D10 SACD/CD transport

User Manual

V1.1

Dear Client,

We are honored that you have chosen the CH D10 SACD/CD transport. Our team has put all of our efforts into designing and manufacturing this top quality versatile and future-proof product and is proud to present it to you. We hope your D10 will bring you uncountable hours of emotion from your musical collection.

But before starting your musical journey, we kindly ask you to pay attention to the information contained in this manual. The D10, as you will discover in the following pages, is a Swiss precision product designed for ultimate performance and flexibility. However, reaching sonic excellence requires your unit to be setup and operated correctly and this is what this manual is all about. If you have any questions or require assistance, please don't hesitate to contact your authorized dealer.

We hope you will enjoy your D10 SACD/CD transport for many years.

The Concert has just begun...

Cossy F.

Table of contents

1 Introduction

CH products are designed and manufactured in Switzerland by CH Precision Sàrl. We use sophisticated digital processing combined with fully discrete, fully balanced, fully complementary, ultra-short signal path analog circuitry and extensive software monitoring and control to ensure the highest possible levels of performance, operational consistency and versatility.

As a result, your D10 offers a number of operational features that are unique and probably unfamiliar. For that reason it is essential that you fully understand every aspect of the D10's operation and options if you are to enjoy its maximum possible performance.

As a 'card-cage' design, users can specify how many digital outputs they require when ordering the D10, or can add additional digital output at a later date as required. The D10 can also be combined with the T10 Time Reference clock, allowing users to enhance or expand performance according to their musical needs and ambitions. The basic instructions for handling and placing the units are identical in all cases.

D10 SACD/CD transport

2 Installation guide

This manual will lead you through each step of the installation and setup procedure, in a clear and logical sequence. Although the operation and options might seem complex, they will quickly become second nature;

However, because of the sheer range of options available it is easy to overlook something unless you approach setup and configuration in a systematic way. If you take the time to follow the manual, it will ensure that you become completely familiar with the D10's many options and that your SACD/CD transport delivers the best possible performance.

2.1 General safety notice

Make sure to observe the following rules:

- Always handle with care. The D10 units are very heavy, so have someone help you when moving them around. Improper handling of the load could lead to risk of injury.
- Install your D10 on a stable base.
- Do not install your D10 unit near water.
- Do not expose the unit to any kind of liquid.
- Use only a fully grounded AC power cord (with – live, neutral and ground).
- The building as well as the socket on which the D10 will be installed must be connected to earth.

- Do not install in direct sun light or near any heat source such as radiators or other sources of significant heat.
- Do not install in a confined space and make sure sufficient air can flow around the unit.
- Do not operate under high ambient temperatures (>35°C) or with extremely high humidity (>85%) such as in humid cellars.
- Only use options and accessories specified or recommended by the manufacturer.
- Do not open the unit nor try to service it by yourself. Do not try to install any option board by yourself. Always refer to a qualified technician for service, maintenance or upgrades. Failure to do so will void the unit's warranty.
- Symbols used:


High Voltage


Physical Earth


Operator's manual


Warning


Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.


Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

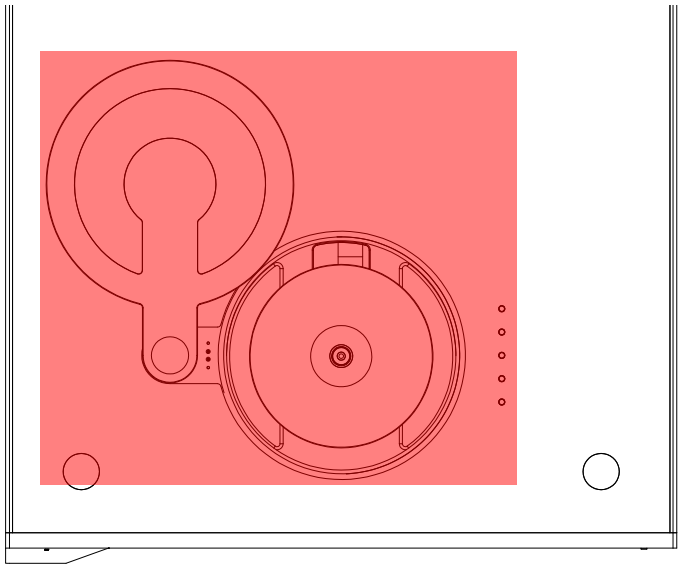

Apparatet må tilkoples jordet stikkontakt.


Apparaten skall anslutas till jordat uttag.

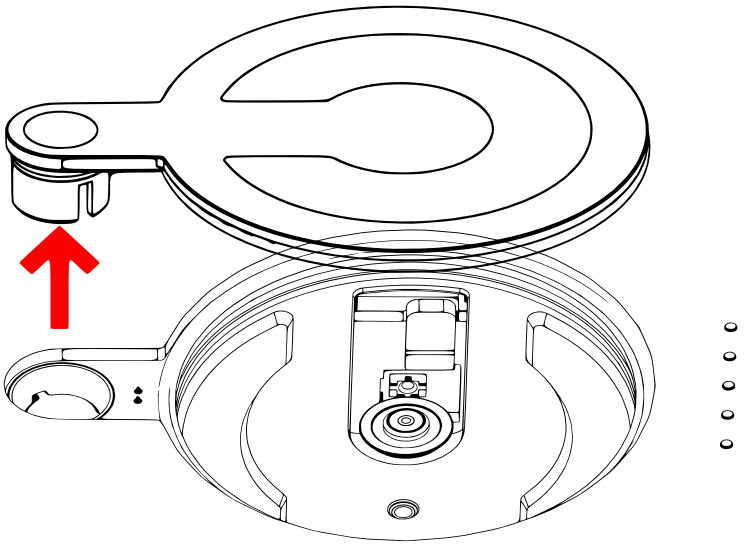
2.2 Door safety notice

The opening hatch is driven by a motor and therefore it is important to observe this important safety points:

- Do not leave any object in the way of opening/closing the lid, nor on the buttons located on the top.



- Make sure the optical disc (SACD or CD) is placed properly inside the D10 before closing the door to avoid damaging it. Please note that a magnetic disc puck is incorporated underneath the lid, ensuring proper clamping of the disc while spinning.
- Do not leave your fingers or any other objects inside the disc chamber when closing the lid.
- Your D10 is equipped with several safety features to avoid pinching injuries related to opening and closing the hatch. In addition to software protection, the hatch is designed to be simply and efficiently detached from the rest of the D10 is necessary.



- To remove the hatch without damaging it, it is important to pull it upwards from the base.

2.3 Unpacking

The D10's cartons are large and contain both the components and all of their accessories. You will need an open, preferably carpeted area in which to unpack them. Please also ensure that the rack or support space on which the D10 will be placed has been cleared and cleaned before you start. At this point it is also worth ensuring that the connectors on any interconnect cables are cleaned and that the power to your system is turned off. Each carton consists of an inner box and outer sleeve. It is easiest to empty one box at a time, before reassembling it to save space.

- Once you open the inner box, remove the User Manual, the Quick Start Guide, the Topology Diagram, the power cord, the small suction cup and the top layer of white foam packaging. Inside you will see the component chassis and various accessories.
- With a helper, carefully lift the D10 out of the box and place it to one side. Then carefully remove the plastic bag in which it is sealed.
- Remove the small, brown Accessory Pack and place it with the D10. Also remove the four composite leveling/grounding spikes. They are inserted into the lower foam and can easily be overlooked.
- We recommend storing the Accessory Pack in a readily accessible place, so don't put it back in the carton with the plastic bag when resealing it.

2.4 Package contents

Your D10 should arrive in two substantial cartons. Once unpacked these cartons and packaging materials should be stored safely in case you ever need to transport your units. When moving or transporting the D10 units, this should always be done in the original packaging.

The audio chassis carton should contain:

- The D10 SACD/CD transport
- A Quick Start Guide and Topology Diagram
- Four two-part titanium/polymer spikes
- A big suction cup (used to remove the four top covers of power supply)
- An accessory box containing:
  - an infrared remote control
  - a spike adjustment screwdriver
  - a Torx T-10 screwdriver
  - four support discs
  - a small suction cup (used to remove the four top covers of D10)
  - a USB stick containing the latest CH Precision firmware

The power supply chassis carton should contain:

- The D10 Power Supply
- Four two-part titanium/polymer spikes
- The mains power cord (adapted to location)
- Two cables to connect the audio unit to its power supply.
- An accessory box containing:
  - four support discs
  - four stacking caps

In case of damage to either D10 chassis or missing components, please contact your authorized dealer immediately. If your D10 units are still very cold from transport, please let them warm up to room temperature in order to avoid condensation developing inside them.

2.5 Placing your D10 and installing the spikes

Before positioning your D10, it is worth taking the time to make a few preliminary decisions.

- Decide which connectors (digital outputs, clock in/out and Ethernet) you will use. Familiarizing yourself with (and making a note of) their position on the rear panel will be extremely useful when you come to actually make connections.
- Decide whether you will use the CH Precision supplied levelling / grounding spikes. If an alternative system is to be used, please note that the lower part of each foot that is held by three screws can be removed to provide an easier access to the M10×1.5 central thread where a third-party system can be attached. Please note that the CH Precision casework is designed to support weight and ground energy in the corners only. If you choose to use third party supports they should be positioned in the same location as the unit's original feet and we do not recommend stacking components except using the supplied spikes and caps. If you still choose to stack them, the D10 being a top loader, it must necessarily be at the top of the stack.
- If you do plan to use the CH spikes, use the small suction cup to remove the four circular covers in the top plate of each unit. Gently insert the titanium composite spikes into each exposed shaft and use the short red screwdriver to turn them enough to engage the threads at the bottom of each spike. Each internal thread is coated with a thin layer of grease during assembly to prevent galling between it and the titanium spike, but adding a thin coating of grease to each thread before insertion is still a good idea, making adjustment easier and more precise.
- Do not screw the spikes in too far at this point or they will protrude from the feet and potentially damage the supporting surface. Do not replace the top-caps yet.
- Check that the voltage selector switch on the unit is set to the correct local voltage and that the power switch is off (the "0" side depressed).

Now you are ready to place your D10. The chassis are very heavy and the feet are fitted with rubber rings to protect the supporting surface, which makes it hard to slide the unit. Having a partner to help lift and place the devices will make things considerably easier.

For performance reasons linked to the radiation of the power supply, it is preferable to keep the power supply chassis and the audio part as far apart as possible.

