



digital audio player
user guide



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This manual is for the empeg car digital audio player.

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one: unpacking the player

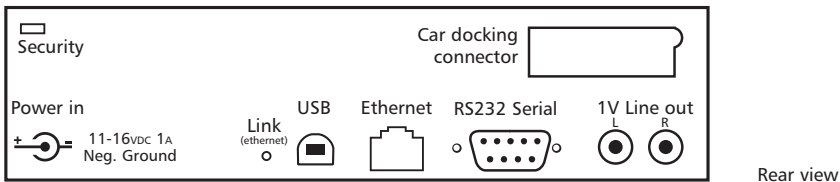
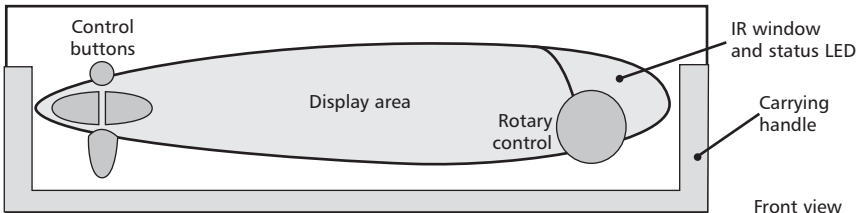
Upon unpacking your empeg car player, please check that each of the following items are enclosed:

- empeg car player
- Car mounting cage
- Infra red remote control
- Home power supply
- emplode software CD
- USB connection cable
- Serial connection cable
- 9 to 25 pin serial adaptor
- This manual
- Car bumper and window stickers

If any of the items are missing, please contact us at support@empeg.com (see contact details in appendix f)

Other items you may require are:

- Ethernet cable with RJ-45 connector for 10BaseT
- Phono (RCA) lead to connect to home amplifier



two: car installation

The empeg car unit is no harder to install than any other car head unit, however, if you are not experienced with head unit installation we recommend you leave the job to a professional. As with other two-part (head unit and separate amplifier) combination systems, the sound quality – and in particular audio interference – is greatly affected by the way the units are wired.

A good car audio specialist will be able to supply and install a suitable amplifier as well as fitting the empeg car.

Amplifier requirements

The unit has high-level line outputs, and requires an amplifier that can handle 3.2V RMS line outputs: ideally, you need to test the empeg unit with the amplifier you intend to use before purchasing it. Ensure you get an amplifier with an adjustable gain control so that it can be matched to the empeg car's output levels.

The unit provides four channels (two left/right pairs, one for front and one for rear), so for a four-speaker system you will require either a four-channel amp or 2x two-channel amps. The empeg does not provide a separate subwoofer out – an external active crossover is recommended for this.

When setting up the amplifier the gain should be turned to minimum (least sensitive) and then, with the empeg car set to maximum output (0dB attenuation), turned up until your maximum listening level is reached. Too high a sensitivity setting will cause both distortion at high volumes and interference at low levels.

Mounting orientation

The unit is designed to mount close to horizontal: ideally, the unit should be leaning back at an angle of 8 degrees (this is fairly common practice in car dashboards) but angles from 0 degrees to 16 degrees tilt (the rear of the unit being lower than the front) are acceptable.

The unit is not designed to be mounted vertically (front faces upwards) or on its side, as this compromises the effectiveness of the shock mountings inside the unit.

Physical

The empeg car dock is a DIN-E sized unit: the aperture it fits into is the standard size of 183mm (7.2") wide and 50mm (2") high. The unit is 173mm (6.8") deep, including cables.

As with other DIN units, the unit is secured with push-out tabs that hold onto the dashboard. After completing the wiring of the dock, it should be pushed into place and the appropriate tabs pushed out (so they protrude on the outside of the dock) in order to hold the dock securely in place.

Summary of electrical connections

Power

Black	Earth
Yellow	Permanent power input
Orange	Ignition sense input
White	Headlights sense input
Blue	Amplifier remote power on
Green	Mute input (e.g. for mobile phone)

The above connections are brought out to a standard ISO car audio connector, suitable for direct connection to many modern vehicles. For vehicles without an ISO connector, the mating connector is available from all good car audio suppliers.

Audio

Line out (front pair/rear pair)	4 volt output
Line in (pair)	1 volt input
Microphone in (3.5" jack)	

Digital

RS232 Serial port (9-way female D type)

empeg Tuner port (8-way male)

Electrical connection details

Ground (black)

The empeg car works with negative earth cars only. The case is connected to ground, as is this connection.

Permanent power input (yellow)

The power input takes a maximum of 1A at 12V to power the unit: any current taken by the amplifier remote line will increase this value. The line is fused at 3A, and the empeg unit is internally fused at 3A. If the fuse blows, investigate and rectify the problem (check the empeg unit powers up with the home power adapter) and always replace with a fuse of the same type and rating.

An in-line power filter is fitted into the power line to filter out ignition noise from the car supply.

The unit has a solid-state internal fuse. If this is tripped, disconnect the unit from the power supply and leave for a few minutes to allow the fuse to reset, and check the unit works with the mains adapter before trying it again in the car. If the solid state fuse trips, a faint "hot electrical" smell may be detected – this is normal.

