# D-CERNO AE

# D-CERNO Central Unit: Quick, Easy & Hybrid



### Description

The D-Cerno AE is the rack-based central engine that enables the D-Cerno discussion system for small to medium-sized meetings. By using state-of-the-art audio processing technology, D-Cerno AE is optimized for its market segment and ready to address future audio processing requirements. With this hybrid-ready control unit, D-Cerno offers unparalleled flexibility and makes integration with external systems easy.

D-Cerno occupies a unique position in the market since it combines an easy-to-setup system with a wide variety of interfaces. The central engine controls 50 delegate units and can be easily integrated by using USB audio, AES-67\* and analog audio.

The delegate units are connected in daisy chain with a shielded CAT5E cable over the 4 bus connections (4 branches or 2 closed loops). With a loop, the redundancy mechanism guarantees that the system continues to function flawlessly if a cable should break or disconnect.

With the D-Cerno AE, organizing a hybrid meeting is as easy as plugging-in a USB cable. This will automatically create a speaker/microphone audio device on your PC which can be selected in your prefered meeting platform.

The D-Cerno AE not only records on an internal storage but also provides the possibility to record on a flash drive and even connects to a PC via multi-channel USB if individual microphones need to be recorded seperately\*.

Integrating with the D-Cerno AE is made easy by providing AES-67 connectivity to link with a DSP\*. The build-in DSP mode puts individual microphone and speakers to seperate channels to be fully processed in the DSP, and the audio configurator allows you to combine the microphone & speakers into groups. D-cerno AE also has multiple balanced analog I/O to connect to external devices\*.

A simple interface gets you all controls right at your fingertips: a volume dial adjusts the volume, and a simple record button\* starts or stops the recording. And with an integrated web server, operators have full control over the microphone modes and recording settings through an easy web interface.

D-Cerno AE can be mounted in a 19" rack but can also be simply positioned on a table for an easy setup. With its fan-less design, this engine is the center piece for all small to medium-sized meeting rooms without any concern for fan noise, even during extended usage.



### **Benefits**

- » Plug-and-play approach
- » 19" rack-based design
- » Hybrid ready via direct USB interface
- » Easy to integrate with AES-67 and USB\*
- » Ready to record\*
- » Smart Audio & Control
- » Camera control integration capabilities
- » Fan-less operation
- » Extended power management\*
  - Wake-On-Lan
  - › Auto Power-on
  - > ECO mode

#### **Features**

- Digital signal processing
- » Dynamics control
- » Integrated web server
- » Integrated recording capabilities\*
  - ) Internal storage
  - External flash drive via USB-C
  - On a PC via multi-channel USB connection
- » Hands-free mode
  - With speaker detection\*
- » DSP mode\*
- » Fail-safe redundancy technology Default digital acoustic feedback reduction
- » For systems up to 50 units
- » System volume
- » Power button\*
- » Recording button\*
- » Secure API\*

# Connectivity

- » 4 Bus connections (4 branches or 2 loops)
- » LAN connection (Control & AES-67\*)
- » 2x Lockable USB-C connections
  - Flash drive interface\*
  - Hybrid meeting Interface
  - Multi-channel audio interface\*
- » 2x Balanced XLR inputs
- 2x Balanced XLR outputs
- » 1x Front-facing 3.5mm input jack
  - Line or Microphone level\*
- » 1x Front-facing 3.5mm output jack
  - Line or Headphone level\*
- » 1x Power connection