- Place the power supply and the audio unit in the rack or on their support
- Connect the two power umbilicals between the power supply and the audio unit. Make sure the color tags of the power unit, cable and audio unit match. The plugs on the umbilicals will only connect in one position (when the dot on the cable and the one on the socket align), so turn the connector in the socket until you feel it engage and then gently push it home until you hear a locking sound (Chapiter 3.3).

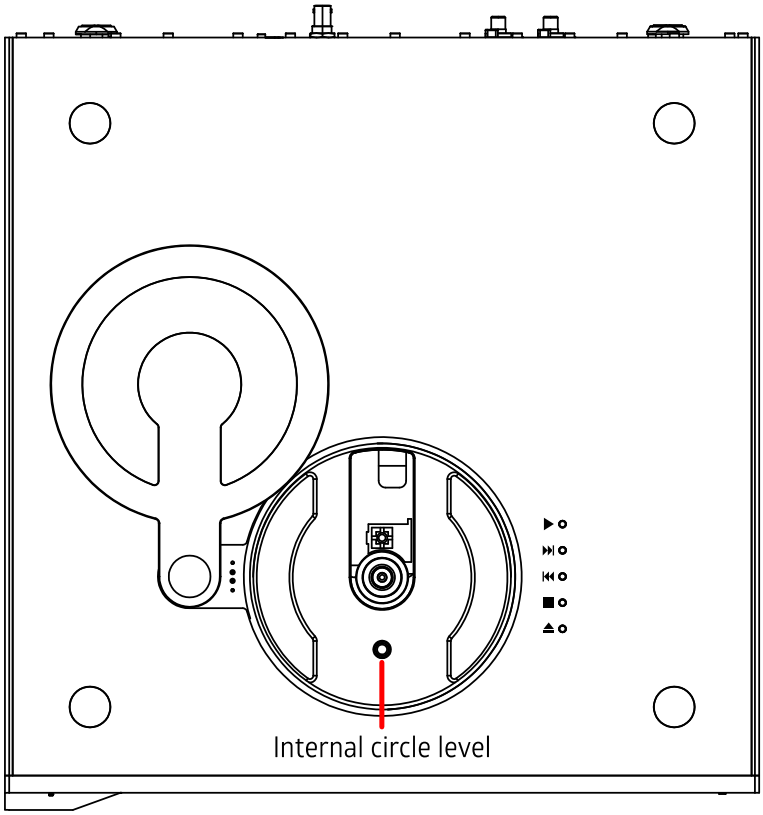
DO NOT force the umbilical connectors into the sockets.

This will risk damaging the connecting pins and damage your D10.

- If you feel resistance when you insert the connector, check that you are trying to connect the proper pairs of umbilicals and connectors together. Please note that the two connectors have the same diameter but a different number of pins, so it is not possible to plug an umbilical in the wrong connector.
- Each D10 chassis is supplied with a set of four support discs. These have a groove machined in the upper face that fits over the rubber ring in the underside of each foot. Lift each corner of the chassis in turn and

position the disc beneath each foot. The groove that interfaces with the rubber ring will ensure that the footer disc stays in place if you slide the unit.

- As well as making the units easier to position, the support discs can also offer a superior interface between the grounding spikes and the supporting surface. The spikes are designed to drain internally generated energy away from sensitive circuitry and into a dispersive support structure, but if the supporting surface is extremely hard or forms an impedance mismatch with the spike tips, the material and footprint of the support discs can function as a lossy mechanical buffer, easing the passage of mechanical energy out of the unit. As a rule, the support discs work well with very hard surfaces, but results will vary with system and supporting surface. Once set up and warmed up, compare the sound of the unit(s) with and without the discs in place.
- Use the red screwdriver to wind down each of the four spikes until you feel that they touch the surface underneath. You will feel a slight resistance due to the chassis' weight. Then turn each spike by the same amount, for instance one more full turn. This should ensure that the load is evenly applied on all four spikes.
- It is worth using the circular spirit level on the D10 to ensure that the disc transport mechanism is perfectly level. If it is not, adjust the spikes with the screwdriver. Once this is done, simply check that all four spikes show the same resistance to turning. This means that the spikes are rigidly coupled to the supporting surface/discs and equally loaded.



Internal circular level of the D10

- Replace the top caps, pushing them all the way in their compartments. Their upper surface will be then align with the top surface of your D10 and they will hold in place thanks to the pressure applied by the elastomer ring to the wall of the compartment. The provided small suction cap is required to remove them.

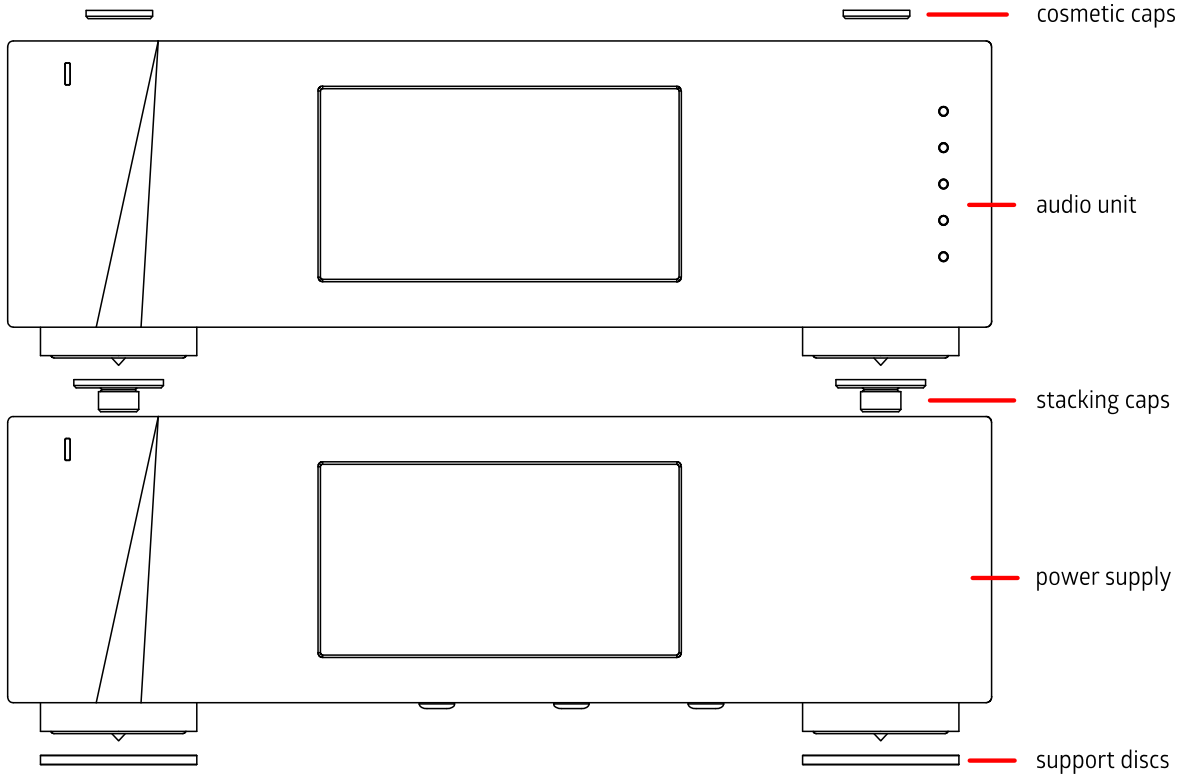
2.6 Stacking the D10 (or not)

Also included in the accessory packs is a set of stacking caps. These polymer inserts allow owners to stack the D10 chassis on top of other CH 1/10 Series components. The spikes and interface caps will ensure mechanical grounding of the stacked chassis. However, this will inevitably compromise performance to some extent and should only be done when space is at an absolute premium.

The optimum support for any CH unit is to mechanically ground it to a stable, dispersive structure, either using the supplied spikes or an after-market solution. If lack of space absolutely mandates the stacking of CH components, then using the supplied spikes and stacking caps will provide the best possible solution.

The stacking caps simply screw into the top of the spike wells, taking the place of the cosmetic caps. When a second unit is stacked on top of them, its spikes can be wound down into the wells in the caps, providing a stable, safe and easily managed stacking option that improves mechanical termination and satisfies aesthetic and practical considerations. Make sure that you retain the cosmetic top caps and store them safely as you may well require them in the future if (or rather, when) your system or circumstances change.

Stacking the D10



3 Power Supply

All CH Precision 10 Series are created with optimized, dedicated external power supplies. This design allows for much better performance. It is important to connect the power supply to the audio unit carefully.

In this chapter you can find all the information related to the power supply of your D10:

- Mains supply
- Fuses and operating voltage
- Audio unit to power supply connection.

3.1 Mains supply

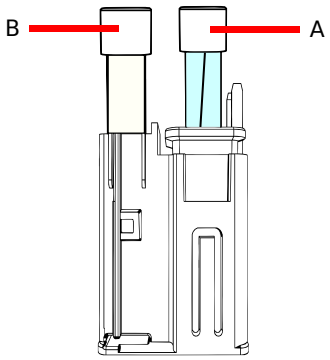
The D10 includes the power cord for your region. If you wish to use another power cord, make sure to use a fully grounded AC power cord (one with three terminals – live, neutral and ground).
Make sure that the mains voltage selection of the unit matches your local mains voltage.

Make sure your D10 power supply is disconnected from the AC supply/wall socket in the following cases:

- When making connections (we also recommended disconnecting the rest of the system from the AC supply when installing signal and speaker cables).
- When cleaning.
- During thunder storms.
- When left unused for a long period.
- Ensure that the AC supply socket to which the unit is connected is accessible.

3.2 Fuses and operating voltage

To change the fuses, switch off the D10 and remove the power cable.
The fuse holder is located to the right of the IEC power input.



Fuse values vary with operating voltage:

- 230VAC – Fuse A : T50mA/250Vac. Fuse B : T2.5A/250Vac
- 100/115VAC – Fuse A : T100mA/250Vac. Fuse B : T5A/250Vac

Never change the selectable voltage during operation.
To change operating voltage, switch off the D10 and remove the power cable.

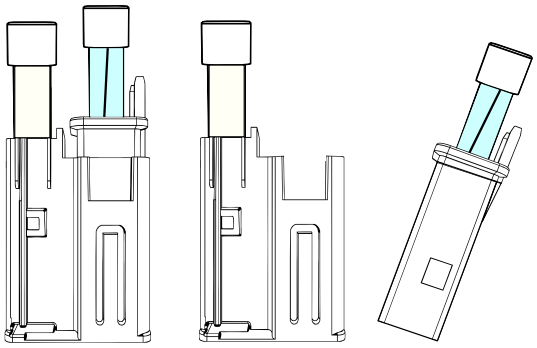
Before changing the operating voltage first check the local voltage.

