

**M460 multi-channel
power amplifier
instruction manual**

a/d/s/

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introduction

Thank you for purchasing an a/d/s/ M460 amplifier. This manual provides information on the connection and use of your a/d/s/ amplifier. Please read it thoroughly. Be sure to save this manual and the packing materials for the amplifier for possible future use.

about this manual

Because of the high power output capability of M460, and the wide choice of system configurations it allows, we strongly recommend that you have the amplifier professionally installed.

This manual contains information about the typical connection, use and maintenance of the M460. This information is sufficient to guide a skilled technician in installation. Basic information about installation, such as the importance of wiring polarity or techniques for solving grounding problems, is not provided here. Consult your a/d/s/ dealer, or a qualified technician, for more information.

associated equipment

M460 works well with many different types of signal sources and speakers. Your a/d/s/ dealer can help you select components to complement the performance of your amplifier. The broad frequency response, low distortion and wide dynamic range of the a/d/s/ automotive loudspeaker systems make them particularly well suited for use with the M460. If other types of speakers are used, be sure they are capable of handling the high power levels the M460 can produce.

system configurations

In addition to the most advanced circuit design available in a car stereo amplifier, the M460 has additional features that allow incredible system configuration flexibility.

Multi-channel design which allows any channel set to be bridged.

Built-in crossovers with plug-in response control modules. Adjustable subwoofer high pass and low pass modules are provided. In addition a variety of high pass, low pass and band pass modules for specific *a/d/s/* speakers and certain generic applications are available. Crossover bypass modules, which allow full range operation, are also supplied.

Extensive signal routing capabilities allow virtually unlimited system configuration options, including routing the output from the built-in crossovers to external amplifiers.

Some typical configurations are described below.

4 channel mode – Channels 1, 2, 3, and 4 operate independently, receiving signals from the corresponding inputs.

3 channel mode – Channels 1 and 2 operate independently. Channel set 3•4 is bridged, and receives an input signal from the channel 3 input.

2 channel mode – Channel sets 1•2 and 3•4 are bridged. Channel set 1•2 receives an input from the channel 1 input. Channel set 3•4 receives an input from the channel 3 input.

installation warnings and tips

Be careful not to cut or drill into gas tanks, fuel lines, brake or hydraulic lines, vacuum lines or electrical wiring when working on your vehicle.

Do not use the amplifier unmounted. Failing to securely mount the amplifier could result in damage or injury, particularly in the event of an accident. Never mount the amplifier where it might get wet. Mount the amplifier so the wire connections will not be pulled. Run wires where they will not be scraped, pinched or damaged.

When mounting an amplifier on a carpeted surface, or a surface that is not flat, use spacers or stand-offs on the mounting screws. This prevents the bottom panel of the amplifier from becoming bent when the mounting screws are tightened. If the bottom panel is bent it can touch the internal components, causing a short circuit and damaging the amplifier.

The +12V power supply wire must be fused at the battery terminal. Use the appropriate size fuse for the selected wire gauge. Disconnect the +12V wire at the battery before making or breaking connections at the amplifier power terminals.

If you need to replace the fuse(s) plugged into the side of the M460 use the specified 20 amp ATO type fuses. Using a higher current fuse may result in damage to the amplifier, which is not covered by the warranty.

Make sure all the other equipment is turned off when making or breaking connections to the M460 power terminals, input jacks and speaker terminals. Turn on the system and slowly turn up the volume control only after double checking all connections.

All the equipment in the system should be turned off when changing the settings of the crossover module controls or when changing the positions of the configuration jumpers. Changing the settings of the crossover module controls or the configuration jumper pins while the system is on may produce signal surges which can damage the other components in the system.

Power for systems with a single amplifier can be supplied by most automotive electrical systems. Systems with more than one amplifier may require a high capacity alternator or battery.

All amplifiers generate a certain amount of heat during normal operation. Be sure the area around the cooling fins of the M460 is unobstructed to allow adequate air circulation. To achieve the most efficient cooling mount the amplifier on a horizontal surface with the fins oriented upward, or on a vertical surface with the fins oriented vertically. **Note:** High ambient temperatures (over 100° F.) around the M460 increases the possibility of the thermal protection system being activated. Ventilation of the amplifier installation area may be required to maintain proper cooling.

Connecting a speaker load of less than 4 ohms to a bridged pair of amplifier channels may cause the amplifier to overheat. Unbridged channels should have an impedance load of no less than 2 ohms. Bridged channels should have an impedance load of no less than 4 ohms. Good ventilation or a cooling fan reduces the chance of the thermal protection system being activated. Do not connect a 2 ohm load to more than one bridged pair of channels. Unbridged channels may each drive 2 ohm loads without difficulty.

general wiring information

All the power and signal input and output connections are on the back of the amplifier chassis. The power supply and speaker wires are attached to plug-in connectors.

The +12V and ground wires must be large enough to handle the current demands of the amplifier. Use stranded copper wire of at least the size shown in the table below. Lighter gauge wire can reduce the power the amplifier produces and lead to dangerous overheating conditions or component damage. Larger gauge wire may be used, however it may require termination with pin-type connectors. The wire must have heat and chemical resistant insulation suitable for automotive use.

Length of wire	5'	10'	15'	20'	25'
Wire gauge	8	8	6	4	4

The "remote" wire can be relatively small; 18 AWG is recommended. If the amplifier is used with an *a/d/s/* signal processor, the remote power control is supplied to the amplifier through the DIN input cable.

power wiring

ground Connect the power supply ground terminal to the metal chassis of the vehicle.

