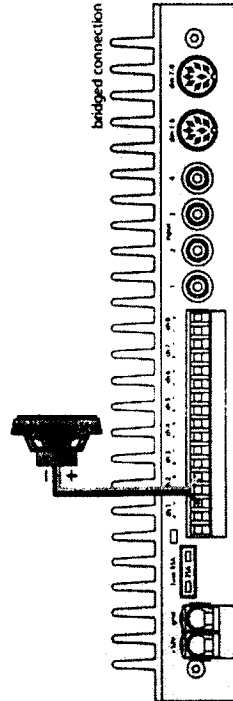
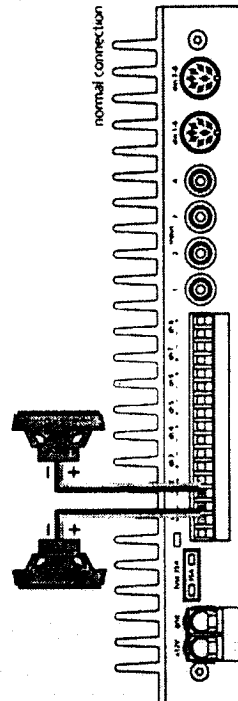


speaker wiring

The labels above the speaker output terminal show the proper connections for unbridged operation. The labels below the terminal identify the bridge mode connections. For example, when channel set 7+8 is bridged, connect the speaker wires to the "-" terminal of channel 1 and the "+" terminal of channel 2. See the illustration below.

Use 16 gauge or larger stranded two-conductor insulated wire to connect the speakers to the 830X. Separate the first few inches of the wire conductors. Strip about 3/8" insulation from each conductor. Be careful not to cut into the wire strands. Twist the strands together to avoid fraying. Unscrew the terminal block clamping screw. Insert the wire bundle into the terminal block and tighten the clamping screw to lock the wire in place.



input connection

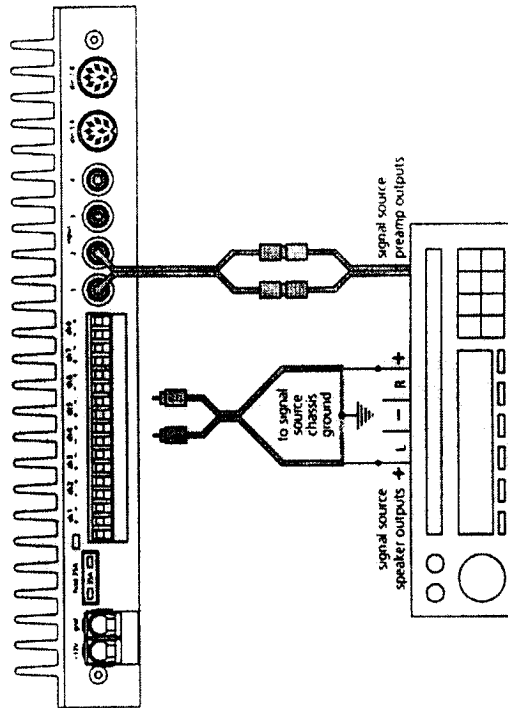
The 830X can accept either high (speaker) level or low (preamp) level input signals. Use a low level input signal if the signal source has preamp outputs.

Low level input. The 830X has both phono plug (RCA) input connectors and 8-pin DIN input jacks. The DIN input allows all audio signal connections to be made with a single plug.

NOTE: Some original equipment radios have "floating" preamp level outputs; their audio signal output connectors are not grounded. The 830X has "ground isolation" circuitry 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 conductor (shield) of the amplifier input connector and the chassis of the radio. This is similar to the connection method for high level inputs described in the following section. Use this connection method only if normal connection procedures do not perform properly.

High level inputs. If a high level input is used the speaker outputs of the signal source must be connected to phono plug adapter cables. Attach the positive speaker output wire to the center conductor of the phono plug cable. The negative speaker output wire is not connected. It must be secured and insulated with electrical tape. The outer (shield) conductors of the phono plug adapter cables are grounded to the chassis of the signal source.

