New Products Division

HHB Communications Ltd
RS232 Control Protocol
CDR-882 DualBurn

Revision 1.4
24th June 2008

TABLE OF CONTENTS

0. REVISION LOG

Revision 1.4

The circumstances under which most of the information commands are sent by the CDR-882 have been clarified.

Commands ***AUTO TRACK ID***, ***MANUAL TRACK ID*** and ***ID WRITE*** have been added.

CDR-882 outgoing ***STATUS DATA*** command has been slightly modified to include a higher number of states.

Format of ***SOFTWARE VERSION*** command has been changed to include versions for both drives and CPLD firmware.

AUTO-CUE and ***AUTO-PAUSE*** codifications have been exchanged.

Some mistakes in the ***DISC DATA*** command have been corrected.

STATUS DATA and ***TOC DATA*** definitions have been slightly modified to be compatible with blank media.

CLOCK SOURCE has been modified to include information about the presence of the clock.

Minor format and spelling mistakes corrected.

Revision 1.3

Command ***OUTPUT DITHER*** (PC transmit), ***OUTPUT DITHER REQ*** and ***OUTPUT DITHER*** (PC receive) have been deleted. As a result commands ***PHONES MIX*** (PC transmit)***, PHONES MIX REQ, PHONES MIX*** (PC receive), ***OUTPUT MIX*** (PC transmit), ***OUTPUT MIX REQ*** and ***OUTPUT MIX*** (PC receive) have changed their codification.

Some changes have been done in commands ***PROGRAM, PROGRAM PLAY*** and ***PROGRAM RECORD***.

Record menu related commands have been expanded into new different commands: ***RECORD SYNC***, ***S/PDIF REC START TRIGGER***, ***AUTO TRACK ID TRIGGER***, ***AUDIO THRESHOLD***, ***TRACK LENGTH***, ***AUTO FINALIZE***, ***DIGITAL OUTPUT FORMAT***, ***SCMS*** and ***COPY SPEED***.

The order of the commands in the DiscSpan menu has changed to match the software of the CDR-882.

The ***STATUS DATA*** and ***DISC DATA*** format have been slightly modified.

Minor format and spelling mistakes corrected.

Revision 1.2

Command ***PAUSE ON / OFF*** has been deleted.

Some mistakes in the values of ***AUTO-CUE THRESHOLD*** command have been corrected.

CLOCK SOURCE information command has been modified to exclude the ***AUTO*** configuration, which will never be output by the unit.

EJECT parameter has been changed by ***NO DISC*** in ***STATUS DATA*** information messages.

Some mistakes in the values of ***DISCSPAN OVERLAP TIME*** command have been corrected.

All boolean commands (***PLAY PROGRAM***, ***RECORD PROGRAM***, ***ELAPSED TIME***, ***REMOTE MODE*** and ***MONITOR***) have been normalized to 1-based logic, meaning 1 = On.

All menu commands have been normalized to a ***MENU:PARAMETER:VALUE*** structure that provides them a one-to-one mapping with the software of the unit.

The track number range has been modified to make it start at 0, rather than 1 (as it did before), in order to have every range in the protocol starting at 0.

CD-TEXT commands have been slightly modified.

PROGRAM commands have been modified to allow programming tracks from both drives.

As a result of some of the changes introduced above, the following commands have changed their codification: ***FINALIZE***, ***DISC COPY***, ***ERASE***, ***SYNC RECORD***, and ***FADER***.

Minor format and spelling mistakes corrected.

Revision 1.1

Commands ***SLOW REW*** and ***SLOW FWD*** have been deleted.

Commands ***INPUT DITHER ON*** and ***INPUT DITHER AUTO*** have been added. As a consequence, the codification for commands ***OUTPUT DITHER ON***, ***OUTPUT DITHER OFF***, ***PHONES MIX*** and ***OUTPUT MIX*** has changed.

Some mistakes in the definition of ***RECORD*** command have been corrected.

Command ***PAUSE ON*** has been deleted.

Definition of ***PLAY***, ***PLAY / PAUSE***, and ***PAUSE ON / OFF*** commands changed to include recording features.

Commands ***I / P SELECT***, ***MONITOR ON***, ***FINALIZE***, ***DISC COPY***, ***ERASE***, ***SYNC RECORD***, ***FADER*** and ***DRIVE SELECT*** have been introduced.

CD-Text related commands (PC transmit ***CD-TEXT ARTIST***, ***CD-TEXT ALBUM***, ***CD-TEXT TRACK***, ***CD-TEXT REQ*** and PC receive ***CD-TEXT ARTIST***, ***CD-TEXT ALBUM***, ***CD-TEXT TRACK***) added.

STATUS DATA has been modified to include information on ***I/P SELECT***, ***MONITOR ON/OFF*** and ***DRIVE SELECT***.

Definition of all transport commands modified to include ***DRIVE SELECT*** features.

Acknowledge definition slightly modified to identify more precisely the command acknowledged.

Minor format and spelling mistakes corrected.

Revision 1.0

Original release.

1. SPECIFICATIONS

The HHB CDR-882 DualBurn functions can be controlled using a serial RS-232C connection from an external device, such as a computer.

1.1. Electrical Specifications

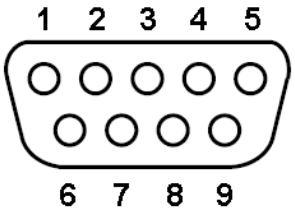
- Conforms to standard: JIS X-5101 (equivalent to former JIS-C-6361 and EIA RS-232C standards) Note that this is not compatible with the RS-422 used in professional VTR units.
- Impedance at receiver: When measured with an applied voltage of between +/-3 V and +/-15 V, the DC resistance is between 3kΩ and 7kΩ. Total load capacitance of < 2500 pF
- Open circuit voltage at transmitter: <25V
- Open circuit voltage at receiver: <2V
- Signal voltage: When the open circuit voltage at the receiver is 0 V, the signal voltage is between +/-5 V and +/-15 V against a load impedance of between 3kΩ and 7kΩ
- Signal discrimination: Logical “1” / OFF = -15V to 0.8V
  Logical “0” / ON = 2.4V to 15V

1.2. Controller format

- Circuit type: 3-wire, half-duplex
- Transmission type: Digital binary serial
- Data Speed (baud rate): 9600
- Word Length: 8-bit
- Parity bit: None
- Stop bit: 1-bit

1.3. Connector pin-out

Pin	Name	I/O
1	Open	-
2	RXD	Input
3	TXD	Output
4	+5V	c. 200mA
5	Ground	-
6	Open	-
7	RTS	Output
8	CTS	Input
9	Open	-



2. COMMUNICATION PACKET FORMAT

Packets used in communication between CDR-882 and PC are detailed in this section.

2.1. Packet structure

Each message is of variable length and made up of the following parts:

Header	Packet length	Format type	Category	Data	Terminator
1 Byte	1 Byte	1 Byte	1 Byte	1-27 Bytes	1 Byte

2.1.1. Header

This states the direction of the communication as follows:

- ***0x7E:*** PC → CDR-882
- ***0x6F***: CDR-882 → PC

2.1.2. Packet length

This specifies the length of the whole command.

2.1.3. Format type

The value of this byte is always ***0x05***.

2.1.4. Category

This byte value identifies the model (CDR-882, in this case). The value is ***0x61***.

2.1.5. Data

Contains the actual message and can vary in length from a single byte up to 27 bytes in length. Please refer to section 4 for more information.

2.1.6. Terminator

The message is concluded with this byte, value ***0xFF***. The message length should be checked against the packet length byte after reception of this terminator byte.

3. REMOTE MODE

3.1. What is the remote mode?

To control the CDR-882 via RS-232C, the remote mode must first be enabled, otherwise it will not respond to any command via RS232C, with the exception of the commands listed below.

After connecting the RS-232C cable between the CDR-882 and controller, the remote mode on command must be the first to be transmitted. Similarly, the last command transmitted before disconnecting should be the remote mode off command, otherwise control from the front panel of remote control will be locked out.

3.2. When remote mode is on

When the remote mode is on, the CDR-882 accepts commands via RS-232C only and does not accept input from either of the following:

- Front panel keys of main unit
- Infra-red remote control

3.3. When remote mode is off

When the remote mode is off, it does not accept any commands via RS-232C except for the following:

- ***REMOTE MODE ON*** command
- ***TOC DATA REQ*** command
- ***TRACK TIME DATA REQ*** command
- ***STATUS DATA REQ*** command
- ***DISC DATA REQ*** command
- ***MODEL NAME REQ*** command
- ***SOFTWARE VERSION REQ*** command

4. TRANSMISSION DATA (SEND)

Details for each command from controller to the CDR-882 are listed in this section.

4.1. Structure of this section

Commands are detailed in terms of their “Function”, “Data length, “Data”, “Details” and “Example” in the following tables.

Function	General functions of commands are shown.
Data length	Data length of commands is shown.
Data	Fixed or variable data is shown in hexadecimal notation.
Details	The function of the command is explained in detail.
Example	Concrete examples of transmission packet are shown.

4.2. Key off

Function	To cancel ***FFWD*** and ***FREW***.
Data length	2 Byte
Data	***0x00, 0x00***
Details	This command cancels the ***FFWD*** and ***FREW*** functions. Otherwise, they will continue until the start or end of the disc.
Example	Stops any of the defined functions: ***0x 7E 07 05 61 00 00 FF***

4.3. Play

Function	To start playback.
Data length	2 Bytes
Data	***0x02, 0x01***
Details	This command starts playback. When this command is sent in ***STOP*** mode, CDR-882 starts playback from top of the disc or selected track. When this command is sent in ***PAUSE*** mode, CDR-882 starts playback again from the paused location. When this command is sent in ***PLAY*** or ***RECORD*** mode nothing happens.
Example	Start playback: ***0x 7E 07 05 61 02 01 FF***

4.4. Play / Pause

Function	To start / pause playback or record.
Data length	2 Bytes
Data	***0x02, 0x05***
Details	This command has the same function as the ***PLAY / PAUSE*** button on the front panel. This command starts playback. When this command is sent in ***STOP*** mode, CDR-882 starts playback from top of the disc or selected track. When this command is sent in ***PLAY / PAUSE*** mode, CDR-882 starts playback again from the paused location. When this command is sent in ***PLAY*** mode CDR-882 enters ***PAUSE*** mode. When this command is sent in ***RECORD*** mode it starts recording, and if CDR-882 is already recording it enters ***RECORD / PAUSE***. When this command is sent in

	RECORD / PAUSE mode it resumes recording.
Example	Start / pause playback or record: ***0x 7E 07 05 61 02 05 FF***

4.5. Stop

Function	To stop playback or record.
Data length	2 Bytes
Data	***0x02, 0x02***
Details	This command cancels playback or record and returns the CDR-882 to STOP mode.
Example	Stop playback or record: ***0x 7E 07 05 61 02 02 FF***

4.6. Record on

Function	To start / stop record mode.
Data length	2 Bytes
Data	***0x02, 0x08***
Details	This command has the same function as the ***REC*** key on the front panel. When this command is sent in ***STOP*** mode, CDR-882 enters ***RECORD*** mode. Then ***PLAY / PAUSE*** command will start recording.
Example	Arm for recording: ***0x 7E 07 05 61 02 08 FF***

4.7. Record

Function	To start recording immediately.
Data length	2 Bytes
Data	***0x02, 0x06***
Details	This command starts recording immediately (after setup is complete) and is different from ***RECORD ON*** command. This command is equivalent to pressing the ***REC*** key on the front panel and then pressing the ***PLAY / PAUSE*** key as soon as the unit is ready (setup completed) to start recording.
Example	Start recording: ***0x 7E 07 05 61 02 06 FF***

