

INSTALLATION & OPERATION GUIDE



Intelligent Power Management Systems.



AC-8CX

8 OUTLET POWER MANAGEMENT SYSTEM





IMPORTANT SAFETY PRECAUTIONS



Your iPOWER™ product represents the latest in power management and protection technology. However, like any electronic device, an inappropriately or improperly installed device may not perform as intended. By following a few common sense precautions, your iPOWER™ product will give you a lifetime of worry-free performance.

The following safety precautions apply to all iPOWER™ products.

READ AND OBSERVE THE FOLLOWING SAFETY PRECAUTIONS AT ALL TIMES.



WARNING! Power Source: Use only with a 3-prong standard AC outlet or a GROUNDED 2 to 3 prong adapter. iPOWER™ products cannot provide power protection without a grounded AC source. Never use a 3 to 1 adapter plug— this will disable all protection from your iPOWER™ unit and will void the Limited Lifetime Warranty and Connected Equipment Guarantee.

All rooftop devices connected to your iPOWER™ products should be grounded according to the National Electrical Code (NEC). Do not place any rooftop device where it can come into contact with power lines or any power circuit.



WARNING! Operating Voltage: Any equipment plugged into an iPOWER™ product must have a 120V, 60Hz rating.



WARNING! Power Rating: Check the power consumption (watts) of each device that will be powered by an iPOWER™ product. Be sure that the total of all devices being connected does not exceed 1800 watts.



WARNING! Water and Moisture: Do not use any iPOWER™ product in an area where it may get wet, such as near a bathtub, sink, laundry facility, in a wet basement, or near a swimming pool.



WARNING! Ventilation: While iPOWER™ products do not generate a significant amount of heat, they should not be placed directly on a bed, rug, or sofa that may obstruct the unit's natural heat dissipation abilities.



IMPORTANT SAFETY PRECAUTIONS



CAUTION! Heat: iPOWER™ products should not be placed on or in close proximity to heat sources such as radiators, heat registers, stoves, or on top of other devices (including amplifiers and receivers) that produce heat.



WARNING! Power Cord Protection: Power cords and remote trigger cables should be routed so that they are not likely to be walked on, chewed by pets, or pinched by objects placed on them. Pay special attention to the place where the cord meets the plug and where the cord enters the device.



WARNING! Object And Liquid Entry: Care should be taken that no objects or liquids fall onto or into the device. Do not use alcohol on the device.



WARNING! Damage Requiring Service: Customers should not attempt to repair iPOWER™ products. These devices should be serviced by an authorized service technician when:

- The power supply cord or the plug has been damaged
- Objects have fallen, or liquid has been spilled, into the device
- The device has been exposed to rain
- The device shows a marked change in performance or does not appear to function normally
- The device has been dropped, or the enclosure has been damaged

CONGRATULATIONS!

Thank you for purchasing a Niles iPOWER™ Intelligent Power Management System. Niles iPOWER™ products are the result of years of research and development and are the most advanced and complete power management devices available. With iPOWER™ in your system, you have complete confidence knowing that your audio/video components have a clean power supply free of noise and distortion. The result—your home entertainment system will perform as its designers intended, while being fully protected from electrical noise and potentially damaging spikes and surges.

In addition to power protection and performance enhancement, the iPOWER™ AC-8CX offers triggering options which allow for control of your system's start-up and shut-down procedures. With a little planning, your AC-8CX can put control of your home entertainment system at your fingertips.