This illustration shows a low level input connection. It also shows how to wire high level outputs to an adapter cable that can be connected to the amplifier inputs.



system configuration information

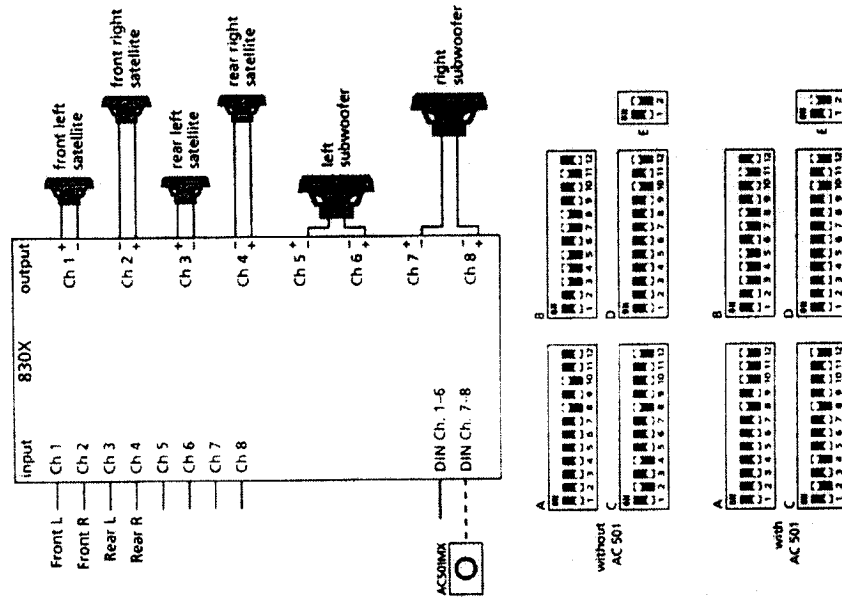
The following pages describe and illustrate the factory standard configuration of the 830X, and many of the most common alternative configurations. Of course the 830X can be used in many other system configurations. Space in this manual does not permit a full description of all of the likely system in which the 830X may be used.

WARNING: The system configuration switches, which give the 830X its ability to be used in so many different system configurations, can create problems if they are used improperly. For example, if the crossover bypass switch and a crossover activation switch for a channel are both turned on, it may damage some system components. Consequently system configurations other than those described in this manual should be set up only with the guidance of a trained and experienced autostand installer.

NOTE: Many of the alternative system configurations require resetting the crossover frequencies. The crossover frequencies that should be used depend on the performance characteristics of the speakers and their installation location. These crossover adjustments should be done with the aid of professional sound analysis equipment in order to ensure maximum reliability and performance.

NOTE: In systems where only the high pass crossover of a channel set is turned on, the frequency control of the low pass crossover for that channel set must be set to its minimum position (65Hz). This ensures that there will be no interaction of the crossovers that will effect high frequency response. So in systems 1, 3 and 5 the low pass crossover frequency for channel set 3-4 should be turned all the way down.