4.8. FREW

Function	To start fast reverse search.
Data length	2 Bytes
Data	***0x02, 0x13***
Details	This command starts reverse search. It is cancelled with the ***KEY OFF*** command. The search speed will gradually increase. From ***PAUSE*** mode, no sound will be heard during the search. From ***PLAY*** mode, audio will be heard at a reduced level. If no ***KEY OFF*** command is received, ***FREW*** will stop at the beginning of the disc and play will commence from there.
Example	Start ***FREW*** operation: ***0x 7E 07 05 61 02 13 FF***

4.9. FFWD

Function	To start fast forward search.
Data length	2 Bytes

Data	***0x02, 0x14***
Details	This command starts forward search. It is cancelled with the ***KEY OFF*** command. The search speed will gradually increase. From ***PAUSE*** mode, no sound will be heard during the search. From ***PLAY*** mode, audio will be heard at a reduced level. If no ***KEY OFF*** command is received, ***FREW*** will stop at the end of the disc.
Example	Start ***FFWD*** operation: ***0x 7E 07 05 61 02 14 FF***

4.10. Prev track

Function	To skip back to the previous track.
Data length	2 Bytes
Data	***0x02, 0x15***
Details	This command has the same function as the ***AMS-*** key on the front panel. When this command is sent at the top of a track in ***PAUSE*** mode, the playback start point goes back to the top of the previous track, and ***PAUSE*** mode is maintained. When this command is sent in the middle of a track in ***PAUSE*** mode, start point goes back to the top of the current track, and ***PAUSE*** mode is maintained. When this command is sent during playback, playback starts from the top of the current track. This command can also be used to select the track to play whilst in ***STOP*** mode.
Example	Start playback from the top of the current track: ***0x 7E 07 05 61 02 15 FF***

4.11. Next track

Function	To skip forward to the next track.
Data length	2 Bytes
Data	***0x02, 0x16***
Details	This command has the same function as the ***AMS+*** key on the front panel. When this command is sent in the top or in the middle of a track in ***PAUSE*** mode, the playback start point goes to the top of the next track, and ***PAUSE*** mode is maintained. When this command is sent during playback, playback starts from the top of the next track. As with ***PREV TRACK,*** this command can also be used to select the track to play whilst in ***STOP*** mode.
Example	Start playback from the top of the next track: ***0x 7E 07 05 61 02 16 FF***

4.12. Eject

Function	To open / close a disc tray.
Data length	3 Bytes
Data	***0x02, 0x40, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	This command has the same function as either ***EJECT*** key on the front panel. When this command is sent the corresponding tray will be ejected or closed.

Example	Open / close disc#1: ***0x 7E 08 05 61 02 40 00 FF***

4.13. Drive select

Function	To select drive.
Data length	3 Bytes
Data	***0x02, 0xDC, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	This command has similar functionality to the ***DRIVE SELECT*** key on the front panel. When this command is sent the corresponding drive is selected.
Example	Select disc#1: ***0x 7E 08 05 61 02 DC 00 FF***

4.14. Mark

Function	To mark the point.
Data length	2 Bytes
Data	***0x02, 0x90***
Details	This command stores a marker location. When this command is sent during ***PLAY / PAUSE*** mode, the unit memorizes the playback point.
Example	Mark the point: ***0x 7E 07 05 61 02 90 FF***

4.15. Cue

Function	To move to the marked point
Data length	2 Bytes
Data	***0x02, 0x91***
Details	This command recalls the stored marker location. Playback will either start immediately or be held in ***PAUSE*** mode if ***AUTO-CUE*** or ***AUTO-PAUSE*** is enabled, or if it is already in ***PAUSE*** mode.
Example	Move to the marked point: ***0x 7E 07 05 61 02 91 FF***

4.16. Direct mark

Function	To mark specified point.
Data length	7 Bytes
Data	***0x02, 0x92, Disc#, Track#, Min, Sec, Frame*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec. ♦ ***Frame:*** 0***(0x00)*** to 74***(0x4A)***
Details	This command stores a specific marker point using disc, track, time and frame information. If this location does not exist, CDR-882 outputs an ***ACKNOWLEDGE*** message of the type ***IMPOSSIBLE***.
Example	Mark 1st disc, 2nd track, 3rd min, 45th sec, 67th frame: ***0x 7E 0C 05 61 02 92 00 01 02 2D 43 FF***

4.17. Auto-cue / pause off

Function	To set ***AUTO-CUE / PAUSE*** to ***OFF***.
Data length	2 Bytes
Data	***0x02***, ***0xB0***
Details	This command sets ***AUTO-CUE / PAUSE*** function to off.
Example	Set ***AUTO-CUE / PAUSE*** to ***OFF***: ***0x 7E 07 05 61 02 B0 FF***

4.18. Auto-cue on

Function	To set ***AUTO-CUE*** to ***ON***.
Data length	2 Bytes
Data	***0x02, 0xB1***
Details	This command sets ***AUTO-CUE*** function to ***ON***. It will therefore cancel ***AUTO-PAUSE*** if set.
Example	Set ***AUTO-CUE*** to ***ON***: ***0x 7E 07 05 61 02 B1 FF***

4.19. Auto-pause on

Function	To set ***AUTO-PAUSE ON***.
Data length	2 Bytes
Data	***0x02, 0xB2***
Details	This command sets ***AUTO-PAUSE*** function to ***ON***. It will therefore cancel ***AUTO-CUE*** if set.
Example	Set ***AUTO-PAUSE*** to ***ON***: ***0x 7E 07 05 61 02 B2 FF***

4.20. Single mode

Function	To select ***SINGLE MODE***.
Data length	2 Bytes
Data	***0x02***, ***0xC0***
Details	This command sets ***SINGLE MODE*** to ***ON***. It will therefore cancel ***DUALBURN MODE*** or ***DISCSPAN MODE*** if set.
Example	Set ***SINGLE MODE*** to ***ON***: ***0x 7E 07 05 61 02 C0 FF***

4.21. Dualburn mode

Function	To select ***DUALBURN MODE***.
Data length	2 Bytes
Data	***0x02, 0xC1***
Details	This command sets ***DUALBURN MODE*** to ***ON***. It will therefore cancel ***SINGLE MODE*** or ***DISCSPAN MODE*** if set.
Example	Set ***DUALBURN MODE*** to ***ON***: ***0x 7E 07 05 61 02 C1 FF***

4.22. DiscSpan mode

Function	To select ***DISCSPAN MODE***.
Data length	2 Bytes
Data	***0x02, 0xC2***
Details	This command sets ***DISCSPAN MODE*** to ***ON***. It will therefore cancel

	DUALBURN MODE or ***SINGLE MODE*** if set.
Example	Set ***DISCSPAN MODE*** to ***ON***: ***0x 7E 07 05 61 02 C2 FF***

4.23. Program play

Function	To select ***PROGRAM PLAY***.
Data length	2 Bytes
Data	***0x02, 0XD0***
Details	This command starts playing a program. Before sending this command, the program should have been specified with the command ***PROGRAM***. An error will be output by the unit if no program has been set. After sending this command the machine will behave as if the program had been entered using the front panel (i.e., two ***STOP*** will be necessary to exit program play).
Example	***PROGRAM PLAY: 0x 7E 07 05 61 02 D0 FF***

4.24. Program copy

Function	To select ***PROGRAM COPY***.
Data length	2 Bytes
Data	***0x02, 0xD1***
Details	This command starts copying a program. Before sending this command, the program should be specified with the command ***PROGRAM***. An error will be output by the unit if no program has been set or it is not suitable (it has tracks from the destination drive).
Example	***PROGRAM COPY: 0x 7E 07 05 61 02 D1 FF***

4.25. Track play

Function	To start playback from the specified track.
Data length	4 Bytes
Data	***0x03, 0x42, Disc#, Track#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)***
Details	This is the command to start playback from a specific track by entering its number. When CDR-882 receives this command, CDR-882 starts playback from the specified track.
Example	Start playback from the 16th track of the 2nd disc: ***0x 7E 09 05 61 03 42 01 10 FF***

4.26. Track pause

Function	To pause playback in the specified track.
Data length	4 Bytes
Data	***0x03, 0x43, Disc#, Track#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)***
Details	This is the command to pause playback at the top of a specified track by entering its track number. When CDR-882 receives this command, it

	pauses at the start point of the specified track.
Example	Pause playback in the 14th track of the 1st disc: ***0x 7E 09 05 61 03 43 00 0E FF***

4.27. Elapsed time

Function	To specify whether elapsed time should be output.
Data length	2 Bytes
Data	***0x07, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This is the command to set whether the elapsed time displayed on CDR-882 should be output or not. CDR-882 can output the new time data whenever the time is updated. CDR-882 outputs only the elapsed times. To display remaining time, first check the time of the entire track with ***TRACK TIME REQ*** and then subtract the elapsed time from it.
Example	Output the elapsed time: ***0x 7E 07 05 61 07 01 FF***

4.28. I/P select

Function	To select inputs to be used as the recording source.
Data length	3 Bytes
Data	***0x08, 0x01, Input*** ***Input:*** ▪ ***0x00:*** Analogue unbalanced ▪ ***0x01:*** Analogue balanced ▪ ***0x03:*** Digital (AES / EBU) ▪ ***0x04:*** Digital S / PDIF (Co-axial) ▪ ***0x05:*** Digital S / PDIF (Optical)
Details	This command sets the input to use for recording.
Example	Set analogue balanced input: ***0x 7E 08 05 61 08 01 01 FF***

4.29. Monitor

Function	To specify whether the monitor is ***ON*** or ***OFF***.
Data length	3 Bytes
Data	***0x08, 0x02, Status*** ♦ ***Status: 0x00***=Off ***0x01***=On
Details	This command has the same function as the ***MONITOR*** key on the front panel. It sets the ***MONITOR*** to ***ON*** or ***OFF***.
Example	Set ***MONITOR*** to ***ON***: ***0x 7E 08 05 61 08 02 01 FF***

4.30. Finalize

Function	To finalize a CD.
Data length	3 Bytes
Data	***0x08, 0x03, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	This command finalizes a CD without prompting for confirmation.

Example	Finalize disc#1: ***0x 7E 08 05 61 08 03 00 FF***

4.31. Disc copy

Function	To copy a disc.
Data length	2 Bytes
Data	***0x08, 0x04***
Details	This command has the same function as the ***DISC COPY*** key on the front panel, but it starts copying immediately, without prompting for confirmation.
Example	Copy a disc: ***0x 7E 07 05 61 08 04 FF***

4.32. Erase

Function	To erase the disc.
Data length	4 Bytes
Data	***0x08, 0x05, Disc#, Option*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Option:*** ▪ ***0x00:*** Initialize disc ▪ ***0x01:*** Erase disc ▪ ***0x03:*** Unfinalize ▪ ***0x04:*** Erase last track
Details	This command unfinalizes, erases or initializes a CD without prompting for confirmation.
Example	Initialize disc#2: ***0x 7E 09 05 61 08 05 01 00 FF***

4.33. Sync record

Function	To sync recording.
Data length	2 Bytes
Data	***0x08, 0x06***
Details	This command has the same function as the ***SYNC RECORD*** key on the front panel.
Example	Press ***SYNC RECORD: 0x 7E 07 05 61 08 06 FF***

4.34. Fader

Function	To fade in or out.
Data length	2 Bytes
Data	***0x08, 0x07***
Details	This command has the same function as the ***FADER*** key on the front panel.
Example	Press ***FADER: 0x 7E 07 05 61 08 07 FF***

4.35. Auto track ID

Function	To set track ID to ***AUTO***.