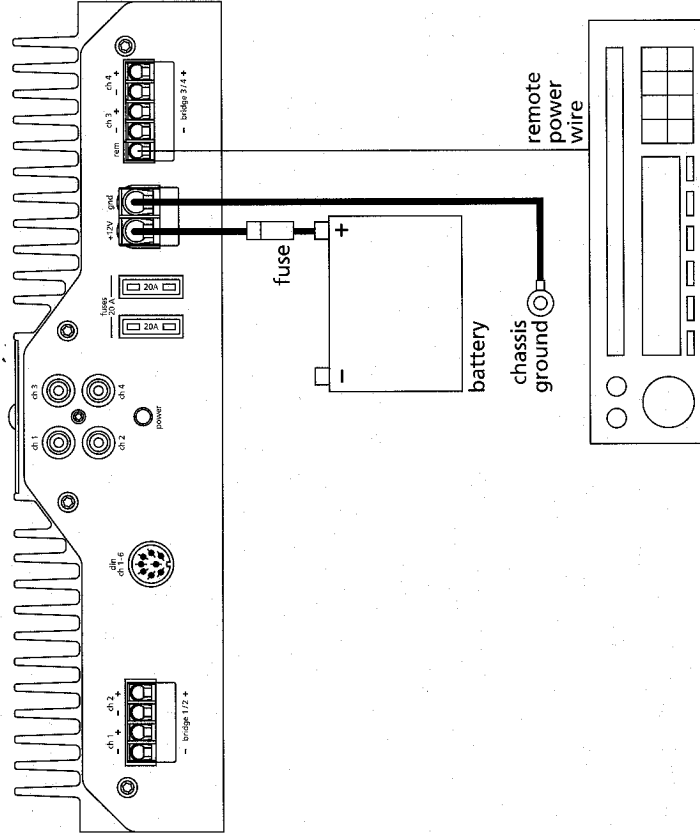
+12V Connect the +12v input terminal to the positive terminal of the battery. This power supply wire must be fused at the battery terminal. See the *Installation warnings and tips* section of this manual.

rem Connect the "remote" turn on terminal to a switched +12V source. The +12V source can be provided by the signal source or by any other power source that is turned on and off with the vehicle power supply. NOTE: If the amplifier receives input signals from an a/d/s/ signal processor via an 8-pin DIN cable, it is not necessary to connect the remote terminal. The remote-on signal is supplied by the signal processor via pin 8 of the input DIN jack.

fuse Two 20 amp fuses protect the M460 from problems with the power supply wiring and the electrical system.

power indicator When the amplifier is on the blue "power" indicator is lit.

power supply wiring



input connection

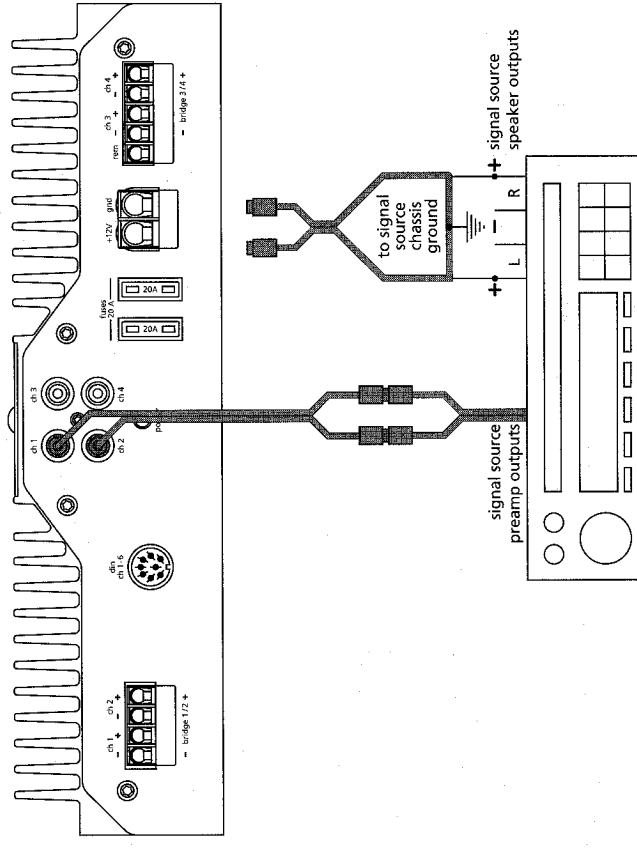
M460 can accept either high level (speaker level) or low level (preamp level) input signals. Use a low level input signal when the signal source has preamp outputs. If the signal source lacks preamp outputs, a high level signal from the speaker outputs will still provide good results.

Low level input M460 has 8-pin DIN input/output jacks that allow all audio signal and remote power connections to be made with a single plug. They also have conventional phono plug ("RCA plug") inputs that may be used instead of the DIN input.

NOTE: Some original equipment radios have "floating" preamp level outputs; their audio signal output connectors are not grounded. The M460 has a unique ground isolation amplifier which prevents noise from ground loops. This equipment combination produces an incomplete audio input circuit. To complete the circuit connect a wire between the outer shield wire of the input connector on the amplifier and the chassis of the radio. This connection method is similar to the one described in the following section for high level input connections. Use it only if normal connection procedures do not perform properly.

