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**Boston**Freedom

REMOTE CONTROL

# **USER** MANUAL

# • • •

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This manual is intended to give you specific information on the use of your Freedom Remote Control. More detailed information regarding the use of your Boston Acoustics Freedom System can be found in the Freedom Home Theater System Setup and Use Guide.

The Freedom Remote is an intelligent remote control that operates the Freedom Control Center via radio frequencies (RF). For that reason, the Freedom Remote does not need to be aimed at the Control Center.

The Freedom Remote also can control virtually all audio and video devices that respond to infrared (IR) remote control signals. Its easy-to-use LCD touch screen and its intuitive interface make it a perfect remote control for every user.

IR codes are stored in the memory of the Freedom Remote, to activate different brands of video and audio devices. The Freedom Remote is set up by default to operate your Boston Acoustics Freedom System. When you have other brands of external devices connected, you simply define the brands when you use the Freedom Remote for the first time. See 'Defining the Brands of Your Devices' on p. XX for more details.

The Freedom Remote can also learn IR codes from your existing remote controls. The Freedom Remote can receive and store the IR codes by means of its learning eye. See 'Learning Commands' on p. XX for more details.

You can label the touch screen buttons on the Freedom Remote. Characters and numbers are available for labeling as well as various audio and video symbols. See 'Labeling Buttons and Devices' on p. XX for more details.

Recording macros is another feature of the Freedom Remote. If you wish to assign a sequence of commands to a single button, you can record a macro. See 'Recording Macros' on p. XX for more details.

With the Freedom Edit software for a PC you can create your own screens and create an individualized look for your remote. Freedom Edit's on line help system will guide you through the process. In the future Freedom Edit will also allow you to upgrade your Freedom Remote. You can find Freedom Edit on the included CD-ROM and on the Boston Acoustics website www.bostonacoustics.com/freedom. See 'Freedom Edit' on p. XX for more details.

### The Batteries

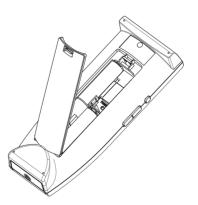
When you use the Freedom Remote for the first time, you have to install the batteries. The Freedom Remote requires 3 AA-batteries (3 x 1.5 V) to function. You can use either the supplied batteries or purchase rechargeable batteries.

1 Remove the battery cover by releasing the tab and lifting.



- 2 Place the batteries in the battery compartment.
- 3 Replace the battery cover.

  After a few seconds, the Freedom Remote starts up automatically and an introduction screen appears. The Freedom Remote beeps twice to indicate that it has started up successfully.



# **Activating the Remote Control**

### Turning on the Display and the Backlight

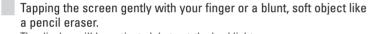
The Remote Control's display can be activated in four different ways:

Tilting the unit more than 50 degrees as illustrated.

The display as well as the backlight will be activated.

Pressing the backlight button on the left side.

The display as well as the backlight will be activated.



50°

The display will be activated, but not the backlight.

Pressing any button will activate the display, but not the backlight.

When the Freedom Remote is switched on for the first time or when it is reset, the Introduction screen appears for a few seconds. The Freedom Remote then automatically switches to the Device Overview that displays all potential devices on your Freedom Remote. You can return to this Device Overview from within other screens by pressing the Device button. See 'Activating the Device Overview' on p. XX for more details.

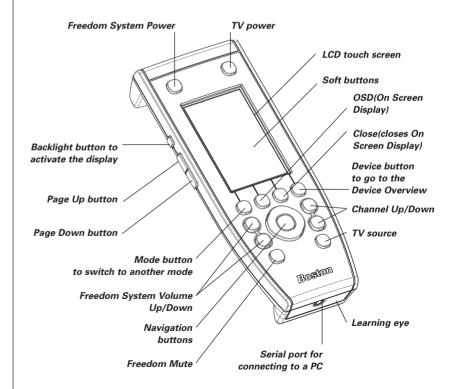


Fig 1: Device Overview



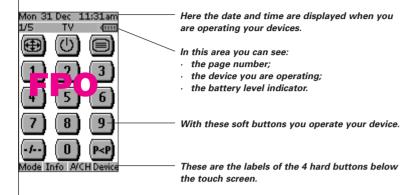
On the Freedom Remote you can perform numerous actions by means of soft and hard buttons.

- Soft buttons are the buttons you can tap on the LCD touch screen.
- Hard buttons are the buttons located above, below and on the left side of the LCD touch screen
  - The hard buttons located above the touch screen are the Freedom System Power and the TV Power.
  - The 4 hard buttons just below the touch screen are the Mode button, 2 context specific buttons and the Device button. Their label is displayed at the bottom of the touch screen.
  - The hard buttons located at the bottom of the Freedom Remote are Volume Up/Down, Channel Up/Down, Mute and TV source.
  - The hard buttons located on the left side of the Freedom Remote are the Backlight button and the Page Up/Down buttons.



### ■ The Touch Screen

The LCD touch screen is divided into different sections:



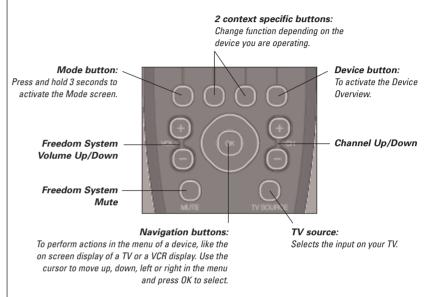
### Using the Soft Buttons

By tapping the soft buttons on the LCD touch screen you send commands to the device you have selected. The name of the active device is indicated at the top of the touch screen.

Note You can operate the soft buttons in the same way you operate hard buttons on a conventional remote control. When you keep the soft button pressed instead of tapping it, the Freedom Remote keeps sending the command.

### Using the Hard Buttons

Hard Buttons can be operated at any time, even without turning on the LCD touch screen.



### Using the Page Up and Page Down Buttons

The controls to operate your devices are typically located on different pages. You can scroll through these pages using the Page Up and Page Down buttons on the left side of the touch screen. The page number on the left of the touch screen indicates the active page number and the total number of screens, for example 1/6. The pages also "wrap around" which means you can go to any page in any direction.

### Using the Backlight Button

Use the Backlight button to activate the Freedom Remote's display and backlight. See also 'Turning on the Display and the Backlight' on p. 6.

Note If the screen stays black or becomes blank, adjust the contrast using the contrast buttons on the left side. The Remote Control also has a switch-off feature: it automatically turns off to save power. In the settings (see p. ???) you can define the switch-off time for the touch screen.