The power input should be connected to the permanent 12V power line of the car wiring. The empeg car can function with a supply voltage from 8V to 16V DC. Audio quality may be reduced at low voltages.

Ignition sense input (orange)

This 12V input should be connected to the vehicle switched accessories line. To prevent excessive battery drain, it should only be powered when the ignition is switched on.

Headlights sense input (white)

This 12V input should be connected to the dashboard night illumination line. It activates the automatic night display dimmer feature.

This line is used to turn the external amplifiers on. It should NOT be used to power the amplifier, as it is a low current line, which can supply a maximum of 1 amp at 12V – this should be connected to the amplifier’s ‘Remote’ line, with the amplifier drawing its power from a direct battery feed.

Amplifier remote power on (blue)

This line can also be used to control an automatic antenna, with the same proviso on current sourcing as above. Note that the antenna will extend whenever the empeg is switched on, regardless of whether the tuner, digital audio or auxiliary source is selected. Some empeg tuner modules may have a dedicated antenna control output which would be preferable for this application.

Mute input (green)

This 12V input is used to automatically mute or pause the audio output. This is primarily intended for use with an in-car cell phone.

Audio

There are two pairs of audio outputs on phono (RCA) connectors, with an output level of approximately 3.2V RMS. The 1V line inputs can take audio from other head units or portable CD/DAT/Minidisc players and route it through the empeg Aux channel.

The microphone input is suitable for connection to a passive condenser mic or an active DSP mic.

Digital

The empeg car’s serial port docks with the car mounting cage, allowing connection to permanently fitted in-car computer equipment. The connector provides transmit, receive, flow control, ground and +12V outputs on a 9 pin RS232 connector.

If this connector is not used, care must be taken to ensure that it is insulated due to the 12V output present on pin 4.

three: windows software installation

It is important to ensure that you do NOT connect the empeg player to your PC via USB before commencing the Windows software installation. If you do so Windows will prompt you to supply a driver location – do not do so, but rather cancel the dialog box, disconnect your player, and continue with the instructions that follow.

Insert the empeg car emplode disc into your CD drive. The installation wizard will automatically start, unless you have disabled auto-run in which case open the CD and double click the Setup icon in the emplode folder.

The emplode License Agreement will be displayed. Please read this and click Yes to indicate acceptance of the terms if agreeable to you. Release notes will then be displayed, which should be read before clicking Next.

You will be prompted to enter your name, company (if applicable) and serial number. The serial number can be located on the silver label attached to your player. Please type the number exactly as it appears, including leading zeros, then click Next.

If you wish to change the default installation folder you can now do so by clicking Browse, otherwise click Next to continue. You can now specify the Start Menu location for the emplode icons, and click Next once more.

The software will now install onto your computer. Once complete, click Finish.

At this stage, it is recommended that you restart your computer.

Uninstalling the Windows software

If you should wish to remove the empeg emplode software from your computer, open the Add/Remove Programs dialog from the Control Panel. Scroll down the list of installed programs, select 'empeg car Management Software' and click Add/Remove. The software will now be totally removed from your computer.

Macintosh users using emulation software

emplode works with PC emulation products such as Virtual PC, RealPC and SoftWindows; providing an appropriate version of Windows is installed.

USB support depends upon the hardware and emulation product. Please note that we are unable to provide support for emplode running under emulation.

four: home installation

To download and organise music on your player you will need to connect it to a mains power outlet and PC. The power adapter and cables that are required for this are supplied with the player. You may also wish to connect your player to your home stereo to listen to your digital music out of the car – an additional cable is required for this purpose.

Connecting to mains power

Connect the power adapter to the empeg car player power socket on the rear panel. As soon as the power adapter is plugged into a live socket the player will power up ready for use.

Note that the supplied power adapter is auto-ranging, suitable for use with voltages from 100V to 240V.

Connecting to your home computer

You can connect your empeg car player to your home computer with USB, 10Base-T Ethernet or RS232 Serial. USB or Ethernet are the recommended options for downloading tracks, as they are much faster than Serial. You will need to use the Serial connection if your computer does not have (or support) USB or TCP/IP Ethernet connections and when upgrading the software in the player. USB is not available on Windows 95 (including OSR2) or Windows NT 4.0.

The Serial cable requires a 9-pin port – the supplied adapter is necessary for connection to a 25-pin port.

To connect your player, simply insert the appropriate cable into the port on the rear panel of the player and into your computer. You should avoid connecting the USB cable until you have installed the supplied software (refer to section three).

If you wish to connect the empeg car to an existing ethernet network, you will require an Ethernet Patch cable with RJ-45 connectors (not supplied) to connect into a hub. If you wish to connect the empeg car directly to a computer, you will require an Ethernet crossover cable (not supplied) with RJ-45 connectors.

Connecting to your home stereo

The phono (RCA) jacks on the rear of the player provide 1V line outputs suitable for direct connection to a home amplifier. A cable for this purpose can be obtained from any electronics or hi-fi outlet (be sure to check the connections required by your amplifier).

Note that the line outputs cannot drive any load directly – do NOT connect them to speakers or headphones.

