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Amber

From

Abilitec Limited

Getting Started

A free on-line copy of this manual
is available from

<http://www.tecsol.com.au/pdfs/Amber.pdf>

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Using this Manual

This manual is the Getting Started manual. It contains basic information and simple step-by-step instructions to help new users become familiar with Amber

Type conventions used in this manual.

Several different typefaces are used in this manual to help you differentiate between general information and step-by step instructions which you should perform.

General information is printed in this type

Important points are printed in bold

Comments and references are in italics

Step by step instructions are in this type

Looking After Amber

Amber requires relatively little routine care and maintenance. Like all sophisticated electronic equipment, Amber should live in a clean, dry environment, away from direct sunlight or heaters.

Cleaning

It is important that Amber be kept clean, especially the front and rear panels where the infrared signals pass through. Use only a damp cloth with a little soap or detergent for cleaning. Abrasives and solvents may damage the plastic surfaces so should not be used.

Dampness

As with other similar electronic equipment, Amber should not become wet. Be aware of this if Amber is mounted on a wheelchair which is used outdoors.

Battery Care

Amber has an internal rechargeable battery which allows operation away from the mains supply for a limited time. It is important that the battery is regularly charged to prevent loss of stored information or possible damage to the battery. See the separate section on battery Care for details on charging.

Battery Care

Amber's battery has 2 functions:

- it provides power for temporary operation away from the mains supply
- it keeps the recordings stored.

The battery used in Amber is a sealed lead-acid type. From a full charge it will keep the system operating for about 100 hours. The battery is automatically charged when the unit is plugged into the mains and can be left charging indefinitely without fear of damage. The charger is designed to replenish 12 hours normal use in about 60 minutes and will automatically regulate the charge to that required. When Amber is operating from its internal battery (i.e. not charging) you will be warned by a red light blinking on the front panel.

CAUTION

Don't let the battery go completely flat as you will not only lose the stored information but the battery may be permanently damaged. Amber will beep every 10 minutes when the battery is getting low. This means it should be charged within two hours.

To charge Amber's battery:

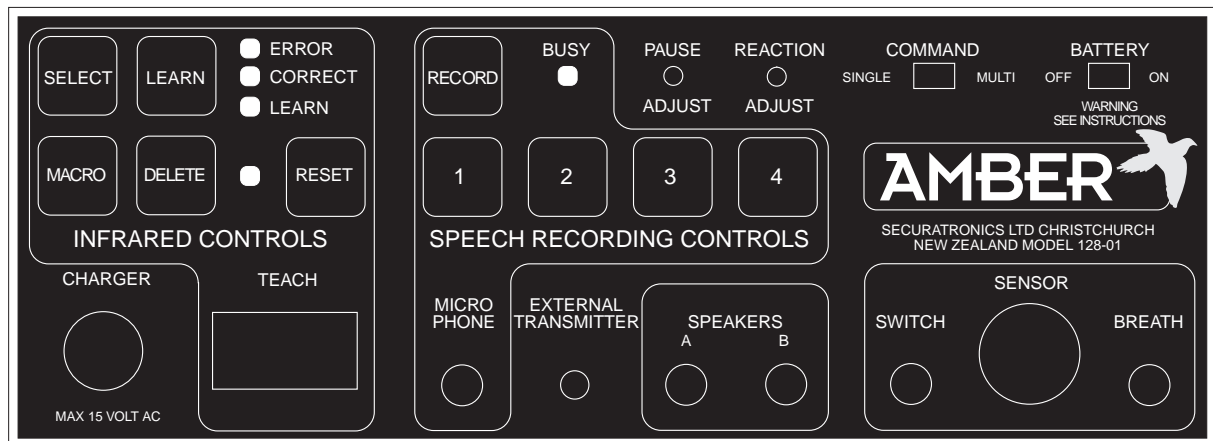
1. Plug the battery charger cable into the charger socket on the bottom left corner of Amber's rear panel.
2. Plug the charger into the mains and make sure that it is turned on at the wall.
3. Charge for at least 2 hours.