### Changing the LCD Contrast

To adjust the LCD contrast on the touch screen:

- 1 Press and hold the **Backlight** button. The screen lights up.
- While still holding the Backlight button, press the **Page Up** button once to increase the LCD contrast one level.

  The LCD contrast is adjusted one level up.

-or-

Press the **Page Down** button once to decrease the LCD contrast one level.

The LCD contrast is adjusted one level down.

3 Release the **Backlight button** when the contrast is satisfactory. The LCD contrast can be adjusted 16 levels.

Note To adjust the contrast multiple levels, you have press the Page Up or Page Down button multiple times. When you press and hold the Page Up or Page Down button, the LCD contrast will only change one level.

### ■ The Battery Status

The battery icon indicates the status of your batteries.

When the battery status is low, the Low Battery icon appears at the top of the touch screen. You can still operate your devices, but you cannot adjust the settings, define brands, learn commands or record macros anymore. When you try to perform these actions, a message screen appears.



Replace the batteries to make the Freedom Remote fully functional again. See 'The Batteries' on p. 3 to replace the batteries.

## **Operating Devices**

To operate devices on your Freedom Remote you have to switch to the **Device Overview**. This screen displays the available devices like TV, VCR, Disc, Tuner, SAT and so on.

### Activating the Device Overview Pages

Press the Device button.

The Device Overview appears, showing the available devices in the Freedom Remote.

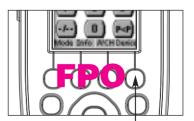


Fig. 2: The Device button

### Selecting a Device on the Device Overview

Tap the soft button of the device you want to operate.

The first page of the selected device appears. See 'Using the Page Up and Page Down Buttons' on p. 10 to go to another page of the device.

You operate devices using the buttons on your Freedom Remote:

- Soft buttons (touch screen buttons):
- Hard buttons.

### Selecting Other Device Functions

The second page of the Device Overview Section allows you additional control of your Freedom System. On this page you will find four soft buttons. Zone 2, Macros, Listen Modes, and Sleep.

Zone 2- The Freedom System has the ability to provide audio simultaneously and independently in two different listening "zones". With the connection of additional amplification and loudspeakers to the Zone 2 output from your Freedom Control Center you can for instance, enjoy a CD in one room and the FM tuner in another.

To activate a device from Zone 2 tap the Zone 2 button.

Devices available now come up in a new page labeled Zone 2. You operate the devices as you would in Zone 1. To turn off Zone 2, or return operation to Zone 1, tap the Off or Zone 1 soft buttons at the bottom of the touch screen.

Note If a Zone 2 user selects a device already in operation in Zone 1 (or vice versa) both users will have control of that same device. This may cause conflicting use and programming.

### **Listen Modes**

The Freedom Remote allows adjustment of several "listening modes" to allow you to get maximum enjoyment and performance from your Freedom System. Listening Modes allow you to use two, five or all six of the system's speakers, depending on program type, format and personal taste. The system's subwoofer is always on, regardless of the number of speakers being used.

Note A customized Listening Mode page is also available for each device and can be found on the next-to-last page for each device. This page will only show soft buttons appropriate for that device.

On the Listening Mode page you will find the following soft buttons:

#### Stereo

Uses only the front left and front right speakers , allowing Freedom to behave like a traditional 2-channel stereo system.

#### Surround Music

Uses the front left/center/right and rear left/right speakers to recreate the ambience of a live musical performance. This is the default setting for the internal CD and Tuner, as well as Auxiliary Audio and Changer external inputs. Additional controls for Surround Music can be found in the setup menus accessed via the system on-screen display.

#### Surround Movie

Uses the front left/center/right and rear left/right speakers to recreate a movie theater-like surround sound experience from sources that are not Dolby® Digital or DTS®. This is the default setting for VCR/PVR, Satellite/Cable and TV. If any external source changes to a Dolby Digital or DTS signal, Surround Movie mode will be automatically overridden.

#### 5/6

Turns the rear center speaker on and off. The Freedom System includes the ability to properly decode the latest surround sound formats: Dolby® Digital Surround  $EX^{\mathbb{Z}}$  and  $DTS^{\mathbb{Z}}$ - $ES^{\mathbb{Z}}$ . Both of these formats are available on DVD, and Dolby Digital Surround EX may be found on some programming on digital cable and satellite.

The proper amount of sound will come automatically from the rear center speaker when watching an EX- or ES-encoded movie. A regular Dolby Digital or DTS soundtrack will also send sound to this speaker. However, when watching these movies it is possible that too much sound can come from the rear center speaker, and not enough from the rear left and right speakers. If that is the case, press the 5/6 button to turn the rear center speaker on and off. The corresponding blue light on the control center will provide a visual confirmation of the status of the rear center speaker. Simply chose which system configuration you prefer for a specific movie soundtrack.

#### Subw -/+

Adjusts the output level of the subwoofer to match the type of programming being played. You may also find that a relatively higher subwoofer level is preferred when playing the system at lower volumes. The range of this control is -12 to +12, and a visual indication of any level change will appear on the control center display and your television.

Night (Disc and Changer Device only)

Changes the Freedom System's overall dynamic range while listening to DVD's. This will reduce the difference between a movie's softest and loudest passages, making the movie more suitable for viewing when you are concerned about disturbing others.

### Listening Mode Memory

The Freedom System will automatically recall both the Listening Mode and the associated subwoofer level setting for each source. Let's say that the last time you played a CD you listened in Surround Music mode and set the subwoofer to –2. The last time you listened to the Tuner you listened in Stereo and set the subwoofer to +3. You just finished watching a movie in Dolby Digital Surround EX with the rear center speaker on and the subwoofer set to +5. When you switch to Tuner, the system will automatically switch to Stereo, subwoofer +3. Any changes you make to the Listen Mode settings will be stored automatically in the system's memory and recalled the next time you choose that source.

#### Macros

A macro allows you to send a sequence of commands using one single button. You can for instance switch on your TV, turn on your cable box and tune to a movie channel, all by pressing a single button. Pressing the Macros soft button on the second page of the Device Overview will bring you to a set of Macro soft buttons. Refer to "Recording Macros" on page #### to learn how to program these for your particular needs.

### Sleep

You can program your Freedom System to shut off automatically. Using the -and + soft buttons allows you to program the Freedom System to shut off automatically in 15 minute intervals for up to 90 minutes.

### Activating The Freedom System On Screen Display

Your Freedom System is equipped with an On Screen Display (OSD). The OSD is utilized to check system status and make adjustments to your Freedom System.