Niles manufactures the industry's most complete line of custom installation components and accessories for audio/video systems. For a free full-line catalog write: **Niles, Catalog Request, P.O. Box 160818, Miami, Florida 33116-0818 or visit our web site at www.nilesaudio.com.**

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INTRODUCTION

Never in the history of power protection has there been a product line that has revolutionized the industry the way that Niles' iPOWER™ has. iPOWER™ Intelligent Power Management Systems represent a breakthrough in three main areas: *power protection*, *noise filtration*, and *power management*. Based on solid scientific principles, clever engineering, and fastidious execution, iPOWER™ devices are built to the most stringent standards in the industry and provide the maximum electrical protection and advanced performance enhancing technology.

iPOWER's i3™ (*instantaneous, impenetrable, and virtually indestructible*) three-stage power protection circuitry stands head and shoulders above the industry in terms of delivering instantaneous response time. Its clamping levels are among the lowest in the industry, providing unrivaled electrical protection for its connected equipment. Its iQ™ Optimal Q Impulse Noise Filtering technology has the ability to reduce detail-obscuring “noise” on the AC power line, resulting in performance that's sure to please even the most demanding eyes and ears. In fact, iPOWER™ may be the first “audiophile-approved” power protection technology available at any price. Additionally, its iDefinition™ HDTV-ready coax circuitry provides protection while minimizing signal loss from input to output so images are razor sharp and colors are vivid. Plus, with a full complement of true line diagnostics, and user-friendly one button operation, your AC-8CX puts you in complete control of your system.



Model AC-8CX
8 Outlet Power Management System

KEY TECHNOLOGIES

i3™ Three-Stage Circuit Topology — Power Protection for the Real World

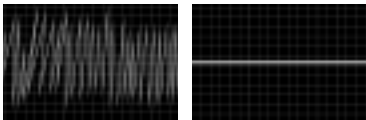
iPOWER's i3™ (instantaneous, impenetrable, and virtually indestructible) circuit topology represents a breakthrough in power protection technology. A three-stage design comprised of Gas Tubes, Metal Oxide Varistors (MOV's) and a proprietary Low-Impedance In-Line Filter, the i3™ circuitry delivers instantaneous protection.

Most MOV-based surge protection devices use a circuit topology that is sacrificial in nature. Like an air bag in an automobile, they are designed to “blow up,” sacrificing their internal circuitry in order to protect the connected equipment during a severe surge event. Sooner or later they fail in the line of duty leaving connected equipment unprotected. As a radical departure from this philosophy, all Niles iPOWER™ products with i3™ protection technology are non-sacrificial in nature. This unique design enables iPOWER™ to protect your equipment time and time again.

While UL's® most rigorous standard for voltage let through is 330 volts, Niles iPOWER™ products with i3™ protection technology have a consistent clamping level of less than 300V. In addition, all iPOWER™ products clamp at a mere 40V over peak standard line voltage (ANSI/IEEE C62.45 6000V 100 kHz Ring Wave Test), adding a level of protection rarely found in the industry.

iQ™ Optimal Q Noise Filtration

All of the Power — None of the Noise. Computers, household appliances, and RF broadcasts can introduce “noise” onto the AC power line, obscuring audio detail and video resolution. By their very nature, conventional AC power line noise filtration circuits limit electrical current flow, stealing the “punch” from high-current power amplifiers. The Niles iPOWER iQ™ optimal Q impulse noise filtration circuitry simultaneously achieves both noise reduction and the proper power line loading necessary for dynamic performance. Through careful research and with the deployment of advanced electrical components, a sophisticated design that varies the Q of the circuit topology was created. With this design, iPOWER™ products achieve an outstanding 50dB of common mode rejection and 60dB of differential mode rejection—without current choking. iPOWER™ delivers both the performance *and* the power.



iQ™ reduces up to 99.9% (60dB) of AC power line noise.
The above graphics simulate AC power line noise reduction.

iDefinition™ Constant Impedance Technology

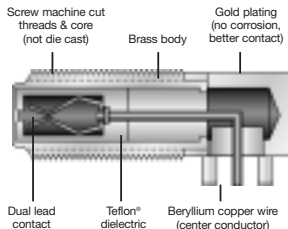
Unfortunately, many surge suppression devices protect coax connections with little regard to the impact on performance. In these circuits, the signal comes in as a specific frequency but leaves as something entirely different. This signal variation often results in ghosting, a lack of detail and impact, and even drop-out. iPOWER's™ iDefinition™ circuitry strives to maintain a perfect 75 ohm impedance throughout the entire circuit. It combines superior components with a proprietary circuit that both protects your coax connections from harmful surges and minimizes the signal loss from input to output. The result, razor sharp images and full compatibility with both existing and upcoming digital video sources like DSS, DTV and HDTV. You'll have both peace of mind and enjoy all the breathtaking performance that digital audio and video deliver.