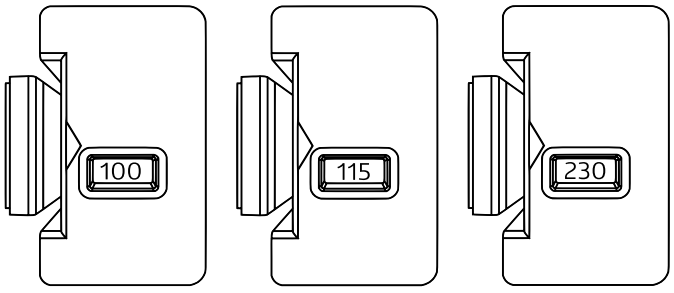
To change the operating voltage, remove the fuse holder from the D10 chassis.

Fuse A (see picture above) is located in a sleeve that can be slid out of the body of the fuse holder: by turning the sleeve and reinserting it, the orientation of the contact pins is altered, switching the operating voltage. The selected voltage will appear in the small window in the base of the fuse holder.

Make sure that if required, you change the fuse values to match the new voltage (as above).

You can now reinsert the fuse holder.





Voltage selector adjustment

The D10 will be delivered to you with a voltage setting already defined according to the “normal” voltage in your country. If you use a different voltage, it is your responsability to ensure that you have the correct voltage setting.

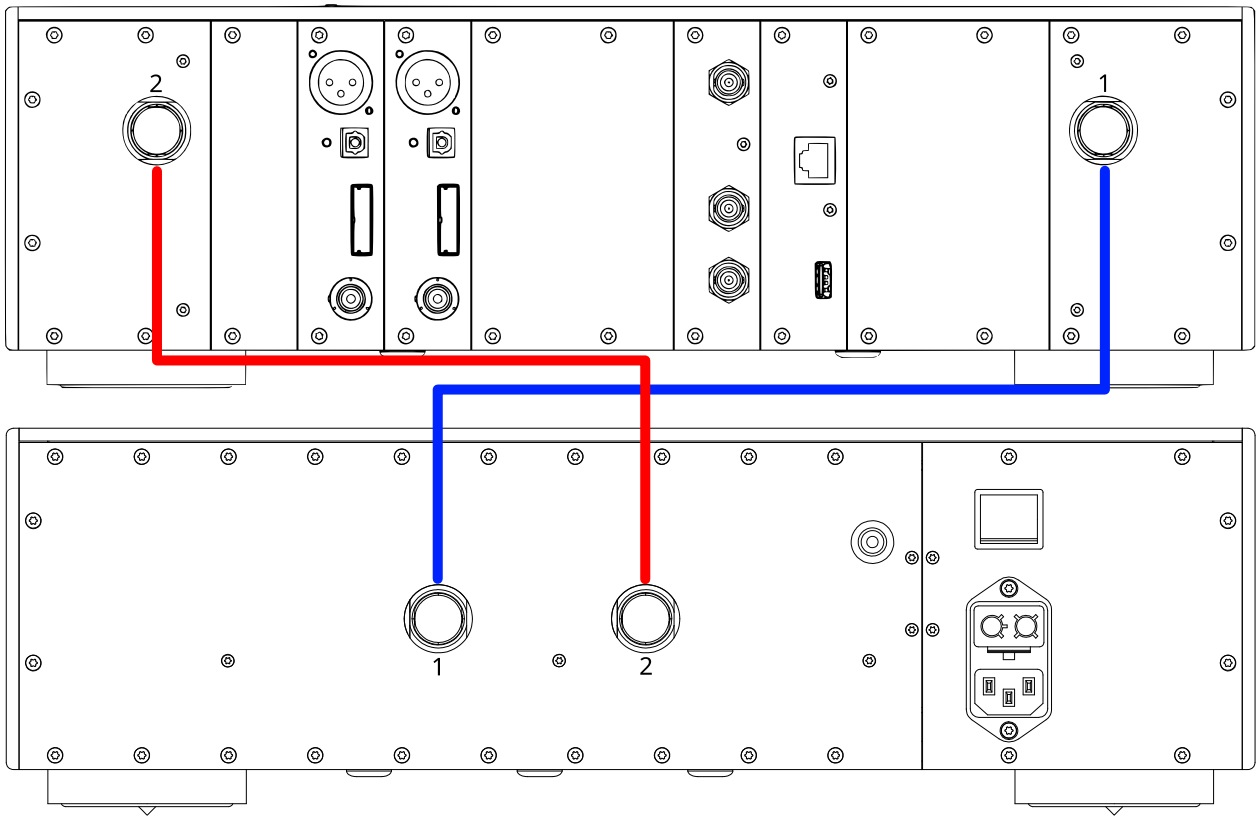
3.3 Audio unit to power supply connection

3.3.1 Power wiring

For proper connection of your power supply, follow the wiring below.

① Motor Power Supply (labeled Analog Power Supply on the PSU), 12 pins, Blue

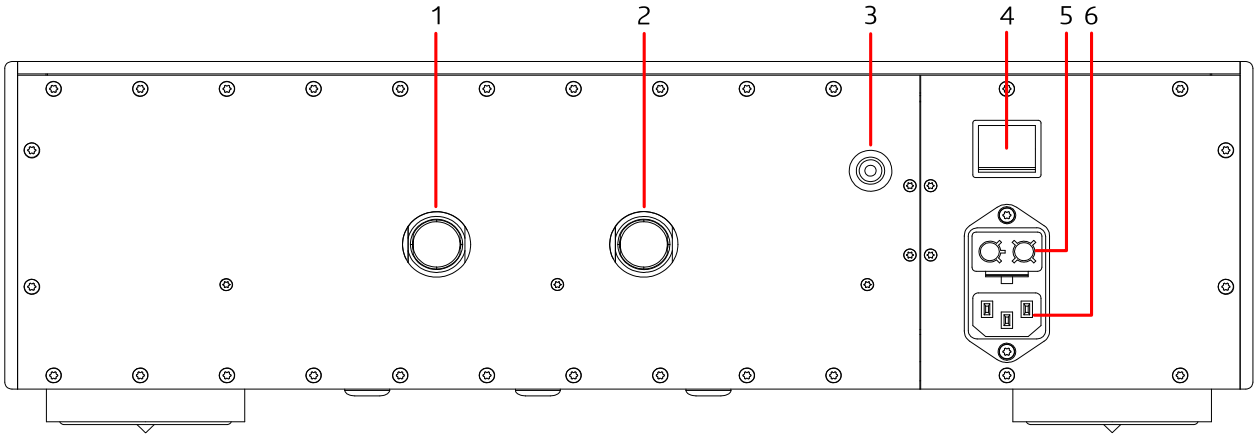
② Audio Power Supply (labeled Control Power Supply on the PSU), 18 pins, Red



D10 power scheme

4 Connections

You are now ready to connect your D10 to your system. Given the differences between systems and the modular nature of the D10, with its range of options, your DAC and system configuration will almost certainly differ from the example below. However, we have selected a 'fully-loaded' D10 to show the widest range of connections.

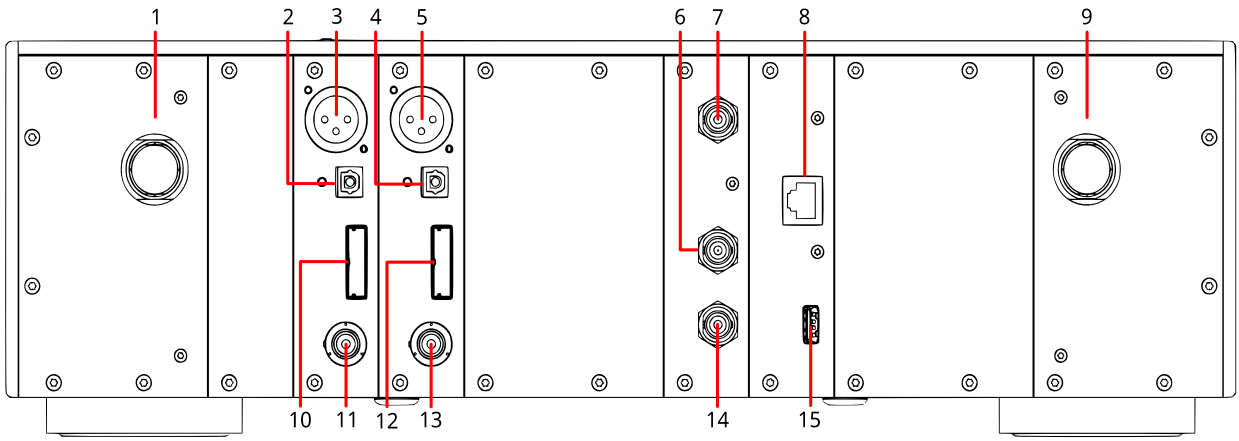


Rear panel connections, power supply part

1. Motor Power Supply (labeled Analog Power Supply)
2. Audio Power Supply (labeled Control Power Supply
3. Digital ground / chassis earth connector. Can be used as an earth reference voltage level
4. Power on/off switch
5. Power fuse and voltage selection
6. Power cord socket

WARNING

The ground sockets (yellow/green) are not used to transfer power. It should only be used as a reference voltage level.



Rear panel connections, audio part

1. Audio power supply
2. TOSLINK (S/PDIF) optical digital output [DIGITAL_OUT_HD board, here fitted in Slot 2]
3. AES-EBU digital output [DIGITAL_OUT_HD board, here fitted in Slot 2]
4. TOSLINK (S/PDIF) optical digital output [optional DIGITAL_OUT_HD board, here fitted in Slot 1]
5. AES-EBU digital output [optional DIGITAL_OUT_HD board, here fitted in Slot 1]
6. BNC 75 Ω clock output 1. [optional CLOCK_SYNC board]
7. BNC clock input. Provides 75Ω or 50Ω input. [optional CLOC_SYNC board]
8. Ethernet port for command interface [CONTROL board]
9. Motor power supply.
10. CH Link HD digital output [DIGITAL_OUT_HD board, here fitted in Slot 2]
11. Coaxial (S/PDIF) digital output [DIGITAL_IN_HD board, here fitted in Slot 2]
12. CH Link HD digital output [optional DIGITAL_OUT_HD board, here fitted in Slot 1]
13. Coaxial (S/PDIF) digital output [optional DIGITAL_IN_HD board, here fitted in Slot 1]
14. BNC 75 Ω clock output 2. [optional CLOCK_SYNC board]
15. USB port for software upgrades. [CONTROL board]

4.1 CONTROL BOARD

This has an Ethernet socket to allow connection to the CH Control app via the system control network, which allows remote control of all system parameters via a compatible tablet. Once again, CONTROL BOARD includes a USB type A socket to enable Firmware upgrades using the supplied USB stick. It does NOT facilitate USB file replay.