Adjustments may include things like TV aspect ratios, speaker levels and parental controls. (See your Freedom Home Theater System Setup and Use Guide for complete information on the use of the OSD)

You access the OSD by pressing the OSD labeled hard button at the bottom of the LCD display. You use the Navigation Buttons (up/down/left/right/ok) to access specific adjustments within the OSD. Use the Close

labeled hard button at the bottom of the LCD display to close the OSD.

Note

After pushing the Close button it is necessary to press the Device button to return to normal remote operation.

# **Working with Modes**

The Freedom Remote starts up in Use mode. In this mode you operate your devices. For customizing the Freedom Remote (adjusting the settings, defining brands, learning buttons, labeling buttons and devices or recording macros) you have to switch to the appropriate mode.

Note When switching between modes you will always return to the last active screen.

The Freedom Remote can be put into 5 different modes. These modes are:

**Use mode** For operating your devices. See 'Operating Devices' on p. 8.

**Setup mode** For changing the Freedom Remote system settings.

See 'Adjusting the Settings' on p. 11 for more details.

**Brand mode** For defining the brands of your devices using the Freedom

Remote's database. See 'Defining the Brands of Your Devices'

on p. 15 for more details.

**Learn mode** For learning commands from other remote controls. See 'Learning'

Commands' on p. 18 for more details.

**Label mode** For labeling buttons on the Freedom Remote. See 'Labeling

Buttons and Devices' on p. 21 for more details.

**Macro mode** For recording macros. You can assign multiple commands to one

single button. See 'Recording Macros' on p. 23 for more details.

**RF/IR mode** For changing mode of communication to external devices. You can

control external components (VCR, satellite reciever) from greater

distances. See "changing the RF/IR settings."

Note Learning commands, defining brands and recording macros is only possible per device. This means that you first have to select a specific device to perform these

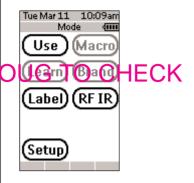
actions.

1 On the Device Overview tap the soft button of the device you want to customize.

The first page of the selected device appears.

2 Press and hold the **Mode** button for 3 seconds.

The Mode screen appears.



Note You have to press and hold the Mode button for 3 seconds to prevent accidental changes.

3 Select the desired mode from the Mode screen.

Note When you switch to another mode from the Device Overview, you cannot choose the **Brand** mode, **Learn** mode, **RF/IR** mode and **Macro** mode. To switch to these modes you first have to go to the specific device you want to customize.

# **Adjusting the Settings**

The Freedom Remote settings can be adjusted in the **Setup** mode.

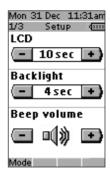
- 1 Press and hold the **Mode** button for 3 seconds. The Mode screen appears.
- 2 Tap **Setup** in the Mode screen. The first Setup page appears.

The Freedom Remote settings consist of 3 setup pages with several settings per page. Use the Page Up and Page Down buttons to navigate to the appropriate setup page.

### First Setup Page

On the first setup page you can adjust:

- the LCD timeout:
- the backlight timeout;
- the beep volume.



#### Adjust the LCD Timeout

The LCD timeout indicates how long the LCD touch screen stays active before it turns off. The LCD will only time out when you don't touch any buttons. You can set the timeout between 1 second and 120 seconds.

Press '+' to increase or '-' to decrease the time the LCD stays active.

- 1 Tap '+' or '-' once to adjust the timeout 1 second up or down.
- 2 Press and hold '+' or '-' to adjust the timeout per 10 seconds up or down.

#### Adjust the Backlight Timeout

The backlight setting indicates how long the backlight of the LCD touch screen and the buttons stays active. The backlight timeout can be set between 1 second and 120 seconds. You can also set the backlight in the 'On' setting so that the backlight automatically activates when the touch screen is tapped or a hard button is pressed.

Note The backlight cannot stay active longer than the LCD. If you increase the backlight timeout, the LCD timeout will automatically increase as well.

Press '+' to increase or '-' to decrease the time the backlight stays active.

- 1 Tap '+' or '-' once to adjust the timeout 1 second up or down.
- 2 Press and hold '+' or '-' to adjust the timeout per 10 seconds up or down.
- 3 After you have reached 120 seconds press the '+' once more to jump to the 'On' state for the Backlight timeout.

When the settings for the LCD timeout and the backlight timeout are high or when the backlight is activated automatically, the battery lifetime may be reduced.

#### Change the Beep volume

The beep volume setting adjusts or turns off the volume of all button and system beeps on the Freedom Remote. The beep volume levels are mute, soft, medium and loud.

Press '+' to increase or '-' to decrease the beep volume.

### Second Setup Page

On the second setup page you can adjust the settings for the date and the time.



#### Adjust the Date

You can set the year, the month and the day in the date settings.

Press '+' to increase or '-' to decrease the value for the year, month and day.

- 1 Tap '+' or '-' once to adjust the year, month and day one value up or down.
- 2 Press and hold '+' or '-' to adjust the values for the year and the month more rapidly. The value for the day settings will change per 5 days.

The Freedom Remote will immediately reflect the date change at the top of the screen.

#### Adjust the Time

- 1 Tap '+' or '-' once to adjust the time 1 minute up or down.
- 2 Press and hold '+' or '-' to adjust the time more rapidly. The time will increase or decrease per 30 minutes.

The Freedom Remote will immediately reflect the time change at the top of the screen

### Third Setup Page

On the third setup page you can:

- Calibrate the touch screen;
- Read information about your device;
- Revert the Freedom Remote



#### Calibrate the touch screen

- 1 Tap the Calibrate button.
  The first instruction "Touch the top left corner" appears.
- 2 Tap as accurately as possible in the center of the image in the upper left corner using a blunt tip of a pencil.

  The second instruction "Touch the buttom right corner" appears.
- 3 Tap as accurately as possible in the center of the image in the upper left corner using a blunt tip of a pencil.

  A message screen "Calibration successful" appears for 3 seconds. The setup panel appears again.

#### The Freedom Remote Information

This page contains information that may be important to the dealer in case of a defect. The following information is displayed on this screen:

- Free memory (in percentage), which gives you an indication on how much memory is left to (further) customize the Freedom Remote;
- Boot version:
- Application version;
- Configuration file.

#### Revert

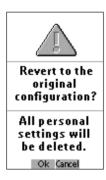
Warning When you revert the Freedom Remote, all customization is lost permanently.

You loose all the Freedom Remote settings, defined brands, learned codes and recorded macros. You should save your configuration file to your PC before reverting. See the Freedom Edit on page XX for more details.

By tapping the Revert button the Freedom Remote will be reverted to the default configuration. Reverting to the original configuration restores the Freedom Remote to its initial state. You might have to revert when you notice that scrolling through pages is slowing down. This might be the case when you have added a lot of commands to the Freedom Remote.

