



MODEL CD-2
RED BOOK CD PLAYER
EXTERNAL CONTROL MANUAL

June, 2017

Introduction

The purpose of this document is to describe how the external control interface of the device works.

Serial Settings

The serial port settings are always 8 data bits, no parity and one stop bit with a baud rate of 115200.

Commands and Requests

All commands and requests start with the '!' character.

Commands end with a combination of the Carriage Return character (ascii 0x0D, referred to as <CR> in this document) and Line Feed (ascii 0x0A, <LF>). Often, a single <CR> is used, but because different systems handle these characters differently, it is also allowed to end with <LF>, <CR><LF> or even <LF><CR>. In this document, it is expected to be <CR><LF>, but all of these combinations are allowed instead.

Requests end with the character '?' and <CR><LF> (or any <CR><LF> combination as above).

Commands can have parameters, these are enclosed in parenthesis.

Replies to a request are formatted as the request with the reply values as parameters. Replies always use the <CR><LF> combination of line-end characters.

Commands and requests are not case sensitive. In addition, it is possible to subscribe to status changes from the device. In this situation, whenever a status has changed (new state, new track etc.) the device will send a status. This status is formed exactly like a reply to a request, except it is followed by the character '!' before the <CR><LF> to indicate, that this is an asynchronous message, not a reply.

!COMMAND<CR><LF>	Command
!COMMAND(param)<CR><LF>	Command with parameter
!REQUEST?<CR><LF>	Request
!REQUEST(reply)<CR><LF>	Reply to a request
!REQUEST(status)!<CR><LF>	A status, which has changed

Commands and requests which are malformed or has invalid parameters will just be ignored. If a command or request is correct but followed by garbage before the line end character(s), the command or request will be executed and the garbage ignored.

Requests

The following requests are available on the CD-2:

Request name	Action	Reply
!VER?<CR><LF>	Requests the SW version in the CD-2	!VER(1.23a)<CR><LF> If the version is 1.23a
!STATE?<CR><LF>	Requests the current state.	One of: !STATE(OFF)<CR><LF> !STATE(OPENING)<CR><LF> !STATE(OPEN)<CR><LF> !STATE(CLOSING)<CR><LF> !STATE(NODISC)<CR><LF> !STATE(DISCERROR)<CR><LF> !STATE(READING)<CR><LF> !STATE(PLAY)<CR><LF> !STATE(STOP)<CR><LF> !STATE(PAUSE)<CR><LF> !STATE(WIND)<CR><LF> !STATE(REWIND)<CR><LF>
!TRACK?<CR><LF> >	Requests the number of the track currently being played.	From !TRACK(1)<CR><LF> to !TRACK(99)<CR><LF> or !TRACK(-)<CR><LF> if no track is currently being played
!NOFTRACKS?<CR> ><LF>	Requests the number of tracks on the current disc.	From !NOFTRACKS(1)<CR><LF> to !NOFTRACKS(99)<CR><LF> or !NOFTRACKS(-)<CR><LF> if there is no current disc.

!TIME? <CR><LF>	Requests the elapsed time of the playing track.	Reply format: !TIME(1:23)<CR><LF> or !TIME(-0:01)<CR><LF> where the '-' indicates, that the CD-2 is currently in the pause between tracks, counting down to start.
!REMTIME?<CR><LF>	Requests the remaining time of the current track.	Reply format: !REMTIME(3:21)<CR><LF> or !REMTIME(-0:01)<CR><LF> where the '-' indicates, that the CD-2 is currently in the pause between tracks, counting down to start.
!PLAYMODE?<CR>><LF>	Requests the current play mode.	!PLAYMODE(m), where m is one of: 0 = Normal play mode 1 = Repeat disc 2 = Repeat track 3 = Random play
!TRACKNAME?<CR><LF>	Requests the trackname from cd-text info for the current track.	!TRACKNAME(Name Of Track)<CR><LF> or !TRACKNAME()<CR><LF> if no data is present for the track name.
!TRACKARTIST?<CR><LF>	Requests the trackartist from cd-text info for the current track.	!TRACKARTIST(Artist Name)<CR><LF> or !TRACKARTIST()<CR><LF> if no data is present for the track artist.
!DISCNAME?<CR><LF>	Requests the discname from cd-text info for the current disc.	!DISCNAME(Name Of Disc)<CR><LF> or !DISCNAME()<CR><LF> if no data is present for the disc name.
!DISCARTIST?<CR>><LF>	Requests the discartist from cd-text info for the current disc.	!DISCARTIST(Artist Name)<CR><LF> or !DISCARTIST()<CR><LF> if no data is present for the disc artist.

