SYSTEM OMEGA/3000

DESIGN
&
INSTALLATION

DEALER
MANUAL

For Delta-88 Version 1.04 & MC-3000 Version 2.02

Audio Design Associates, Inc., 602-610 Mamaroneck Ave., White Plains, NY, 10605, (914) 946-9595, FAX (914) 723-4642

System Manual Index

System Omega/3000 Index (cont.)

System Omega/3000 Index (cont.)

System Omega/3000 Index (cont.)

Contents

SAFETY INSTRUCTIONS

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THE APPLIANCES IN THIS SYSTEM TO RAIN OR MOISTURE. REPLACE FUSE ONLY AS MARKED.

CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT PLUG THE UNITS IN THIS SYSTEM INTO ANY OUTLET OR EXTENSION CORD WITHOUT THE STANDARD THREE-PRONG CONFIGURATION, WHERE THE CIRCULAR HOLE IS USED FOR THE GROUND PLUG.

IMPORTANT:

The lightning flash with the arrowhead, within an equilateral triangle, is intended to alert the user of the presence of un-insulated "dangerous voltage" within the products' enclosures that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

CAUTION:
TO PREVENT RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS ARE INSIDE ANY OF THE UNITS IN THIS SYSTEM. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within the equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliances.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS - All the safety and operating instructions should be read before the appliances are operated.

RETAIN INSTRUCTIONS - The operating instructions should be retained for future reference.

HEED WARNING - All warnings on the appliances and in the operating instructions should be adhered to.

.

FOLLOW INSTRUCTIONS - All operating and use instructions should be followed.

WATER AND MOISTURE - The appliances should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION - The appliances should be installed in a stable location.

WALL OR CEILING MOUNT - The appliances should not be mounted to a wall or ceiling.

VENTILATION - The appliances should be situated so that their location or position does not interfere with their proper ventilation. For example, the appliances should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings.

HEAT - The appliances should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.

POWER SOURCES - The appliances should be connected to a power supply only of the type described in the operating instructions or as marked on the appliances.

GROUNDING - Make sure that the units in the system are always connected to a standard three-prong grounded outlet (the circular pin is ground). When operating this unit at a higher voltage with a different power cord configuration, consult your dealer for the proper power cord/outlet combination to use before operating this unit.

POWER CORD PROTECTION - 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, paying particular attention to cords at plugs, convenience receptacles, and the points where they exit from the appliances.

CLEANING - The appliances should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the face plates.

POWER LINES - An outdoor antenna should be located away from power lines.

PERIODS OF DISUSE - The power cord of the appliances should be unplugged from the outlet when the units are not in use for a long period of time.

OBJECT AND LIQUID ENTRY - Care should be taken so that objects do not fall and liquids are not spilled into the enclosures through openings.

DAMAGE REQUIRING SERVICE - The appliances should be serviced by an authorized service center or qualified service personnel when:

- The power supply cords or plugs have been damaged; or
- Objects have fallen, or liquid has been spilled into the appliances; or
- The appliances have been exposed to rain; or
- The appliances do not appear to operate normally or exhibit a marked change in performance; or
- The appliances have been dropped; or the enclosures have been damaged.

SERVICING - The user should not attempt to service the appliances beyond that described in the operating instructions. For all other servicing, contact the factory.

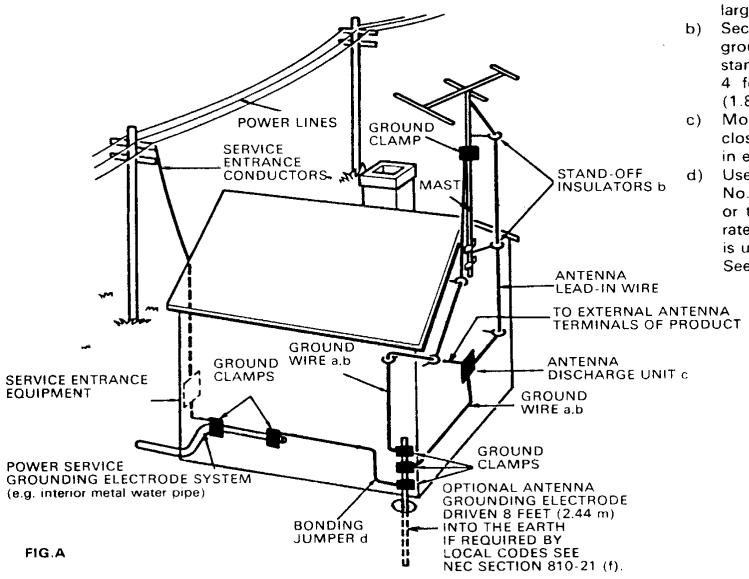


FIG.A

a) Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copperclad steel, bronze wire, or larger as ground wire.

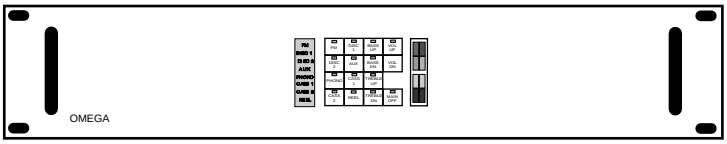
b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).

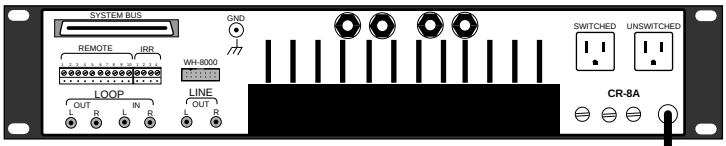
Description of the System Omega

ADA's System Omega is the most flexible multi-room mainframe currently available. In its most basic form, the System Omega permits eight sources to be distributed into as many as 256 zones. Zones are included into a system by adding zone preamplifiers (CR-8Ps) or zone integrated amplifiers (CR-8As) permitting you to design a System Omega with the exact number of zones you require. Zones can always be added at a later time because System Omega was designed upon a "building block architecture" capable of unlimited future expansion. Any System Omega permits one-button operation of source selection, volume, bass, and treble control, room off, and system off.



CR-8P & CR-8A Front Panel

CR-8P Rear Panel



CR-8A Rear Panel

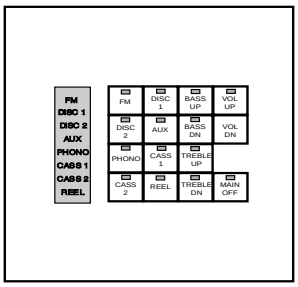
System Omega is unique in both its sound quality, simplified operation, modular design, ease-of-installation, and long-life durability. System Omega has been in homes around the world for over five years. The most unique feature of System Omega, is its enormous family of options, both in keypad controls and mainframe components. The listing on following pages describes these options.

System Omega was introduced in 1988 with a complete family of "MC-1600" Series and "MC-1700" Series standard keypads which are zone specific. These keypads, regardless of what wire harnesses are used, in some way wire back directly to their respective zone preamp (CR-8P) or zone amp (CR-8A). The wiring used between keypads and zone preamps and amps is a twelve conductor/20 gauge with foil shield control cable, which may terminate on either the system's wire harness, or in smaller systems, directly on the CR-8Ps and CR-8As.

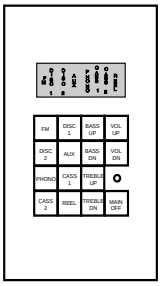
The keypads include a total of fifteen buttons and nine LEDs. The buttons communicate to the CR-8Ps & CR-8As for source selection, one (1) source transport function (i.e. tuner preset skip, disc skip), volume up/dn, bass up/dn, treble up/dn, room off, and system off. The keypad's LEDs receive information from the CR-8Ps and CR-8As when that room is on by illuminating the source button's LED indicator. If the system is on elsewhere in the house and that zone is off, the ROOM OFF button's LED indicator would be lit. When all keypad lights are off, the system is completely shut down. To restart a room, the user would simply select one of the eight sources. The data communication between keypads and CR-Units (when using the standard Omega Keypads) is in the form of analogue data. Using various voltage levels, the ten control wires (2 of the 12 wires are used for IR) can control fifteen functions and report on nine LEDs. While this communication network is bidirectional, it is limited in both status indication and control options. Yet the standard, and more basic Omega Keypads, provide simplified control for clients who do not require additional source control and full display feedback. For those who require a more elaborate keypad interface, ADA provides System 3000.

System Omega Standard Keypads & Controls

STANDARD REMOTE MUSIC CONTROLS



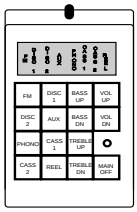
MC-1600



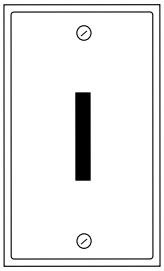
MC-16.5

- **full control of corresponding central room amplifier or central room preamplifier**
- **system turns on when a source is selected**
- **led source display when room is on**
- **system on indicator**

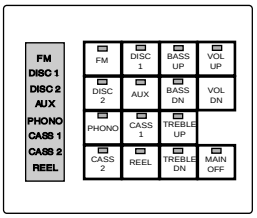
TABLE TOP REMOTE MUSIC CONTROLS



*MC-16.5T**



WPA-10



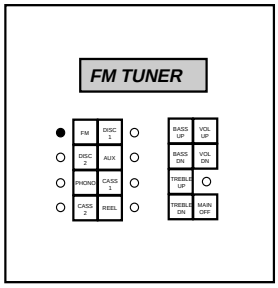
MC-1600T

all the features of the MC-1600 plus:

- **slim plug-in connector & flexible control cable**
- **single gang interface with WPA-10 Wall Plate Adapter**
- **display of source playing**

sleek angled control

DELUXE REMOTE MUSIC CONTROL



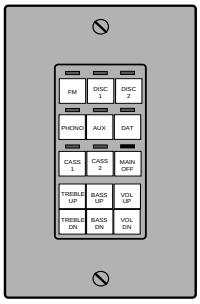
MC-1700

all the features of the MC-1600 plus:

- **alpha numeric led readout of source playing**

ie. *johns cd* or *jazz cd*

DECORA® REMOTE MUSIC CONTROL

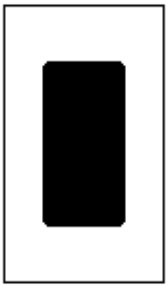


MC-1676

all the features of the MC-1600 plus:

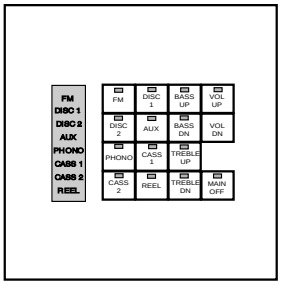
- **single gang bezel**
- **led source indicators**
- **available in white, ivory, and black**

INFRARED RECEIVERS



IRR-288

requires IDB-CR Infrared Decoder Board built into CR-Units or IDB-ZS Infrared Decoder Board built into ZS-1

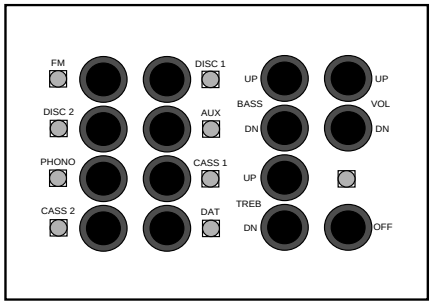


MC-1609

all the features of the MC-1600 plus:

- **infrared receiver**
- **infrared decoder [eliminate IRR-288 & IDB-CR or IDB-ZS]**

OUT DOOR REMOTE MUSIC CONTROL

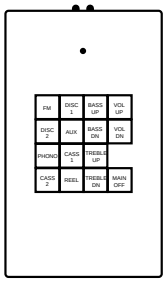


MC-1616

all the features of the mc-1600 plus:

- **all weather sealed buttons**
- **durable white enamel finish**
- **silk screened control label**

INFRARED REMOTE CONTROL

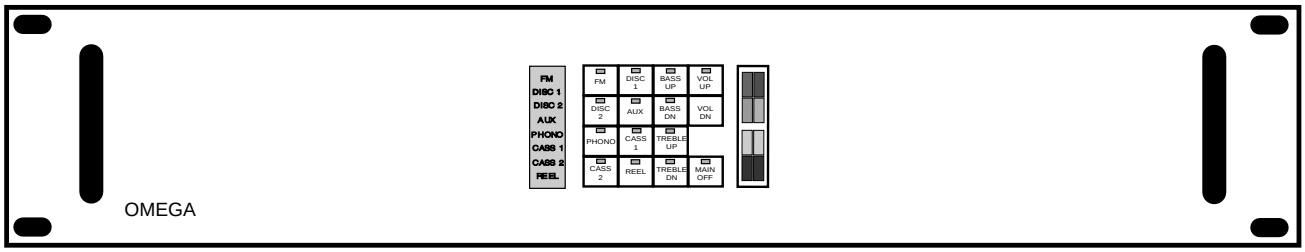


MC-009

- **powerful emitters**
- **full control of identical to MC-16.5**

System Omega Zone Preamps & Zone Integrated Amps

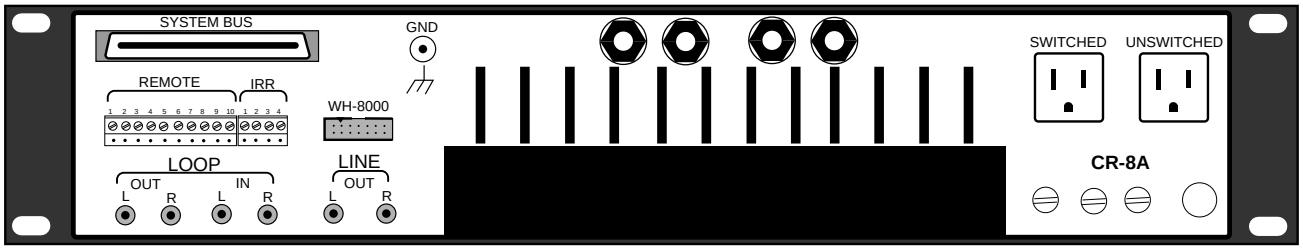
The System Omega CR-8P and CR-8A are identical in front panel design. Both units have a full function keypad mounted in their front panel permitting central control of a remote room's source selection and volume, bass, & treble levels. Each room is turned on by selecting a source. To turn off a room, press the ROOM OFF button once. To turn off the entire system, press and hold any ROOM OFF button.



CR-8P and CR-8A Front Panel

The CR-8Ps and CR-8As are also similar in rear panel connections and accessories. Both have a male 50 pin ribbon cable connection for the System Bus. There are two parallel control inputs: two removable screw terminal connectors, a ten pin connector for standard Omega "1600/1700" Series keypads and a four pin connector for IRR-288 IR Receivers; and a 14 pin ribbon cable connection which connects CR-Units to WH-8000 or SODC-8 Wiring Harnesses. Either the screw terminals or ribbon cable port can be used in any system. It is worth noting, that if your system includes more than two CR-Units, ADA recommends using a wire harness to screw terminate all keypad and IR control wires, as it will facilitate a system's installation and operation.

