televic
conference

D-CERNO

USER & INSTALLATION GUIDE

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INTRODUCTION

This chapter will give you a short introduction to this manual together with a general description of the D-Cerno system and its functionalities.

GETTING STARTED

About This Manual

Throughout this guide we use icons to designate different types of information:

	This is a note. A note gives additional information, such as the meaning of the color of the microphone LEDs. A note also provides information that may only be applicable to some situations.
	This is a tip. A tip gives you an alternative way to do a particular step or procedure, or lets you know of an option that you may find helpful.
	This indicates that something is very important. Important information is something that you need to do in order to accomplish a certain task.
	This provides safety precaution information, that is, information that you need to be careful about to prevent potential problems when using our systems.

Compatibility

This user manual applies to the following products:

Product	Version
D-Cerno	≥ 14.0

SAFETY INSTRUCTIONS

This chapter describes all safety instructions needed to use the D-Cerno devices.

Read this before using the equipement.

SAFETY INSTRUCTIONS

The safety instructions contain general safety guidelines that integrators, installers, operators, end users, and anyone else who installs or uses Televic material is required to read and follow at all times.

Safety

All Televic systems are state of the art devices and have been designed to meet all quality standards. Nevertheless, the individual components of the conference system can cause danger for persons and material assets if

- the conference system is not used as intended,
- the conference system is set up by personnel not familiar with the safety regulations,
- the conference system is converted or altered incorrectly,
- the safety instructions are not observed.

Important Safety Instructions

1. **Read Instructions**. All the safety and operating instructions should be read before the product, device or system is operated.

2. **Retain Instructions**. The safety and operating instructions should be retained for future reference. The instructions should be kept in the vicinity of the product or system.

3. **Heed Warnings**. All warnings on the product and the operating instructions should be closely adhered to.

4. **Follow Instructions**. All instructions for installation or operating/use should be followed closely.

5. **Cleaning**. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.

6. **Ventilation**. Any slots and openings in the device or equipment are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

7. **Heat**. The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat. Do not use or operate any equipment in environments that exceed the standard operating temperatures.

8. **Modifications**. Do not use any modifications, extension, or other attachemnts not recommended by the product manufacturer as they may cause hazards.

9. **Accessories**. Only use attachments/accessories specified by the manufacturer. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

10. **Water and Moisture**. Do not use this product near water or in a moistures environment - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool, in an unprotected outdoor installation; and the like.

11. **Moving**. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

12. **Power Sources**. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

13. **Power Lines**. An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.

14. **Grounding or Polarization**. Do not defeat the safety purpose of the polarized or ground-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

15. **Power-Cord Protection**. Power-supply cords should be routed to that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plug, convenience receptacles, and the point where they exit from the product.

16. **Lightning**. For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent

damage to the product due to lightning and power-line surges. (Not applicable when special functions are to be maintained, such as evacuation systems.)

17. **Overloading**. Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.

18. **Object and Liquid Entry**. Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

19. **Inflammable and Explosive Substance**. Avoid using this product where there are gases, and also where there are inflammable and explosive substances in the immediate vicinity.

20. **Heavy Shock or Vibration**. When carrying this product around, do not subject the product to heavy shock or vibration.

21. **Servicing**. Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

22. **Damage Requiring Service**. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power-supply cord or plug is damaged.

b. if liquid has been spilled, or objects have fallen into the product.

c. If the product has been exposed to rain or water.

d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

e. If the product has been dropped or damaged in any way.

f. When the product exhibits a distinct change in performance-this indicates a need for service.

23. **Replacement Parts**. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

24. **Safety Check**. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

25. **Coax Grounding**. If an outside cable system is connected to the apparatus, be sure the cable system is grounded. U.S.A. models only: Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge apparatus, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Maintenance

GENERAL

Do not put any objects on top of the units. Object falling through the holes of the unit can cause damage.

Do not install the units in a location near heat sources as radiators, air ducts or direct sunlight.

Make sure the units are not exposed to excessive dust, humidity, mechanical vibration or shock.

CLEANING

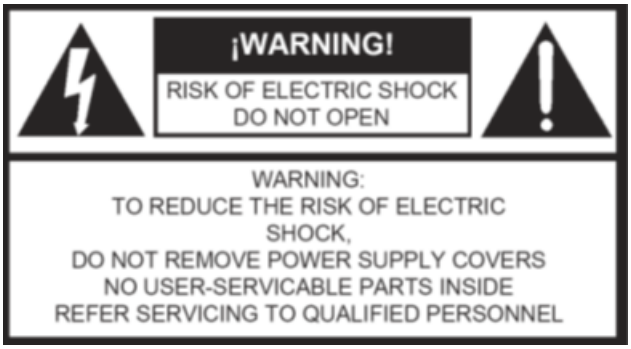
Do not use alcohol, ammonia or petroleum solvents or abrasive cleaners to clean the units.

To keep its original condition it is advised to periodically clean the unit:

- Use a clean soft cloth that is not fully moist.
- Make sure the device is completely dry before usage.

Power Connections

For permanently connected equipment, a readily accessible disconnect device shall be incorporated in the fixed wiring; For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.



This label may appear on the bottom of the apparatus due to space limitations.

The lightning flash with an arrowhead symbol, with an equilateral triangle, is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture. Do not open the cabinet; refer servicing to qualified personnel only.

To prevent electric shock, do not use this (polarized) plug with an extension cord receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

D-CERNO COMPONENTS

This chapter will describe all available hardware components and how you can use these components to match your needs.

ABOUT D-CERNO

D-Cerno System Architecture

The D-Cerno system is a digital discussion system for small to medium-sized conference rooms.

The main characteristics of the system are:

- **Crystal-clear audio reproduction**: digital signal processing, high-quality GSM interference free microphone and loudspeaker, resulting in excellent intelligibility.
- **Attractive, stylish design**: contemporary, unobtrusive and low profile, fitting into modern and traditional style conference rooms
- **Plug and Play**: easy installation, up and running in no time, ideal for frequently changing environments
- **High reliability**: built-in redundancy feature – hygienic, easy to clean, consistent performance over the entire lifespan of the product.

Network Structure

The central unit can control and power a total of 50 units over the four available conference ports. The network can be structured in two ways:

- Branch configuration
- Closed loop configuration

Each branch or loop can handle a maximum of 25 units if the total cable length is respected. The total cable length of a branch / loop cannot exceed the maximum of 400 m. The maximal cable length between units or between units and central unit is 80 m. The maximum power consumption of a unit is 2W.

Figure 1-1 shows a graphical representation of a configuration of the D-Cerno network. On the left side we see a branch configuration connected to port 1. On the right a closed loop configuration between port 3 and 4 is shown.

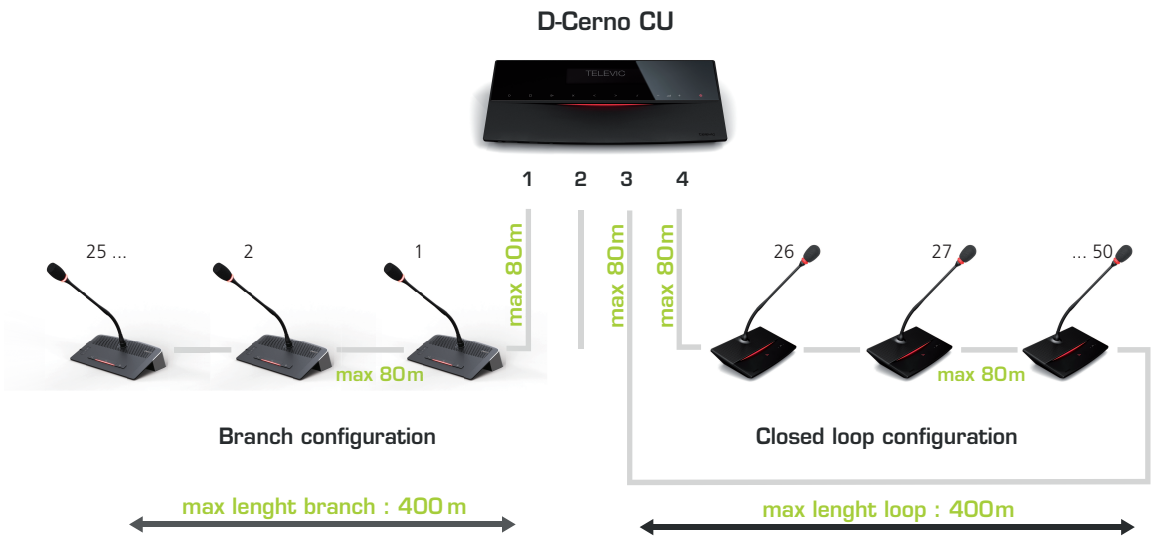


Figure 1-1 *D-Cerno network*

Designing a system in a closed loop configuration provides a redundant system and thus increases the reliability of the system. If for some reason a cable or unit malfunctions the system stays operational.

The units have the possibility to detect the flow of the signal automatically, providing a free port selection. If at some point no signal is provided anymore, the signal flow will be reversed automatically. As a result the system configuration stays operational.

The figure below illustrates:

- Branch configuration in normal operation Figure 1-2
- Branch configuration with cabling error (Figure 1-3)
- Loop configuration with cabling error (Figure 1-4)

Figure 1-2 *D-Cerno branch configuration, no error*

Figure 1-3 *D-Cerno branch configuration with cable error, units after the cable are no longer active*

Figure 1-4 *D-Cerno loop configuration with cable error, all units remain functional*

COMPONENTS

A D-Cerno system can consist of the following components:

Product	Parts included
Central unit (71.98.0320)	> D-Cerno CU > D-Cerno PS > Mains cable > Conference sytem cable (2m) > Quick guide
Central unit-R (71.98.0321)	> D-Cerno CU-R > D-Cerno PS > Mains cable > Conference system cable (2m) > Quick guide
Delegate units 71.98.0301 (D), 71.98.0303 (DL), 71.98.0306 (D SL), 71.98.0311 (F-DM)	> D-Cerno D, DL, D SL and F-DM (microphone not included) > Conference system cable (2m)
Chairman units 71.98.0302 (C), 71.98.0304 (CL), 71.98.0307 C SL), 71.98.0312 (F-CM)	> D-Cerno C, CL C SL and F-CM (microphone not included) > Conference system cable (2m)
Spare power supply (71.98.0340)	> D-Cerno PS > Mains cable
System cables, available in different lengths	> DCC2 2m cable set: 4 x 2 m > DCC5 5m cable set: 4 x 5 m > DCC10 10m cable set: 4 x 10 m > DCC20 20m cable set: 2 x 20 m

Product	Parts included
Microphones for D-Cerno D SL and C SL	> D-MIC 30 SL (71.98.0053) > D-MIC 40 SL (71.98.0054) > D-MIC 50 SL (71.98.0055) > D-MIC 70 SL (71.98.0057) > D-MIC 40 FF (71.98.0059)

UNITS

Introduction

The contribution units consist of delegate and chairman units. Both are used for speech reinforcement in a conference room. The chairman units are used to guide and control an ongoing discussion. There are two types of table-top units available: units with a fixed microphone and units with a screw lock microphone (SL). You can use both units interchangeably, meaning that your setup can be a mix of both types. There are also flushmount units.

Controls And Indicators

D-CERNO TABLE TOP UNITS

The D-Cerno table top delegate units have the following features:

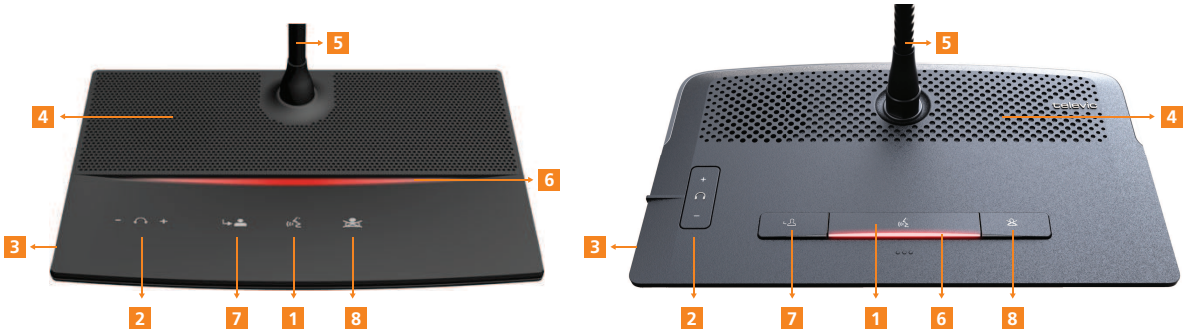


Figure 1-5 *D-Cerno chairman microphone units: D-Cerno C (left) and D-Cerno C SL (right)*

1. Microphone button: activation / deactivation of the microphone. Indication LEDs show the status of the microphone. (red: active, green: request)

2. Volume buttons: change the volume level of the headphones.

> Volume change is only possible when a headphone is connected

3. Headphone connector: connection of headphone to the unit. Mono and stereo headphones can be used.

4. Loudspeaker: distributes the floor channel. Mutes in case microphone is active.

5. Microphone (for D-Cerno D and C SL this is a detachable microphone which you can fix using the screw-lock connector, the microphone has an integrated LED, which show the status of the microphone)

6. Status LED: Indicates the status of the unit.

- **Red**: unit is active
- **Green**: unit is in request mode
- Pressing the **Next-in-line** or **PRIOR** button on a chairman unit is indicated by illuminating the corresponding part of the led bar (not for D-Cerno D and C SL).

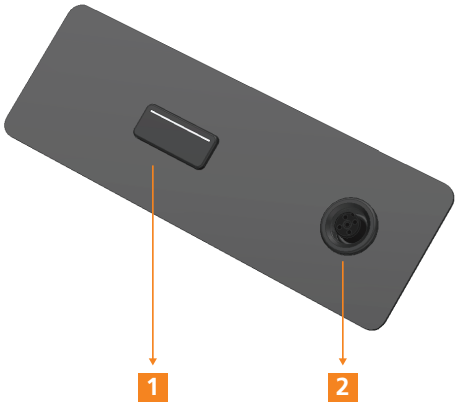
7. NEXT button: (chairman unit only): Grants the floor to the next delegate in the waiting list.

8. PRIOR button: (chairman unit only):

- **Press and hold**: temporarily mutes the microphones of all active units
- **Press and release**: deactivates the microphones of all active units

D-CERNO FLUSHMOUNT UNIT

The D-Cerno flushmount delegate unit has the following features:



1. Microphone button: activation / deactivation of the microphone. Indication LEDs show the status of the microphone. (red: active, green: request)

2. Microphone screw-lock connector to fit a removable microphone (30, 40, 50 or 70 cm).

The flushmount unit has no loudspeaker, no volume button and no headphone connector. It is intended for use at venues where a room sound system is already installed.

