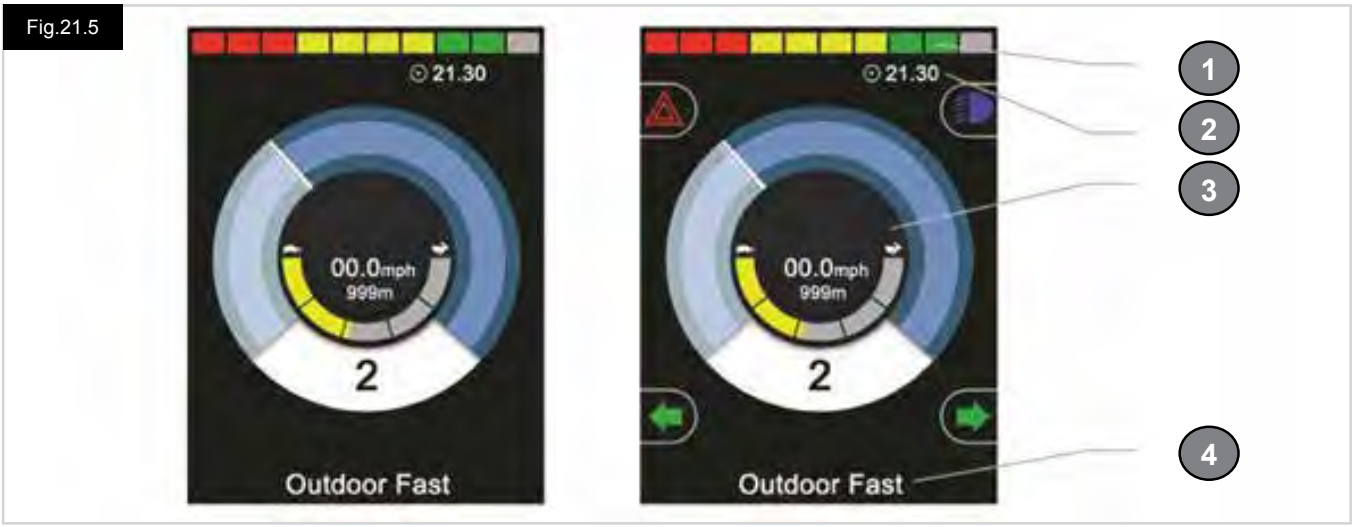
21.4 LCD Screen Detail (Fig 21.5)

The status of the control system can be understood by observing the LCD screen.

The screen for the R-Net CJSM2 has common components, which will always appear, and components that will only appear under certain conditions. Opposite is a view of a typical Drive screen, with and without lights.

The screen is split into four areas of information: Battery Indicator, Information Bar, Main Area and Text Bar. Each area is detailed separately in the following sections.

Fig.21.5



1. **Battery Indicator**
2. **Information Bar**
3. **Main Area**
4. **Text Bar**

BATTERY INDICATOR (Fig 21.6)

This displays the charge available in the battery and can be used to alert the user to the status of the battery:

- **Steady:** This indicates that all is well.
- **Flashing Slowly:** The control system is functioning correctly, but you should charge the battery as soon as possible.
- **Stepping Up:** The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again

INFORMATION BAR (Fig 21.7 - Fig 21.11)

This area contains information and warning symbols, as well as a clock.

FOCUS (Fig 121.7)

When the control system contains more than one method of direct control, such as a secondary Joystick Module or a Dual Attendant Module, then the Module that has control of the wheelchair will display the Focus symbol.

BLUETOOTH SIGNAL ICON (Fig 21.8)

This symbol appears when Bluetooth is enabled. If the symbol is white, the system is not paired to an external Bluetooth device. If the symbol is blue, the system is paired to an external Bluetooth device. When the system has been placed into Discovery Mode, the icon will flash blue.

MOTOR TEMPERATURE (Fig 21.9)

This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.

CONTROL SYSTEM TEMPERATURE (Fig 21.10)

This symbol is displayed when the control system has intentionally reduced its own power, in order to protect itself against heat damage.

CLOCK (Fig 21.11)

This displays the current time in a numeric format. The clock is user adjustable.

Adjustable options are:

- Visibility, whether the clock is displayed on screen.
- The display format, 12 or 24 hour.
- The time, the user can adjust the time.

These adjustments are made within the Settings Menu. Refer to section Settings Menu for more details.

TEXT BAR (Fig 21.12)

This area of the screen displays text relevant to the operating condition of the control system. Example text strings would be Profile Name, Mode Name or Axis Name. These text strings are programmable.

Fig.21.6

Fig.21.7

Fig.21.8

Fig.21.9

Fig.21.10

Fig.21.11

Fig.21.12

MAIN SCREEN AREA

This area will contain different information dependent on the current operating Mode of the control system. The area is also used to display general system information, when necessary.

DRIVE MODE SCREEN (Fig 21.13)

Displays symbols relevant to the drive control of the wheelchair.

CURRENT PROFILE (Fig 21.14)

This denotes the currently selected Profile, shown in numeric form.

SPEED INDICATOR (Fig 21.15)

This gives a graphical display of the wheelchairs speed. As the speed increases, the needle will move around the arc, covering the background with the white highlight.

The display is scaled between zero speed and the speed corresponding to the programmable parameter, Max Displayed Speed.

DIGITAL SPEED DISPLAY (Fig 21.16)

This displays the actual speed of the wheelchair in digital form. The display can be set to mph or km/h, or can be turned off. These options are set by the programmable parameter, Display Speed.

MAX SPEED INDICATOR (Fig 21.17)

This displays the current maximum speed setting.
When the left-hand segment is illuminated, then the speed setting corresponds to the programmed minimum forward, reverse and turning speeds.

The indicator will never show a lower setting, i.e. the left-hand segment will always be fully illuminated.

When all segments are fully illuminated, then the speed setting corresponds to the programmed maximum forward, reverse and turning speeds.

ODOMETER (Fig 21.18)

This displays the total distance the wheelchair has travelled or the trip distance since the last reset. This selection is made in the Settings Menu. Refer to Settings Menu further in this section of the manual.

The display can be set to mph or km/h, or can be turned off.

These options are set by the same programmable parameter that affects the digital speed display, i.e. Display Speed.