4.2 DIGITAL-OUT HD

Your D10 comes factory fitted with one DIGITAL-OUT HD board. This gives you connections for balanced digital (AES/EBU on XLR), coaxial digital (S/PDIF on RCA), optical (S/PDIF on TosLink) and our proprietary CH-LINK HD high-resolution digital output. A second DIGITAL-OUT HD board can optionally be added if needed.

The three standard audio connectors can output different audio data formats and rates, depending on the type of optical disc being played back (red-book CD, MQA-CD, or SACD). The CH Link HD outputs the raw audio data in I²S form over LVDS transmissions lines. For SACD playback, the standard digital audio connectors can be configured to convert the DSD stream to various rates of PCM (44.1, 88.2 or 176.4 kHz), or to encapsulate the 1-bit stream in a PCM frame (DSD over PCM, DoP).

4.3 CLOCK_SYNC

The CLOCK_SYNC board allows for external clock synchronization, either with an external master clock (such as the T1/T10 Time Reference) or with a second unit with a clock synchronization capability.

The CLOCK_SYNC board provides a BNC clock input that can be terminated at 75 Ω (recommended with the CH Precision T1/T10) or at 50 Ω through the D10's menu. Supported input frequencies on this connector are all standard audio Wordclocks (44.1, 48, 88.2, 96, 176.4 192, 352.8, 384, 705.6 and 768 kHz), audio Masterclocks (22.5792 and 24.576 MHz), DSD bitclock (2.8224 MHz) and atomic-clock multiples (100 kHz and 10 MHz).

The CLOCK_SYNC board also provides a pair of 75 Ω clock output connectors. Use these connectors to synchronize an external device to your D10. The use of high-quality, genuine 75Ω or 50Ω BNC cables will also help maximize performance.

4.4 Power cord receptacle and voltage selection

Make sure that the voltage selection is set to the correct value with respect to the AC voltage in your location and that the power switch is in the Off position (0 side of the switch depressed). Connect the IEC plug to the power cord receptacle and plug the power plug into the AC wall outlet or distribution block.

4.5 Electrical grounding

The grounding switch allows owners to combine or separate the signal and chassis ground. In any audio system, it is generally best to connect the signal ground to the chassis grounds at one point only, usually in the preamplifier, in order to break ground loops and kill potential hum.

4.6 A word about cables...

Although it is now widely accepted that audiophiles cables can make a valuable contribution to system performance, there is still one aspect of system cabling where many users remain skeptical. There is a widely held belief that digital cables “only carry ones and zeros” and that therefore they can’t make a difference. This is not the case. Digital cables actually carry voltage square waves (an analog signal) and are thus not only prone to distortion but different forms of distortion to the conventional analog cables in your system. They are particularly susceptible to impedance variation and yet few low-grade digital cables achieve much better than ±10% tolerance when it comes to their impedance rating, while the number of audiophile connectors that comply with 75Ω or 110Ω digital connection standards is vanishingly small.

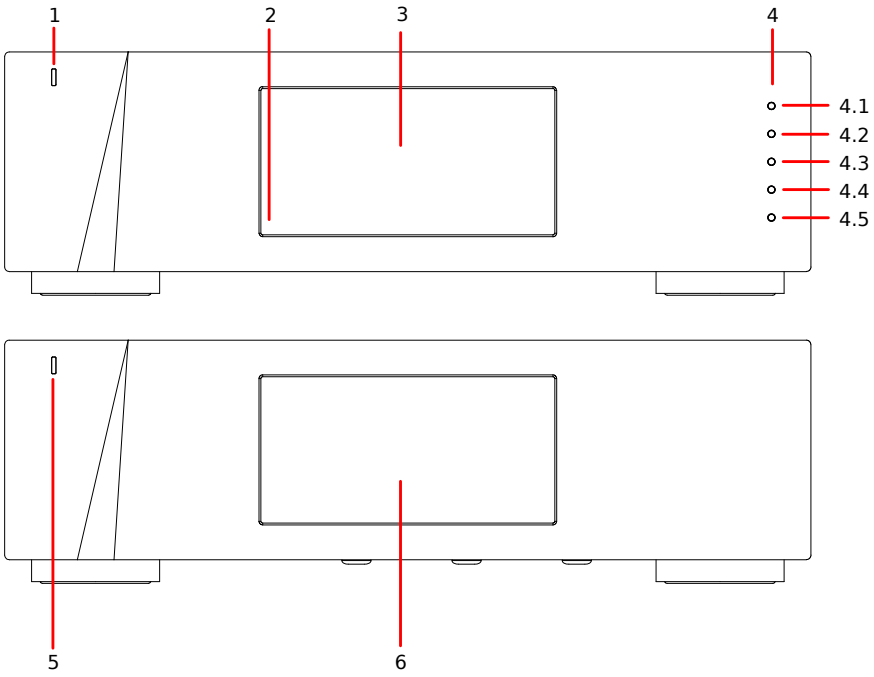
Our CH-LINK HD is carefully engineered to maximize performance when it comes to digital data transfer. If you are using the AES/EBU, S/PDIF or TosLink outputs to your D10, or using clock cables between units, then we strongly advise that you experiment or consult with your dealer over your choice of cables. Using high-quality, properly engineered digital cabling with accurately realized impedance characteristics cannot increase the performance of the D10 – but using poor quality digital cabling will definitely erode performance and undermine your investment.

5 Operation

The D10 SACD/CD transport can be operated from the front and top panels, from the IR remote control or from CH Control app. Feedback to the user is provided by a high-definition display with customizable colors. Setup operations are handled from the front panel or the CH Control Android app.

5.1 Front panel controls

5.1.1 Front panel



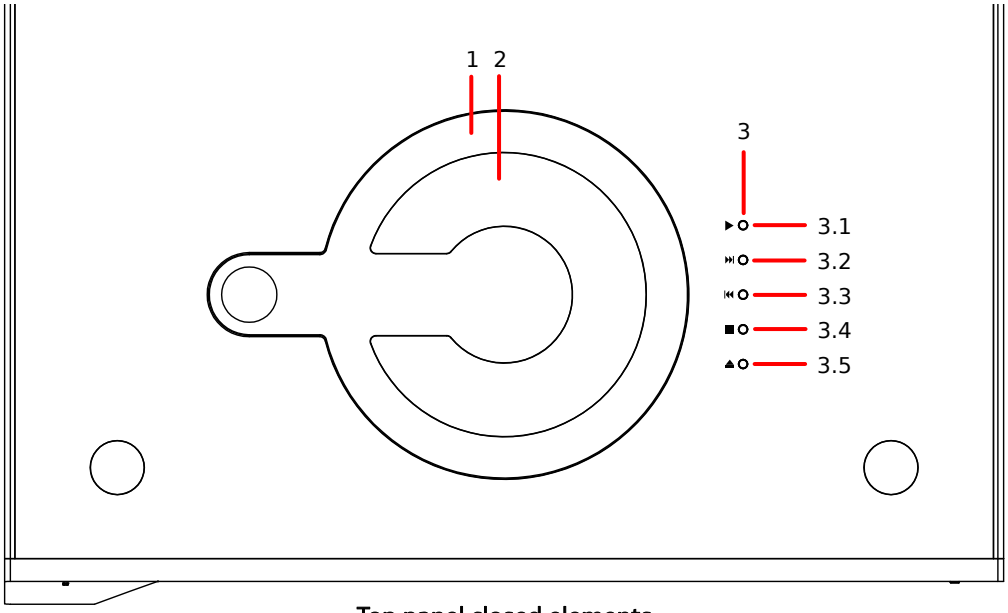
Front panel elements

1. Standby LED (audio chassis)
2. IR remote control receiver
3. Display area (high-definition AMOLED display)
4. Menu control knobs (Normal push → NP/Long push → LP)
   - 4.1 Mute (NP) / Operate/standby (LP)
   - 4.2 Up
   - 4.3 Next/OK
   - 4.4 Down
   - 4.5 Cancel/Exit
5. Standby LED (power supply chassis)
6. Cosmetic display (nothing to display)

The standby LED lights up when the unit is in standby. It is normally turned-off during operation and lights briefly whenever it receives a valid IR remote control command. The LED can also be programmed to remain on during operation. The display is a high-definition 24-bit RGB panel with a very wide viewing angle, high contrast and high brightness that ensure optimal legibility. The color and brightness of the display can be configured according to the user's taste/requirements and different colors can be chosen for PCM, DSD, MQA and MQA Studio.

5.2 Top panel controls

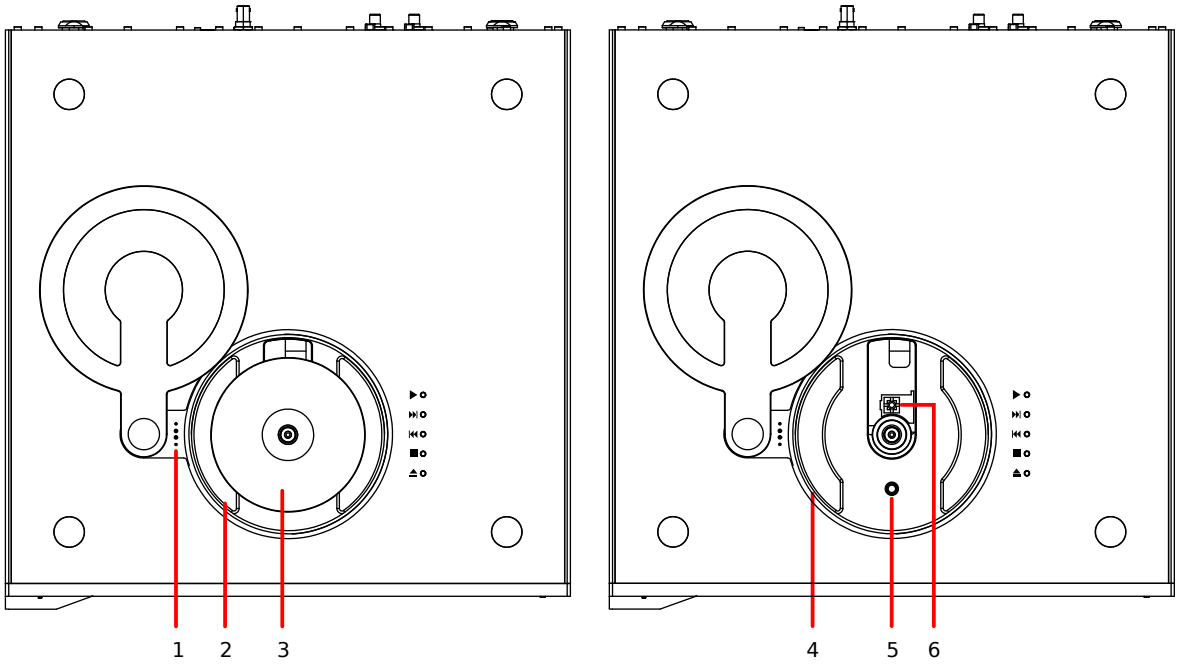
5.2.1 Closed disc vault



Top panel closed elements

1. Vault door
2. Dark-tinted window
3. Disc control knobs
    - 3.1 Play/Pause
    - 3.2 Next track
    - 3.3 Previous track
    - 3.4 Stop
    - 3.5 Open/Close vault door