For home use it is strongly recommended that you set the output gain (volume) on the player to 0dB and adjust the volume from your amplifier. This will ensure optimum signal to noise ratio.

five: the emplode music management software

Before proceeding with this section, install the emplode software as described in section three.

Introduction

The emplode program is responsible for managing the music database on your empeg car player, including loading tracks, setting and changing track details and organising your music. The program runs on your home computer and communicates with your player via a USB, Ethernet or Serial connection – refer to section three for details of making this connection.

Documentation

This guide gives a basic overview for using emplode. Full documentation is provided with the program via the Windows help system.

Encoding your music

Before music can be played by the empeg car it must be encoded in a supported audio format. Currently supported formats are MP3 and MP2, with more coming in subsequent software upgrades. These formats compress the data yet maintain excellent audio characteristics, which is why the empeg car can store so much music.

The empeg emplode software does not perform the encoding – this may have been performed by your music vendor (if you are purchasing tracks in MP3 format) or, if you wish to encode your own CD collection, a third party product is required. There are many such products – some free, some commercial – available from the Internet and computer stores. We recommend Audio Catalyst by Xing Technology (<http://www.xingtech.com>) as it is fast, of high quality and easy to use.

It is particularly convenient for your MP3 encoded tracks to have ID3 tags. This feature of many encoding programs incorporates track titles, artist names and other details into the encoded track – often automatically via Internet music databases. If these details are included at the time of encoding it will save you time later.

Starting the emplode program

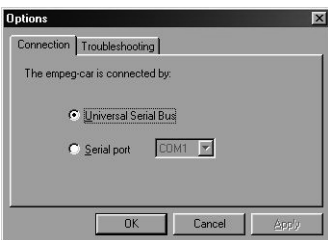
The empeg music database is stored on the car player itself, never on your PC, so before you can use emplode you must connect your player to the computer (refer to section four) and switch it on.

Load the emplode program from the Start Menu (by default it will have been placed in a sub menu called 'empeg car'). If the player is connected and switched on a short sequence will take place during which the music database is retrieved.

If this does not happen check that the player is powered up and connected correctly. It may be necessary to tell emplode how the player is connected – click Options to open the configuration window. If the player is connected via USB select 'Universal Serial Bus'. If it is connected by RS232 Serial select 'Serial port' and choose the port number from the drop down list. Refer to the emplode help system for details of how to configure an Ethernet connection. Click OK when you have selected the appropriate connection: emplode will now attempt once again to connect to the car player.

When the connection has been successfully made, and the music database retrieved, the emplode main window will open.

emplode connection options window



Playlist tree

Tracks on the empeg car player are organised into playlists. A playlist is simply a collection of tracks that are grouped together, perhaps because they have a common theme; they may be from a certain album, by a certain artist, or of a certain genre. A playlist can contain further playlists (known as nested lists), and it is this hierarchy that provides for fast selection of music on the player.

The top-level playlist, which is always present, is called 'empeg car' by default and cannot be deleted. A playlist called 'Unattached items' is also listed. This contains items not in a playlist. On the player, these items appear in the first menu under playlists. From thereon the structure of your music database is entirely up to you. The way in which you choose to organise your music will reflect your personal preferences.

In the example window shown on page 16, you can see that tracks have been grouped into artist, group and genre playlists. In fact, the tracks in each of the genre playlists are copied from an artist or group playlist. You can refer to a track in as many playlists as you want, but it will only be stored once in the player so no capacity is wasted.

When a playlist is selected on the car player, the tracks in any nested lists will also play, and so on until the entire branch of the tree has played. For example, the top level empeg car playlist contains all of the tracks on the player, whereas the artist playlist shown contains all of the tracks for each of the artists.

You may choose to organise your music in an entirely different way to this – it's up to you!

It's easy to navigate the playlist tree: open a branch by clicking the + symbol, and close it again by clicking the – symbol. Alternatively you can double click on a list to open or close it's branch. To select a playlist, simply highlight it by clicking.

Track list

The track list displays each of the tracks and nested lists that are contained in the highlighted playlist. Four views are available: Large Icons view, Small Icons view, List view and Details view. The view can be changed from the View menu, or from the toolbar controls.

In the List view (which is the recommended setting) click the headings to change the sort criteria.

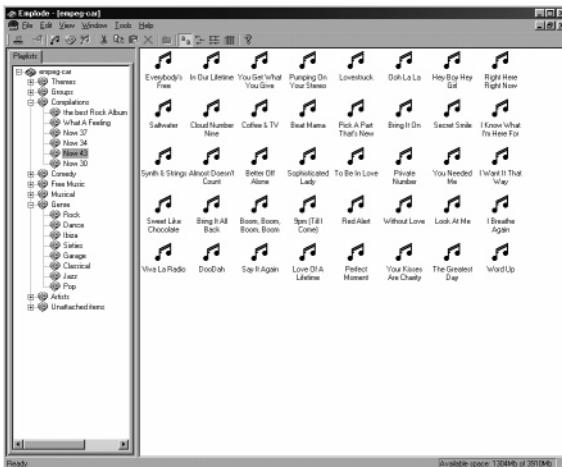
Tracks are represented by this icon: 

Playlists are represented by this icon: 

To change the play order of a track within the list, click and drag it over the track that it is to precede. To delete a track highlight it and press the Delete key, or select Delete from the Edit menu. Tracks and playlists can also be Cut, Copied and Pasted in the usual way, and a convenient pop-up menu is provided by right clicking over a track or playlist.

