

# HOW TO CORNER YOURSELF WITH GREAT SOUND

User Manual  
Cornered CA280DSP

# Introduction

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Cornered Audio provide aesthetic sound to custom- and commercial installations where high-end performance and discreet, elegant design is needed. To get the best out of your Cornered amplifier and loudspeaker system, please study this manual carefully before installing.

## Safety

- Read and keep these instructions
  - Do not use this apparatus near water
  - Clean only with a dry cloth
  - Do not block any ventilation openings
  - Do not install near any heat sources such as radiators or other heat producing products
  - Use with provided power cord or similar
  - Refer all service to qualified personnel
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## 1.0 Warnings

- To reduce risk of electric shock, do not expose this apparatus to rain or moisture
- Do not expose this system/apparatus to dripping or splashing are placed on the apparatus.
- This apparatus must be connected to a mains socket outlet with earthing connection.
- To prevent electric shock do not remove top or bottom covers.
- No serviceable parts inside.
- Check the voltage in your area and use the correct type of mains

## 1.1 Radio interference

This product has been tested and complies with the limits for the European Electro Magnetic Compatibility (EMC) directive. It also complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference from electrical equipment. This product uses radio frequency energy and, if not used or installed in accordance with these operating instructions, may cause interference to other equipment, such as radio receivers.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, the user may be able to correct the interference by one or more of the following measures:

- Check if the affected unit complies with the EMC limits for immunity, (CE-labelled). If not, address the problem with the manufacturer or supplier.
- Consult the dealer or an experienced radio/TV technician for help.
- Reorient or relocate the antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet

## 2.0 Set-up

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## 2.1 Remote control software

Go to: [www.cornered.dk/amplifiers](http://www.cornered.dk/amplifiers)  
to download control software for your CA280DSP.

## 2.2 Rack mounting

CA280DSP can be mounted into a rack by attaching two brackets, one short and one long (included) to the mounting holes in the side of the amplifier. Use a 4 mm diameter machine screw, ensuring that the length of the screw is suitable for the thickness of the rack shelf.

A dedicated rack mount designed to hold two CA280DSP's side by side is available as accessory.

## 2.3 Operating voltage

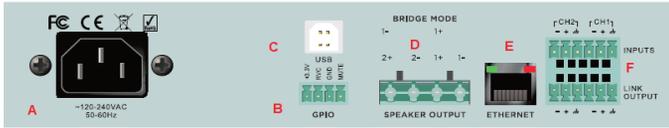
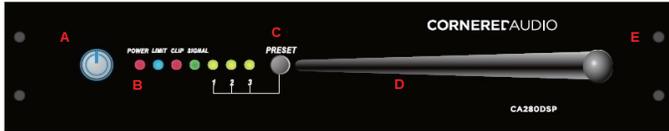
CA280DSP is stable with voltage from 85 to 265V, but perform to specifications from 110 to 240 Volt. Always use the provided power plug. Use balanced source cables to avoid hum and interference when cable runs over 5 meters are used.

## 2.4 Service

Spare parts for your CORNERED products are available through your local CORNERED distributor. In case you are not able to source spare parts locally, you can contact us directly at [info@cornered.dk](mailto:info@cornered.dk)

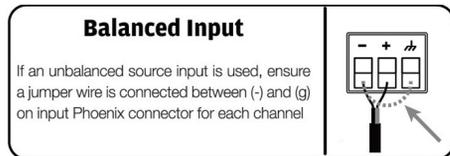
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## 3.0 Front and rear panel



### Front - from left to right:

- A. The large Standby/On LED to the left will show a red light when the unit is in stand-by mode.
- B. The red Power LED shows that the unit is connected to power.
  - a. The blue Limit indicator will light up when the limiter is active - (determined by the limit setting)
  - b. The red clip LED will light up when amplifier is clipping
- C. Pre-set 1, 2 and 3 are user made pre-sets
- D. Antenna creating access point for set-up via Wi-Fi (should always stand straight when in use)
- E. Screw holes for rack mounting



### Rear - from left to right:

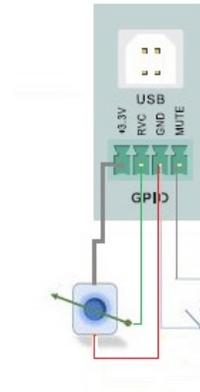
- A. AC line input – Connect the included IEC power cable.
- B. General purpose in- and output. Connect external control using the four-pole Phoenix connector.
- C. USB connection for PC set-up and control
- D. Speaker outputs. Cables up to 4 sq. mm. is supported.
- E. Ethernet connection for external control and set-up.
- F. Balanced inputs with link using 3-pole Phoenix connectors.