5.2.2 Open disc vault



Top panel open elements

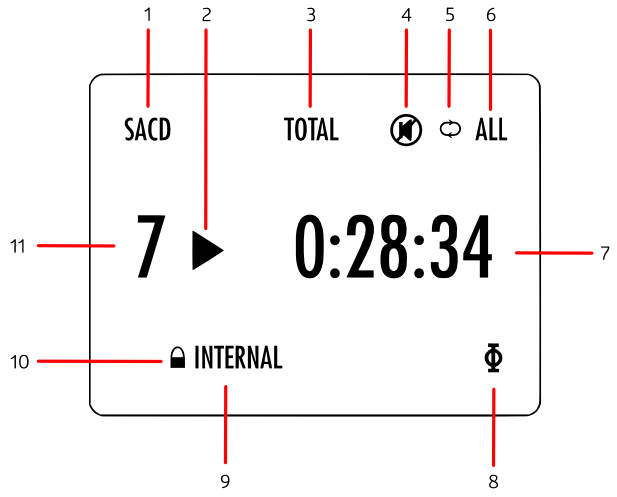
1. End-position sensor
2. Disc placement and retrieval slot
3. Optical disc (SACD or CD)
4. Vault illumination
5. Circular spirit level to adjust the transport mechanism's horizontality
6. Optical reading lens

5.3 Operating modes

The D10 SACD/CD transport has two main operating modes: Status mode and Menu mode. Status mode is used to access standard transport controls (play, pause, mute,...) whereas Menu mode is used to configure the unit. The D10 also includes Shortcuts for quick access to selected Menu mode items. Shortcuts are user programmable and most Menu mode items can be selected as Shortcuts.

5.3.1 Status mode

Status mode is used for displaying the standard SACD/CD transport functions. When powered-on, the D10 starts in Status display mode. The display looks as follows:



Status mode elements

1. Disc layer selected (**SACD** or **CD**). Also shows when **MQA** or **MQA Studio** is detected and decoded.
2. Playing status indication.
3. Time display mode. Indicates **TOTAL** if time information is relative to the whole disc.
4. Mute indication. If the symbol is present, the output is muted.
5. Repeat indication. If the symbol is present, repeat mode is engaged.
6. Repeat type. If repeat is for the whole disc, the indication ALL is activated.
7. Current time. Negative time indicates remaining time (either for track or for disc).
8. Polarity (phase) indication. If the Φ symbol is present, polarity is reversed.
9. Clock source indication.
10. Lock indication (or). Indicates if the unit is locked to a clock source or not.
11. Track number.

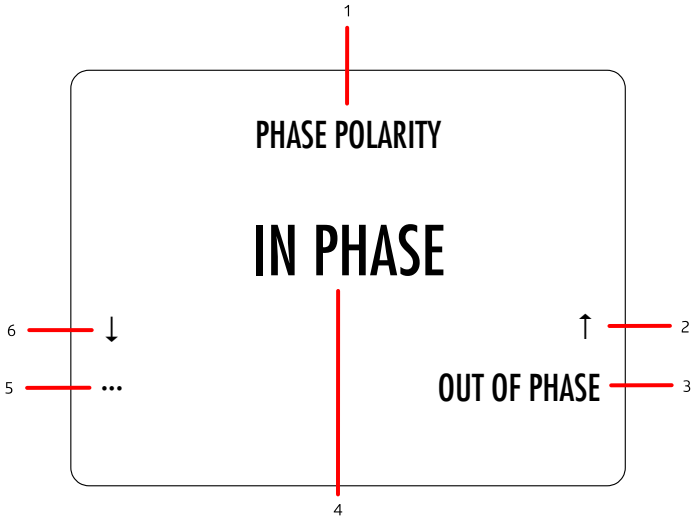
The items displayed depend on user settings. In the example above, the D10 is playing an SACD, repeating the whole album. The output is muted. The D10 is clock master, running its internal DCXO clock at a fixed frequency. The polarity of the audio signal is reversed.

5.3.2 Shortcuts

The D10 SACD/CD transport is configured by a set of menus as described in the next sections. To allow quick access to the most frequently used configuration menu items, the D10 offers the concept of Shortcuts. Shortcuts are fully programmable and you may choose any configuration parameter as a Shortcut. To learn how to program individual Shortcuts, please refer to the SHORTCUTS menu item in the next section.

Shortcuts are accessed from Status mode by pressing the "Ok" button. Press the “OK” button again to move to the next shortcut. The last Shortcut is always dedicated to accessing Menu mode (Setup). On the last shortcut, "Cancel" button will return to normal mode and "Ok" button will enter Menu mode. The individual setting of a given shortcut is changed using the "Up" and "Down" button. If there is no user action for approximately 10 seconds, the unit will return to normal mode.

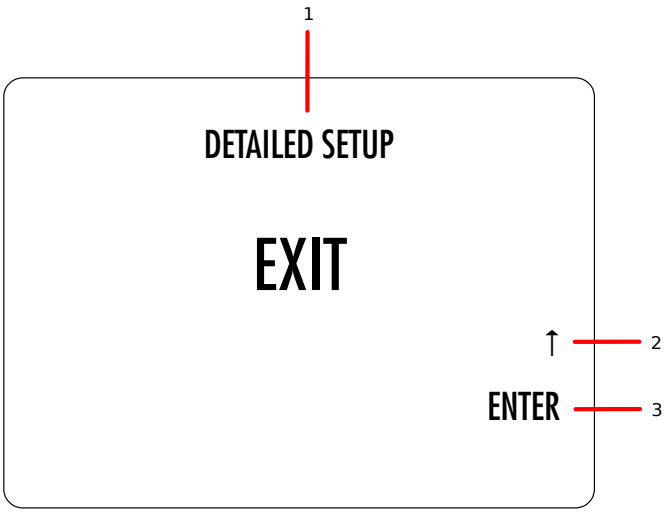
The PHASE POLARITY Shortcut gives a good illustration of how to navigate a Shortcut screen. Navigating other Shortcuts is similar.



Phase polarity Shortcut elements

1. Shortcut title (parameter, for other Shortcuts, title changes accordingly)
2. Arrow "Up" indicating next value, if applicable.
3. Next parameter value if “Up” button is applied (parameter up)
4. Current parameter value (for other Shortcuts the current value of the parameter is displayed on this line)
5. Next parameter value if “Down” button is applied (parameter down)
6. Arrow “Down” indicating previous value if applies.

The last Shortcut (Setup) is always the same and cannot be removed or altered. It allows the Menu mode to access the detailed setup of the unit.



Setup Shortcut elements

1. Shortcut title. It indicates that Detailed Setup (Menu mode) can be entered at this stage

2. Current value of the parameter. Default action is to exit (go back to Status mode)

3. Arrow indicating “Up” button.

4. Next parameter value. If “Up” button is applied, the unit enters into Menu mode

5.4 Menu mode

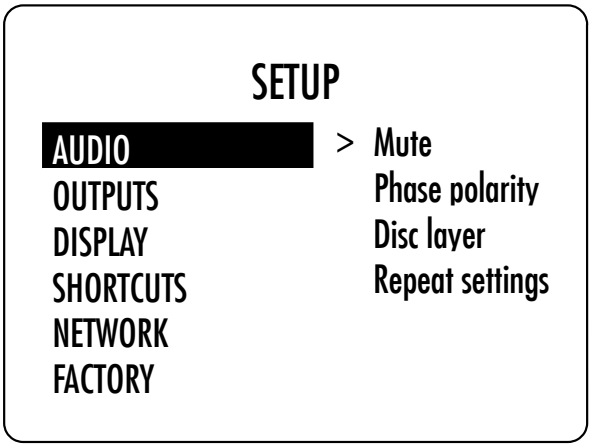
The Menu mode allows for Configuration and Setup of the D10 SACD/CD transport through a set of menus. Menu mode is entered from the last Shortcut item (see above). From Status mode, enter the Shortcut mode by pressing th "Ok" button. By successive "Ok", step to the last Shortcut item (Setup) and push "Up" button to enter the Menu mode.

Navigation in Menu mode is based on "Up" and "Down" button to select a given menu item and "Ok" and "Cancel" to change menu level.

5.4.1 Setup Menu

D10 SACD/CD transport menu structure.

The general setup menu is used to navigate into all settings.



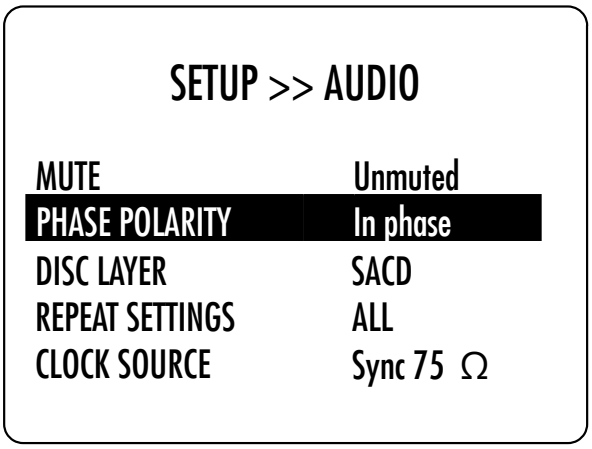
Main menu elements

There are six main menus used for configuring the D10:

- AUDIO: Allows user to adjust audio related parameters.
- OUTPUTS: Allows user to adjust parameters related to the outputs.
- DISPLAY: Allows user to adjust display related parameters.
- SHORTCUTS: Allows user to assign and modify. Shortcuts in order to optimize the user interface.
- NETWORK: Provides information about the network setup and configuration.
- FACTORY: Indicates the software version and allows it to be updated. Shows installed option boards. Allows user and service technicians to return the unit to factory settings.