1 Tap the **Revert** button.

A message screen appears to confirm or cancel the revert process.



2 Press OK or Cancel.

### ■ To exit Setup Mode

- 1 Press the **Mode** button. The Mode screen appears.
- **Tap the mode button you want to go to.**The Freedom Remote switches to this mode. See also 'Working with Modes' on p. 10.

### Changing the RF/IR Settings

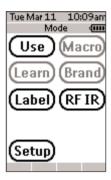
Your Freedom Remote Control comes from the factory ready to control your system using Radio Frequencies (RF). RF signals have an operating range of 20 meters (66 feet) in a typical home and unlike traditional Infrared (IR) signals used by most consumer electronics, RF signals can go through walls and obstacles, allowing you to operate the system throughout your house. This feature is particularly helpful when controlling your system from another room or even outside where you may have additional speakers. There are two reasons why you may want to adjust the RF/IR characteristics of your Remote Control and Freedom System. One, to extend control of IR devices by using RF. Two, to resolve system interference problems.

Changing Infrared (IR) Components to Radio Frequency (RF) Control
Additional devices (VCR, Satellite Receiver, etc.) that you may want to connect
to your Freedom System will typically use IR signals to operate via a remote
and your Freedom Remote Control is designed to learn these IR commands,
(see Defining Brands and Learning Commands on pages ###)

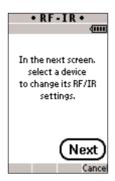
However you may choose to operate your IR devices using RF signals giving you the conveniences of RF as mentioned above. The Freedom System can receive RF signals from the Remote Control and translate them into IR signals and send them to the appropriate IR device.

To be able to operate one or more IR devices with RF signals from your Freedom Remote, you have to change the Remote Control's RF/IR settings for those devices. You will also need to connect the supplied Dual IR Emitter to the rear of your Freedom Control Center. The Emitter also needs to be placed near the IR device you want to operate, ensuring the Emitter's sending eye is pointed at the device. (See your Freedom Home Theater System Setup and Use Guide for complete information on RF/IR operation)

1 From the Device Overview page, press and hold the Mode button for 3 seconds.



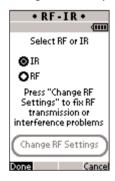
2 From the Mode page press the RF/IR button. A message will ask you to select the device you want to change. Hit Next.



3 On the next screen select the device you wish to change.



4 Then select the transmission mode. The default setting for components you have connected to your Freedom System is IR. If you want to change this to RF, press the RF button. Tap the Done button to finish.



Now when using the remote, all commands will be sent to the Freedom System in RF mode and converted to IR. The IR signal is then sent through the Dual IR Emitter and delivered to the selected component.

Note Please do not change the RF settings to IR for Disc or Tuner. The Freedom Control Center does not respond to IR commands. Additionally, changing the operation of external devices from IR to RF means those devices no longer respond to IR commands from the Freedom Remote Control. For more information about RF/IR setup, see your Freedom Home Theater System Setup and Use Guide for complete information on RF/IR operation).

### Changing RF Settings- RF ID

If you have more than one Freedom system in your home or perhaps a neighbor in close proximity also has a system, you may find that the RF signals from one system's Remote Control will interfere with the other. In this case you will want to change your system's ID code so that your system operates independently.

- 1 Looking at the rear panel of your Freedom Control Center you will find a dial labeled ID located near the main power line. By rotating the dial, change the setting from the default A setting to another. Note the new setting.
- 2 From the Device Overview page, press and hold the Mode button for 3 seconds.
- 3 From the Mode page press the RF/IR button. A message will ask you to select the device you want to change. Press Next.
- 4 On the next screen select the device you wish to change.
- 5 Press the button labeled Change RF Settings
- 6 On the next screen find the box labeled Change RF ID. Scroll to the ID designation that matches the ID knob on the back of the Control Center. Press Done

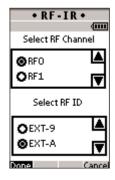


Note All devices must match the ID number selected on the Control Center. If you change one device you must change all others in the same manner for proper operation.

### Changing RF Settings- RF Channel

In rare occasions, other RF controlled devices (garage door openers, cordless phones) may interfere with the operation of your Freedom Remote Control. If you suspect interference, you can choose another channel to operate your Freedom System.

1 Looking at the rear panel of your Freedom Control Center you will find a dial labeled CH located near the main power line. By rotating the dial, change the setting from the default 0 setting to another. Note the new setting.



- 2 From the Device Overview page, press and hold the Mode button for 3 seconds.
- 3 From the Mode page press the RF/IR button. A message will ask you to select the device you want to change. Press Next.
- 4 On the next screen select the device you wish to change.
- 5 Press the button labeled Change RF Settings
- 6 On the next screen find the box labeled Change RF Channel. Scroll to the RF designation that matches the CH knob on the back of the Control Center. Press Done

Note All devices must match the CH number selected on the Control Center. If you change one device you must change all others in the same manner for proper operation.

## **Defining the Brands of Your Devices**

The Freedom Remote can operate other components (VCR, Satellite Receiver) that you may want to connect to your Freedom System. This eliminates the need to use multiple remotes from different manufacturers, as well as allow command operations to be programmed as "macros" (see section on Macros). To take advantage of the Freedom Remote's ability to control other brands and devices follow these steps.

To define brands you have to set the Freedom Remote in Brand mode:

- 1 Set the Freedom Remote in Use Mode. See 'Working with Modes' on p. 10.
- 2 Select the device, e.g. TV, for which you want to define the brand. The device screen appears.
- 3 Press and hold the **Mode** button for 3 seconds. The Mode screen appears.
- 4 Tap **Brand** on the Mode screen.

An instruction screen appears indicating you can set the brand for the selected device.

The Freedom Remote is now in Brand mode. 'Brand' and the label of the selected device appear at the top of the LCD touch screen.



5 Tap **Next** to define the code set of your device.

The code set screen appears. When the brand is already defined like in the default configuration, the code set is displayed.

-or-

Press Cancel to exit Brand mode.



6 Enter the code set from the 'Table of Brands' from p. 34 onwards.

Note To delete a number, tap on the LCD touch screen.

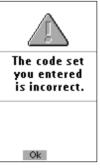
In the Table of Brands the brands are ordered alphabetically per device. Some brands use several code sets for the same device. The code sets in the table of brands contain only the basic functions of the devices. It is advised to enter the first code set and try it out. If your device is not responding properly, you should try out the second code set of the brand. Try out all code sets of the brand until you can operate the device to your satisfaction.