High level inputs If a high level input is used, the speaker wire outputs of the signal source must be connected to a phono plug adapter cable so it can be connected to the amplifier. Attach the positive speaker output wires to the center conductors of the phono plug cables. The negative speaker output wires are not connected. They should be secured and insulated with electrical tape. Connect the outer (shield) conductors of the phono plug adapter cables to the chassis of the signal source.

input connection



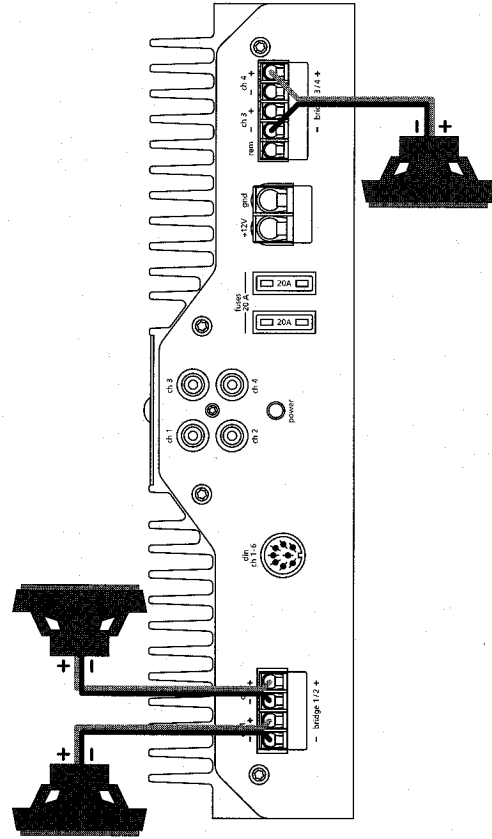
speaker wiring

The labels above the speaker wire connector receptacles show the connections for unbridged operation. The labels below the receptacles identify the bridge mode connections. For example, when channels 3 and 4 are bridged, the negative terminal of channel 3 and the positive terminal of channel 4 are used. See the system wiring diagrams for examples.

Wire Connect the speakers to the amplifier with stranded two-conductor insulated wire. Use 16 gauge or larger wire.

Polarity The polarity for every speaker-to-wire and wire-to-amplifier connection must be the same so the speakers will be "in phase". If the polarity of one connection is reversed, bass output and stereo imaging is degraded. All speaker wire is marked to identify the two conductors. There may be ribs or a stripe on the insulation of one conductor. Or the wire may have clear insulation with different color conductors. Decide which conductor is "positive" and which is "negative". Then be consistent with every speaker-to-wire and wire-to-amplifier connection.

When speakers are connected to unbridged channels follow the polarity indicators above the plug-in terminal, like the speakers connected to channels 1 and 2 in the illustration. When a speaker is connected to a bridged channel set the negative speaker wire is connected to the negative terminal for the odd numbered channel and the positive terminal is connected to the positive terminal of the even numbered channel, as the speaker is connected to channel set 3•4 below.



NOTE: Some satellite/subwoofer installations sound better with the subwoofer phase reversed. Connect the speakers in phase and then experiment with the phasing after completing the installation

Connecting the wires to the plug-in connectors Separate the first inch or two of the conductors of each wire. Strip about $\frac{3}{8}$ " of the insulation from each conductor. Be careful not to cut into the wire strands. Twist the wire strands together to avoid fraying. Unscrew the terminal clamping screw. Insert the wire into the terminal and tighten the clamping screw to lock the wire in place. Plug the connector into the receptacle on the amplifier.

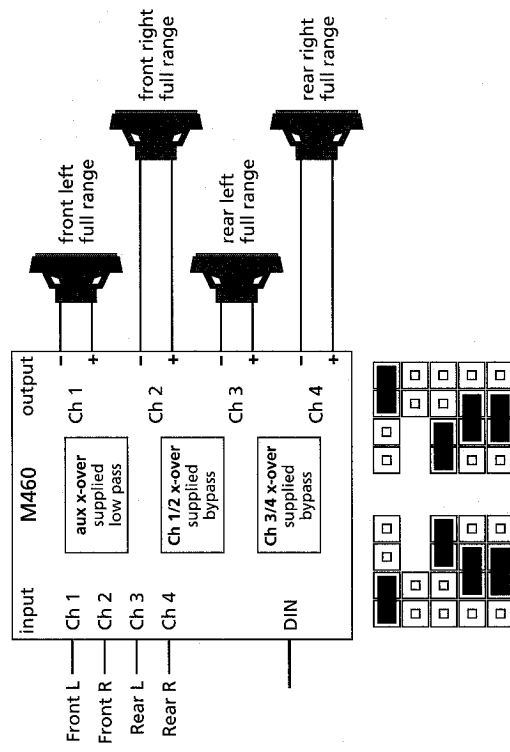
factory standard system

Inputs: Four channels.

Amplifier: One M460 in 4 channel mode.

Outputs: Four full range speakers.

Note: The DIN low pass output is derived from channel 1 and 2 inputs.



alternative system 1

Inputs: Four channels.

Amplifier: One M460 in 4 channel mode.

Outputs: One pair of satellite speakers and one or two subwoofers driven by bridged channels.

***Notes:** Connect one subwoofer to the channel 3 and 4 bridged terminals. Connect two subwoofers to the individual channel speaker terminals for channels 3 and 4.

