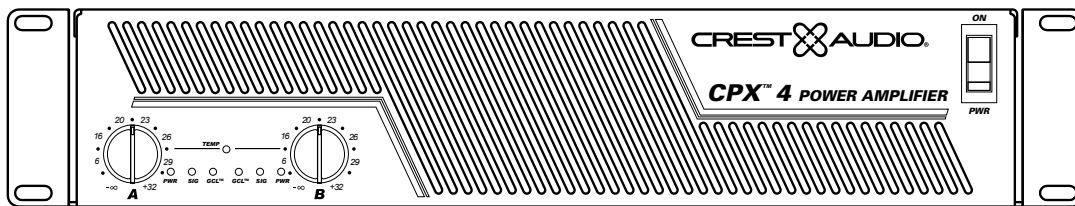




# CPX™ Series Power Amplifiers

## CPX™4

### Operating Manual





## FCC/ICES Compliancy Statement

This device complies with Part 15 of the FCC. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**Warning:** Changes or modifications to the equipment not approved by Peavey Electronics Corp. can void the user's authority to use the equipment.

**Note** – This equipment has been tested and found to comply 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.



Crest Audio 5022 HWY 493 N. Meridian, MS 39305 (601) 483-5365 FAX (601) 486-1278

## CPX™ 4 Professional Stereo Power Amplifier

Congratulations on your purchase of the CPX 4, a power amplifier designed for years of reliable, flawless operation under rigorous use. This amplifier offers the sonic superiority and unsurpassed reliability for which Crest is famous, while remaining surprisingly compact. Advanced technology and extensive protection circuitry allow operation with greater efficiency into difficult loads and power conditions. The GCL™ (Gain Comparator Limiting) circuitry ensures trouble-free operation into loads as low as 2 Ohms. GCL protects drivers and ensures that sonic integrity is maintained, even in extreme overload conditions. The CPX 4's high-efficiency design uses tunnel-cooled heat sinks and variable-speed DC fans. This cooling topology maintains a lower overall operating temperature, resulting in longer output transistor life. For your safety, read the important precautions section, as well as input, output and power connection instructions.

Although the CPX 4 amplifier is simple to operate and housed in an ultra-strong steel chassis, improper use can be dangerous. This amplifier is very highpowered and can put out high voltages and sizable currents at frequencies up to 30 kHz. Always use safe operating techniques when operating this amplifier.

Before you send signal through your amplifier, it is very important to ensure that the product has the proper AC line voltage supplied. You can find the proper voltage for your amp printed next to the IEC line (power) cord on the rear panel of the unit. Each product feature is numbered. Refer to the front panel diagram in this manual to locate the particular features next to its number.



Please read this guide carefully to ensure your personal safety as well as the safety of your amplifier.

### FEATURES:

- Gain Comparator Limiting (GCL)
- Line voltage selector switch
- Dual cooling fans
- 100 Hz Crossover
- Front panel LEDs: GCL, Signal, Thermal Protect, and Power
- Switchable 2<sup>nd</sup> order 40 Hz high pass filter
- AC Power Switch / Circuit Breaker

## SAVE THESE INSTRUCTIONS

- 1 Save the carton and packing materials! Should you ever need to ship the unit, use only the original factory packing.  
For replacement packaging, call Crest Customer Service Department directly.
- 2 Read all documentation before operating your equipment. Retain all documentation for future reference.
- 3 Follow all instructions printed on unit chassis for proper operation.  
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- 4 Never hold a power switch or circuit breaker in the "ON" position if it won't stay there by itself!  
\_\_\_\_\_
- 5 Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.
- 6 Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.
- 7 Damage caused by connection to improper AC voltage is not covered by any warranty. Mains voltage must be correct and the same as that printed on the rear of the unit.
- 8 Do not ground any hot (red) terminal.  
Never connect a hot (red) output to ground or to another hot (red) output!  
\_\_\_\_\_
- 9 Power down and disconnect units from mains voltage before making connections.
- 10 Do not drive the inputs with a signal level greater than that required to enable equipment to reach full output.
- 11 Do not run the output of any amplifier channel back into another channel's input.  
Do not parallel- or series-connect an amplifier output with any other amplifier output.  
Crest is not responsible for damage to loudspeakers for any reason.
- 12 Do not connect the inputs or outputs of amplifiers to any other voltage source such as a battery, mains source, or power supply, regardless of whether the amplifier is turned on or off.
- 13 Connecting amplifier outputs to oscilloscopes or other test equipment while the amplifier is in bridged mono mode may damage both the amplifier and test equipment!  
\_\_\_\_\_
- 14 Do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.
- 15 Do not block fan intake or exhaust ports.  
Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, weathersheet, carpet or completely enclosed rack.
- 16 If the unit is used in an extremely dusty or smoky environment the unit should be periodically blown free of foreign matter.
- 17 Do not use the unit near stoves, heat registers, radiators or other heat-producing devices.
- 18 The equipment power cord should be unplugged from the outlet when left unused for a long period of time.