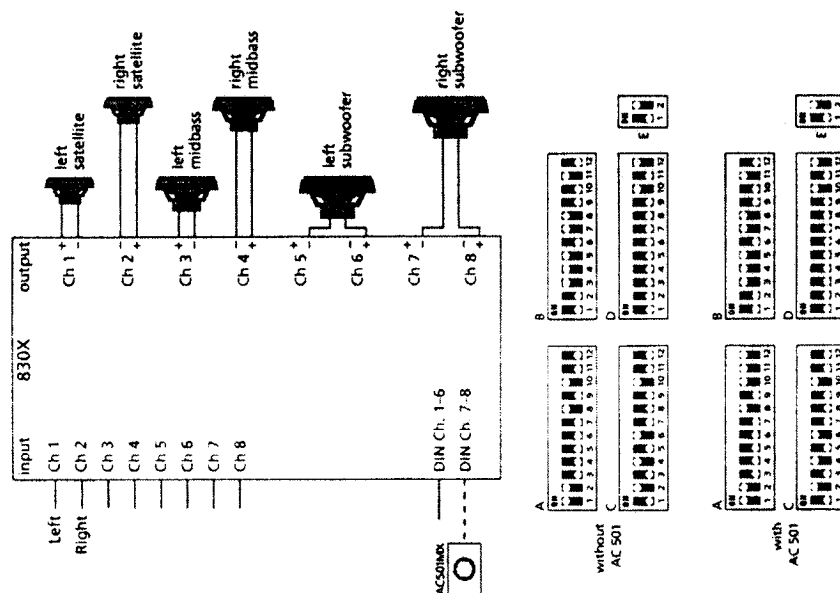
System 1 - Standard Configuration - The 830X is shipped from the factory configured for six channel operation to drive front and rear satellite speakers and two subwoofers. A four channel input is connected to channels 1 through 4. Channel sets 1-2 and 3-4 drive the four satellite speakers. The high pass crossovers, which are factory set at 125Hz, are turned on. Channel sets 5-6 and 7-8 are both bridged and drive a pair of subwoofers at high power. The low pass crossovers, which are factory set at 85Hz, are turned on. Channel set 5-6 receives the summed inputs of channels 1 and 3; channel set 7-8 receives the summed inputs of channels 2 and 4. The addition of the optional AC501 allows remote control of the subwoofer output level.



a/d/s/
Sound As It Should Be.

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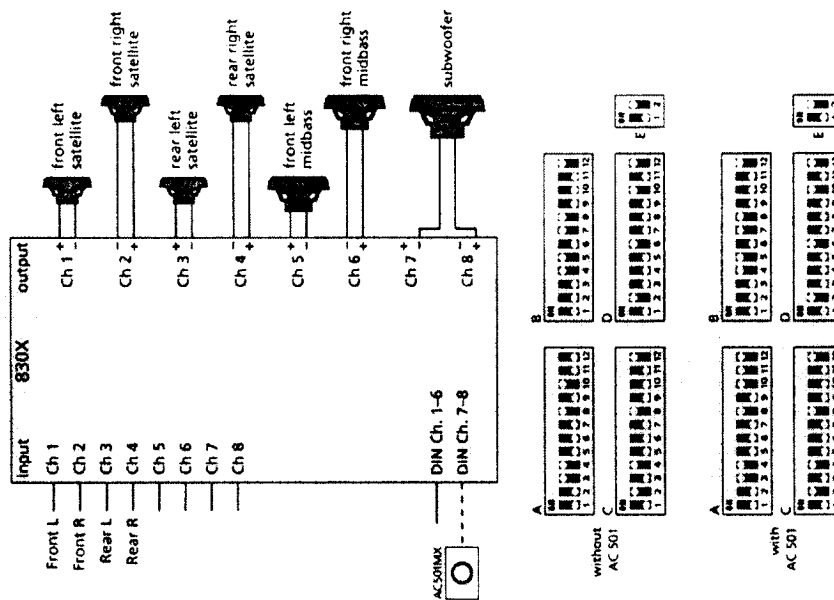
System 2 - The 830X is configured for six channel operation to drive a pair of satellite speakers, two midbass speakers, and two subwoofers. A two channel input is connected to channels 1 and 2. Channel set 1+2 has the high pass crossovers turned on and drives the two satellite speakers. Channel set 3+4 drive both the high pass and low pass crossovers turned on and drives the midbass speakers. Channel sets 5+6 and 7+8 are both bridged and have their low pass crossovers turned on. They drive a pair of subwoofers at high power. Channel set 5+6 receives the channel 1 input signal; channel set 7+8 receives the channel 2 input signal. The addition of the optional AC501 allows remote control of the subwoofer output level.