Note Defining the brand of your device will not erase the commands you have previously learned to buttons of that device. See 'Learning Commands' on p. 18 for more details.

7 Press **OK** to define the brand of your device.

When the code set is correct, you will hear a confirmation beep. The IR codes of the selected device will be installed on the Freedom Remote.

If you entered an incorrect code set, you hear an error beep. A message screen appears.



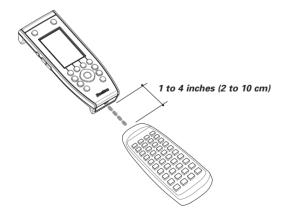
1 Press OK.

The Freedom Remote returns to the code set screen where the incorrect code set is displayed.

2 Look up the correct code set and repeat instructions 6 and 7.

## **Learning Commands**

If an IR code or a brand is not in the database, you can program the Freedom Remote commands by transmitting IR signals from your existing remote controls to the Freedom Remote's learning eye. To do this, place the Freedom Remote and the device's remote control on a flat surface, 1 to 4 inches (2 to 10 cm) apart.



To learn commands from other remote controls, the Freedom Remote has to be in Learn mode. Switching to Learn mode is only possible from a specific device, not from the Device Overview. See 'Working with Modes' on p. 10.

Per device you can learn all soft and hard buttons on the Freedom Remote, except for:

- the Backlight button
- the Page Up and Page Down buttons
- the Mode button
- the Device button
- the Power button
- the OSD button
- the Close button
- the Volume +/- button
- the Mute button

### ■ The Learn Sequence

- Set the Freedom Remote in Use Mode. See 'Working with Modes' on p. 10.
- 2 Select the device, e.g. TV, with the buttons you want to learn. The device screen appears.
- 3 Press and hold the **Mode** button for 3 seconds. The Mode screen appears.
- 4 Tap Learn on the Mode screen.

The Freedom Remote is now in Learn Mode. 'Learn' and the label of the selected device appear at the top of the touch screen.



Use, if necessary, the Page Up or Page Down button to go to the next button you want to learn.

6 Press the soft or hard button you want to learn on the Freedom Remote.

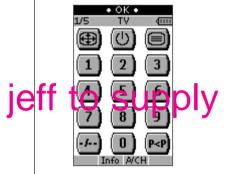
The Learn label changes to Learning, which means the Freedom Remote is ready to receive commands from an existing remote control. The Freedom Remote will wait for 5 seconds to receive an IR code from another remote control.

Note When a hard button is pressed to learn, there is no on screen feedback to indicate which button is pressed.

7 Press and hold the button on the existing remote control you want to learn to the Freedom Remote.

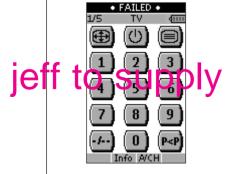
When the Freedom Remote receives an IR code:

- You hear a confirmation beep;
- The label changes from Learning to OK. The Learn sequence has been successful.



When the Freedom Remote does not receive an IR code in 5 seconds:

- You will hear an error beep;
- The label changes from Learning to Failed. The Learn sequence has failed.



The Freedom Remote will return to Learn mode. Return to step 5 of the Learn sequence to relearn the button.

Tip You do not have to wait for the OK or Failed to disappear. If you press another button (soft or hard button), the Freedom Remote Learn sequence immediately goes back to step 5.

- 8 Go to other pages of the selected device with the Page Up and Page Down buttons. Repeat steps 6 and 7 until you have copied all the commands of the existing remote control.
- 9 Press **Done** when you have finished learning commands to the buttons of your choice.

The Freedom Remote returns to Use Mode. You can try out the new IR codes or select another device to learn.

## **Labeling Buttons and Devices**

You can label or relabel buttons and devices with:

- Characters in lower case and upper case;
- Numbers;
- Symbols.

To label a button or a device:

- 1 Set the Freedom Remote in Use Mode. See 'Working with Modes' on p. 10.
- 2 Select the device, e.g. TV, with the buttons you want to label. The device screen appears.

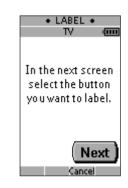
-or

Select the Device Overview with the device buttons you want to label.

The Device Overview appears.

- 3 Press and hold the **Mode** button for 3 seconds. The Mode screen appears.
- 4 Tap Label on the Mode screen.

The Freedom Remote is now in Label Mode. 'Label' and the name of the selected device appear at the top of the touch screen with the following message on screen.



- 5 Press **Next** to display the selected device screen or the Device Overview in Label Mode.
- 6 Tap the button you want to label.

  The Freedom Remote shows a mini-keyboard. The button you want to label is displayed above the keyboard.
- 7 Edit the label.
  - Tab the character, number or symbol you want to use. Repeat this action for every character.
  - To delete a character, press **Del**.
  - To enter a space, press **Space**.
  - To display other keyboard with capital letters and symbols, press the Page Up or Page Dowr button repeatedly.

• LABEL •							
1/5 TV 🐠							
on							
a b c d e f							
g	g h i j m n o p		i	k	I		
m			P	q	r		
S	t	u	v	w	x		
y	z	1	2	3	4		
5	6	7	8	9	0		
Spa	ce C	K ·	Cano	el l	Del		

Note You will hear an error beep, when you selected more characters than can be displayed on the selected button.

8 Tap **OK** to save the changes and return to the panel you were.

-or

Tap Cancel to return to the panel you were without saving changes.



- 9 Label all other elements you want. You can navigate to the different pages of the selected device screens or the Device Overview, using the Page Up and the Page Down button.
- 10 Press **Done** when you have finished labeling the buttons of your choice. The Freedom Remote returns to Use Mode. You can see the label or select another device to label.

# **Recording Macros**

A macro allows you to send a sequence of commands using one single button. You can for instance, switch on your TV, turn to a movie channel and prepare your VCR for recording by rewinding the videotape. All this can be done be pressing a single button on your Freedom Remote.

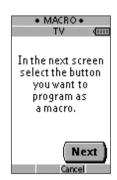
To record macros, the Freedom Remote has to be in Macro mode.

- 1 Set the Freedom Remote in Use Mode. See 'Working with Modes' on p. 10.
- 2 Select the device, e.g. TV, with the buttons you want to program as a macro.

The device screen appears.

Note Basically, you can assign any button as a macro button. However, it is recommended to assign only the reserved macro buttons on the last page of every device. Use the Page Up and Page Down buttons to go to the last page of the device.

- 3 Press and hold the **Mode** button for 3 seconds. The Mode screen appears.
- 4 Tap Macro on the Mode screen.
  A message screen appears, the Freedom Remote is now in Macro Mode.