### Service Information

Do not remove the cover!  
Removing the cover will expose you to potentially dangerous voltages. There are no user-serviceable parts inside.

Equipment should be serviced by qualified service personnel when:

- A. The power supply cord or the plug has been damaged.
- B. The equipment has been exposed to rain.
- C. The equipment does not appear to operate normally or exhibits a marked change in performance.
- D. The equipment has been dropped or the enclosure damaged.

To obtain service:  
contact your nearest Crest Audio Service Center, Distributor, Dealer or contact Crest Audio at 601.483.5365 USA or visit [www.crestaudio.com](http://www.crestaudio.com) for additional information.

## Installation

### Unpacking

Upon unpacking, inspect the amplifier. If you find any damage, notify your supplier immediately. Only the consignee may institute a claim with the carrier for damage incurred during shipping. Be sure to save the carton and all packing materials. Should you ever need to ship the unit back to Crest, one of its offices, service centers or the supplier, use only the original factory packing. If the shipping carton is unavailable, contact Crest to obtain a replacement.

Because of the complexity of the design and the risk of electrical shock, all repairs must be completed only by qualified technical personnel.

### Mounting

The CPX 4 amplifier will mount in standard 19" racks. Rear mounting ears are also provided for additional support, which is recommended in non-permanent installations like mobile or touring sound systems.

### Connecting Power

The CPX 4 amplifier power requirements are rated at 1/8 power (typical music conditions) and 1/3 power (extreme music conditions). The maximum power current draw rating is limited only by the front panel circuit breaker. Consult the specifications in the Specification section for figures on the current that each amplifier will demand. Make sure the mains voltage is correct and is the same as that printed on the rear of the amplifier. Damage caused by connecting the amplifier to improper AC voltage is not covered by any warranty. Therefore, be sure to set the line voltage selector switch for the voltage in your area.

Always turn off and disconnect the amplifier from mains voltage before making audio connections. Also, as an extra precaution, turn the attenuators down during power-up.

### Cooling Requirements

The CPX 4 amplifier uses a forced-air cooling system to maintain a low, consistent operating temperature. Air is drawn into the amplifier by fan(s) on the rear panel, courses through the cooling fins of the tunnel-configured channel heat sink(s), and then exhausts through the front panel grille. If either heat sink gets too hot, its sensing circuit will open the output relay, disconnecting the load from that particular channel. The CPX 4 utilizes one common heat sink and a single fan, but retains the separate circuitry. NOTE: Maintain an adequate air supply at the back of the amplifier and enough space around the front of the amplifier to allow the cooling air to escape. If the amp is rack mounted, do not use doors or covers on the front of the rack; the exhaust air must flow without resistance. If you are using racks with closed backs, use fans on the rear rack panel to pressurize the rack and ensure an ample air supply.

### Operating Precautions

Make sure the mains voltage is correct and the same as that printed on the rear of the amplifier. Damage caused by connecting the amplifier to improper AC voltage is not covered by any warranty. See the Connecting Power section for more information on voltage requirements.