Above graphics simulate digital signal degradation.

Groundbreaking F-Connector Technology

It has been said that a chain is only as strong as its weakest link, and this is just as true for an electrical circuit. Electronic devices have become increasingly more sophisticated over the years, while the basic hardware supporting their use has gone unchanged for decades. At Niles, we realized early in the development of iPOWER™ that one of the weakest links in the power management chain was in F-connector quality and construction. Your AC-8CX's F-connectors incorporate six major advances in materials, design and construction that ensure the highest audio and video resolution possible.



Machine-Cut Threads. Unlike most products which have inexpensive stamped threads, iPOWER™ products use only machine-cut threads on their connectors. While machine cutting is a more time-consuming and expensive process, it allows for a much closer manufacturing tolerance. iPOWER's™ F-connectors are easier to connect, make for a superior electrical contact, and minimize signal loss.

Dual Lead Contact. A dual lead contact makes a more positive connection and is much more durable, ensuring a lifetime of service.

Teflon® Dielectric. A Teflon® dielectric greatly reduces signal loss and preserves the color and clarity of the source signal.

Solid Brass Body. Brass allows for a more precise thread to be cut, increases conductivity, and is the most dependable material for electrical connectors. The Brass body offers an unrivaled level of dependability and extended life.

Gold Plating. Gold plating increases surface conductivity, decreases signal loss and preserves signal integrity.

Beryllium Copper Wire Center Conductor. This advanced material increases conductivity and resists oxidation for maximum performance and extended life.

Unrivaled System Integration and Ease of Use

iPOWER™ features an elegant and intuitive user interface. As a pioneer of home audio/video customization, Niles understands that technology is only useful if it is *used*. iPOWER™ provides the installer with the flexibility to design and execute a spectacular system in a package that the end-users can actually operate. For the end-user, Niles iPOWER™ meets the needs and budget of nearly any enthusiast. Its intuitive interface allows the most complex systems to be controlled with one-button operation with displays that are clear and easy to understand. Installers will appreciate features such as true line diagnostics and feedback.

Real Line Diagnostics

Your AC-8CX is equipped with a sophisticated set of line diagnostic indicators. These indicators not only ensure that the AC-8CX is working, but also let you know that the wiring in your house has been installed properly. This is particularly useful in older homes where electrical systems may have been installed at different times during the life of the home.

When illuminated, the Ground OK LED on the AC-8CX indicates that the house wiring is properly grounded. If the LED does not illuminate, there is a line problem. Without a proper ground, your AC-8CX will not be able to provide protection from electrical surges and spikes. DO NOT OPERATE YOUR AC-8CX WITHOUT A PROPER GROUND. IF THE GROUND OK LED DOES NOT ILLUMINATE, DISCONNECT THE UNIT IMMEDIATELY.

When illuminated, the LINE OK LED on the AC-8CX indicates that the wall outlet does not have a line problem such as polarity inversion. If the LED does not illuminate, there is a line problem. This is common, especially in older homes. Call your electrician to have the line repaired. DO NOT OPERATE YOUR AC-8CX WITH A LINE PROBLEM. IF THE LINE OK LED DOES NOT ILLUMINATE, DISCONNECT THE UNIT IMMEDIATELY.