MACRO •

5 Tap Next.

The device screen with the Macro label appears. With the Page Up and Page Down buttons you can go to other screens of the selected device.





### USING THE FREEDOM REMOTE

### USING THE FREEDOM REMOTE

6 Tap the soft or hard button you want to select as a macro. A message screen appears.



7 Tap Start.

The Device Overview appears with the 'Recording' label at the top of the screen. The buttons you tap on this screen will not be recorded. From the Device Overview you can go to the different devices or you can press the Extra hard button to go to the Extra screen with delays and beeps.



8 Tap the button of the device you want to go to. The device screen appears.



- 9 Tap the soft or hard buttons with the commands you want to record.
- 10 Press the Page Up and Page Down buttons to go to different screens of the same device.

-or-

Press the Device button to go to the Device Overview again.

11 To add delays and beeps to the macro, press the Extra hard button on the Device Overview.

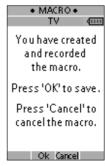
The Extra screen appears.

Note Delays may be required between commands. Some devices will not respond to another remote command immediately after turning on.



- 1 To add a delay, tap one of the Delay buttons.
  By tapping several Delay buttons, the duration of the delay will be increased.
- 2 To add a beep, tap the Beep button.
- 3 Press the Device button to go to the Device Overview again.
- 12 Press Stop to stop recording.

A message screen appears.



Press OK to save the macro and return to the Mode screen.
The existing command of the selected button is replaced by the macro.

-or-

Press Cancel to return to the Mode screen without saving the macro. The button retains its previous command.

14 Set the Freedom Remote in Use mode to test the recorded macro.

If you want to personalize your Freedom Remote even more beyond its standard programming features, Freedom Edit is the tool for you to use. Freedom Edit is the Freedom Remote's companion software that you find on the included CD-ROM. You can find more information and updates of the software on http://www.bostonacoustics.com/freedom.

Freedom Edit is the visual editor for creating and configuring the Freedom Remote Configuration Files (NCF) on your computer. An NCF is a file that is used to define the Freedom Remote behavior and look for the LCD touch screen.

Note It is advised to make backup copies of your own configurations. This can be done with Freedom Edit.

### With Freedom Edit you can:

- define the types and brands of your devices;
- generate the Device Overview;
- design the page layout and the appearance of buttons;
- configure the behavior of the hard buttons and soft buttons;
- access Freedom Edit's extended help system by pressing F1.
- save, duplicate and share NCFs, devices, buttons, bitmaps or codes with another Freedom Remote;
- preview the NCF on the Freedom Emulator;
- download the new configurations to your Freedom Remote and upload the configuration file on your Freedom Remote to Freedom Edit by means of the included serial cable:
  - 1 Plug one end of the serial cable in the serial port on your computer.
  - 2 Plug the other end of the serial cable in the serial port on the Freedom Remote.



Note When the Freedom Remote is connected to the PC, the battery lifetime may be reduced.



- PC with a Pentium 166 MHz or higher
- Windows 98/ME/XP or NT 4.0/2000
- 32 MB of RAM
- 16 MB of free hard disk space
- Free serial port
- CD-ROM player

### Installing Freedom Edit from the CD-ROM

- 1 Place the Freedom Edit CD-ROM in your computer.
  Freedom Edit setup will start up automatically. If not, you can install Freedom Edit by double-clicking the FreedomEditSetup.exe file on the CD-ROM.
- 2 Follow the instructions on screen that will guide you through the installation procedure.

The first time you run Freedom Edit, you have to accept the license agreement. Otherwise Freedom Edit will not run.



### Important Notices

#### Take care not to scratch the touch screen

Use your finger to tap the LCD touch screen or use plastic-tipped pens intended for use with touch screens.

Never use an actual pen, pencil or other sharp object on the LCD touch screen.

### Protect the Freedom Remote from extreme temperatures

Keep the Freedom Remote away from heaters and other heat sources.

#### The Freedom Remote is not waterproof

The Freedom Remote should not be exposed to rain or moisture.

Do not store or use the Freedom Remote in any location that is extremely damp or wet.

When you have spilled water on the Freedom Remote, you have to take out the batteries and let the Freedom Remote dry for 48 hours before you place the batteries back.

When you have spilled other liquids like coffee on the Freedom Remote, you can clean it with distilled water. Make sure no water gets into the housing.

The touch screen of the Freedom Remote contains a glass element

Do not drop the Freedom Remote or subject it to any strong impact.

### Cleaning the Freedom Remote

Use a soft, damp cloth to clean the Freedom Remote.

If the LCD touch screen of the Freedom Remote is spoiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.

Do not use a corrosive detergent or an abrasive sponge.

Avoid the use of abundant water.

Tip You may want to switch your Freedom Remote to Front input to avoid the system operation while cleaning. This will eliminate any soft buttons that can be activated during cleaning.

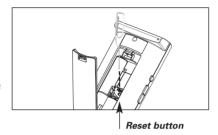
#### How do I reset the Freedom Remote?

Under normal circumstances, you will never have to reset the Freedom Remote. However, on rare occasions, if the Freedom Remote's touch screen freezes or if you notice unusual behavior, you need to perform a reset to get the Freedom Remote running again. All customized commands and devices are retained, however you will need to reset the time and date.

- 1 Slide the battery cover off the back of the Freedom Remote. You will see the Reset button in the battery compartment.
- 2 Use an unfolded paperclip or a sharp pencil to carefully press the Reset button.

  The Freedom Remote restarts and an Introduction screen appears.

  The Freedom Remote beeps twice to indicate it is ready for use.



### How do I revert to the original configuration?

Reverting to the original configuration restores the Freedom Remote's devices and commands to its state when you purchased it. This means that all programming is lost permanently. Normally, you never have to revert the Freedom Remote. See 'Revert' on p. 14.

- 1 Press and hold the Mode button for 3 seconds.
  The mode screen appears.
- 2 Tap the **Setup** button.
- 3 Scroll to the third setup page.
- 4 Tap the Revert button.

  A message screen appears to confirm or cancel the revert process.
- 5 Press OK or Cancel.

#### Do I have to calibrate the touch screen?

The Freedom Remote's touch screen is calibrated when it leaves the factory. You only have to calibrate the LCD touch screen:

- when you upgrade the Freedom Remote's software in the future. The Freedom Remote displays a message to calibrate the touch screen. Complete the instructions in 'Calibrate the touch screen' on p. 14.
- when the touch screen buttons do not respond properly. Navigate to Setup Mode first as described in 'Adjusting the Settings' on p. 11 and continue with the instructions in 'Calibrate the touch screen' on p. 14.