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Sound As It Should Be

System 3 - The 830X is configured for seven channel operation to drive front and rear satellite speakers, a pair of front channel midbass speakers, and a single subwoofer. A four channel input is connected to channels 1 through 4. Channel sets 1+2 and 3+4 have the high pass crossovers turned on and drive the four satellite speakers. Channel set 5+6 has both the high pass and low pass crossovers turned on and drives the front channel midbass speakers. Channel set 7+8 is bridged has the low pass crossover turned on. It drives a single subwoofer at high power. Channel set 5+6 receives inputs from channel 1 and 2. The addition of the optional AC501 allows remote control of the subwoofer output level.

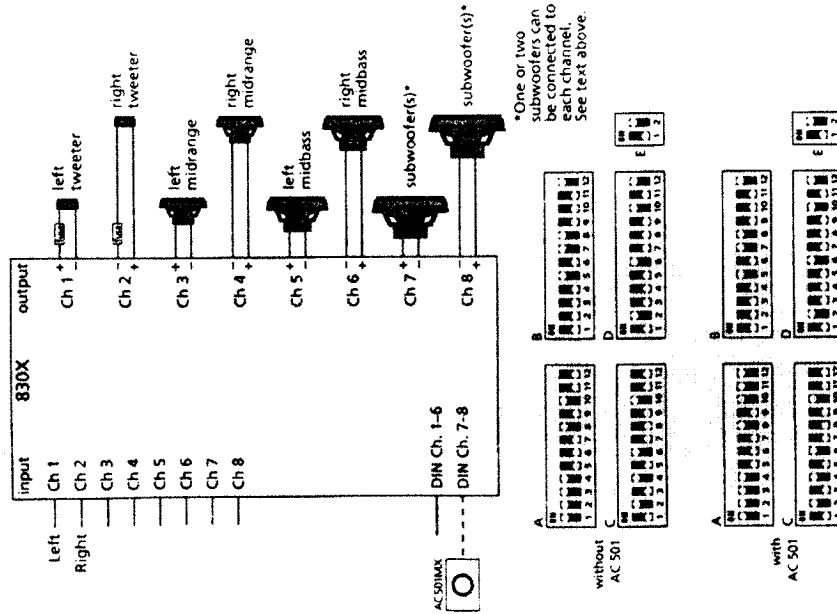


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Sound As It Should Be

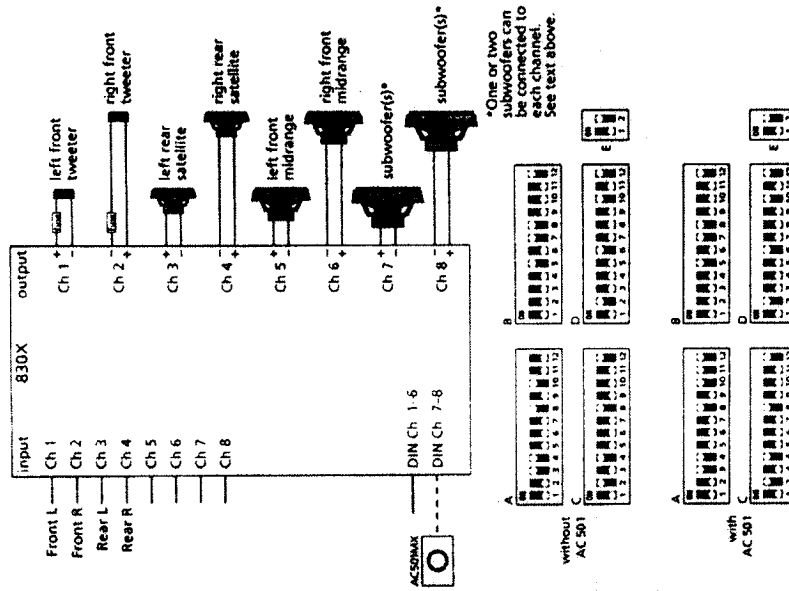
System 4 - The 830X is configured for eight channel operation to quad-amplifying a pair of speakers. A two channel input is connected to channels 1 and 2. Channel set 1+2 has the high pass crossover turned on and drives the tweeters. Channel set 3+4 has both the high pass and low pass crossovers turned on and drives the midranges. Channel set 5+6 also has both the high pass and low pass crossovers turned on and drives the midbass speakers. One or two subwoofers may be connected to channels 7 and 8. The addition of the optional ACS501 allows remote control of the subwoofer output level.

