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University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

The GrEAT Pack

Generic Electronic Assistive Technology Environmental Control System

Information Booklet



Compiled by Michele Verdonck as part of a UCC doctoral research project funded by the HRB

20/05/09

The GrEAT Pack

(Generic Electrical Assistive Technology Pack)

This is a user manual for your electronic assistive technology environmental control system trial pack or in simple words – a few bits of technology that can let you control some household appliances. This information is intended for you, your family and carers.

The information is organised to progress from a basic introduction to more complicated adjustments. It is not necessary to read it all. The items in section 5 are only included for reference if you are interested.

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The GrEAT Pack

(Generic Electrical Assistive Technology Pack)

1) Contents: Gadgets, switches and all the bits

List of contents:

- DVD - video demos
- The control unit – a KEO with bluetooth
- KEO charger
- European adapter
- Flexzi mount with clamp base
- Mounting plate for KEO
- Magic arm mount
- Small mounting plate for switch
- Chin switch
- Small square switch (Micro lever switch)
- Small black disk shape switch (Mini cup switch)
- Black rectangular switch (Micro light switch)
- Infrared telephone base
- Telephone handset
- Telephone handset wire
- Telephone power cable
- Telephone phone cable
- Mobile phone
- Charger for mobile phone
- USB cable for mobile phone
- Mobile phone wired headset
- Bluetooth headset for mobile phone
- Infrared electrical socket set
- Sound switch
- Microphone for sound switch
- Portable wireless personal alarm
- Switch accessible trigger for personal alarm
- Video camera
- The power lead for the video camera
- Senior Pilot environmental control unit **(for back up use only)**



Figure 1 Keo Environmental control unit

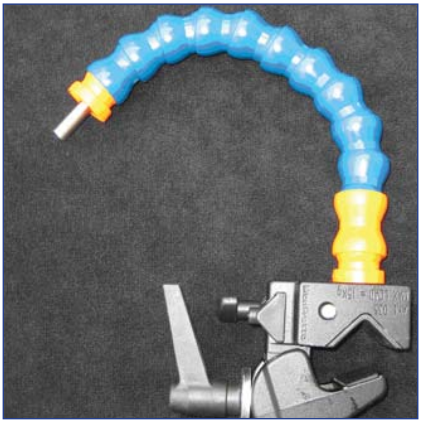

Figure 2 Flexzi mount with clamp base


Figure 4 Magic arm mount


Figure 3 Chin switch


Figure 5 Micro lever switch


Figure 6 Mini cup switch



Figure 7 Micro light switch



Figure 10 Mobile phone and charger



Figure 8 Infrared telephone



Figure 11 Bluetooth headset and charger



Figure 9 Power cable for infrared telephone

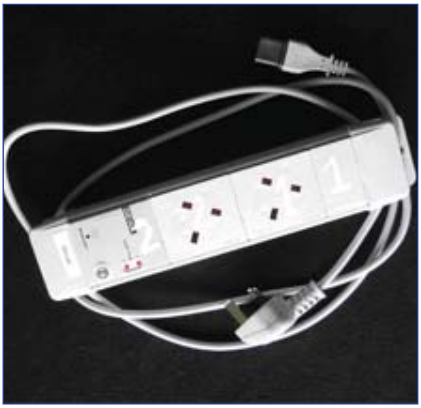


Figure 12 Infrared electrical socket set



Figure 13 Sound operated switch


Figure 14 Microphone for sound switch


Figure 15 Portable wireless personal alarm and switch accessible trigger


Figure 16 Sound switch with microphone input and alarm output



Figure 17 Video camera


Figure 18 Senior Pilot environmental control unit **(for back up use only)**

2) Basic Information

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What can I do with it?

You decide what you want to do with the pack. I will help you programme the KEO to do the things that you want (where possible). You can choose all or some of the following:

1. Answer the landline
2. Answer your Bluetooth mobile phone
3. Dial pre-programmed telephone numbers
4. Control a TV – channels, volume, etc
5. Control a DVD player
6. Switch a lamp on or off
7. Switch a heater on or off

Are there any other things that you think may be possible? Please talk to me if so, and we can discuss these.

What things should I supply?

1. A landline for the phone
2. A Bluetooth enabled mobile phone with a bluetooth ear piece
3. TV/ DVD/ other remote controls for your personal entertainment systems
4. On /off appliance like a fan, heater, bedside lamp (2 max)

How do I use it?