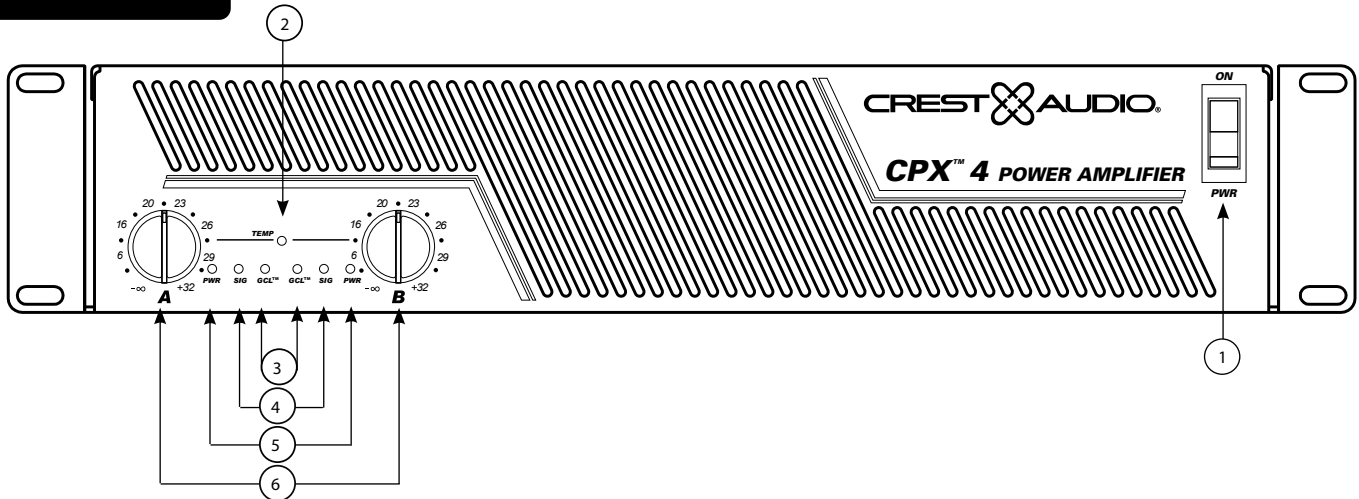
Remember to have the gain controls turned down during power-up to prevent speaker damage if there is a high signal level at the inputs. Whether you buy or make them, use good-quality connections, input cables and speaker cables, along with good soldering technique, to ensure trouble-free operation. Most intermittent problems are caused by faulty cables. Consult the Wire Gauge Chart to determine proper gauges for different load impedances and cable lengths. Remember that cable resistance robs amplifier power in two ways: power lost directly to resistance ( $I^2R$  loss), and by increasing the total load impedance, thereby decreasing the power demanded of the amplifier. Also, make sure the mode switch is correctly set for the desired application. See Sections on Stereo, Parallel and Bridged Mono Mode for more information.



Make certain that there is enough space around the front and rear of the amplifier to allow the heated air to escape.

Suggestion: In racks with closed backs, allow at least one standard-rack-space opening for every mounted power amplifier.

## Front Panel



- 1 The CPX 4 amplifier has a combination AC switch/circuit breaker on the front panel. If the switch shuts off during normal use, push it back to the ON position once. If it will not stay on, the amplifier needs servicing.

### INDICATORS

The CPX 4 amplifier features three front panel LED indicators per channel: GCL, SIGNAL and POWER, plus a shared Thermal Protect LED. These LED indicators inform the user of each channel's operating status and warn of possible abnormal conditions.

- 2 THERMAL PROTECT LED

This indicator illuminates when the thermal sensor on either heatsink reaches approximately 90 degrees C, at which point, the amplifiers are muted while the fan remains on high speed. If this happens repeatedly, either reduce the load on the amplifier (detach one of the speakers), or supply additional cooling to the amplifier, such as a fan. When rack mounting, it is helpful to leave 1 RU open above and below the amplifier to prevent heat buildup from adjacent units.

- 3 GCL (Gain Comparator Limiting) LED

A channel's GCL LED will light at the onset of clipping. If the LEDs are flashing quickly and intermittently, the channel is just at the clip threshold. A steady, bright glow means the amp is clip limiting, or reducing gain to prevent severely clipped waveforms from reaching the loudspeakers. See the Gain Comparator Limiting section for more information.

- 4 SIGNAL LED

This LED lights when its channel produces an output signal of about 1 volt RMS or more. This signal indicates whether a signal is reaching and being amplified by the amplifier.

- 5 POWER LED

The Power LED indicates that its channel is operational. It lights under normal operation and remains on, even when the channel is in Gain Comparator Limiting or GCL gain reduction.