Fig.21.13

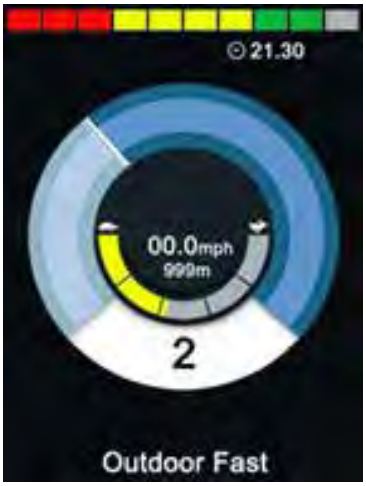


Fig.21.14

Fig.21.15

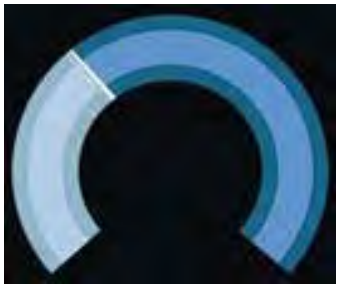


Fig.21.16

Fig.21.17

Fig.21.18

INHIBIT (Fig 21.19)

If the wheelchair is being inhibited from driving, then this red symbol will be flashing.

If the speed of the wheelchair is being limited, for example, by a raised seat, then this orange symbol will be displayed.

Fig.21.19

LATCHED DRIVE (Fig 21.20)

This symbol will be displayed if the control system is set for latched drive operation.

Fig.21.20

MOMENTARY SCREENS (Fig 21.21 - Fig 21.22)

If the momentary screens are programmed to be displayed then pressing the Speed or Profile Buttons will display screens such as below.

Speed Switch.
Momentary Screen = Fig 21.21

Profile Button.
Momentary Screen = Fig 21.22

Fig.21.21

SEATING MODE SCREEN (Fig 21.23)

Displays symbols relevant to the seating control of the wheelchair.

Displays the sections of the chair currently selected for movement, the name given to the selection and a direction arrow showing what sort of movement is available.

Seating adjustment is achieved as follows:

- Move the joystick left or right to select the desired axis.
- Move the joystick forwards or backwards to move the seat.

Fig.21.22

LATCHED SEATING CONTROL (Fig 21.24)

This symbol will be displayed if the control system is set for latched seating control operation.

Fig.21.23

Fig.21.24

BLUETOOTH MODE SCREEN (Fig 21.25 - 21.26)

The initial Bluetooth Mode screen will be dependent upon whether the CJSM2 has been set up to control one or more devices.

If set up to control just one device, a screen such as shown in Fig 21.25, will appear.

If set up to control more than one device, a screen such as shown in Fig 21.26 will appear.

The joystick should be used to navigate the menu and select the device to control.

Forward and reverse deflections navigate the menu.

A right deflection selects the highlighted device.

For further details of Bluetooth operation, refer to the Bluetooth chapter.

BLUETOOTH SCREEN PROGRAMING

The text to describe each device can be set via the programmable parameter, “Device Name”.

The screen symbol for each device can be set via the programmable parameter, “Screen Graphic”.

Please contact your local approved Sunrise Medical authorized dealer.

DISCONNECTING A BLUETOOTH DEVICE

Enter the Settings Menu and select Bluetooth.

Set the device you wish to disconnect from On to Off.

FLIGHT-SAFE MODE

It is common practice to disable wireless transmissions while on an aircraft.

Enter the Settings Menu and select Bluetooth.

Set all the devices to Off.

GENERAL INFORMATION SYMBOLS

LIMP MODE (Fig 21.27)

This message is displayed if a user switch has become disconnected, the switch detect has been set to on, and the control system is programmed to still allow drive, at a reduced rate.

TIMER (Fig 21.28)

This symbol is displayed when the control system is changing between different states. An example would be entering into module reconfiguration.

Fig.21.25

Fig.21.26

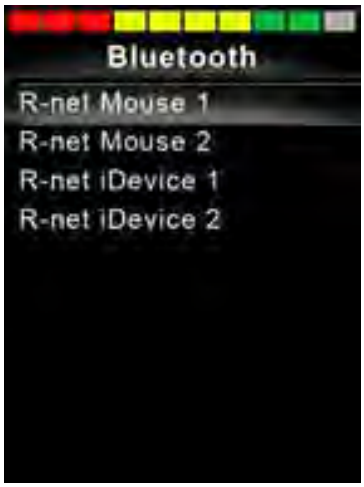


Fig.21.27

Fig.21.28

RESTART (Fig 21.29)

When the control system requires a reboot; for example, after a module reconfiguration, this symbol will be flashing. Turn the chair off and back on.

SLEEP (Fig 21.30)

This symbol will be displayed for a short time before the R-Net enters into a sleep state.

E-STOP (Fig 21.31)

If the control system is programmed for latched drive or seating control operation, then it is normal for an Emergency Stop Switch to be connected into the External Profile/Mode Switch Jack.

If the Emergency Stop Switch is operated or disconnected, this symbol will be displayed.

Fig.21.29

Fig.21.30

Fig.21.31

JOYSTICK DISPLACED (Fig 21.32)

If the joystick is operated before or just after you switch the control system on, the screen will flash the joystick displaced screen.

You must release and center the joystick to resume normal operation.

If you do not release the joystick within five seconds the wheelchair will not be able to move, even if you release the joystick and operate it again.

The screen will display a diagnostic screen at this time.

You can reset this condition by switching the control system off and on again.

Fig.21.32

CONTROL SYSTEM LOCK (Fig 21.33)

This symbol is displayed if the control system is locked, see section 3.5 for locking and unlocking the joystick.

Fig.21.33

DIAGNOSTIC SCREEN (Fig 21.34)

When the control system safety circuits have operated and the control system has been prevented from moving the wheelchair, a diagnostics screen will be displayed.
This indicates a system trip, i.e. the R-Net has detected a problem somewhere in the wheelchair's electrical system.
If the error is in a non-active module, for example in the ISM but Drive Mode is selected, then drive will still be possible, however, the diagnostic screen will appear intermittently.
Refer to Diagnostics for a complete description of the Trip Texts and diagnostic procedures or contact your authorized dealer.

Fig.21.34

SETTINGS MENU (Fig 21.35 next page)

The Settings Menu allows access to user related adjustments. The menu is accessed by depressing and holding the top left-hand Screen Button for 1 second.

A typical Settings Menu display would be as shown in Fig.21.35.

Joystick forward and reverse movements are used to navigate up and down the screen.

Each of the menu items are described in the following sections:

TIME

A right joystick deflection will enter a sub-menu with the following Time related function options:

Set Time:
Allows the user to set the current time.