CR-8P Rear Panel



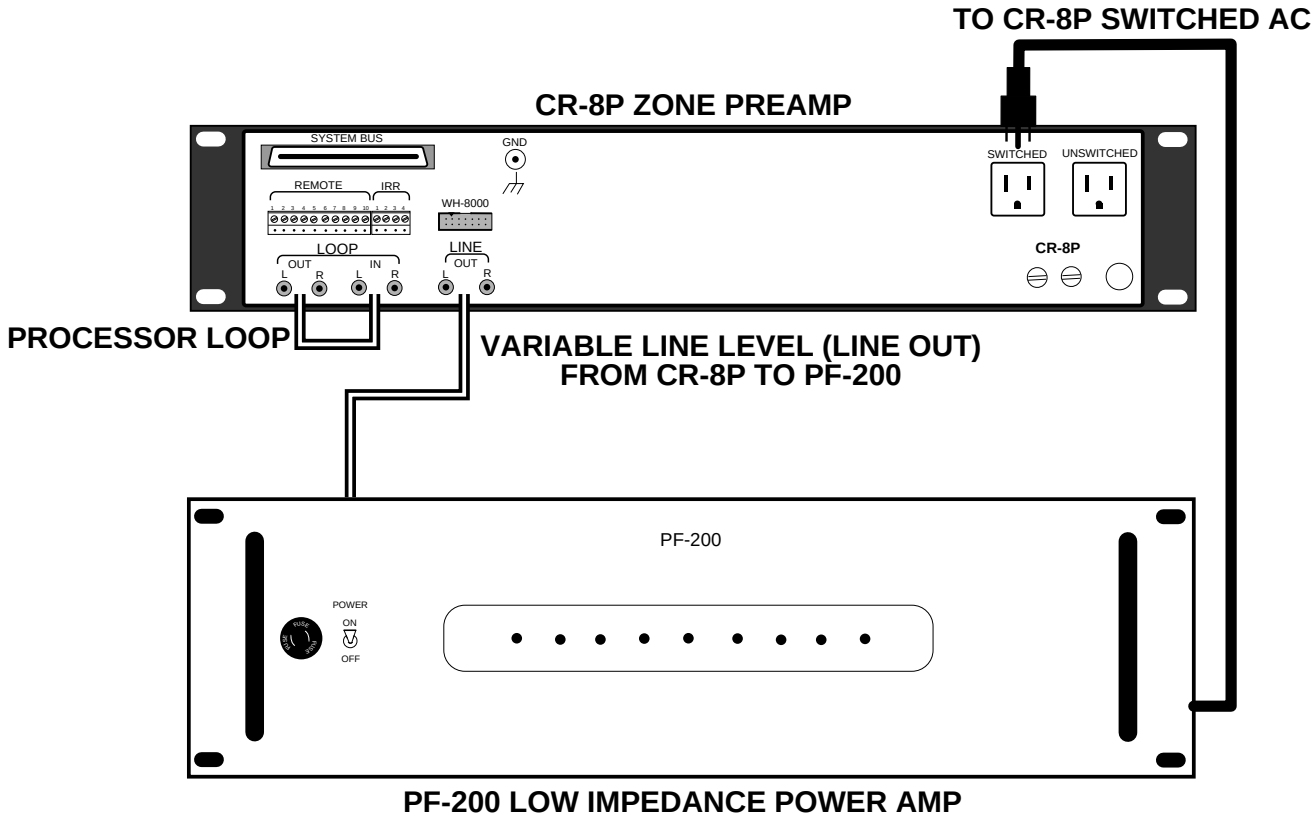
CR-8A Rear Panel

SPECIAL NOTE: In any type of system, an IR receiver will require a decoder in some form. For zones controlled from an IRR-288 IR Receiver, the CR-Unit for that zone must include an IDB-CR Infrared Decoder Board. The IDB-CR needs to be custom installed into a CR-Unit and will need to be ordered specifically for a particular CR-Unit. If the IRR-288 is operating a ZS-1 Zone Splitter, the ZS-1 will require the Infrared Decoder Board, not the CR-Unit. In this case you will

need to order the ZS-1 with an IDB-ZS built into it instead. The MC-1609 Keypad, when used does not require an infrared decoder board in either a CR-Unit or ZS-1 as it is built into the keypad itself. To determine if your CR-Unit has an IDB-CR, find the serial number sticker on the side of the CR-Unit. A second sticker with its own serial number will be present for CR-Units with IDB-CRs built in. (For IRT-3000 IR Transceivers and MC-3000 Keypads receivers in a System 3000, the decoder is incorporated into every ADA Bus Component, including the CIC-3000, and again, no infrared decoder is required for either the CR-Unit or ZS-1).

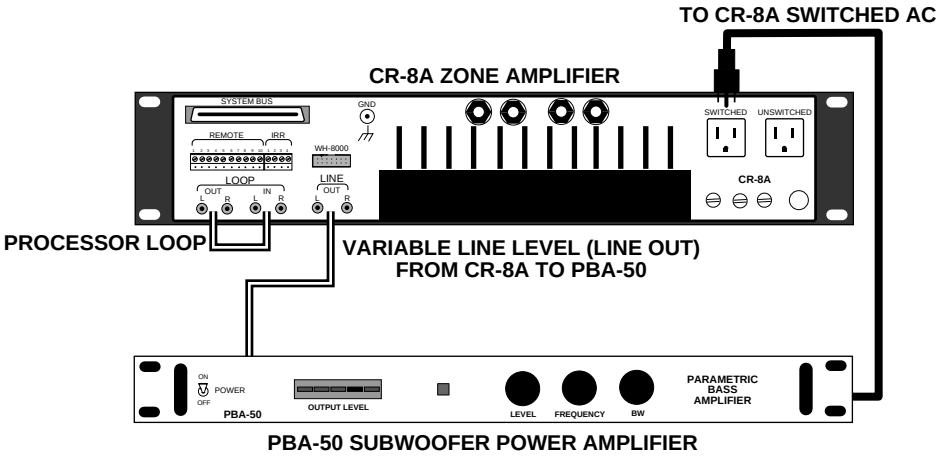
Each CR-Unit includes a processor loop which patches the selected audio source's fixed line level signal to the CR-Units preamplifier. If the zone is a home theater, use the LOOP OUT to feed the zones surround sound decoder. The processor loop can also be used when including an external equalizer to a zone. In addition to the processor loop, each CR-8P and CR-8A includes a variable line level output (preamplified) which can feed additional power amplifiers.

Using a CR-8P's or CR-8A's Switched AC Outlet



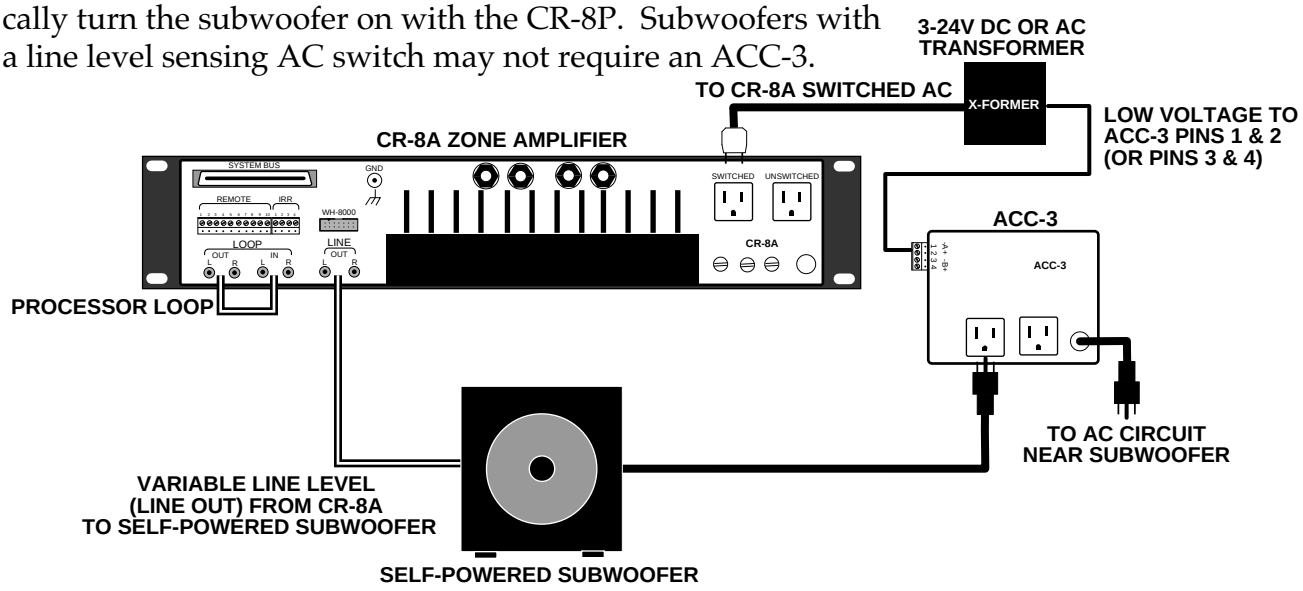
Each CR-Unit includes a Switched and Unswitched AC Outlet. The Unswitched Outlet is used to provide AC to other CR-Units forming the AC Bus. The Switched Outlet can be used to provide power to additional zone related components whenever that zone is on. These components can include power amplifiers, graphic equalizers, subwoofer amplifiers, or home theater systems. Please note, the switched outlet is only rated at 10 Amps. If you are drawing too much current, the CR-Units safety fuse will blow. Furthermore, the AC Bus (described under "Installing the System Bus & AC Bus") may be overloaded even if you are not exceeding the amp restrictions of a single CR-Unit. When working with high current amplifiers or remotely located home theater equipment, use RPS-1s or ACC-3s to provide AC switching.

Including a Subwoofer Power Amplifier to Operate with a CR-8A

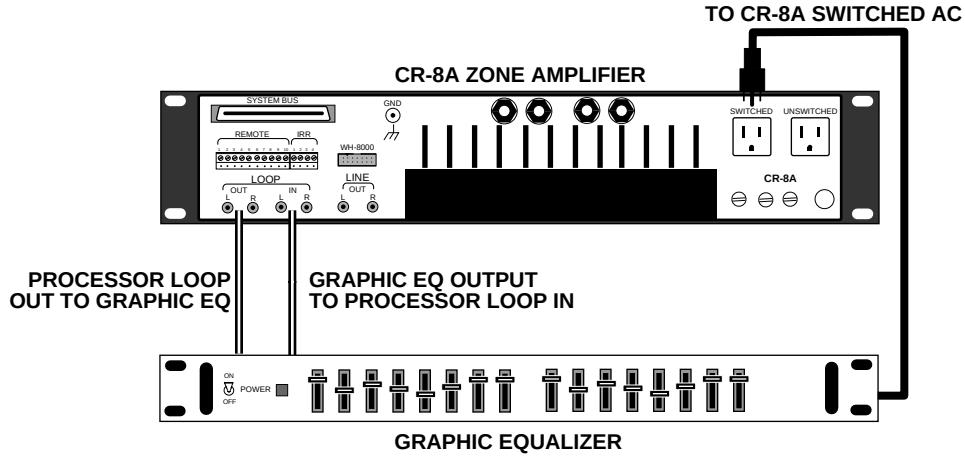


Including a Self-Powered Subwoofer to Operate with a CR-8A

Since the subwoofer is located away from the equipment rack, an ACC-3 is used to automatically turn the subwoofer on with the CR-8P. Subwoofers with a line level sensing AC switch may not require an ACC-3.

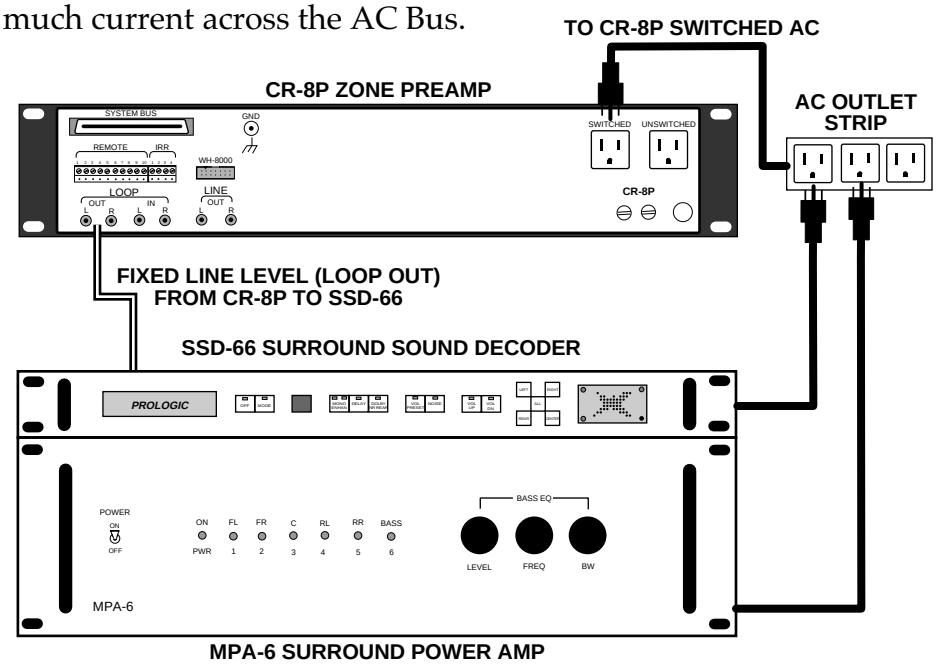


Including a Graphic Equalizer to Operate with a CR-8A



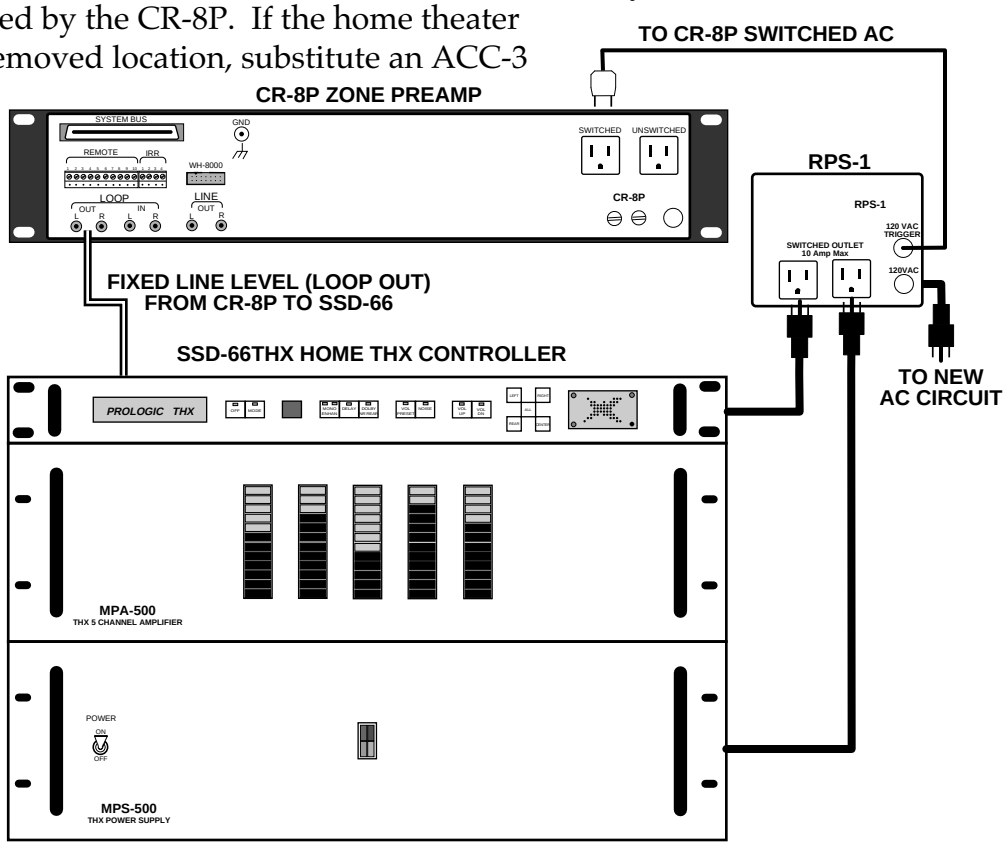
Including a Home Theater System to Operate with a CR-8P

In this application, the home theater system is using the CR-8Ps switched AC outlet and will not draw too much current across the AC Bus.