Data length	2 Bytes
Data	***0x08, 0x08***
Details	This command sets the track ID function to ***AUTO***. It will therefore cancel manual track ID if set.
Example	Set track ID to ***AUTO***: ***0x 7E 07 05 61 08 08 FF***

4.36. Manual track ID

Function	To set track ID to ***MANUAL***.
Data length	2 Bytes
Data	***0x08, 0x09***
Details	This command sets ***AUTO-PAUSE*** function to ***ON***. It will therefore cancel ***AUTO-CUE*** if set.
Example	Set track ID to ***MANUAL***: ***0x 7E 07 05 61 08 09 FF***

4.37. ID write

Function	To write a track ID.
Data length	2 Bytes
Data	***0x08, 0x0A***
Details	This command writes a track ID to a CD in the same sense the ***TRACK ID*** button does from the front panel.
Example	Write track ID: ***0x 7E 07 05 61 08 0A FF***

4.38. CD-text artist

Function	To set the artist name of a disc.
Data length	Up to 27 Bytes
Data	***0x08, 0xA1, Disc#, Track#, Artist*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Artist: Artist name as Ascii data***
Details	This command sets the artist field of CD-text. If an artist is assigned to a track it will be automatically assigned to the entire CD.
Example	Set artist as “U2” in Disc#1 (through Track#2): ***0x 7E 0B 05 61 08 A1 00 01 55 32 FF***

4.39. CD-text album

Function	To set the album name of a disc.
Data length	Up to 27 Bytes
Data	***0x08, 0xA2, Disc#, Track#, Album*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Album: Album name as Ascii data***
Details	This command sets the album field of CD-text. If an album name is assigned to a track it will be automatically assigned to the entire CD.
Example	Set album as “Unplugged” in Disc#1 (through Track#5): ***0x 7E 12 05 61 08 A2 00 04 55 6E 70 6C 75 67 67 65 64 FF***

4.40. CD-text track

Function	To set the track name of a track.
Data length	Up to 27 Bytes
Data	***0x08, 0xA3, Disc#, Track#, Track*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Track: Track name as Ascii data***
Details	This command sets the track field of CD-text.
Example	Set track name as "In the end" to 8th track of Disc#2: ***0x 7E 13 05 61 08 A3 01 07 49 6E 20 74 68 65 20 65 6E 64 FF***

4.41. Remote mode

Function	To set the ***REMOTE MODE***.
Data length	2 Bytes
Data	***0x10***, ***Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command changes the ***REMOTE MODE*** of the CDR-882. In ***REMOTE MODE ON*** CDR-882 accepts controls from RS-232C until it enters ***REMOTE MODE OFF***. In ***REMOTE MODE ON***, CDR-882 does not accept keys of main unit or wireless remote control.
Example	Set ***REMOTE MODE*** to ***ON***: ***0x 7E 07 05 61 10 01 FF***

4.42. Program

Function	To define a playback or record program.
Data length	Up to 27 Bytes
Data	***0x10, 0x20, Part#, Disc#1, Track#1, …, Disc#n, Track#n*** ♦ ***Part#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)***
Details	This command defines a track sequence (program). It might be necessary to send two of these instructions to set the complete program (if it has more than 12 tracks). The field ***Part#*** will specify whether the instruction sets the first or second part of the program. The maximum number of tracks allowed is 20, and any further track will be ignored. If the program is meant for recording, only tracks from one drive (source drive) should be selected. Otherwise an error will occur when sending the command ***PROGRAM COPY***.
Example	Set program 20Tr, 18Tr, 16Tr, 14Tr of Disc#1: ***0x 7E 10 05 61 10 20 00 00 13 00 11 00 09 00 07 FF***

4.43. Menu audio

4.43.1. Dig input level

Function	To define digital input level.
Data length	4 Bytes

Data	***0x13, 0x01, 0x01, Level*** ♦ ***Level:*** ▪ ***0x00:*** Off ▪ ***0x01-0x03:*** -60 dB to –48 dB (step +6 dB) ▪ ***0x03-0x0B:*** -48 dB to -24 dB (step +3 dB) ▪ ***0x0B-0x17:*** -24 to -12 dB (step +1 dB) ▪ ***0x17-0x47:*** -12 to +12 dB (step +0.5 dB) ▪ ***0x47-0x4F:*** +12 to +20 dB (step +1 dB)
Details	This command sets the digital input level.
Example	Set level to –10 dB: ***0x 7E 09 05 61 13 01 01 1B FF***

4.43.2. Input balance

Function	To define input balance.
Data length	4 Bytes
Data	***0x13, 0x01, 0x02, Balance*** ♦ ***Balance:*** ▪ ***0x00-0x28:*** L=00.0 dB/R=-10.0 dB to L=-10.0 dB/R=00.0 dB (step +0.5 dB)
Details	This command sets the input balance.
Example	Set balance to L=00.0 dB/R=-9.5 dB: ***0x 7E 09 05 61 13 01 02 01 FF***

4.43.3. Fade-in time

Function	To define fade-in time within the audio menu.
Data length	4 Bytes
Data	***0x13, 0x01, 0x03, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command sets the audio fade-in time.
Example	Set fade-in time to 4s: ***0x 7E 09 05 61 13 01 03 03 FF***

4.43.4. Fade-out time

Function	To define fade-out time within the audio menu.
Data length	4 Bytes
Data	***0x13, 0x01, 0x04, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command sets the audio fade-out time.
Example	Set fade-out time to 2s: ***0x 7E 09 05 61 13 01 04 01 FF***

4.43.5. Input dither

Function	To set input dither.
Data length	4 Bytes
Data	***0x13, 0x01, 0x05, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=Auto

Details	This command sets input dither to ***OFF*** or ***AUTO***.
Example	Set input dither to ***AUTO***: ***0x 7E 09 05 61 13 01 05 01 FF***

4.43.6. Phones mix

Function	To set phones mix.
Data length	4 Bytes
Data	***0x13, 0x01, 0x06, Mix*** ♦ ***Mix:*** ▪ ***0x00:*** Priority CD1 ▪ ***0x01:*** Priority CD2 ▪ ***0x02:*** 1+2 ▪ ***0x03:*** 1+2 (-6 dB)
Details	This command configures the phones mix.
Example	Set mix to ***PRIORITY CD1***: ***0x 7E 09 05 61 13 01 06 00 FF***

4.43.7. Output mix

Function	To set output mix.
Data length	4 Bytes
Data	***0x13, 0x01, 0x07, Mix*** ♦ ***Mix:*** ▪ ***0x00:*** Priority CD1 ▪ ***0x01:*** Priority CD2 ▪ ***0x02:*** 1+2 ▪ ***0x03:*** 1+2 (-6 dB) ▪ ***0x04:*** As phones
Details	This command configures the output mix.
Example	Set mix to ***PRIORITY CD2***: ***0x 7E 09 05 61 13 01 07 01 FF***

4.44. Menu clock

4.44.1. Clock source

Function	To select clock source.
Data length	4 Bytes
Data	***0x13, 0x02, 0x00, Src*** ♦ ***Src:*** ▪ ***0x00:*** Auto ▪ ***0x01:*** Internal ▪ ***0x02:*** Wordclock ▪ ***0x03:*** Digital input
Details	This command selects the clock source.
Example	Set clock source to ***AUTO***: ***0x 7E 09 05 61 13 02 00 00 FF***

4.45. Menu display

4.45.1. Contrast

Function	To set LCD contrast.
Data length	4 Bytes

Data	***0x13, 0x03, 0x01, Level*** ♦ ***Level:*** 0***(0x00)*** to 31***(0x1F)***
Details	This command sets the LCD contrast.
Example	Set the contrast to 20: ***0x 7E 09 05 61 13 03 01 14 FF***

4.45.2. Invert

Function	To set LCD invert.
Data length	4 Bytes
Data	***0x13, 0x03, 0x02, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command sets invert to ***ON*** or ***OFF***.
Example	Set invert to ***ON***: ***0x 7E 09 05 61 13 03 02 01 FF***

4.46. Menu edit marker

4.46.1. Auto-cue threshold

Function	To define the threshold for the ***AUTO-CUE*** function.
Data length	4 Bytes
Data	***0x13, 0x04, 0x00, Threshd*** ♦ ***Threshd:*** ▪ ***0x00-0x08:*** -72 dB to –24 dB (step +6 dB)
Details	This command sets the threshold for the ***AUTO-CUE*** function.
Example	Set threshold to –24 dB: ***0x 7E 09 05 61 13 04 00 08 FF***

4.47. Menu DiscSpan

4.47.1. Multi-machine

Function	To select ***MULTI-MACHINE*** mode.
Data length	4 Bytes
Data	***0x13, 0x05, 0x01, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This sets ***MULTI-MACHINE*** mode to ***ON*** or ***OFF***.
Example	Set ***MULTI-MACHINE*** mode to ***OFF***: ***0x 7E 09 05 61 13 05 01 00 FF***

4.47.2. Master / Slave

Function	To set ***MASTER / SLAVE*** configuration.
Data length	4 Bytes
Data	***0x13, 0x05, 0x02, Status*** ♦ ***Status: 0x00***=Master ***0x01***=Slave
Details	This command sets either ***MASTER*** or ***SLAVE*** to ***ON***.
Example	Set ***MASTER*** to ***ON***: ***0x 7E 09 05 61 13 05 02 00 FF***

4.47.3. Fade-in time

Function	To define fade-in time within the DiscSpan menu.
Data length	4 Bytes

Data	***0x13, 0x05, 0x03, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command sets the DiscSpan fade-in time.
Example	Set fade-in to 4s: ***0x 7E 09 05 61 13 05 03 04 FF***

4.47.4. Fade-out time

Function	To define fade-out time within the DiscSpan menu.
Data length	4 Bytes
Data	***0x13, 0x05, 0x04, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command sets the DiscSpan fade-out time.
Example	Set fade-out to 2s: ***0x 7E 09 05 61 13 05 04 01 FF***

4.47.5. Overlap time

Function	To define overlap time.
Data length	4 Bytes
Data	***0x13, 0x05, 0x05, Time*** ♦ ***Time:*** ▪ ***0x00-0x38:*** 4 sec to 60 sec (step +1 sec) ▪ ***0x38-0x40:*** 1 min to 5 min (step +30 sec)
Details	This command sets the overlap time.
Example	Set overlap to 5m: ***0x 7E 09 05 61 13 05 05 40 FF***

4.48. Menu record

4.48.1. Record sync

Function	To define record sync.
Data length	4 Bytes
Data	***0x13, 0x06, 0x01, Sync*** ♦ ***Sync:*** ▪ ***0x00:*** Rec Start / Stop ▪ ***0x01:*** Rec Start / Stop+Track
Details	This command sets the record sync.
Example	Set sync to Rec Start / Stop: ***0x 7E 09 05 61 13 06 01 00 FF***

4.48.2. S/PDIF REC start trigger

Function	To define the start trigger.
Data length	4 Bytes
Data	***0x13, 0x06, 0x02, Trigger*** ♦ ***Trigger:*** ▪ ***0x00:*** S / PDIF subcode ▪ ***0x01:*** Audio threshold
Details	This command defines the start trigger.
Example	Set trigger to audio threshold: ***0x 7E 09 05 61 13 06 02 01 FF***

4.48.3. Auto track ID trigger

Function	To define auto track ID trigger.
Data length	4 Bytes
Data	***0x13, 0x06, 0x03, Trigger*** ♦ ***Trigger:*** ▪ ***0x00:*** S/PDIF subcode ▪ ***0x01:*** Audio threshold ▪ ***0x02:*** Time interval
Details	This command defines the auto track ID trigger.
Example	Set trigger to audio threshold: ***0x 7E 09 05 61 13 06 03 01 FF***

4.48.4. Audio threshold

Function	To define the audio threshold.
Data length	4 Bytes
Data	***0x13, 0x06, 0x04, Threshd*** ♦ ***Threshd:*** ▪ ***0x00-0x0C:*** -96 dB to –24 dB (step +6 dB)
Details	This command defines the audio threshold.
Example	Set audio threshold to –96 dB: ***0x 7E 09 05 61 13 06 04 00 FF***