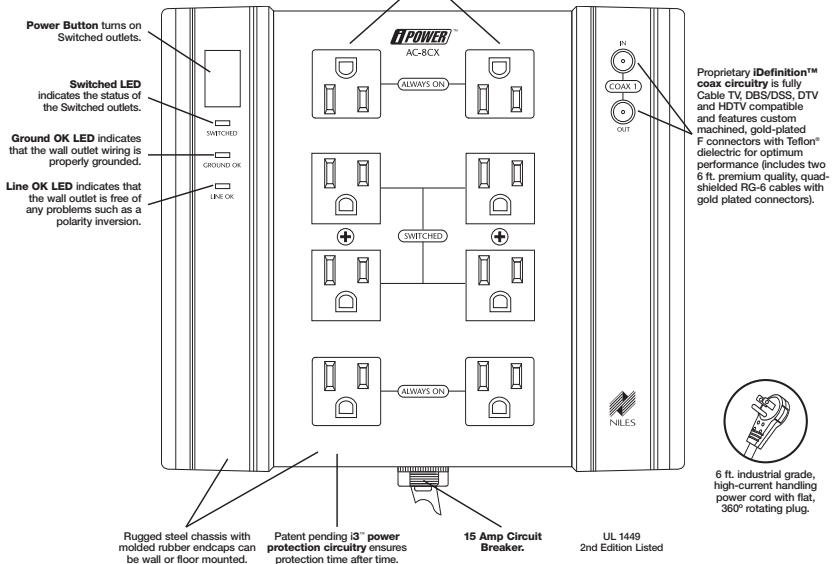
The Switched LED on the AC-8CX illuminates when the Power Button is activated indicating that the Switched outlets are ON. When the Power Button is not initiated, the Switched LED does not illuminate, indicating that there is no power at the Switched Outlets.

UL 1449 Second Edition Listing

The UL 1449 Second Edition procedure is considered to be the most rigorous and demanding series of tests for surge protection devices in the world. In order for a surge protection device to obtain this UL certification, it must pass a battery of "torture" tests ensuring that the product will meet a set of established safety and performance standards. Your AC-8CX is UL 1449 Second Edition listed.

UNIT DETAILS

The AC-8CX features four pairs of premium quality, wall transformer-spaced outlets. Two pairs are **Always On**, two pairs are **Switched** on by the power button.



INSTALLATION OVERVIEW

The following is an overview for installing your iPOWER™ product.

- Unpack all of the contents of the AC-8CX carton.
- Plan your system and lay out all of the equipment that will be connected to the AC-8CX.
- Place the AC-8CX in the location where it will be used, being sure to follow both the safety precautions listed in the front of this manual and the placement recommendations on (page 12). DO NOT plug the unit in yet.
- Plug each of the components into the AC-8CX. You may want to make a note on paper listing the component connected to each outlet.
- Connect any device with coaxial outputs to the F-connectors.
- With all of the attached components in the OFF position, plug the AC-8CX into the wall.
- Test for proper operation.

PACKAGE CONTENTS



(1) AC-8CX



(1) Installation &
Operation Guide



(1) Quad-shielded RG-6
cables with gold-plated
connectors

PLANNING YOUR SYSTEM

Think about which components need to work together, and place them in close proximity to one another. You may also want to consider putting frequently handled components in the most convenient locations. By carefully planning the system's architecture in advance, your AC-8CX can be integrated into any configuration you choose.



IMPORTANT NOTE

All components in a system must be connected to an iPOWER™ Power Management System in order for the system to be protected from electrical disturbances and to realize maximum noise filtration benefits. This includes AC power cables, coaxial connections, and telephone cables used with pay-per-view systems. Failure to do this will degrade system performance and leave it vulnerable to electrical damage.



PROPER GROUNDING

Your iPOWER™ product will not be able to provide surge protection or noise reduction without a proper ground. If the AC line in your house is properly grounded, the GROUND OK light will illuminate. If the GROUND OK light does not illuminate, stop your installation. Check the AC connection and make sure that the unit is plugged in properly. If the GROUND OK light still fails to illuminate, have the AC outlet in the house checked by an electrician to diagnose the ground problem.