### Important!

Observe polarity to avoid low frequency cancellation, especially if mixing to mono in the matrix.

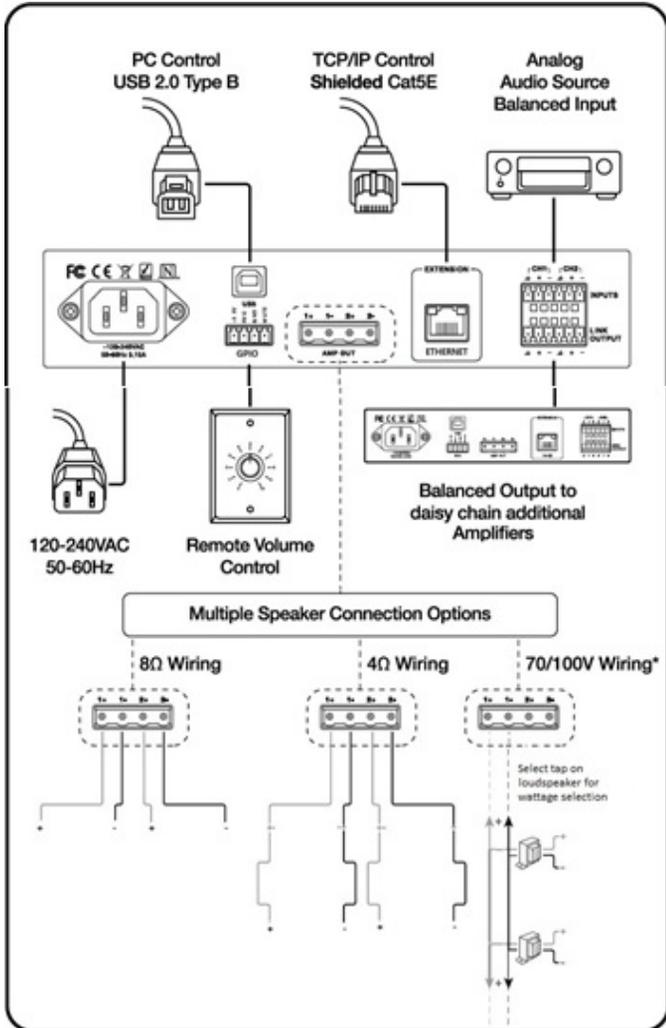
**Note:** In Bridge mode - connect speaker cables to 1+ 2+