You need to push a switch to control the KEO. The KEO will provide interconnected menus for you to choose from. When you select a function on the KEO it then sends out the corresponding infrared signal. This signal should then be received by the targeted appliance and do as it has been told. For example: select TV; select volume up and the TV volume should increase.

Switching

You can choose how you do this and where you want to place the switch. You need to be sure that you can use this movement over and over again. The KEO will be positioned so that you can see the screen. Pushing a switch will wake the KEO up and then it will scan through options. When the option you want is highlighted you select it by hitting the switch. If you miss the flash the menu will circulate again giving you another chance.

How does it fit together?

Parts that fit together have been marked with the same coloured tape. If the colours on two bits are different the parts do not belong together. The colours used to mark parts are included in the instructions below.

The control unit set up

1. Attach the Flexzi mount to your wheelchair tray, armrest or similar using the clamp
2. Position the mount so that the mounting plate is in a comfortable line of sight.
3. Secure the KEO to the mounting plate by pressing the Velcro on the mount together with the Velcro on the KEO



Flexzi mount clamped to tray

The switch set up

If you select a chin switch you will not need to use a mount. If you use another switch you will need to mount this.

1. Clamp the magic arm mount to your wheelchair, with the mount locked tight at first
2. Select a switch and attach it to the switch plate at the end of the magic arm.
3. Loosen the magic arm mount and re-position to allow a good position for contact with the switch.
4. Lock in position



Switch positioned using a Magic arm mount

In bed

1. Remove both mounts from the wheelchair
2. Attach both to the bed
3. Loosen the KEO mount, and position as required
4. Loosen the switch mount and position as required
5. You may choose a different switch for use in bed



Bed with magic mount for switch and Flexzi mount for KEO

Putting it together

1. Plug the switch into the base of the KEO (white).
2. Test the switch positioning, and adjust if needed.
3. Test the that the switch works on the KEO

Infrared socket

1. Plug the infrared socket into a wall socket
2. Plug one or two on/off appliances such as a lamp or fan into the infrared socket. Ensure the socket is away from any bright lights.

The alarm

The portable personal alarm is sound triggered using a sound switch. On the sound switch there are two dials that can be adjusted. The 'time on for' is the length of time that the switch will remain active once it is triggered. The response adjustment is the volume of noise required for activation.

1. The microphone plugs into the microphone socket at the front of the sound switch (purple).
2. Switch the sound switch on at the on/off button.
3. Adjust the sound switch by moving the response dial and then testing the volume of noise that activates the switch. Adjust this so that the sound switch is not triggered by normal noises but can be activated by your loud shout.
4. Then plug the wire out of the back of the sound switch into the switch transmitter of the doorbell (yellow)
5. Your carer or family member on call can now leave the room taking the personal alarm with them
6. If you make a loud enough noise the sound switch will activate the alarm.



Wire at back of sound switch plugged into personal alarm

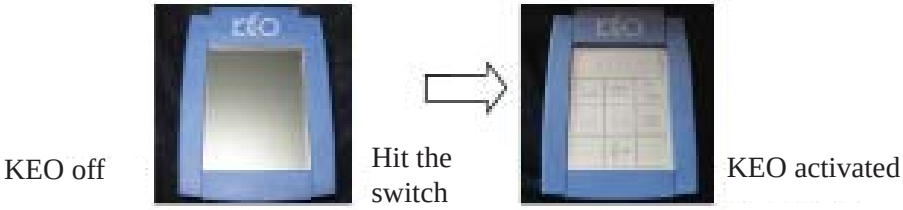


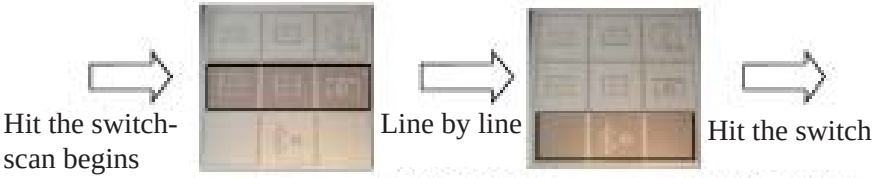
Sound switch, microphone and personal alarm

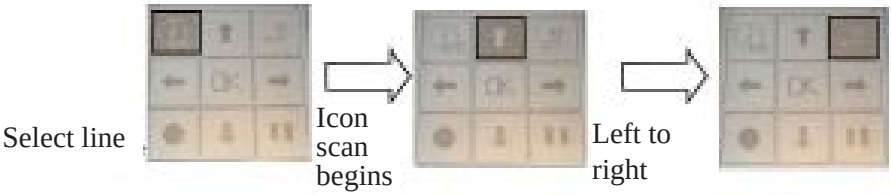
How the KEO works.