Display Time:
This sets the format of the time display or turns it off. The options are 12hr, 24hr or Off.

DISTANCE

A right joystick deflection will enter a sub-menu with the following odometer data and function options:

Total Distance

This is a value held in the Power Module and relates to the total distance driven using that Power Module.

Trip Distance

This is a value held in the Joystick Module and relates to the total distance driven since the last reset.

Display Distance

Sets whether Total Distance or Trip Distance appears as the odometer display on the Joystick Module.

Clear Trip Distance

A right joystick deflection will clear the Trip Distance value.

BACKLIGHT

A right joystick deflection will enter a sub-menu with the following Backlight related function options:

Backlight

This sets the intensity of the LCD backlight, adjustable range is 0% to 100%.

Auto Backlight

The Joystick Module contains an ambient light sensor to automatically adjust screen brightness. The programmable options are On or Off. If set to On, the display adjusts the screen brightness based on the light sensor reading. If set to Off the screen brightness will not change with changes in light intensity.

Backlight Timeout

This adjusts the period of time the backlight will remain active once no further instructions are received from an input device, adjustable between 0 and 240 seconds (4 minutes).

BLUETOOTH

A right deflection of the joystick will enter a sub-menu to configure the Bluetooth Mode screen.

Refer to chapter Bluetooth Set-up and Operation for more details.

IR SETUP

A right deflection of the joystick will enter a sub-menu for learning and deleting IR codes.

Refer to chapter IR Set-up and Operation for more details.

Fig.21.35

21.5 Programming (Fig 21.36)

A right deflection of the joystick will enter a sub-menu for programming user experience functions as follows:

Sleep
Sets the time after which the control system will go to sleep if an Input Device command is not received.

Sounder Volume
Sets the volume of the sounder used to indicate button presses.

Horn Volume
Sets the volume of the horn when used.

Start-up Beep
Sets whether a short beep occurs when the controller is turned on.

Momentary Screens
Sets whether programmed Momentary Screens are displayed.

Display Speed
Sets how the wheelchairs speed is displayed; options are mph, km/h, or off.

Displays
Sets the format of the digital drive display; options are odometer, speed, or both.

Diagnostics
Allows the user to read diagnostic information from the control system.

Timers
Enables the user to view how many hours the chair has been driven.

EXIT
A right deflection of the joystick will exit the settings menu.

Fig 21.36

1. **Module**
2. **Software Version**
3. **Trip Text**
4. **Occurences**

Fig.21.36

22.0 CJSM2 IR Setup and Operation

22.1 Introduction

The CJSM2 includes an IR transmitter and receiver to replicate commonly used IR devices, such as remote controls for TVs, DVDs, Cable/Satellite or environmental controls such as automatic door openers (Fig 20.1).

22.2 CJSM2 Used With An Omni2-IR

If there are two devices with IR connected into a system, for example a CJSM2 and an Omni2-IR, only one of the devices can have IR codes stored in it.

If there are IR codes in both devices, then IR Mode will not be accessible.

If a CJSM2 and an Omni2-IR are connected into a system, the Omni2-IR's learning function is disabled and IR codes must be learned through the CJSM2.

To ensure the CJSM2 supports a greater number of modern day IR appliances, the storage format of its IR codes is different to that of the Omni2-IR.

Therefore, it is not possible to use the IR Configurator to exchange IR codes between the devices, (contact your Sunrise Medical authorized dealer).

IR Control Mode is accessed in the normal way of Mode selection, i.e. operation of the R-Net system's Mode button or Command.

IR Control Mode will only be available if IR Codes have been stored in the CJSM2.

There are two ways to store IR Codes in the CJSM2: by 'learning' Codes from IR handsets; or by programing from the PC based IR Configuration Tool, (contact your Sunrise Medical authorized dealer).

Refer to section IR Set Up for details of the method.

NOTE:
If IR Mode is not available and there are stored IR Codes, then refer to your Sunrise Medical authorized dealer.

Fig.22.1

22.3 IR Code User Menu

IR Control Mode is accessed through Mode selection, i.e. operation of the R-Net system's Mode button or Command. IR Control Mode will only be available if IR Codes have been stored in the CJSM2.

There are two ways to store IR Codes in the CJSM2:

1. Copying codes from IR handsets, (e.g. Television remote).
2. Programming from the PC based IR Configuration Tool,(contact your Sunrise Medical authorized agent).
3. Enter IR Mode to access the list of available IR Appliances,(Fig 22.2).

Navigate the User Menu as below (Fig 20.3 to 20.4)

i. Forward joystick deflections will highlight the Appliance above.
ii. Reverse joystick deflections will highlight the Appliance below.
iii. Left or Right joystick deflections will enter the highlighted Appliance's sub-menu, which will contain all the IR Commands for that Appliance
iv. Left or Right joystick deflections will then activate the highlighted IR Command.

For each Appliance there is a list of associated IR Commands: For example, if TV is selected commands such as:

TV – ON, TV – OFF, Channel Up, Channel Down, Volume Up, and Volume Down may be displayed.

When the CJSM2 is transmitting the selected command, it is highlighted with a red background.

NOTE:

- If IR Mode is not available and there are stored IR Codes, then please refer to your Sunrise Medical authorized dealer.
- The CJSM2 contains a default menu. If required, the IR Configuration tool can be used to change this default menu. Please refer to your Sunrise Medical authorized dealer.

22.4 IR Set Up Menu

On entering the IR Set-up Menu, the default appliances will appear (Fig 22.2).

By selecting an appliance, then its commands will be shown (Fig 22.3).

If a Command is checked, this means it has a stored IR Code (Fig 22.5).

If it is not checked, then there is no stored IR Code for that Command.

IR Codes can be stored or deleted as detailed in the following sections.

Fig.22.2

Fig.22.3

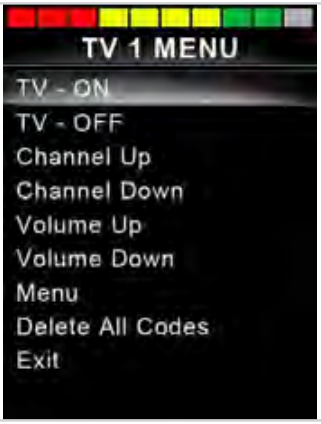
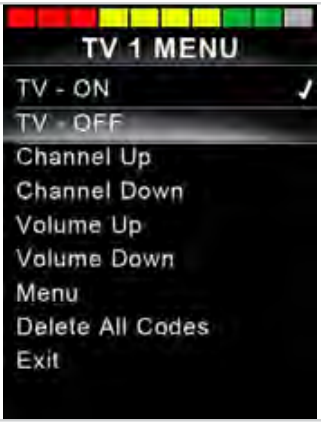


Fig.22.4

Fig.22.5



22.5 Learning an IR Code

Refer to (Fig 20.6 to 20.11).