- 6 INPUT ATTENUATORS

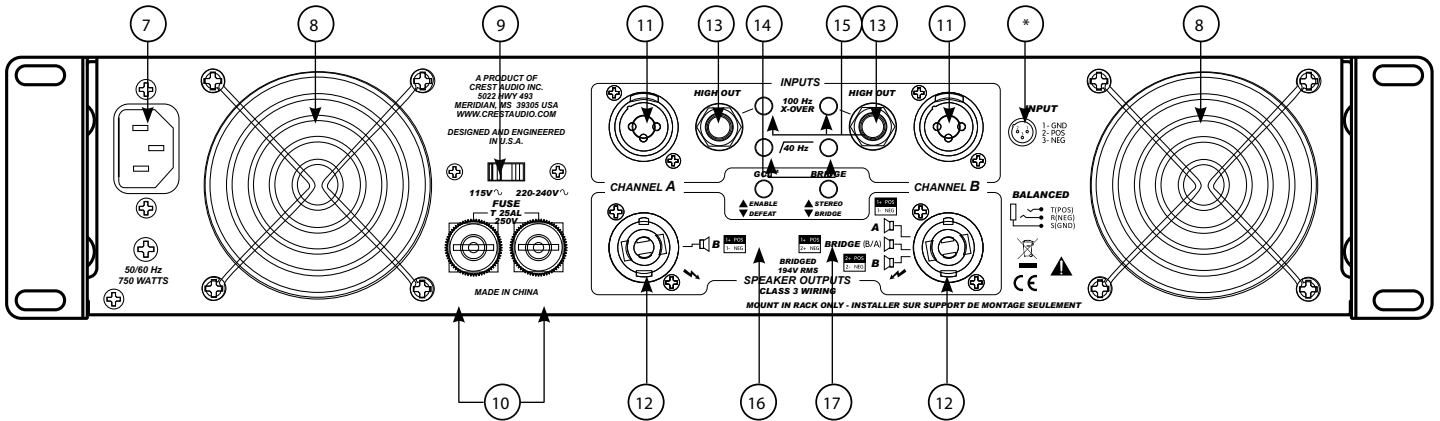
Whenever possible, set the attenuators fully clockwise to maintain optimum system headroom. The input attenuator controls, located at the front panel (one for channel A, one for channel B), adjust gain for their respective amplifier channels in all modes. See the specifications at the end of this manual for standard voltage gain and input sensitivity information.

AC POWER INLET:



When operating in the Bridged Mode, both attenuators must be in the same position so the speaker load will be equally shared between the channels. See the section on Bridged Mono operation for more information and precautions.

## Rear Panel



### 7 IEC MAINS CONNECTOR



This is a standard IEC power connector. An AC mains cord having the appropriate AC plug and ratings for the intended operating voltage is included in the carton.



### U.S. DOMESTIC AC MAINS CORD

The mains cord supplied with the unit is a heavy-duty, three-conductor type with a conventional 120 VAC plug with ground pin. It should be connected to an independent circuit capable of continuously supporting at least 15 amps. This is particularly critical for sustained high-power applications. If the outlet used does not have a ground pin, a suitable grounding adapter should be used and the third wire grounded properly.



**Never break off the ground pin on any equipment. It is provided for your safety.** The use of extension cords should be avoided but, if necessary, always use a three-wire type with at least a #14 AWG wire size. The use of lighter wire will severely limit the power capability of this amplifier. Always use a qualified electrician to install any new electrical equipment. To prevent the risk of shock or fire hazard, always be sure that the amplifier and all associated equipment is properly grounded.



### NOTE: FOR U.K. ONLY

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug, proceed as follows: (1) The wire which is colored green and yellow must be connected to the terminal which is marked by the letter E, or by the Earth symbol, or colored green or green and yellow. (2) The wire which is colored blue must be connected to the terminal which is marked with the letter N, or the color black. (3) The wire which is colored brown must be connected to the terminal which is marked with the letter L, or the color red.

To avoid the risk of electrical shock, do not place fingers or any other objects into empty tube sockets while power is being supplied to unit.

### 8 FAN GRILLE

A two-speed DC fan supplies cool air to the amplifier. THIS INTAKE SHOULD NEVER BE BLOCKED! The fan switches to high speed automatically when the unit requires additional cooling. At idle and cool, the fan runs at low speed. The fan should never stop unless the amplifier is switched OFF or the AC mains power source is interrupted, or the thermal breaker in the transformer has tripped due to excess heating. The thermal breaker in the transformer is self-resetting once the excess heat has dissipated.

### 9 LINE VOLTAGE SELECTOR SWITCH

The CPX series power transformer is designed with two primaries that can be placed in series or parallel by means of the line voltage selector switch. It is accessible by loosening one screw and rotating the transparent guard out of the way. Please be sure this is set to the proper voltage for your area before turning the amplifier on for the first time.