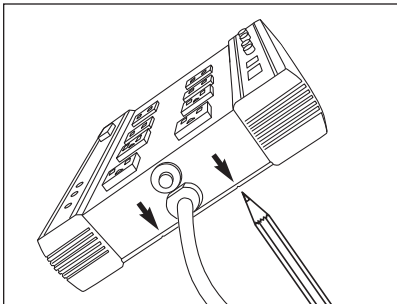
Placement

It is recommended that the AC-8CX be placed in a location easily reached when manually operating the other controls in the system. There should be a clear line of sight between the operator and the unit to allow easy user feedback of system status. The AC-8CX should be placed on a flat, stable shelf or platform or, if desired, can be wall mounted. See the following section for directions on wall mounting. **IMPORTANT:** Be sure to follow the "Safety Precautions" in the front of this manual to ensure proper product performance and safety.

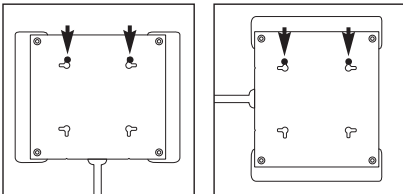
Wall Mounting

Once you have decided where your AC-8CX should be placed, you may wish to permanently mount it in that location. Mounting screw slots are provided on all AC Series iPOWER™ products for such purposes. On the back of each unit you will find a series of L-shaped slots designed to accommodate mounting screws. The L-shape of the openings allows for both vertical and horizontal positioning of the unit. Additionally because the screw hole distances are uniform you can rotate the unit without having to reposition the screws (see illustration).

After you've located the desired positioning you can mark the distance between the screw locations using the special indents found on your AC iPOWER™ unit (see illustration).



Once you've located your desired positioning you can mark the screw locations using the special indents found on your AC iPOWER™ unit. Plus, because the screw hole distances are uniform you can rotate the unit without having to reposition the screws.



PLANNING YOUR AC CONNECTIONS

Always On Outlets

For the Always On outlets, power will be routed to attached components at all times, regardless of whether the Power Button on the AC-8CX is initiated or not. These outlets are appropriate for any component that has a clock, timer, or that will be used as a master control or triggering unit for the rest of the system. Devices such as a VCR, DBS receiver, cable TV box, or any item with a microprocessor should use the Always On outlets.

Switched Outlets

The Switched outlets power up the moment the Power Button is initiated. These outlets are appropriate for devices with latching power supplies* such as some CD players, tuners, tape decks, and some televisions. If the power button on your iPOWER™ unit is left permanently engaged, the Switched outlets will function identically to the Always On outlets described above.

* You can tell if a component has a latching power supply by unplugging it from the wall while it is turned on, waiting three minutes, and then plugging it back in. If the power comes back on, it is latching.

MAKING CONNECTIONS



IMPORTANT NOTE

All components in a system must be connected to an iPOWER™ Power Management System in order for the system to be protected from electrical disturbances and to realize maximum noise filtration benefits. This includes AC power cables, coaxial connections, and telephone cables used with pay-per-view systems. Failure to do this will degrade system performance and leave it vulnerable to electrical damage.

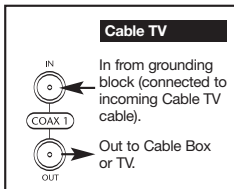
Connecting Devices to the AC Outlets

Be sure that the plugs are inserted all the way into the outlet to ensure a proper electrical connection. To simplify set-up, make a note as to which components are connected to which outlets.

Connecting to Coaxial Lines

For coaxial line connection, use the (1) RG-6 cable included with your AC-8CX to make connections to your DBS tuner, or any other device requiring a high quality connection. The premium cable is quad-shielded, has gold-plated F connectors, and will provide superior performance. Be sure to follow the markings on the AC-8CX that indicate IN (from the signal source), and OUT (to the component). Your AC-8CX, equipped with iDefinition™ constant impedance technology, will provide protection from virtually all types of electrical surges while preserving the integrity of the source signal. Plus, the coax circuit is fully Cable TV, DSS, DTV and HDTV compatible.

The following is an example of a system utilizing connections for cable TV. Actual connections may vary depending upon your system.



TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES AND TEST PROCEDURE
AC-8CX does not power-up. There is no power to the connected equipment.	<ul style="list-style-type: none">• Check that the unit is plugged in and that there is power at the outlet.• Check the AC-8CX's circuit breaker located by the power cord and reset if necessary.
The GROUND OK light on the front panel of the AC-8CX does not light up.	<ul style="list-style-type: none">• This indicates that the wall outlet is not properly grounded or possibly another type of line problem. Without a proper ground, your AC-8CX will not provide power protection.<ol style="list-style-type: none">1. STOP YOUR INSTALLATION. Check the AC connection and make sure that the AC-8CX is plugged in properly. If the GROUND OK light still fails to illuminate, have the AC outlet in the house checked by an electrician to diagnose the problem.2. DO NOT operate your AC-8CX without a proper ground.
The LINE OK indicator on the front panel of the AC-8CX does not light up.	<ul style="list-style-type: none">• This indicates that the wall outlet has a line problem such as polarity inversion. This is common, especially in older homes. DO NOT operate the AC-8CX with a line problem. Call your electrician to have the line repaired.

TROUBLESHOOTING (continued)

SYMPTOM	POSSIBLE CAUSES AND TEST PROCEDURE
Both the LINE OK indicator and the GROUND OK light on the front panel of the AC-8CX do not light up.	<ul style="list-style-type: none"> • This indicates that either the wall outlet is not properly grounded, or the wall outlet has a line problem such as a polarity inversion, (or both). See the above two items for more information.
There is no picture on the TV.	<ul style="list-style-type: none"> • Check your signal routing from the source to the AC-8CX and the entire chain of components through which the signal passes. Secure all connections and double-check that the cables are connected to the IN and OUT jacks in the proper way.
The circuit breaker on the AC-8CX continues to trip.	<ul style="list-style-type: none"> • Your AC-8CX is equipped with a 15 Amp circuit breaker to provide overload protection. This breaker will allow up to 1800 watts of power to pass through the AC-8CX to your components. If the breaker continues to trip after being reset several times, there may be a short in the system. If no short is apparent, or the problem is intermittent, this indicates that the components are drawing more than the 1800 watts the AC-8CX can supply. Check with your Niles dealer or installer to see what other iPOWER™ products can be used in addition to the AC-8CX to provide sufficient power for your system.
There is an audible "thump," "click," or "pop," coming from my loudspeakers during the power-up function of my AC-8CX.	<ul style="list-style-type: none"> • Many components will create "thumps," "clicks," and "pops" when they are first turned on. This can happen while their internal power supply "settles in," which usually only takes a few seconds or so. This is common, and while annoying, it usually will not harm loudspeakers. Niles offers several iPOWER™ models with features designed to prevent this condition. See your Niles dealer for more information.

SPECIFICATIONS

AC OUTLETS TECHNICAL SPECIFICATIONS

UL 1449 Clamping Rating	330 Volts (lower value is better)
ANSI/IEEE 100 kHz Ring Wave Test	<40 volts above peak standard line voltage
Response time	Instantaneous [<1 nanosecond (<1 billionth of a second)]
Surge Voltage	Tested to 6,000 Volts
Energy dissipation	1550 Joules
Line voltage	120VAC 15A, 50/60 Hz
Peak impulse current	100,000 Amps
Protection Modes.....	Line to Neutral, Line to Ground, Neutral to Ground
EMI/RFI noise reduction	Up to 60dB (99.9%) 100 kHz to 100 MHz

TECHNICAL SPECIFICATIONS FOR EACH COAX CIRCUIT

Clamping level	70 Volts
Response time	Instantaneous (<75 nanoseconds)
Energy dissipation	340 Joules
Peak impulse current	20,000 Amps
Connections	Machined, gold-plated Female F-connectors with Teflon Dielectric
Net Weight	4 lbs.
Dimensions	Width: 8-1/4"; Height: 7-3/8"; Depth: 2-1/2"



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1449 Second Edition
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