Before You Begin

Before you can use Amber, you must charge the battery for at least ½ an hour.

You might like to plug in the charger now, then read through the rest of these instructions to familiarise yourself with Amber while the battery is charging.

To charge the battery, plug the charger into a mains outlet and plug the small plug on the end of the wire into the charging socket on Amber's rear panel.



What Can Amber Do?

Amber is a piece of equipment called an Environmental Control System. It is designed to assist people with severe physical disabilities to interact independently with their environment.

There are many modern electronic appliances available to entertain us or enhance our comfort. Most require us to be able to operate switches or push buttons or turn knobs to work them. If you cannot do that, due to a physical disability, the appliance may be useless to you.

Amber is able to overcome such barriers to provide you with a means of operating a wide range of electrical and electronic devices - completely independently. If you can work a single switch, puff in a tube or even just blink an eye, Amber can give you access to the world.

Here are some examples of the appliances and other systems which Amber can operate at your command:

- Television
- Video
- Stereo
- Radio
- Telephone
- Heaters
- Lights
- Intercom system
- Door locks
- Fan
- Air-conditioning
- Open & close doors
- Open & close curtains

How Does Amber Work?

Many appliances now come with remote controls which allow you to operate them from the convenience of your chair or bed. These remote controls send signals to the appliances they operate, via infra-red light beams. You can think of Amber as a sophisticated version of such a remote control.

Rather than working just one appliance, Amber is able to send signals to a number of different appliances and other electrical equipment. In this way it becomes a universal remote control which can operate almost anything electrical, even appliances which do not have their own remote control.

Most remote controls have an array of tiny buttons, one for each command. Amber uses a different approach to select the various commands available, which requires a signal from just one switch. Amber comes with a built in puff-switch, an optional touch switch or can use any of a wide range of specialised switches available from other manufacturers.

Most environmental controls have a display panel to tell the user which function is to be performed on which appliance. Instead, Amber uses spoken messages to tell you what is happening. This means you do not have to be able to see Amber in order to use it. This unique feature makes Amber suitable even for users with poor vision or total blindness. Amber is also portable. The rechargeable battery gives up to 100 hours use allowing Amber to be mounted on a wheelchair, or taken from room to room.

Amber is completely customisable to a user's particular needs. That means that the user can choose which functions on which appliances will be available from Amber. There are few restraints on which appliances are suitable to work with Amber, leaving you free to choose from a wide range of commercially available equipment.

Amber is able to store up to 128 different commands. In order to make the commands easier to access, they are arranged into 4 groups of up to 32 commands. Each group of commands is given a Heading. Look at the Command Sheet, Appendix A in the User Manual. As you can see, there are 4 headings for 4 different sets of equipment (Television, Video, Stereo, Appliances). These headings are user programmable and can be whatever you wish. Under each heading is a list of Labels, one for each command you wish to store. The Headings and Labels are recorded into Amber using a microphone. Appendix A shows some examples.

You may find it useful to compare Amber to a filing cabinet with four drawers. The Headings identify the contents of each drawer. Inside the drawers are a set of filing pockets, up to 32 of them. Each pocket has a Label. Inside each pocket is a secret code which Amber can send to an appliance on an infra-red light beam, causing the appliance to perform some function in the same way as a remote control would.