MICROPHONES

Introduction

Some D-Cerno units have a fixed microphone. This microphone has a unidirectional response for optimum performance even in noisy conditions, and has a very low susceptibility to interference from mobile phones.

Some other D-Cerno units have a screw-lock connector to insert a pluggable gooseneck microphone:

- D-MIC 30 SL (ref. 71.98.0053): Directional microphone, 30 cm
- D-MIC 40 SL (ref. 71.98.0054): Directional microphone, 40 cm
- D-MIC 50 SL (ref. 71.98.055): Directional microphone, 50 cm
- D-MIC 70 SL (ref. 71.98.0057): Directional microphone, 70 cm
- D-MIC 40 FF (ref. 71.98.0059): Directional microphone, fully flexible, 40 cm
- D-MIC 40 BC (ref. 71.98.0072): Cardioid broadcast microphone, 40 cm
- D-MIC 40 BC Hypercardioid (ref. 71.98.0073): Hypercardioid broadcast microphone, 40 cm

General Microphone Characteristics

The recommended speaking distance from the mouth to the top of the microphone is between 20 to 40 cm. In order to accommodate the variety of speakers and speaking distances, microphones are available in three different lengths (see list above).

Electrical And Acoustic Properties

For information about the microphones, please refer to the corresponding datasheet.

Microphone Connector Characteristics

The Confidea D-MIC microphones have a 5-pin connector to plug into the different Plixus compatible units. Each pin has a distinct function:

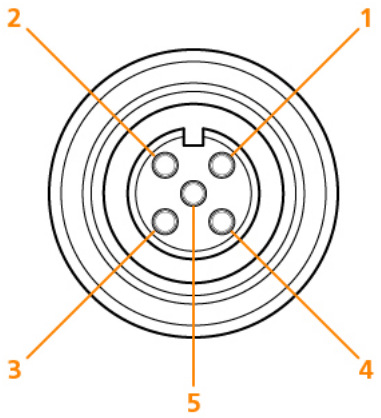


Figure 1-6 *Microphone connection*

1. Pin 1: Microphone GND
2. Pin 2: Microphone signal
3. Pin 3: Not used
4. Pin 4: LED +

Microphone Operation Modes

The microphone contains the following elements:

- Indicator ring: shows the status of the microphone
- Union nut: attaches the removable microphone to the unit
- Microphone plug: connects the microphone to the unit

The color of the microphone indicator ring shows the status of the microphone:

Color	Status
Red	Microphone is active
Red (blinking)	Last minute of speech time (if set via software) Speech request (if set via software)
Green	Microphone is initialized
Green (blinking)	Microphone request

Handling Of Gooseneck Microphones

Below are safety instructions and prescriptions for proper use, safety warnings, storage and environmental conditions to keep your microphones healthy over a long lasting period.

OPERATING

The flexible arm of your gooseneck microphone is able to keep its position, without sagging or vibrating. Its operation is based on the friction developed between the inner spring, constructed as a metal spiral (steel) and the outer cover made of copper (or brass).

Any external treatment on the flexible arm can affect the mechanical or electrical properties of the microphones flexible tube.

Warnings:

- Avoid contact with any kind of solid, liquid or gel lubricating substance (oils, soaps, talcum powder, graphite, etc.) since they could cause structural degradation of the product. Even avoid contact with water as it may cause oxidation.
- Any kind of cleaning needs to be oil or lubricant-free or the product will be permanently damaged. Above products will eliminate the friction between the metal surfaces mentioned earlier and are strictly forbidden.
- Your gooseneck microphone has been tested for bending angles of up to 90°. Do not try to bend or twist the flexible arm for more than 90° as permanent damage will occur.

USE, MAINTENANCE AND STORAGE

- Clean the flexible tube only with a dry cloth.
- Respect the application limits at room temperature ranging between +5° C and + 40° C, and a relative humidity < 60 %.
- Store your gooseneck microphone at constant temperature and the lowest humidity rate possible (< 50 %) to avoid condensation which can damage the flexible arm as well as the electret microphone cell.
- Respect the load times and the minimum bending angles stated in our technical sheets.

MAXIMUM ANGLE USE

The microphones mentioned below can be used with the following maximum angle (°), measured from a flat surface (0°):

Reference Number / Microphone Model	Maximum Angle From a Flat Surface
71.98.0053 - D-MIC 30 SL	90
71.98.0053 - D-MIC 30 SL	90
71.98.0054 - D-MIC 40 SL	60
71.98.0055 - D-MIC 50 SL	20
71.98.0057 - D-MIC 70 SL	00*
71.98.0059 - D-MIC 40 FF	60
71.98.0072 - D-Mic 40 BC Cardioid	60
71.98.0073 - D-Mic 40 BC Hypercardioid	60

* "00" means that it can only be mounted on a horizontal surface

WARRANTY

The warranty automatically expires if the above prescriptions were not fulfilled or if the product has been modified, changed or unproperly stored. Any claim should be sent to Televic Conference together with some explanatory technical document. Products can only sent back after prior authorization of Televic.

CENTRAL CONTROL UNIT

Introduction

The D-Cerno CU is the heart of the system. It controls all delegate units and can interconnect to other systems via the external audio connections.

The system operates in a standalone mode and controls a maximum of 50 units. Configuration can be done via the integrated menu.

Controls And Indicators

All controls are done via touch panel by means of an intuitive user interface menu (see "Introduction to the main menu" on page 35). A user can activate or select a control or menu item by touching one of the symbols underneath the display.

External Connections

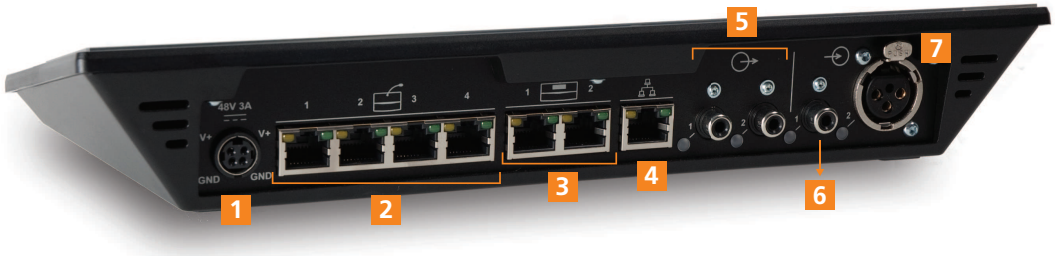


Figure 1-7 *Connections available on the back side of the D-Cerno central unit*

1. **+48V DC** power connector

2. **Four RJ45 ports** to connect up to max 50 delegate units (max. 25 units per branch or loop). The **green** LED indicates that a signal is detected without errors (devices are detected). The **yellow** LED indicates that no signal is detected (no devices are connected).

For more information please use the power calculation tool available on Sharefile.

3. **Two RJ45 ports**. Two RJ45 shielded connectors for a connection with 2 peripheral central units when the central unit is controller in a coupled environment.

In case a larger number of units are required the system can be extended with 2 extra central units in controller / peripheral configuration. The maximum of microphone units is 150 (obtained by using 3 central units).

4. **LAN connector**: for web server connection (D-Cerno CU-R only)

Through the LAN connector it is possible to connect the central unit to the local network. This makes it possible to control the recording and configuration by web browser on your PC or mobile device.

5. **Two unbalanced RCA audio output connectors** to extract analog audio floor signal. The green LED lights up when there is an output signal of > -40dBV present.

6. **One unbalanced RCA analog audio input connector** to add external signals to the floor. The red LED lights up when there is an overload of the input signal (signal > +9dBV).

7. **One balanced XLR analog audio connector** to add external signals to the floor. The red LED lights up when there is an overload of the input signal.

The AUX In connection on the central unit has an XLR 3 Female connector. So a cable with an XLR 3 Male connector should be used to insert an external signal.

Figure 1-8 *XLR pin assignment: Pin 1: Shield, Pin 2: Signal 2, Pin 3: Signal -*

8. **Headphone connector** at the front of the central unit: for headphone monitoring.

   a. **Two USB connectors** can be found at the front of the D-Cerno CUR.

> For now the NTFS and exFAT formats are not supported by the D-Cerno CUR, but they are supported by the Plixus AE-R to allow the user to record the meeting. To guarantee a correct recording in WAV or MP3 format, we advise to use a USB 2.0 key.

> Before plugging in a USB, please check the amount of free recording space.

Start Up

Before switching on the central unit, please make sure all units are correctly connected to the Central Unit.

To start the D-Cerno CUR there are two options. The first option is to press and hold the on/off button for 3 seconds. A second option is to automatically let the D-Cerno CUR start when the power supply is connected. For this option you need to physically change a dipswitch on the electronic circuitry inside the D-Cerno CUR. This procedure is described in the appendix of this manual in "D-Cerno CUR startup options" on page 84.

When the red ON/OFF led is blinking the meeting can be started and settings can be adjusted. USB and network functionalities (recording, web browser) are available after 15 seconds, when the red ON/OFF stops blinking and turns off.

Please note that as long as the ON/OFF led is blinking, the network functionalities are not available. It is therefore not possible to access the web server or record the meeting.

Then the image depicted on Figure 1-9 appears on the screen and the device is ready to record.

Figure 1-9 *USB and network functionalities enabled*

To switch off the device, press and hold the ON/OFF switch for 3 seconds.

INSTALLATION PROCESS

This chapter describes how to physically set up and install the D-Cerno system. Here you can find all technical details needed to correctly install all D-Cerno components.

INSTALL D-CERNO

Install The Microphone Table Top Unit

D-Cerno units offer the freedom to input /output connectivity to allow flexible cabling. The microphone units can be connected in daisy chain or in loop to ensure redundancy and increase reliability.

Figure 1-10 *D-Cerno connectivity*

Make sure that the units are not positioned too close to each other. It is recommended to keep a distance of 1 m between the units to prevent howling.

The recommended speaking distance for people to speak to the microphone is between 20 and 40 cm.

Install The Flushmount Unit

The D-Cerno chairman and delegate units (F-CM and F-DM) are flushmount panels. They need to be integrated into conference furniture.

Mounting type	Flush mounting
Dimensions of the unit (H x W)	150 x 50 mm
Cut-out dimensions (H x W)	127 x 43 mm
Weight	270
Front plate	Steel
Color	Black
Part numbers	71.98.0311 (D-Cerno F-DM) & 71.98.0312 (D-Cerno F-CM)

Make sure to enter the panel straight into the cut-out of the table :

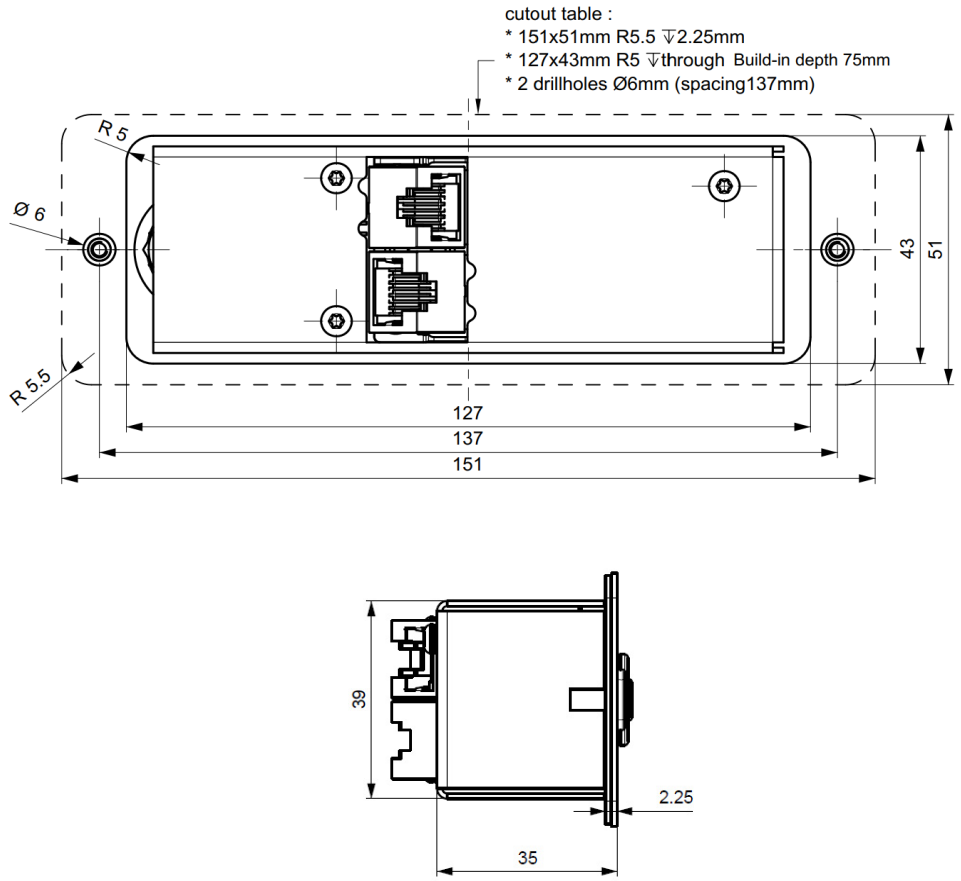


Figure 1-11 *Dimensions and cut-out of D-Cerno Flushmount F-CM and F-DM*

Install The Central Unit

POWER SUPPLY

The power supply can operate on an input voltage range of 100-240Vac , 47-63 Hz.

The output voltage is 48 V dc – 3.15 A max

SYSTEM CABLES

Cables used in the D-Cerno system are shielded Cat 5e (AWG 24 FTP) cables with shielded RJ45 connectors. Contribution units and central units are by default equipped with a pre-made cable of 2m. In case additional cables are required Televic has standard pre-made cables available in different lengths.

The use of shielded Cat 5e (AWG 24 FTP) cables with shielded RJ45 connectors is mandatory.

CONFIGURATION

This chapter describes how to configure the D-Cerno system using the D-Cerno web server as well as the D-Cerno menu on the central unit. It includes a description of how to connect to the built-in web server together with how configure different settings to guarantee a successful meeting.

INTRODUCTION TO THE MAIN MENU

Menu Navigation

The D-Cerno CU-R has three extra record buttons. With these buttons it is possible to start, stop or pause a recording.

- ○: Start recording
- □: Stop recording
- ▷: Play / pause recording

Figure 1-12 *D-Cerno central unit with recording option*

After start-up of the system, the main menu shows up.