# **Specifications**

Material and color  Size (W x D x H)  Aluminium, Black (RAL 9011)  Size (W x D x H)  S7 x 42 x 6,4 cm  Weight  3,36 kg  Weight packed  2,48 kg (without PSU)  Electrical  Power supply External 100-240 VAC 50/60 Hz 2.5 A  Power supply central unit 4,4 A  Power supply output to power units  Network - LAN  Link speed  10/100 Mbps - 1 Gbps  Security*  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  Nax. length within loop  Interfaces - Analog Audio Output  Signal level*  NAA  Nax. Output level  Line / Headphone  Nax. Output level  How dBV  Aluminium, Black (RAL 9011)  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 17 x 4,5 cm  57 x 42 x 6,4 cm  48 x 10 x 1	Mechanical			
Size (W x D x H)  Size packed (W x D x H)  Size packed (W x D x H)  Size packed (W x D x H)  Weight  3,36 kg  Weight packed  2,48 kg (without PSU)  Electrical  Power supply External 100-240 VAC 50/60 Hz 2.5 A  Power supply 48 VDC central unit 4.4 A  Power supply output to power units 3.35 A Max 180 W  Network - LAN  Link speed  10/100 Mbps - 1 Gbps  Security*  802.1X (MD5, TLS, PEAP-MSCHAPv2)  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  Max. Output level  AND OBV  Line / Headphone  Number of interfaces 2  1  Connection type XLR  Max. Output level  100-240 VAC 50/60 Hz 2.5 A  Returnal 100-240 VAC 50/60 Hz 2.5 A  Returnal 100-240 VAC 50/60 Hz 2.5 A  Power supply 48 VDC 3.35 K Max 180 W  Retwork - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length within loop  Line / Headphone  Number of interfaces 2  1  Connection type XLR 3.5 mm jack Max. Output level 100-240 VAC 50/40 HP 3.35 mm jack Max. Output level	Material and color	Aluminium Black	(PAL 9011)	
Size packed (W x D x H)  Weight  3,36 kg  Weight packed  2,48 kg (without PSU)  Electrical  Power supply external power adapter  100-240 VAC 50/60 Hz 2.5 A  Power supply central unit  4.4 A  Power supply output to power units  Security*  10/100 Mbps - 1 Gbps  Security*  802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control*  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  NyA  Nempto Signal level*  N/A  Nax. Output level  Max. Output level  Hoodby  1,36 kg  Without PSU)  External  100-240 VAC 50/60 Hz 2.5 A  May 180 VC  48 VDC 3.35 A Max 180 W  Metwork - LAN  Line / Headphone  NyA  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  Hoodby  O dBV		,		
Weight packed 2,48 kg (without PSU)  Electrical  Power supply External 100-240 VAC 50/60 Hz 2.5 A  Power supply 48 VDC central unit 4.4 A  Power supply 0 output to power units 335 A Max 180 W  Network - LAN  Link speed 10/100 Mbps - 1 Gbps  Security* 802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control* WoL  Network - Conference  Cable type CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop 400 m  Interfaces - Analog Audio Output 8 Balanced outputs (back)  NyA Line / Headphone  Number of interfaces 2 1  Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV				
Weight packed 2,48 kg (without PSU)  Electrical  Power supply external power adapter 100-240 VAC 50/60 Hz 2.5 A  Power supply 48 VDC 4.4 A  Power supply 48 VDC 3.35 A Max 180 W  Network - LAN  Link speed 10/100 Mbps - 1 Gbps  Security* 802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control* WoL  Network - Conference  Cable type CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop 400 m  Interfaces - Analog Audio Output 8 Balanced outputs (back) utput (front)  Signal level* N/A Line / Headphone  Number of interfaces 2 1  Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV				
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Power supply external power adapter 100-240 VAC 50/60 Hz 2.5 A  Power supply 48 VDC 4.4 A  Power supply 48 VDC 3.35 A Max 180 W  Network - LAN  Link speed 10/100 Mbps - 1 Gbps  Security* 802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control* WoL  Network - Conference  Cable type CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop 400 m  Interfaces - Analog Audio Output 8 Balanced outputs (back) Unbalanced output (front)  Signal level* N/A Line / Headphone  Number of interfaces 2 1  Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV	5 ,	z,46 kg (Without F	30)	
external power adapter  100-240 VAC 50/60 Hz 2.5 A  Power supply 2.5 A  Power supply 48 VDC output to power units 3.35 A Max 180 W  Network - LAN  Link speed 10/100 Mbps - 1 Gbps  Security* 802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control* WoL  Network - Conference Cable type CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop  Interfaces - Analog Audio Output Signal level* N/A  Network - Connection type  Number of interfaces 2 1 Connection type XLR 3.5 mm jack Max. Output level +10 dBV  O dBV		External		
central unit  Power supply output to power units  A8 VDC 3.35 A Max 180 W  Network - LAN  Link speed  10/100 Mbps - 1 Gbps  Security*  802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control*  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  Headphone  Max. Output level  Hodby  O dBV	117	100-240 VAC 50/60 Hz		
output to power units  3.35 A Max 180 W  Network - LAN  Link speed  10/100 Mbps - 1 Gbps  Security*  802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control*  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  +10 dBV  O dBV				
Link speed 10/100 Mbps - 1 Gbps  Security* 802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control* WoL  Network - Conference  Cable type CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units 80 m  Max. length within loop 400 m  Interfaces - Balanced outputs (back) Unbalanced output (front)  Signal level* N/A Line / Headphone  Number of interfaces 2 1  Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV		3.35 A		
Security*  802.1X (MD5, TLS, PEAP-MSCHAPv2)  Power control*  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  HOBV  O dBV	Network - LAN			
(MD5, TLS, PEAP-MSCHAPv2)  Power control*  WoL  Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  Hodby  O dBV	Link speed	10/100 Mbps - 1	Gbps	
Network - Conference  Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  80 m  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  Hawg24, shielded RJ45 connector  What is a shielded, FTP, AWG24, shielded,	Security*			
Cable type  CAT 5E or better, shielded, FTP, AWG24, shielded RJ45 connector  Max. length between units  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  Hawg24, shielded RJ45 connector  Balanced output (hack)  Unbalanced output (front)  Line / Headphone  Value  N/A  Alice  1  Onle Old Note  Alice  Ali	Power control*	WoL		
AWG24, shielded RJ45 connector  Max. length between units  Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  Connection type  XLR  3.5 mm jack  Max. Output level  +10 dBV  O dBV	Network - Conference			
Max. length within loop  Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Unbalanced output (front)  Line / Headphone  Number of interfaces  2  1  Connection type  XLR  3.5 mm jack  Max. Output level  400 m  Unbalanced output (front)  Line / Headphone  0  0  0  0  0  0  0  0  0  0  0  0  0	Cable type			
Interfaces - Analog Audio Output  Signal level*  N/A  N/A  Line / Headphone  Number of interfaces  2  Connection type  Max. Output level  Balanced outputs (back)  N/A  Line / Headphone  2  1  3.5 mm jack  0 dBV	Max. length between units	80 m		
Analog Audio Output  Signal level*  N/A  N/A  Line / Headphone  Number of interfaces  2  Connection type  XLR  3.5 mm jack  Max. Output level  +10 dBV  Output (front)  Line / Headphone  Output (front)  Analog Audio Output (front)  Diamontory  Analog Audio Output (front)  Analog Audio Output (front)  Diamontory  Analog Audio Output (front)  Output (front)  Analog Audio Output (front)  Output (front)  Output (front)  Headphone  Output (front)	Max. length within loop	400 m		
N/A Headphone  Number of interfaces 2 1  Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV			0	
Connection type XLR 3.5 mm jack  Max. Output level +10 dBV 0 dBV	Signal level*	N/A		
Max. Output level +10 dBV 0 dBV	Number of interfaces	2	1	
'	Connection type	XLR	3.5 mm jack	
Load impedance $> 600 \Omega$ $> 16 \Omega$	Max. Output level	+10 dBV	0 dBV	
	Load impedance	> 600 Ω	> 16 Ω	
SNR (in dB A Weighted) > 95 > 90	SNR (in dB A Weighted)	> 95	> 90	
THD @ -10 dBV < 0.01% < 0.01%	THD @ -10 dBV	< 0.01%	< 0.01%	
Interfaces - Balanced out- Unbalanced Analog Audio Input puts (back) output (front)				
Signal level*  N/A  Line /  Microphone	Signal level*	N/A	- ,	
Number of interfaces 2 1	Number of interfaces	2	1	
Connection type XLR 3.5 mm jack	Connection type	XLR	3.5 mm jack	
Max. input level +10 dBV 0 dBV	Max. input level	+10 dBV	0 dBV	
Input impedance $> 10 \text{ K}\Omega$ $> 16 \Omega$	Input impedance	> 10 KΩ	> 16 Ω	
SNR (in dB A Weighted) > 95 > 90			0.0	