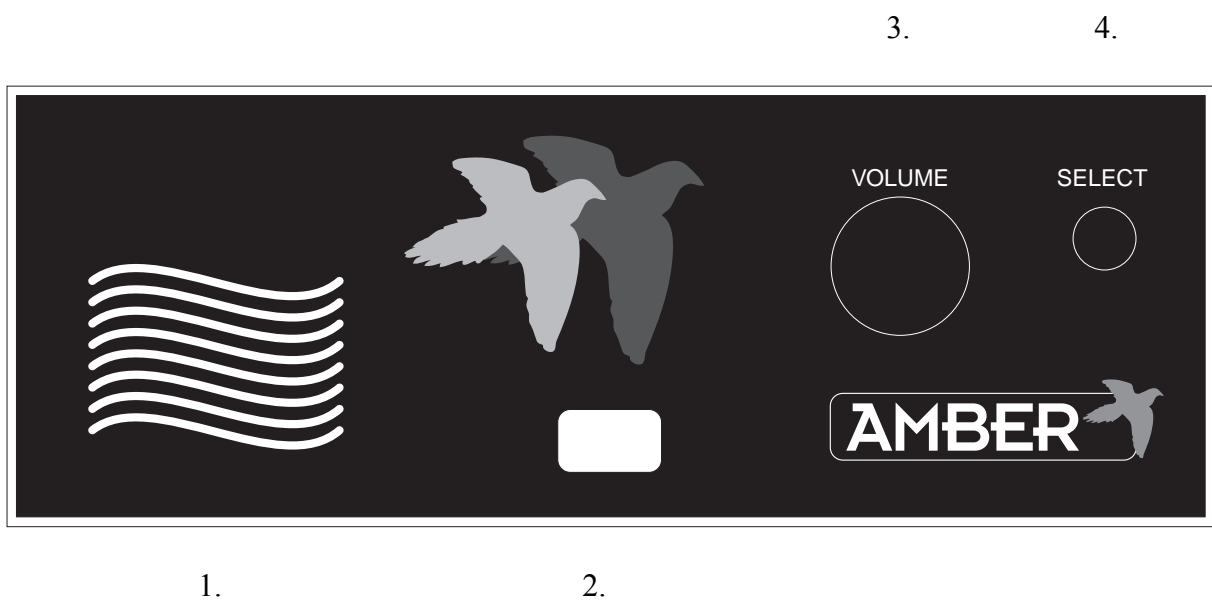
When you activate Amber's switch, the four Headings are played through Amber's loudspeaker, just like playing a tape recording. If you press the switch again, immediately after one of the Headings has played, the list of Labels stored under that Heading will then be played. Pressing the switch after the Label you wish to select, will instruct Amber to issue the infra-red code for that Label, so as to activate your appliance.

Take time now for a test drive to gain a better appreciation of how Amber operates. You will begin to discover just how versatile Amber is.

Controls And Connections

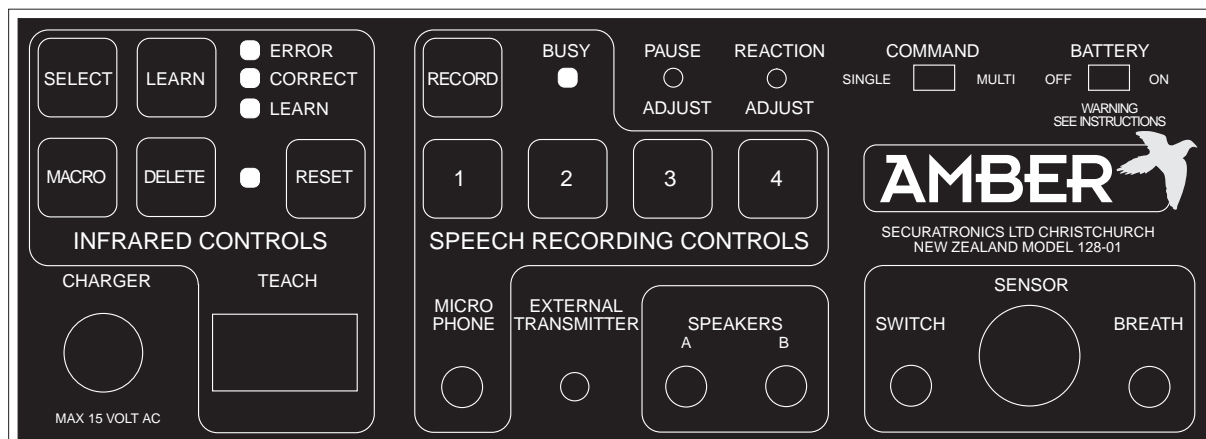
Read this section “ Controls and Connections” carefully. Spend a few minutes familiarising yourself with the location of the various controls. Don’t try any of them out just yet, as that is what this test drive is for. The instructions below assume that you are starting with the Battery switched off. Note the warning about this switch under **Battery Care**.