The main menu consists of a system volume section and a configuration menu entrance. The main system volume can be adapted with the < > keys or via the dedicated volume buttons. The menu consists of several levels. Each level functions as a ring structure navigating from the last to first item or vice versa.

The basic functionalities of the main menu:

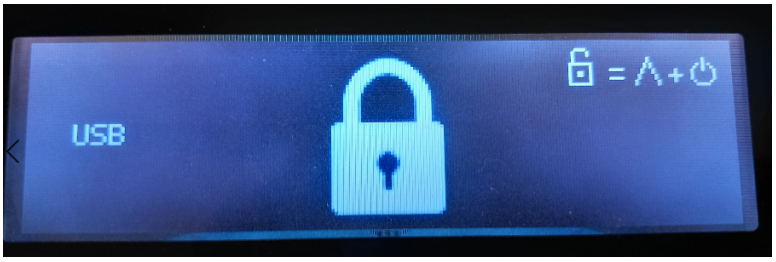
Icon	Function
⚙	Enter the configuration menu
V	Enter the next menu level
Λ	Return to previous menu level
<	Select previous menu item

Icon	Function
>	Select next menu item
▢	Selected item

Adjust the loudspeaker volume settings directly on the central unit.

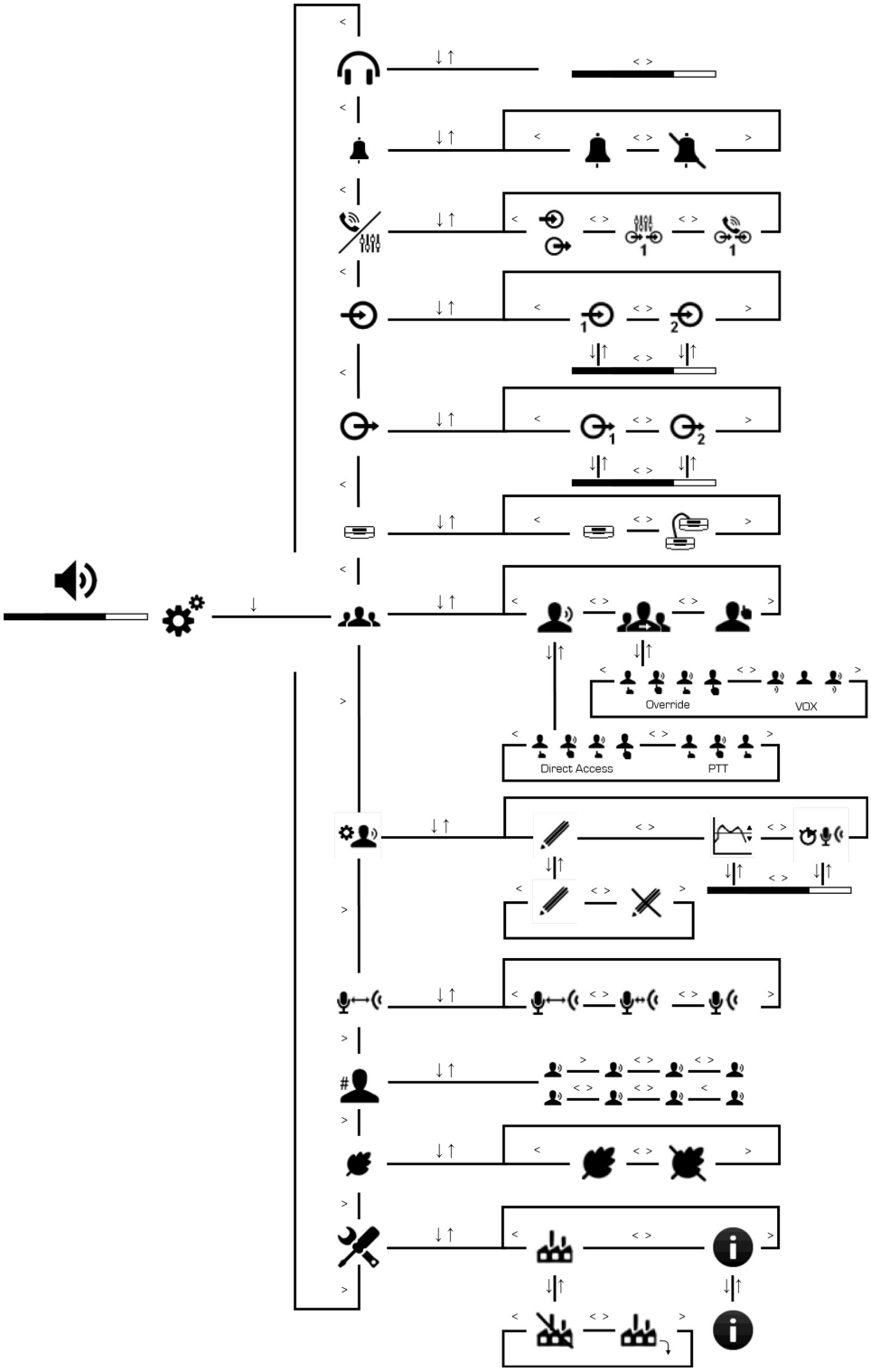
Menu Lock

There is the possibility to lock and unlock the menu to avoid accidental change in the settings. To lock/unlock the menu, press and hold ∧ , and press ⏻ in the meantime.



Menu Overview

The menu structure on the next pages can be used as a quick reference guide to configure the conference systems.



MICROPHONE MODE ( )

Level 2	level 3	Description
		Direct access
		Toggle
		Push to talk
		FIFO
		Toggle
		Group
		VOX
		Request

VOX SETTINGS ( )

Level 2	level 3	Description
		Pencil drop
		Pencil drop
		Pencil drop off
		Sensitivity
		Sensitivity adjustment

Level 2	level 3	Description
		Release time
		Release time adjustment

With the web server you can configure additional settings such as whether the last active microphone remains active. See "Vox settings" on page 69.

MICROPHONE SENSITIVITY PRESET( )

Level 2	level 3	Description
		Preset Far
		Preset Average
		Preset Close

NUMBER OF ACTIVE SPEAKERS ALLOWED( )

Level 1	level 2	Description
		Representation of speaker, maximim 8

ECO POWER( )

Level 1	level 2	Description
		Eco Power ON
		Eco Power OFF

SETTINGS MENU( )

Level 1	level 2	Description
		Factory settings
		Factory settings OFF
		Activate factory settings
		System information
		Information about software and hardware versions of the central unit

HEADPHONE VOLUME ( )

Level 1	level 2	Description
		Headphone volume adjustment

CHIME ( )

Level 1	level 2	Description
		Chime ON
		Chime OFF

EXTERNAL PROCESSING( )

Level 1	level 2	Description
		Independant AUX settings
		External processing
		Remote conferencing

AUXILIARY OUT SETTINGS ( )

Level 1	level 2	Description
		AUX OUT 1
		AUX OUT 1 volume adjustment
		AUX OUT 2
		AUX OUT 2 volume adjustment

AUXILIARY IN SETTINGS ( )

Level 1	level 2	Description
		AUX IN 1
		AUX IN 1 volume adjustment
		AUX IN 2
		AUX IN 2 volume adjustment

CONTROLLER / PERIPHERAL CONFIGURATION ( )

Level 1	level 2	Description
		Peripheral configuration
		Controller configuration

CONFIGURE GENERAL D-CERNO SETTINGS

Configuration menu selection allows entering the different settings as described below. All selected settings are activated immediately except for “restore factory settings” which needs additional confirmation.

Loudspeaker Volume

– +

Adjust the loudspeaker volume of the system. The loudspeakers setting are the same for a delegate as for a chairman. Loudspeaker volume is adjustable between 0dB and - 46dB + “OFF”

Eco Mode

The central unit has an ECO function where the system goes into low power mode when no sound has been detected for more than 30 minutes. You can enable and disable the eco mode.

Settings Menu

FACTORY SETTINGS

When the factory settings reset is selected and confirmed, the CU will reboot with its default settings (See "Default settings" on page 77).

If a factory settings reset is required, please wait until the D-Cerno CU has completely started up, so the ON/OFF LED is switched off. Then a factory reset can be performed.

SYSTEM INFO

Displays general system info as shown in example below. This contains the software version, serial number, IP address, subnet mask and MAC address of the CUR.

V	**0801**
SN	**13A00009**
IP	**192.168.0.20**
SM	**255.255.255.0**
MAC	**00:0E:3D:10:04:D6**

Headphone Volume

Adjust the headphone volume of the CU. The headphone volume of the central unit can be adjusted via the central unit menu.

Chime

Whenever the chairman uses the prior button, a chime will be audible. The chime mode can be set on or off.

Controller-Peripheral Configuration

Whenever an installation requires more than 50 units the system can be extended using 1 or 2 extra central units in a **controller/peripheral configuration**. The system can be extended to a **maximum of 150 unit**. One D-Cerno central unit acts like a controller whereas the other central units are configured as peripheral units.

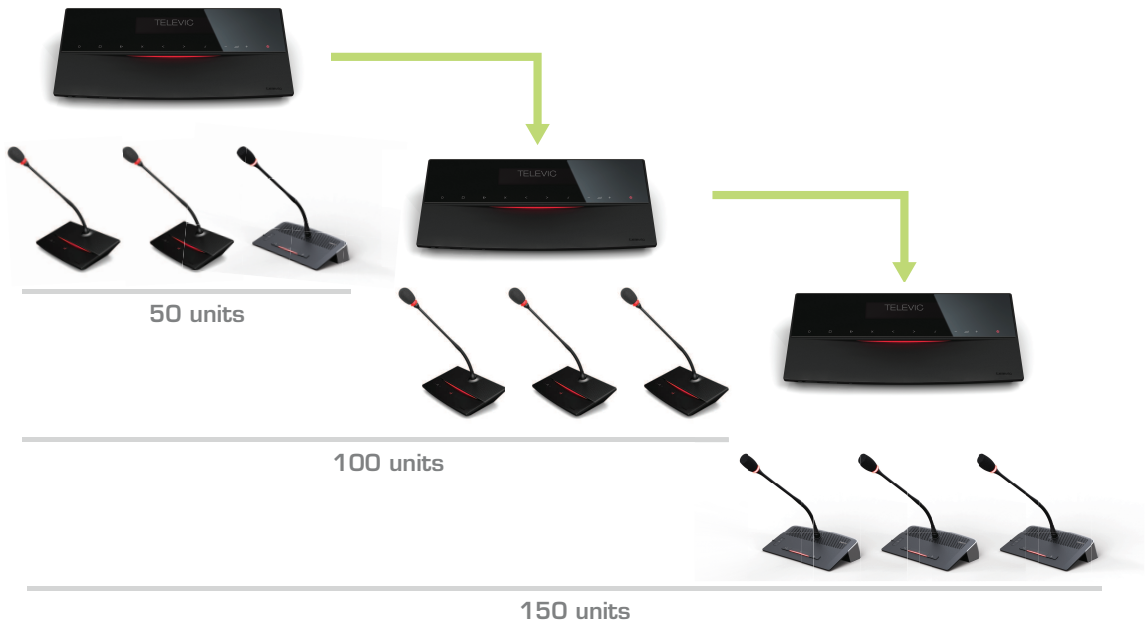


Figure 1-13 *A controller-peripheral configuration with multiple D-Cerno central units*

If the controller icon ( ) is selected, the D-Cerno central unit will then act as a controller. If the peripheral icon

( ) is selected, the D-Cerno central unit will then act as a peripheral.

The menu of a peripheral central unit cannot be accessed. That means that all settings need to be done on the controller central unit. For example: initialization of the units, volume settings…

Also, the recording functionalities and audio insert functionalities are disabled on peripheral central units.

CONFIGURE CONFERENCE MODES

Conference Modes

In order to guide a conference, several conference modes are available.

Chairman microphones are not affected by any conference mode and can be activated at any time with a maximum of 8 chairman units.

DIRECT ACCESS

This enables the participant to turn on his microphone at any time by pressing the MIC icon ( ) on his conference unit.

Several participants can be active simultaneously until the microphone limit setting (see chapter 12.5) is reached. The chairman can cancel all the active microphones by briefly pressing the PRIOR icon. This can cause a chime (on the condition this setting is activated: see chapter 12.9).

Holding the PRIOR button ( ) will temporarily mute all active microphones. Releasing the button will return the state of the microphone to before the PRIOR button was pressed.

ACTIVATION MODE

In the direct access mode there is an additional setting to define the way a delegate is granted the floor.

TOGGLE

Represented by animation sequence:

The microphone icon needs to be pressed to activate the unit and once more to deactivate the unit.

PUSH TO TALK

Represented by animation sequence:

The microphone is only active as long as the MIC icon is pressed.

OVERRIDE (1-8)

Makes it possible to activate 1 to 8 delegates simultaneously depending on microphone limit setting (see "Configure microphone settings" on page 50). Whenever the microphone limit is reached, and a delegate presses the microphone icon, the longest active microphone will be deactivated. The chairman can cancel all the active microphones by briefly pressing the PRIOR icon.

Holding the **PRIOR** button ( ) will temporarily mute all active microphones. Releasing the button will return the state of the microphone before the PRIOR button was pressed.

ACTIVATION MODE

In the override mode there is an additional setting to define the way a delegate is granted the floor.

TOGGLE

Represented by animation sequence:

The microphone icon needs to be pressed to activate the unit and once more to deactivate the unit.

VOX

The microphone of the delegates will be activated based on the fact that they start to talk. Once they stop talking the microphone will automatically be switched off when the release time has expired (see chapter 10).

WITH REQUEST

Whenever the microphone limit is reached pressing the MIC icon ( ) will add the delegate to a waiting list. The unit will enter into request state.

A unit in request is visualized via the green LED bar on the delegate unit, the green LED of the microphone button and by the blinking microphone LED ring.

The chairman can activate delegate unit that are in request state by pressing the NEXT icon ( ) on his unit. The LED bar of the first delegate unit in the queue list will become red and the microphone will be activated.

The chairman can cancel all the active microphones by briefly pressing the PRIOR icon (. Holding the **PRIOR** button will temporarily mute all active microphones. Releasing the PRIOR button will return the status of the microphones to as before the PRIOR button was pressed.

CONFIGURE VOX SETTINGS

Vox Setting

PENCIL DROP

This setting prevents accidental microphone activation by short sounds for example when a pencil is dropped on a desk.

The Pencil drop setting can be set on or off.

SENSITIVITY

Each room has a different acoustic signature. With this setting it is possible to adjust the sensitivity of the VOX mode.

The voice activation of a microphone is triggered by a sound level, adjustable between 0 and -24 dBFs.