As well as dragging tracks and playlists within the current view, they can also be dragged onto other lists in the Playlist Tree. If you drag and drop the item will be moved to the appropriate list – if you hold down the Ctrl key before dropping the item will be copied instead.

empeg displaying
playlists on left and
track list on right



Creating a new playlist

Select the playlist in which you wish to create the new list, by clicking on it in the Playlist Tree – if you are starting with a blank player this will be the top level ‘empeg car’ playlist. From the Edit menu select New Playlist, or click on the New Playlist control on the toolbar.



Properties window

The Properties window will open, in which you can specify the title of the list. The other fields are entirely optional and may be used in future versions of the player software for track retrieval. Type in the title of the playlist and click OK.

The new playlist will have been created, and can be navigated as described above.

Adding a track to a playlist

Open the playlist to which you wish to add a track and click anywhere in the Track List section of the window. From the Edit menu select New Tune or click on the New Tune control on the toolbar. The Open File window will appear, from which you can navigate your computer in the usual way. Locate and select the track that you wish to add to your player and click Open.

The Properties window will open, and if ID3 (v1 or v2) tags are present in the track some of the fields will be automatically filled in for you. You should ensure that at least the Title and Artist fields are completed – the other fields will be useful for advanced track retrieval using the searching functions.

The track will have been inserted into the playlist. You can change it's position or move it between lists as described previously. To easily move tracks between playlists, select New window from the Window menu. Then select Tile from the Window menu. You can now easily move tracks between playlists using drag & drop.

Alternatively you can use cut & paste or drag & drop from the windows Explorer to add tracks. A folder hierarchy can be added in a single operation using this method.

Synchronising the player

Whenever you add playlists and tracks, or change the music database in any other way, the changes are stored within emplode. The database on the player is not updated until you synchronise. This allows you to work quickly; adding tracks, organising your music and so forth; without delays every time some data needs to be transferred to the player.

When you are finished updating, you must synchronise the player music database with the changes. From the File menu select Synchronise or click the Synchronise control in the toolbar. The synchronisation process can take anything from several seconds to several hours, depending upon how much new music you have added to the database and whether you are using USB, Ethernet or Serial. The Synchronise window will keep you up to date with the progress of the operation.

Do not switch off or disconnect the player during synchronisation.

Occasionally emplode will perform a more thorough integrity check during synchronisation. This can take some time on large capacity players.

When synchronisation is complete the player will be ready for use with the updated music database.

emplode online help

The emplode toolbar features tool tips – if you're not sure of the function of a control, hold the mouse pointer over it for a couple of seconds.

A full manual for emplode is available through the Windows help system.

six: operating the empeg car player

The empeg car player is fast and intuitive to operate, using either the front panel controls or the infra red remote.

Front panel controls

The front panel has four function control buttons. Each button provides different functions depending upon what the player is currently doing, and whether you press and release or press and hold.

Player mode	empeg	Tuner	Aux	Menu
Top (short)	Play/pause	Mute/unmute	Mute/unmute	Back
Top (hold)	Standby mode	Standby mode	Standby mode	Back (repeating)
Bottom (short)	Menu	Menu	Menu	Select
Bottom (hold)				Select (repeating)
Left (short)	Previous track	Previous preset		Previous item
Left (hold)	Rewind	Tune down		Previous (repeating)
Right (short)	Next track	Next Preset		Next item
Right (hold)	Fast forward	Tune up		Next (repeating)

When the player is in standby mode, pressing a button will restore it to its previous mode of operation.

Rotary control

The rotary control allows you to control the sound functions of the player.

When in play mode, the control allows you to adjust the volume. Pushing the knob changes to another setting.

Remote control

The infra red remote control provides fast access to many of the player's popular functions. As for the front panel controls, the function of many of the buttons depends upon the mode of the player at the time.



Menu Button

Reveals or hides the menu, or cancel.



Skip Left & Skip Right Buttons

In empeg mode these buttons skip to the previous or next track respectively. In tuner mode they skip to the previous or next preset, and in menu mode they move to the previous or next item.



Rew & FF Buttons

In empeg mode these buttons skip backward or forward within the current track. In tuner mode they adjust the frequency.



Play/Pause Button

In empeg mode this button switches between play and pause. In tuner and aux mode toggles the mute function.



Volume Up & Down Buttons

In empeg, tuner and aux modes these buttons adjust the volume level.



DNPP Button

In empeg, tuner and aux modes this button changes to the next visualisation. In menu mode it selects the highlighted item.



Direct OK Button

In empeg mode this button accesses the advanced search functions. In tuner mode it is used to enter a tuning frequency.



Input Select Buttons





These buttons select tuner, aux and empeg modes respectively.




