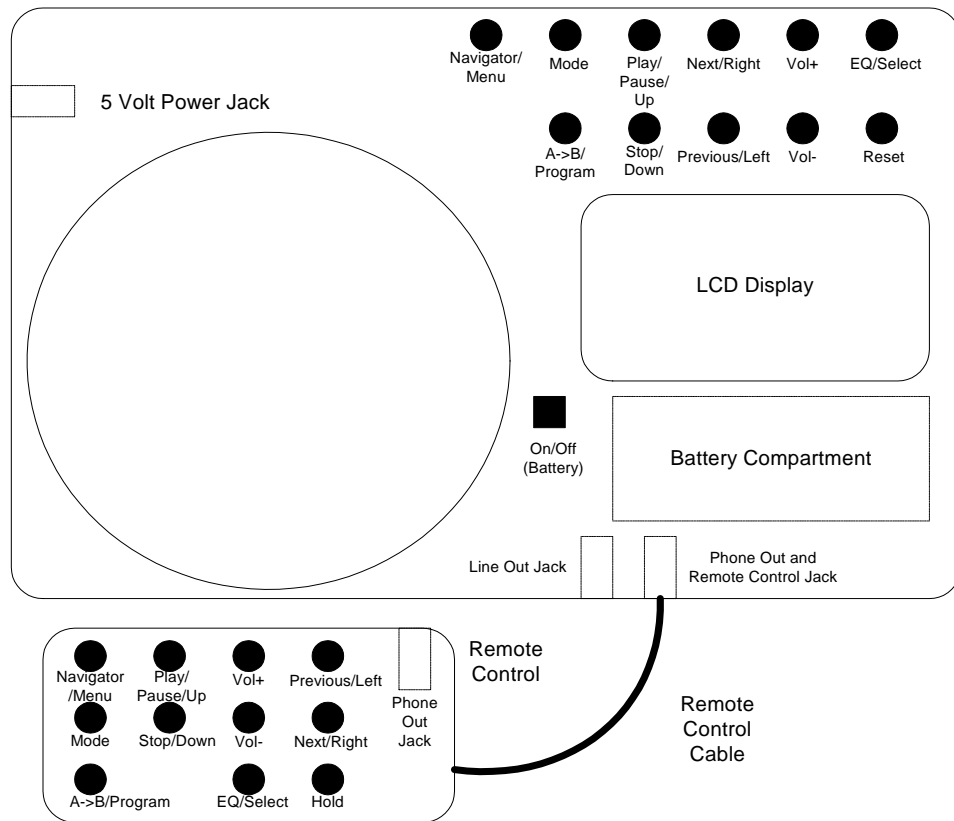


For detailed instructions, please refer to the full User's Manual.

The figure below shows a top view of the CD player and remote.



To operate this unit, please follow this procedure.

**First**, install the batteries in the battery compartment (accessible from the top of the unit), or attach the 5 volt power adapter to the power jack on the left rear corner of the unit.

**Second**, plug in the headphone to the headphone jack located on the front of the unit. If using the remote, plug the remote into the headphone jack located on the front of the unit, and plug the headphone into the headphone jack located on the remote.

**Third**, set the Open switch to "Lid Open". Insert a CD. Set the Open switch to "Lid Closed".

**Fourth**, press the Play/Pause/Up button in the right rear of the CD player.

## Controls

The control buttons are located on the top of the unit, in the right rear corner, directly above the LCD display. The list below provides details of these control functions.

**Play/Pause/Up:** This button is used to start or pause playback of the current track. When displaying a menu, this button is used to move up. When the player is in soft power-down mode, pressing this button will power on the player and commence playback.

**Stop/Down:** This button is used to stop playback of the current track. When displaying a menu, this button is used to move down. When held, this button will put the player into soft power-down mode.

**Vol+/Vol-:** Increase/decrease volume.

**Previous/Left:** This button is used to skip to the beginning of the current track, or to the beginning of the previous track (if already at the beginning of the current track). Holding this button while playing will seek backwards within the track. Holding this button while stopped will repeatedly skip to the previous track. When displaying a menu, this button is used to move left.

**Next/Right:** This button is used to skip to the beginning of the next track. Holding this button while playing will seek forward within the track. Holding this button while stopped will repeatedly skip to the next track. When displaying a menu, this button is used to move right.

**EQ/Select:** This button is used to cycle between the various equalizer settings, or to select items when displaying a menu.