### 10 DUAL PRIMARY FUSE

In order to accommodate line voltage switching, the power transformer is designed with two primaries that can be placed in series or parallel by means of the line voltage selector switch. Each primary is individually fused, so there is no need to change fuse values when a different line voltage is selected. It is important to use the fuse values specified on the rear panel. The fuses are provided to limit current to the associated transformer primary winding, and protect it from overheating and possible destruction due to fault conditions in the unit. The trip current values have been carefully chosen to allow reasonable continuous power output performance, while still protecting the power transformer. These fuses should not open unless there is a fault in the amplifier circuitry that causes excessive mains current draw. However, abnormal conditions such as a short circuit on either or both channels, or continuous operation at overload or clipping (especially into 2-ohm loads per channel or 4-ohm bridge load) can cause the fuses to open. If this occurs, UNPLUG from the AC POWER source before replacing the fuses, after waiting a brief period of time to allow the unit to cool down. Efforts should be made to correct the cause of the overload, first by disconnecting one output at a time, and then one speaker at a time until the bad cable or damaged speaker is isolated. If the fuses open instantly each time you attempt to turn the unit on, it should be taken to a qualified Crest Service Center for repair.

### 11 COMBO INPUT CONNECTORS

Input connections are made via the 3-pin XLR (pin 2+) or 6.3 mm plug "Combi" connectors on the rear panel of the amplifier. The inputs are actively balanced. The input overload point is +28 dBu.

### 12 CONNECTING OUTPUTS\*\*

The CPX4 has twist lock output connectors. Channel A and Channel B may be accessed individually with 2 conductor connectors, with (+) at terminal 1+ and (-) at terminal 1-. A 4 conductor twist lock may be used on the channel A output, with channel B appearing at terminals 2+ and 2-. For BRIDGE mode, use only the channel A twist lock connector, and the (+) output is at terminal 1+, and the (-) output is at terminal 2+, which is fed from Channel B output.

### 13 HIGH OUT JACKS

This 1/4" jack supplies high-frequency output signals from the activated crossover for patching to this amplifier and/or additional power amplifier inputs. Unlike the low-frequency crossover output that is automatically routed to the associated channel, the high-frequency output signal must be patched to some suitable input in order to complete the bi-amped system. This 1/4" jack also provides an unbalanced (tip/sleeve) output to be patched with single-conductor shielded cables.

### 14 40 Hz SWITCH

This switch is used to activate the LOW CUT filter for the corresponding channel. It is a push-type switch, that requires a small tool to activate. The IN position routes the input signals through the 40 Hz LOW CUT filter, while the OUT position bypasses the filter. This filter will cut extremely low frequencies, protecting speakers from the possibility of over-excursion. The filter low-frequency rolloff is 12 dB per octave. The LOW CUT filter for each channel will function independently of the crossover function.

### 15 CROSSOVER SWITCH (100 Hz crossover)

This switch is used to activate the 100 Hz crossover for the corresponding channel. It is also a push-type switch and requires a small tool to activate. The CPX 4 offers two 100 Hz crossovers. These are designed for use when a subwoofer is added to the system. With the switch IN, the input signals are routed through the crossover and the low frequencies are automatically sent to the corresponding channel. At the same time, the high frequencies are sent to the HIGH OUT (9) jack and must then be patched to the INPUT of the other channel of this amplifier or to another amplifier input to complete the bi-amped system. With the switch OUT, the crossover is defeated and the input signal is routed directly to the respective power amp channel. The crossover frequency is fixed at 100 Hz and cannot be changed. The crossover configuration is a four-pole Linkwitz-Riley approximation.



### 16 GCL

Crest's patented GCL (Gain Comparator Limiting) limiter circuit enables the sound technician to maximize the performance of the amplifier/speaker combination by preventing the power amplifier from clipping. When the onset of clipping is detected, the limiter engages to prevent damage to the loudspeakers and degradation of sound quality. For this reason, GCL should always be enabled.

### 17 BRIDGE MODE SELECTOR SWITCH

When a 2-channel amplifier is operated in the Bridge mode, it is converted into a single-channel unit with a power rating equal to the sum of the power rating for each channel, at a load of twice that of the single-channel rating. For example, the CPX 4 is rated at 1600 Watts RMS per channel into 4 Ohms. The Bridge rating is 3200 Watts RMS into 8 Ohms. Bridge mode operation is accomplished by placing the MODE switch in the BRIDGE position, and using a twist lock connector wired for bridge mode on the channel A output, and using the CHANNEL A input. All CHANNEL B input functions are defeated and serve no purpose now. Bridge mode operation can be used to drive sound distribution systems in very large public address applications. Another common use for the Bridge mode is in subwoofer applications where very high power levels are required to reproduce extremely low frequencies with adequate headroom. Such enclosures usually contain 2 or 4 loudspeakers to handle the power levels involved. When using Bridge mode, the connected enclosure impedance must be 4 or 8 Ohms — never below 4 Ohms.