**Note:** [See below for wiring of the GPIO](#)



## 4.0 Connections

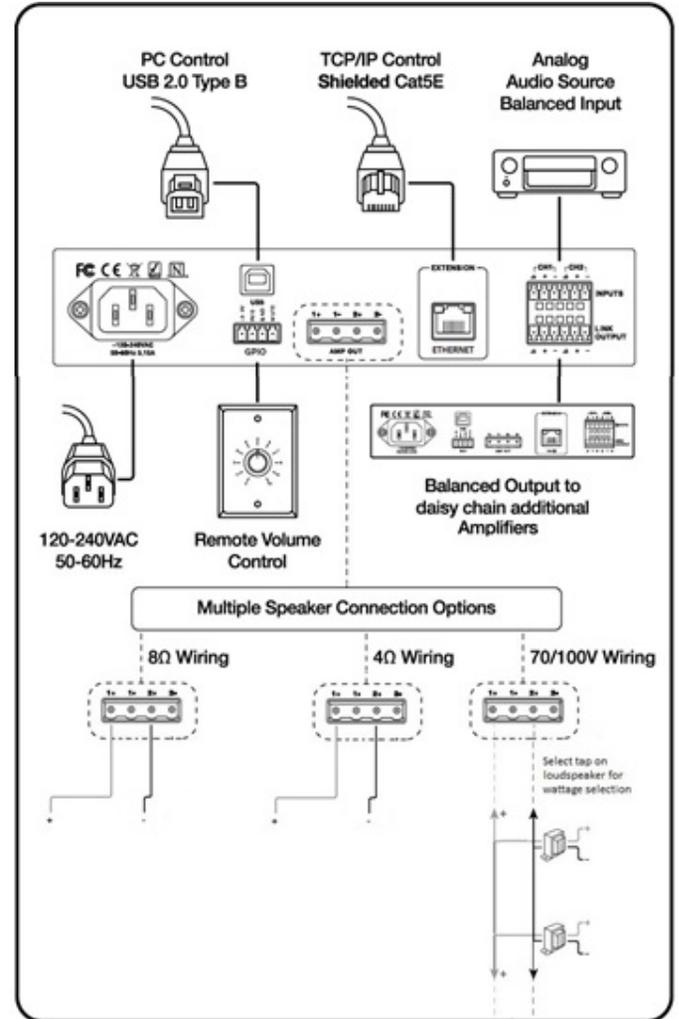
### 4.1.1 Wiring in 2-channel mode



\* Use 1+ 1- for 70/100V direct drive. Select >16 ohm.

## 4.0 Connections

### 4.2 Wiring in bridge mode



\* In bridge mode, use 1+ 2+ for 70/100V and 4/8ohm mode

## 5.0 Navigation bar

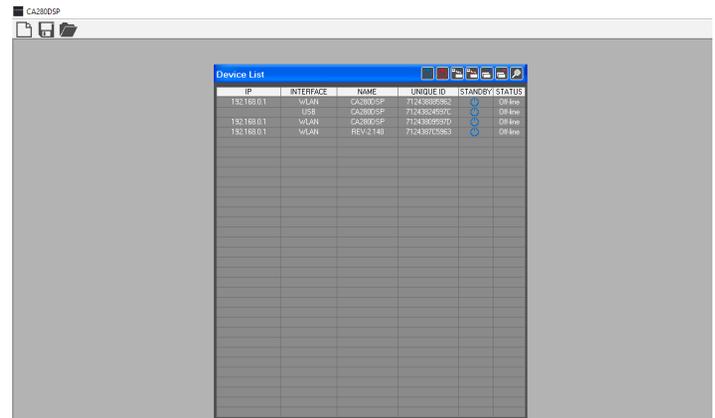


1. Load and Save settings to PC. Store and Recall up to 3 pre-sets locally on the amplifier (accessed via front panel)
2. Link check boxes. When checked, changes made to one input or one output are applied to both inputs/outputs
3. Level. Click to access mode selection (4, 8, 16 ohm or 70V/100V), input source, channel routing and gain levels.
4. L/R. Click to access controls for both input channels including gain, noise gate, low pass, high pass and EQ filters
5. Click to access controls for output channels including EQ Filters, gain, compression, limiter, and dynamic loudness
6. SM. Click to access controls for Sound Masking. Enable and disable sound masking and adjust masking EQ filters
7. Settings. Update firmware, rename device and adjust network settings
8. Power button. Toggle in and out of stand-by mode 1. Load and Save settings to PC. Store and Recall up to 3 pre-sets locally on the amplifier (accessed via front panel)

## 6.0 Install control software and connect to amplifier

**Control and setup of the amplifier can be made via direct Wi-Fi, Ethernet cable or USB type B.**

1. Download and install the control software on supported PC device from [WWW.CORNERED.DK](http://WWW.CORNERED.DK)
2. Install driver and open software
3. To connect to the amplifier directly via Wi-Fi, search available Wi-Fi networks and connect to "WiFi Net"
4. Wired LAN connection: select TCP/IP option (you may need to manually add device).
5. Direct USB connection: select USB option (you may need to manually add device)
6. Select device on drop down list and double click to open amplifier. Wait and click yes to connect



## 7.0 Basic amplifier functions

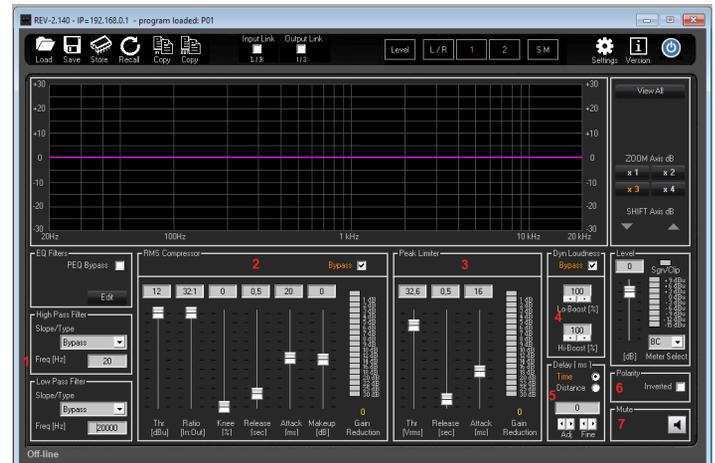
Click “Level” in the main navigation bar to access basic amplifier functions.