Note: In this type of a system the tweeter can be damaged if the crossover frequency or the levels are improperly set. A fuse installed in the tweeter wires as shown below can help protect the tweeter. For a/d/s/ tweeters use a 1.5 amp fast blow fuse. For other speakers contact the manufacturer for the recommended fuse value.



System 5 - The 830X is configured for eight channel operation to drive front channel tweeters and midranges, rear channel satellite speakers, and subwoofers. A four channel input is connected to channels 1 through 4. Channel set 1+2 has the high pass crossover turned on and drives the front channel tweeters. Channel set 3+4 has both the high pass and low pass crossovers turned on and drives the front channel midranges. Channel set 5+6 has the high pass crossovers turned on and drives the rear channel satellites. Channel set 7+8 has the low pass crossovers turned on and drives the subwoofers. One or two subwoofers may be connected to channels 7 and 8. The addition of the optional ACS501 allows remote control of the subwoofer output level.

Note: In this type of a system the tweeter can be damaged if the crossover frequency or the levels are improperly set. A fuse installed in the tweeter wires as shown below can help protect the tweeter. For a/d/s/ tweeters use a 1.5 amp fast blow fuse. For other speakers contact the manufacturer for the recommended fuse value.



testing the system

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 system on. The remote turn on system of the amplifier must be activated. (See the information on page 3.) The LED power indicator should be lit.

Turn the 830X level controls up about one-quarter turn from the full counter-clockwise position. 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 level control adjustment described in the following section. If no sound is heard, or if the sound is distorted, immediately turn off the system. Check the power and signal wiring for correct and secure connections. If the problem persists, consult your a/d/s/ dealer or service technician.

level control adjustment

The level controls on the front panel adjust the outputs of the various channel sets. When a channel set is used in the stereo mode, the control affects two channels. When a channel set is bridged, the control affects the bridged output channel.

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. This procedure maximizes the system signal-to-noise ratio and reliability. Note: In some systems the output signals from the radio and from cassette tapes or compact discs may vary substantially. Check all sources and use the source which is loudest for a given volume setting.

Turn the 830X level controls up about one-quarter turn from the full counter-clockwise position. Set the signal source 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, stop turning up the volume control. Do not turn up the 830X level controls. Be very careful when operating the system. Never play the system at a volume level that produces audible distortion. 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 830X. 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. Start turning up the level controls, one at a time, until you just begin to hear distortion. Note the position of the control and turn it down. Repeat this process until you have determined the maximum setting for all the controls. Then return all the controls to the setting you have determined to be the maximum.

If further adjustments are needed to achieve proper sound balance in the system, turn down the controls of the channel sets that are too loud. Do not turn up the level controls to balance the system.

crossover adjustments

The crossover controls on the front panel set the crossover frequency of the various channel sets. The crossover controls described below must be set, along with the configuration switches and the level controls, to get proper performance from the system. The crossover functions of the amplifiers allow a variety of system configurations. Where the crossover frequency controls should be set depends on the configurations of the system, the speakers used, the installation location of the speakers, and the acoustics of the vehicle.

Ideally the crossovers should be set using an acoustical analyzer. If one is not available the crossovers in a two-way system can be set using careful listening tests. Crossovers for three-way systems should always be set with the aid of an acoustic analyzer. Note: After the crossover controls have been set, the sound balance of the system may have changed enough that it will be necessary to readjust the level controls of the amplifier. If necessary, repeat the level control setting procedure described in the preceding section.