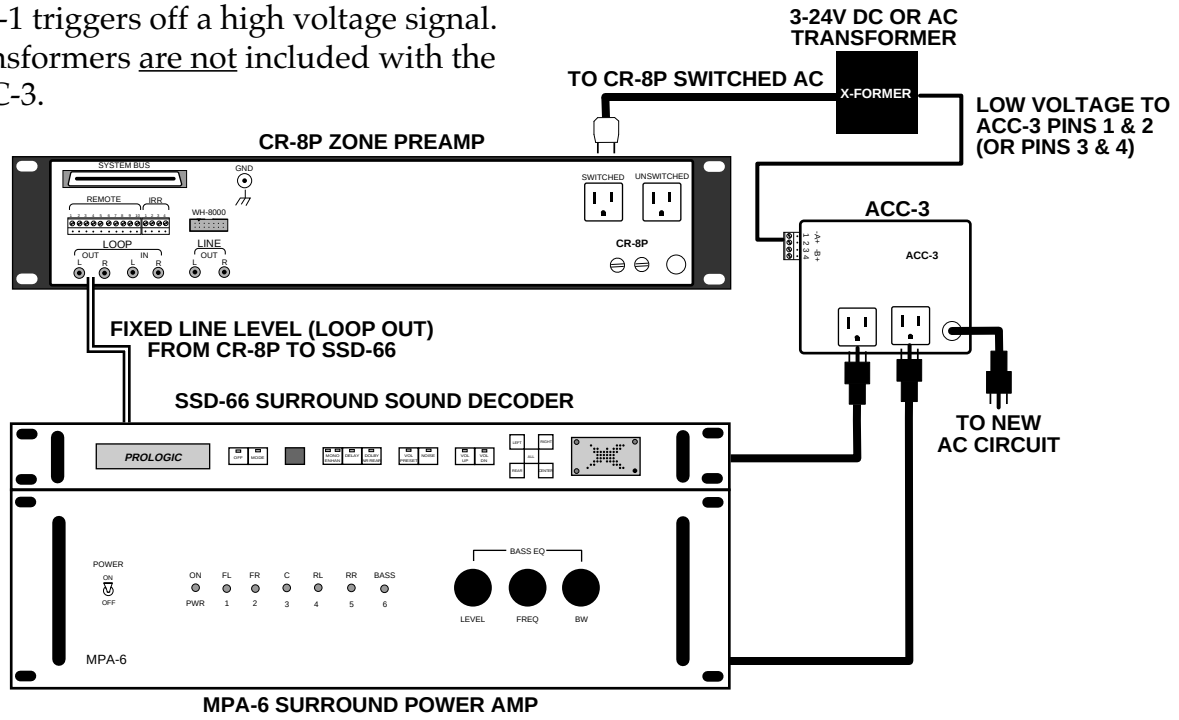
Including High Power Home Theater to Operate with CR-8P

In this application, the home theater decoder and amplifier are located in the equipment rack with the CR-8P. An RPS-1 should be used when the home theater amplifier may draw too much current. The RPS-1 will draw current from a secondary AC circuit while the AC switching is provided by the CR-8P. If the home theater equipment is in a removed location, substitute an ACC-3 for the RPS-1.

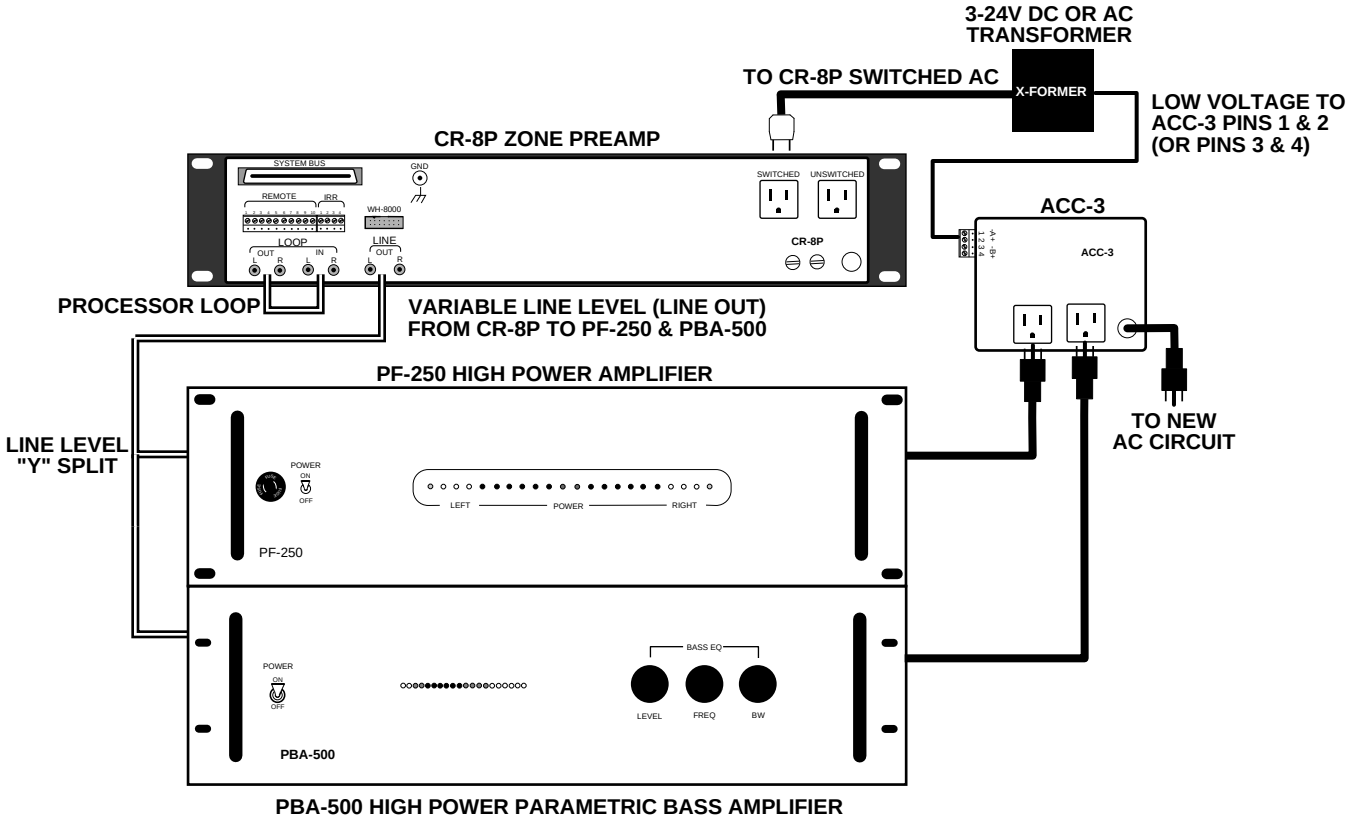


Including a Home Theater System to Operate with a CR-8P

In this application, the home theater system is not located close enough to the CR-8P to permit use of the RPS-1. Instead of running a long high voltage (120VAC) AC line to an RPS-1 from the CR-8Ps switched AC outlet, the ACC-3 will be used with a low voltage transformer. This application permits the home theater equipment to be located at any distance, even in a remote room, from the central equipment rack. The ACC-3 triggers off a low voltage signal where the RPS-1 triggers off a high voltage signal. Transformers <u>are not</u> included with the ACC-3.



Including a High Power Amp Package to Operate with a CR-8P



The ground connection on the CR-Units is for directly wired keypads and should be connected to an earth ground.

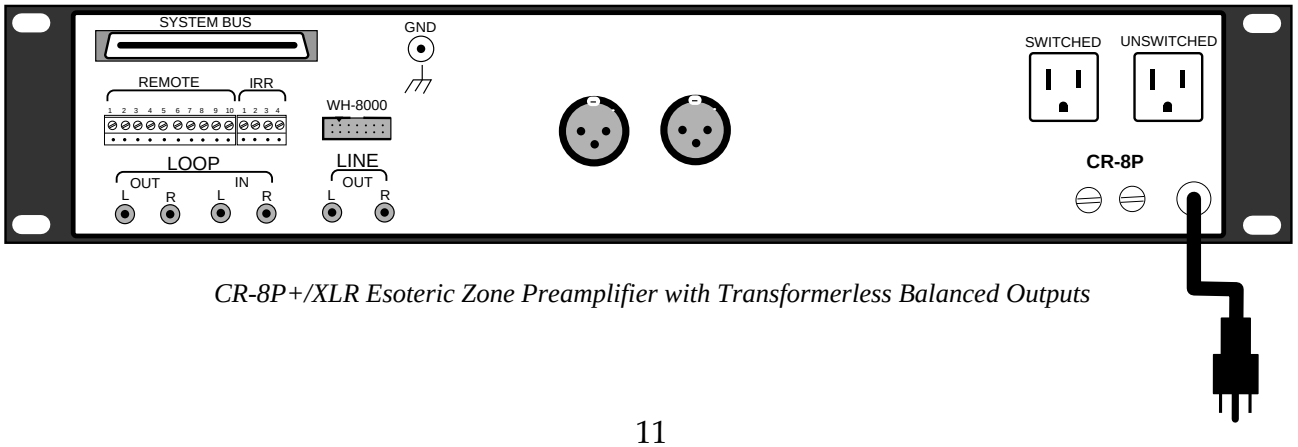
The CR-8A in addition to the previously mentioned features includes a fan cooled power amplifier stable down to 2Ω. You can safely run as many as four pair of 8Ω speakers off one CR-8A. If your impedance load is below 2Ω or you require higher power (loud volume levels), ADA suggests using a CR-8P with a PF-200 (1/2Ω stable) or PF-250 (1.5Ω stable - high power) Amplifiers.

The CR-8P and CR-8A are available in several forms which can be mixed in any combination (up to 256 units/zones) for a system. For basic System Omegas both the CR-8P (or CR-8A) can be ordered with an IR receiver built directly into its front panel. This unit does not require an IDB-CR Infrared Decoder Board (only needed for direct IRR-288 IR Receivers). The user can control the zone with ADA's MC-009 IR Transmitter by aiming the MC-009 directly at the equipment rack. The model number for CR-Units with a built-in IR Receiver is CR-8P/IR or CR-8A/IR. Only one such unit can be used per system and its inclusion presupposes that the equipment rack is constantly open to the room.

SPECIAL NOTE: The built-in IR receiver does not provide any IR repeating options to sources or other ADA equipment. The serial control input, found on many sources (used for transport control in an ADA system - no flasher needs to be stuck to the source's front panel), may override the components front panel IR receiver when connected It is therefore possible that the user may loose IR source control in the main equipment room when the System is installed. If your sources shut off the front panel IR when connected through its rear panel serial control input, it will be necessary to include an ADA IR Receiver or a keypad with a built-in IR receiver for this room making it unnecessary to use a CR-8P/IR or CR-8A/IR.

The CR-8P and CR-8A are also available in an audiophile esoteric version where the volume, bass, and treble levels are adjusted using motorized potentiometers. In these CR-Units, the gain level is nearly doubled and the sound quality is even better than a standard CR-8A or CR-8P. CR-Units with motorized pots are called CR-8P+ (Plus) Preamps and CR-8A+ (Plus) Integrated Amps. CR-8P+ and CR-8A+ can also be ordered with built-in IR receivers (as previously mentioned) and are called CR-8P+/IR or CR-8A+/IR.

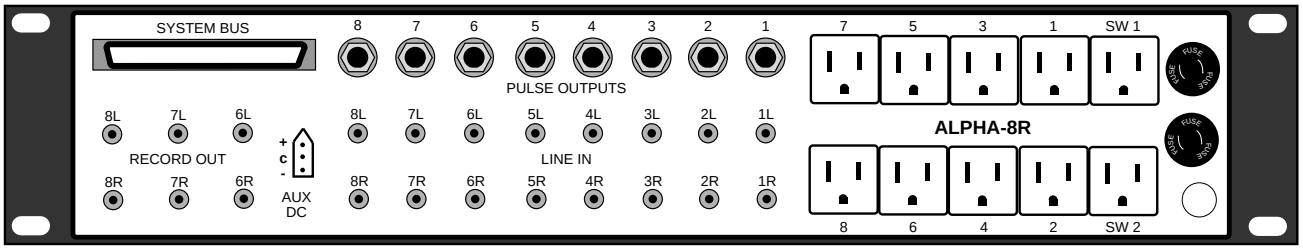
For zones requiring amplifiers which use balanced inputs, the CR-8P+ is also available with transformerless balanced outputs. This unit is called a CR-8P+/XLR. This unit is also available with a built-in IR receiver and is called CR-8P+/XLR/IR.



CR-8P+/XLR Esoteric Zone Preamplifier with Transformerless Balanced Outputs

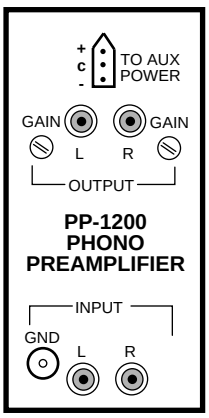
System Omega - ALPHA-8R Line Driver

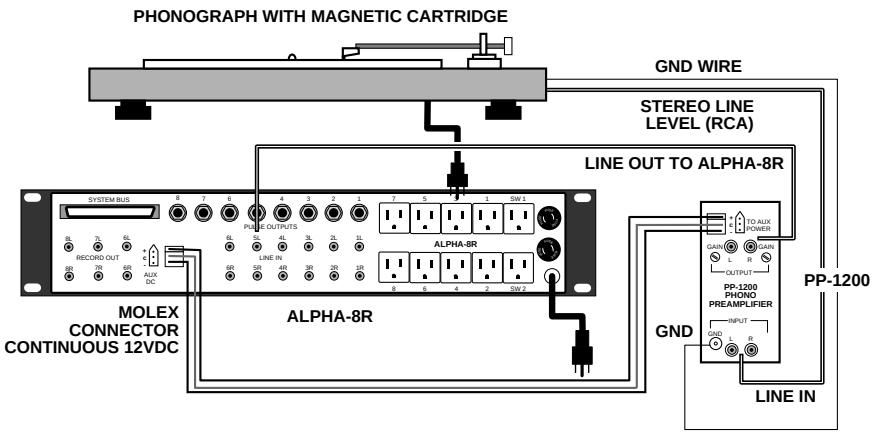
Each System Omega requires one ALPHA-8R System Line Driver. This components acts as the central source control unit whether you are using the System 3000 Control System or not. The Alpha-8R has eight source line-level inputs which correspond to the eight source buttons on all ADA keypads. For each of the eight sources, there is a corresponding AC outlet which engages the source component only as needed. Therefore, sources which are not selected will remain off, preserving the source components life-span. In addition, when working with sources which incorporate a "timer/play" mechanism (sources which will automatically engage into play when they are plugged into an AC outlet), sources will begin playing automatically with the touch of one button.



In addition to the eight line-level source inputs, there are three record outputs (fixed line level) which correspond to sources 6, 7, & 8. If you are including recording devices on the system, they should be on inputs 6, 7, and/or 8. The front panel of the Alpha-8R incorporates a Record Selector which patches the selected source's output to all three record outputs (6, 7, & 8). The selected source will receive AC as well as sources 6, 7, & 8 regardless whether these sources are selected in other zones. Therefore, if CD 1 (source 4) is selected, it will engage into play and sources 6, 7, and 8 will also turn on. The audio signal will be patched internal to the Alpha-8R from CD 1 to Record Outputs 6, 7, and 8. If a client would enjoy simplified recording control, provide them with a cassette recorder with a "timer/play/record" switch set to "timer record". When they wish to record a CD, all they would need to do is drop a new tape in this cassette recorder and press CD 1 on the Alpha-8R. Automatically, the CD would go into play and the cassette recorder into record. The recording process cannot be stopped in other rooms and can only be turned off by pressing the Alpha-8R's OFF button.