Front Panel Controls



1. Speaker
2. Window for infrared transmission and no-charge warning light.
3. Volume control.
4. Care-givers operating button

Back Panel Controls



- | | |
|-----------------------------------|---|
| 1. Select | Selects column and command when recording |
| 2. Learn | Used to teach commands from remote controls of TVs, VCRs, Stereos etc. |
| 3. Macro | For combining up to 10 commands into one selection. (see Additional Features) |
| 4. Delete | Use to erase unwanted infrared codes. |
| 5. Reset | Resets learning mode if Learn LED refuses to go out while teaching Amber infra-red commands |
| 6. Error | } Indicate infrared teaching status. |
| Correct | |
| Learn | |
| 7. Charger | Battery charger socket |
| 8. Teach | Receives signals from the infra-red remote controls used for teaching Amber. |
| 9. Record | For recording spoken menu of commands. |
| 10. 1-4 Speech Recording Controls | For selecting the desired column for speech recording. |
| 11. Busy | Lights up when Amber is processing. |
| 12. Microphone | Socket for microphone |

13. External Transmitter For use with a remote infrared transmitting device or a UHF radio link. Particularly useful when Amber is mounted out of sight of the devices to be controlled.
14. Speakers A&B Can be used to add another speaker or pillow phone to system. Using socket B will disconnect the internal speaker.
15. Switch Sensor Breath For connecting the switch system suited to the user's abilities.
16. Pause Adjust Pre-sets the minimum pause time. Adjusting clockwise increases pause
17. Reaction Adjust Pre-sets Amber's reaction to sensor touches. This control can be adjusted to interpret a number of stuttered touches into one single selection.
18. Command (single - multi) allows or selection of 2 modes of operation. When set in single position, Amber will stop playing after a command has been sent. In multi position, Amber will play a complete column of commands allowing multiple selections.
19. Battery This switch turns Amber on and off.
NOTE! Turning off this switch will erase all programming.

Test Drive

Before embarking on this test drive, it is important to have charged Amber's battery. *See the section "Before You Begin" in this manual.*

In order to program Amber, it is necessary to have an understanding of how Amber works. *Make sure you have already read the sections "What Can Amber Do?" and "How Does Amber Work?" in this manual.*

You will need to find yourself a quiet place in which to work, where you won't be interrupted for thirty minutes or so, and where there is a minimum of background noise. You will need a flat stable surface on which to work. Please make sure you have the following items at hand:

- This manual "Getting Started"
- Amber
- Microphone
- A remote control (we will assume that you are using one for a television)
- The appliance (television) to go with the remote control

Switch Amber On

1. **Switch the Battery switch to On and wait for at least 5 minutes.**
2. **Switch the Battery switch to Off.**
3. **Press and hold Speech Recording Control 4 (located on the rear panel)**
4. **Switch the Battery switch to On**
5. **Release Speech Recording Control 4**

The orange BUSY light will come on for about 20 seconds while Amber clears its memories. A beep will be heard when this is done. Amber is now ready for you to begin recording.

Begin Recording

1. Turn to the Sample Command Sheet, Appendix A in the User Manual.

We will use the examples provided in the Sample Command Sheet (Appendix A) to begin with, then you can program your own commands later. As you can see, there are four Headings for different equipment (Television, Video, Stereo & Appliances). Under each Heading is a list of labels (one for each command Amber is to send).

2. Face Amber's rear panel towards you
3. Plug the microphone into the microphone socket
4. Switch the COMMAND Switch to MULTI
5. Press and release the RECORD button
6. Within 5 seconds press and release Speech Record button 1
7. Speak the first column of commands clearly into the microphone

The orange BUSY light will come on while recording messages

Don't speak directly at the microphone, speak across the front of it. This will produce a better sound.