The AC502 is not used. The satellite speaker-to-subwoofer balance is controlled by adjusting the fader.

alternative system 1a

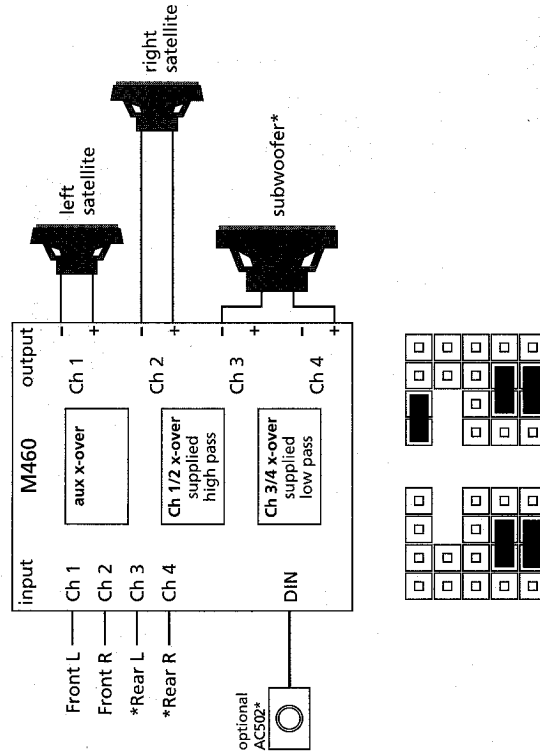
Inputs: Two channels.

Amplifier: One M460 in 4 channel mode.

Outputs: One pair of satellite speakers and one or two subwoofers driven by bridged channels.

***Notes:** Connect one subwoofer to the channel 3 and 4 bridged terminals. Connect two subwoofers to the individual channel speaker terminals for channels 3 and 4.

The rear channel inputs are not used. The satellite speaker-to-subwoofer balance is controlled by the AC502.



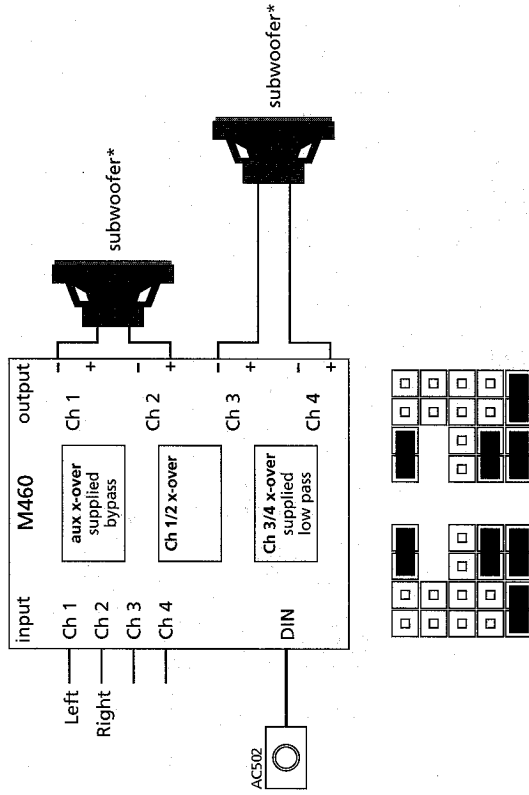
alternative system 2

Inputs: Two channels.

Amplifier: One M460 in 2 channel mode.

Outputs: Two or four subwoofers driven by bridged channels. An AC502 controls subwoofer output level.

***Notes:** Connect two subwoofers to the channel 1 and 2 and channel 3 and 4 bridged terminals. Connect four subwoofers to the individual channel speaker terminals for channels 1, 2, 3, and 4.



alternative system 3

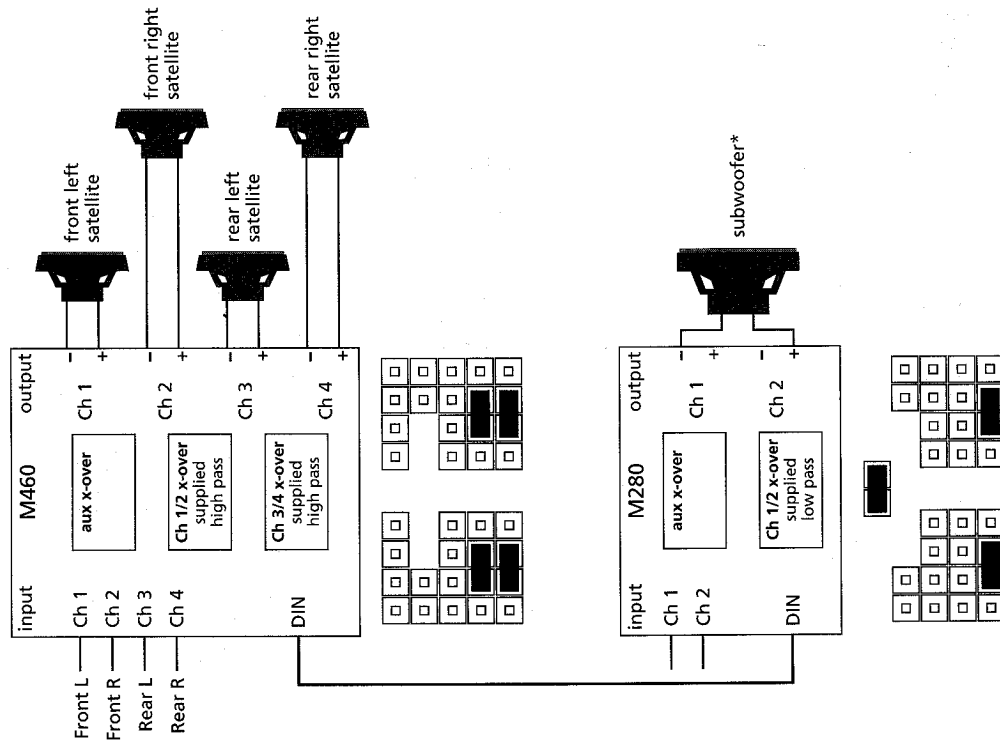
Inputs: Four channels.