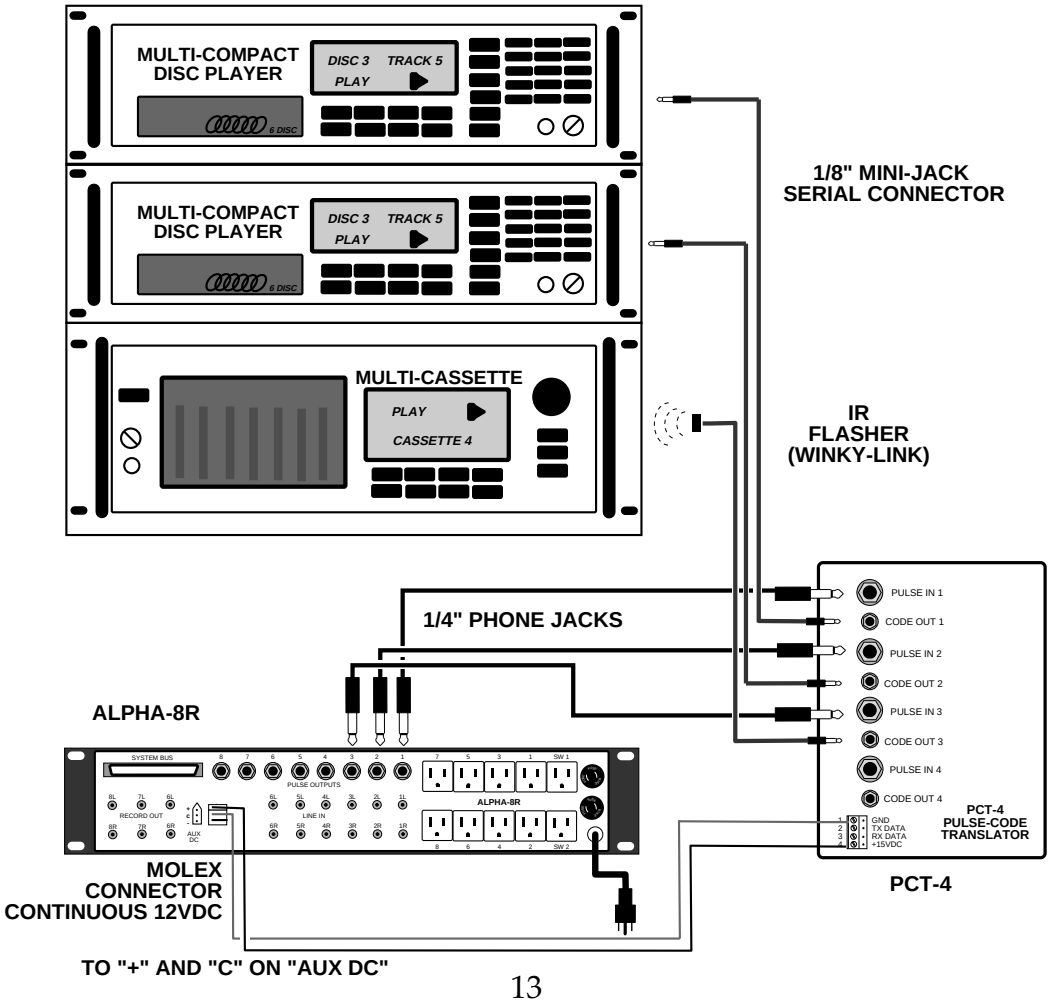
The Alpha-8R does not provide an input for a phonograph. Therefore, all eight inputs can be used for any type of source. When including a phonograph as a source, ADA provides the PP-1200 Phono Preamp. This device is a small external box which receives power from the Alpha-8R's Low Voltage Output (Molex connector). Several PP-1200 can be incorporated into a system for multiple phonographs.





The Alpha-8R's Low Voltage connector is also used to provide continuous power to the PCT-4 when the PCT-4 is used on a standard System Omega (no CIC-3000). On a standard System Omega, the Alpha-8R's eight 1/4" phone jacks (one per source input) are used to provide a 5 VDC pulse to the PCT-4 or MT-3000 Multi-Tuner. This pulse is activated when the source button is repeatedly pressed, either on the room keypads or the CR-Units, and will perform a single transport function (i.e. tuner preset skip, disc skip). When using a System 3000 control format, using strictly "MC-3000" Series controls throughout, these 1/4" 5VDC Pulse jacks will not be used since the PCT-4 communicates directly on the ADA Bus™. In the System 3000, the PCT-4 will get its continuous voltage, not from the Alpha-8R, but through the ADA Bus™ as well. Therefore, the continuous voltage supply connector from Alpha-8R to PCT-4 would not be needed. If you are combining both "MC-1600/1700" Series standard Omega keypads and "MC-3000" Series System 3000 keypads on the same system, the 1/4" phone jacks would be needed (for the standard 1600/1700 keypads) but the continuous voltage supply from the Alpha-8R would not be used.

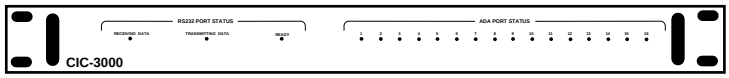
The Alpha-8R also incorporates two switched AC outlets (SW 1 and SW 2). These outlets become active when the Alpha-8R's Power Switch is on. The AC Bus (discussed in the following pages under "System Omega System Bus & AC Bus Installation") is usually plugged into SW 2 and other system components (CIC-3000's, VSU-8's, PCT-8's, and VS-3's) plug into SW 1 {you may need to plug an AC power strip into this outlet}. When the Alpha-8R's power switch is off, all system components are off permitting installation and servicing of the system. If the system will not be used for extended periods of time, the power switch can be used as a "vacation switch" turning off the entire system.



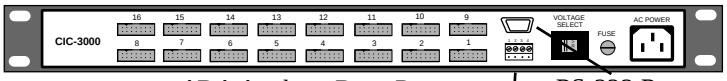
Description of the System 3000

System 3000 incorporates the System Omega mainframe and couples it to the ADA Bus™, the award winning bidirectional serial data communication language / network, which unifies all components on a single four conductor / 18 gauge with stranded shield wiring bus. The System 3000 control package permits a standard 8 source System Omega to include as many 64 sources over 256 rooms / zones.

When incorporating a CIC-3000 Computer Interface Controller (System 3000 Controller), the CR-8Ps and CR-8As can be controlled from "MC-3000" Series keypads. These keypads are significantly more advanced in that they provide additional source transport control functions and full feedback on a 12 character alphanumeric LED display in plain English. With the addition of a System 3000 package, a System Omega can also be controlled by a computer such as a touch screen, home automation system, or personal IBM based computer. While "MC-3000" Series keypads and other ADA Bus™ components operate on ADA Bus™ language codes, "MC-1600" Series and "MC-1700" Series keypads and CR-8Ps and CR-8As operate on ADA's analogue language codes, and touch screens and computer systems operate on ASCII language codes, it is the CIC-3000 that operates as the main system translator, permitting all three language formats to communicate to each other for function and feedback.



CIC-3000 Front Panel



ADA Anoluge Data Ports *RS-232 Port*

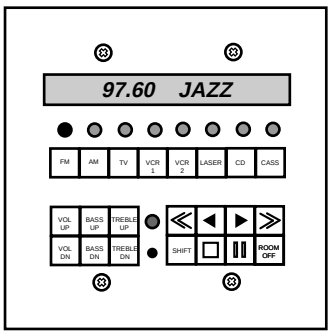
ADA Bus™ Port

CIC-3000 Rear Panel

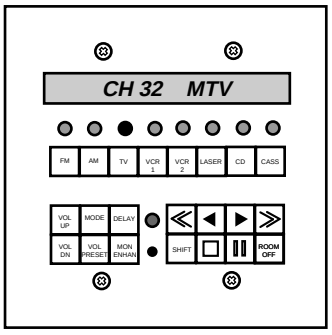
The System 3000 control format, although relying on the CIC-3000 for main system integration, is in fact, a distributed network. When using "MC-3000" Series keypads and other ADA Bus™ components, you are assembling a network where each component is controlled by its own microprocessor. This permits the system to function even if a single keypad or component fails. Unlike central systems, such as many home automation systems, the System 3000 only requires its ADA Bus™ components to operate their specific function. The four control wires are for voltage, ground, receive data, and transmit data and all ADA Bus™ components wire identically on removable four-pin screw terminal connectors, making wiring and connection simple.

Unlike standard "MC-1600" Series and "MC-1700" Series keypads, the "MC-3000" Series keypads are not wired directly to their respective CR-8P and CR-8A. All System 3000 keypads wire on a single wiring network and then to the CIC-3000. The keypads are programmed to control a particular zone or room and it is the CIC-3000 which knows which of its zone / room ports that control wishes to access. The CR-8Ps and CR-8As individually wire to their own CIC-3000 port. When a particular keypad selects a source, it sends a signal telling the CIC-3000 what room it is, for example, Room 1 and that, for example, Source 1 has been selected. The information is then translated in the CIC-3000 to analogue data and is released through the CIC-3000's port 1 connector to the first CR-Unit (zone amp or preamp). This amp or preamp then sends a conformation signal back to the CIC-3000 through its port 1 connector. The CIC-3000 processes this information and sends it out on the ADA Bus™ to all keypads.

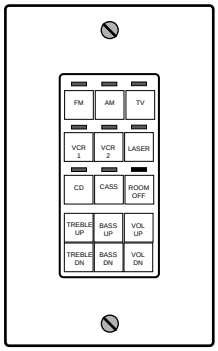
System 3000 Keypads and Controls



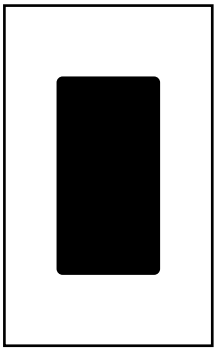
MC-3000 Wall Mounted Keypad
Standard Button Format



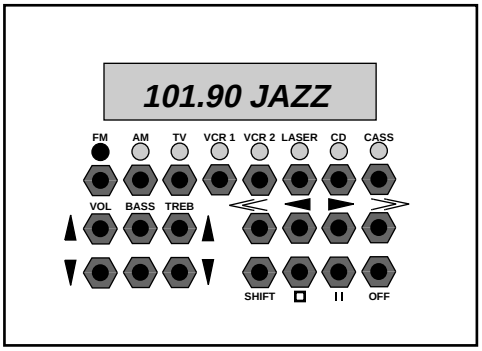
MC-3000 Wall Mounted Keypad
Home Theater Button Format



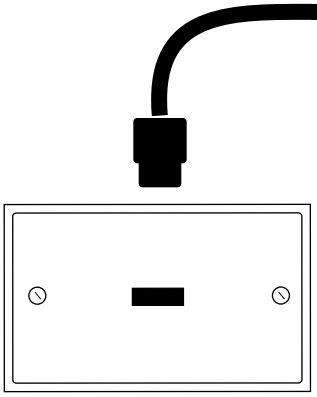
MC-3011 Wall Mounted Keypad
Deocra® Style Bezel



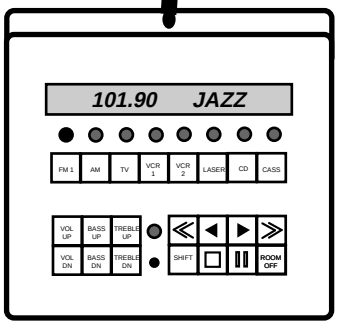
IRT-3000 Bi-Directional
IR Transceiver



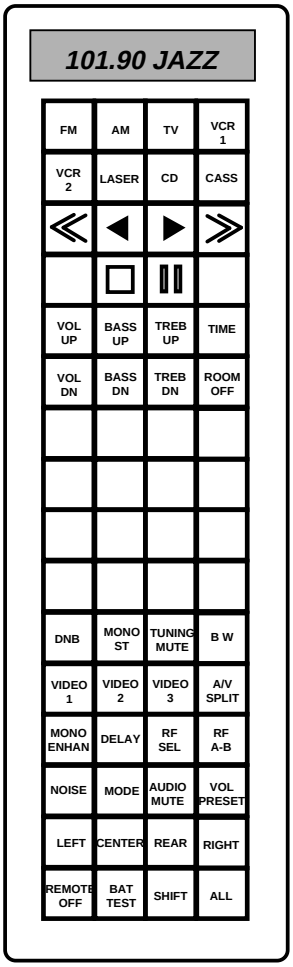
MC-3000 OD All Weather
Outdoor Keypad



WPA-3000 Wall Plate Adaptor

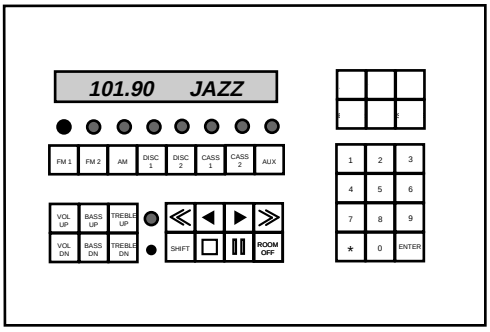


MC-3000T Table Top Keypad



MC-0064
Bi-Directional Hand-Held
IR Remote Control

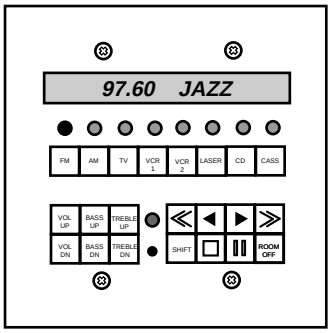
MC-3800 Wall Mounted Keypad
with Numeric Access

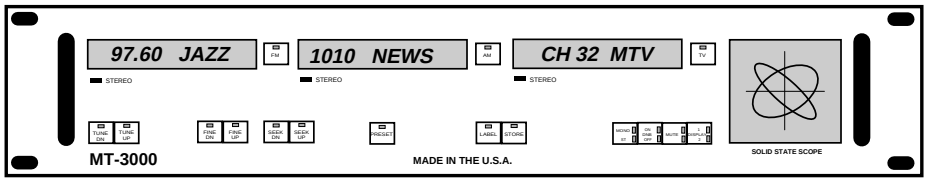


Description of the System 3000 (cont.)

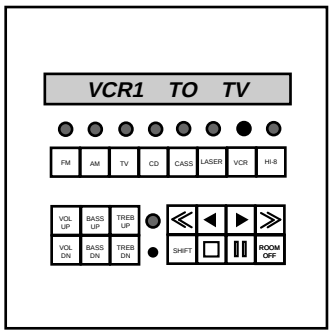
If the system were completely off before the source was pressed, all other rooms' keypads would change their display from either the "Time" or "All Off", to "Room Off". The keypad for the room that selected the source, would receive the same information as all other keypads, but since it is looking for a particular source's information, it will display the source's name.

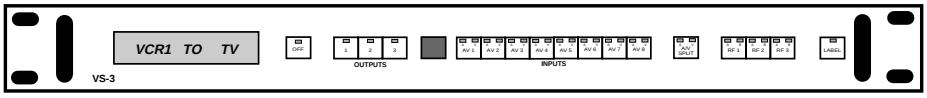
If that source were ADA's MT-3000 Multi-Tuner, after a brief moment of displaying the source's name, the keypad would display the tuner's frequency and preset label.