Start speaking immediately you press Speech Record button 1. Don't leave a long pause before the first word or Amber will not replay properly.

Read down the first column, starting with the heading (e.g. "Television, on, off,..., etc.) Be sure to leave a normal pause between words (labels). This pause allows Amber to detect the end of a word.

Speak at normal speed. If you are too slow, Amber will run out of memory.

When speaking 2-word labels (e.g. fast-forward), speak them with no pause between the words, or Amber will think they are two separate commands.

8. After the last word in the column, press and release the Record Button. This will switch off the microphone.

9. Wait until the BUSY light goes out.

This will show that the recording process is completed.

Check your Recording

1. Press Speech Record button 1

This will replay your list exactly as you recorded it. If any words are missing at the end, you have run out of memory space. You will have to record again, speaking a little faster, or abbreviating the labels. Don't shorten the pauses as Amber will not be able to keep track of the ends of the words. If necessary the recording time can be extended (see... in the User Manual).

2. If you are happy with your recording, press the SELECT button and hold it for about one second.

Amber will begin to speak. If Amber does not speak even though it was OK in test 1 above then you have probably left too long a pause before you started speaking. Record again starting immediately you press Speech Record Button 1.

3. As soon as you have heard the first word (Television), press the SELECT button again. Watch the BUSY light.

Amber will play the complete column with one second pauses inserted between each of the words.

The BUSY light will go out during each pause. If it stays on between two words, this means that your pause between those two words was too short. If it goes out during a word, you either hesitated or dropped your speech level and Amber has interpreted that as the end of a word.

If Amber does not recognise the pauses between your words correctly, simply repeat the recording process until you get it right.

4. When you are happy with the recording, move on and repeat the process for the other 3 columns.

e.g. Video, on, play, etc. (recorded into Speech Record button 2)

Stereo, on, mute, etc. (recorded into Speech Record button 3)

Appliances, light, heater, etc. (recorded into Speech Record button 4)

Check each recording as you go.

5. When recording is completed, unplug the microphone

Infra-red Programming

Now that each of the labels has been recorded, we are ready to program the infra-red codes for the devices Amber will control.

- 1. Take your television infra-red remote control transmitter and place it on a flat surface, pointing towards the small window labelled TEACH on Amber's rear panel.**

Leave a gap of approximately 5 cm between the transmitter (remote) and the rear panel (TEACH). Make sure the remote is level with the window. Sometimes you may need to place the remote or Amber on a book to achieve correct alignment.

- 2. Switch the COMMAND switch on the rear panel to MULTI.**

This switch should already be in the MULTI position from previous recording.

- 3. Press the LEARN button.**

The yellow LEARN light will come on.

- 4. Press the SELECT button, hold for one second, then release.**

You will hear the Heading "Television" play.

- 5. After the word "Television" has played, press the SELECT button momentarily.**

You will hear the word "on" play.

- 6. After hearing the word "on" press and hold the SELECT button.**

- 7. While holding the SELECT button, press and hold the ON button on the television remote control.**

If your television remote does not have a separate "on" button, use the "Channel 1" button instead (assuming that this will turn the television on).

Remember to keep the remote control facing the TEACH window. The LEARN light should flash for about one or two seconds and then go out. The green CORRECT light should come on indicating that the teaching was successful.

- 8. Release the SELECT button.**

The next word in the list will play.

- 9. Repeat steps 6,7 & 8 until Amber has learned all the commands under the word "Television".**

This process can be repeated with your other remote controls for the commands under the other Headings (e.g. Video, Stereo).

10. When you have finished, press the LEARN button again.

The LEARN light will go off.

NOTE:

If, while teaching Amber the remote commands, the red error light goes on instead of the green, this indicates that there has been an error in the learning process. To try again, simply release the SELECT button momentarily, and press again. If you are still unsuccessful, release both buttons (i.e. SELECT and ON) and press the LEARN button to turn off the light and press it again to start over. Go back to the particular command and retry. If Amber still refuses to learn, it may be caused by incorrect alignment with the teach window, moving the remote during the teaching or weak batteries in the remote control: Even though the remote may work the television the batteries may be too weak to teach Amber.