RELEASE TIME

A voice activated microphone will be switched off when, after a certain time, no sound is detected. This time is adjustable between 1 and 10 seconds.

CONFIGURE MICROPHONE SETTINGS

Microphone Preset

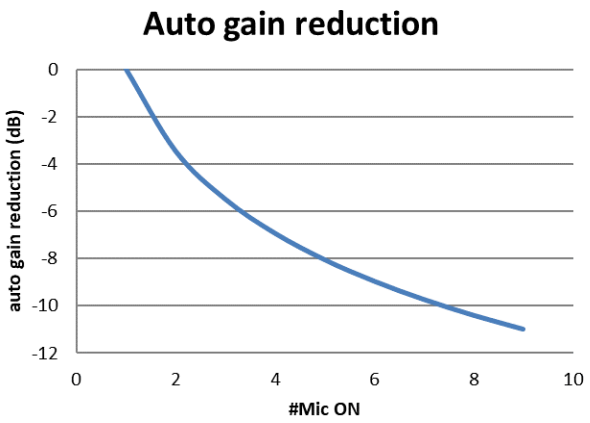
There are 3 limiter gain presets to choose from. The choice between these 3 will depend on the distance between the speaker and the microphone. This setting influences the sensitivity and the dynamic range of the microphones. Each step (far, average, and close) results in halve or double of the distance needed to have the same output level.

Below you can find the relation between microphone sensitivity preset, used distances between microphone and speaker and output level.

	Relative output level at fixed distance between microphone and speaker
Close	Level reference
Average	Level reference + 6dB
Far	Level reference + 12dB

	Change in distance between speaker and microphone to obtain the same output level
Close	Distance reference
Average	Distance reference x 2
Far	Distance reference x 4

There is also a fixed automatic gain reduction setting that reduces the volume per active microphone depending on the total number of active microphones. See graph below:



Microphone Limit

The maximum amount of open microphones at the same time can be between 1 and 8. The value of this menu item is represented by a number of delegate icons. For example four open microphones will look like this:

On top of the maximum number of active delegates it is possible to activate a maximum of 8 chairman units.

CONFIGURE EXTERNAL PROCESSING

Independent AUX Settings

Auxiliary input and output settings are independent form each other and allow an external signal to be added to the floor and to extract the total floor signal Audio path for Independent Aux settings.

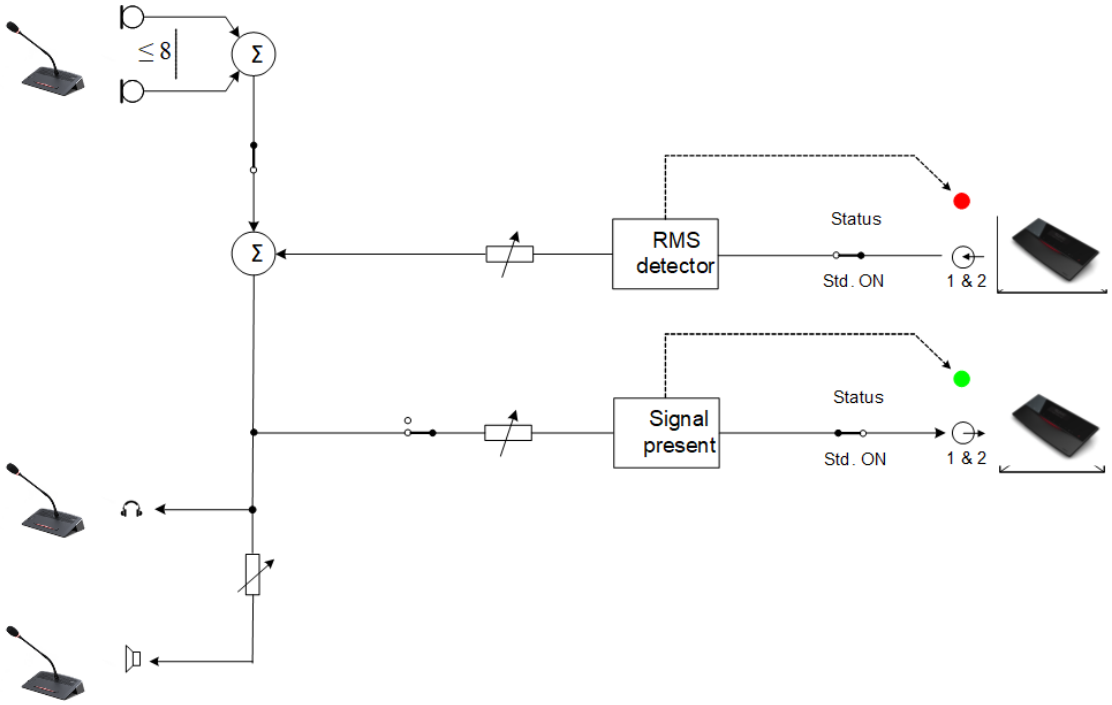


Figure 1-14 *Normal audio path*

Remote Conferencing

The **Remote conferencing** option gives you the possibility to connect to a central unit to for example a video conferencing system or a telephone coupler. To prevent echoing, you need to set the remote conferencing option.

AUDIO PATH FOR N-1

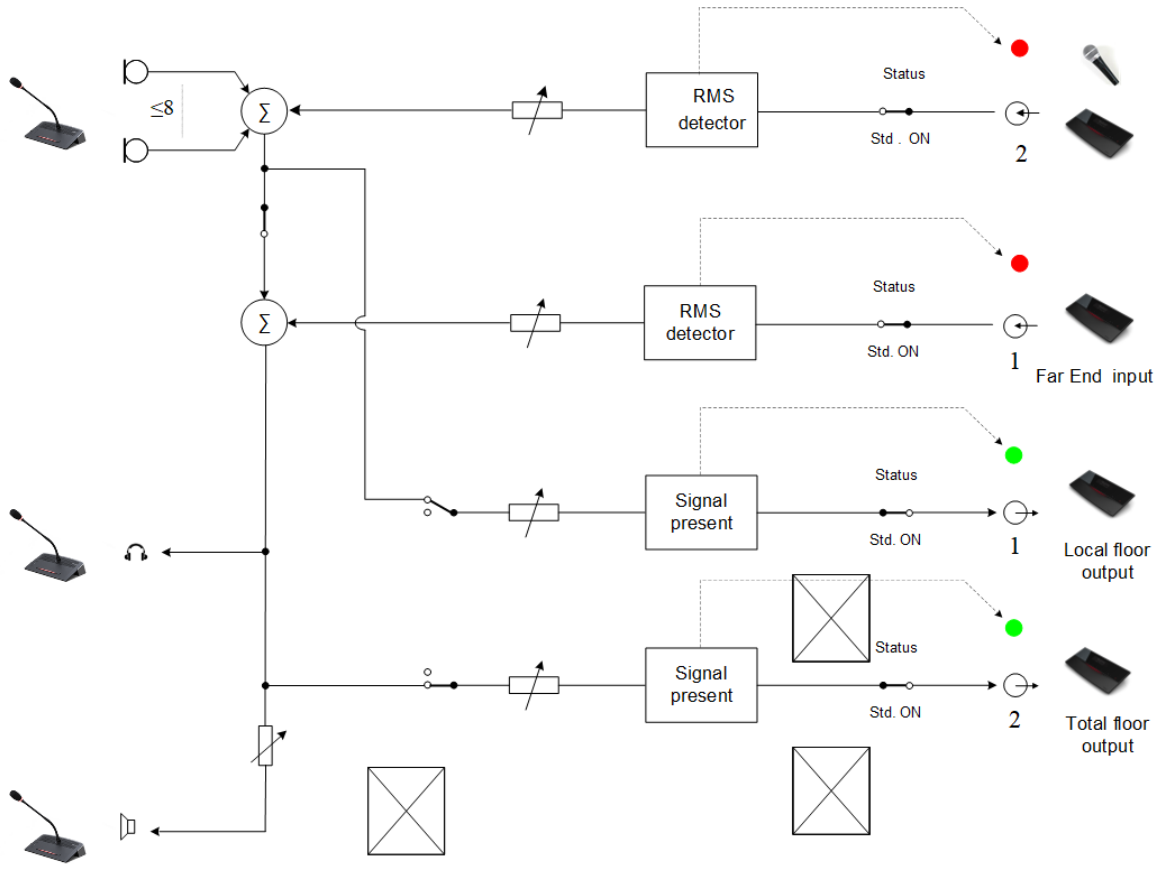


Figure 1-15 *Remote conferencing audio path*

When selecting "Remote conferencing, Aux volume settings are set to default values! So Aux input – output levels have to be set to desired values AFTER selecting "Remote conferencing"

External Equalizer

To avoid feedback or to equalize audio signals it is possible to connect external equipment to the central unit. When this setting is chosen, the floor signal (mics + Aux IN2) will be routed to both AUX OUT. The signal present at AUX IN1 will be used as the new floor channel and audible on the units loudspeakers. This way it is possible to use external audio equipment like equalizers, feedback destroyers or mixers. The schematic below summarizes this feature.

The signal at both AUX OUT will be the sum of the microphones and the AUX IN2.

Audio path for external equalizer Mode

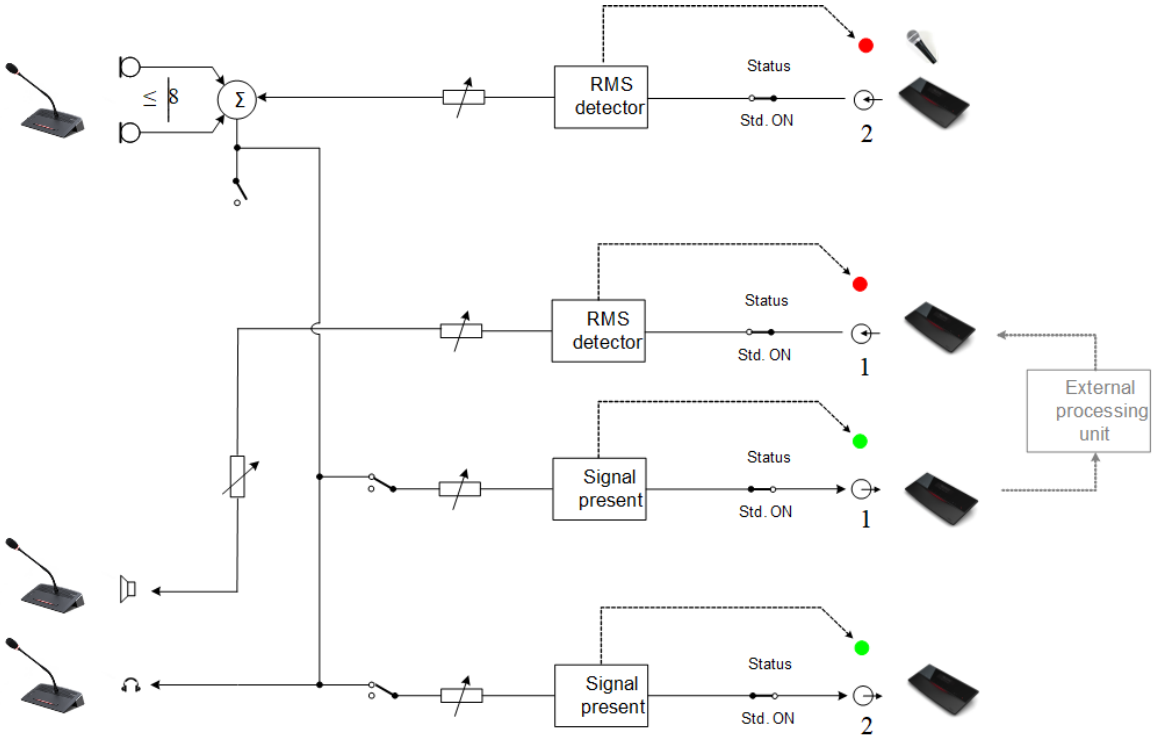


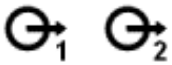
Figure 1-16 *External equalizer audio path*

"Remote conferencing" and "External Equalizer" audio paths apply only to Aux In 1 and Aux Out1. In "remote conferencing" setup mode, Aux Out 1 is considered as "local floor" out and Aux Out 2 is considered as "total floor" out. Aux Input 1 is used as "Far End input", so this signal will not be part of the Aux Out 1 signal. Aux Input 2 (XLR) can also be used to add a signal (e.g. from external microphones) to the local floor.

When selecting "External equalizer", Aux volume settings are set to default values! So Aux input – output levels have to be set to desired values AFTER selecting "External Equalizer"

CONFIGURE AUX SETTINGS

Audio Out

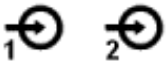


The D-Cerno CU has 2 auxiliary output RCA connectors. On each output there is also an activity indication.

(LEDis on when level > -40dBV)

The output gain is adjustable between +24dB and -51dB + "OFF". Default gain value = 0dB. 10dBV (=0dBFS)

Audio In



Two auxiliary line inputs are available on the central unit.

- Aux IN 1: RCA connector
- Aux IN 2: XLR connector

On each input there is also an overload LED indication. (LED is on when input level > 9dBV).

The input gain is adjustable between +24dB and -51dB + "OFF". Default gain value = 0dB. 10dBV (=0dBFS)

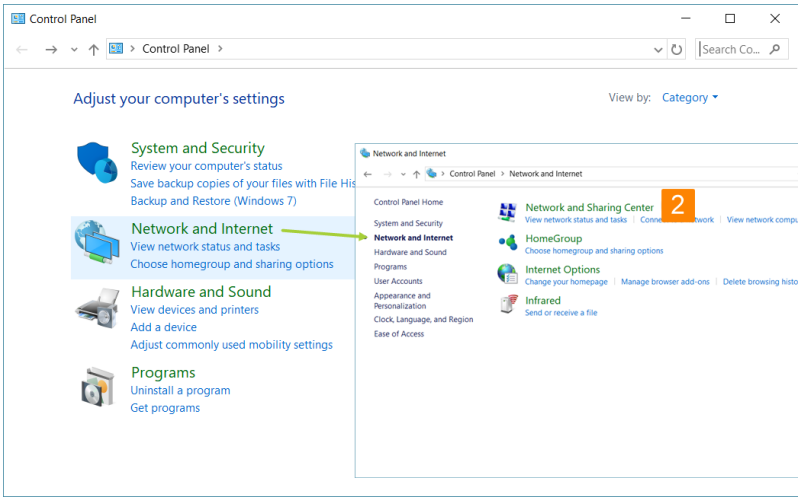
CONFIGURE IP SETTINGS

To access the web server your computer needs an IP address and subnet mask that can access the IP address of the central unit. The **default IP address** of the central unit is **192.168.0.20**, which means the computer should have an IP address that is within the same subnet, like 192.168.11 or 192.168.0.21. The subnet mask must be the same for all equipment on the network, 255.255.255.0.