4.48.5. Track length

Function	To define track length.
Data length	4 Bytes
Data	***0x13, 0x06, 0x05, Length*** ♦ ***Length:*** ▪ ***0x00-0x04:*** 1 min to 5 mins (step +1 min)
Details	This command defines the track length.
Example	Set track length to 5 min: ***0x 7E 09 05 61 13 06 05 04 FF***

4.48.6. Auto finalize

Function	To define auto finalize.
Data length	4 Bytes
Data	***0x13, 0x06, 0x06, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command configures auto finalize.
Example	Set auto finalize to ***ON***: ***0x 7E 09 05 61 13 06 06 01 FF***

4.48.7. Digital output format

Function	To define the digital output format.
Data length	4 Bytes
Data	***0x13, 0x06, 0x07, Format*** ♦ ***Format:*** ▪ ***0x00:*** Consumer ▪ ***0x01:*** Professional

Details	This command specifies the digital output format.
Example	Set format to professional: ***0x 7E 09 05 61 13 06 07 01 FF***

4.48.8. SCMS

Function	To define SCMS.
Data length	4 Bytes
Data	***0x13, 0x06, 0x08, Mode*** ♦ ***Mode:*** ▪ ***0x00:*** Prohibit copy ▪ ***0x01:*** Copy once ▪ ***0x02:*** Permit copies
Details	This command configures SCMS.
Example	Permit any copy: ***0x 7E 09 05 61 13 06 08 02 FF***

4.48.9. Copy speed

Function	To define copy speed.
Data length	4 Bytes
Data	***0x13, 0x06, 0x09, Mode*** ♦ ***Mode:*** ▪ ***0x00:*** Low ▪ ***0x01:*** Medium ▪ ***0x02:*** High
Details	This command sets the copy speed.
Example	Set the copy speed to medium: ***0x 7E 09 05 61 13 06 09 01 FF***

4.49. Menu parallel port

4.49.1. Input / Output

Function	To configure inputs and outputs of the parallel port.
Data length	10 Bytes
Data	***0x13, 0x07, 0x00, i/p#1, ..., i/p#5, o/p#1, ..., o/p#3*** ♦ ***i/p:*** ▪ ***0x00:*** Off ▪ ***0x01:*** Play / Pause ▪ ***0x03:*** Record ▪ ***0x04:*** Stop ▪ ***0x05:*** AMS+ ▪ ***0x06:*** AMS- ▪ ***0x07:*** FFwd ▪ ***0x08:*** FRew ▪ ***0x09:*** Eject ♦ ***o/p:*** ▪ ***0x00:*** Off ▪ ***0x01:*** Play ▪ ***0x02:*** Pause ▪ ***0x03:*** REcord ▪ ***0x0A:*** No disc

Details	This command configures the inputs and outputs of the parallel port.
Example	Set input#1 to ***STOP*** and output#2 to ***PLAY*** (all the others to ***OFF***): ***0x 7E 10 05 61 13 07 00 04 00 00 00 00 00 01 00 FF***

4.50. Menu general

4.50.1. Eject block

Function	To set ***EJECT BLOCK*** to ***ON*** or ***OFF***.
Data length	4 Bytes
Data	***0x13, 0x08, 0x01, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command sets ***EJECT BLOCK*** to ***ON*** or ***OFF***.
Example	Set ***EJECT BLOCK*** to ***ON***: ***0x 7E 09 05 61 13 08 01 01 FF***

4.50.2. Timer

Function	To set ***TIMER*** to PLAY or ***OFF***
Data length	4 Bytes
Data	***0x13, 0x08, 0x02, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=Play
Details	This command sets ***TIMER*** to ***PLAY*** or ***OFF***.
Example	Set timer to ***OFF***: ***0x 7E 09 05 61 13 08 02 00 FF***

4.51. Menu audio REQ

4.51.1. Dig input level REQ

Function	To obtain digital input level.
Data length	3 Bytes
Data	***0x13, 0x01, 0x01***
Details	This command requests the digital input level.
Example	Request level: ***0x 7E 08 05 61 13 01 01 FF***

4.51.2. Input balance REQ

Function	To obtain input balance.
Data length	3 Bytes
Data	***0x13, 0x01, 0x02***
Details	This command requests the input balance.
Example	Request input balance: ***0x 7E 08 05 61 13 01 02 FF***

4.51.3. Fade-in time REQ

Function	To obtain audio fade-in time.
Data length	3 Bytes
Data	***0x13, 0x01, 0x03***
Details	This command requests the audio fade-in time.
Example	Request fade-in time: ***0x 7E 08 05 61 13 01 03 FF***

4.51.4. Fade-out time REQ

Function	To obtain audio fade-out time.
Data length	3 Bytes
Data	***0x13, 0x01, 0x04***
Details	This command requests the audio fade-out time.
Example	Request fade-out time: ***0x 7E 08 05 61 13 01 04 FF***

4.51.5. Input dither REQ

Function	To obtain input dither data.
Data length	3 Bytes
Data	***0x13, 0x01, 0x05***
Details	This command requests the input dither configuration.
Example	Requests input dither data: ***0x 7E 08 05 61 13 01 05 FF***

4.51.6. Phones mix REQ

Function	To obtain phones mix data.
Data length	3 Bytes
Data	***0x13, 0x01, 0x06***
Details	This command requests the phones mix setting.
Example	Request mix setting: ***0x 7E 08 05 61 13 01 06 FF***

4.51.7. Output mix REQ

Function	To obtain output mix data.
Data length	3 Bytes
Data	***0x13, 0x01, 0x07***
Details	This command requests the output mix setting.
Example	Request mix setting: ***0x 7E 08 05 61 13 01 07 FF***

4.52. Menu clock REQ

4.52.1. Clock source REQ

Function	To obtain clock source.
Data length	3 Bytes
Data	***0x13, 0x02, 0x00***
Details	This command requests the clock source.
Example	Request clock source: ***0x 7E 08 05 61 13 02 00 FF***

4.53. Menu display REQ

4.53.1. Contrast REQ

Function	To obtain LCD contrast.
Data length	3 Bytes
Data	***0x13, 0x03, 0x01***
Details	This command requests the LCD contrast.
Example	Request the contrast: ***0x 7E 08 05 61 13 03 01 FF***

4.53.2. Invert REQ

Function	To obtain LCD invert data.
Data length	3 Bytes
Data	***0x13, 0x03, 0x02***
Details	This command requests the invert configuration.
Example	Request invert data: ***0x 7E 08 05 61 13 03 02 FF***

4.54. Menu edit marker REQ

4.54.1. Auto-cue threshold REQ

Function	To obtain the threshold for the ***AUTO-CUE*** function.
Data length	3 Bytes
Data	***0x13, 0x04, 0x00***
Details	This command requests the threshold for the ***AUTO-CUE*** function.
Example	Request threshold: ***0x 7E 08 05 61 13 04 00 FF***

4.55. Menu DiscSpan REQ

4.55.1. Multi-machine REQ

Function	To obtain ***MULTI-MACHINE*** data.
Data length	3 Bytes
Data	***0x13, 0x05, 0x01***
Details	This requests ***MULTI-MACHINE*** information.
Example	Request ***MULTI-MACHINE*** data: ***0x 7E 08 05 61 13 05 01 FF***

4.55.2. Master / Slave REQ

Function	To obtain ***MASTER / SLAVE*** data.
Data length	3 Bytes
Data	***0x13, 0x05, 0x02***
Details	This command requests the ***MASTER / SLAVE*** data.
Example	Request data: ***0x 7E 08 05 61 13 05 02 FF***

4.55.3. Fade-in time REQ

Function	To obtain DiscSpan fade-in time.
Data length	3 Bytes
Data	***0x13, 0x05, 0x03***
Details	This command requests the DiscSpan fade-in time.
Example	Request fade-in time: ***0x 7E 08 05 61 13 05 03 FF***

4.55.4. Fade-out time REQ

Function	To obtain DiscSpan fade-out time.
Data length	3 Bytes
Data	***0x13, 0x05, 0x04***
Details	This command requests the DiscSpan fade-out time.

Example	Request fade-out time: ***0x 7E 08 05 61 13 05 04 FF***

4.55.5. Overlap time REQ

Function	To obtain overlap time.
Data length	3 Bytes
Data	***0x13, 0x05, 0x05***
Details	This command requests the overlap time.
Example	Request overlap time: ***0x 7E 08 05 61 13 05 05 FF***

4.56. Menu record REQ

4.56.1. Record sync REQ

Function	To obtain record sync data.
Data length	3 Bytes
Data	***0x13, 0x06, 0x01***
Details	This command requests the record sync data.
Example	Request record sync data: ***0x 7E 08 05 61 13 06 01 FF***

4.56.2. S/PDIF REC start trigger REQ

Function	To obtain start trigger setting.
Data length	3 Bytes
Data	***0x13, 0x06, 0x02***
Details	This command requests the start trigger configuration.
Example	Request trigger: ***0x 7E 08 05 61 13 06 02 FF***

4.56.3. Auto track ID trigger REQ

Function	To obtain auto track ID trigger setting.
Data length	3 Bytes
Data	***0x13, 0x06, 0x03***
Details	This command requests the auto track ID trigger configuration.
Example	Request trigger: ***0x 7E 08 05 61 13 06 03 FF***

4.56.4. Audio threshold REQ

Function	To obtain the audio threshold.
Data length	3 Bytes
Data	***0x13, 0x06, 0x04***
Details	This command requests the audio threshold.
Example	Request audio threshold: ***0x 7E 08 05 61 13 06 04 FF***

4.56.5. Track length REQ

Function	To obtain track length.
Data length	3 Bytes
Data	***0x13, 0x06, 0x05***
Details	This command requests the track length.
Example	Request track length: ***0x 7E 08 05 61 13 06 05 FF***

4.56.6. Auto finalize REQ

Function	To obtain auto finalize data.
Data length	3 Bytes
Data	***0x13, 0x06, 0x06***
Details	This command requests the auto finalize configuration.
Example	Request auto finalize data: ***0x 7E 08 05 61 13 06 06 FF***

4.56.7. Digital output format REQ

Function	To obtain the digital output format.
Data length	3 Bytes
Data	***0x13, 0x06, 0x07***
Details	This command requests the digital output format.
Example	Request format: ***0x 7E 08 05 61 13 06 07 FF***

4.56.8. SCMS REQ

Function	To obtain SCMS configuration.
Data length	3 Bytes
Data	***0x13, 0x06, 0x08***
Details	This command requests the SCMS configuration.
Example	Request SCMS configuration: ***0x 7E 08 05 61 13 06 08 FF***

4.56.9. Copy speed REQ

Function	To obtain copy speed.
Data length	3 Bytes
Data	***0x13, 0x06, 0x09***
Details	This command requests the copy speed.
Example	Request copy speed: ***0x 7E 08 05 61 13 06 09 FF***

4.57. Menu parallel port REQ

4.57.1. Input / Output REQ

Function	To obtain inputs and outputs of the parallel port.
Data length	3 Bytes
Data	***0x13, 0x07, 0x00***
Details	This command requests the configuration of the parallel port.
Example	Request data: ***0x 7E 08 05 61 13 07 00 FF***

4.58. Menu general REQ

4.58.1. Eject block REQ

Function	To obtain ***EJECT BLOCK*** data.
Data length	3 Bytes
Data	***0x13, 0x08, 0x01***
Details	This command requests the ***EJECT BLOCK*** configuration.