Two way system crossover adjustment Set the crossover controls to their approximate correct positions using the frequency indicators around the controls as a guide. In a satellite / subwoofer system set the high pass crossover control slightly above the low frequency limit of the satellite speakers. (See the specifications for the satellite speakers.) Set the subwoofer low pass control slightly below the frequency setting of the high pass crossover control. In a woofer / tweeter two-way speaker system set the high pass control slightly above the recommended tweeter crossover point. Set the low pass control slightly below the frequency setting of the high pass crossover.

Play music that has solid, but not overpowering, bass information combined with a vocal component. Music with a male voice works well for subwoofer / satellite systems; female voice is better for woofer / tweeter systems. While playing the system at moderately high volume levels, listen for good bass definition and vocal reproduction that sounds natural and well balanced. If the transition from one speaker to the other is not smooth, try adjusting the low pass crossover. It may also be necessary to adjust the level controls of the amplifier. (Do not set the high pass crossover to a lower frequency or turn up the level controls for the high pass channels. Doing that increases the work the tweeter or satellite speaker has to do and reduces the power capacity of the system.) Repeat this process until the system sounds natural and well balanced.

maintenance

The 830X requires little routine maintenance. Every few months, with the system turned off, check the power supply and audio connections 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.

in case of difficulty

The most common difficulties are noise, distorted sound, or thermal cycling. Fuses will blow only under unusual circumstance, or when there is a problem in the power supply wiring. If you have problems that are not corrected by following the steps described below, call your local authorized a/d/s/ dealer.

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 noises are produced by the signal source, not the amplifier.

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. This type of noise often has a constant volume level. Such power supply related noise can typically be eliminated with better installation practices. Consult a professional autostereo equipment installer for advice.

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, or improperly installed, loudspeaker also can cause distortion. Fuzzy or raspy sound, especially at high volume levels, is a sign of loudspeaker failure. Listen carefully to each driver in the speaker system to determine which one is producing distortion and replace it.

Thermal cycling

The 830X is protected from overheating by a thermal protection circuit which turns the amplifier off if it gets too hot. Normal operation of the amplifier resumes automatically when it cools down.

The amplifier may run excessively hot when:

- Air cannot circulate around the heatsink.
- The ambient temperature of the air around the amplifier is very high.
- The impedance load of the speaker(s) connected to the amplifier is too low. Unbridged channels should have an impedance load of at least 2 ohms. Bridged channel should have an impedance load of at least 4 ohms.

Short circuit protection

The amplifier will shut itself off if any of its speaker outputs are short circuited. When the problem is remedied the amplifier resumes normal operation.

Power fuse

Fuses will blow only under unusual circumstances, such as when there is a problem with the power supply wiring. Before replacing a blown fuse, inspect all the power supply wires to be sure they are properly connected, and that they are not loose or damaged. Replace blown fuses only with the specified ATO type with the specified rating. Using a fuse rated for higher current may result in damage to the system components or the electrical wiring of the car. If a replacement fuse blows, have the system inspected by your a/d/s/ dealer or a qualified service agency.

specifications

Power output @ 0.05% THD

8 channels x 40 watts
6 channels x 40 watts + 1 channel x 120 watts
4 channels x 40 watts + 2 channels x 120 watts
2 channels x 40 watts + 3 channels x 120 watts
4 channels x 120 watts

Frequency Response

Signal to noise ratio

Input sensitivity

Input impedance

Crossover high pass

Crossover low pass

Input DC power supply current

No signal - 2A
Maximum - 35A

Power fuse

Type ATO, 35 amp

Dimensions*

267mm W x 378mm L x 53mm H

10 1/2" W x 14 7/8" L x 2 1/8"

* Dimensions listed are the minimum chassis dimensions

Add 2" / 50mm to the length dimension to allow for connectors and wiring

Specifications subject to change

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)