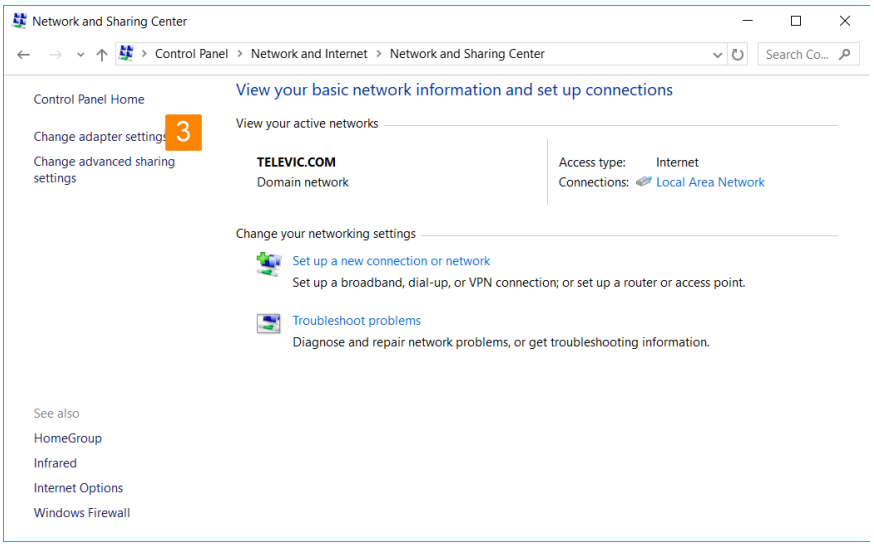
Change IP Settings In Windows

1. Go to **Control panel**.

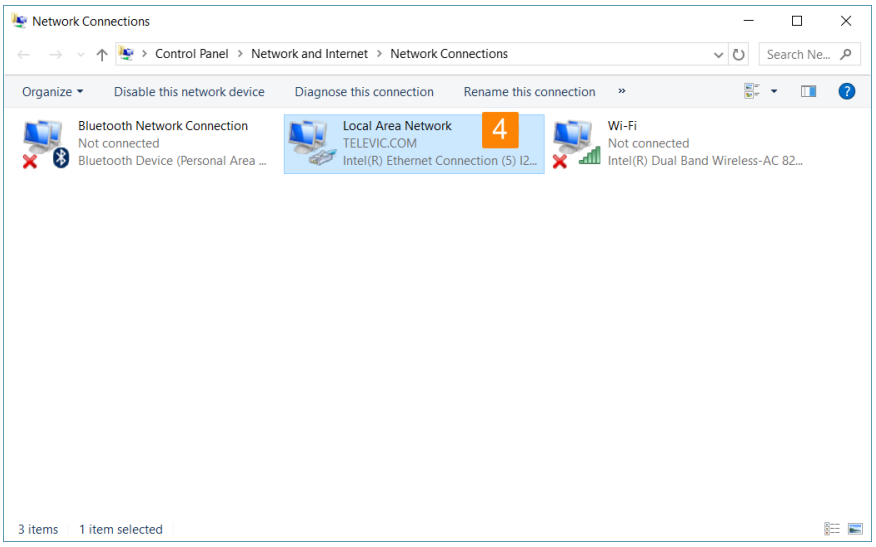
2. Click **Network and Internet** and then **Network and sharing center**.



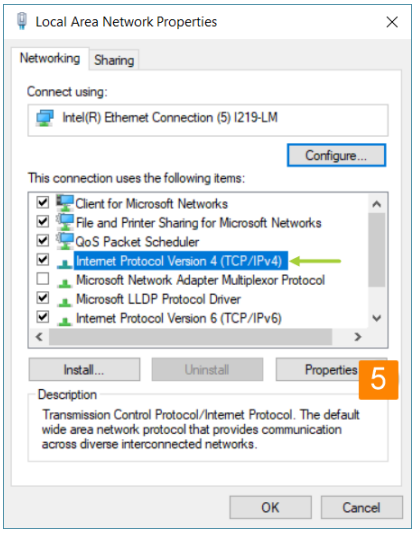
3. Click **Change adapter settings** in the menu on the left.



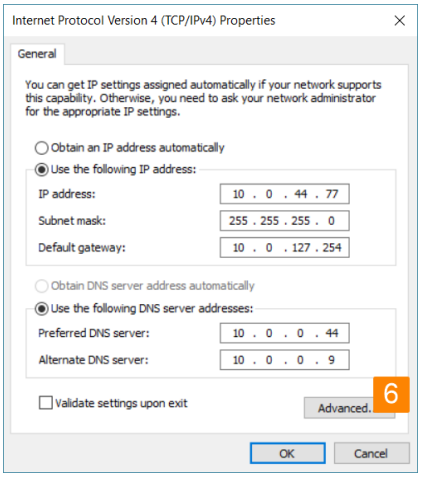
4. Right-click the **Local Area Connection** and select **Properties**.



5. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



6. To assign a fixed IP address to your computer, click **Advanced**.



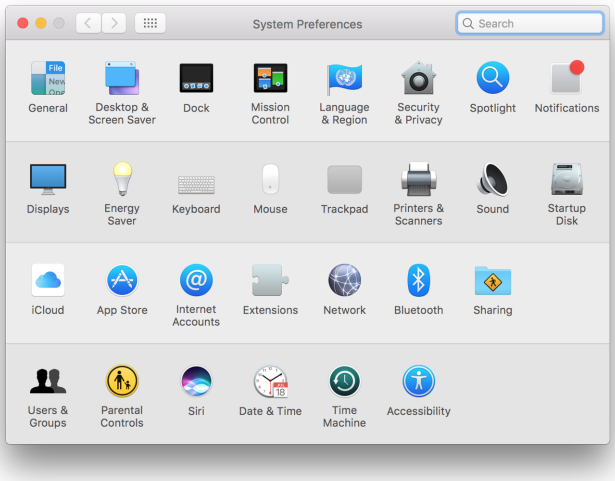
7. Click **Add** in the IP address pane.

8. Enter an IP address in the range of the central, for example 192.168.0.11. Fill in 255.255.255.0 as subnet mask.

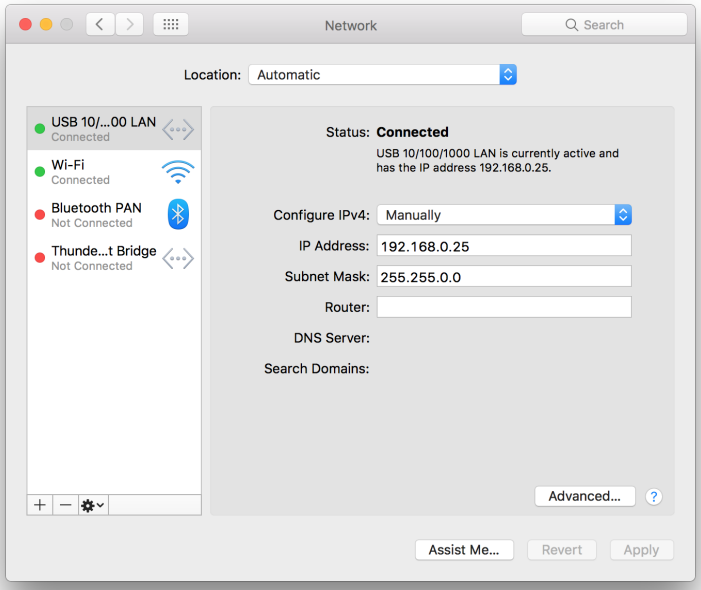
9. Click **OK**. You are now ready to access the D-Cerno system.

Change IP Settings In MacOS

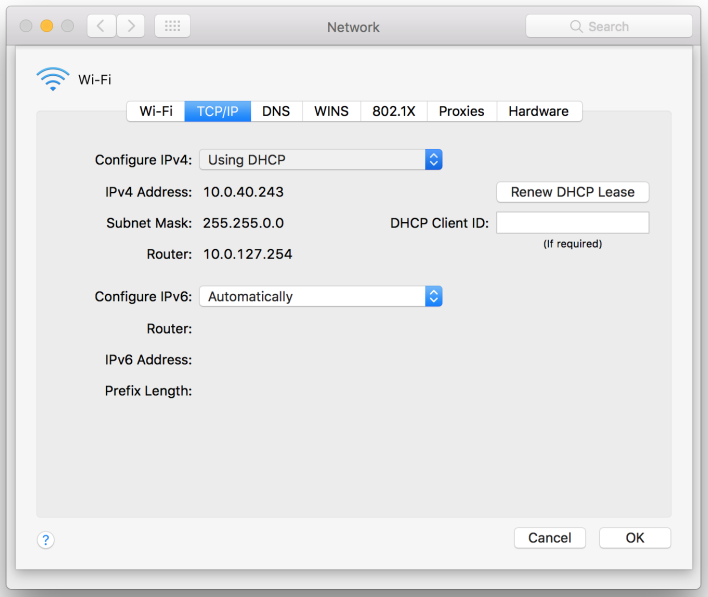
1. Go to the **Apple Menu** and select **System Preferences**.



2. Select **Network** from the menu.

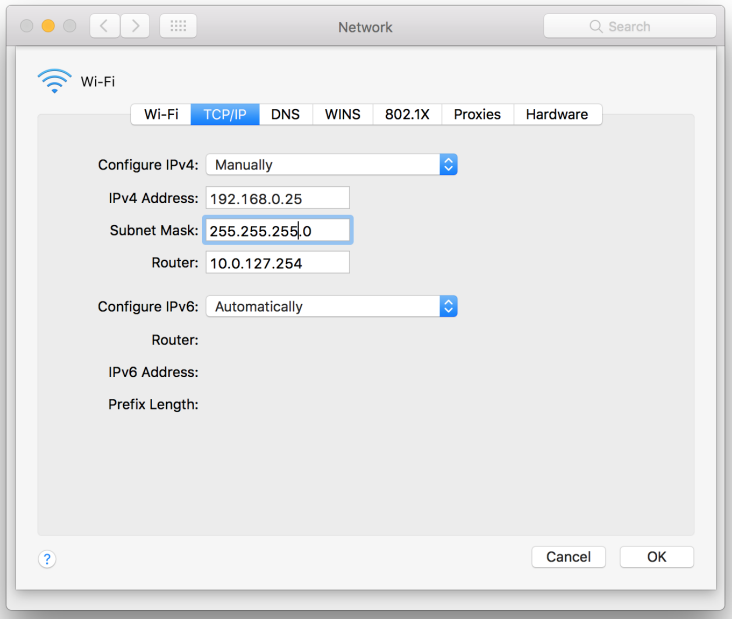


3. Click the **Advanced** button.



4. Select **TCP/IP** in the menu on top.

5. Change **Configure IPv4** to **Manually**.



6. Enter an IP address in the range of the central unit, for example 192.168.0.11. Fill in 255.255.255.0 as subnet mask.

7. Click **OK**.

If you have a proxy server or firewall installed on your computer check the connection restrictions to the D-Cerno unit IP address and content that uses java scripts.

Please refer to the documentation that came with your installation for the correct settings.

Please refer to the documentation that came with your PC or MAC installation for additional information and the correct settings.

Assigning Multiple IP Addresses (IP – Aliasing)

To use multiple tcp_ip addresses on your PC, set a fixed IP address first as explained above and add the appropriate Subnet Mask, Default Gateway and the DNS server addresses.

The Default Gateway and DNS servers can be determined by executing the command **"ipconfig /all"** in a "cmd" screen.

Windows : Click on start -> enter "cmd" in the search bar and press enter

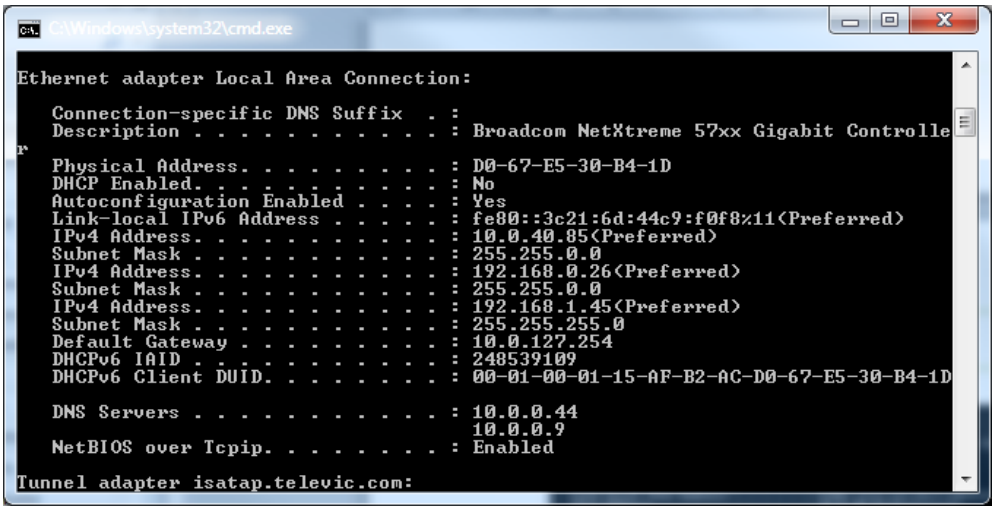


Figure 1-17 *Command Prompt*

In this example the PC has normally "10.0.40.85" as IP address. Now IP Address "192.168.0.26" (e.g.) has to be added to be able to access the webserver of the central unit.

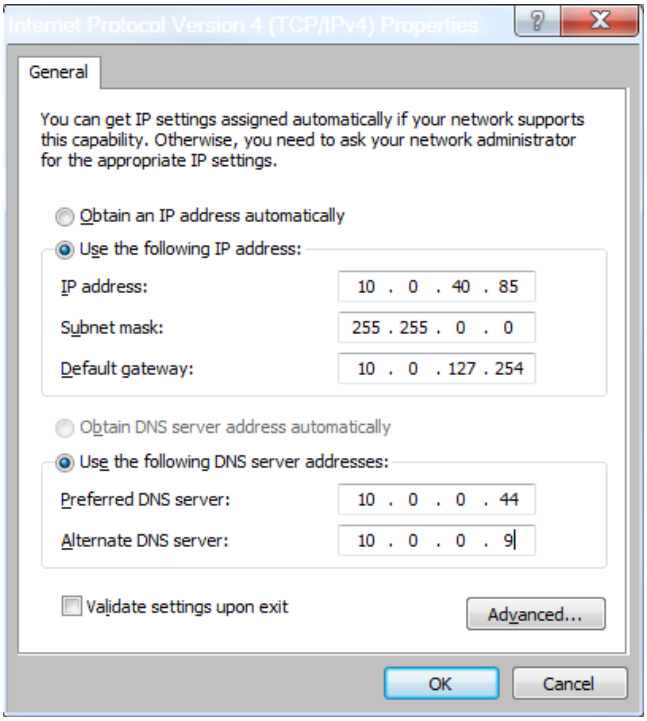


Figure 1-18 *DNS and gateway settings*

Next click on "Advanced" and "Add"… to add IP Address(es) and click OK twice (Figure 1-19).