Commands

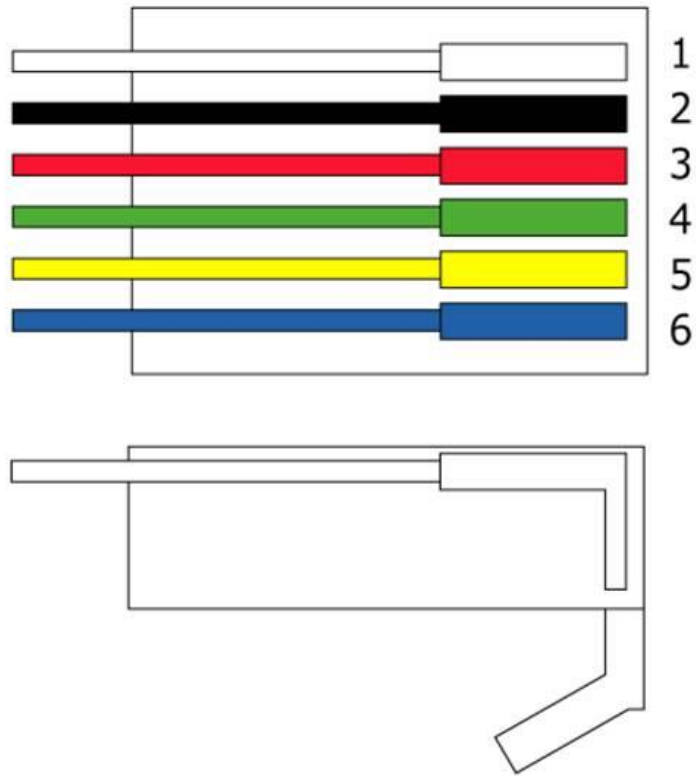
The following commands are available on the CD-2.

Command name	Command name Action
!OFF<CR><LF>	Turns the CD-2 off.
!ON<CR><LF>	Turns the CD-2 on.
!PWR<CR><LF>	Toggles power on the CD-2. Same functionality as the standby button on the front.
!EJECT<CR><LF>	Opens or closes the tray. Same functionality as the eject button on the front.
!PLAY<CR><LF>	Play.
!PAUSE<CR><LF>	Pause.
!PLAYPAUSE<CR><LF>	Toggles between play and pause. Same functionality as pressing the rotary button on the front.
!STOP<CR><LF>	Stop.
!PREV<CR><LF>	Requests the previous track. If the disc is currently at track 1, the last track on the disc will be selected. Same behavior as turning the front rotary knob counterclockwise.
!NEXT<CR><LF>	Requests the next track. If the disc is currently at the last track, the first track on the disc will be selected. Same behavior as turning the front rotary knob clockwise.
!REWIND<CR><LF>	Start scanning backwards.
!WIND<CR><LF>	Start scanning forwards.
!STOPWIND<CR><LF>	Stop the scanning started by one of the above commands.
!DIGIT(d)<CR><LF>	Corresponds to pressing the digit d on the remote in order to select a specific track.
!PLAYMODE(m)<CR><LF>	Select playmode, where m is one of: 0 = Normal play mode 1 = Repeat disc 2 = Repeat track 3 = Random play
!DISPMODE(m)<CR><LF>	Selects display mode, where m is one of: 0 = Elapsed time, no CD-Text info. 1 = Remaining time, no CD-Text info. 2 = Elapsed time, CD-Text info active. 3 = Remaining time, CD-Text info active.
!SAMPLERATE(r)<CR><LF>	Selects a new sample rate for the output, where r is one of: 0 = 44.1 kHz 1 = 48 kHz 2 = 96 kHz 3 = 192 kHz

!GAIN(g)<CR><LF>	Selects a new value for the analog output gain. Possible values for g is from -120 (corresponding to attenuating 12 dB) and up to 0 (no attenuation). Only steps of 5 (0.5 dB) is possible.
!SUBSCRIBESTATE<CR><LF>	Start subscription mode for the state of the CD-2. Will send information whenever the state changes.
!UNSUBSCRIBESTATE<CR><LF>	Deactivates state subscription mode.
!SUBSCRIBETRACK<CR><LF>	Start subscription mode for track numbers. Will send information whenever a new track number is available
!UNSUBSCRIBETRACK<CR><LF>	Deactivates track subscription mode.
!SUBSCRIBETIME<CR><LF>	Start subscription mode for time. Will send information whenever new time info is available. If the current display mode displays remaining time, then the time send from the CD will also be remaining time.
!UNSUBSCRIBETIME<CR><LF>	Deactivates time subscription mode.
!SUBSCRIBEDISCTEXT<CR><LF>	Activates disc text subscription mode. Whenever a new disc is inserted, the disc name and disc artist will automatically be send.
!UNSUBSCRIBEDISCTEXT<CR><LF>	Deactivates disc text subscription mode.
!SUBSCRIBETRACKTEXT<CR><LF>	Activates track text subscription mode. Whenever a new track is being played, track artist and track name will automatically be send.
!UNSUBSCRIBETRACKTEXT<CR><LF>	Deactivates track text subscription mode.

RJ 12 PIN OUT

PIN OUT DIAGRAM FOR RS232 CABLE



Pin 4 = GND
Pin 5 = Rx
Pin 6 = Tx