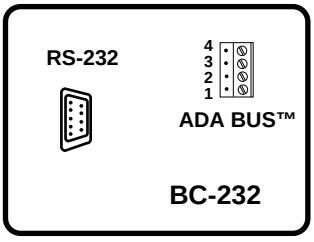


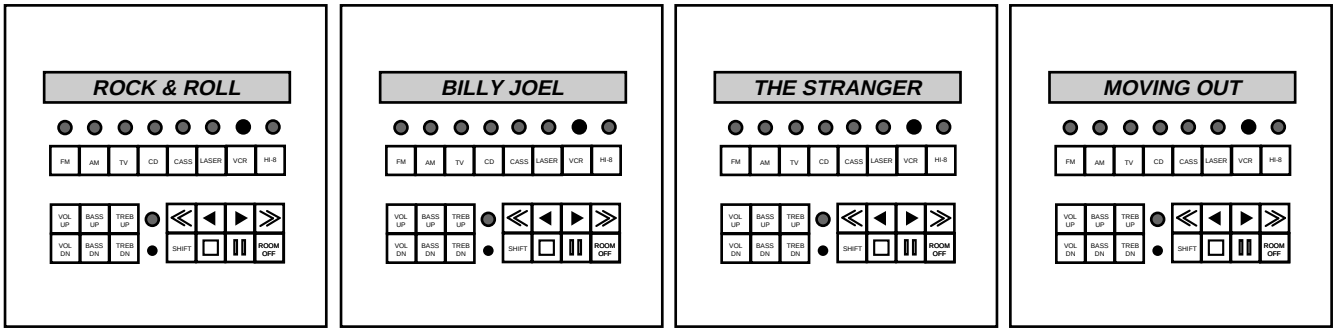
If the source were ADA's VS-3 A / V Switcher, used to permit additional sources to be accessed on a system, the keypad will display the VS-3's selected source name.





If that source were some type of computer source controller (i.e. Gefen System's CDJ-Pro CD and Laser Library Management System integrated onto the ADA Bus™ using ADA's BC-232 RS-232 to ADA Bus™ Convertor), the keypad would display the name of the play list, album name, artist name, and title of cut (up to 12 characters).

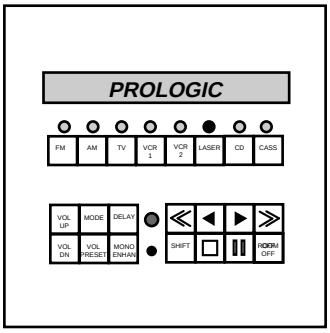


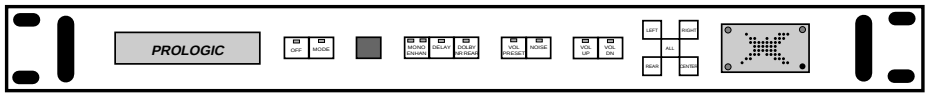


When using Gefen System's CDJ-Pro CD Management Sorftware, the MC-3000 Keypad will display the favorite play mode, artist name, album name, and song title, advancing to the next display each time the "Fast Rewind" button is pressed. Pressing the source button advances the CD Changer to the next favorite play mode. When done, the user must press STOP.

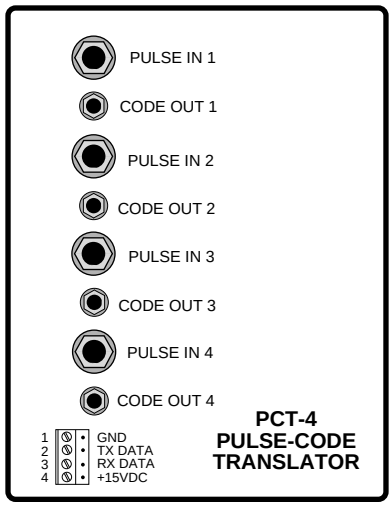
Additional ADA Bus™ components wire onto the ADA Bus™ network such as SSD-66(THX) Surround Sound Decoders, PCT-4 Basic Source Controllers, PCT-8 Advanced Source Controllers ("MC-3800" Series keypads must use a PCT-8), ACC-3000 Bidirectional Source AC Controllers (used with PCT-8 & VS-3s), and LVI-3000/RCI-22 Low Voltage Relay Closure Controller.

Several SSD-66 Surround Sound Decoders can be used on any System 3000. In fact as many as 256 zones can be setup as home theaters using a CR-8P Zone Preamp with an SSD-66. The preamp operates as the source selector for that zone while the SSD-66 acts as the zones volume controller. While standard MC-3000 keypads offer volume, bass, and treble buttons, an MC-3000 or MC-3800 keypad for a home theater would offer volume up/dn, mode selection, volume preset recall, time delay adjustment, and enhancement on, off, or auto control. These functions no longer are communicated to the CR-8P but are received and returned to the SSD-66. The same information as displayed on the SSD-66 would display on the MC-3000 or MC-3800. Therefore, it is not necessary to locate the surround decoder in the home theater. It could be racked with the main equipment in either another room or utility closet while permitting full control and status indication from the room's keypad. The SSD-66 has 256 address settings which correspond to the particular zone number the SSD-66 is set to operate.



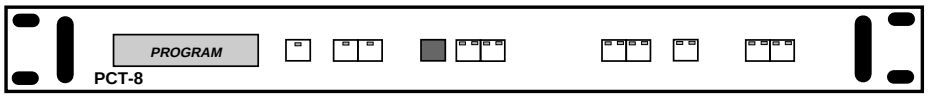


The source transport buttons on both the MC-3000 and MC-3800 permit one function to take place when repeatedly pressing the source's button once after the source is selected. Additional functions are accessed using the forward and reverse play, fast rewind and fast forward, pause, and stop buttons. When using either a PCT-4 Basic 4 Source Controller or PCT-8 Advanced 8 Source Controller, these functions will activate the selected sources function. Go to Appendixes E & F for more information on how a particular source is accessed and controlled. When using an MC-3800, you must also use a PCT-8 to gain access to numeric source commands. When a transport command is selected on either the MC-3000 or MC-3800, the PCT-4 or PCT-8 is told to transmit this command to a particular source via an IR source flasher or serial source connection. The PCT-4 or PCT-8 will also transmit a conformation signal back to the keypad reading for example, DISC SKIP, TUNER PRESET UP, PAUSE, or RANDOM PLAY. Since this conformation command is usually not coming directly from the source component itself, it is merely an indication that the PCT-4 or PCT-8 told the source to perform this function. More sophisticated sources (such as the MT-3000 Multi-Tuner) respond with real data and do not require wiring through a PCT-4 or PCT-8.

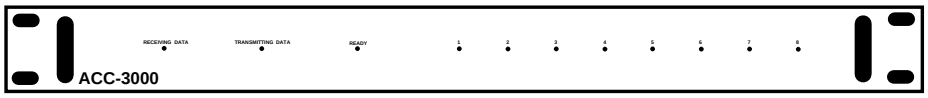


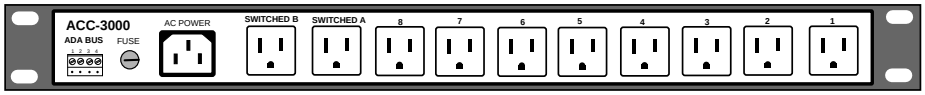
Description of the System 3000 (cont.)

For Future Upgrade Only - Currently Unnavailable. The PCT-8 will one day also permit the addition of programming macros. When using the PCT-8 in conjunction with an ACC-3000 Advanced AC Source Controller, the two components form a closed loop control network. The ACC-3000 acts as both an AC switcher and Current Sensing device. Therefore it can tell, by measuring a source's current draw, whether a source is off, on, in play, etc. It communicates this information to the PCT-8 over the ADA Bus™. Therefore, if a source is selected, the ACC-3000 will check to see if it is on and if it is not on, tell the PCT-8 to send out the Power On command. Furthermore, once the unit is on, the ACC-3000 can detect that the unit is on but not in play. The PCT-8 can be programmed with macro function which would have the ACC-3000 look for the current draw when the source is in play and the PCT-8 can continue sending the play code until the ACC-3000 responds with the correct current sensing conformation. Thus, the PCT-8 and ACC-3000, when used together, permit non-intelligent sources to provide actual status feedback.



The ACC-3000 permits its switched AC outlets to be linked and/or bypassed. Linking AC outlets is required for sources which act as more than one input onto the system. The MT-3000 is in fact three tuner sources yet it has only one AC power cord. If the MT-3000 were plugged into the ACC-3000's Source #1 AC Outlet, when source two or three were selected from a keypad, the ACC-3000's Source #1 AC Outlet would still need to turn on. The ACC-3000 has eight DIP switches on the side of its chassis which can be set to link two or three AC outlets. Sources, such as VCRs, require constant electricity for their clocks. For these devices, the ACC-3000's AC Outlets can be set for bypass, still permitting current sensing while defeating the AC switching. Other sources, such as CD players, operate perfectly with AC switching and should be installed on either the ACC-3000 or the Alpha-8R (discussed next) with their "Timer Play" switch in the "On" position. Therefore, if a CD player were selected, it would automatically engage into play.

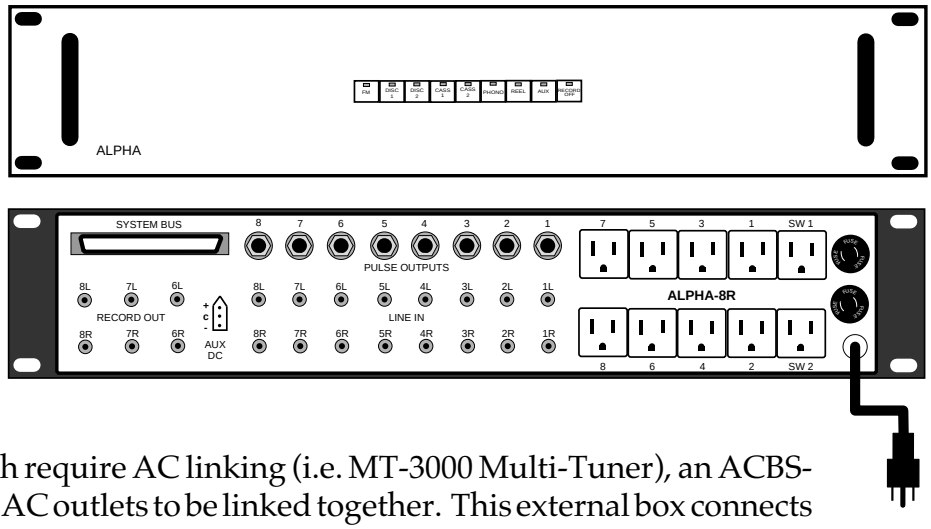




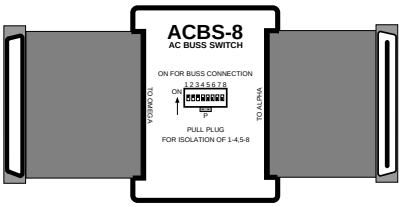
The Alpha-8R acts as the systems Line Driver, turning on sources only as needed and sending their line-level signal to the numerous zone preamps and zone integrated amps (CR-8Ps and CR-8As) over a 50 pin ribbon cable called the System Bus (pre-made custom for each system). The ALPHA-8R includes a Record Selector on its front panel permitting one button recording, where the last three sources can be recording devices. For example, if you wish to record a CD, simply press the CD button and the record buttons on a cassette recorder (cassette must be either source 6, 7, or 8). The Alpha-8R will automatically engage the CD player and the last three sources while routing the audio directly to all three record outputs (6, 7, & 8).

Installation of the Omega System Bus & AC Bus

In most system configurations, the ACC-3000 is usually not required in that the System Omega's Alpha-8R Line Driver, while acting as the line-level input device for the eight central sources, also incorporates eight switched AC outlets, one per source. These outlets engage one at a time, only as the source is needed (exactly as the ACC-3000).



When using devices which require AC linking (i.e. MT-3000 Multi-Tuner), an ACBS-8 is used to permit several AC outlets to be linked together. This external box connects between the Alpha-8R and the first CR-Unit on the 50 pin ribbon cable which will described as the System Bus. Do not confuse the System Bus with either the ADA Bus™ (System 3000 Components), AC Bus (AC connections between all CR-Units), or Zone Bus (14 pin ribbon cable which connects between WH-8000, WH-IRX-8, and SODC-8 Wiring Harness {used to terminate "MC-1600" Series and "MC-1700" Series Keypads}, VSU-8 Video Switching Units, CIC-3000's, and ZS-1 Zone Splitters).



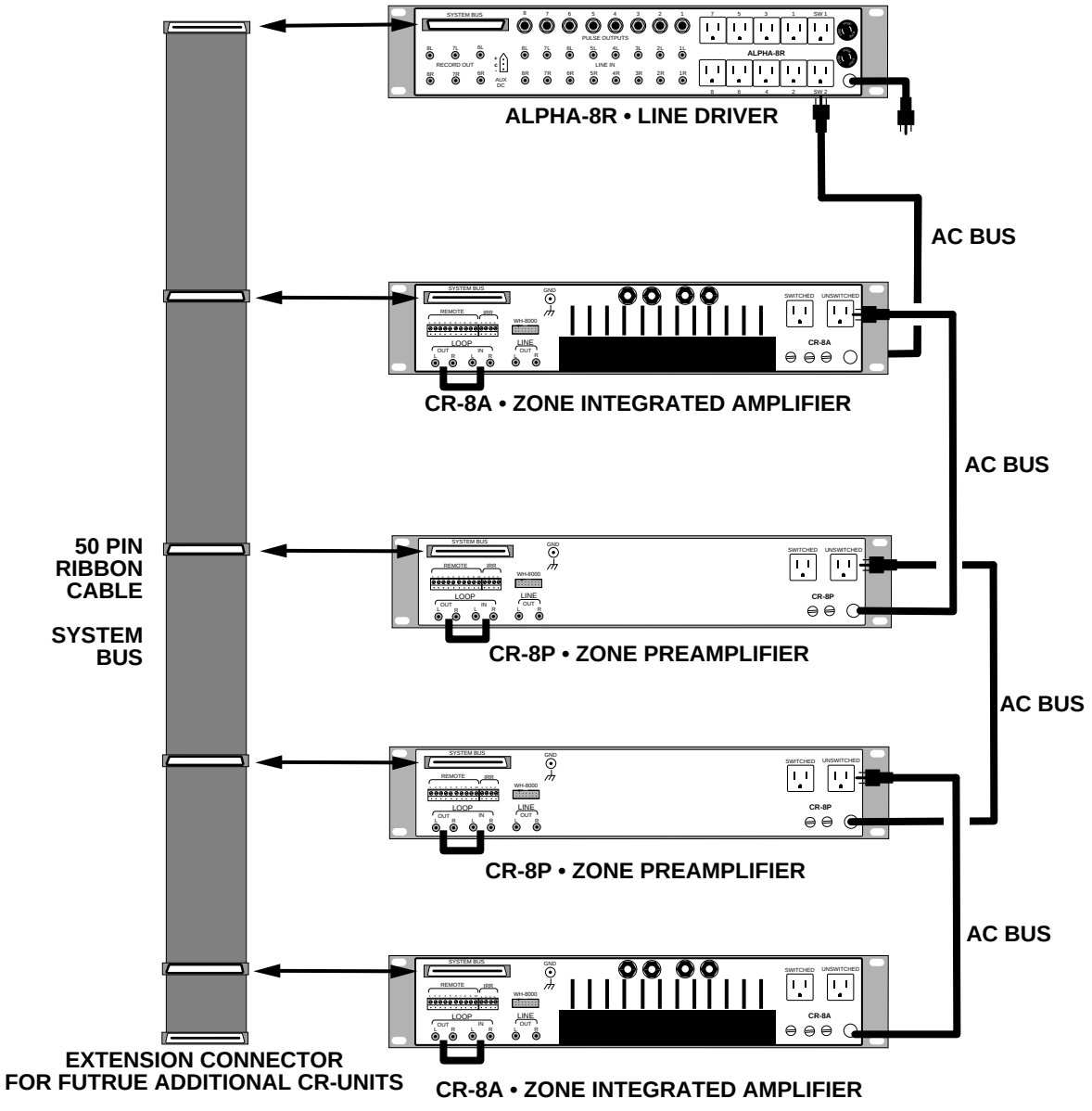
The System Bus 50 pin ribbon cable connects to the Alpha-8R, ACBS-8 when using and MT-3000, and then to all CR-Units. It transfers a control signal from the CR-Units to the Alpha-8R telling the Alpha-8R what source is selected. The System Bus also provides balanced line audio signals to all CR-Units and is included with each System Omega. The System Bus is cut to order and typically has a 2' long space between 50 pin connectors, which plug into the CR-Units. This distance permits a CR-Unit to be removed from the rack when rear access is not possible. If you are splitting equipment racks or locating the the Alpha-8R in a space at no more than a 30' distance from the CR-Units, ADA will custom cut the cable providing ADA receives a diagram detailing the rack layout. While the System Bus can be over 25' long, it is a flat cable ribbon cable which is relatively unprotected and should be run in a wide diameter conduit when run between high traffic areas or through tight spaces. When requiring a custom cut System Bus, a minimal fee may be charged.