To assign multiple IP addresses on a MAC we kindly refer to an external document on the Televic partner domain.

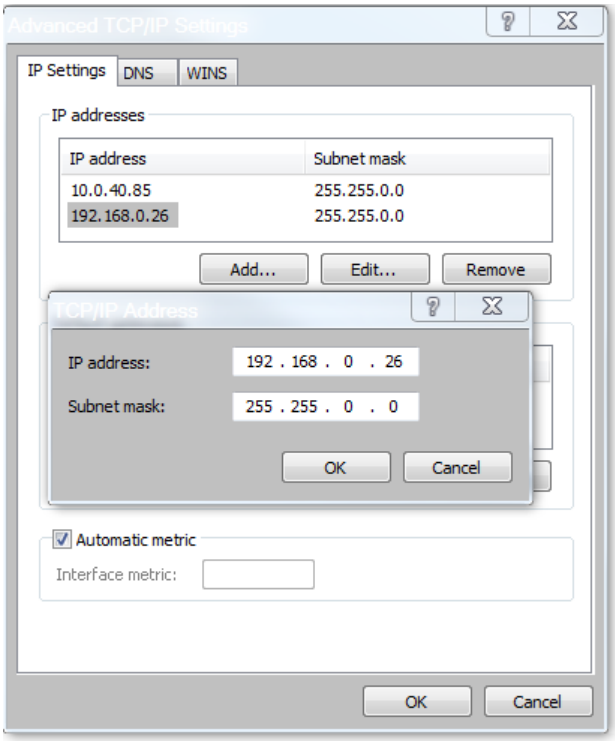


Figure 1-19 *Adding IP-address*

ACCESS THE WEB SERVER

Before you can access the web server you need to configure your IP address as described in "Configure IP settings" on page 56

Install Cables

To access the web server connect your computer or smartphone (by means of a router) to the LAN port using a straight-through patch cable.

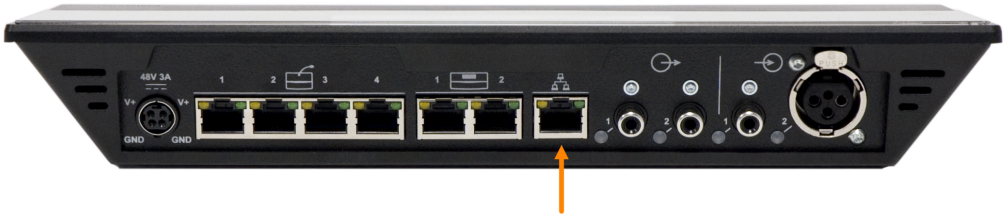


Figure 1-20 *LAN port on the D-Cerno central unit*

Access The Web Server

The web server is HTML 5 based web server, which is compatible with mobile devices such as iPhone, Android or iPad.

To access the web server open your web browser and type in 192.168.0.20 in the address bar, press enter. You will then see the D-Cerno login screen. The default password is "**1234**", click **Login**.

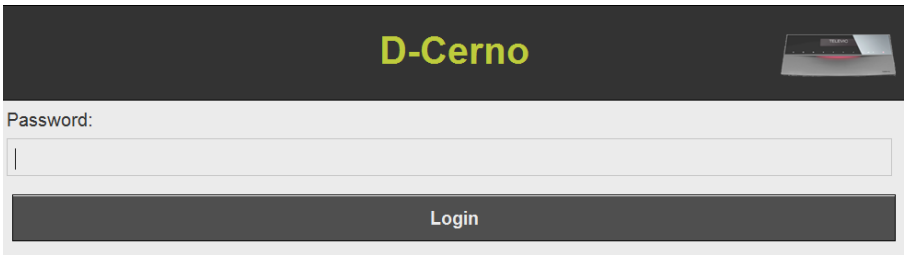


Figure 1-21 *D-Cerno login screen*

Default Screen

After you successfully establishing a connection to the D-Cerno webserver and passing the password screen, the default D-Cerno screen appears.

Figure 13.11: Default screen

RECORD AUDIO

The D-Cerno CU-R has 3 record buttons. With these buttons it is possible to start, stop or pause a recording from the central unit.

- ○: Start recording
- □: Stop recording
- ▷: Play / pause recording

On the front of the central unit there is a possibility to connect two USB storage devices for direct recording of the meeting. For more information about the USB storage devices, please refer to "External connections" on page 27.

The recording of a meeting can be saved as MP3 or WAV format.

The Central unit uses 2 USB ports so that the USB devices can take over from each other. If one USB device is full, the other one will take over. In the picture below you can see the different statuses of the USB devices. These are displayed on the central unit.

USB	Idle	USB 1 2	USB1 active USB2 present + error
USB 1	USB1 active	USB 1 2	USB1 active + error USB 2 active
USB 2	USB2 active	USB 1 2	USB1 active + error USB2 present + error
USB 1 2	USB 1 active USB 2 present	USB 1 2	USB1 present + error USB2 active + error
USB 1 2	USB 1 present USB 2 active	USB 1	USB1 full
USB 1	USB 1 active + error	USB 2	USB2 full

USB 2 active + error		USB1 full USB2 active	
USB1 active + error USB2 present		USB1 active USB2 full	
USB 1 present USB2 active + error			
		USB1 almost full USB2 present	
		USB1 present USB2 almost full	
		USB1 almost full	
		USB2 almost full	
		USB1 full USB2 almost full	
		USB1 almost full USB2 full	

The recording can be started /stopped, played or paused from the central unit with the record buttons.

Record Using The Web Server

More advanced control is available through the web server:

PAUSE / STOP OR START A RECORDING

A recording can be paused, stopped or started with these three buttons. You can also see how long ago a recording started.

Figure 1-22 *Pause/ stop or start a recording*

CONTENT OF DEVICES:

With the web server it is possible to see on which USB device the recording is stored. In the left corner you can see the remaining time for recording on the USB device. This is automatically adjusted according to the used recording format. The size of the recording is displayed next to the recording.

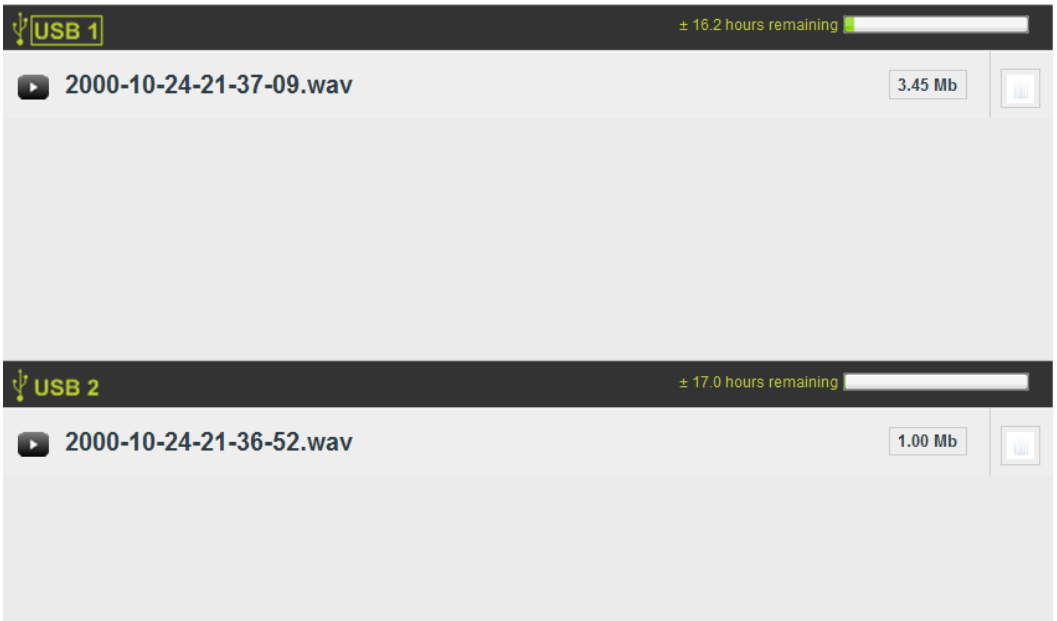


Figure 1-23 *Content of devices*

PLAYBACK

Playing the recording file can be done by pressing on the recorded file.

DELETE:

A recording can also be deleted by pressing on the delete button.

Figure 1-24 *Figure 13.17: Delete a recording*

SWITCH ACTIVE USB DEVICE:

By using the switch button it is possible to switch between USB devices. This can be done before recording or when a recorded is started.

Figure 1-25 *Switch USB device*

CONFIGURE D-CERNO USING THE WEB SERVER

Parameters Also Accessible From The D-Cerno Main Menu

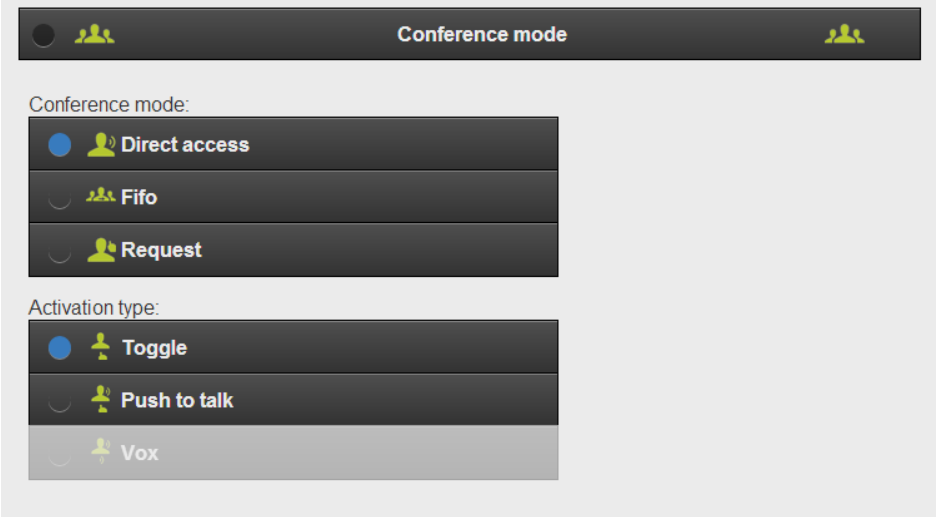
The following settings can be accessed on both the central unit and the web server. That's why we will refer to "Configure general D-Cerno settings" on page 43 for the explanation of the different options.

VOLUME

After you successfully access the D-Cerno web server for the first time, you can change the volume settings of the central unit, directly from the web server. Change the volume using the slide bar.

CONFERENCE MODE:

See "Configure conference modes" on page 46 for more information.

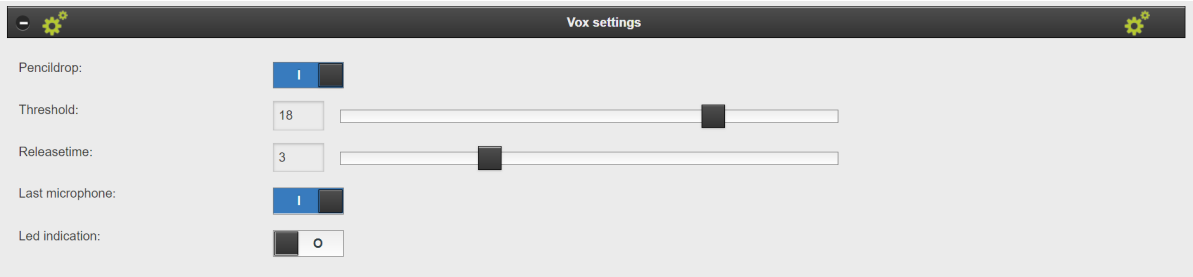


VOX SETTINGS

In the D-Cerno web server you can configure two additional settings which are not available on the central unit:

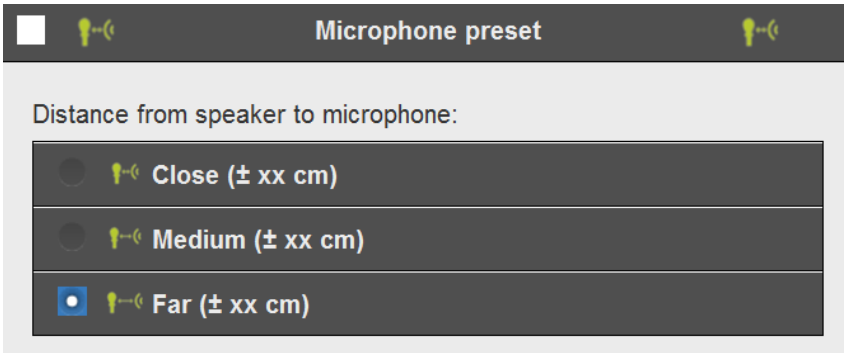
Parameter	Description
Last microphone	Keep the last activated microphone active even when no sound is detected
Led indication	Use microphone status LED to show that microphone is active

See "Configure VOX settings" on page 49 for more information on the other VOX settings.



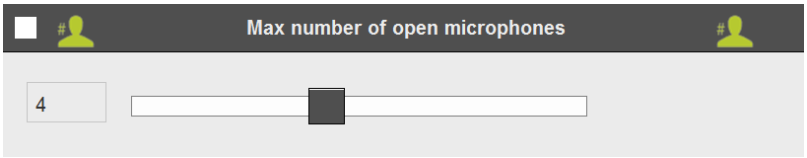
MICROPHONE PRESET

For more information see "Configure microphone settings" on page 50.



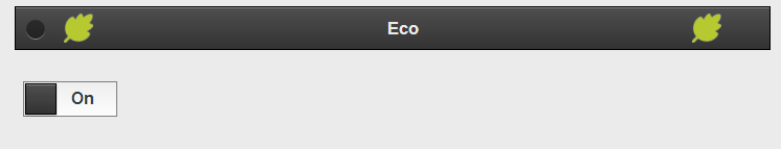
MAXIMUM NUMBER OF OPEN MICROPHONES:

For more information see "Configure microphone settings" on page 50.