Amplifiers: One M460 in four channel mode and one M280 in 1 channel mode.

Outputs: Front and rear satellite speakers and one or two subwoofers.

***Note:** Connect one subwoofer to the channel 1 and 2 bridged terminals. Connect two subwoofers to the individual channel speaker terminals.

The subwoofer output fades with the front satellite speakers.



setup

Depending on the system configuration, setting up M460 requires some or all of the following procedures: 1) Replacing the crossover modules and setting their controls. 2) Setting the crossover output-to-amplifier input jumpers. 3) Setting the channel set bridging jumpers. 4) Setting the auxiliary crossover and DIN input/output signal routing jumpers. All these setup steps must be done before turning the system on.

Trying the system Double check all the wiring connections to be sure they are correct and secure. Turn the signal source volume control down all the way. Turn the amplifier's level controls up (clockwise) about one-quarter of a turn from the full counter-clockwise position. (The amplifier level controls are located under the removable panel.)

The remote turn on system of the amplifier must be activated by applying +12 volts DC to the "remote" connector, located on a speaker output plug-in connector. (If an *a/d/s* signal processor is connected to the amplifier, the turn on signal is supplied via the DIN connector cable.) The blue LED power indicator on the input/output panel will light when the amplifier is on. If the power indicator does not light it indicates a problem in the power supply or remote turn on system wiring.

Slowly turn up the volume control of the signal source. If the system produces reasonable sound levels, and the sound is clean, proceed with the input level adjustment described in the following section. If no sound is heard, or the sound is distorted, immediately turn off the system. Check the fuses, all power supply wiring, input signal connections, and speaker wiring. If the problem persists, consult your a/d/s dealer or a qualified service technician.

crossover adjustments

The M460 is supplied with satellite speaker high pass, subwoofer low pass, and crossover bypass modules. It is shipped with the bypass modules installed in channel sets 1•2 and 3•4 and a low pass module is installed in the auxiliary position.

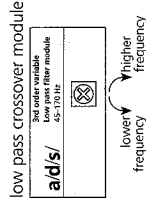
NOTE: There is a wide selection of fixed frequency / product specific high pass, low pass and band pass crossover modules available. Contact your a/d/s/ dealer for more information.

The high pass crossover module can be set to eight different frequencies ranging from 62 to 175Hz. The table below shows the switch settings for the various crossover frequencies.

Figure 1 displays the dependence of the ratio of the second order to the first order of the filter mode, $\frac{ad_s}{1}$, on the frequency of the filter mode, f_s . The figure is organized into a 4x4 grid of plots. The rows correspond to different filter modes: 62Hz - all off, 85Hz, 95Hz, and 115Hz. The columns correspond to different filter modes: 125Hz, 145Hz, 155Hz, and 175Hz. Each plot shows a series of data points with error bars, and a solid line represents the theoretical prediction. The y-axis is labeled $\frac{ad_s}{1}$ and ranges from 0 to 1. The x-axis is labeled f_s and ranges from 0 to 1. The plots show that the ratio of the second order to the first order of the filter mode is generally close to 1, with some variations depending on the filter mode and frequency.

continued

The low pass crossover module is continuously variable. It can be set to crossover frequencies from 45 to 170Hz. To change the crossover frequency use a jeweler's screw driver to adjust the control on the circuit board. **CAUTION:** Do not apply excessive force to the control. Doing so will damage it. Turn the control counter-clockwise to set the crossover frequency lower or clockwise to set the crossover frequency higher. Note: The output of the low pass module is monophonic.



Crossover adjustment procedure Set the high pass crossover frequency first. Determine the low frequency roll-off point of the main speakers and set the high pass crossover frequency above it. For example if the main speaker is the a/d/s/ 325s, which has a frequency response of 50-23,000Hz, set the high pass crossover point to 85Hz.

Set the low pass crossover frequency so there is a smooth transition from the main speakers to the subwoofers. Ideally the low pass crossover frequency should be set with the aid of an acoustical analyzer. If one is not available the crossover can be set using careful listening tests. Play music that has strong bass content combined with a male vocal. Listen for good bass definition and vocal reproduction that sound natural and well balanced.

Changing the low pass crossover frequency may change the sound balance of the system enough that it is necessary to readjust the level controls of the amplifier. If necessary repeat the level control setting procedure described in the following section.

level control settings

System volume level adjustments The level controls are located under the removable panel on the top of the amplifier. Adjusting the level controls of the system is a two step process. First the maximum setting of the signal source is determined. Then, if necessary, the level controls of the amplifier are adjusted to allow the maximum possible undistorted sound level. **Note:** It is fairly obvious when the rated power output of most car stereo amps is exceeded. In contrast the M460 has very "soft" distortion characteristics—there is no obvious "breakup" of the sound until the amplifier is driven well beyond its rated output. When setting the level controls of the amplifier use very clean signal source material and listen very carefully for the onset of distortion.