#### CONNECTING INPUTS

Input connections are made via the 3-pin XLR (pin 2+) or 6.3 mm plug "Combi" connectors on the rear panel of the amplifier. The inputs are actively balanced. The input overload point is +28 dBu.

#### CONNECTING OUTPUTS

The CPX4 has twist lock output connectors. Channel A and Channel B may be accessed individually with 2 conductor connectors, with (+) at terminal 1+ and (-) at terminal 1-. A 4 conductor twist lock may be used on the channel A output, with channel B appearing at terminals 2+ and 2-. For BRIDGE mode, use only the channel A twist lock connector, and the (+) output is at terminal 1+, and the (-) output is at terminal 2+, which is fed from Channel B output.

*The input XLR connectors are wired according to standard practice for balanced interconnections, with pin 2 (+), pin 3(-) and pin 1 ground. The TRS connectors are wired with Tip (+), Ring (-), and Sleeve ground.*

\*\*



**WARNING.** Regardless of what connections are used, the minimum parallel speaker load should always be limited to 2 Ohms per channel, or 4 Ohms when in BRIDGE mode. Operation at Loads of 4 Ohms per channel, or 8 Ohms BRIDGE mode, is more desirable for sustained operations because the amplifier will run much cooler with this load. Operation above 4 Ohms per channel and even open-circuit conditions can always be considered safe, but sustained operation at loads below 2 Ohms could result in temporary amplifier shut down due to the thermal limit circuitry.

## Operation Modes

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### Stereo Operation

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For stereo (dual channel) operation, turn the amplifier off and set the mode select switches on the back panel to the OUT (extended) position. In this mode, both channels operate independently of each other with their input attenuators controlling their respective levels. For example, a signal at channel A's input produces an amplified signal at channel A's output, while a signal at channel B's input produces an amplified signal at channel B's output.

### Bridged Operation

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Both amplifier channels can be bridged together to make a very powerful single-channel monaural amplifier. Use extreme caution when operating in bridged mode; potentially lethal voltage may be present at the output terminals. To bridge the amplifier, depress the rear panel Bridge Mode switch (17) to the IN position. Direct the signal to channel A's input and connect the speakers across pin +1 and pin +2 of the channel A Speakon® output connector. Only channel A's input attenuator is active while in Bridged Mono mode.



Unlike the Stereo Mode, in which one side of each output is at ground, in the Bridged Mode both sides are hot. Pin +1 is Channel A's side, which is the same polarity as the input. The minimum nominal load impedance in the Bridge Mode is 4 Ohms, which is equivalent to driving both channels at 2 Ohms. Driving bridged loads of less than 4 Ohms will activate GCL circuitry, resulting in a loss of power and potential thermal overload.

## Protection Features

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The CPX 4 amplifier incorporates several circuits to protect both themselves and loudspeakers under virtually any situation. Crest has attempted to make the amplifiers as foolproof as possible by making them immune to short and open circuits, mismatched loads, DC voltage, and overheating. If a channel goes into the Gain Comparator Limiting or GCL gain reduction mode, the speaker load remains connected, but clipping percentage is instantly reduced. DC voltage on the output, excessive subsonic frequencies or thermal overload will cause the channel's output to disconnect from the speaker load until the problem is corrected or the amplifier cools down.

### Gain Comparator Limiting (GCL)

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Any time a channel is driven into hard, continuous clipping, the GCL circuit will automatically reduce the channel gain to a level just slightly into clipping, guarding the speakers against the damaging high power continuous square waves that may be produced. Situations that may activate the GCL circuit include uncontrolled feedback, oscillation, an improper equipment setting or malfunction upstream from the amplifier. Normal program transients will not trigger the GCL, only steady, excessive clipping will. The GCL LED will flash on peaks when GCL is active, and will flash brightly with clipping when GCL is disabled.

### Thermal Protection

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Internal fans keep the amplifier operating well within its intended temperature range under all normal conditions. If either channel's heat sink temperature reaches 90°C, both channels of the amplifier will shut down until it has cooled. During this time, the THERMAL PROTECT LED will light up and the fans will continue to run at high speed.