Example	Request ***EJECT BLOCK*** data: ***0x 7E 08 05 61 13 08 01 FF***

4.58.2. Timer REQ

Function	To obtain ***TIMER*** data.
Data length	3 Bytes
Data	***0x13, 0x08, 0x02***
Details	This command requests the ***TIMER*** configuration.
Example	Request timer data: ***0x 7E 08 05 61 13 08 02 FF***

4.59. Status data REQ

Function	To check the status.
Data length	2 Bytes
Data	***0x20, 0x20***
Details	This is the command to make CDR-882 output ***STATUS DATA*** indicating current unit condition such as ***EXIST / NO DISC***, the value of ***AUTO-CUE / PAUSE***, ***PLAY MODE*** and so on.
Example	Request ***STATUS DATA***: ***0x 7E 07 05 61 20 20 FF***

4.60. Disc data REQ

Function	To check the information of the disc.
Data length	3 Bytes
Data	***0x20, 0x21***
Details	This is the command to make CDR-882 output ***DISC DATA*** indicating disc information.
Example	Request 1st disc data: ***0x 7E 08 05 61 20 21 00 FF***

4.61. Model name REQ

Function	To check model name.
Data length	2 Bytes
Data	***0x20, 0x22***
Details	This is the command to ask for the ***MODEL NAME*** of the CDR-882. When this command is sent, CDR-882 outputs “HHB CDR-882” as ASCII data.
Example	Request ***MODEL NAME***: ***0x 7E 07 05 61 20 22 FF***

4.62. Software version REQ

Function	To check software version.
Data length	2 Bytes
Data	***0x20, 0x23***
Details	This is the command to ask for the version of the various firmwares (CDR-882, drives and CPLD) installed in the unit. When this command is sent, CDR-882 outputs the versions as ASCII data.
Example	Request ***SOFTWARE VERSION***: ***0x 7E 07 05 61 20 23 FF***

4.63. TOC data REQ

Function	To check the information in the TOC.
Data length	3 Bytes
Data	***0x20, 0x44, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	This is the command to ask for the ***TOC DATA*** (total track numbers and total time recorded to the discs). When this command is sent, CDR-882 outputs ***TOC DATA***.
Example	Request 1st disc ***TOC DATA***: ***0x 7E 08 05 61 20 44 00 FF***

4.64. Track time data REQ

Function	To check the time length of a specified track.
Data length	4 Bytes
Data	***0x20, 0x45, Disc#, Track#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)***
Details	This is the command to output information regarding the duration of certain track. When this command is sent, CDR-882 outputs ***TRACK TIME DATA***.
Example	Request the time for the 3rd track of the 2nd disc: ***0x 7E 09 05 61 20 45 01 03 FF***

4.65. CD-text REQ

Function	To request information stored as CD-text.
Data length	4 Bytes
Data	***0x20, 0xAA, Disc#, Track#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)***
Details	This command requests information on CD-text.
Example	Request information on Track#10 of Disc#1: ***0x 7E 09 05 61 20 AA 00 09 FF***

5. TRANSMISSION DATA (RECEIVE)

Details of each command received from CDR-882 are mentioned in this section.

5.1. Structure of this section

Commands are detailed in terms of their “Function”, “Data length, “Data”, “Details” and “Example” in the following tables.

Function	General functions of commands are shown.
Data length	Data length of commands is shown.
Data	Fixed or variable data is shown in hexadecimal notation.
Details	The function of the command is explained in detail.
Example	Concrete examples of transmission packet are shown.

5.2. Acknowledge

Function	To acknowledge commands sent to CDR-882.
Data length	6 Bytes
Data	***0x07, 0x07, Cmd1, Cmd2, Cmd3, Info*** ♦ ***Cmd1:*** First byte of the command acknowledged ♦ ***Cmd2:*** Second byte of the command acknowledged ♦ ***Cmd3:*** Third byte of the command acknowledged (for 2 byte commands this will be ***0x00***) ♦ ***Info:*** ▪ ***0x00:*** Executed without problem ▪ ***0x01:*** Not executed. Undefined command ▪ ***0x00:*** Not executed. No disc ▪ ***0x00:*** Not executed. Impossible
Details	Indicates if a command has been received and processed correctly.
Example	Command ***PLAY*** executed without problem: ***0x 6F 0B 05 61 07 07 02 01 00 00 FF***

5.3. Menu audio

5.3.1. Dig input level

Function	To output digital input level configuration.
Data length	4 Bytes
Data	***0x13, 0x01, 0x01, Level*** ♦ ***Level:*** ▪ ***0x00:*** Off ▪ ***0x01-0x03:*** -60 dB to –48 dB (step +6 dB) ▪ ***0x03-0x0B:*** -48 dB to -24 dB (step +3 dB) ▪ ***0x0B-0x17:*** -24 to -12 dB (step +1 dB) ▪ ***0x17-0x47:*** -12 to +12 dB (step +0.5 dB) ▪ ***0x47-0x4F:*** +12 to +20 dB (step +1 dB)
Details	This command outputs the digital input level configuration. When CDR-882 receives a ***DIG INPUT LEVEL REQ*** command it outputs this message.
Example	Output level of –10 dB: ***0x 6F 09 05 61 13 01 01 1B FF***

5.3.2. Input balance

Function	To output input balance configuration.
Data length	4 Bytes
Data	***0x13, 0x01, 0x02, Balance*** ♦ ***Balance:*** ▪ ***0x00-0x28:*** L=00.0 dB/R=-10.0 dB to L=-10.0 dB/R=00.0 dB (step +0.5 dB)
Details	This command outputs the input balance configuration.
Example	Output L=00.0 dB/R=-9.5 dB: ***0x 6F 09 05 61 13 01 02 01 FF***

5.3.3. Fade-in time

Function	To output audio fade-in time.
Data length	4 Bytes
Data	***0x13, 0x01, 0x03, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command outputs the audio fade-in time.
Example	Output fade-in of 4s: ***0x 6F 09 05 61 13 01 03 03 FF***

5.3.4. Fade-out time

Function	To output audio fade-out time.
Data length	4 Bytes
Data	***0x13, 0x01, 0x04, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command outputs the audio fade-out time.
Example	Output fade-out of 2s: ***0x 6F 09 05 61 13 01 04 01 FF***

5.3.5. Input dither

Function	To inform about the input dither configuration.
Data length	4 Bytes
Data	***0x13, 0x01, 0x05, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=Auto
Details	This command outputs the input dither configuration.
Example	Input dither set to ***AUTO***: ***0x 6F 09 05 61 13 01 05 01 FF***

5.3.6. Phones mix

Function	To output phones mix configuration.
Data length	4 Bytes
Data	***0x13, 0x01, 0x06, Mix*** ♦ ***Mix:*** ▪ ***0x00:*** Priority CD1 ▪ ***0x01:*** Priority CD2 ▪ ***0x02:*** 1+2

	▪ ***0x03:*** 1+2 (-6 dB)
Details	This command outputs the phones mix configuration.
Example	Output mix configuration of ***PRIORITY CD1***: ***0x 6F 09 05 61 13 01 06 00 FF***

5.3.7. Output mix

Function	To inform about the output mix configuration.
Data length	4 Bytes
Data	***0x13, 0x01, 0x07, Mix*** ♦ ***Mix:*** ▪ ***0x00:*** Priority CD1 ▪ ***0x01:*** Priority CD2 ▪ ***0x02:*** 1+2 ▪ ***0x03:*** 1+2 (-6 dB) ▪ ***0x04:*** As phones
Details	This command outputs the output mix configuration.
Example	Output mix configuration of ***PRIORITY CD2***: ***0x 6F 09 05 61 13 01 07 01 FF***

5.4. Menu clock

5.4.1. Clock source

Function	To output clock source configuration.
Data length	5 Bytes
Data	***0x13, 0x02, 0x00, Src, Present*** ♦ ***Src:*** ▪ ***0x01:*** Internal ▪ ***0x02:*** Wordclock ▪ ***0x03:*** Digital input ♦ ***Present:*** ▪ ***0x00:*** Clock not present ▪ ***0x01:*** Clock present
Details	This command outputs the clock source configuration. As it happens in the machine, when ***AUTO*** is selected the actual clock configuration chosen by the machine is the one that is output. The presence of the clock is output too. Internal clock is always present.
Example	Output configuration set to ***INTERNAL***: ***0x 6F 0A 05 61 13 02 00 01 01 FF***

5.5. Menu display

5.5.1. Contrast

Function	To output LCD contrast.
Data length	4 Bytes
Data	***0x13, 0x03, 0x01, Level*** ♦ ***Level:*** 0***(0x00)*** to 31***(0x1F)***
Details	This command outputs the LCD contrast.

Example	Output contrast of 20: ***0x 6F 09 05 61 13 03 01 14 FF***

5.5.2. Invert

Function	To output LCD invert configuration.
Data length	4 Bytes
Data	***0x13, 0x03, 0x02, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command outputs the invert configuration.
Example	Output invert configuration of ***ON***: ***0x 6F 09 05 61 13 03 02 01 FF***

5.6. Menu edit marker

5.6.1. Auto-cue threshold

Function	To output the threshold for the ***AUTO-CUE*** function.
Data length	4 Bytes
Data	***0x13, 0x04, 0x00, Threshd*** ♦ ***Threshd:*** ▪ ***0x00-0x08:*** -72 dB to –24 dB (step +6 dB)
Details	This command outputs the threshold for the ***AUTO-CUE*** function.
Example	Output threshold of –24 dB: ***0x 6F 09 05 61 13 04 00 08 FF***

5.7. Menu DiscSpan

5.7.1. Multi-machine

Function	To output ***MULTI-MACHINE*** configuration.
Data length	4 Bytes
Data	***0x13, 0x05, 0x01, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This outputs the ***MULTI-MACHINE*** configuration.
Example	Output ***MULTI-MACHINE*** set to ***OFF***: ***0x 6F 09 05 61 13 05 01 00 FF***

5.7.2. Master / Slave

Function	To output ***MASTER / SLAVE*** configuration.
Data length	4 Bytes
Data	***0x13, 0x05, 0x02, Status*** ♦ ***Status: 0x00***=Master ***0x01***=Slave
Details	This command outputs the ***MASTER / SLAVE*** configuration.
Example	Output ***MASTER*** configuration: ***0x 6F 09 05 61 13 05 02 00 FF***

5.7.3. Fade-in time

Function	To output DiscSpan fade-in time.
Data length	4 Bytes
Data	***0x13, 0x05, 0x03, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)

Details	This command outputs the DiscSpan fade-in time.
Example	Output fade-in time of 4s: ***0x 6F 09 05 61 13 05 03 03 FF***

5.7.4. Fade-out time

Function	To output DiscSpan fade-out time.
Data length	4 Bytes
Data	***0x13, 0x05, 0x04, Time*** ♦ ***Time:*** ▪ ***0x00-0x09:*** 1 sec to 10 sec (step +1 sec)
Details	This command outputs the DiscSpan fade-out time.
Example	Output fade-out time of 2s: ***0x 6F 09 05 61 13 05 04 01 FF***

5.7.5. Overlap time

Function	To output overlap time.
Data length	4 Bytes
Data	***0x13, 0x05, 0x05, Time*** ♦ ***Time:*** ▪ ***0x00-0x38:*** 4 sec to 60 sec (step +1 sec) ▪ ***0x38-0x40:*** 1 min to 5 min (step +30 sec)
Details	This command outputs the overlap time.
Example	Output overlap time of 5m: ***0x 6F 09 05 61 13 05 05 40 FF***

5.8. Menu record

5.8.1. Record sync

Function	To output record sync.
Data length	4 Bytes
Data	***0x13, 0x06, 0x01, Sync*** ♦ ***Sync:*** ▪ ***0x00:*** Rec Start / Stop ▪ ***0x01:*** Rec Start / Stop+Track
Details	This command outputs the record sync configuration.
Example	Sync set to Rec Start / Stop: ***0x 6F 09 05 61 13 06 01 00 FF***

5.8.2. S/PDIF REC start trigger

Function	To output the start trigger.
Data length	4 Bytes
Data	***0x13, 0x06, 0x02, Trigger*** ♦ ***Trigger:*** ▪ ***0x00:*** S / PDIF subcode ▪ ***0x01:*** Audio threshold
Details	This command outputs the start trigger configuration.
Example	Trigger set to audio threshold: ***0x 6F 09 05 61 13 06 02 01 FF***

5.8.3. Auto track ID trigger

Function	To output auto track ID trigger.