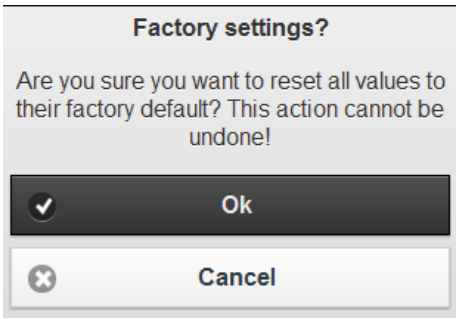
ECO MODE

For more information see "Eco mode" on page 43



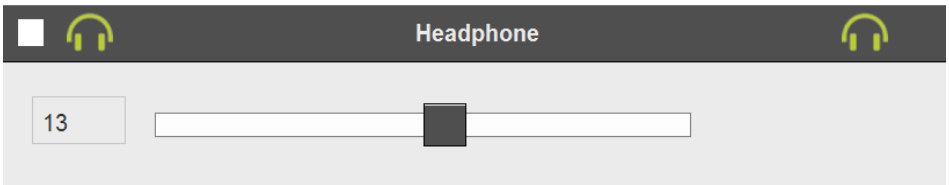
FACTORY SETTINGS

For more information see "Configure general D-Cerno settings" on page 43.



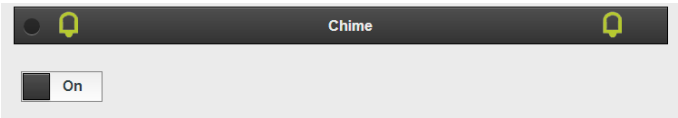
HEADPHONE

For more information see "Headphone volume" on page 44.



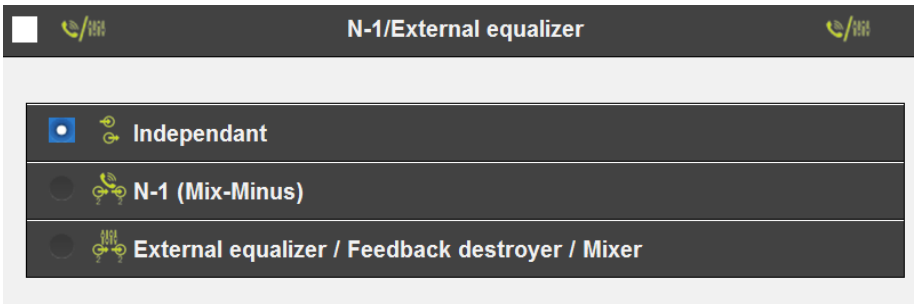
CHIME

For more information see "Chime" on page 44



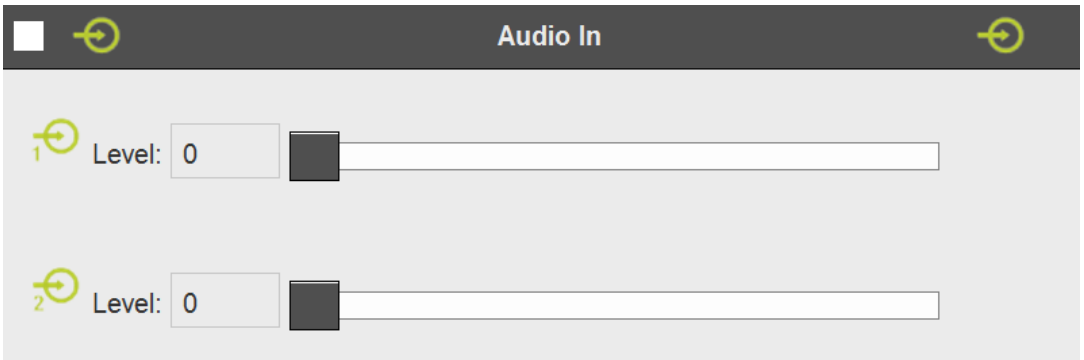
N-1/EXTERNAL EQUALIZER

For more information see "Configure external processing" on page 52.



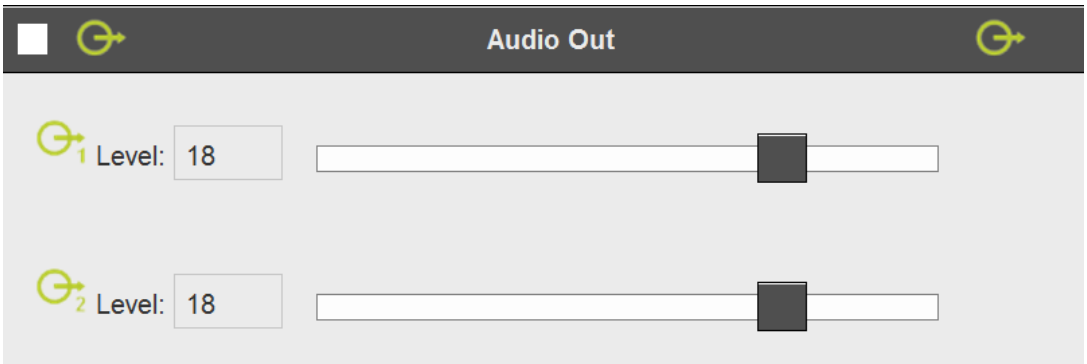
AUDIO IN

For more information see "Configure external processing" on page 52.



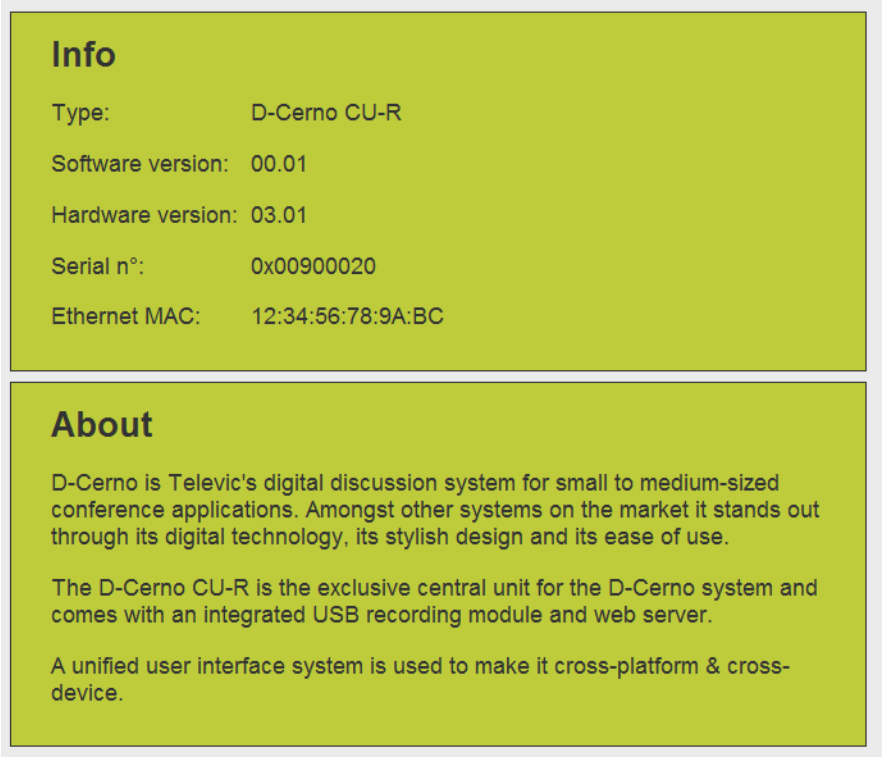
AUDIO OUT

For more information see "Configure external processing" on page 52.



INFO

For more information see "Configure general D-Cerno settings" on page 43.



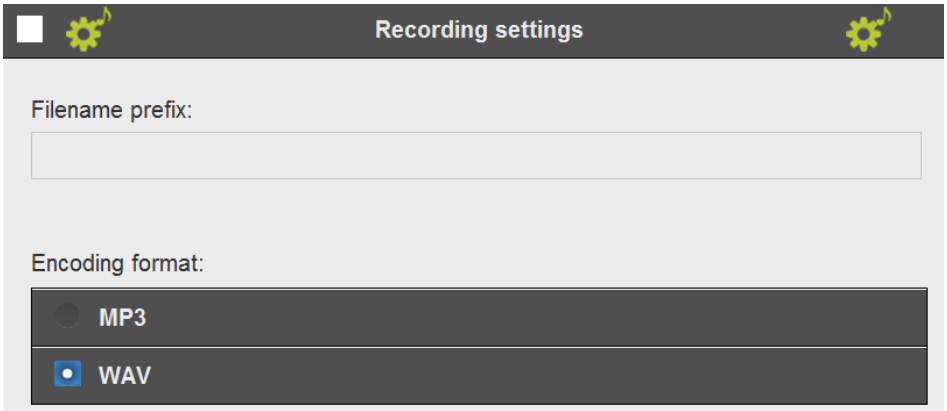
Settings Only Accessible Via The Web Server

RECORD SETTINGS

The encoding format and file name prefix can be changed in the record settings.

One minute of recording in WAV format takes about 4MB.

One minute of recording in MP3 format at 192kbps takes about 1.5MB.

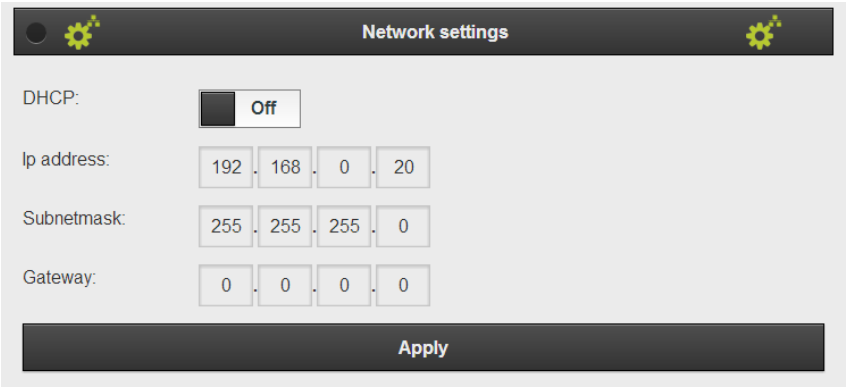


CAMERA PROTOCOL

The "IP address" is the destination IP address (UDP) and "Port" is the destination port (UDP). For more information about the camera protocol string we refer to chapter 16.

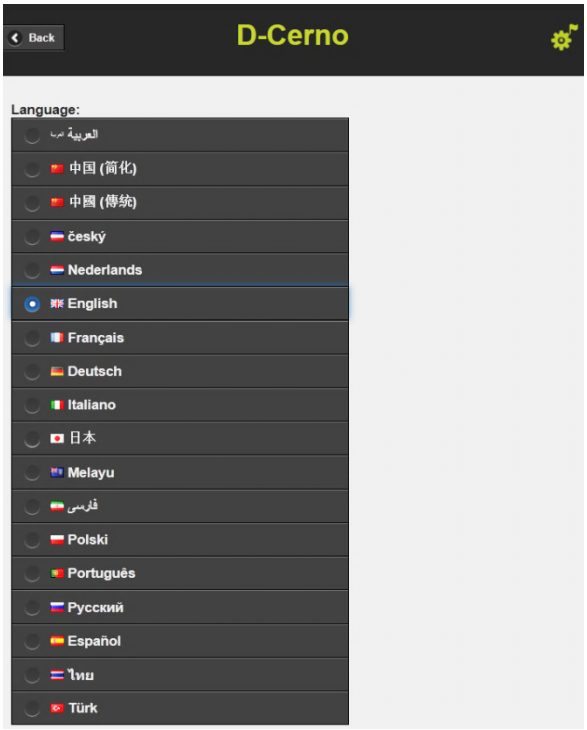
NETWORK SETTINGS

You can customize the TCP/IP setting to allow the D-Cerno central unit into your personal or company LAN network. When using multiple D-Cerno central units it is mandatory to choose different IPs to prevent conflicts. After clicking "Apply" you need to restart the Central Unit by clicking the ON/OFF button and also change the IP address in your browser to the new IP address.



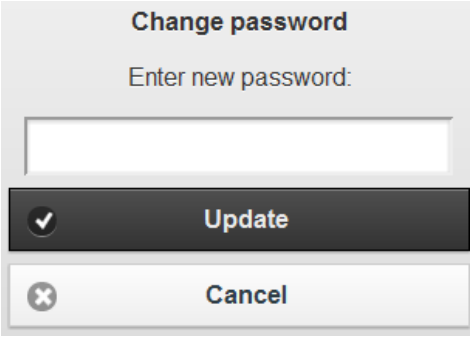
LANGUAGE SETTING:

In the language setting you can select your preferred language to view the D-Cerno web server in.



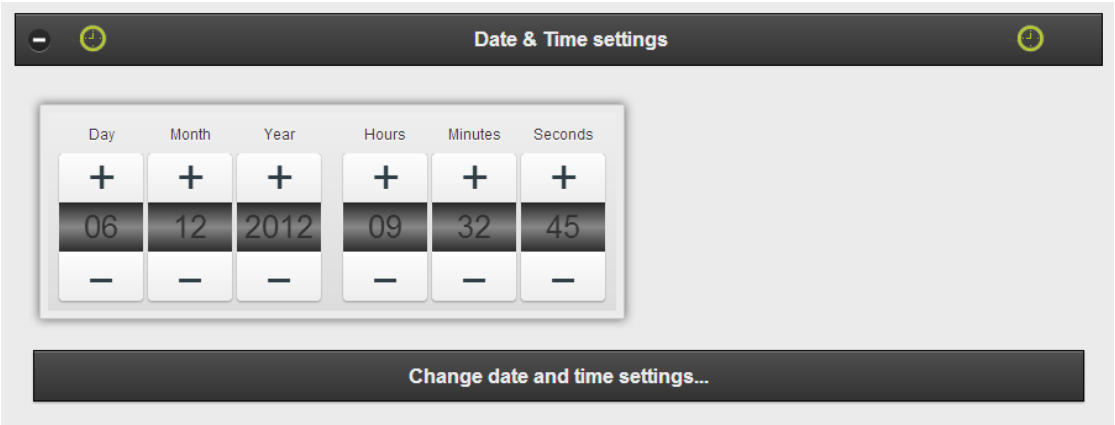
CHANGE PASSWORD:

The default password is "1234", it is possible to change this in the screen displayed below.



TIME & DATE SETTINGS

In the time and date settings window you can see the clock of your computer. This is not the clock of the D-Cerno CUR. If the timestamp that is added to the recorded files is not correct you can change the time and date by clicking **Change date and time settings…**. This way you have the correct timestamp.