- Menu:** Quickly navigate to key functions
- Input:** Input can be switched from either analogue input or the internal noise generator.
- Noise generator:** Select white or pink noise and control gain
- Routing:** The matrix allows either input to be routed to either output.
- Auto-off/Auto-on:** When Sleep mode is enabled, the amplifier will be turned off after 1 hour of inactivity. It will automatically turn on immediately when input is detected.  
**Note:** If the unit is manually powered off by the Power button on the front panel, it will not wake up by input signal presence, even if Sleep Mode is enabled.
- External control:** Allows volume/mute via the GPIO.
- Bridge mode:** When selecting “Bridge Mode”, the amplifier will deliver 280 watt on the 1+ 2+ output terminals.  
**Note:** Bridge 1 will send the signal from channel 1 to the bridge output. Bridge 2 will send the signal from channel 2 to the bridge output and bridge 1+2 will send the summed signal to the bridge output.
- Load:** Select impedance for the speakers to allow the amplifier to optimize the output stage. Select >16 ohm for 100V mode.
- Gain:** Adjust input and output gain.

## 8.0 Advanced amplifier functions

By clicking on 1 or 2 in the main menu, you will access more settings for channel 1 or 2.



- High pass/Low pass filters** - choose between Bessel, Butterworth and LR, 6, 12, 18 and 24 dB filters.
- RMS Compressor** with custom settings
- Peak Limiter** - settings for all Cornered speakers are in the presets.
- Dynamic Loudness - to boost bass and treble at low volume in retail outlets and like.
- Delay** in milli seconds or meters.
- Reverse polarity**
- Mute** channel

## 9.0 Bridge mode

When selecting "Bridge Mode", the "Speaker Drive" menu will appear.

- If you wish to run in 100V mode, select ">16ohm" in the "load" drop down menu and the amplifier will deliver 280 watt in 100V mode.
- If you wish to run in 8 ohm mode, select 8 ohm in the "load" drop down menu and the amplifier will deliver 280 watt in 8 ohm mode



## 10.0 Loading and saving settings

### 9.1 Loading from - and saving to PC

Click "Load" and "Save" in the menu bar in the upper left-hand side of the menu.

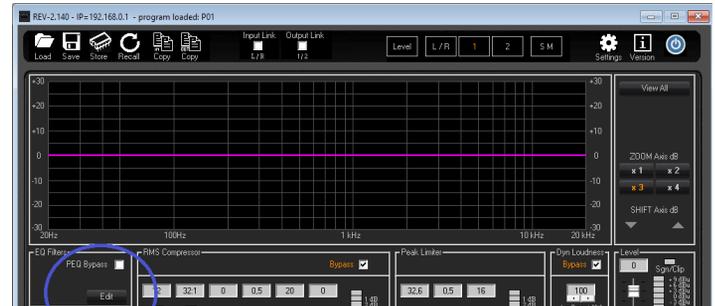
### 9.2 Loading from - and saving to the three pre-sets on amplifier front panel

Click "Store" and "Recall"

Note: Loading from - and saving to the pre-sets on the front panel, is only possible when the remote connection is disconnected!

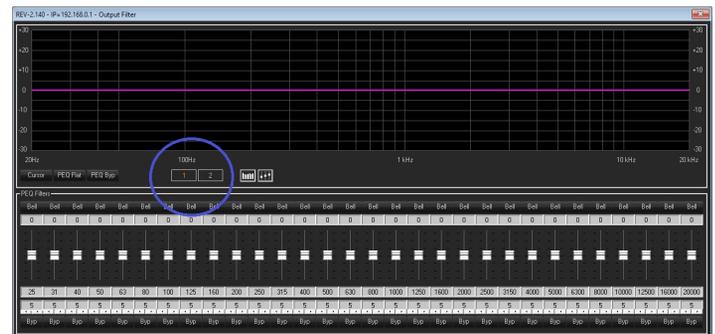
## 11.0 EQ section

To enter the EQ section, press 30 PEQ in the quick menu bar. Then click "edit" in the EQ filters section marked below.