In some systems, the output levels from the radio and from cassette tapes or compact discs may vary substantially. Check all sources when setting the amplifier's input level controls and use the source which is loudest for a given volume setting.

Set the amplifier's input level controls up approximately one-quarter of turn from the full counter-clockwise position. Also set the tone, balance and fader controls to their "flat" or mid-rotation positions.

Head unit volume control maximum setting With highly dynamic music playing, slowly advance the volume control of the signal source. If you achieve the highest volume level you want (or if you hear any distortion) before the signal source volume control is turned up all the way do not turn up the amplifier volume controls. Be very careful when operating the system. Do not play the system at a volume level that produces distortion for any length of time. Doing so can damage the system components.

Level control maximum settings If you can turn the volume control of the signal source up all the way without hearing distortion, and that produces adequate volume levels, you do not need to turn up the level controls of the amplifier. If you can turn the volume control of the signal source up all the way without hearing distortion, but you want to achieve higher volume levels, turn up the level controls on the amplifier. Turn up one of the level controls until you begin to hear distortion. Note the position of the control and turn it down. Repeat this process with the remaining volume controls until you have determined the maximum setting for each control. Then return the controls to the settings you have determined to be the maximum.

NOTE: If the active crossovers in the amplifier are being used, set the level control for the satellite speakers as described above. Then set the other controls to achieve proper sound balance. Play some very dynamic music and slowly advance the volume control of the signal source. Listen very carefully for any signs of distortion. If you hear distortion before turning up the signal source volume all the way, reduce the amplifier level controls.

If further adjustments are needed to achieve proper tonal balance in the system, turn down the controls that are too loud. Do not turn up the controls to balance the system. This procedure maximizes the system signal-to-noise ratio and reliability.

maintenance

The M460 requires little routine maintenance. With the power off, check the various power supply and audio connections every few months to make sure they are secure.

Keep the chassis free of dust and dirt. Dust and dirt can be removed with a soft brush or vacuum cleaner. Do not use solvents or liquid cleaners of any kind on the amplifier's chassis.

in case of difficulty

The most common difficulties are noise, distortion, or thermal cycling. Fuses will blow only under unusual circumstances such as a problem in the power supply wiring.

If you want to talk to us about any problems, call:

a/d/s/ Customer Service, (508) 658-5100, between 9AM and 5PM, Eastern time.

System noise and distortion The background noise level of the system will vary widely. Differences in equipment and installation practices, particularly power supply wiring, will result in higher or lower noise levels.

Certain types of noise, in modest amounts, is normal. Tape "hiss", is typical when playing tapes at high levels. Varying amounts of "static" is also normal with AM and FM radio reception. Such hiss and static noises are the product of the signal sources. They are not produced by the amplifier. Setting the signal source volume control, and amplifier input level controls, as described in the preceding section will minimize these noises.

Improper power supply wiring, particularly inadequate grounding, is the source of most noise problems. One common noise is "alternator whine", a buzzing or whirring sound which changes with the engine speed. Such noise is often constant in volume level and is audible only when the volume level of the system is relatively low. Such power supply related noise can typically be eliminated with better installation practices. Consult a professional mobile installation specialist for advice.

continued

Distortion, especially when it occurs at high volume, is typically the result of over driving the amplifier or the speakers or both. For example, overcoming the noise resulting from driving at highway speeds with the windows down will tax the abilities of any automotive sound system. In such instances the only remedy is to reduce the volume level of the system before damage occurs.

A defective loudspeaker can also cause distortion. Fuzzy or raspy sound, especially at loud levels, is a sign of loudspeaker failure. Listen carefully to each driver in the loudspeaker system to determine which speaker is defective and replace it.

Thermal cycling The M460 is protected from overheating by a thermal protection circuit which turns the amplifier off when it gets too hot. When this happens the power indicator on the input/output panel turns off. Turn the system down until the amplifier cools down. The amplifier resumes operation automatically when it has cooled down. The power indicator will light again.

Amplifiers may run excessively hot when:

- Air cannot circulate around the chassis.
- The ambient temperature of the air around the amplifier is very high.
- When the impedance load of the speaker(s) connected to any given channel is too low. Unbridged channels should have an impedance load of no less than 2 ohms. Bridged channels should have an impedance load of no less than 4 ohms.

If the thermal protection system is repeatedly activated take steps to improve the air circulation around the amplifier chassis or raise the impedance load of the speakers connected to the amplifier. Constant overheating may eventually damage the amplifier.

Short circuit protection If a speaker output is "short circuited" you will hear no sound or distorted sound at a reduced volume level. If this happens check the speaker wire-to-amplifier and speaker wire-to-speaker connections to be sure there are no strands of wire from one conductor touching the other. When the problem is remedied the amplifier resumes normal operation. Protection circuitry in the M460 prevents short circuits from damaging the amplifier in most situations. However continuous operation with a short circuited output can still damage the amplifier.