CD-MD CH Button

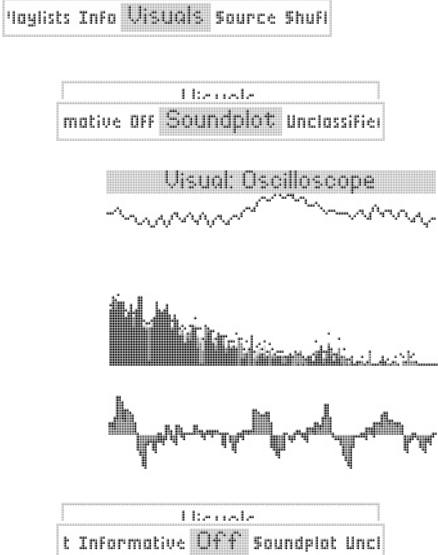

This button switches between track information displays.


Menu functions

All empeg car player functions can be accessed from the menu system. Open the main menu by pressing the bottom panel button or the  button on the remote control. Change the currently highlighted menu function with the left and right buttons on the front panel, or by using the   buttons on the remote; when the required function (or sub-menu) is highlighted, select it by pressing the bottom button or the  button on the remote.

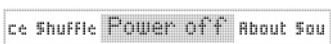
<p>About Sound Playlists Info Visuals</p>	<p>Access playlists set up in emplode.</p>
<p>Disables Complex Dance  Chill Club Compl</p>	<p>Move through playlists. Select subplaylists. The arrow means 'play all playlists/tracks in this level'.</p>

<p>Sound Playlists Info Visuals Source</p>	<p>Controls what information is displayed.</p>
<p>Track Now & Next OFF Line Track Now & T</p>	<p>A scrolling text line along the bottom of the screen with track time on the right. If visuals are switched on, they will be displayed in the top section of the screen.</p>
<p>rbital: Out There Some 0:47</p>	
<p>Track Next OFF Line Track Now & Next C</p>	<p>Displays title, artist, source/year. Track number in playlist/total tracks in playlist and track time.</p>
<p>When I Grow Up Garbage Version 2.0/1998 [54/178] 1:14</p>	
<p>Track ne Track Now & Next OFF Line 1</p>	<p>Current track at top. Following four tracks displayed below. Track number/total tracks in playlist and track time.</p>
<p>Biscuit Hammering in My Head Smakin Japanese Babe Going Out Of My Head You Look So Fine 0:22 [54/178]</p>	
<p>Track :k Now & Next Off Line Track No</p>	<p>No track information displayed.</p>


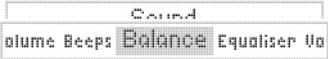
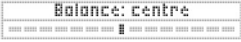



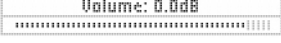

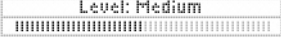
 <p>The screenshot shows a menu with 'Visuals' highlighted. Below it, a sub-menu lists 'Oscilloscope', 'Soundplot', and 'Unclassified'. The 'Oscilloscope' option is selected, and the screen displays a waveform. Below the waveform are two more visual options: 'Soundplot' and 'Unclassified'. At the bottom, another menu shows 'Visuals' with 'Oscilloscope', 'Soundplot', and 'Unclassified' listed, where 'Oscilloscope' is highlighted.</p>	<p>Controls visuals displayed.</p> <p>There are a number of categories to select from.</p> <p>The name of the selected visual is displayed for a few seconds.</p> <p>You can move through visuals by pressing  on the remote control.</p> <p>Switches all visuals off.</p>
--	---

 <p>The screenshot shows a menu with 'Source' highlighted. Below it, a sub-menu lists 'empeg', 'radio', and 'auxiliary'. The 'empeg' option is selected. Below this, another menu shows 'Source' with 'radio', 'auxiliary', and 'empeg' listed, where 'radio' is highlighted. At the bottom, a third menu shows 'Source' with 'auxiliary', 'empeg', and 'radio' listed, where 'auxiliary' is highlighted.</p>	<p>Select source input.</p> <p>Listen to empeg.</p> <p>Listen to radio.</p> <p>Listen to auxiliary input.</p>
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 <p>The screenshot shows a menu with 'Shuffle' highlighted. Below it, a sub-menu lists 'On' and 'Off'. The 'On' option is selected.</p>	<p>Switches shuffle on or off.</p>
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 <p>The screenshot shows a menu with 'Power off' highlighted. Below it, a sub-menu lists 'About \$au'.</p>	<p>Puts unit into standby mode. Or press and hold the top button. Press any button to switch on.</p>
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	<p>Displays information about the empeg software.</p>
	

	<p>Controls sound outputs and audio feedback.</p>
	<p>Controls the balance between left and right outputs.</p>
	
	<p>Control the equaliser.</p>
	<p>Full instructions on using the equaliser are on page 25.</p>
	<p>Control the volume. Alternatively, use the rotary control.</p>
	<p>0.0dB is recommended for home use. Control the volume with your amplifier.</p>
	<p>Control audio feedback beeps.</p>
	<p>Levels available are: off, low, medium and high.</p>

Searching

While selecting music through the menu system is convenient for selecting playlists, the empeg features advanced searching algorithms.



Pressing  allows you to cycle through searching by PIN, year (direct entry), track title, artist, genre, year or source.






Year
1999

PIN/year

Enter a PIN or year using the numeric keypad on the remote control.