Data length	4 Bytes
Data	***0x13, 0x06, 0x03, Trigger*** ♦ ***Trigger:*** ▪ ***0x00:*** S/PDIF subcode ▪ ***0x01:*** Audio threshold ▪ ***0x02:*** Time interval
Details	This command outputs the auto track ID trigger configuration.
Example	Trigger set to audio threshold: ***0x 6F 09 05 61 13 06 03 01 FF***

5.8.4. Audio threshold

Function	To output the audio threshold.
Data length	4 Bytes
Data	***0x13, 0x06, 0x04, Threshd*** ♦ ***Threshd:*** ▪ ***0x00-0x0C:*** -96 dB to –24 dB (step +6 dB)
Details	This command outputs the audio threshold value.
Example	Audio threshold set to –96 dB: ***0x 6F 09 05 61 13 06 04 00 FF***

5.8.5. Track length

Function	To output track length.
Data length	4 Bytes
Data	***0x13, 0x06, 0x05, Length*** ♦ ***Length:*** ▪ ***0x00-0x04:*** 1 min to 5 mins (step +1 min)
Details	This command outputs the track length.
Example	Track length set to 5 min: ***0x 6F 09 05 61 13 06 05 04 FF***

5.8.6. Auto finalize

Function	To output auto finalize.
Data length	4 Bytes
Data	***0x13, 0x06, 0x06, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command outputs auto finalize.
Example	Auto finalize set to ***ON***: ***0x 6F 09 05 61 13 06 06 01 FF***

5.8.7. Digital output format

Function	To output the digital output format.
Data length	4 Bytes
Data	***0x13, 0x06, 0x07, Format*** ♦ ***Format:*** ▪ ***0x00:*** Consumer ▪ ***0x01:*** Professional
Details	This command outputs the digital output format.
Example	Output professional format: ***0x 6F 09 05 61 13 06 07 01 FF***

5.8.8. SCMS

Function	To output SCMS.
Data length	4 Bytes
Data	***0x13, 0x06, 0x08, Mode*** ♦ ***Mode:*** ▪ ***0x00:*** Prohibit copy ▪ ***0x01:*** Copy once ▪ ***0x02:*** Permit copies
Details	This command outputs the SCMS configuration.
Example	Any copy permitted: ***0x 6F 09 05 61 13 06 08 02 FF***

5.8.9. Copy speed

Function	To output copy speed.
Data length	4 Bytes
Data	***0x13, 0x06, 0x09, Mode*** ♦ ***Mode:*** ▪ ***0x00:*** Low ▪ ***0x01:*** Medium ▪ ***0x02:*** High
Details	This command outputs the copy speed.
Example	Copy speed set to medium: ***0x 6F 09 05 61 13 06 09 01 FF***

5.9. Menu parallel port

5.9.1. Input / Output

Function	To inform about inputs and outputs of the parallel port.
Data length	10 Bytes
Data	***0x13, 0x07, 0x00, i/p#1, ..., i/p#5, o/p#1, ..., o/p#3*** ♦ ***i/p:*** ▪ ***0x00:*** Off ▪ ***0x01:*** Play / Pause ▪ ***0x03:*** Record ▪ ***0x04:*** Stop ▪ ***0x05:*** AMS+ ▪ ***0x06:*** AMS- ▪ ***0x07:*** FFwd ▪ ***0x08:*** FRew ▪ ***0x09:*** Eject ♦ ***o/p:*** ▪ ***0x00:*** Off ▪ ***0x01:*** Play ▪ ***0x02:*** Pause ▪ ***0x03:*** Record ▪ ***0x0A:*** No disc
Details	This command outputs the configuration of the parallel port.
Example	Output configuration of input#1 to ***STOP*** and output#2 to ***PLAY***: ***0x 6F 10 05 61 13 07 00 04 00 00 00 00 00 01 00 FF***

5.10. Menu general

5.10.1. Eject block

Function	To output ***EJECT BLOCK*** configuration.
Data length	4 Bytes
Data	***0x13, 0x08, 0x01, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=On
Details	This command outputs the ***EJECT BLOCK*** configuration.
Example	Output ***EJECT BLOCK*** configuration of ***ON***: ***0x 6F 09 05 61 13 08 01 01 FF***

5.10.2. Timer

Function	To output ***TIMER*** configuration.
Data length	4 Bytes
Data	***0x13, 0x08, 0x02, Status*** ♦ ***Status: 0x00***=Off, ***0x01***=Play
Details	This command outputs the ***TIMER*** configuration.
Example	Output configuration of ***OFF***: ***0x 6F 09 05 61 13 08 02 00 FF***

5.11. Status data

Function	To inform about internal status.
Data length	7 Bytes
Data	***0x20, 0x20, Data1, Data2, Data3, Track#1, Track#2*** ♦ ***Data1:*** ▪ ***b7-b5: 000 (fixed)*** ▪ ***b4-b3:*** ▫ ***00:*** Single mode ▫ ***01:*** Dualburn mode ▫ ***10:*** DiscSpan mode ▪ ***b2-b1:*** ▫ ***00:*** Auto-cue / pause off ▫ ***01:*** Auto-cue ▫ ***10:*** Auto-pause ▪ ***b0:*** ▫ ***0:*** Program off ▫ ***1:*** Program on ♦ ***Data 2:*** ▪ ***b7-b5: 000 (fixed)*** ▪ ***b4:*** ▫ ***0:*** Monitor off ▫ ***1:*** Monitor on ▪ ***b3-b1 (I/P):*** ▫ ***000:*** Analogue balanced ▫ ***001:*** Analogue unbalanced ▫ ***010:*** Digital AES / EBU ▫ ***011:*** Digital S / PDIF (Co-axial)

	▫ ***100:*** Digital S/PDIF (Optical) ▪ ***b0:*** ▫ ***0:*** Disc#1 selected ▫ ***1:*** Disc#2 selected ♦ ***Data 3:*** ▪ ***b7-b4 (disc#1):*** ▫ ***0000:*** Stop ▫ ***0001:*** Play ▫ ***0010:*** Pause ▫ ***0011:*** FFWD Pause ▫ ***0100:*** FREW Pause ▫ ***0101:*** REC Armed ▫ ***0110:*** Record ▫ ***0111:*** FFWD Play ▫ ***1000:*** FREW Play ▫ ***1001:*** Next ▫ ***1010:*** Previous ▪ ***b3-b0 (disc#2):*** ▫ ***0000:*** Stop ▫ ***0001:*** Play ▫ ***0010:*** Pause ▫ ***0011:*** FFWD Pause ▫ ***0100:*** FREW Pause ▫ ***0101:*** REC Armed ▫ ***0110:*** Record ▫ ***0111:*** FFWD Play ▫ ***1000:*** FREW Play ▫ ***1001:*** Next ▫ ***1010:*** Previous ♦ ***Track# 1 and 2 (discs 1 and 2, respectively):*** 1***(0x00)*** to 99***(0x62)***
Details	Indicates CDR-882's internal state. When CDR-882 receives ***STATUS DATA REQ***, it outputs this message. If no disc, track number ***0x00*** is output. If CDR-882 is in ***STOP*** mode it will output the first track it would play if a ***PLAY*** command was sent (meaning track#1 or first track of a program). If there is a blank media inserted in one of the drives, its track number will be number 100 (***0x63***).
Example	CDR-882 is playing 3rd track of 1st disc, with ***PROGRAM OFF***, ***AUTO-CUE ON***, ***MONITOR OFF***, ***DUALBURN MODE***, 2nd drive is empty: ***0x 6F 0B 05 61 20 20 0A 00 10 03 00 FF***

5.12. Disc data

Function	To output disc information.
Data length	3 Bytes
Data	***0x20, 0x21, DiscData*** ♦ ***DiscData:*** ▪ ***b7 (disc#1):*** ▫ ***0:*** No disc ▫ ***1:*** Disc exists

	▪ ***b6:*** ▫ ***0:*** Finalized ▫ ***1:*** Unfinalized ▪ ***b5-b4:*** ▫ ***00:*** CD ▫ ***01:*** CD-R ▫ ***10:*** CD-RW ▫ ***11:*** Unknown ▪ ***b3 (disc#2):*** ▫ ***0:*** No disc ▫ ***1:*** Disc exists ▪ ***b2:*** ▫ ***0:*** Finalized ▫ ***1:*** Unfinalized ▪ ***b1-b0:*** ▫ ***00:*** CD ▫ ***01:*** CD-R ▫ ***10:*** CD-RW ▫ ***11:*** Unknown
Details	Indicates various disc information. When CDR-882 receives ***DISC DATA REQ*** command, it outputs this data. It also sends this message when a CD is read after loaded or during start-up. This command is sent after DISC EXISTS but before TOC DATA.
Example	Disc#1 is a finalized CD-R, while 2nd tray is empty: ***0x 6F 08 05 61 20 21 83 FF***

5.13. Model name

Function	To output the model name.
Data length	13 Bytes
Data	***0x20, 0x22, ModelName***
Details	Outputs model name (“HHB CDR-882”) using an ASCII characters string. When CDR-882 receives ***MODEL NAME REQ***, it outputs this data. It also sends this message on start-up, before SOFTWARE VERSION.
Example	Model name CDR-882: ***0x 6F 12 05 61 20 22 48 48 42 20 43 44 52 2D 38 38 32 FF***

5.14. Software version

Function	To output firmware versions.
Data length	Up to 27 Bytes
Data	***0x20, 0x23, Option, Version*** ♦ ***Option:*** ▪ ***0x01:*** CDR-882 ▪ ***0x02:*** Drive 1 ▪ ***0x03:*** Drive 2 ▪ ***0x04:*** CPLD ♦ ***Version:*** Ascii chain with version
Details	Outputs software versions using ASCII strings. When CDR-882 receives

	SOFTWARE VERSION REQ command, it outputs four different messages, one for each option. It also sends these messages on start-up, after MODEL NAME.
Example	CDR-882 firmware version 1.03: ***0x 6F 0C 05 61 20 23 01 31 46 30 33 FF***

5.15. Track change

Function	To inform of a track change.
Data length	6 Bytes
Data	***0x20, 0x50, Disc#, Track#, Min, Sec*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec.
Details	Information on changed track. When CDR-882 completes to search or has track changed in ***PLAY*** or ***PAUSE*** mode, it outputs this data. This data includes the time of the new track.
Example	Disc#1 has changed to 2nd track (track time 3m10s): ***0x 6F 0B 05 61 20 50 00 02 03 0A FF***

5.16. Elapsed time

Function	To output the elapsed time in playback.
Data length	6 Bytes
Data	***0x20, 0x51, Disc#, Track#, Min, Sec*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec.
Details	When CDR-882 is configured to output the elapsed time, it outputs this data each time the elapsed time changes.
Example	2nd disc, 1st track playback 0m 2s: ***0x 6F 0B 05 61 20 51 01 01 00 02 FF***

5.17. TOC data

Function	To output the information in the TOC.
Data length	7 Bytes
Data	***0x20, 0x60, Disc#, FirstTrack#, LastTrack#, Min, Sec*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***FirstTrack#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***LastTrack#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec.
Details	When CDR-882 receives ***TOC DATA REQ***, it outputs this data. When it finishes reading the TOC of a new disc or during start-up it also outputs this data. If a disc is blank the track sent by CDR-882 will be number 100 (***0x63***).