The Alpha-8R also has the only power switch which really matters. When a system is wired correctly, turning off this switch should shut down the CR-Units preventing zones from turning on, turn off the CIC-3000(s) permitting them to reset when the switch is turned on again, and turn off all sources and additional ADA components. This switch is required to permit zone by zone system installation, later service of the system, or turning the system off during long periods of non-use (vacation switch). The following pages diagram the System Bus when using an MT-3000 which requires source linking or when no MT-3000 is used.

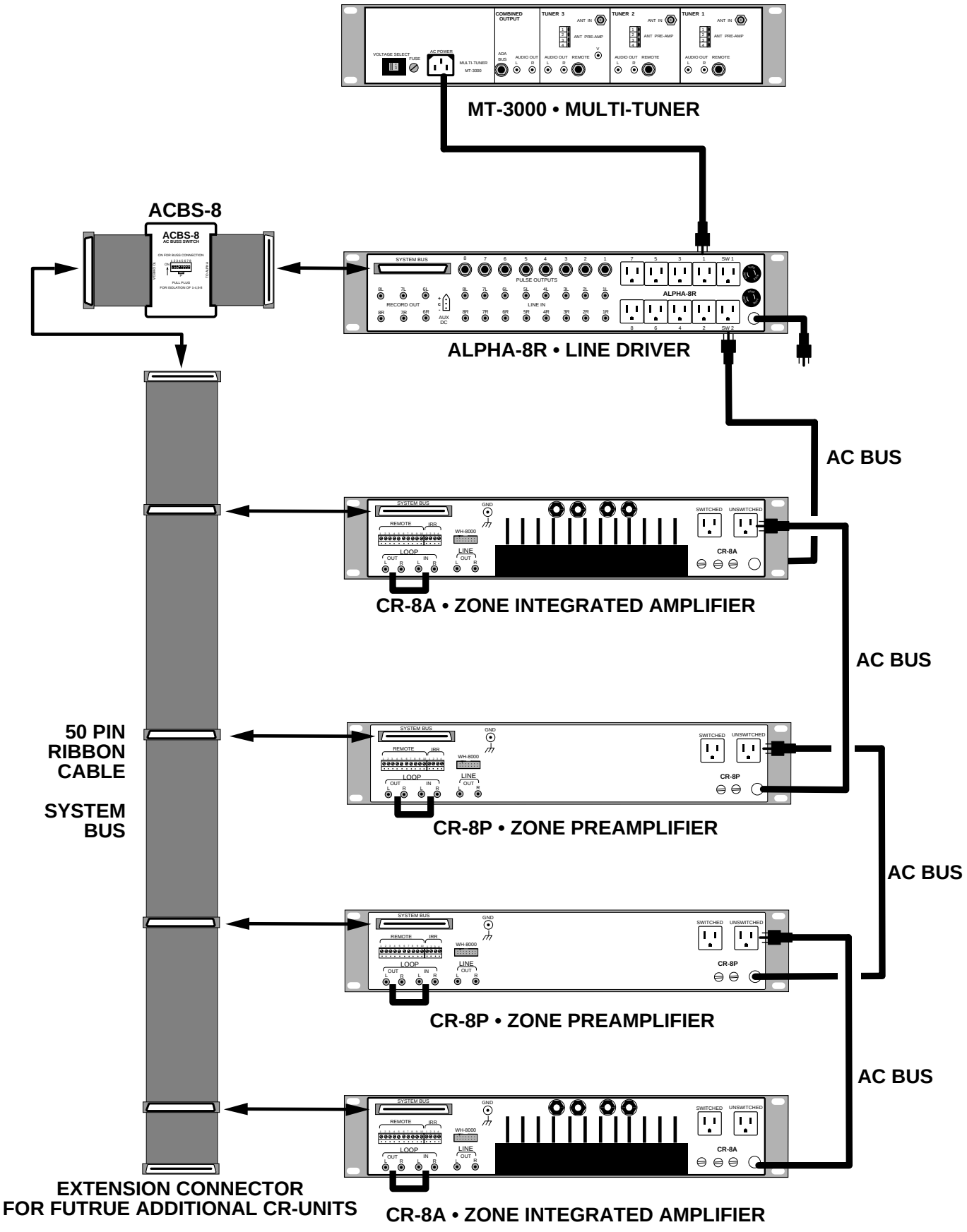
Installation of the System Bus and AC Bus

The AC Bus is the AC wiring network which is always tied into the Alpha-8R's Power Switch. As previously described, this switches ability to cut off AC to all system components is essential to proper installation and maintenance of the system. The Alpha-8R has eight AC outlets (marked 1 - 8) which are used for the eight sources (VCRs with clocks should plug directly into a wall outlet). There are two additional AC outlets marked as SW1 and SW2. These outlets are live whenever the Alpha-8Rs Power Switch is on. One outlet is used to provide AC to the CIC-3000s, PCT-8s, ACC-3000s (if used), VSU-8s, and VS-3s. All of these devices must plug into the Alpha-8R either directly or via a power strip. The second outlet is used for the first CR-Unit. It plugs into this outlet (either SW1 or SW2) and the second CR-Unit plugs into the first CR-Units Unswitched AC Outlet. This process continues, constantly plugging the next CR-Unit into the first CR-Units Switched AC Outlet until the entire system is connected. This AC connection is referred to as the AC Bus.

System Bus (No ACBS-8) & AC Bus



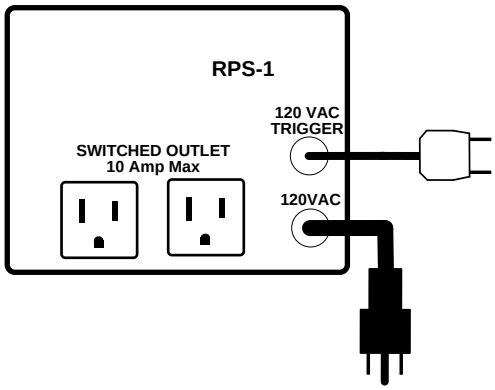
System Bus (With ACBS-8) & AC Bus

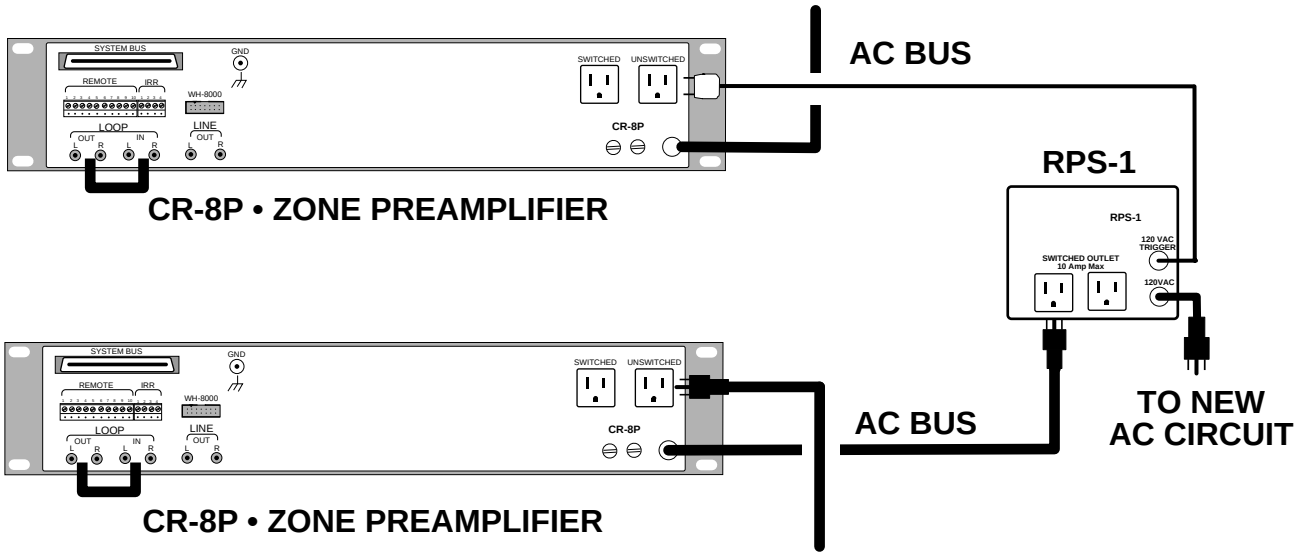


Installation of the AC Bus Across Multiple AC Circuits

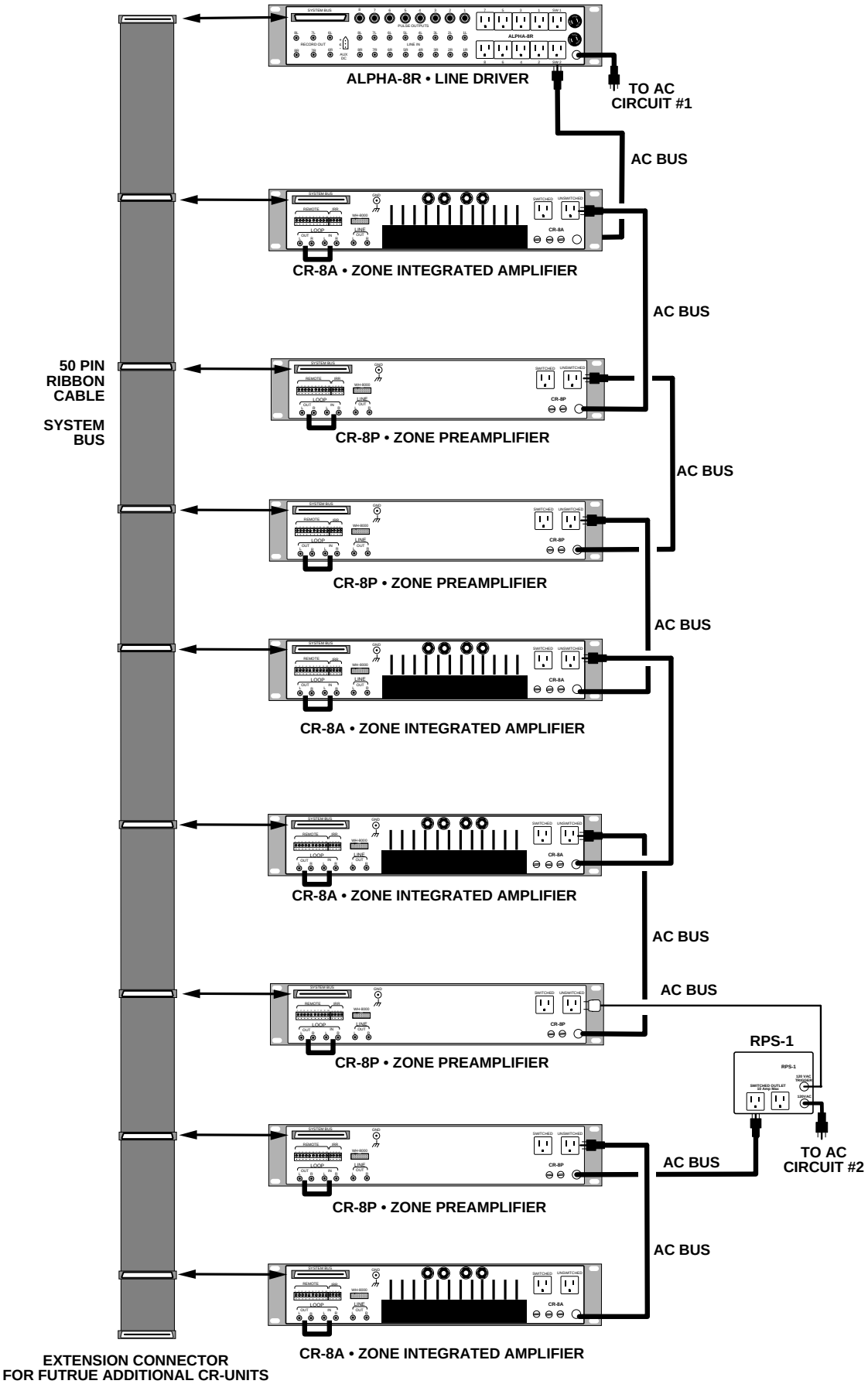
The Alpha-8R is capable of providing a total of 10 Amps. While this is sufficient for a small Omega System, a system with over 6-8 CR-Units will require an additional AC circuit to draw power from. Depending on how many additional power amps are used on the system, it is ADA's recommendation that you provide an additional AC circuit for every six zones or THX home theaters. Therefore, if you are installing a ten zone system, you should plan on at least two (2) AC circuits wired to the equipment mainframe location.

ADA provides the RPS-1 Black Box which permits you to draw AC from a new circuit while maintaining the AC Bus from the previous CR-Unit. The RPS-1's heavy AC line cord plugs into the second AC circuit and its slim AC line cord plugs into the previous CR-Units unswitched AC outlet. The next CR-Unit plugs into one of the RPS-1's AC outlet thereby preserving the AC Bus's ability to shut off the entire system even though the system's current is drawn from two AC circuits. Depending on your system's size, plan one RPS-1 for every six additional zones.





Installation of AC Bus with RPS-1



Wiring Harnesses for a Standard System Omega

ADA provides several wire harnesses for a standard System Omega with removable screw terminal connectors. These wire harnesses are essential to proper equipment termination and permit you to tone out and connect all keypad wires prior to installation of the equipment rack. Furthermore, these wire harnesses act as a solid ground platform for keypad control cables and should be terminated on a real earth ground. The remaining connections, from the wire harness to the system components, is accomplished via flat 14 pin ribbon cables called the Zone Bus.

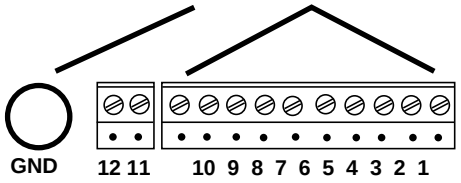
The "MC-1600/1700" Series keypads wire on a 12 conductor/20 gauge with foil shield control cable. IRR-288 IR Receivers require a 2 conductor/20 gauge with stranded shield control cable. All keypad or IR control cables should be individual home runs. Two wire harness choices are available. The first, and more basic model is the WH-8000 Wire Harness. This wire harness has screw termination connectors for up to eight keypads or infrared receivers and one WH-8000 should be used for every eight keypads.

The SODC-8 Wire Harness is larger in size than the WH-8000 yet still provides wire termination for up to eight keypads. It includes advanced diode lightning protection. Furthermore, the SODC-8 can individually program each "MC-1600/1700" Series keypad to flash its source button LED indicators when that keypad is off while other rooms are listening to a source. For example, if the room you are in is off while a second room is listening to CD 1 and a third room is listening to FM 1, the keypad for the room that is off would intermittently have the CD 1 and FM 1 buttons flash indicating that these sources are in use. This permits a user to approach a keypad and determine which sources are currently being used elsewhere in the home. You could then choose to listen to those sources or select an unused source. For keypads connected to an SODC-8, once a source button is selected on a keypad, its LED lights up and the flashing stops. This may be useful for some rooms, but may become annoying in bedrooms. The SODC-8 permits each keypad's termination to be set to flash or not flash. This setting can only be accomplished on the SODC-8 prior to final installation.