Click on "Bell" to change from Bell to High/Low Shelving, High/Low pass Q, Notch filter or All-pass filters. Frequency and Q can be changed simply by clicking on the value and entering the desired value.

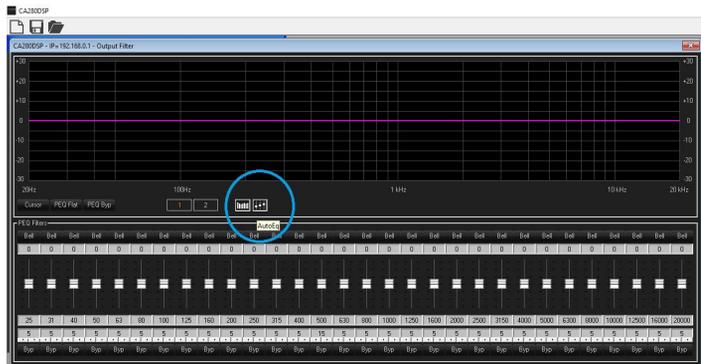
All filters can be by-passed individually by clicking By-pass "Byd". EQ settings can be made separately for each output channel by clicking on either **1** or **2** as shown below, which is practical if you run a sub on one channel and top-boxes on the other.



## 11.1 Auto EQ

With the PC's ASIO card and an external microphone, CA280DSP is capable of calculating and setting room EQ automatically. To enter the Auto EQ Wizard, do the following:

- A:** Click on the Auto EQ symbol marked below. The Auto EQ Wizard will appear. Read on-screen instructions and click "next".



- B:** Select ASIO card and Microphone from the drop down menu. Click "test".



- C:** Set Frequency range and PEQ filter gain (+ - 3 dB is recommended). Click "Start". The Auto EQ will sweep the room and calculate EQ settings with gain and Q. It will show the recommended EQ setting. Now check the settings by clicking on "verify". The RTA will then show an improved room response. If accepted, click "Apply"



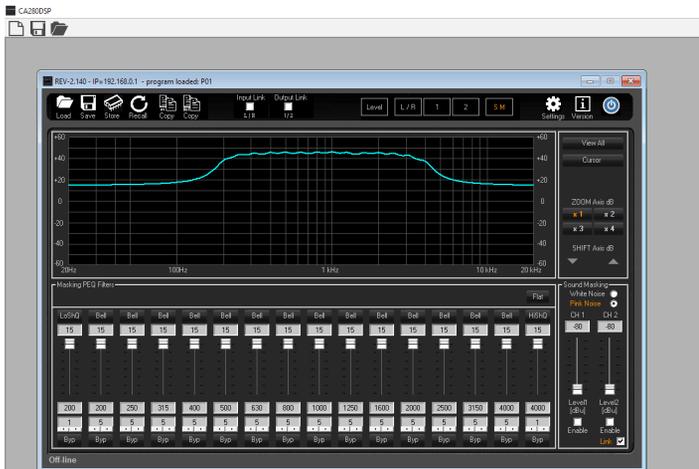
- D:** To copy the EQ settings from output 1 to output 2, close the PEQ. Click "Copy Out" in the top menu. Select "Out1" to "Out2" and click "Confirm".



## 12: SM - Sound Masking

The amplifier includes a fully customizable Sound Masking generator. To access Sound Masking features, click the SM button on the Navigation Bar.

A default sound masking setting will show. It can be customized as desired using 16 band Masking filters. The sound masking signal can be used on its own or blended into background audio or paging. When installing a sound masking system into a new space, gradually increase level over a week or more until you have reached the desired setting, where the sound masking signal blends into the background noise while suppressing normal conversation from a distance.



# Declaration of conformity

### Manufacturer:

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Denmark

Tel +45 4366 1088  
www.cornered.dk

We, CORNERED Audio ApS, declare under our responsibility that the following product(s):

Cornered CA280DSP  
Type: Amplifier

...is in conformity with COUNCIL DIRECTIVE of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC) and has been manufactured in conformity with the following national standards that implement a harmonized standard:

EN 55013

Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment.

Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment.

Hans V. Madsen / Founder  
01.06.2019