Example	Disc#1 with 4 tracks and 1m12s recording time: ***0x 6F 0C 05 61 20 60 00 01 04 01 0A FF***

5.18. Track time data

Function	To output track time information.
Data length	6 Bytes
Data	***0x20, 0x62, Disc#, Track#, Min, Sec*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec.
Details	Information on track time. When CDR-882 receives ***TRACK TIME REQ***, it outputs this data.
Example	14th track of 1st disc has 2m8s: ***0x 6F 0B 05 61 20 62 00 0E 02 08 FF***

5.19. Track end

Function	Completed to playback a track.
Data length	2 Bytes
Data	***0x20, 0x83***
Details	Indicates that the playback of a specified track has been completed.
Example	Completed to play a specified track back: ***0x 6F 07 05 61 20 83 FF***

5.20. Track last 30 sec

Function	To inform that playback track has 30 sec remaining.
Data length	2 Bytes
Data	***0x20, 0x84***
Details	Information to indicate that playback track has 30 sec. remaining. When playback track has 30 sec. remaining, CDR-882 outputs this data. For tracks with less than 30 sec, it outputs it as soon as the track starts.
Example	Track has 30 sec. remaining: ***0x 6F 07 05 61 20 84 FF***

5.21. No disc

Function	To inform that no disc is loaded in a specific drive.
Data length	3 Bytes
Data	***0x20, 0x93, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	Indicates it has no disc in the specified drive. After opening any tray CDR-882 outputs this data, It also does so if it does not find any disc in that drive during start-up.
Example	No disc in drive#1: ***0x 6F 08 05 61 20 93 00 FF***

5.22. Disc exists

Function	To inform that a disc exists in a specific drive.

Data length	3 Bytes
Data	***0x20, 0x95, Disc#*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)***
Details	Indicates that CDR-882 has found a disc in a certain drive. When a tray is closed or during start-up CDR-882 outputs this data if a CD is found in that drive. This message is usually followed by DISC DATA and then TOC DATA.
Example	Disc detected in drive#1: ***0x 6F 08 05 61 20 95 00 FF***

5.23. Mark position

Function	To inform about the marked position.
Data length	7 Bytes
Data	***0x20, 0xA0, Disc#, Track#, Min, Sec, Frame*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Min:*** 0***(0x00)*** to 99***(0x63)*** min. ♦ ***Sec:*** 0***(0x00)*** to 59***(0x3B)*** sec. ♦ ***Frame:*** 0***(0x00)*** to 74***(0x4A)***
Details	Information on marked point. When CDR-882 receives ***MARK*** command, it outputs this data.
Example	Disc#2, Track#2, 3Min, 45Sec, 67Frame: ***0x 6F 0C 05 61 20 A0 01 02 03 2D 43 FF***

5.24. CD-text artist

Function	To output the artist name of a disc or track.
Data length	Up to 27 Bytes
Data	***0x20, 0xA1, Disc#, Track#, Artist*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Artist: Artist name as Ascii data***
Details	This command outputs the artist field of CD-text.
Example	Output artist “U2” in Disc#1: ***0x 6F 0B 05 61 20 A1 00 00 55 32 FF***

5.25. CD-text album

Function	To output the album name of a disc or track.
Data length	Up to 27 Bytes
Data	***0x20, 0xA2, Disc#, Track#, Album*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Album: Album name as Ascii data***
Details	This command outputs the album field of CD-text.
Example	Output album “Unplugged” in Disc#1: ***0x 6F 12 05 61 20 A2 00 00 55 6E 70 6C 75 67 67 65 64 FF***

5.26. CD-text track

Function	To output the track name of a track.
Data length	Up to 27 Bytes
Data	***0x20, 0xA3, Disc#, Track#, Track*** ♦ ***Disc#:*** 1***(0x00)*** to 2***(0x01)*** ♦ ***Track#:*** 1***(0x00)*** to 99***(0x62)*** ♦ ***Track: Track name as Ascii data***
Details	This command outputs the track field of CD-text.
Example	Output track name "In the end" of 8th track of Disc#2: ***0x 6F 13 05 61 20 A3 01 08 49 6E 20 74 68 65 20 65 6E 64 FF***

6. COMMAND QUICK REFERENCE

6.1. Transmission format

- Transmission format: 9600 bps
- Character length: 8 bit
- Parity check: No parity
- Stop bit number: 1 bit
- Variable length byte communication data: (First Byte: header to last Byte: terminator)
- Contents of data: ***0x00*** to ***0xFF*** (0 to 255)

6.2. Packet

- Header: 1 Byte
- Packet length: 1 Byte
- Format type: 1 Byte
- Category: 1 Byte
- Data: 1-27 Byte
- Terminator: 1 Byte

6.2.1. Header

1st byte header (communication direction):

- ***0x7E:*** PC → CDR-882
- ***0x6F:*** CDR-882 → PC

6.2.2. Packet length

2nd byte data length: ***0x05*** to ***0x20*** the number of data bytes from header to terminator.

6.2.3. Format type

3rd byte format type: ***0x05***

6.2.4. Category

4th byte category: ***0x61***

6.2.5. Terminator

Data from header is completed at the terminator (***0xFF***). In case of decode, be sure to check data length against the terminator.

6.3. PC → CDR-882

5th Byte	6th Byte	After 7th Byte	
0x00	KEY OFF		
	0x00	KEY OFF	
0x02	TRANSPORT		
	0x01	PLAY	
	0x02	STOP	
	0x05	PLAY / PAUSE	
	0x08	RECORD ON	
	0x11	RECORD	
	0x13	FREW (Necessary: KEY OFF)	
	0x14	FFWD (Necessary: KEY OFF)	
	0x15	PREV TRACK	
	0x16	NEXT TRACK	
	0x40	EJECT + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	0xDC	DRIVE SELECT + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	MARK / CUE		
	0x90	MARK	
	0x91	CUE	
	0x92	DIRECT MARK + Disc# + Track# + Min + Sec + Frame	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
		Frame:	0***(0x00)***-74***(0x4A)***
	AUTO PAUSE / CUE		
	0xB0	AUTO-PAUSE / CUE OFF	
	0xB1	AUTO-CUE ON	
	0xB2	AUTO-PAUSE ON	
	MODE		
	0xC0	SINGLE MODE	
	0xC1	DUALBURN MODE	
	0xC2	DISCSPAN MODE	
	PROGRAM MODE		
	0xD0	PROGRAM PLAY	
	0xD1	PROGRAM COPY	
0x03	TRACK PLAY / PAUSE		
	0x42	TRACK PLAY + Disc# + Track#	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
	0x43	TRACK PAUSE + Disc# + Track#	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
0x07	ELAPSED TIME		
	0x00	ELAPSED TIME OFF	

	0x01	ELAPSED TIME ON	
0x08	I / P SELECT		
	0x01	I / P SELECT + Input	
		Input:	***0x00:*** Analogue balanced ***0x01:*** Analogue unbalanced ***0x02:*** Digital AES / EBU ***0x03:*** Digital S / PDIF (Co-axial) ***0x04:*** Digital S / PDIF (Optical)
	MONITOR		
	0x02	***0x00***	MONITOR OFF
		0x01	MONITOR ON
	FINALIZE		
	0x03	FINALIZE + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	DISC COPY		
	0x04	DISC COPY	
	ERASE		
	0x05	ERASE + Disc# + Option	
		Disc#:	1***(0x00)***-2***(0x01)***
		Option:	***0x00:*** Initialize disc ***0x01:*** Erase disc ***0x02:*** Unfinalize ***0x03:*** Erase last track
	SYNC RECORD		
	0x06	SYNC RECORD	
	FADER		
	0x07	FADER	
	TRACK IDs		
	0x08	AUTO TRACK ID	
	0x09	MANUAL TRACK ID	
	0x0A	ID WRITE	
	CD-TEXT		
	0xA1	CD-TEXT ARTIST + Disc# + Track# + Artist	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Artist:	Artist name
	0xA2	CD-TEXT ALBUM + Disc# + Track# + Album	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x01)***-99***(0x63)***
		Album:	Album name
	0xA3	CD-TEXT TRACK + Disc# + Track# + Track	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Track:	Track name
0x10	REMOTE MODE		
	0x00	REMOTE MODE OFF	
	0x01	REMOTE MODE ON	

	PROGRAM		
	0x20	PROGRAM + Part# + Disc#1 + Track#1 + ... + Disc#n + Track#n	
		Part#:	1***(0x00)***-2***(0x01)***
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
0x13	MENU		
	0x01	AUDIO	
		0x01	DIG INPUT LEVEL + Level
			Level: ***0x00***: Off ***0x01-0x03:*** -60 to –48 dB ***0x03-0x0B:*** -48 to -24 dB ***0x0B-0x17:*** -24 to -12 dB ***0x17-0x47:*** -12 to +12 dB ***0x47-0x4F:*** +12 to +20 dB
		0x02	INPUT BALANCE + Balance
			Balance: 0***(0x00)***-40***(0x28):*** L=00.0 dB / R=-10.0 dB to L=-10.0 dB / R=00.0 dB
		0x03	FADE-IN TIME + Time
			Time: ***0x00***-***0x09:*** 1 sec to 10 sec
		0x04	FADE-OUT TIME + Time
			Time: ***0x00***-***0x09:*** 1 sec to 10 sec
		0x05	INPUT DITHER + Status
			Status: ***0x00:*** Off ***0x01:*** Auto
		0x06	OUTPUT DITHER + Status
			Status: ***0x00:*** Off ***0x01:*** On
		0x07	PHONES MIX + Mix
			Mix: ***0x00:*** Priority CD1 ***0x01:*** Priority CD2 ***0x02:*** 1+2 ***0x03:*** 1+2 (-6 dB)
		0x08	OUTPUT MIX + Mix
			Mix: ***0x00:*** Priority CD1 ***0x01:*** Priority CD2 ***0x02:*** 1+2 ***0x03:*** 1+2 (-6 dB) ***0x04:*** As phones
	0x02	CLOCK	
		0x00	CLOCK SOURCE + Src
			Src: ***0x00:*** Auto ***0x01:*** Internal ***0x02:*** Wordclock ***0x03:*** Digital input
	0x03	DISPLAY	
		0x01	CONTRAST + Level

			Level:	0***(0x00)***-31***(0x1F)***
		0x02	INVERT + Status	
			Status:	***0x00:*** Off ***0x01:*** On
	0x04	EDIT MARKER		
		0x00	AUTO-CUE THRESHOLD + Threshd	
			Threshd:	***0x00-0x0A:*** -72 dB to –24 dB
	0x05	DISCSPAN		
		0x01	MULTI-MACHINE + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x02	MASTER / SLAVE + Status	
			Status:	***0x00:*** Master ***0x01:*** Slave
		0x03	FADE-IN TIME + Time	
			Time:	1***(0x01)***-10***(0x0A)***
		0x04	FADE-OUT TIME + Time	
			Time:	1***(0x01)***-10***(0x0A)***
		0x05	OVERLAP TIME + Time	
			Time:	***0x00-0x38:*** 4 sec to 60 sec ***0x38-0x40:*** 1 min to 5 min
	0x06	RECORD		
		0x01	RECORD SYNC + Sync	
			Sync:	***0x00:*** Rec Start / Stop ***0x01:*** Rec Start / Stop+Track
		0x02	S / PDIF REC START TRIGGER + Trigger	
			Trigger:	***0x00:*** S / PDIF subcode ***0x01:*** Audio threshold
		0x03	AUTO TRACK ID TRIGGER + Trigger	
			Trigger:	***0x00:*** S / PDIF subcode ***0x01:*** Audio threshold ***0x02:*** Time interval
		0x04	AUDIO THRESHOLD + Threshd	
			Threshd:	***0x00-0x0C:*** -96 dB to –24 dB
		0x05	TRACK LENGTH + Length	
			Length:	***0x00-0x04:*** 1 min to 5 mins
		0x06	AUTO FINALIZE + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x07	DIGITAL OUTPUT FORMAT + Format	
			Format:	***0x00:*** Consumer ***0x01:*** Professional
		0x08	SCMS + Mode	
			Mode:	***0x00:*** Prohibit copy ***0x01:*** Copy once ***0x02:*** Permit copies
		0x09	COPY SPEED + Mode	