### ■ General Problems

#### The display stays blank or becomes black

- Make sure the batteries are properly installed. See "The Batteries" on page 3.
- Press the Backlight button to make sure the Freedom Remote and the backlight are turned on. See 'Turning on the Display and the Backlight' on p. 6.
- Adjust the contrast using the Backlight button and the Page Up or Page Down buttons on the left side of the Freedom Remote. See 'Changing the LCD Contrast' on p. 7.

#### The display is too light or too dark

 Adjust the contrast using the Backlight button and the Page Up or Page Down buttons on the left side of the Freedom Remote. See 'Changing the LCD Contrast' on p. 7.

#### The Freedom Remote shuts off automatically

 This is a timeout feature of the Freedom Remote to save power. You can change the time Freedom Remote stays on in the Settings. See 'Adjust the LCD Timeout' on p. 12.

# IR Devices that have been configured for RF do not respond to commands from the remote control.

- Check in the IR/RF mode if the devices you want to operate are set up properly.
- Make sure the IR emitter is placed near the devices you want to use with RF signals.
- Be aware that more than one IR emitter may be needed if have many IR devices are stacked or located on different shelves.

### A device responds to some RF signals and not to others.

It is possible that a device does not respond properly when operated with RF signals. This is mostly due to IR signals that cannot be properly transmitted as RF signals. In that case, you have to reconfigure the remote control to operate the device with IR signals again.

You also may be receiving interference from another RF device, see Choosing Another Channel.

### My Freedom System operates without me controlling it.

You may be receiving interference from another Freedom System, see Changing The Systems ID code.

#### External Devices do not respond to commands from the Freedom Remote

- Make sure the Freedom Remote is in Use mode. See 'Working with Modes' on p. 10.
- If in IR mode, make sure the Freedom Remote's sending LED is pointed towards the device you're operating.
- Check if the battery level is low. If so, replace the batteries. See 'The Batteries' on page 3.
- Check if you have defined the correct brands for your devices. See 'Defining the Brands of Your Devices' on p.15.
- Check if the button you are trying to use is assigned properly via Brand mode, Learn mode or Macro mode. See 'Defining the Brands of Your Devices' on p. 15, 'Learning Commands' on p. 18 and 'Recording Macros' on p. 23.
- Calibrate the touch screen. See 'Calibrating the touch screen' on p. 24.

# The Freedom Remote does not learn commands from an existing remote control

- Press and hold the buttons on the existing remote control for a longer or shorter period of time.
- Make sure the distance between the Freedom Remote and the existing remote control is between 1 and 4 inches (2 to 10 cm). See 'Learning Commands' on p. 18.
- Do not learn commands directly under fluorescent lights.
- Do not learn commands on a reflecting table surface.
- Check if the battery level is low. If so, replace the batteries.
   See 'The Batteries' on page 3.
- Check if there is sufficient memory to learn commands. If not, revert the Freedom Remote. See 'Freedom Remote Information' and 'Revert' on p. 14.

### The Freedom Remote is not recognized by the Freedom Edit software

- Make sure the serial cable is properly connected. See 'Freedom Edit' on p. 27.
- Disconnect other equipment connected to the serial ports, e.g. PDA's.
- Plug the serial cable in another serial port.
- Try to connect multiple times.

### Programming Problems

#### Buttons are not sending the correct commands

- Check if you have defined the correct brands for your devices. See 'Defining the Brands of Your Devices' on p. 15.
- Check whether the button of the device is learned properly. See 'Learning Commands' on p. 18.
- Check whether the macro is recorded properly. See 'Recording Macros' on p. 23.

#### The Freedom Remote will not switch modes

 Replace the batteries. When the batteries are low the Freedom Remote prevents you from switching to customizing modes so that no customization can get lost.

#### The Freedom Remote is low on memory

• Revert the Freedom Remote. See 'Revert' on p. 14.

#### The configuration file is corrupted

When this unlikely event occurs, you have to revert to the original
configuration or use Freedom Edit to download a new configuration file. All
your customized commands and devices will be lost and you will have to
reprogram your Freedom Remote. If you use Freedom Edit, it is advised to
make backup copies of your customized configurations. See 'Revert' on p. 14
and 'Freedom Edit' on p. 27.

#### The Freedom Remote error message

If the error message 'Invalid CF version or corrupt Flash!' occurs:

- Use the Reset button on the back of the Freedom Remote. See 'How do I reset the Freedom Remote?' on p. 30.
- Try to recover the Freedom Remote Configuration File (NCF) by downloading a backup copy or the default file from Freedom Edit. See 'Freedom Edit' on p. 27.
- Go to the Boston Acoustics website http://www.bostonacoustics.com/freedom for more information.





# TABLE OF BRANDS

Display	Monochrome touch screen LCD with 4 gray levels and digital contrast control.
	Resolution: 160 x 100 pixels
	Blue EL backlighting for LCD and hard buttons
Interface	3-wire (RS232) serial port connector
Software	Built-in Boston Acoustics Radio Frequency codes
	Database with IR codes to operate different brands
	Total number of devices limited only by memory
Infrared (IR)	Infrared sending LED and learning eye
	Operating distance of 33 feet (10 meters)
	Learning frequency up to 56 kHz and 455 kHz
	Learning distance 1 inch (2 cm) up to 4 inch (10 cm)
Memory	2 MB non-volatile flash memory
Batteries	3 AA-batteries (3 x 1,5V): primary or rechargeable
Power management	Tilting the unit more than 50 degrees. The display well as the backlight will be activated.
	Pressing the backlight button on the left side. The disas well as the backlight will be activated.
	Tapping the screen gently with your finger or a blunt, object like a pencil eraser. The display will be activate but not the backlight.
	Pressing any button will activate the display, but not backlight.
	Power off automatically
Dimensions	7.8 inch x 3 inch x 1.3 inch (177mm x 74mm x 33mm)
Operating temperature	41°F to 113°F (5°C to 45°C)
Accessories	RS232 cable for PC connection
	CD-ROM with Freedom Edit software
	3 AA-batteries