5.4.2 Audio Menu

The audio setup menu is used to adjust the different audio-related settings.

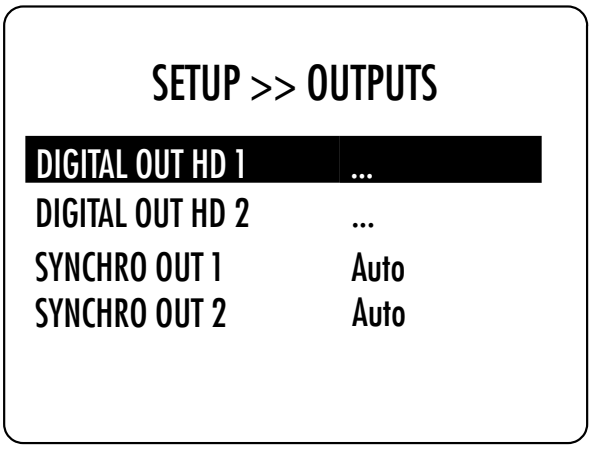


Audio menu elements

- Mute: Mutes or unmutes the audio output.
- Phase polarity: Allows users to reverse the absolute phase polarity of the audio output.
- Disc layer: Selects the disc layer to be read for current SACD.
- Repeat settings: Selects the repeat mode (repeat track, whole disc, or no repeat). This setting can be reset upon disc change (sticky: no) or remain (sticky: yes).
- Clock source: Allows user to synchronize the D10 to an external clock or to act as clock master. There is more information about optimizing clock configuration in the Advanced clocking chapter of this manual.

5.4.3 Outputs Menu

The Outputs setup menu is used to adjust the different outputs-related settings.



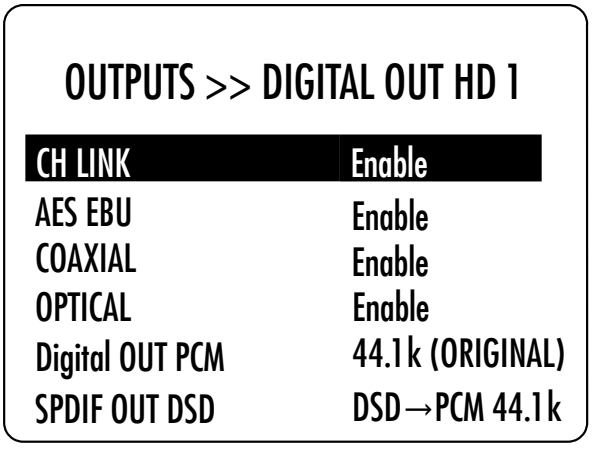
Outputs menu elements

- Digital out HD X: Allows you to activate and deactivate the different outputs of the digital out card.
- Synchro out X: Allows you to select the sync card settings (Off, Auto, Loopback or Internal).

The Outputs menu has two additional lines which allow you to manage the two outputs of the sync board. The two outputs can be configured as:

- Off: The output is off.
- Auto: The output depends on the “clock source” configuration of the selected input.
- Loopback: The signal present on the clock BNC input is buffered and fed to the output connector.
- Internal: The output is connected to the internal clock reference.

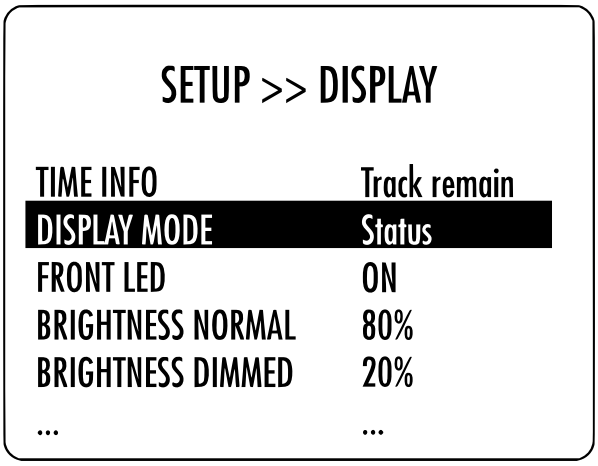
Settings and information given in the menu Outputs → digital out HD.



Digital Out HD menu

5.4.4 Display Menu

The Display menu is used to change screen settings.



Display menu elements

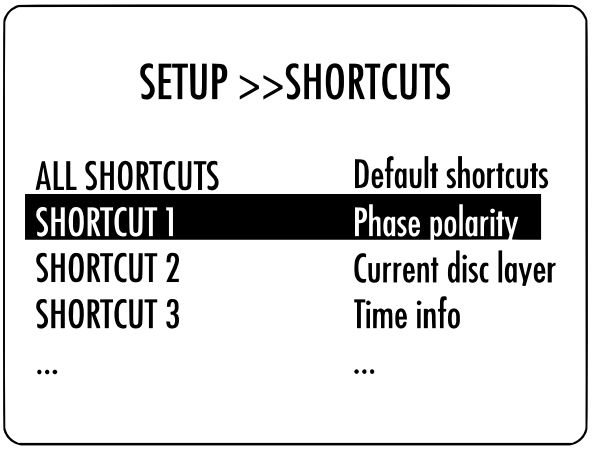
- Time info: Selects the time information to be displayed (track or disc elapsed or remaining).
- Display mode: The D10 screen can display a status page or be turned off.
- Front LED: Allows users to select whether the front panel LED in the CH logo is on or off when the D10 is operating.
- Brightness normal: Allows you to set the brightness of the display in operating mode (10 – 100%), and to fine tune the high brightness gamma curves to perfectly match the brightness and color of other CH Precision product's display.
- Brightness dimmed: Allows you to set the brightness of the display when dimmed between operations (10 – 30%), and to fine tune the low brightness gamma curves to perfectly match the brightness and color or other CH Precision product's display.
- Colors: A different display color can be allocated for each different type of audio stream type (PCM, DSD, MQA, MQA Studio).
  The color can be chosen from a list of standard colors or a custom color can be made.
- Disc vault brightness: Allows you to set the brightness of the ring LED in open and reading mode (0 – 100%)

The brightness in "open" mode is the brightness when the system is in motion (closing/opening) or when the mechanism is "open".

The brightness in "read" mode is the brightness when the D10 is reading the "TOC". When the D10 is in "play", then the LED turns off.

5.4.5 Shortcuts Menu

The Shortcuts menu allows you to customize your shortcuts.



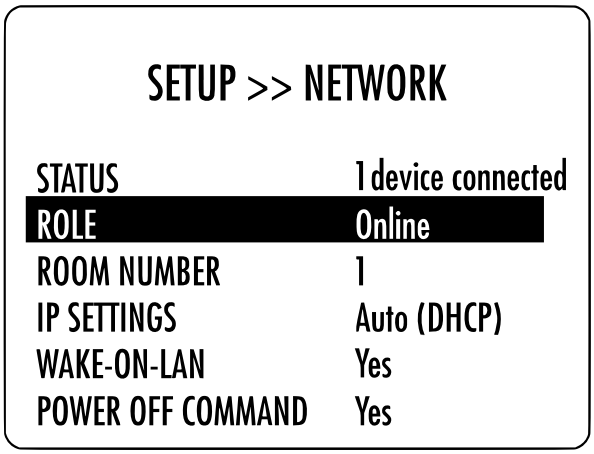
Shortcuts menu elements

- The D10 allows you to establish up to six shortcuts, taking you directly to almost any parameter in any menu.
- **If you use "Default shortcuts", the D10 is preprogrammed with Phase Polarity, disc layer and Time info as shortcuts.**
- After scrolling through the last shortcut, the next screen that the D10 displays is the entry port to the D10 menu. The available shortcuts are as follows:

  1. None
  2. Phase polarity
  3. Current disc layer
  4. Repeat mode
  5. Time info
  6. Display mode
  7. Front led
  8. Color

5.4.6 Network Menu

The Network menu allows you to obtain information about the network and configure its options.

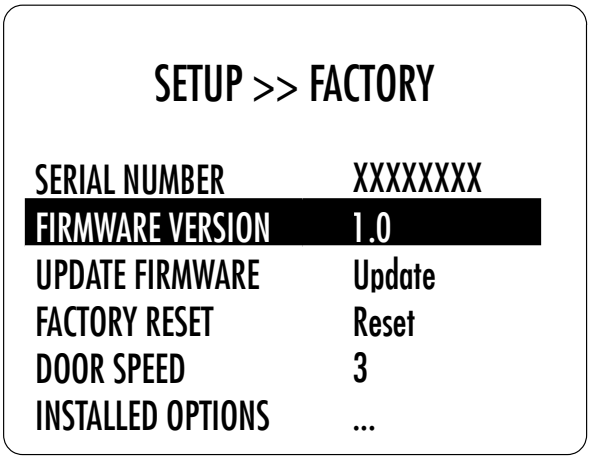


Network menu elements

- Status: Shows a list of compatible devices detected on the LAN.
- Role: When physically connected to a network, the D10 can ignore this network (offline) or connect to it. This networking facility allows system-wide sharing of commands among CH products (such as mute or power up/down).
- Room number: Defines the room in which the D10 is located for multi-room applications. This prevents CH Precision units connected to the same network but located in different systems/rooms to interact with each other.
- IP settings: Auto should be selected if the D10 is connected to a router with DHCP server feature. Direct-Link should be selected when an RJ45 Mirror lead directly connects a D10 to a single other CH Precision device. More advanced settings are available if needed.
- Wake-on-LAN: If 'No' is selected, the D10 cannot be switched on from the CH-Control App. If 'Only If POE' is selected, connecting the D10 to a Power Over Ethernet switch will allow it to be switched on via the CH-Control App (Standby consumption will be less than 0.5W). If 'Yes' is selected, the D10 can always be switched on by the CH-Control App (Standby consumption will be less than 2W).
- Power off command: If Yes is selected, the D10 will enter standby mode when it receives a Power Off command from the LAN. It will remain on if No is selected. This is useful if you want to keep your D10 on even when you turn off the rest of your system.

5.4.7 Factory Menu

The Factory menu provides information about firmware, options and remote control.