A third wire harness is available for standard System Omegas which is used for passing IR signals to the PCT-4 Source Controller for IR repeating. In a standard System Omega, all IR receivers terminate on their specific zone amp, preamp, or zone splitter. IR codes from an MC-009 System Omega IR Remote control are the same for all rooms. Thus when an MC-009 is aimed at a MC-1609 Keypad with IR or IRR-288 IR Receiver, its control signal is sent directly to its CR-Unit or Zone Splitter. However, when IR repeating is required, using the MC-1609 or IRR-288 to transfer IR signals to source equipment (using the source's remote control), these IR receivers would actually group together and then cause the IR receiver from one room to affect the IR receivers for all other rooms. Therefore, the MC-009 for one room would feed ADA IR codes to all rooms causing them to turn on at once and track all subsequent functions. To prevent this from happening when IR repeating is required, a WH-IRX-8 Standard Omega IR Filtering Wire Harness will be used to filter out ADA IR codes while permitting non-ADA IR codes to pass to a common repeater, the PCT-4 Source Controller. One WH-IRX-8 is required for every eight rooms with either an MC-1609 or IRR-288. Installation of the WH-IRX-8 is discussed in detail on page 46.

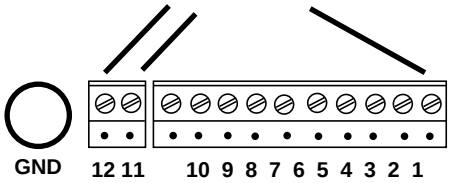
MC-1600/1700 SERIES KEYPADS CONTROL CABLE

KEYPAD PINS 1-10 MATCH PINS 1-10
FOIL SHIELD TO GROUND KEY



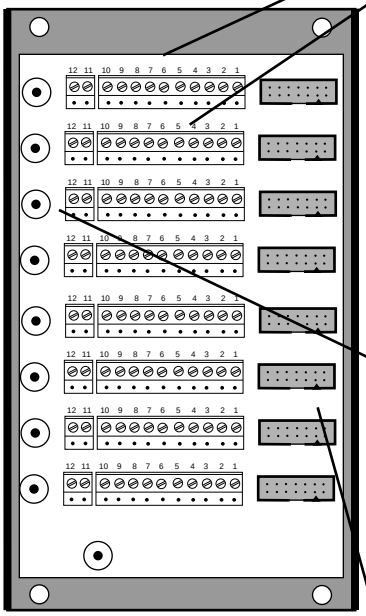
IRR-288 CONTROL CABLE

IRR-288 PIN 3 TO PIN 11
IRR-288 PIN 4 TO PIN 12
IRR-288 SHIELD TO PIN 1



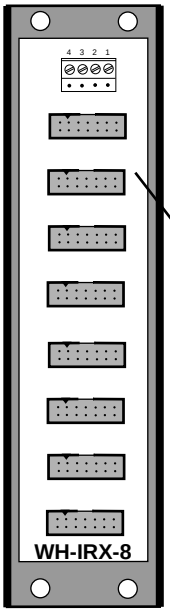
SCREW TERMINAL CONNECTORS

SODC-8 POWER SUPPLY FEED (9 PIN "D" CONN.) FROM SYSTEM BUS 50 PIN RIBBON CABLE



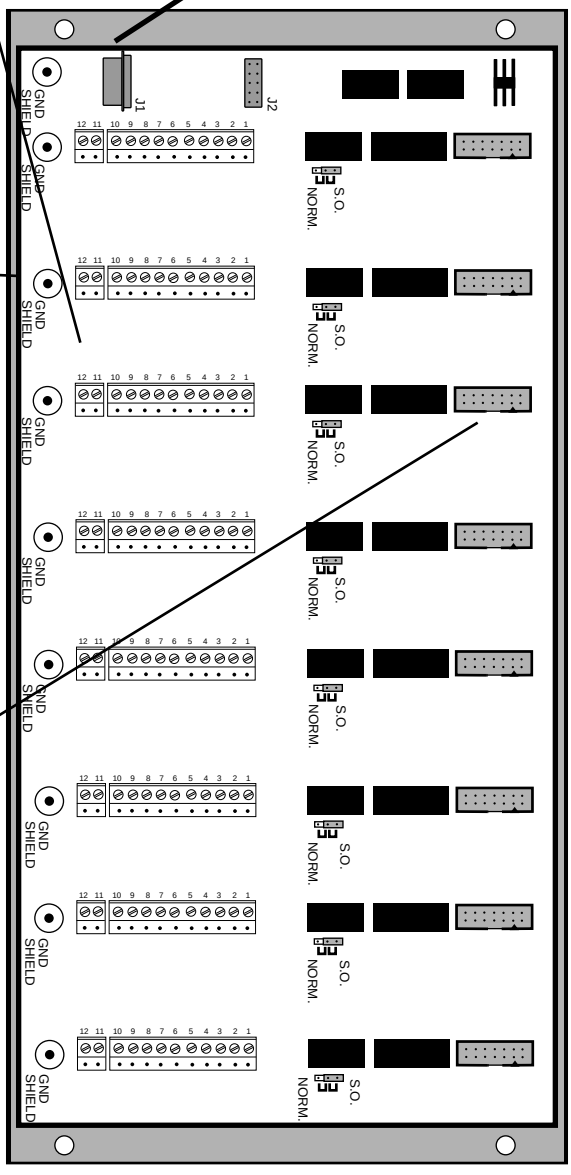
WH-8000

GROUNDING KEYS



WH-IRX-8

ZONE BUS 14 PIN RIBBON CABLE PORT



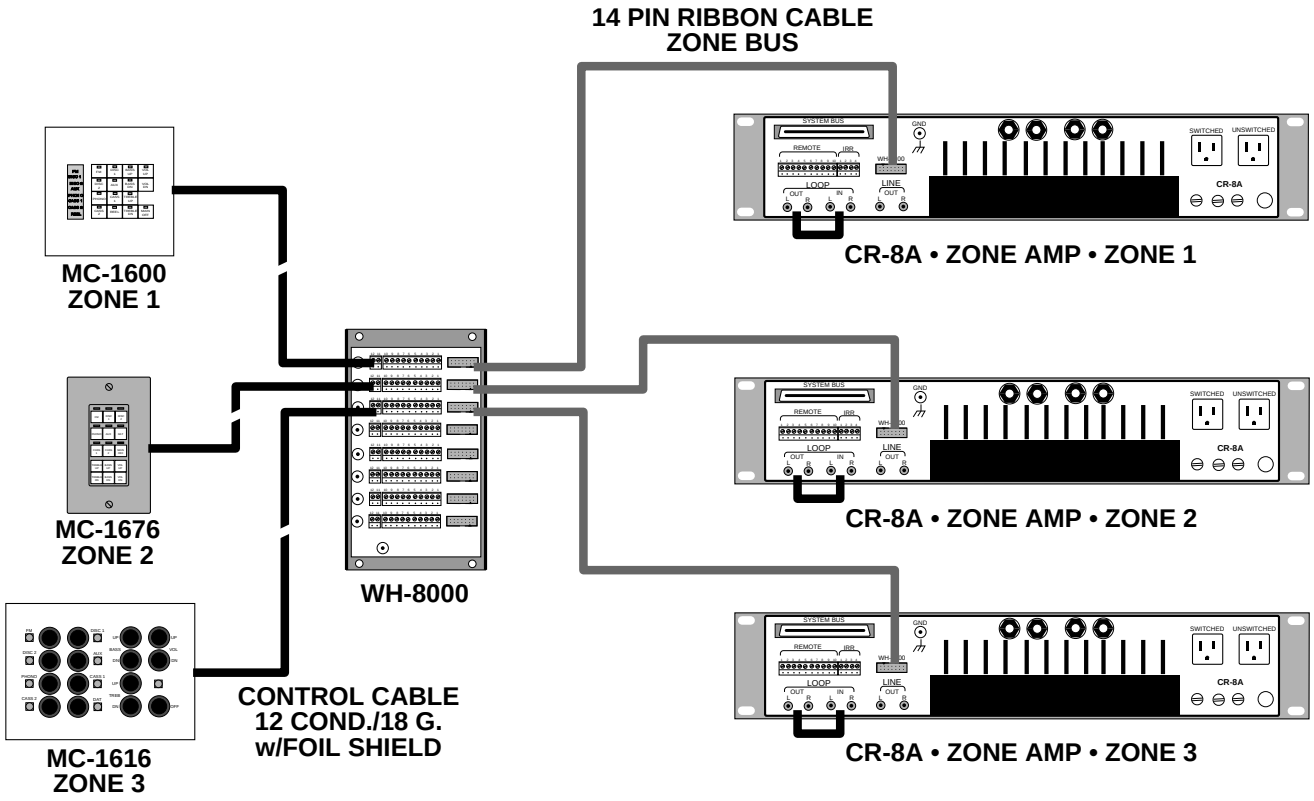
SODC-8

Standard System Omega - Zone Bus

Both the WH-8000 and SODC-8 act as keypad and IR screw termination platforms and apart from the previously mentioned features, operated identically. Once keypad home run wires are terminated, the remaining mainframe connections, to CR-Units, WH-IRX-8s Standard Omega IR Filtering Wire Harness (Used to provide IR signals to sources {via a PCT-4} when using MC-1609 Keypads or IRR-288 IR Receivers), VSU-8 Video-follow-audio Switching Units, ZS-1 Zone Splitters, DOS-1 Zone Tracking Units, and CIC-3000s (when combining both "MC-3000/3800" and "MC-1600/1700" Series Keypads) occur through a 14 pin flat ribbon cable called the Zone Bus. The zone bus is an extension of the keypads control cable and is easier to work with behind the equipment rack than heavier keypad control cable. Furthermore, several components may parallel onto the Zone Bus.

The Zone Bus is used regardless whether you are installing a System Omega or System Omega with System 3000 control interface. It is through this wire that CR-Units get control instructions and return conformation information. The Zone Bus cables are 10' long and are provided with the ADA System. If longer Zone Bus cable is required, it may purchased on spools at an additional cost. You will need to order spools of Zone Bus cable well prior to delivery as they require some lead time and are not always in stock.

Standard System Omega
Keypad Termination to WH-8000
& Zone Bus Connections from WH-8000 to CR-Units

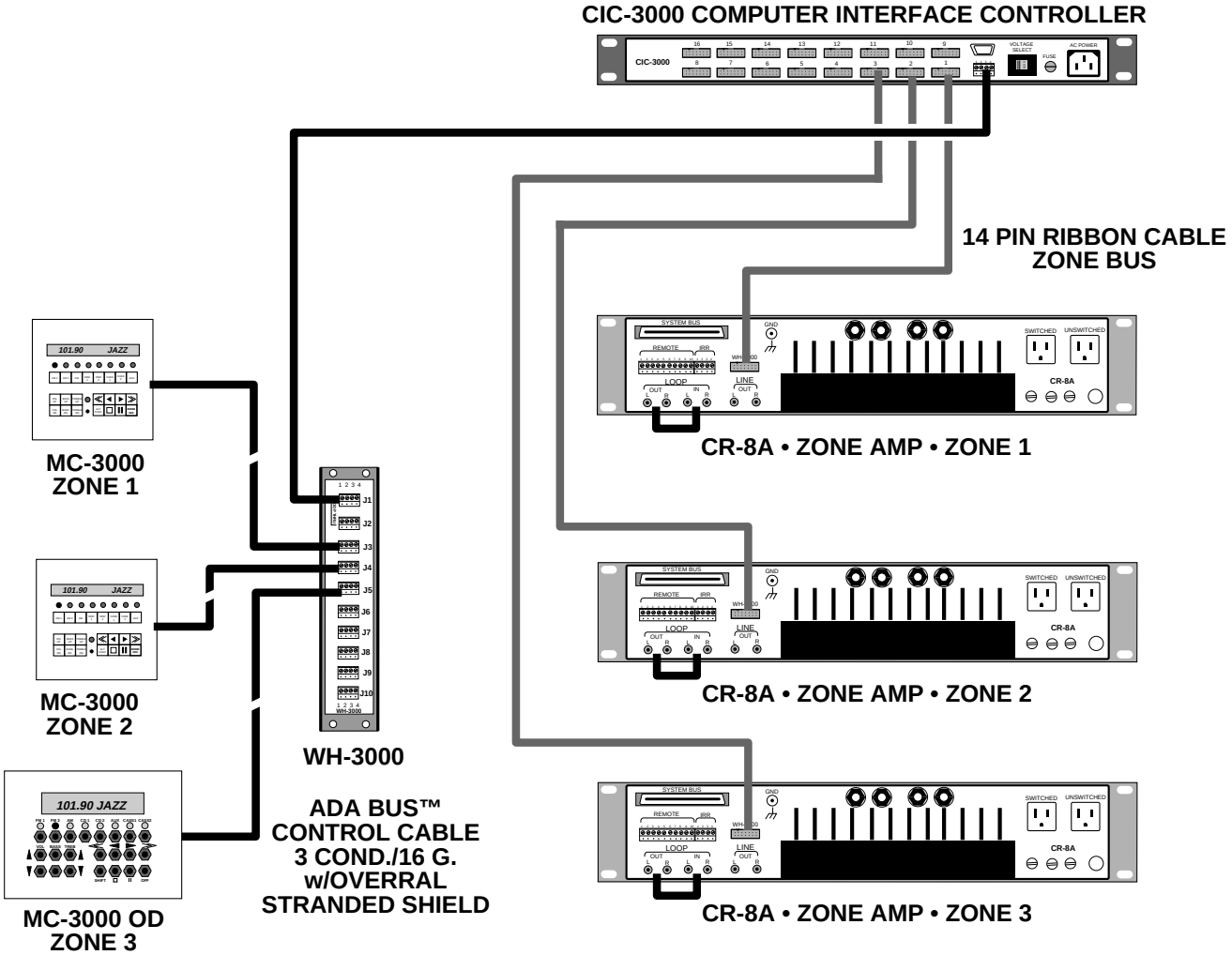


System 3000 - Zone Bus

The System 3000 uses a different wire harness called the WH-3000. Not only do all System 3000 keypads and IRT-3000 IR Transceivers connect to this wire harness, but also other ADA Bus™ components connect to this wire harness. The WH-3000 is discussed in detail on page 40. In its most basic form when installing the Zone Bus ribbon cables in a System 3000 with a CIC-3000 and CR-Units (no VSU-8 Video Switching Unit, no ZS-1s Zone Splitters, and no standard System Omega keypads {MC-1600/1700 Series controls}), the Zone Bus ribbon cables connect directly from a specific CIC-3000 port to its respective CR-Unit. Zone 1 is port one on the CIC-3000 and should connect to Zone 1's CR-Unit. Zone 2 is port two on the CIC-3000 and should connect to Zone 2's CR-Unit, etc.

If you are mixing keypad types and including ZS-1 Zone Splitters, WH-IRX-8s Standard Omega IR Filtering Wire Harness, or VSU-8 Video-follow-audio Switcher Units, the connection of the Zone Bus ribbon cable must include these devices as require. This will be discussed later on in this manual.

System 3000
Keypad Termination to WH-3000
& Zone Bus Connections from CIC-3000 to CR-Units



Zone Bus - Intermediate Crimp-On Connectors

The Zone Bus 14 Pin Ribbon Cable is important in that it connects many components which are zone specific. With both the standard Omega System or the System 3000 configuration, the zone bus will most likely connect more than just the keypads' wire harness to the CR-Units (in a standard Omega) or the CIC-3000 to the CR-Units (System 3000). To permit other devices to track a zones control function, which may include source selection, tone control, and zone off, intermediate connections will need to be made on the zone bus cable.