Should Amber “lock up” (that is the LEARN light refuses to go out) then press the RESET button for about two seconds. The LEARN light will go out and you can start again.

You have now finished programming Amber. Follow the next few steps to see if you pass the test!

See If It Works

- 1. Make sure that your television set is plugged in and switched on at the power switch, but turned off using its own remote control.**
- 2. Point Amber so as the front panel faces the television set.**
- 3. Press the SELECT button and hold for about one second.**

Amber will begin to play the list of Headings.

- 4. After the word “television”, press the SELECT button again.**

Amber will begin to play the list of Labels (commands).

- 5. After the word “on”, press the SELECT button once more.**

The television set should turn on. If you have other commands stored for your television set, you can experiment with them too.

Congratulations, you have now finished the Test Drive.

If you are still a little unsure of how to program Amber, repeat the Test Drive as many times as you like. When you feel comfortable with Amber, fill out your own command sheet with your individual Headings and Labels and use the Test Drive as a basis for programming them.

COMMAND SHEET (SAMPLE)

HEADINGS				
LABELS	<i>TELEVISION</i>	<i>APPLIANCES</i>	<i>VIDEO</i>	<i>STEREO</i>
1	ON	LIGHT ON	ON	ON
2	OFF	LIGHT OFF	PLAY	MUTE
3	VOLUME UP	HEATER ON	PAUSE	VOLUME UP
4	VOLUME DOWN	HEATER OFF	STOP	VOLUME DOWN
5	CHANNEL 1	FAN ON	FAST FORWARD	TUNER
6	CHANNEL 2	FAN OFF	REWIND	TAPE
7	CHANNEL 3	BLANKET ON	STOP	CD
8	CHANNEL 4	BLANKET OFF	CHANNEL UP	RECORD
9	CHANNEL 5	BRIGHT	CHANNEL DOWN	TUNE
10	PICTURE UP	DIM	RECORD	SEARCH
11	PICTURE DOWN	DOOR	STOP	AM
12		CURTAINS	PLAY	FM
13		INTERCOM	FRAME	TAPE
14			OFF	PLAY
15			PLAY	RECORD
16			STOP	FAST FORWARD
17				REWIND
18				STOP
19				PAUSE
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COMMAND SHEET

HEADINGS				
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COMMAND SHEET

HEADINGS				
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Specifications

Capacity:	Up to 128 commands arranged in 4 menus.
Transmission medium:	Simulated infra-red codes via front panel transmitter or optional multi directional devices.
Scan system:	Digitally recorded audio with playback via internal speaker or optional external speakers or pillow phone.
Scan speed:	User definable from 0.2 to 25 seconds per command.
Audio output:	Nominally 1 Watt into 4 Ohms.
External speaker jacks:	A: Additional to internal speaker. B: Disables internal speaker.
Speech recording time:	Nominally 25 or 40 seconds internally switched.
Operation:	By touch sensor, mouthpiece or universal switches. Front panel push button for caregiver.
Operational modes:	Single: Returns to standby after 1 command. Multi: Scans complete selected menu up to 32 commands.
Volume control:	Adjustable by front panel control.
Warning systems:	Charger off: Flashing front panel LED. Battery low: Audible tones every 10 minutes.
Macro facilities:	Macros may contain up to 10 commands.
Macro interval:	300 ms between commands.
Standby Battery:	Rechargeable 12 volt 2.0 ampere hour. Provides up to 100 hours dependant on use.
Power switching:	By optional UHF or infra-red adaptor to X10 system or similar.
Power consumption:	Standby current nominally 15 milliamperes @ 12 volts.
Charger input:	15 volts AC rms @ 450 milliamperes.
Dimensions:	200mm wide 290mm deep 80mm high.
Weight:	2.5 Kg.

Notes