Interfaces - USB	Port 1	Port 2
Working modes	Audio device 1x1 (UAC2, 16 bit, 32 kHz) or Mass storage host *	Audio device 8x8 (UAC2, 16 bit, 32 kHz)* or Mass storage host*
Power delivery	5 V - 0.5 A	
Power Sink	5 V - Sense only	
USB Version	USB 2.0	
Connector	USB-C	
Interfaces - Configuration Switches (*)	Function	
DIP 1	Disable auto start	
DIP 2	Disable front panel	
DIP 3	Wake on Lan	
DIP 4	ECO mode	
Audio Recording*		
Storage - Internal	3 GB	
Storage - External	USB flash drive (NTFS or FAT32)	
Format	MP3, WAV	
Quality	64, 128,196,256 kbps	
Environmental		
Operating temperature	5 - 45°C	
Regulatory		
Europe	CE	

<sup>\*</sup> Available in future updates

# **Compatible Products**

#### **Discussion units**

>	D-Cerno D-SL	71.98.0306
>	D-Cerno C-SL	71.98.0307
>	D-Cerno F-DM	71.98.0311
>	D-Cerno F-CM	71.98.0312

# **Spare Power Supply**

71.98.0340

# **D-Cerno Advanced Audio License\***

71.98.0360

- Required for
  - Multi-channel USB\*
  - AES-67\*
  - DSP Mode\*
  - Custom audio routing\*
  - Operator mode with microphone control\*

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