**Mode:** This button is used to cycle between the various playback modes, such as repeat all, shuffle all, etc.

**Navigator/Menu:** Pressing this button will enter/leave the file system navigator menu. Holding this button will enter/leave the settings menu.

**A->B/Program:** Pressing this button while playing sets the A point for the A->B repeat mode. Pressing it again will set the B point and enable the A->B repeat mode. Pressing it a third time will cancel the A->B repeat mode. Pressing this button while stopped will enter/leave the playlist menu.

**Reset:** Resets the CD player settings to "Normal" mode.

**Hold:** This switch disables all controls on the CD player. This prevents accidental changes to your settings, if carrying your player in a pocket or backpack. Switch off to enable the controls.

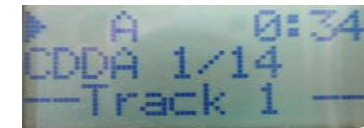
**Open:** Opens and closes the cover to load a CD.

**On/Off (Battery):** (This switch is located near the battery compartment). This switch controls the power from the batteries. To extend battery life, switch to Off when not operating the unit. If the unit is connected to the 5 Volt power adapter, this switch should be left in the Off position. This will extend the life of the batteries.

## Operation

### Normal Mode

After the Play button has been pressed, the CD player will scan the CD. After the scanning has been completed, if the disc is OK, the normal operation screen will be displayed.



#### Top Line

-The time in the upper right corner of the screen is the current playback time.

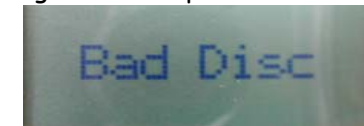
#### Second Line

-Format: This indicates the format of the audio on the disc. It will be "CDDA", "MP3", or "WMA".  
-Track number/Total number of tracks.

#### Third Line

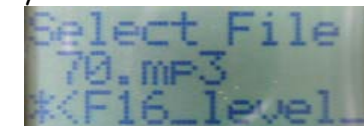
Contains track information. The format is "TrackNum: Artist - Song (Length)".

If there is a problem with the disc, the player will report that on the display. A message will be displayed for five seconds, then the CD player will be powered off. The following is an example screen.



### Navigation

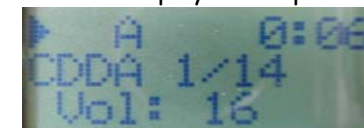
Pressing the "Navigator/Menu" button enters navigation mode and the following screen is displayed.



The arrow buttons can be used to highlight a file, which is then selected by pressing the "Select" button. Selecting a file will cause it to be played back. Selecting a directory will cause the directory contents to be played back. If there is no button activity for a period of time, the CD player reverts to normal mode.

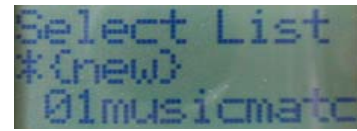
### Volume

The "Vol+" and "Vol-" buttons adjust the playback volume. When the volume is changed, the new volume level is displayed temporarily.



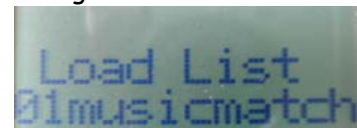
### Playlist

If the "A->B/Program" button is pressed while the player is stopped, the playlist selection mode will be entered and the following screen displayed.



Use the "Up/Down" buttons to highlight a playlist. Select it by pressing the "Select" button. Selecting a playlist will cause the contents of that playlist to be loaded and playback started. If there is no button activity for a period of time, the screen reverts to normal mode.

When a playlist file is selected, the following screen is displayed while the contents of that file are being read and inserted into the custom playlist.



After the playlist has been read from the playlist file, playback is commenced, and the screen reverts to normal mode.

Selecting the "{new}" item enters the playlist creation mode, and the following screen is displayed.



The number on the first line is the playlist index of the track currently being programmed. Files are selected with the "Up/Down" buttons. Pressing the "Select" button will add the file to the custom playlist. Pressing the "A->B/Program" button will complete the custom playlist, return the screen to normal mode and start playback of the custom playlist.

### EQ

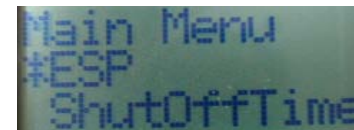
The first time the "EQ" button is pressed, the current equalizer setting will be displayed.



Subsequent presses of the "EQ" button while the equalizer is displayed will cycle between the various equalizer settings. Once the desired equalizer setting has been selected, the display will revert to normal mode after a short delay.