Power fuse Fuses will blow only under unusual circumstance, or when there is a problem with the power supply wiring. Before replacing a blown fuse, inspect all power supply wiring to be sure there are no loose or damaged wires. Replace blown fuses only with the specified 20 amp ATO type. If a replacement fuse blows, have the system inspected by your a/d/s/ dealer or a qualified service agency.

optional accessories

- AC201 Cable adapter, 8 pin DIN jack (female) to 6 phono plugs (male)
- AC202 Chassis adapter, 8 pin DIN plug (male) to 6 phono jacks (female)
- AC203 1 foot cable, 8 pin DIN plug (male) each end
- AC204 6 foot cable, 8 pin DIN plug (male) each end
- AC205 15 foot cable, 8 pin DIN plug (male) each end
- AC206 Break-out-box, 1 DIN jack in - 2 DIN jack out, for pin reassignments
- AC207 Chassis adapter, 8 pin DIN plug (male) to 6 phono plugs (male)
- AC502 Remote bass control for use with the M and P series amplifiers

There is a wide selection of fixed frequency / product specific high pass, low pass and band pass crossover modules available. Contact your a/d/s/ dealer for more information.

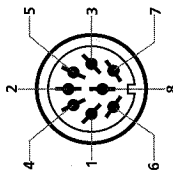
DIN jack connections

Channel 1-6 connector

- pin 1 Ch 4
- pin 2 Audio signal ground
- pin 3 Ch 2
- pin 4 Ch 3
- pin 5 Ch 1
- pin 6 Ch 6
- pin 7 Ch 5
- pin 8 Remote power control

DIN pin numbers

Viewed from the front of the jack.



specifications

Power output (watts)*

- 4 channel - 4 x 60
- 3 channel - 2 x 60, 1 x 180
- 2 channel - 2 x 180
- 4 channel at 2 ohms - 4 x 90

Power bandwidth

10 Hz to 100 kHz, ± 0.25 dB

Signal to noise ratio (with crossover circuitry)

90 dB (minimum)