Designed by UEI Technology Licensed under U.S. Patent 5,689,353

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PreAmp						
Carver						0296
Curtis Mathes						0327
GE						0105
JVC						0358
Linn						0296
Magnavox						0296
Marantz						0296
Optimus					0422,	0327
Philips						0296
Pioneer						0327
Polk Audio						0296
RCA						0327
Realistic						0422
Sony					0716,	0247
Soundesign						0105
Victor						0358
Wards						0105
Yamaha						0381
Cable						
ABC				0030,	0034,	
Allegro					0180,	0342
Americast					0400	2.4
					0180.	24
Archer					0100,	
Bell South					0100,	26
Bell South Century						<u>26</u>
Bell South Century Citizen					0180,	26 90 42
Bell South Century Citizen Comtronics						26 90 42 67
Bell South Century Citizen Comtronics Contec						26 42 67 46
Bell South Century Citizen Comtronics Contec Emerson					0180,	26 90 42 67 46 0824
Bell South Century Citizen Comtronics Contec Emerson Everquest						26 42 67 46 0824 0067
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus					0180,	26 42 67 46 0824 0067 0427
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard					0180,	26 90 42 67 46 0824 0067 0427 0180
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini	mont				0180, 0042,	26 90 42 67 46 0824 0067 0427 0180 0824
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instru	ment				0180, 0042, 0042, 0503,	26 67 46 0824 0067 0427 0180 0824 0837
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar	ment				0180, 0042,	26 90 42 67 46 0824 0067 0427 0180 0824 0837 0171
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind	ment		1047	0026	0180, 0042, 0042, 0503, 0067,	26 90 42 67 46 0824 0067 0427 0180 0824 0837 0171 0824
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin	ment	0	0047,	0036,	0180, 0042, 0042, 0503,	26 67 46 0824 0067 0427 0180 0824 0837 0171 0824 0061
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex	ment	0	0047,		0180, 0042, 0042, 0503, 0067,	26 67 46 0824 0067 0427 0180 0824 0837 0171 0824 0061 0034
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco				0042,	0180, 0042, 0042, 0503, 0067, 0286,	26 20 42 67 46 0824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold				0042,	0180, 0042, 0042, 0503, 0067,	26 90 42 67 46 0824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex				0042,	0180, 0042, 0042, 0503, 0067, 0286,	26 90 42 67 46 0824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex Motorola				0042,	0180, 0042, 0042, 0503, 0067, 0286,	26 90 42 67 46 00824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027 1133
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex Motorola Movie Time				0042,	0180, 0042, 0042, 0503, 0067, 0286,	26 90 42 67 46 00824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027 1133 0090
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex Motorola Movie Time NSC				0042,	0180, 0042, 0042, 0503, 0067, 0286, 0180, 0042,	26 90 42 67 46 00824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027 1133 0090 0090
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrur GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex Motorola Movie Time NSC Oak				0042,	0180, 0042, 0042, 0503, 0067, 0286,	26 90 42 67 46 00824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027 1133 0090 0090
Bell South Century Citizen Comtronics Contec Emerson Everquest Focus Garrard Gemini General Instrut GoldStar Goodmind Hamlin Hytex Jasco Jerrold Memorex Motorola Movie Time NSC				0042, 0503,	0180, 0042, 0042, 0503, 0067, 0286, 0180, 0042,	26 90 42 67 46 00824 0067 0427 0180 0824 0837 0171 0824 0061 0034 0342 0837 0027 1133 0090 0090 0034 0048

	Paragon				0027
	Philips		0180,	0332,	0344
	Pioneer		0171,	0560,	0904
	Popular Mechanics				0427
	Pulsar				0027
	Quasar				0027
	RCA				0048
	Radio Shack	0042,	0910,	0342,	0824
	Recoton				0427
	Regal			0047,	0286
	Runco				0027
	SL Marx				0067
	Samsung			0067,	0171
	Scientific Atlanta		0035,	0504,	0904
	Signal			0042,	0067
	Sprucer				0048
	Starcom			0030,	0042
	Stargate		0067,	0042,	0824
	Starquest				0042
	TV86				0090
	Teleview				0067
	Tocom				0039
	Toshiba				0027
	Tusa				0042
Δ.	Unika				0180
	Unit Artists	┣			0034
	Uni sal			0180,	0218
	Viev ar				0090
	Zenitk		0027,	0552,	
	Zentek				0427

### CD/CDR

Aiwa	0151, 0184
Burmester	0447
California Audio	Labs 0056, 0330
Carver	0184, 0206, 0464
DKK	0027
Denon	0030, 0900
Emerson	0332
Fisher	0201, 0206
Garrard	0420, 0447
Genexxa	0059, 0332
Harman/Kardon	0184, 0200
Hitachi	0059
JVC	0099
Kenwood	0055, 0217, 0853, 0064, 0653,
	0708
Krell	0184
LXI	0332

# TABLE OF BRANDS

Linn						0184
MCS						0056
MTC						0447
Magnavox						, 0332
Marantz		0184	, 0653	, 0	056	6, 0207
Mission						0184
NSM						0184
Nikko				_		0201
Onkyo						3, 0895
Optimus		9, 0495				
	033	32, 1090	), 0027			
Panasonic				U	Ubb	6, 0330
Parasound				_	404	0447
Philips		0050	0.405			0653
Pioneer		0059	, 0495,			
Dalla Assalta				- 1	บชะ	1090
Polk Audio						0184
Proton QED						0184
						0184 0056
Quasar RCA	nno	0, 0059	0405	nr	222	
NGA	000	0, 0005	, 0433,	0	000	, 1003,
Realistic			0206	_	į	, 0447
Rotel			0200	0		, 0447
SAE				_		0404
				0		0332
Sansui				0		0206
Sansui Sanyo				0		0206
Sansui Sanyo Scott				0		0206 0332
Sansui Sanyo			0064			0206 0332 0332
Sansui Sanyo Scott Sears			0064	, 0	207	0206 0332
Sansui Sanyo Scott Sears Sharp			0064	, 0	207	0206 0332 0332 7, 0888
Sansui Sanyo Scott Sears Sharp Sherwood				, 0	207 094	0206 0332 0332 7, 0888 4, 0207
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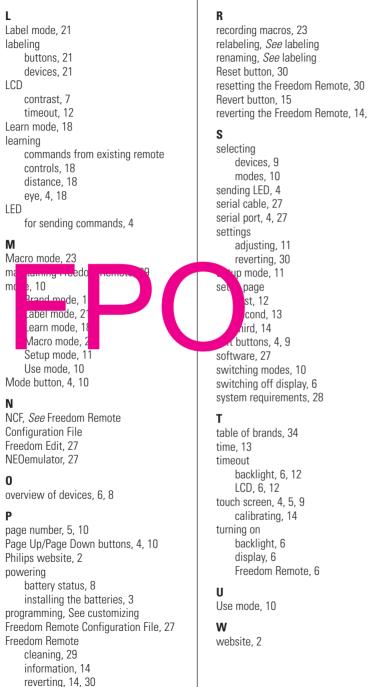
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