### Menu

Press and hold the "Navigator/Menu" button to enter menu mode and display the following screen.

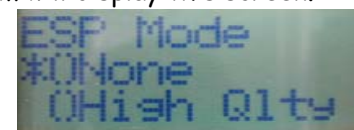


The "Up" and "Down" buttons will highlight a menu item. Pressing the "Select" button will enter the setting screen for that item.

The following is a list of the items in the main menu:

-**ESP** (Electronic Shock Protection) - "ESP" can be set to "None", "High Quality" (about 9.5 seconds for CDDA media), or "Extra Time" (about 38 seconds for CDDA media, use the "Down" button to scroll menu to this item.)

Selecting the "ESP" item will display this screen.



The "X" in the box indicates the current setting of the "ESP" item. Highlighting a different setting and pressing the "Right" button will change the setting. Pressing the "Select" button will go back to the parent menu.

-**Lyrics** - "Lyrics" can be set to "On" or "Off". When "On", lyrics will be displayed, if they are on the CD.

-**Resume** - "Resume" can be set to "On" or "Off". When "On", if a CD is removed from the player, the player will remember where on the CD it was playing. Works for up to 5 CDs.

-**Scrolling** - "Scrolling" can be set to "On" or "Off". Line 4 of the display shows information about the song currently playing. When "Scrolling" is set to "On", this information will automatically scroll, if it is longer than can be shown on 1 line.

-**Shut off time** - The "Shut off time" setting displays a countdown timer. If the power off time is not zero, the player will be turned off after the specified number of minutes of inactivity. Can be set from 0 to 15 minutes, in 1 minute increments.

-**Sleep timer** - The "Sleep timer" setting displays a countdown timer. If the sleep timer is not zero, the player will be turned off after the specified number of minutes, regardless of activity. Can be set from 0 to 120 minutes, in 15 minute increments.

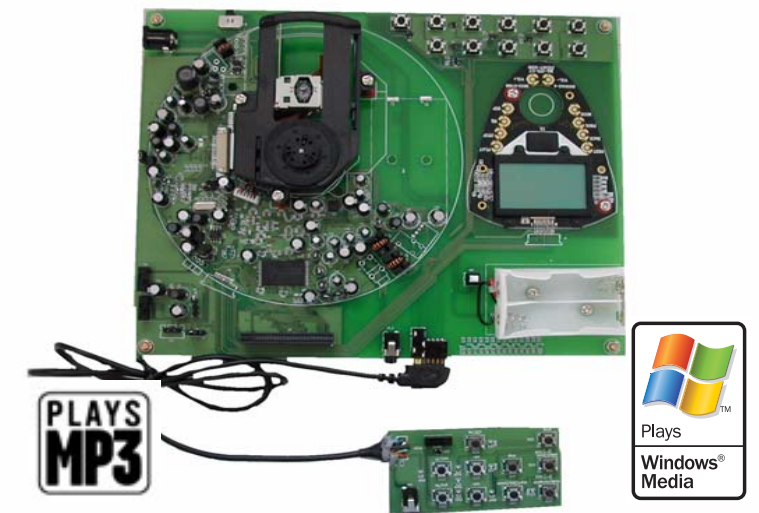
### CONTACTING CIRRUS LOGIC SUPPORT

For a complete listing of direct Distributor, Sales, and Sales Representative contacts, visit the Cirrus Logic website at <http://www.cirrus.com/>

Thank you for purchasing the CRD7410-BA, reference design for a low-cost CD player including remote control from Cirrus Logic.

The CRD7410-BA is an advanced reference design which supports all functions for an advanced low-cost portable CD player.

- Cirrus advanced CD-player application software
  - Playback of CDDA, MP3, VCD, AVCD, SVCD and WMA files
  - Support for .b4s, .pls, .rmp, .m3u and .m4u playlists
  - Full ISO 9660 and UDF file-system support
  - VCD Audio, ID3 v1.1/V2.3, mixed sessions ...
- Remote control
- Rohm BU9536 servo DSP
- Slim KSM1000 loader mechanism
- Compact layout leaving space for AA batteries



The CRD7410-BA is powered by the highly integrated Cirrus CS7410 solution for CD/MP3/WMA players. The CS7410 integrates microcontroller and DSP capability into a single device to provide a highly cost effective and compact solution for this exciting new class of consumer electronics products.