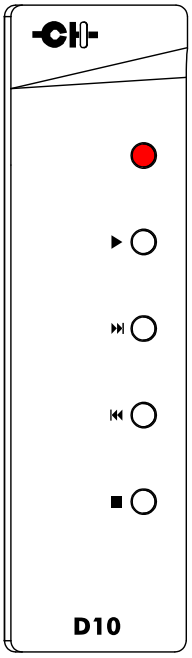
Factory menu elements

- Serial number: Displays the serial number of your D10. This serial number is also written on a sticker at the back of your D10.
- Firmware version: Indicates the version of the firmware that the D10 is currently running. Periodically check CH Precision's website to see if a newer version is available. It could add new features or correct bugs. Note that the CH Control App indicates that a device is not up to date by displaying its name in orange instead of red.
- Update firmware: Selecting Update launches the D10 firmware update process. A USB flash disc drive with a valid set of firmware must be inserted in the A-shaped USB port. Please refer to the corresponding section of this manual for more detail on firmware update procedure.
- Factory reset: Resets all parameters to their default factory values. This can be useful if you made some changes that you don't know how to revert.
- Door Speed: Allows users to select the speed at which the "door" opens and closes 1 (lowest) to 5 (highest). 3 is default speed.
- Installed options: Lists the hardware configuration of your D10.
- IR Remote: Pair/Unpair infrared remote control. It is possible to pair the remote control to your D10 to prevent any unwanted interaction with other machines using the same IR command set. It is also possible to deactivate pairing if necessary.

6 Handheld remote control

6.1 Remote control operation

The D10 SACD/CD transport is delivered with an IR remote to control the unit's basic operations. The provided remote control is not intended to be used to configure the unit.



D10 remote control

The remote control activity LED illuminates when a button is pushed on the remote. The remote control buttons support dual functions by distinguishing between Normal Push [NP] and Long Push [LP] inputs. For a Normal Push [NP], the button is released immediately after pressing. A Long Push [NP] requires the button to be pressed for at least two seconds before being released.

Remote control functions are according to the following table:

Remote Control Button	Normal Push [NP]	Long Push [LP]
MUTE (red button)	Mute/Unmute (also wakes-up from STANDBY)	Sets unit into STANDBY or wakes it up
PLAY/PAUSE (▶)	Play/Pause	Phase polarity inversion
NEXT TRACK (⏭)	Select next track	Fast forward the track
PREVIOUS TRACK (⏮)	Select previous track	Rewind the track
STOP (■)	Stop	Open/Close the disc vault door

6.2 Changing the remote control batteries

If the Remote Control Activity LED fails to light then you will need to change the batteries in the handset. The back cover can be removed using the Torx T-10 screwdriver supplied in the accessory pack.
The remote control uses two LR03 batteries (AAA).

Warning: Do not ingest battery, Chemical Burn Hazard

The remote control supplied with this product contains LR03 batteries (AAA).

If one of those batteries is swallowed, it can cause severe internal burns in just 2 hours and could lead to death. Keep new and used batteries away from children.

If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

7 Advanced clocking

Connecting your D10 to a CH Precision product with DAC capability (such as the C10 DAC Converter, the C1.2 DAC/Controller or I1 integrated amp) allows you to access superior clocking topologies, via the optional Clock Sync board.

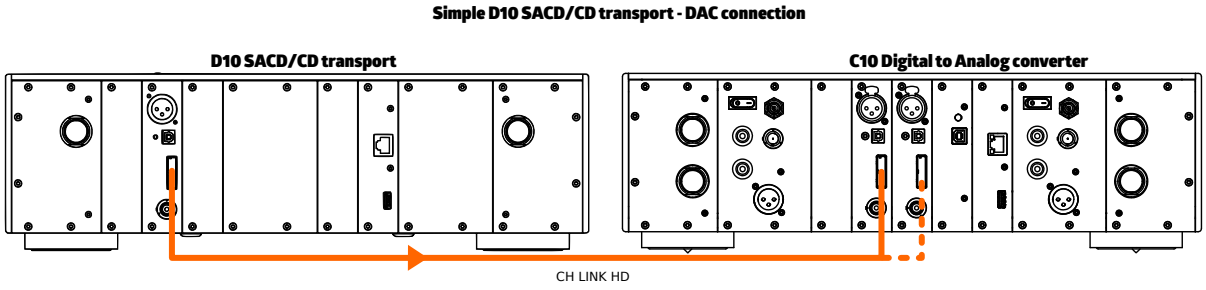
Correct clock synchronization can make a huge difference to the musical results and communicative qualities you obtain from digital sources and it is essential to take the time and care to get these set up parameters right. Recommended use cases for various configurations are detailed in the following paragraphs. Even though this chapter is quite technical, we kindly ask you to take the time to read it in order to get the best sound out of your CH system. Do not hesitate to seek assistance from your authorized dealer, should you be unsure of the best configuration for your setup.

7.1 General clocking considerations

In any configuration, **there must always be no more and no less than one clock master** (unless an asynchronous sample rate converter isolates two clock masters). In the CH product range, the clock master is the unit clocked on its own internal clock (clock source parameter is INTERNAL) or an external clock generator such as the T1/T10. If more than one clock master is used/designated, the system cannot synchronize (at some point a unit will display CLOCKING ERR to let you know that the current clocking scheme is wrong). If the SACD/CD transport does not operate synchronously with its DAC, the DAC's input buffer may not keep up (it will get full or empty). Either situation will generate a CLOCKING ERR notification on one of the CH Precision DACs.

7.2 Without CLOCK_SYNC board

When a C10's DIGITAL-IN HD inputs are used together with a D10 SACD/CD transport and no CLOCK_SYNC board is fitted, both audio data and clocking goes from the source (the D10) to the DAC. More precisely, clocking is sent with the audio stream. It is either carried on dedicated lines in the CH Link HD (while audio data is carried on other lines in the same cable) or embedded in S/PDIF's bi-phase modulated signal. The schematic below shows the optimal way to connect such a system:

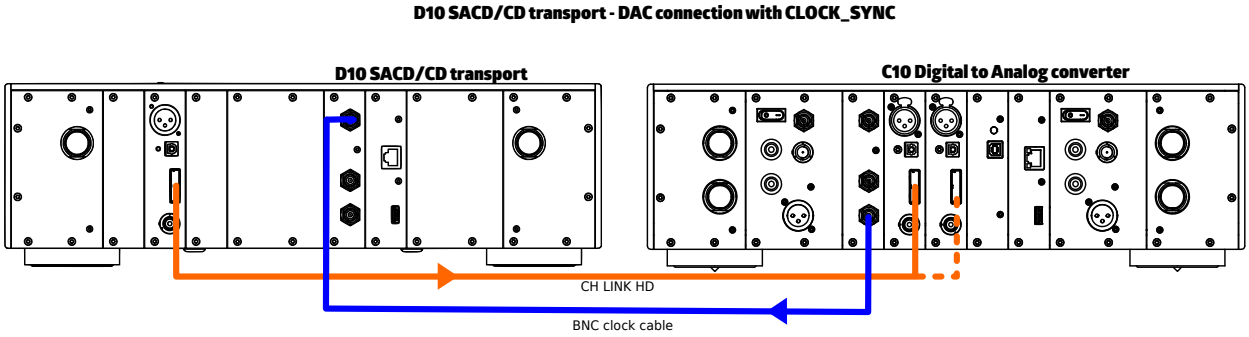


More generally, when a D10 does not have a CLOCK_SYNC card, it will force the DAC to sync to the incoming audio stream:

- C10 clock source (for this input): AUDIO IN

7.3 D10 with DAC (both with CLOCK_SYNC board)

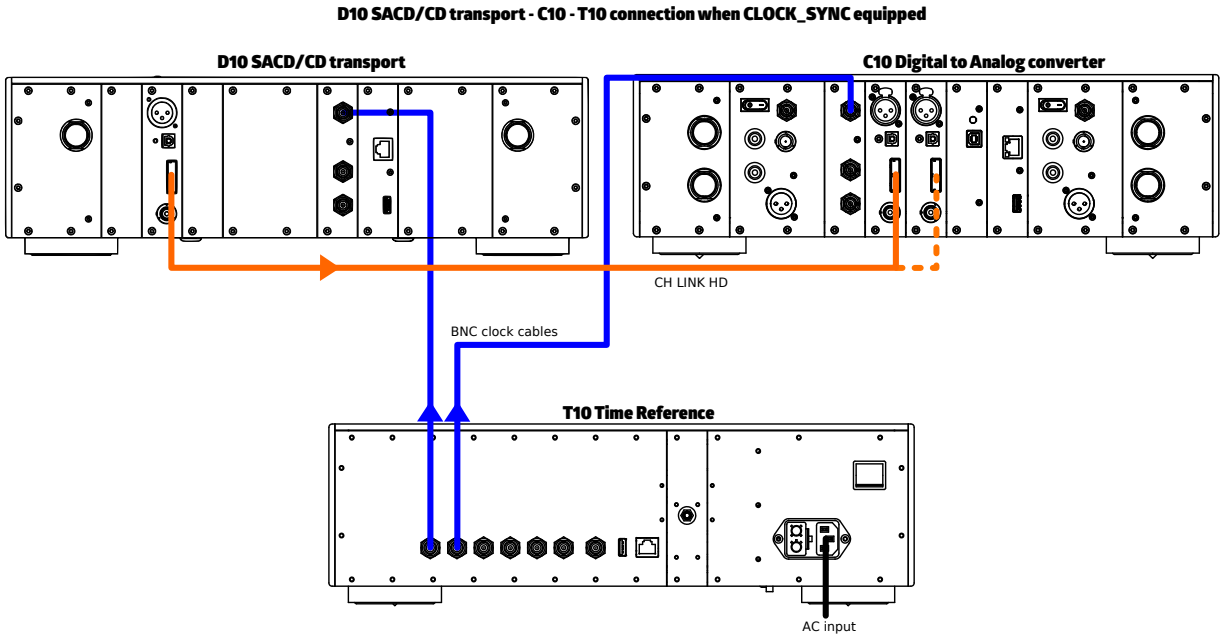
When both the D10 and the DAC are equipped with a CLOCK_SYNC board, optimum performance is obtained when the DAC is the clock master, and the D10 is the clock slave. The audio stream goes from the D10 to the C10, but the clock signal goes the other way. The schematic below shows how to connect such a system:



- D10 Synchro in: BNC 75Ω
- C10 clock source (for this input): INTERNAL
- C10 Synchro out: INTERNAL or Auto

7.4 D10 with DAC (both with CLOCK_SYNC board) + External time reference (T10)

When both the D10 SACD/CD transport and the DAC are equipped with a CLOCK_SYNC board, and an ultra-high stability clock generator such as the CH Precision T1/T10 10MHz Time Reference is available, optimum performance is obtained when both the D10 SACD/CD transport and DAC lock themselves to the external clock generator. Direct clock connections from the T1/T10 to the individual devices are preferred over daisy-chaining. The audio stream goes from the D10 SACD/CD transport to the DAC, and the clock signal is distributed to both the D10 SACD/CD transport and DAC from the T1/T10. The schematic below shows how to connect such a system:



- D10 SACD/CD transport clock source: SYNCHRO BNC 75Ω
- C10 clock source (for this input): SYNCHRO BNC 75Ω

8 Firmware update

8.1 Preparing the USB stick

The firmware of all the CH Precision units can be updated using the USB port located at the back of the unit. Before starting the firmware update, it is necessary to load a USB stick with files containing the new firmware. Use a FAT32 formatted USB 2.0 stick (there is one supplied with your D10, located in the Accessory Pack). Please note that some USB sticks might not be detected by the D10's USB port. The following procedure describes how to load the USB stick with the correct files:

1. Download the latest D10 firmware file from www.ch-precision.com.
2. Decompress the ".zip" folder and copy the decompressed files to the root of your USB stick.