1. Enter the IR Set-up Menu.
2. Select an Appliance, e.g. TV – Samsung.
3. The commands for the Appliance will appear on the screen.
4. Select the command to be learned, via a right deflection of the joystick. In this example, TV > Channel Up (Fig 22.7).
5. Select Learn Code, via a right deflection of the joystick while the command is highlighted (Fig 22.8).
6. Point the TV remote control at the CJSM2 Receiver LED and press the Channel Up button twice.
7. A check denotes a successful learn operation (Fig 22.10).
8. A cross denotes an unsuccessful learn operation, please retry (Fig 22.11).
9. After the code is learned, highlight Exit and deflect the joystick to the left. This will return the system to the Appliance level of the IR Set-up Menu.

NOTE:
The first time an IR Code has been learned, it is necessary to cycle the power to the CJSM2, (turn OFF and ON). If other IR Codes are already learned, then this is not necessary.

Fig.22.6

Fig.22.7

Fig.22.8

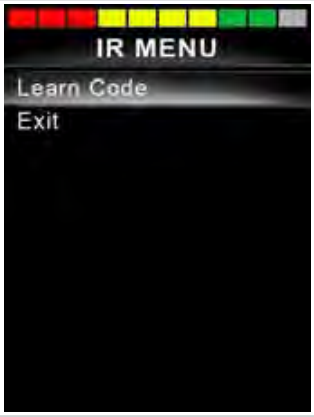
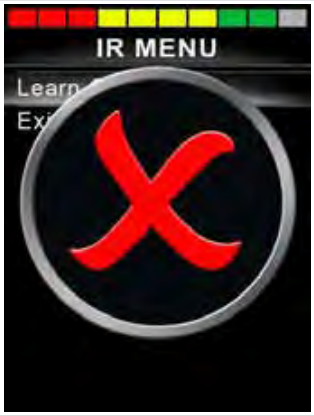


Fig.22.9

Fig.22.10

Fig.22.11



22.6 Learning Sequential IR Codes

Multiple IR Codes can be learned against one Command in the CJSM2 IR set up menu. This enables multiple IR Codes to be transmitted through one Command in the CJSM2 when in IR mode.

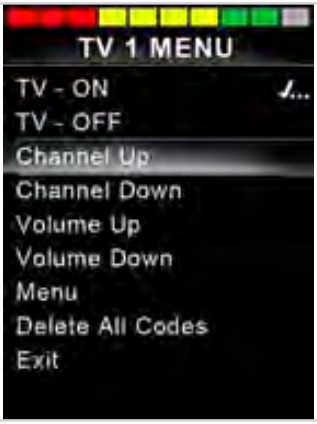
Example of use:

1. The on/off function for multiple appliances (the TV and the DVD for example) can be learned against one entry in the IR Set up menu. The CJSM2 will then transmit the Codes for the learned Command in one burst. In this case, turning the TV and the DVD recorder on or off simultaneously.

To create a Sequence, relating to example 1 above:

- Select the Command to use as the Sequence initiator. In this example, TV > On/Off.
- Select Learn Code, by deflecting the joystick to the right while the Command is highlighted.
- Point the TV remote control at the CJSM2's Receiver LED and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Point the DVD remote control at the CJSM2's Receiver LED and press the On/Off button twice.
- After each successful learn operation a check momentarily appears on the screen, select Learn Code again.
- Complete the sequence by highlighting Exit and deflecting the joystick to the left.
- This time the On/Off Command will have a Tick and 3 Dots beside it, showing a Learned Sequence (Fig 22.12).

Fig.22.12



20.7 Enabling / Disabling IR Codes

IR Codes can be enabled or disabled in the IR Set-up Menu. If a Code is disabled it will not transmit and will not appear in IR Mode options.

- To disable an IR Code, deflect the speed paddle of the CJSM2 up or down. A disabled IR Code appears with an X against the highlighted Command (Fig 22.13).
- To enable an IR Code, deflect the speed paddles on the CJSM2 up or down. An enabled Code appears with a check against the highlighted Command.

Fig.22.13

22.8 Deleting IR Codes

To delete an IR Code for a specific command, highlight the specific command in the appliance menu and deflect the joystick to the right. Then select the Delete Code option (Fig 22.14).

To delete all IR Codes for an appliance select Delete All Codes within that appliance's sub-menu (Fig 22.15).

To delete all IR Codes stored in the CJSM2, select Delete All Codes within the IR Set-up Menu (Fig 22.16).

Fig.22.14

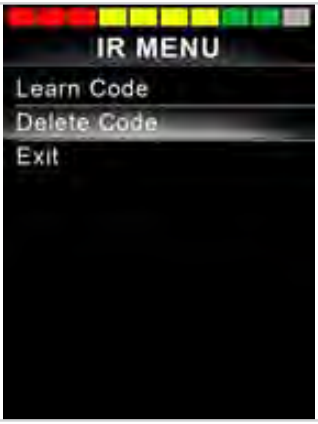


Fig.22.15

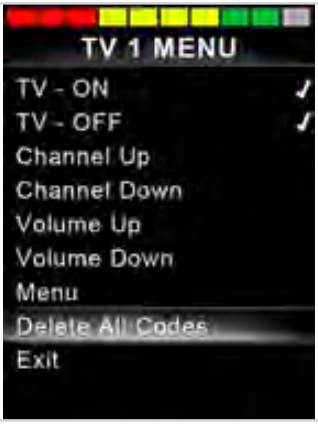


Fig.22.16

22.9 Default IR Menu

The CJSM2 is shipped with a default User Menu as shown below:

TV	DVD 1	DVD RECORDER	CABLE/ SATELLITE	MUSIC	DEVICE 1	DEVICE 2
On/Off	On/Off	On/Off	On/Off	On/Off	Command 1	Command 1
Channel Up	Play	Play	TV Guide	Play	Command 2	Command 2
Channel Down	Stop	Stop	Up	Stop	Command 3	Command 3
Volume Up	Pause	Pause	Down	Volume Up	Command 4	Command 4
Volume Down	Fast Fwd	Fast Fwd	Left	Volume Down	Command 5	Command 5
Menu	Fast Rev	Fast Rev	Right	Pause	Command 6	Command 6
0		Menu	Select/OK	Fast Fwd	Command 7	Command 7
1		Up	Information	CD Changer	Command 8	Command 8
2		Down	Page Up	AM		
3		Left	Page Down	FM		
4		Right	Red	Search		
5		Select/OK	Green	Preset		
6		Record	Yellow			
7		Timer Record	Blue			
8		Record Mode				
9						
Input (Up, Down, Left, Right)						
Select / OK						

23.0 CJSM2 Bluetooth Setup and Operation

23.1 Introduction

The R-Net CJSM2-BT allows a wheelchair user to control multiple Bluetooth enabled devices. Typical applications include PC mouse control or operation of a Smart device. Up to four devices can be controlled. Two of which can be Apple iOS devices and two of which can be Windows or Android devices.

23.2 Operation and Configuring

Bluetooth Mode will only be available if one or more devices are set to On in the Settings Menu. See section Bluetooth Mode Screen Configuration for more details.

The CJSM2-BT and target Bluetooth devices will remain paired until they are disconnected by the target device.

Once a CJSM2-BT has been paired with a Bluetooth device, the module remembers the device's unique identifier. This means the wheelchair can be driven outside the operating range of the Bluetooth connection and upon returning within range the connection will be automatically reinstated.

There are three configuration processes that need to be carried out:

- Bluetooth Mode configuration.
- Bluetooth Mode screen configuration.
- Pairing with Bluetooth Devices.

Each is described in the following sections.

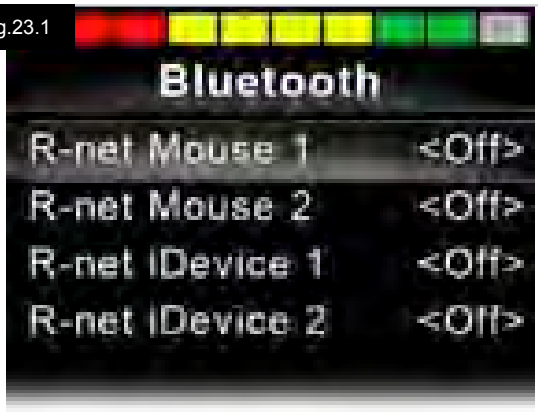
An R-Net Output Mode must be set to Bluetooth. Please contact your Sunrise Medical authorized dealer.

This is a two-stage process. Firstly, a device or devices must be set to On from the Settings Menu. Secondly, for each device a screen graphic and a name can be set via PC Programing. The following two sections describe each process.

Settings Menu

- Enter the Settings Menu and select Bluetooth.
- The Bluetooth Devices screen is displayed.
- Set one or more of the devices to On.
- Switch the R-Net system off and on again (Refer to Fig 23.1).

Fig.23.1



23.3 Pairing With a Bluetooth Device

The CJSM2-BT must first be put into Discovery Mode via the sequence below:

- Enter Bluetooth Mode and select the device you wish to pair with.
- Deflect the joystick in the forward direction and hold until there is a beep. This will take approximately 10 seconds, then release.
- Deflect the joystick in the reverse direction and hold until there is a beep. This will take approximately 10 seconds, then release.
- A screen will appear (Fig 23.2).
- The flashing blue icon indicates that the CJSM2-BT is in Discovery Mode.

Depending on which type of device is being paired with – a Windows PC, an Android device or an iDevice – refer to one of the following three sections:

21.4 Pairing With Windows

If the PC does not have integrated Bluetooth, then a receiver dongle must be used and its drivers installed.
The following Bluetooth dongles are recommended:

- Trust BT-2400
- Linksys USBBT100-UK
- Belkin F8T012uk1 Version 1000

Once a Bluetooth connection is confirmed, the following process should be undertaken on the PC:

- Enter My Bluetooth Devices (Fig 23.3).
- Click ‘Add’ to open the Bluetooth Device Wizard (Fig 23.4).
- Check the box marked ‘My device is set up and ready to be found’ (Fig 23.4).
- Click ‘Next’ (Fig 23.4).
- The PC will now search for local Bluetooth devices.
- The available Bluetooth devices are shown on the screen (Fig 23.5).
- Click on the New Device name e.g. 'Tom's PC' and then click on ‘Next’ (Fig 23.5).

Fig.23.2

Fig.23.3

Fig.23.4

Fig.23.5

- Select 'Use the passkey found in the documentation'.
- Type in 1234 as the pass key. Click Next (Fig 23.6).
- The PC will commence connection with the CJSM2-BT (Fig 23.7).
- When the connection is completed click ‘Finish’ (Fig 23.8).
- The blue icon on the CJSM2-BT will stop flashing (Fig 23.2).
- The screen will show connected devices (Fig 23.9).

NOTE:
If the process fails, click on New Device name e.g. ‘Tom’s PC’, then select ‘Remove’ and repeat the process (Fig 23.9).

Fig.23.6

Fig.23.7

Fig.23.8

Fig.23.9

23.5 Pairing With an Android Device

The following process should be undertaken on the Android device:

- Select System Settings and set Bluetooth to On.
- Select Android Device name e.g. ‘Tom’s Samsung’ from the list available devices.
- Enter the password ‘PGDT’ (this is only required the first time the device is connected) when prompted on the screen. Open the R-Net for Android App and select ‘Connect’. This will present a list of available Bluetooth devices.
- The R-net for Android App is available from the Play Store, simply search for “PGDT”, “R-net” or “R-net for Android” and download the App to the Smart device. A direct link to the App is available at: https://play.google.com/store/apps/details?id=com.teksoftco.android.pgdtoverlay or use the quick response code below.
- Select ‘Tom’s Samsung’ from the list of available devices.
- Enter the password ’1234’ when prompted on the screen.
- Tom’s Samsung should appear as a paired device. In addition, the blue icon on the CJSM2-BT should stop flashing.

23.6 Pairing With an iDevice

The following process should be undertaken on the iDevice:

- Select Settings and set Bluetooth to On.
- Select the iDevice name e.g. 'Tom's iPad' from the list of available devices.
- The iDevice name should appear as a paired device. In addition, the blue icon on the CJSM2-BT should stop flashing.