Input sensitivity

100 mV for rated power

Input impedance

50 k Ohms

Crossover high pass*

62Hz, 85Hz, 95Hz, 115Hz, 125Hz, 145Hz, 155Hz, 175Hz, 12 db / octave

Crossover low pass*

45 - 170 Hz, 18 db / octave, mono output

Idle current

3 A

Average current

14 A

Maximum current

40 A

Power fuse

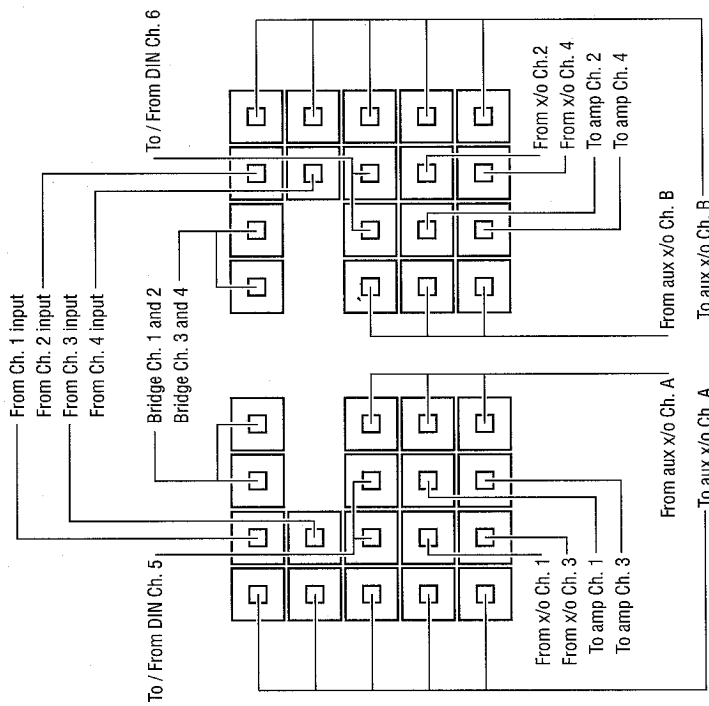
Type ATO, 2 x 20 amp

Dimensions

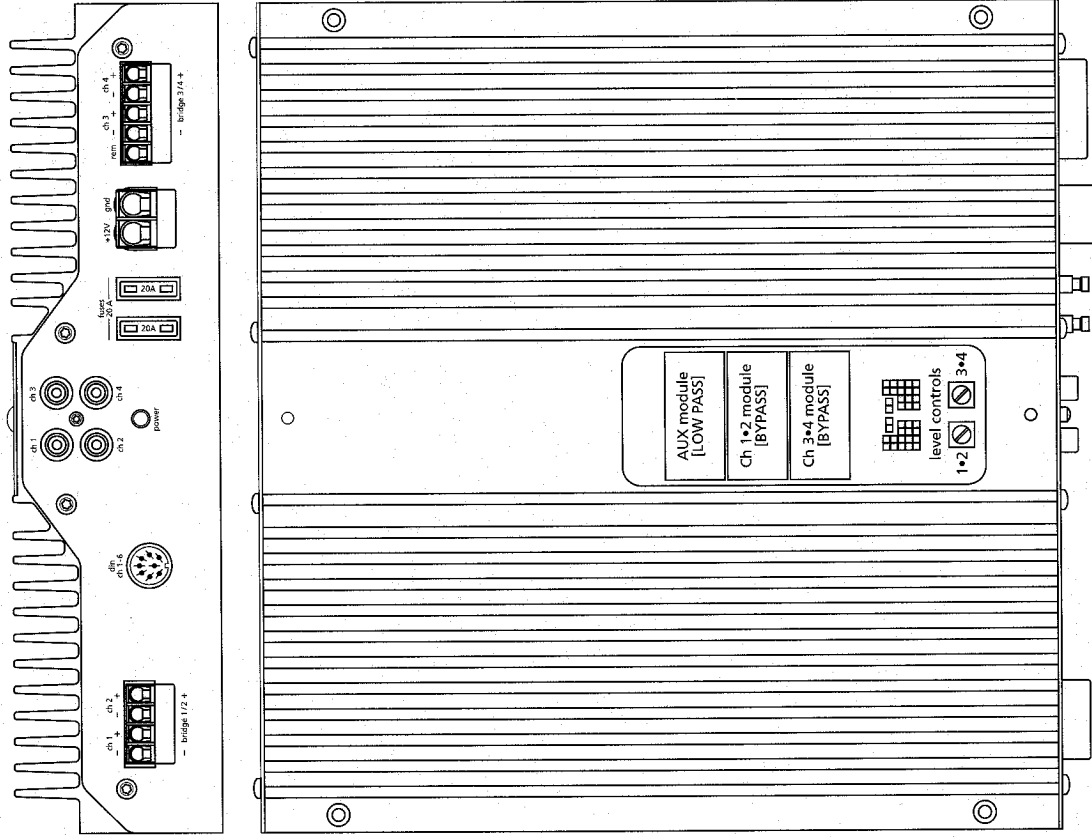
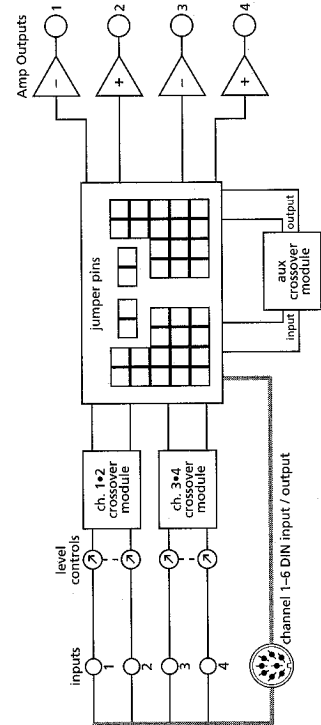
293 mm W x 279 mm L x 73 mm H
1 1/2" W x 11" L x 2 7/8" H

* With supplied crossover modules. Other modules available. Specifications subject to change

M460 jumper pin identification



M460 block diagram



Warranty Information

There are two things you **must** do to ensure trouble free service in the event you need warranty repairs.

1 - Keep your original sales receipt in a safe place. A copy of the receipt will be **required** to obtain warranty service.

2 - Be sure your retail dealer has written the **date**, the **model number**, and the **serial number** (if applicable) of the Product on the receipt.

To give yourself an extra measure of protection, make a separate record of the information about your purchase and keep it in a safe place. In the event you misplace the sales receipt, your dealer may be able to give you a copy.

Take a moment now to read the terms of your warranty. Check to be sure your sales receipt is dated and has the Product model number and serial number (if applicable) on it. Then put it away in a safe place.

When shipping a Product in for service:

- Enclose a copy of your original sales receipt that has the date, the Product model number and serial number (if applicable) written on it.
- Always ship Products in the complete original packing material.
- Avoid shipping Products via the Postal service. If you must use the Postal service, be sure to register and insure the package.

a/d/s/ Limited Warranty

Analog and Digital Systems, Inc. (a/d/s/) warrants to the original consumer purchaser of the a/d/s/ Products described in this manual, that the Product will be free from defects in materials and workmanship for a period of one (1) year after the date of purchase. If the product is installed by an authorized a/d/s/ retail dealer, the warranty is extended to three (3) years, a/d/s/ sole obligation under this warranty shall be to provide, without charge, parts and labor necessary to remedy the defects, if any, that appear during the warranty period.

This warranty is the sole and exclusive express warranty given with respect to the Product. All other express warranties are hereby excluded. Neither a/d/s/ nor the authorized dealer who sells the Product is responsible for indirect, incidental, or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

IMPORTANT - Keep your original sales receipt. Be sure the retail dealer has written on it the date, model number, and serial number (if applicable) of the Product. This information is required for warranty service.

This warranty is limited to:

- Products purchased from authorized a/d/s/ retail dealers in the United States. a/d/s/ will supply a list of authorized dealers on request.

In order to obtain warranty service you must:

- Return the Product, freight prepaid, to the a/d/s/ dealer from which it was purchased, an authorized a/d/s/ independent service agency, or to a/d/s/. If necessary you may call a/d/s/ Customer Service Department for the names and addresses of authorized independent service agencies in your area.
- Provide proof of purchase in the form of a copy of your original sales receipt. The date, model number, and serial number (if applicable) of the Product **must** be written on the sales receipt.

This warranty does not cover:

- Damage that is the result of misuse, abuse, accident (including but not limited to damage by water), faulty hookup, defective or maladjusted associated equipment, or the use of the Product with equipment for which it was not intended.
- Cosmetic defects that appear more than thirty (30) days after the date of purchase. Cosmetic damage caused by improper handling is also excluded.
- Products that are used for commercial purposes.
- The cost of removing or reinstalling the Product.
- Damage that occurs while the Product is being shipped to whoever will service it. See the information above regarding shipping procedures.

This warranty is void if:

- The Product identification or serial number label is removed or defaced in any way.
- The Product is serviced or repaired by any one other than a/d/s/ or an authorized a/d/s/ dealer or service agency.

a/d/s/

Sound. As it should be.