Make sure all the files are present on your USB stick, and that there are no duplicates. It is easiest to delete older D10 firmware files from the stick before loading the new ones, as this saves any possible confusion. Any missing file will make the firmware update procedure fail, while multiple versions of the same unit's firmware can lead to unstable D10 behavior after update.

8.2 Updating the unit's firmware

1. Connect the USB stick to the USB port located at the back of your D10 unit.
2. Navigate to the FACTORY SETTINGS menu and select the UPDATE FIRMWARE item.
3. Start the Firmware Update process by pushing the "enter" button. Please note that the unit will perform a Reset (the display briefly turns off and on) during the procedure.
4. Once the firmware update is complete, the unit automatically goes into Standby mode. Remove the USB stick and turn the unit on. The new firmware is now active. To verify that the firmware update is effective, navigate to the FACTORY SETTINGS menu and select the FIRMWARE VERSION item. The displayed firmware revision should match the firmware revision on the files copied to the USB stick.

Note: The firmware update process lasts 6-15 minutes, do NOT interrupt it!

When performing a firmware update, do NOT press or turn the unit's front panel buttons, do NOT unplug the unit from the AC wall socket and do NOT turn the mains power switch off. Interruption of the firmware update procedure may result in corrupted firmware and a malfunctioning unit. If something goes wrong during a firmware update and the unit is malfunctioning, apply the emergency firmware update procedure described below.

8.3 Emergency firmware update procedure

Perform the following Emergency Firmware Update procedure if your unit doesn't power up normally.

1. Power the unit off (back panel mains power switch to OFF).
2. Connect the USB stick to the USB port located on the CONTROL board mounted on the back of your D10 unit.
3. Push and keep the "enter" button pushed and power up the unit (back panel mains power switch to ON). Keep the encoder button pushed for a couple more seconds after you turn the unit on.
4. The unit performs the emergency firmware update. Once the operation is complete, the unit automatically goes into Standby mode. Remove the USB stick and turn the unit on. The new firmware is now active. To verify that the firmware update is effective, navigate to the FACTORY SETTINGS menu and select the FIRMWARE VERSION item. The displayed firmware revision should match the firmware revision on the files copied to the USB stick.
5. If the emergency firmware update procedure fails, try the same procedure again using a different USB stick. If the failure persists, turn off your unit and contact your authorized dealer for assistance.

Note: The emergency firmware update procedure lasts 6-15 minutes, do NOT interrupt it!

8.4 Background firmware update

The D10 supports background firmware updates, which are triggered by the CH-Control application. To use this feature, the device needs to have a USB key attached - use the provided one. It is highly recommended to keep the USB key permanently attached to ensure that the device can receive automatic firmware updates in the future. The application will notify you when a new version is ready to be installed. You can install the firmware update either by shutting down the device from the application (either individually or whole system) or by going to the device's menu under 'Factory→Update firmware' setting.

Check only: The application checks for firmware updates on the website and informs you if a new version is available.

Disabled: The entire transfer and check process is deactivated.

Minimal Android version required for this feature is 5.1 (LOLLIPOP_MR1).

9 Troubleshooting

Error	Action
No power	Check the AC power cord Check the power cables between the power supply unit and the audio unit Check the power button at the back of the power supply unit Check the mains fuses on the AC power cord receptacle
Remote control does not work	Check if the unit is connected to the AC supply and powered-on Check that the distance to the unit is not too great. Move closer and try again. The D10's Standby LED should briefly illuminate Change the batteries in the remote control if required (Remote control LED does not illuminate) Test the setting with or without remote control pairing.
Disc doesn't play	Check if the optical disc has been inserted correctly (labeled side up) Check that disc is not empty (CD-R / CD-RW only) Check if disc type is supported by the D10 unit (CD and SACD only, no DVD or BD) Check if disc is dirty. If so, clean it with a dry cloth from center to exterior of disc Check that disc is not scratched or damaged
Sound skips	Check if disc is dirty. If so, clean with a dry cloth from center to exterior of disc Check that disc is not scratched or damaged
Disc plays, but no sound (general)	Check that your DAC, pre-amplifier and amplifier are turned-on Check that the system volume setting is not too low Check that the correct input is selected on your DAC and pre-amplifier Check that the outputs are correctly enabled on your D10
Disc plays, but no sound (⊘ is displayed)	Your D10 or other device is muted. Unmute using first Remote Control button.
Disc plays, but no sound ("⎍" is displayed)	Check that there is a SACD/CD in the D10, or that the CD in question is not scratched or dirty. If you use a T1/T10 reference clock, check your setup, referring to the Advance Clocking chapter of this manual

Error	Action
Lost in the settings?	Restore factory settings and start your setup again
Firmware update fails	Try Emergency Software Update procedure If it fails, download the latest D10 firmware from www.ch-precision.com, prepare a software update on a FAT32 formatted USB stick and run the Emergency Software Update procedure again
USB flash drive for firmware update is not detected by D10	Please try another brand of USB flash drive (e.g. the one provided with your D10).

If the error cannot be corrected using the information from the above table, disconnect the unit from AC wall power and from the rest of you system and contact your authorized dealer.

10 Specifications

General

Supported discs	CD, CD-R, CD-RW: stereo PCM 16 bits, 44.1kHz (redbook), MQA-CD SACD single layer and hybrid stereo, DSD 1bit, 2.8224MHz (scarletbook)
User control	Five tactile push buttons on front + Five tactile push buttons on top, CH Control Android app, infrared remote control
Power supply	Selectable 100V, 115V or 230V AC, 50Hz to 60Hz
Power consumption (Standby)	<0.5W
Power consumption (Normal)	120W
Operating conditions	Temperature: +5C to +35C, humidity: 5% to 85% (no condensation)
Storage conditions	Temperature: +5C to +35C, humidity: 5% to 85% (no condensation)
Dimensions (L x D x H)	Power unit: 440mm x 440mm x 133mm SACD/CD transport unit: 440mm x 440mm x 133mm
Weight	Power supply unit: 23kg SACD/CD transport unit: 41kg ⚠
Firmware update / Control	USB port for firmware update / Ethernet based system control

Digital Audio outputs (second DIGITAL_OUT board optional)

CH LINK HD	Proprietary high-definition link supporting high-definition uncompressed audio and control. LVDS signaling for all I2S audio signals (incl. clocks).
AES-EBU (consumer format)	XLR connector, 2.5Vpp diff., 110 Ω 16bits / 44.1 or 24bits/88.2kHz (CD, MQA-CD) 24bits / 44.1, 88.2, 176.4kHz or 1 bit/2.8224MHz DoP (SACD)
Coaxial (S/PDIF)	RCA connector, 0.5Vpp, 75 Ω 16bits / 44.1 or 24bits/88.2kHz (CD, MQA-CD) 24bits / 44.1, 88.2, 176.4kHz or 1 bit/2.8224MHz DoP (SACD)
Optical TOSLINK (S/PDIF)	Standard TOSLINK optical connector 16bits / 44.1 or 24bits/88.2kHz (CD, MQA-CD) 24bits / 44.1, 88.2, 176.4kHz or 1 bit/2.8224MHz DoP (SACD)

Clock Sync board

Clock input	1x BNC connector, 0.5Vpp to 5Vpp, 75 Ω or 50 Ω input impedance Wordclock (44.1, 48, 88.2, 96, 176.4, 192, 352.8, 384, 705.6, 768 kHz), Masterclock (22.5792, 24.476 MHz), DSD bitclock (2.8224 MHz), High stability external clock (100 kHz, 10 MHz), 40% to 60% duty cycle square wave
Clock output	2x BNC connectors, 2Vpp, 75 Ω output impedance Buffered Clock input or Audio Wordclock 50% duty cycle square wave

Remote control

Remote control type	Infrared. Uses NEC codes. Range: 10m (line of sight)
Remote control batteries	2x LR03 type (AAA)

Design and Specifications are subject to change without notice. Weight and dimensions are approximate.

Illustrations are informative only and may differ from the actual production model.

Enclosure designed by Sven Adolph - Momentum Industrial Design - www.momentum.ch

FCC-Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- adjust or relocate the receiving antenna
- increase the separation between the equipment and the receiver
- connect the equipment into a mains outlet on a circuit different from that to which the receiver is connected
- consult the dealer or an experienced ratio/TV technician for help

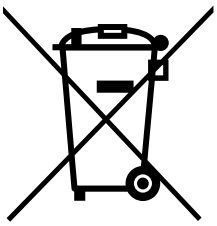
Certification Body Scheme

All CH Precision products have Body Certification (CB) certification based on the IEC 62368-1 electrical safety standard.

All certifications are visible on the official IECEE website (https://certificates.iecee.org/#/search)

Disposal – Environmental care

Directive 2002/96/EG of the European Parliament requires consumer electro-technical appliances to be disposed separately and have to be indicated with the following symbol. Should you dispose this component please do so in conformity with local and global legal and environmental regulations and according to best practices. We strongly encourage you to recycle any batteries used with this component.



CH PRECISION SÀRL

Z.I. LE TRÉSI 6B · 1028 PRÉVERENGES · SWITZERLAND

+41 (0)21 701 9040 · info@ch-precision.com

www.ch-precision.com