23.7 Updating the List of Devices

The CJSM2 will remember the Bluetooth ID of up to four devices.

To replace an entry on the list of devices, one of the existing pairings must be terminated.

This process is initiated from the paired device and will vary depending on the device.

When the device is unpaired a new device can be added.

23.8 Operating a Windows PC

There are programable options for the timings and sensitivity of the operations, refer to the Bluetooth Programing chapter for more information.
External switches connected to the External Profile jack socket can also be used to control devices, but programing of the R-net will be required. Refer to chapter Bluetooth Programing for more details.

23.9 Operating an Android Device

The operating method is similar to that of a Windows PC and the same programable options apply. Refer to the Bluetooth Programing chapter for more details.

NOTE:

- The CJSM-BT cannot switch an Android device on or off.
- The Sleep function of the Android device must be disabled.
- If the device does ‘go to sleep’, then a manual wake-up process will be needed.
- The default programing relates to the operations shown below (Fig 23.10).

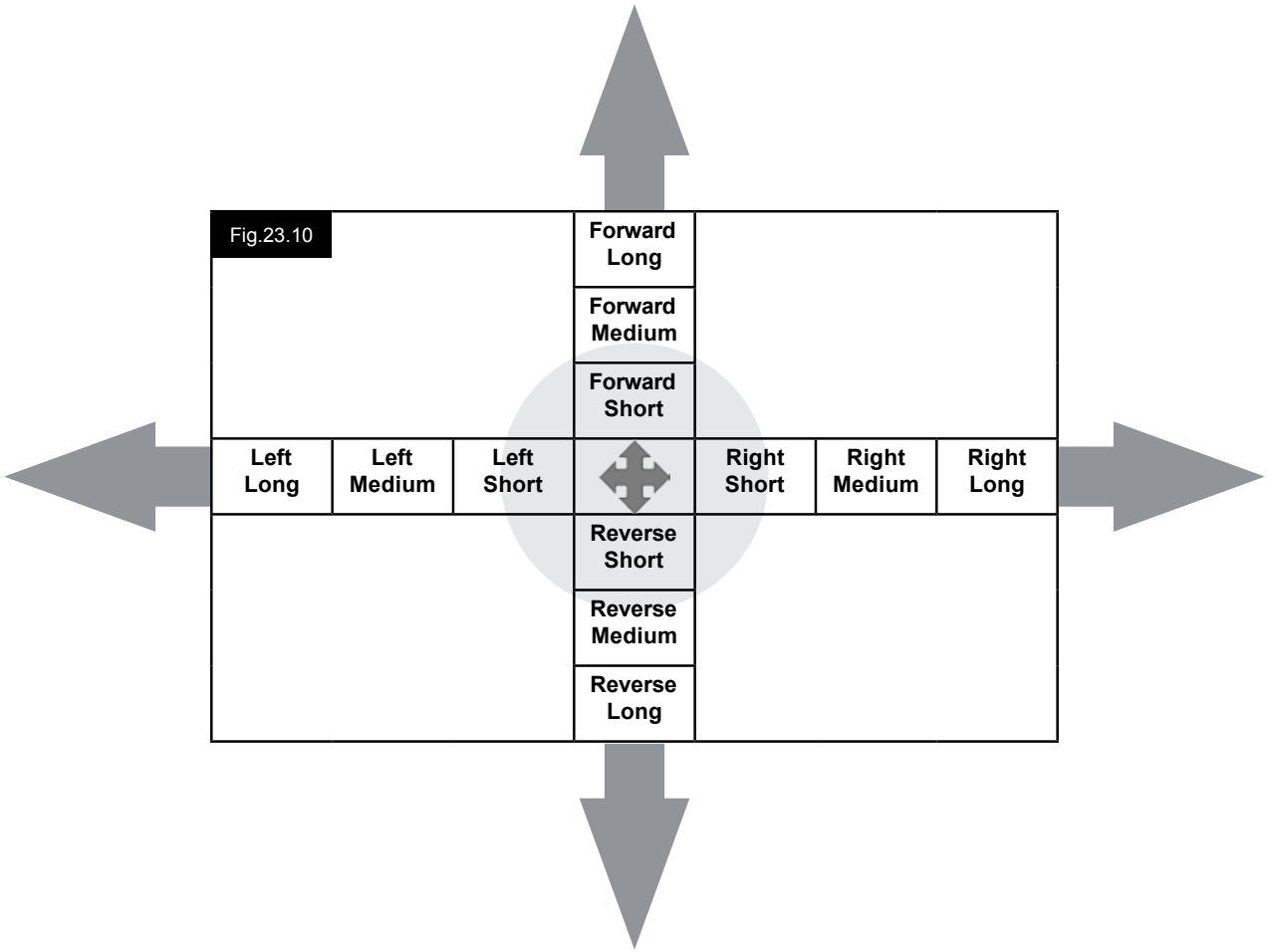


Fig.23.10

23.10 Operating an iDevice

The CJSM2-BT can control an iDevice in two ways:

- Using the iDevice's Switch Control functionality
- Using the iDevice's Switch Control functionality in conjunction with the iDevice's Voice Over functionality

These two methods will be referred to as Switch Control and Voice over respectively, and each is explained in the following sections.

Switch Control

The principle of Switch Control is that certain iDevice commands, such as the Home button or tapping the screen, can be assigned to commands received via Bluetooth from an external device such as the CJSM2-BT.

The process for assigning CJSM2-BT commands to the iDevice commands is covered in section Switch Control Set-Up.
An example of Switch Control is given below.

NOTE:
The screen navigation sequences are defined by the iDevice and not the CJSM2-BT.

Switch Control operates by highlighting sections within the application window. Various commands are then used to navigate the sections and to select individual applications (Fig 23.11).

iDevice command Next Item selects another highlighted area (Fig 23.12).

iDevice command Select Item enters the highlighted area (Fig 23.13).