			Mode:	***0x00:*** Low ***0x01:*** Medium ***0x02:*** High
	0x07	PARALLEL PORT		
		0x00	PARALLEL PORT + i#1 + ... + i#5 + o#1 + ... + o#3	
		i:	***00:*** Off ***01:*** Play / Pause ***03:*** Record ***04:*** Stop ***05:*** AMS+ ***06:*** AMS- ***07:*** FFwd ***08:*** FRew ***09:*** Eject	
		o:	***00:*** Off ***01:*** Play ***02:*** Pause ***03:*** Record ***0A:*** No disc	
	0x08	GENERAL		
		0x01	EJECT BLOCK + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x02	TIMER + Status	
			Status:	***0x00:*** Off ***0x01:*** Play
0x14	MENU INFORMATION REQ			
	0x01	AUDIO		
		0x01	DIG INPUT LEVEL REQ	
		0x02	INPUT BALANCE REQ	
		0x03	FADE-IN TIME REQ	
		0x04	FADE-OUT TIME REQ	
		0x05	INPUT DITHER REQ	
		0x06	PHONES MIX REQ	
		0x07	OUTPUT MIX REQ	
	0x02	CLOCK		
		0x00	CLOCK SOURCE REQ	
	0x03	DISPLAY		
		0x01	CONTRAST REQ	
		0x02	INVERT REQ	
	0x04	EDIT MARKER		
		0x00	AUTO-CUE THRESHOLD REQ	
	0x05	DISCSPAN		
		0x01	MULTI-MACHINE REQ	
		0x02	MASTER / SLAVE REQ	
		0x03	FADE-IN TIME REQ	
		0x04	FADE-OUT TIME REQ	

		0x05	OVERLAP TIME REQ
	0x06	RECORD	
		0x01	RECORD SYNC REQ
		0x02	S/PDIF REC START TRIGGER REQ
		0x03	AUTO TRACK ID TRIGGER REQ
		0x04	AUDIO THRESHOLD REQ
		0x05	TRACK LENGTH REQ
		0x06	AUTO FINALIZE REQ
		0x07	DIGITAL OUTPUT FORMAT REQ
		0x08	SCMS REQ
		0x09	COPY SPEED REQ
	0x07	PARALLEL PORT	
		0x00	PARALLEL PORT REQ
	0x08	GENERAL	
		0x01	EJECT BLOCK REQ
		0x02	TIMER REQ
0x20	INFORMATION REQ		
	0x20	STATUS DATA REQ	
	0x21	DISC DATA REQ	
	0x22	MODEL NAME REQ	
	0x23	SOFTWARE VERSION REQ	
	0x44	TOC DATA REQ + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	0x45	TRACK TIME DATA REQ + Disc# + Track#	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
	0xAA	CD-TEXT REQ + Disc# + Track#	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***

6.4. CDR-882 → PC

5th Byte	6th Byte	After 7th Byte	
0x07	ACKNOWLEDGE		
	0x07	ACKNOWLEDGE + Cmd1 + Cmd2 + Cmd3 + Info	
		Cmd1:	First byte of the command acknowledged
		Cmd2:	Second byte of the command acknowledged
		Cmd3:	Third byte of the command acknowledged
		Info:	***0x00:*** Executed w/o problem
			0x01: Not executed. Undefined command.
			0x02: Not executed. No disc.
			0x03: Not executed. Impossible.
0x13	MENU INFORMATION		
	0x01	AUDIO	
		0x01	DIG INPUT LEVEL + Level
			Level: ***0x00***: Off ***0x01-0x03:*** -60 to –48 dB ***0x03-0x0B:*** -48 to -24 dB ***0x0B-0x17:*** -24 to -12 dB ***0x17-0x47:*** -12 to +12 dB ***0x47-0x4F:*** +12 to +20 dB
		0x02	INPUT BALANCE + Balance
			Balance: 0***(0x00)***-40***(0x28):*** L=00.0 dB/R=-10.0 dB to L=-10.0 dB/R=00.0 dB
		0x03	FADE-IN TIME + Time
			Time: ***0x00-0x09:*** 1 sec to 10 sec
		0x04	FADE-OUT TIME + Time
			Time: ***0x00-0x09:*** 1 sec to 10 sec
		0x05	INPUT DITHER + Status
			Status: ***0x00:*** Off ***0x01:*** Auto
		0x06	PHONES MIX + Mix
			Mix: ***0x00:*** Priority CD1 ***0x01:*** Priority CD2 ***0x02:*** 1+2 ***0x03:*** 1+2 (-6 dB)
		0x07	OUTPUT MIX + Mix
			Mix: ***0x00:*** Priority CD1 ***0x01:*** Priority CD2 ***0x02:*** 1+2 ***0x03:*** 1+2 (-6 dB) ***0x04:*** As phones
	0x02	CLOCK	
		0x00	CLOCK SOURCE + Src + Present
			Src: ***0x01:*** Internal ***0x02:*** Wordclock ***0x03:*** Digital input

			Present:	***0x00:*** Clock not present ***0x01:*** Clock present
	0x03	DISPLAY		
		0x01	CONTRAST + Level	
			Level:	0***(0x00)***-31***(0x1F)***
		0x02	INVERT + Status	
			Status:	***0x00:*** Off ***0x01:*** On
	0x04	EDIT MARKER		
		0x00	AUTO-CUE THRESHOLD + Threshd	
			Threshd:	***0x00-0x0A:*** -72 dB to –24 dB
	0x05	DISCSPAN		
		0x01	MULTI-MACHINE + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x02	MASTER / SLAVE + Status	
			Status:	***0x00:*** Master ***0x01:*** Slave
		0x03	FADE-IN TIME + Time	
			Time:	1***(0x01)***-10***(0x0A)***
		0x04	FADE-OUT TIME + Time	
			Time:	1***(0x01)***-10***(0x0A)***
		0x05	OVERLAP TIME + Time	
			Time:	***0x00-0x38:*** 4 sec to 60 sec ***0x38-0x40:*** 1 min to 5 min
	0x06	RECORD		
		0x01	RECORD SYNC + Sync	
			Sync:	***0x00:*** Rec Start / Stop ***0x01:*** Rec Start / Stop
		0x02	S / PDIF REC START TRIGGER + Trigger	
			Trigger:	***0x00:*** S / PDIF subcode ***0x01:*** Audio threshold
		0x03	AUDIO TRACK ID TRIGGER + Trigger	
			Trigger:	***0x00:*** S / PDIF subcode ***0x01:*** Audio threshold ***0x02:*** Time interval
		0x04	AUDIO THRESHOLD + Threshd	
			Threshd:	***0x00-0x0C:*** -96 dB to –24 dB
		0x05	TRACK LENGTH + Length	
			Length:	***0x00-0x04:*** 1 min to 5 mins
		0x06	AUTO FINALIZE + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x07	DIGITAL OUTPUT FORMAT + Format	
			Format:	***0x00:*** Consumer ***0x01:*** Professional
		0x08	SCMS + Mode	

			Mode:	***0x00:*** Prohibit copy ***0x01:*** Copy once ***0x02:*** Permit copies
	0x07	PARALLEL PORT		
		0x00	PARALLEL PORT + i#1 + ... + i#5 + o#1 + ... + o#3	
		i:	***00:*** Off ***01:*** Play / Pause ***03:*** Record ***04:*** Stop ***05:*** AMS+ ***06:*** AMS- ***07:*** FFwd ***08:*** FRew ***09:*** Eject	
		o:	***00:*** Off ***01:*** Play ***02:*** Pause ***03:*** Record ***0A:*** No disc	
	0x08	GENERAL		
		0x01	EJECT BLOCK + Status	
			Status:	***0x00:*** Off ***0x01:*** On
		0x02	TIMER + Status	
			Status:	***0x00:*** Off ***0x01:*** Play
0x20	INFORMATION			
	0x20	STATUS DATA + Data1 + Data2 + Data3 + Track#1 + Track#2		
		Data1:	b7-b5	***000 (fixed)***
			b4-b3:	***00:*** Single mode ***01:*** DualBurn mode ***10:*** DiscSpan mode
			b2-b1:	***00:*** Auto-Cue / Pause Off ***01:*** Auto-Cue ***10:*** Auto-Pause
			b0:	***0:*** Program mode off ***1:*** Program mode on
		Data2:	b7-b5	***000 (fixed)***
			b4:	***0:*** Monitor off ***1:*** Monitor on
			b3-b1:	***000:*** Analogue balanced ***001:*** Analogue unbalanced ***010:*** Digital AES / EBU ***011:*** Digital (Co-axial) ***100:*** Digital (Optical)
			b0:	***0:*** Disc#1 selected ***1:*** Disc#2 selected

		Data3:	b7-b4 (Disc#1):	***0000:*** Stop ***0001:*** Play ***0010:*** Pause ***0011:*** FFWD Pause ***0100:*** FREW Pause ***0101:*** REC Armed ***0110:*** Record ***0111:*** FFWD Play ***1000:*** FREW Play ***1001:*** Next ***1010:*** Previous
			b3-b0 (Disc#2):	***0000:*** Stop ***0001:*** Play ***0010:*** Pause ***0011:*** FFWD Pause ***0100:*** FREW Pause ***0101:*** REC Armed ***0110:*** Record ***0111:*** FFWD Play ***1000:*** FREW Play ***1001:*** Next ***1010:*** Previous
		Track#1:	1***(0x00)***-99***(0x62)***	
		Track#2:	1***(0x00)***-99***(0x62)***	
	0x21	DISC DATA + DiscData		
		DiscData	b7: (Disc#1)	***0:*** No disc ***1:*** Disc exists
			b6: (Disc#1)	***0:*** Finalised ***1:*** Unfinalised
			b5-b4: (Disc#1)	***00:*** CD ***01:*** CD-R ***10:*** CD-RW ***11:*** Unknown
			b3: (Disc#2)	***0:*** No disc ***1:*** Disc exists
			b2: (Disc#2)	***0:*** Finalised ***1:*** Unfinalised
			b1-b0: (Disc#2)	***00:*** CD ***01:*** CD-R ***10:*** CD-RW ***11:*** Unknown
	0x22	MODEL NAME + ModelName		
		ModelName: “HHB CDR-882”		
	0x23	SOFTWARE VERSION + Option + Version		
		Option:	***0x01:*** CDR-882 ***0x02:*** Drive 1 ***0x03:*** Drive 2 ***0x04:*** CPLD	

		Version:	Firmware version as Ascii data
	0x50	TRACK CHANGE + Disc# + Track# + Min + Sec	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
	0x51	ELAPSED TIME + Disc# + Track# + Min + Sec	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
	0x60	TOC DATA + Disc# + FirstTrack# + LastTrack# + Min + Sec	
		Disc#:	1***(0x00)***-2***(0x01)***
		FTrack#:	1***(0x00)***-99***(0x62)***
		LTrack#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
	0x62	TRACK TIME DATA + Disc# + Track# + Min + Sec	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
	0x83	TRACK END	
	0x84	TRACK LAST 30 SEC	
	0x93	NO DISC + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	0x95	DISC EXISTS + Disc#	
		Disc#:	1***(0x00)***-2***(0x01)***
	0xA0	MARK POSITION + Disc# + Track# + Min + Sec + Frame	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Min:	0***(0x00)***-99***(0x63)***
		Sec:	0***(0x00)***-59***(0x3B)***
		Frame:	0***(0x00)***-74***(0x4A)***
	0xA1	CD-TEXT ARTIST + Disc# + Track# + Artist	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Artist:	Artist name
	0xA2	CD-TEXT ALBUM + Disc# + Track# + Album	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Album:	Album name
	0xA3	CD-TEXT TRACK + Disc# + Track# + Track	
		Disc#:	1***(0x00)***-2***(0x01)***
		Track#:	1***(0x00)***-99***(0x62)***
		Track:	Track name