SYSTEM UPDATE

Here an update of the system can be performed. For a detailed description of the update procedure please see "Update D-Cerno" on page 78.

DEFAULT SETTINGS

Menu item	Default value
Operating Mode	Direct access
Activation mode	Toggle
Pencil drop	ON
Sensitivity	
Release time	4 seconds
Microphone preset	Far (Maximum sensitivity)
Maximum number of open microphones	4
Eco mode	ON
Headphone Volume	6dBFs
Chime	OFF
Loudspeaker Volume	-6dBFS
Output level Aux Out 1	-10 dBFS
Output level Aux Out 2	-10 dBFS
Input level Aux In 1	OFF
Input level Aux In 2	OFF
Aux-In/Out Mode	Independent

UPDATE D-CERNO

If an update of the system is advised you will need 4 files for the 4 parts of the update: host_x-xx-xx.mcs, peripheral_x-xx-xx.mcs, web_x-xx-xx.img and os_x-xx-xx.ubi, where the x-xx-xx is replaced by the current version.

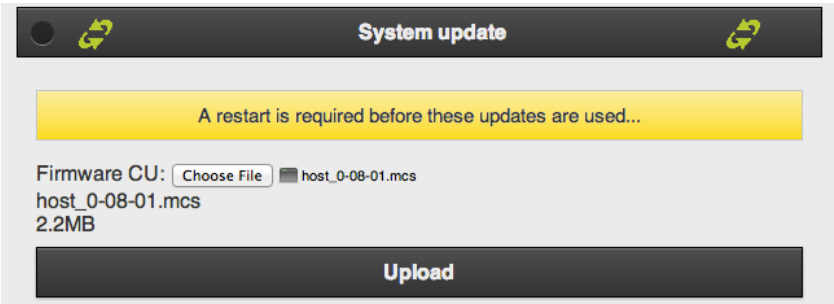
Go to https://www.televic-conference.com/en/d-cerno-software-updates to find all D-Cerno update files. The complete update procedure takes about 20 minutes.

After each part of the update, please do a restart of the Central Unit to make sure it starts with the latest uploaded version. Also close and re-open the web browser.

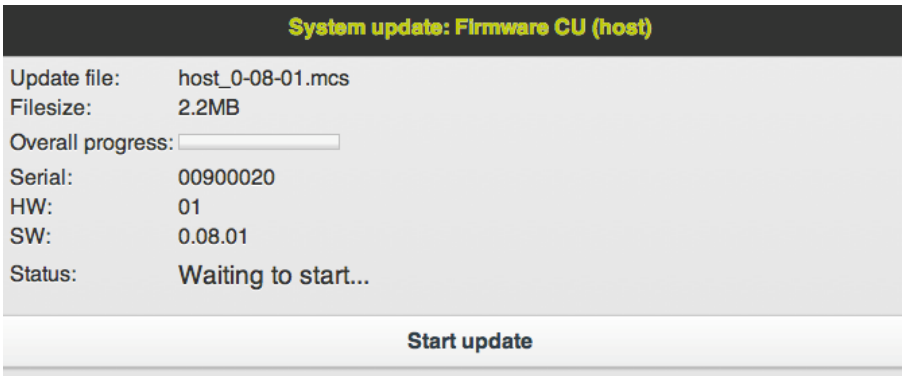
If an update is done, please do an update of all files. By doing this you are 100% sure all files are up to date.

Firmware CU

By clicking on "Choose file" a pop-up window appears. Please choose the file "**host_x-xx-xx.mcs**". Then press "**Upload**".



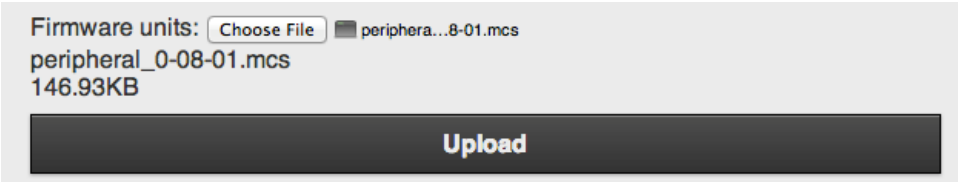
Then the following is shown:



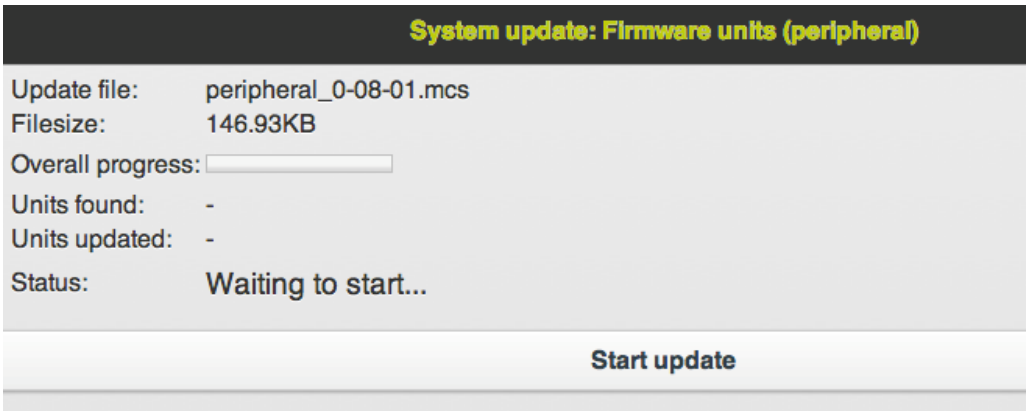
Press "**Start update**" to start the update. This takes around 15 minutes to complete the first parts. Under "**Status**": you can see the current status. When completed the status changes to "**Update completed successfully**!". Then press "**Back**" to go to the second part and restart the central unit.

Firmware Units

Before uploading a new file, please **manually restart the central unit** and re-open the webbrowser. Then choose the file: "**peripheral_x-xx-xx.mcs**" and click "**Upload**".

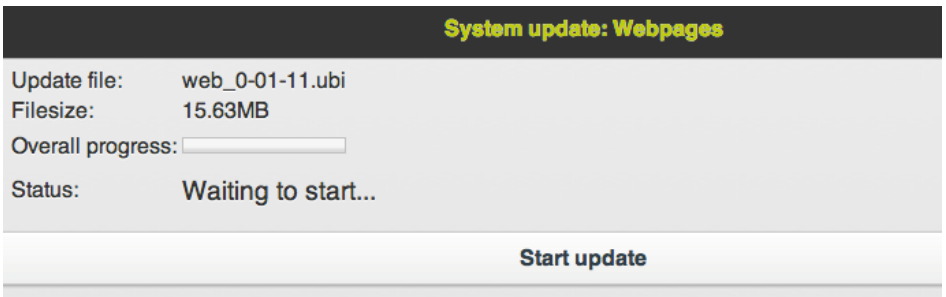


Then again a new screen is shown where the status says "Waiting to start…". Press "**Start update**". The update takes a couple of minutes. During the update the light ring of the delegate units should blink and after completion the total number of update units should correspond with the actual number of units connected to the central unit. If this is not the case it is advised to do the same update procedure a second time. (Again restart both Central Unit and webbrowser).



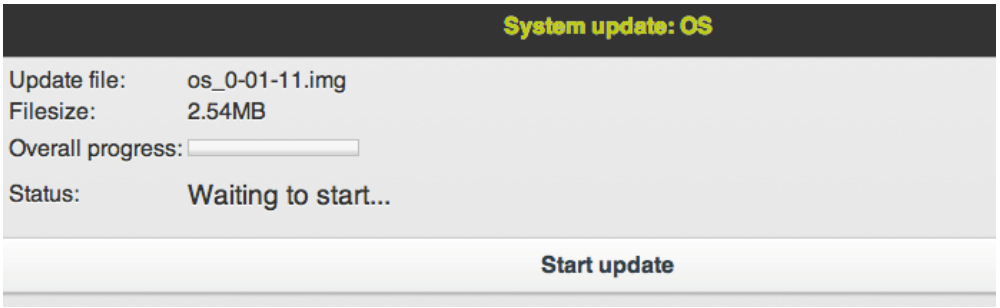
Webpages

Choose the file "**web_x-xx-xx.ubi**" and press "**Upload**", "**Start update**". The update takes about 1 minute. After completion please restart both the web server and central unit.



OS

Choose the file "**os_x-xx-xx.img**" and press "**Upload**", "**Start update**". The update takes about 1 minute. After completion please restart both webserver and central unit.



Now all files and units are up to date.

APPENDIX

This chapter contains additional information relevant to use the D-Cerno system.

CAMERA PROTOCOL

First set the correct destination IP address and port. The port number has to be higher than 3000. For example 9050 is a valid port.

The content is sent using the UDP packet protocol and it is given in the following format (the * are substitute for the real values, see further examples): **{"serial": "********","status": *,"totalMicOn": *,"totalMicReq",*}**

SERIAL

"serial" contains the serial code of the delegate unit. This code is shown at the back of each delegate unit, as the 8-digit number just under the barcode.

The "serial" data of a D-Cerno D delegate unit starts with "10……"

The "serial" data of a D-Cerno C chairman unit starts with "11……"

STATUS

"status" has several options:

- 0 = off
- 1 = on
- 2 = request
- 4 = next in line
- 8 = prior

TOTALMICON

"totalMicOn" = total number of active microphones.

TOTALMICREQ

"totalMicReq" = total number of microphones in request.

So for example if the microphone with serial "101008D2" goes into request mode the following command is send:

{"serial": "101008D2","status": 2,"totalMicOn": 1,"totalMicReq",0}

After a microphone conference mode change the following string is sent:

{"serial": "00000000","status": 0,"totalMicOn": 0,"totalMicReq",0}

D-CERNO CUR STARTUP OPTIONS

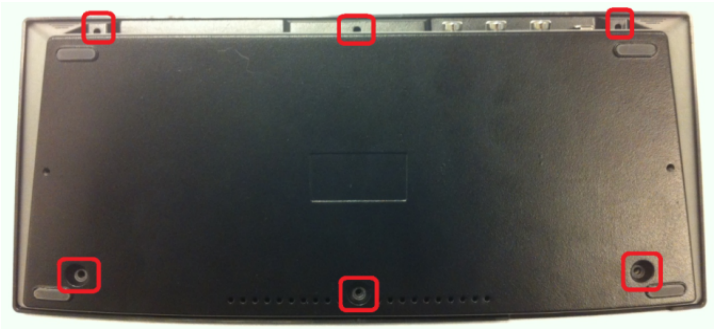
The D-Cerno CUR has two startup triggers:

- On / Off button
- Connection with the power supply

This choice can be made by setting a hardware switch in a certain position. The default is the On / Off button. To change to automatic startup when the power supply is connected, follow the steps below:

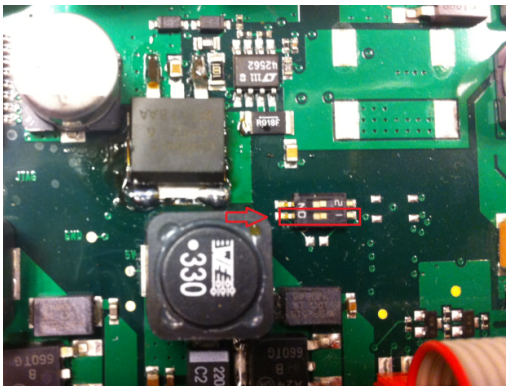
1. Make sure nothing is plugged in in the D-Cerno CUR.

2. Remove the screws at the back of the units as shown below.



3. Carefully remove the front of the unit. The location of the switch is marked in red below.

4. Below a close-up of the switch. The startup option is the lower switch. By default (On / Off switch mode) the switch is positioned to the left. To change the mode to start from the moment to power is supplied to the unit the switch needs to be positioned to the right, as shown in the picture below.



5. In case "Connection with the power supply" option is used, the on/off button can/may not be

used to switch off the system! You also need to deactivate the Eco mode.

6. Carefully reassemble the unit.

Before switching on the central unit please make sure all units are correctly connected to the Central Unit.

TECHNICAL DATA

Electrical And Electro Acoustical Characteristics

Parameter	Value
Frequency response	25Hz to 15 KHz (+/-3dB)
Harmonic distortion	≤ 0.02%
Input sensitivity	0dBV= -10dBFS
Input gain adjustment	+24dB to -51dB + "OFF"
Input impedance Aux 1	≥ 7 KΩ (asymm.)
Input impedance Aux 2	≥ 20 KΩ (symm.)
Output level	0dBV= -10dBFS
Output gain adjustment	+24dB to -51dB + "OFF"
Output impedance	≤ 600 Ω
Volume control	0dB to -46dB + "OFF"
Headphone output level	Max 70mW in 32 Ω
>Headphone volume control	0dB to -72dB + "OFF"
Headphone impedance	16 Ω to 150 Ω

Mechanical Characteristics

Parameter	Value
Dimensions W x H x D (mm)	
Central unit	300 × 135 × 50
Including Packing	345 × 250 × 155
Delegate / Chairman table top unit (fixed microphone)	210 × 135 × 50
Delegate / Chairman table top unit (screw lock microphone)	211.4 × 136 × 48.2

Parameter	Value
Delegate / Chairman flushmount unit	150 x 50 x 46
Including Packing (fixed microphone for table top unit)	335 × 250 × 120
Including Packing (screw lock microphone for table top unit)	250 × 150 × 90
Including Packing (flushmount unit)	205 x 85 x 60
Power supply	170 × 70 × 35
Including Packing	215 × 160 × 50
Weight (g)	
Central unit	1300
Including packing (CU + PS + Cable)	2660
Delegate / Chairman table top unit (fixed microphone)	660
Delegate / Chairman table top unit (screw lockmicrophone)	760
Delegate / Chairman flushmount unit	270
Including packing (unit + cable) (fixed microphone)	1100
Including packing (unit + cable) (screw lock microphone)	975
Including packing (flushmount unit)	325
Power supply	920

Environmental Characteristics

Parameter	Value
Temperature	5°C to 50°C
Humidity Protection	Class EP10 - Compliant to IEC 60068_2.14

System Limits

Parameter	Value
Max units on CU	50
Max units on one port	25
Maximum cable length (branch or loop)	400 m
Maximum cable length between units or between CU and first unit	80 m

Web Browser

Parameter	Value
Default IP address	192.168.0.20
Default subnet mask	255.255.255.0
Default password	1234

USB Specs

Parameter	Description
File system	FAT
USB type	USB 2.0
Device type	Mass storage

televic
conference

TELEVIC CONFERENCE

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GET IN TOUCH