Fig.23.11

Fig.23.12

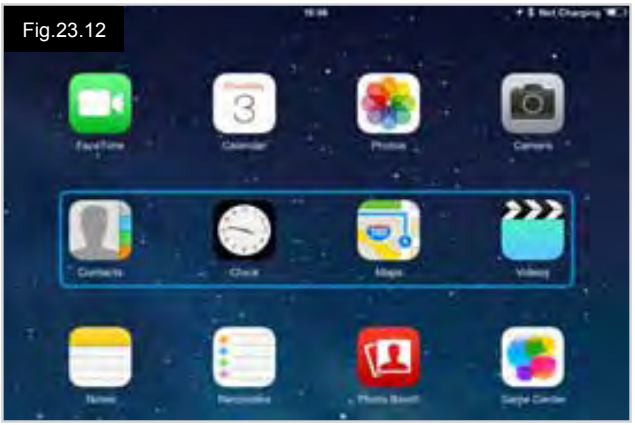


Fig.23.13

iDevice commands Next Item and Previous Item are used to select individual icons within the highlighted area (Fig 21.14).

iDevice command Select Item opens the highlighted item. Depending on the nature of the application, areas of the screen will be highlighted and similar commands to the above can be used to navigate it (Fig 21.15).

iDevice command Home returns to the Home screen (Fig 23.16).

Fig.23.14

Fig.23.15

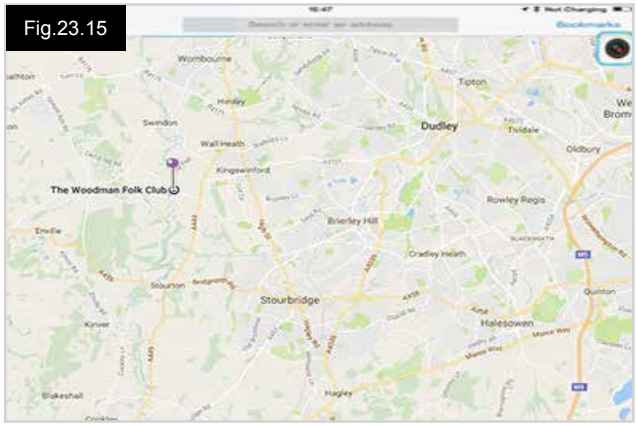


Fig.23.16

Voice Over

Voice Over operates in conjunction with Switch Control, but offers an alternative method of screen navigation. Examples are given (Fig 23.17 - 23.20). Please note, the screen navigation sequences are defined by the iDevice and not the CJSM2-BT.

iDevice commands Cursor Right and Cursor Left select individual icons within a row (Fig 23.17 - 23.18).

The same iDevice commands also navigate the rows. Opening items and returning to the Home screen are effected in the same way as Switch Control (Fig 23.19 - 23.20).

Fig.23.17

Fig.23.18

Fig.23.19

Fig.23.20

Switch Control Setup

Certain CJSM2-BT commands can be assigned to iDevice commands. The CJSM2-BT commands are detailed below. Time related deflections (nudges) of the joystick in each of the four directions (Fig 23.10).

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programable. Refer to the Bluetooth Programing chapter for more information.

Set the R-Net programable parameter Mode to Switch Control. Refer to the Bluetooth Programing chapter for more information.

NOTE:

Within Accessibility there are Auto Scanning and Auto Hide options. It is recommended that these options are turned off for the initial set up.

To enable Switch Control on the iDevice and assign commands:

- From the iDevice Settings menu, select General > Accessibility (Fig 23.21).
- Set Switch Control to ON (Fig 23.22).
- Select Switches (Fig 23.23).
- Select External (Fig 23.24).
- Select Add New Switch (Fig 23.25).
- This screen is displayed (Fig 23.26).
- Activate the CJSM2-BT command you wish to assign to the iDevice; for example, a long reverse nudge.
- When the command has been received, this screen is displayed (Fig 23.27).
- Enter a convenient name – for example, long reverse – and then Save (Fig 23.28).
- This screen is displayed (Fig 23.29).
- Select the iDevice command you wish to assign; for example, Move To Next Item (Fig 23.29).
- This screen will appear and the process can be repeated to assign further commands (Fig 23.30).