Track title/artist/genre/source

When initially selected, the list shows every track on the empeg. You can move through this list using the   buttons on the remote.

The empeg car uses a fuzzy logic matching algorithm to find tracks. Use the remote to enter the first letter of the item you are searching for. For example, if you are searching for the artist 'Chicane' then press  on the remote. The list will now show only artists that have A, B or C as the first letter. Pressing  will reduce the list to items that have G, H or I as the second letter. Continue this until the list has just one item, or move to your required selection using the   buttons. Press  to select the item.

```

Search by artist      170 tunes
Bob Marley vs Funkstar De Luxe  ^
Chemical Brothers (3)
Chicane              v
Search by artist      10 tunes
Chemical Brothers (3)
Chicane
The Chemical Brothers (6)
  
```

If you wish to append the selection to the current playlist, pressing  toggles between append and select modes. Pressing  then adds the item to the current playlist (for this time only – the actual playlist remains unmodified).

```





Append by artist     170 tunes
Bob Marley vs Funkstar De Luxe  ^
Chemical Brothers (3)
Chicane              v
  
```

Note that you only need to press the button once for a letter. The search algorithm works by reducing the options available until you either reach the item you are looking for, or the list is short enough for you to move through quickly.

Using the equaliser

The empeg car has an advanced parametric graphic equaliser system.

When in the home, the equaliser allows you to edit two channels. In the car you can edit four channels.



Move through the menu using the   buttons. Change options using the   buttons.

The two channel equaliser has the following options:


- Locked** Changes left and right channels together.
- Unlocked** Changes each channel independently.

The four channel equaliser has the following options:




- Locked All** Changes all 4 channels together.
- Locked LR** Changes left and right channels together.
- Locked FB** Changes front and back channels together.
- Unlocked** Changes each channel independently

Pressing  will move out of the menu and allow you to edit the equaliser bars.  then moves through each bar.

Frequency range is 50Hz – 18,000Hz
Gain is -30dB – +12dB

Pressing  switches between adjusting the frequency, gain, Q factor and combined gain and Q factor.

Presets

You can save 16 presets. To edit a preset, select the preset you wish to edit by using the   buttons on the remote. To change the name of a preset, press  when the preset is highlighted and enter the name using the alphanumeric keypad on the remote control.

- Saved** The current preset is saved.
- Save** Select to save the current settings. You must name the preset before you can save it.



Two channel equaliser



Four channel equaliser



Editing the frequency



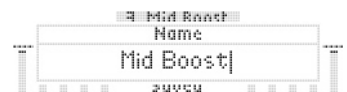
Editing the gain



Editing the Q factor



Editing the combined gain and Q factor



Entering a preset name



Using the alphanumeric keypad on the remote control

The remote control features an alpha numeric keypad which allows you to enter numbers and letters.

According to the situation, the empeg will allow you to enter numbers only, letters only, or numbers, uppercase and lowercase letters.

When in the searching menus, the player takes a single key press to mean any of the letters associated with that number.

For example, if you press **5** the empeg will search for tracks that have J, K or L as the first letter.

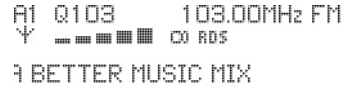
When entering a name for a preset, the empeg works much like a mobile phone.

For example, if you press **2** the empeg will cycle through 2, A, B, C, a, b and c, along with accented characters.

Pressing **←** **→** moves the cursor forward and back. If the last letter you entered was lowercase, then the next letter will be lowercase by default.

seven: optional tuner module

The tuner module is an optional unit that stays in the car with the docking sled. A full installation guide is included with the module.

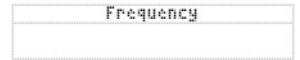


Radio display with RDS

You can access the tuner by pressing **TUNER** on the remote control, or selecting tuner in the source menu.

Tuning

To enter a specific frequency using the numeric keypad, press **DIRECT OK** on the remote control. Omit any points – the tuner will work them out for itself. For example, entering '1036' will tune to 103.6. Press **DIRECT OK** again to confirm and tune to that frequency. Use the **AM** **FM** buttons to fine tune in .10MHz steps.

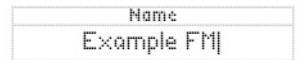


Frequency input box

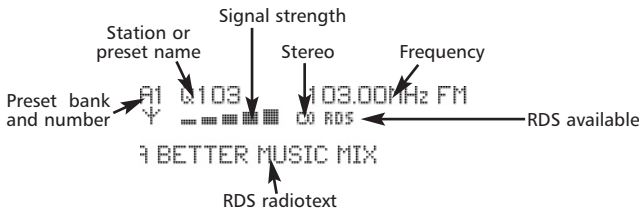
Presets

The tuner has three banks (A, B and C) of ten (0-9) presets. Move through the presets by pressing a number button on the remote or using the **PREV** **NEXT** buttons. Move to a different bank of presets by pressing the **TUNER** button.

To store a preset, press **OVERP**. Use **TUNER** to select a bank and then select a preset number. Then enter the name. See section six for how to use the alphanumeric keypad. To cancel saving a preset, press ***** on the remote control.