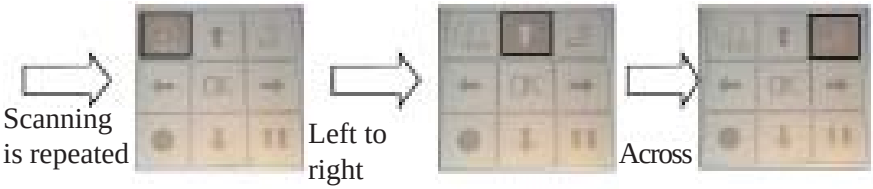
Each KEO can be set up as you choose so the photographs below may differ from the exact set up on your KEO.

Scanning









Choose and highlight icon using a switch

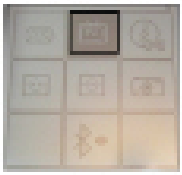
Turning on a socket

In the first menu select the second line
Then select a socket icon (1st or 2nd icon)
and the socket will switch on or off

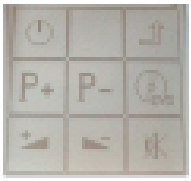


TV

In the first menu select the TV icon



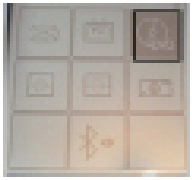
The TV menu will open



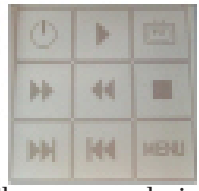
Choose your desired function using the scanning as previously
To get out of the TV menu select the top right button 'BACK'

DVD

In the first menu select the DVD icon



The DVD menu will open



Choose your desired function using scanning

Select the MENU button to access the DVD menu navigation page



On this page the DVD icon opens the DVD page and the back button goes to the main directory

Telephone

- The KEO can answer and control two telephones.
- When paired to a mobile phone by bluetooth the phone answer menu will automatically appear when the mobile phone rings.
- To dial select the phone icon in the first menu, the phone menu appears. If you desire a pre-stored number select M1 or M2 or open the memory page by selecting M.
- If you select M, you will have access to remaining stored numbers.



Figure 1 Phone menu

- When you have selected the phone number, select the dial icon, this will then open another menu with the option of dialling from the landline or mobile phone.

If you want to dial a new number

- Select the phone menu.
- Select the number on the second line, this is a dynamic key and will change from 1 to 2, 2 to 3, 3 to…. each time you select it.
- When you have the number you want to dial select OK and the number will appear at the top of the screen.
- Repeat until you have the entire number. Select the dial button.
- A new menu will then offer you the choice of landline or mobile phone via bluetooth.
- If unsuccessful repeat dialling the entire number.

Pairing with bluetooth phone

In menu one select the third line, select the middle button, this will connect to bluetooth icon. Press this and your phone will be connected. Ensure that your phone's bluetooth is active and visible to all (on the mobile phones own setting menu ensure the phone is not hidden).



Figure 2 KEO connecting to bluetooth mobile phone

Video Camera

The video camera has been included as a research tool to record your experience of using this package. It is like a diary. Once the camera is left on and in a suitable position, so that you can see yourself in the screen, you are ready to record your thoughts. Control of the camera is possible using the KEO.

Select the video icon in the main menu.



Use the zoom buttons to select the video shot that you desire.

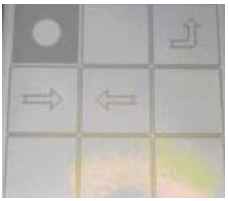
zoom in



zoom out



When you are happy with the shot use the record button to start and stop the recording.





Use the back button to return to the main menu.

If the KEO stops working

Check it is charged.

Press the reset button on the back using a paper clip or similar.

What do I have to do?