### Short Circuit

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If an output is shorted, the overcurrent protection circuit will engage and reduce the output of the amplifier to protect the output devices. Solid red GCL LEDs and dim signal LEDs is an indication of a short circuit and should be investigated immediately. To find the cause of the overload, start by disconnecting one output at a time, and then one speaker at a time until the bad cable or damaged speaker is isolated.

### DC Voltage Protection

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If a DC or subsonic voltage is present at the outputs, a crowbar circuit engages to prevent loudspeaker damage.

### Turn-On/Turn-Off Protection

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At power-up, the amplifier stays in mute mode with outputs disconnected for several seconds while the power supplies charge and stabilize. When power is removed, the mute mode engages so that no thumps or pops are heard.

### Speaker Protection

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All loudspeakers have electrical, thermal and physical limits that must be observed to prevent damage or failure. Too much power, low frequencies applied to high frequency drivers, severely clipped waveforms and DC voltage can all be fatal to cone and compression drivers. The Crest CPX 4 amplifier automatically protects speakers from DC voltages and subsonic signals. For more information, see the section on Protection Features. Mid- and high-frequency speakers, especially compression drivers, are highly susceptible to damage from overpowering, clipped waveforms or frequencies below their rated pass band. Be extremely careful that the low and mid bands of an electronic crossover are connected to the correct amplifiers and drivers and not accidentally connected to those for a higher frequency band. The amplifier's clipping point is its maximum peak output power and can deliver more power than many speakers can safely handle. Be sure the peak power capability of the amplifier is not excessive for your speaker system.

To ensure that the speakers never receive excessive power and that the amplifier never clips, use a properly adjusted external limiter (or a compressor with a ratio of 10:1 or higher) to control power output. In systems with active electronic crossovers, use one for each frequency band. The clip limiter will automatically limit the duration of continuous square waveforms applied to the speakers. Some speaker systems are packaged with processors that have power limiting circuits and should not require additional external limiting.

Do not drive any low-frequency speaker enclosure with frequencies lower than its own tuned frequency. The reduced acoustical damping could cause a ported speaker to exceed its mechanical limits and permanently deform the voice coil, even when driven with comparatively low power. Consult the speaker system specifications to determine its frequency limits.

### Amplifier Maintenance and User Responsibility

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A CPX 4 amplifier requires no routine maintenance and should never need any internal adjustment during its lifetime. Your CPX 4 amplifier is very powerful and can be potentially dangerous to loudspeakers and humans alike. It is your responsibility to read the Important Precautions section in the front of this manual and to make sure that the amplifier is installed, wired and operated properly. Many loudspeakers can be easily damaged or destroyed by overpowering, especially with the high power available from a bridged amplifier. Read the Speaker Protection section and always be aware of the speaker's continuous and peak power capabilities.

# Specifications

## CPX 4

### Rated Power @ 120 VAC or 240 VAC

#### Stereo\* Mode

2 Ω, 1 kHz, 1% THD (RMS per channel)  
 4 Ω, 1 kHz, 1% THD (RMS per channel)  
 8 Ω, 1 kHz, 1% THD (RMS per channel)

800 W  
 1,600 W  
 1,005 W

#### Bridge\* Mode (Mono)

8 Ω, 1 kHz, 1% THD (RMS)  
 4 Ω, 1 kHz, 1% THD (RMS)

3,200 W  
 1,600 W

### Minimum Load Impedance

2 Ω

### Maximum RMS Voltage per channel

97 V

### Frequency Response +0, -2 dB @ 1 W

Stereo mode, both channels driven +0, -2 dB @ 1 W

12 Hz - 35 kHz

### Hum & Noise

"A" weighted, reference to rated power @ 8 Ω

> 88 dB

### Crosstalk

@ 1 kHz, at rated output power @ 8 Ω

> -55 dB

### Input Sensitivity RMS Voltage

@ rated output power, 4 Ω

1.95 V

### Input Impedance

Balanced, XLR (pin 2 positive) & TRS 1/4" Jack

10 kΩ

### Overall System Gain per Channel

40X (+32 dB)