Preset name input box



eight: upgrading the player software

The software in the empeg car player can be upgraded via your PC connection. Upgrades will be posted regularly to the support section of our web site (<http://www.empeg.com/>).

To install a car player upgrade, first download it from the web site. Be sure to read the release notes! You will be able to choose between the consumer and the developer image – unless you are developing software for the player you should choose the consumer image, as this has performance benefits.

To upgrade the software the car player **MUST** be connected by RS232 Serial – the USB and Ethernet connections will be ignored. Ensure that the appropriate COM port is specified in the emplode options (although you can switch back to USB after doing so if you wish).

Disconnect the power cable from your car player and run the empeg Upgrade Wizard from the Start Menu or from the emplode Tools menu.

Click Browse and select the upgrade file that you have downloaded, then click Next. Read the release notes and click next again. When the software instructs you to do so, connect the power cable to your car player and the upgrade procedure will begin.

Upgrading takes a few minutes, during which you will be informed of the progress. Your music database, radio presets and other user settings will not be affected.

Once the upgrade process is complete, the player will reset and is ready for immediate use.

upgrade wizard



nine: service and support

Cleaning

The player should be cleaned with a soft dry cloth. Do not use abrasives or cleaning agents.

The player requires no physical maintenance. Removing the cover voids the warranty.

Software maintenance

The hard disks do not require defragmenting or any other software maintenance. The empeg uses a filing system that keeps fragmentation to a minimum, and due to the way the player caches well ahead when playing, delays caused by any fragmentation are not a problem.

Contacting our service centre

Our service centre in Cambridge, England is available for your after sales service and support requirements.

Email *support@empeg.com*

Telephone

United Kingdom	01223 576 123
United States	1-877-259-5295 (Toll Free)
International	+44 1223 576 123

Telephone cover is provided Monday to Friday at the following times:

09:30 to 23:30	UK GMT
04:30 to 18:30	US EST
01:30 to 15:30	US PST

Messages can be left outside of these hours, or consider using email.

Mail

empeg Service
1 Signet Court
Swann's Road
Cambridge CB5 8LA
United Kingdom

Please contact us to obtain authorisation before shipping any product for repair or upgrade.

ten: appendices

35 appendix a: **technical information**

- Hardware
- Radio module (optional)
- Audio
- Electrical
- Environmental
- Physical

39 appendix b: **official certifications**

- FCC certification
- CE certification

41 appendix c: **software license**

- Emplode software

43 appendix d: **GPL and LGPL**

45 appendix e: **contact information**

appendix a: technical specifications

Hardware

Processor	220MHz StrongARM S-1100-DA
Flash memory	1Mb
RAM	12Mb 60ns FPM
DSP	SAA7705H
DACs	16 bit sign-magnitude, fourfold oversampling digital filters, noise shaping
Display	128 x 32 dot matrix vacuum fluorescent display, 2 bits per pixel
IR	SIR IrDA I/O, Consumer IR input
Controls	4 pushbuttons, 1 rotary+push
HDD port	ATA 2.5" HDD standard 2MM header
HDD physical	ATA 2.5" HDD up to 19.5mm, corner mounting screws
Serial IO	9-pin PC serial port, data rate to 230Kbits/s, also docked in-car
USB	12Mbit/s standard type B socket on head unit
Ethernet	10BaseT RJ45 socket on head unit
Power input	+12V on ISO connector fused at 3A with inline fuseholder
Grounding	Negative earth only
Auxiliary ctrl output	+12V @ 1A maximum on ISO connector
Audio outputs	4V line level front & rear stereo phono (RCA) line jacks, 1V stereo phono (RCA) sockets on head unit
Audio inputs	1V line level stereo phono (RCA) line jacks
Other features	On board temperature sensor Software controlled display brightness Display night mode input Audio mute input (for mobile phones) Optional Tuner Module

Tuner module (optional)

Type	FM fuzzy logic autotuning radio, RDS, RBDS capability
FM tuning range	88 to 108 MHz, 12.5 kHz steps

Audio

DAC sample rate	fixed 44.1KHz
DAC typical S/N ratio	110dBA
DAC typical output noise	3uV
DAC typical THD + N	1Khz, 0dB -70dBA
DAC typical dynamic range	1Khz (-60dB) 102dBA
DAC max crosstalk	10Khz -69dB
Aux input frequency response	20Hz to 18KHz
Aux input typical channel separation	50dB
Volume control range	-66dB to +20dB
Balance attenuation range LR	0dB to -30dB
Fader attenuation range FR	0dB to -30dB
Tone control range, bass/treble	-12dB to +15dB
Dynamic loudness level range	0dB to +14dB
Dynamic loudness offset range	0dB to +24dB
Dynamic bass boost level range	0dB to +14dB
Dynamic bass boost offset range	0dB to +24dB
Graphics equaliser	20 band parametric set as 2 x 10-band or 4 x 5-band
Other audio features	Dynamic range compression

Electrical

Standby power	2.75 Watts
Standby power, drive spun up	3.30 Watts
Operating power, drive spun down	6.20 Watts
Operating power, peak	8.90 Watts
Input voltage	8 to 16 VDC
Switched auxiliary output	1A maximum load