Fig.23.21

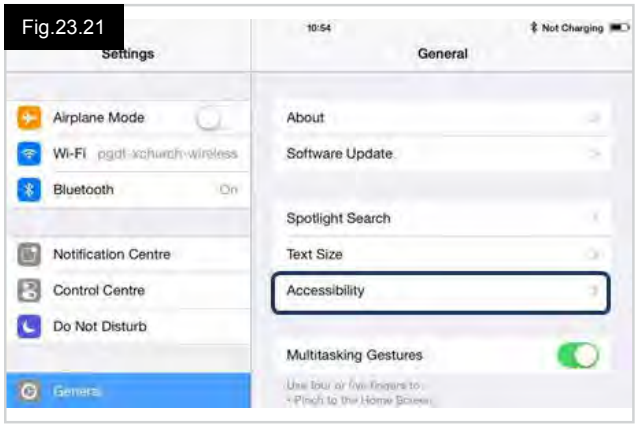


Fig.23.22

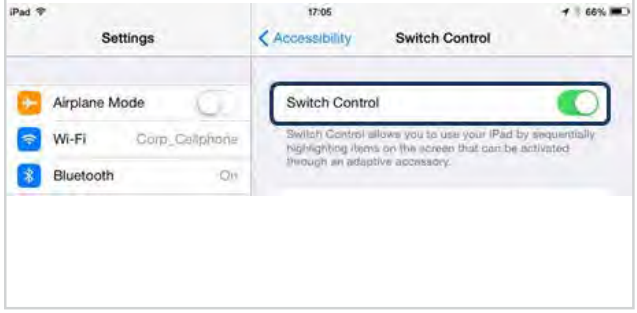


Fig.23.23

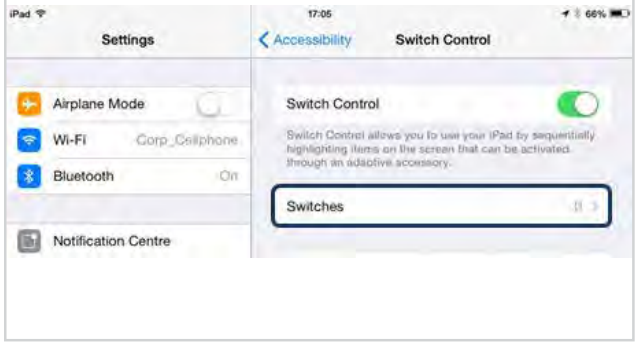


Fig.23.24

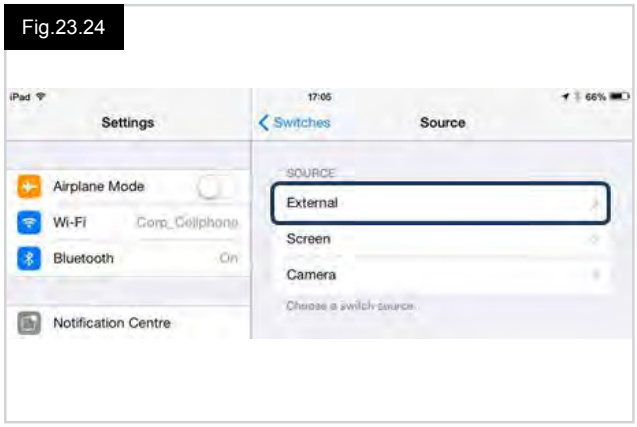


Fig.23.25

Fig.23.26

Fig.23.27

Fig.23.28

Fig.23.29

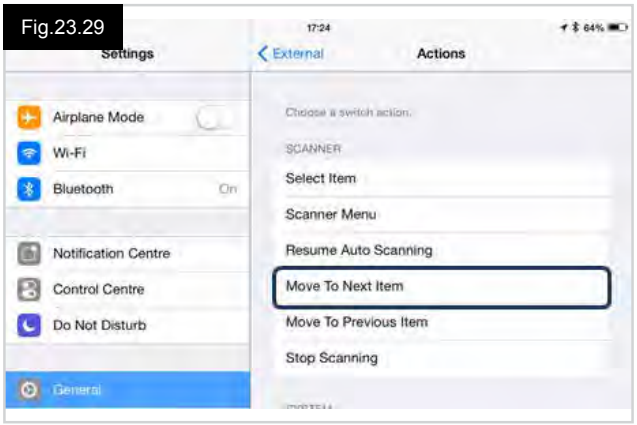


Fig.23.30

Voice Over Setup

Certain CJSM2-BT commands can be assigned to iDevice commands. These are detailed below. Time related deflections (nudges) of the joystick in each of the four directions (Fig 23.10).

- Forward Short
- Reverse Short
- Left Short
- Right Short
- Forward Medium
- Reverse Medium
- Left Medium
- Right Medium
- Forward Long
- Reverse Long
- Left Long
- Right Long

The timings associated with the nudges are programmable. Refer to the Bluetooth Programming chapter for more information.

Time related operations of two external profile .ack switches.

The timings associated with the external switch operations are programmable.

Refer to the Bluetooth Programming chapter for more information, Section 21.0.

The Speed Down and Speed Up buttons.

The procedure to enable Voice Over on the iDevice and assign commands is as follows:

- From the iDevice Settings menu, select General > Accessibility and set Voice Over to On (Fig 23.31).

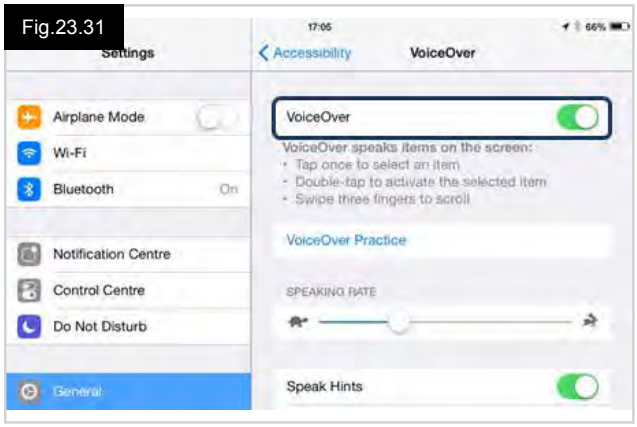
NOTE: The remainder of Voice Over set up is via the R-Net PC programmer, contact your authorized dealer for more information.

WARNING!

PC Programming must be done by trained and qualified personnel only. Please contact your Sunrise Medical authorized dealer.

- Set the parameter Voice Over and then use the relevant parameters to assign CJSM2-BT to iDevice commands.
- Refer to the Bluetooth Programming chapter for more information, Section 23.0.

Fig.23.31



24.0 Guarantee / Warranty

THIS GUARANTEE DOES NOT AFFECT YOUR LEGAL RIGHTS IN ANY WAY.

Sunrise Medical* provides a guarantee, as set out in the warranty conditions, for wheelchairs to its customers covering the following.

WARRANTY CONDITIONS:

1. **FOR ONE (1) YEAR -** We warrant all Sunrise-made parts and components of this wheelchair including: motors, gearboxes, and electronic components, against defects in materials and workmanship for one year from the date of first consumer purchase.
2. **LIMITATIONS -**
    1. We do not warrant:
        a. Tires and tubes, upholstery, pads, and push handle grips.
        b. Damage from neglect, accident, misuse, or from improper installation or repair.
        c. Products modified without Sunrise Medicals express written consent.
        d. Damage from exceeding the weight limit.
    2. This warranty is VOID if the original chair serial number tag is removed or altered.
    3. This warranty applies in the USA and Canada only. Check with your authorized dealer to find out if international warranties apply.
    4. This warranty is not transferable and only applies to the first consumer purchase of this wheelchair through an authorized Sunrise Medical dealer.
    5. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical.
3. **WHAT WE WILL DO -** Our sole liability is to repair or replace covered parts. This is the exclusive remedy for consequential damages.
4. **WHAT AUTHORIZED DEALER MUST DO -**
    1. Obtain from Sunrise Medical, while this warranty is in effect, prior approval for return or repair of covered parts. Contact Customer Service for a Returned Material Authorization (RMA) number and information as to where to return the product. Upon contacting Customer Service please provide Model number, Serial number, description of what is required for service/repair, and any additional information as to reason for service being performed to the wheelchair.
5. **NOTICE TO CONSUMER -**
    1. You must pay the cost of labor to repair, remove or install parts even if they are covered under warranty.
    2. If allowed by law, this warranty is in place of any other warranty (written or oral, express or implied, including a warranty of merchantability, or fitness for a particular purpose).
    3. This warranty gives you certain legal rights. You may also have other rights that vary from state to state or province to province.
6. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical.

* Denotes the Sunrise Medical facility from which the product was purchased.

Additional Notes For Australia Only:

i. For goods provided by Sunrise Medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under Australian Consumer Law.
ii. You are entitled to a replacement or refund for a major failure and for compensation for any foreseeable loss or damage.
iii. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
iv. The benefits to you given by this warranty are in addition to your other rights and remedies under a law in relation to the goods to which the warranty relates.

Record your serial number here for future reference:

_____

Website Addresses:

US = www.SunriseMedical.com

FR = www.SunriseMedical.fr

ES = www.SunriseMedical.es

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