### Distortion (THD)

Stereo Mode, both channels driven, 20 Hz - 20 kHz, 10 dB, 4 Ω

< 0.1%

### Slew Rate

> 12 V/μs

### Damping Factor 8 Ω, 20 Hz -2 kHz

Stereo Mode, both channels driven, 8 Ω, 20 Hz -2 kHz

> 400:1

### Topology

Class H

### Limiter (GCL - switchable)

Yes

### Input Connectors

Input  
 Link

2 x 3-pin XLR - 1/4" Jack (TRS) Combo  
 2 x 1/4" Jack (TRS) High Out

### Output Connectors

Stereo Mode  
 Bridge Mode

2 x 4-pin Twist-Lock  
 1 x 4-pin Twist-Lock

### Crossover

Switchable per channel

100 Hz (4th order Linkwitz-Riley)

### Low Cut

Switchable per channel

-3 dB @ 40 Hz (12 dB per Octave)

### Mode Select

Stereo & Bridge Mode

### Cooling System

Temperature dependent, air flow - back to front

2 x Two-Speed DC Fan

### Protection

Amp

Full short circuit, open circuit  
 Over-temp thermal  
 RF  
 Stable into any load

## Specifications

	<b>CPX 4</b>
<b>Load</b>	Turn on/off muting DC (triac crowbar) Low-cut filter
<b>Power Consumption</b> Stereo Mode, both channels driven @ 1/8 rated output power, 4 $\Omega$	750 W
<b>Mains Voltage</b>	Dual Voltage Selector switch 220-240 & 115 V AC, 50/60 Hz
<b>Mains Connector</b>	IEC
<b>LED Indicators</b>	GCL™/Clipping - Red Signal - Yellow Thermal Protect - Red Power - Green
<b>Dimensions &amp; Weight</b> Net Weight Dimensions (HWD)	43 lbs (19.5 kg) 3.5" x 19" x 16.25" 89 mm x 483 mm x 413 mm
<b>* Repetitive burst @ 20 ms</b>	

Specifications subject to change without notice

stranded cable length	wire gauge	power loss		
		8 Ohms load	4 Ohms load	2 Ohms load
<b>2</b> meters	0.3mm <sup>2</sup>	2.9%	5.6%	10.8%
	0.5	1.74	3.4	6.7
	0.75	1.16	2.3	4.5
	1.5	0.58	1.16	2.3
	2.5	0.35	0.70	1.39
	4.0	0.22	0.44	0.87

<b>5</b> meters	0.5mm <sup>2</sup>	4.3%	8.2%	15.5%
	0.75	2.9	5.6	10.8
	1.5	1.45	2.9	5.6
	2.5	0.87	1.74	3.4
	4	0.55	1.09	2.2
	6	0.37	0.73	1.45

<b>10</b> meters	0.5mm <sup>2</sup>	8.24%	5.5%	28%
	0.75	5.6	10.8	19.9
	1.5	2.9	5.6	10.8
	2.5	1.74	2.9	6.7
	4	1.09	1.74	4.3
	6	0.73	1.09	2.9

<b>30</b> meters	0.75mm <sup>2</sup>	15.5%	0.73%	45%
	1.5	8.2	15.5	28
	2.5	5.1	9.8	18.2
	4	3.2	6.3	12.0
	6	2.2	4.3	8.2
	10	1.31	2.6	5.1

stranded cable length	wire gauge	power loss		
		8 Ohms load	4 Ohms load	2 Ohms load
<b>5</b> feet	18AWG	0.81%	1.61%	3.2%
	16	0.51	1.02	2.0
	14	0.32	0.64	1.28
	12	0.20	0.40	0.80
	10	0.128	0.25	0.51

<b>10</b> feet	18AWG	1.61%	3.2%	6.2%
	16	1.02	2.0	4.0
	14	0.64	1.28	2.5
	12	0.40	0.80	1.60
	10	0.25	0.51	1.01

<b>40</b> feet	18AWG	6.2%	11.9%	22%
	16	4.0	7.7	14.6
	14	2.5	5.0	9.6
	12	1.60	3.2	6.2
	10	1.01	2.0	4.0
	8	0.60	1.20	2.4

<b>80</b> feet	18AWG	11.9%	22%	37%
	16	7.7	14.6	26
	14	5.0	9.6	17.8
	12	3.2	6.2	11.8
	10	2.0	4.0	7.7
	8	1.20	2.4	4.7







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Features and specifications subject to change without notice.

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Logo referenced in Directive 2002/96/EC Annex IV  
(OJ(L)37/36,13.02.03 and defined in EN 50419: 2005  
The bar is the symbol for marking of new waste and  
is applied only to equipment manufactured after  
13 August 2005