Environmental

Operating temperature range	5 deg. C to 55 deg. C
Standby temperature range	5 deg. C to 55 deg. C
Non-operating temperature range	-20 deg. C to 60 deg. C
Humidity, operating	10% to 90% RH, non-condensing
Humidity, non-operating	5% to 95% RH, non-condensing
Shock, operating	150G
Shock, non-operating	400G

Physical (maximum)

Docking unit 50mm (2") high
183mm (7.2") wide
173mm (6.8") deep

Head unit 55mm (2.2") high
186mm (7.3") wide
152mm (6") deep

Weight

2.5kg (5.5lbs) with two drives

Case material

1mm (0.04") stainless steel

Note

Figures vary depending on hard drive type fitted, power consumption figures are shown with a single 18Gb drive. Drives are kept spun down as much as possible during operation.

Specifications are subject to change without notice.

appendix b: official certifications

FCC certification

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used to comply with emission limits.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device shall not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

CE certification

This equipment has been tested and found to comply with European EMC Emissions and Immunity regulations.

appendix c: software license agreement

End user license agreement

For Emplode software

This Empeg Limited ("empeg") End User License Agreement accompanies the product and related explanatory materials ("Software"). The term "Software" also shall include any upgrades, modified versions or updates of the Software licensed to you by empeg. Please read this Agreement carefully. At the end, you will be asked to accept this agreement and continue to install or, if you do not wish to accept this Agreement, to decline this agreement, in which case you will not be able to use the Software.

Upon your acceptance of this Agreement, empeg grants to you a non-exclusive license to use the Software, provided that you agree to the following.

Use of Software

You may install the Software on a hard disk or other storage device; install and use the Software on a file server for use on a network for the purposes of (i) permanent installation onto hard disks or other storage devices or (ii) use of the Software over a network; and make backup copies of the Software.

You are not permitted to distribute copies of the Software to third parties.

Copyright and Trademark Rights

The Software is owned by empeg and its suppliers, and its structure, organisation and code are the valuable trade secrets of empeg and its suppliers. The Software also is protected by United Kingdom Copyright Law and International Treaty provisions. This Agreement does not grant you any intellectual property rights in the Software.

Restrictions

You agree not to modify, adapt, translate, reverse engineer, decompile, disassemble or otherwise attempt to discover the source code of the Software. The software is licensed by empeg only for the purposes of interaction with empeg audio products.

No Warranty

The Software is being delivered to you AS IS and empeg makes no warranty as to its use or performance. EMPEG AND ITS SUPPLIERS DO NOT AND CANNOT WARRANT THE PERFORMANCE OR RESULTS YOU MAY OBTAIN BY USING THE SOFTWARE OR DOCUMENTATION. EMPEG AND ITS SUPPLIERS MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AS TO NON-INFRINGEMENT OF THIRD PARTY RIGHTS, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT WILL EMPEG OR ITS SUPPLIERS BE LIABLE TO YOU FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES,

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Governing Law and General Provisions

This Agreement will be governed by the laws England and Wales, excluding the application of its conflicts of law rules. This Agreement will not be governed by the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded. If any part of this Agreement is found void and unenforceable, it will not affect the validity of the balance of the Agreement, which shall remain valid and enforceable according to its terms. You agree that the Software will not be shipped, transferred or exported into any country or used in any manner prohibited by the United Kingdom Laws or any other export laws, restrictions or regulations. This Agreement shall automatically terminate upon failure by you to comply with its terms. This Agreement may only be modified in writing by an authorised officer of empeg.

Unpublished-rights reserved under the copyright laws of the United Kingdom.
Empeg Limited, Dinder House, Dinder, Near Wells, Somerset, BA5 3PB. UK.

YOUR ACCEPTANCE OF THE FOREGOING AGREEMENT WAS OR WILL BE INDICATED DURING INSTALLATION OF THE EMPLODE SOFTWARE.

appendix d: GPL and LGPL

Parts of the software provided with the empeg car player are covered by the GNU (<http://www.gnu.org>) General Public Licence and the Lesser General Public Licence. Under the terms of the license we are required to provide the source code for these components. These can be found on the CD in the sources directory and on our website (<http://www.empeg.com>) in the support section.

appendix f: contact information

email

General enquiries	<i>info@empeg.com</i>
Sales enquiries	<i>sales@empeg.com</i>
After sales support	<i>support@empeg.com</i>
Bug reporting	<i>bugs@empeg.com</i>

web

<http://www.empeg.com>

mail

empeg head office	1 Signet Court Swann's Road Cambridge CB5 8LA United Kingdom
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Telephone

United Kingdom	01223 576 123
United States	1-877-259-5295 (Toll Free)
International	+44 1223 576 123

Telephone cover is provided Monday to Friday at the following times:

09:30 to 23:30 GMT
04:30 to 18:30 EST
01:30 to 15:30 PST

Messages can be left outside of these hours, or consider using email.

Fax

United Kingdom	01223 576 124
International	+44 1223 576 124

announcement mailing list

This is a low volume (usually around 1 message per month) announcement list for those interested in empeg products.

For subscription information, send an email to:

empeg-announce-request@empeg.com

with the word "help" in the subject.

Notes

Notes



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