Technology is expensive so please care for all the parts of this package. Please:

1. Keep it charged, every night.
2. Don't drop it. Please tell me if you do so to ensure the system is still satisfactory.
3. Keep it clean.
4. Take care with cables – don't drive over them or get them caught in the bed mechanism.
5. Never force any of the parts to fit or to change position. If force is required the parts do not belong together or a release mechanism needs to be adjusted first.

PLEASE let me know if anything does break or stops working.

3) Adjustments, What next?

What adjustments are possible on the KEO?

Many adjustments are possible and most are easy to do so please consider your own preferences and possible adjustments.

Things that can be adjusted:

1. The speed that the buttons scan at can be adjusted (slow at first and faster when you are an expert).
2. Line by line scanning can be replaced by individual scanning (every button scanned in turn).
3. The number of times that the scan will be repeated before it stops.
4. The choice of switch.
5. The position of the switch.
6. The menus on the KEO can be 3 x 3, or 5 x 4.
7. Beeping – can be switched on to provide auditory feedback while scanning.

Can I change the parts of the pack or add new bits?

If an appliance can be controlled using infrared signals it can be programmed into the KEO at any stage.

Alternative items that are available that could have been in this package include:-

1. Other brands of control units including: GEWA prog, GEWA progress, Possum PRIMO, Possum Vivo, SiCare, SRS intellect, SRS lite, Steepers Activ 500.

2. Different mounting options.
3. Sip and puff switch.
4. Micro joystick switch.
5. Computer mouse control is possible using the KEO and an infrared receiver for the computer (purchased separately).
6. Wireless switch access.

Other things that could be added to this environmental control package include:-

- Electric door openers.
- Electrical door locks.
- Intercom and security camera.
- Lifts can be fitted with IR receivers so that you may use a ECS to control a lift.
- Infra red light switches.
- Infra red wall sockets.
- Motorised drapes or blinds.
- Window controllers.
- If you have a Penny & Giles or Quickie powered wheelchair it may be possible to add an interface that can plug into your wheelchair that will then allow you to use the power wheelchair joystick to access the environmental control unit.

4) Resources

Details of items in the pack

Item	Supplier	Order Code
Proteor KEO with bluetooth transmitter	Ideal Technology	
European adapter	PC World	
Flexzi clamp mount	QED	MERFCM
Mounting plate for KEO - switch plate 44.4 x 114	QED	92203
Magic arm mounting arm	QED	9AB70L
Small mounting plate for switch - square switch 30 x 30	QED	92201
Chin switch	QED	POS005
Switch plate 32.5 x 100	QED	92202
Small square switch (micro lever switch)	QED	9LA70M
Small black disk shape switch (mini cup switch)	QED	9AT5808
Black rectangular switch (micro light switch)	QED	9ATA5850
SiCare IR Quickphone	Ideal Technology/ Dr. Hein	
Mobile phone bluetooth headset	The Car Phone Warehouse	
Infrared electrical socket set	Ideal Technology	
Sound switch	QED	9LA3M
Microphone for sound switch	PC World	
Portable wireless personal alarm	QED	PC/3
Back up Senior Pilot environmental control unit	Dr. Hein	20-001Z-01-01-xx

Contact details of suppliers of GrEAT items

QED
Quality Enabling Devices Ltd,
Unit D16, Heritage Business Park, Heritage Way, Gosport, Hampshire PO12 4BG, UK
Tel: 023 9258 0600
Fax: 023 9252 8666
E-mail: sales@qedonline.co.uk

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90429 Nürnberg, Germany
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Fax +49 (0)911 32380-19
E-mail: info@dr-hein.com

The Carphone Warehouse
www.carphonewarehouse.ie

PC World
www.pcworld.ie

Contact details of other suppliers of Environmental Controls

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8 Farmbrough Close,
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Aylesbury, Buckinghamshire,
U.K. HP20 1DQ
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Fax: + 44 (0) 1296 461 001
E-mail: sales@possum.co.uk

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1 Hillview Tce.,
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Fax: +353 1 8833294
E-mail: info@crcmedical.com

Useful websites

http://www.srstechnology.co.uk
http://www.possum.co.uk
http://www.davecarthy.com
http://www.tashinc.com
http://www.gewa.se/english
http://www.breakboundaries.com
http://www.sicare.de/en
http://www.rslsteeper.co.uk
http://www.proteor.com.
http://www.picomed.no
http://www.sunrisemedical.co.uk

5) Technical manuals

Keo
Quickphone
Personal Alarm
Manfrotto mount
Mobile phone