All devices which could accept the zone bus have a 14 Pin Male Connector on them. The CIC-3000; CR-Units; WH-8000, WH-IRX-8, & SODC-8 Wire Harnesses (not the WH-3000); ZS-1 Zone Splitters; and VSU-8 Video-follow-audio Switching Unit all have 14 pin male zone bus connectors. The zone bus cable is provided with 14 Pin Female Connectors on both ends of the cable. ADA will provide a bag of intermediate connectors which are crimped onto the zone bus at convenient points. These connectors will permit other devices to plug onto the zone bus.

Prior to crimping the intermediate connections, determine the distance the connections should be from either end of the 10' ribbon cable permitting enough slack to connect all the components required. If, for example, the WH-8000 and WH-IRX-8 are mounted next to each other against the rear of the equipment rack, you will only need a short connection between one end of the ribbon cable and the first interconnect to reach from the WH-8000 to the WH-IRX-8. The remaining length could be used in full to reach the rear of the CR-Unit.

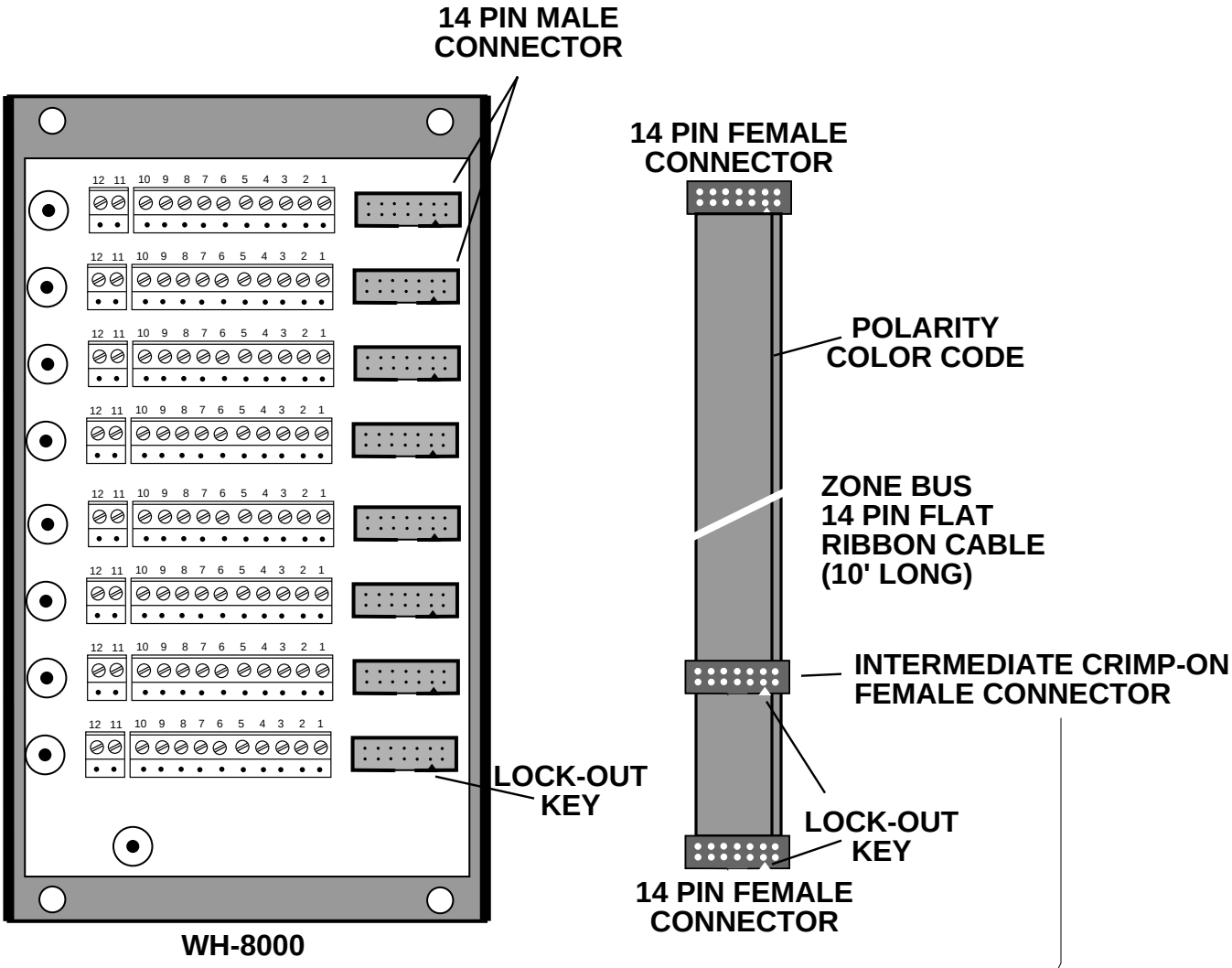
The crimp-on connectors are in two parts, the front female connector and the back board. To crimp on the connector, lay the ribbon cable on a flat surface and position the back board underneath the ribbon cable at the predetermined distance. Determine the position of the lock-out keys on both ends of the ribbon cable and note the side and direction of the lock out key with respect to the ribbon cable. Use a color or color band on the ribbon cable to determine the proper polarity. Place the front female connector in place with the lock out key in the correct position and line it up to the back board using the back board's sleeve as a guide. Make certain that the connector is lined-up correctly such that, when it is crimped, the connection pins pierce the ribbon cable on the wires rather than in between the wires. Once you have alined the connectors, press the back board and front female board together. A pair of pliers may be needed to fully connect the crimp-on intermediate connectors.

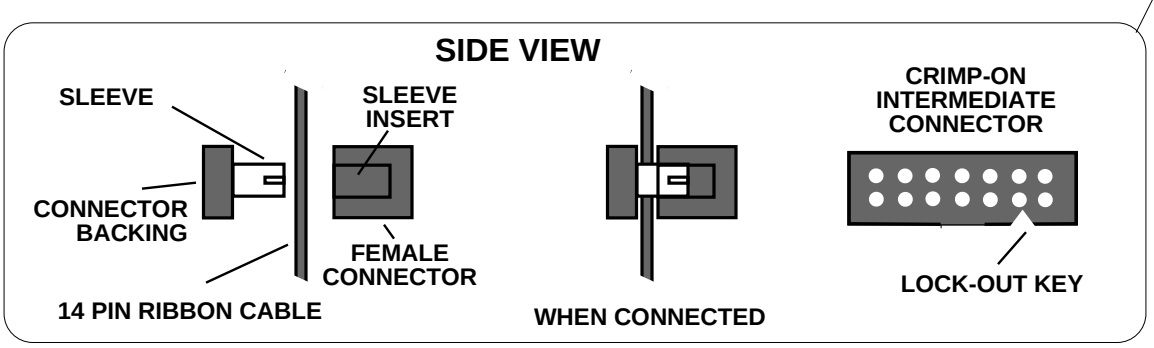
All zone bus connectors need to be firmly pressed into place to insure that proper contacts are made. Again, it is critical that the female and male connectors have a polarity pin in place, preventing you from inadvertently plugging the female connector in upside-down.

If you improperly install the crimp-on connectors on a zone bus ribbon cable, most functions specific to that zone will not operate. It is important to check the ribbon cable, for both continuity and shorts between ribbon cable wires, prior to installing the zone bus ribbon cable. If wires on the zone bus are shorted together, the zone will not function and the equipment may be damaged. ADA strongly suggests building a system zone by zone, checking the zones function as you install it. ADA components may be able to sustain a dead short on the ribbon cable for a short time before they in fact fail. Therefore, even though a CR-Unit looks like it is working correctly, all functions should be tested, using the CR-Units front panel keypad. If something appears wrong, shut down the system and verify the zone bus ribbon cable.

The following devices use a 14 pin ribbon cable connector.

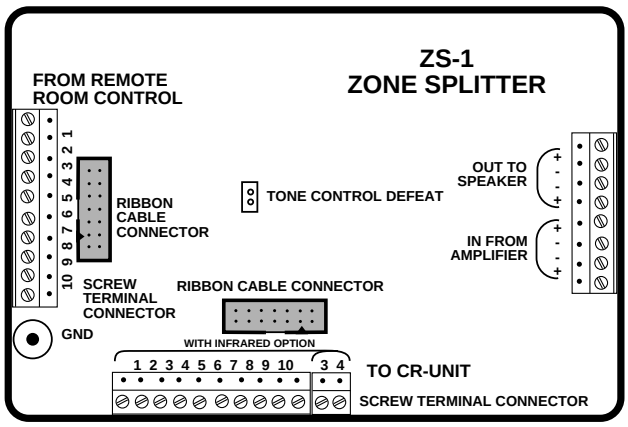
CR-8P & CR-8A	**Zone Preamplifiers and Zone Integrated Amplifiers**
CIC-3000	**System 3000 Controllers**
VSU-8	**Video-follow-audio Switching Units**
ZS-1	**Zone Splitters**
WH-8000	**Basic Standard System Omega Wire Harness**
SODC-8	**Advanced Standard System Omega Wire Harness**
WH-IRX-8	**Standard System Omega IR Filtering Wire Harness**
DOS-1	**Dual Output Synchronizers - Cause CR-Units to track the same source.**





ZS-1 Zone Splitters

ZS-1 Zone Splitters are electronically controlled autoformers and speaker relays. They permit several rooms on the same zone (same CR-Unit) to have their speakers turn on individually when that keypad selects a source. Furthermore, while the zones overall volume level is set on the CR-Unit's front panel, rooms with ZS-1s can adjust their local volume directly on the room's keypad using the Volume Up and Volume Down buttons that typically control the CR-Unit's volume level. No additional rotary volume control will be required for local volume.



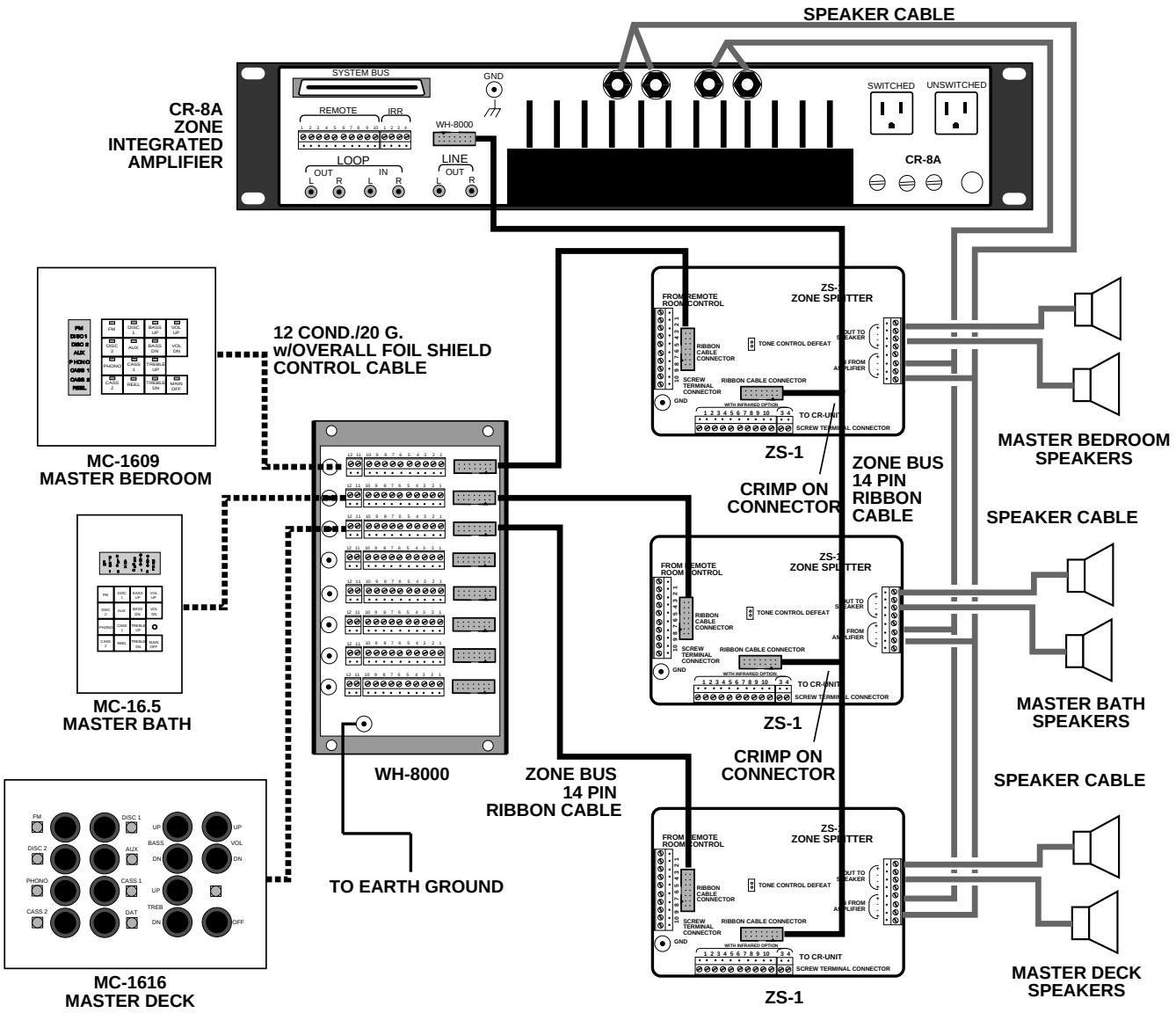
The ZS-1 Zone Splitter is electronically controlled and operates exactly as a rotary 50 Watt autoformer and speaker on/off switch. If a room is off, its speakers will be off. When a room is turned on, by pressing a source button, its speakers will turn on. Pressing the Volume Up or Volume Down buttons will begin to advance and lower the ZS-1 through ten volume steps. These ten steps are the tap off points on the ZS-1's autoformer. When using ZS-1's, the master volume, set on the CR-Unit's front panel, is usually set to the highest possible volume level for the largest size room. The rooms can then adjust volume down from that point. Because the ZS-1 is like a 50 Watt autoformer, the same considerations as to impedance load (number of speaker pairs) and volume levels (amplified power output) that apply to a 50 Watt autoformer, apply to the ZS-1. Thus, a ZS-1 is perfect to split zones where volume levels are not blasting and impedance loads don't go below 4Ωs (two pair of 8Ω speakers.) You will need one ZS-1 for each room on a split zone. Furthermore, because the ZS-1 draws current from the CR-Units over the zone bus, no more than five ZS-1s should be connected on any one zone.

For example, in a master bedroom suite, there are a total of three areas/rooms which will operate off of the same CR-8A Integrated Zone Amplifier. These rooms are the master bedroom, master bath, and master deck. All three areas will include a keypad and will listen to the same source when on. Yet one can go into the bathroom, turn on a source by pressing one button, and only the speakers in the bathroom will turn on. The other two areas, bedroom and deck, will remain off. Furthermore, if the bedroom were on, the volume level in the bathroom can be adjusted using the keypad's existing volume up and down buttons, without effecting the bedrooms volume level. When a keypad's Room Off button is pressed, the room will turn off. When it is pressed a second time, the other rooms on that zone will turn off providing they were on. When pressed a third time, the system will turn off.

Each ZS-1 also has a Tone Control Defeat pin, which when removed, disengages a keypad's ability to adjust bass and treble settings for that zone. This may be useful for secondary rooms whose acoustical settings are not critical. For example, in a split zone with a grand hallway, great room, and vestibule, the hallway and vestibule's keypads may not need to adjust the bass and treble levels while the great room may require a specific bass and treble setting. In this case, the ZS-1s for the vestibule and hallway should have the Tone Control Defeat jumper pins removed.

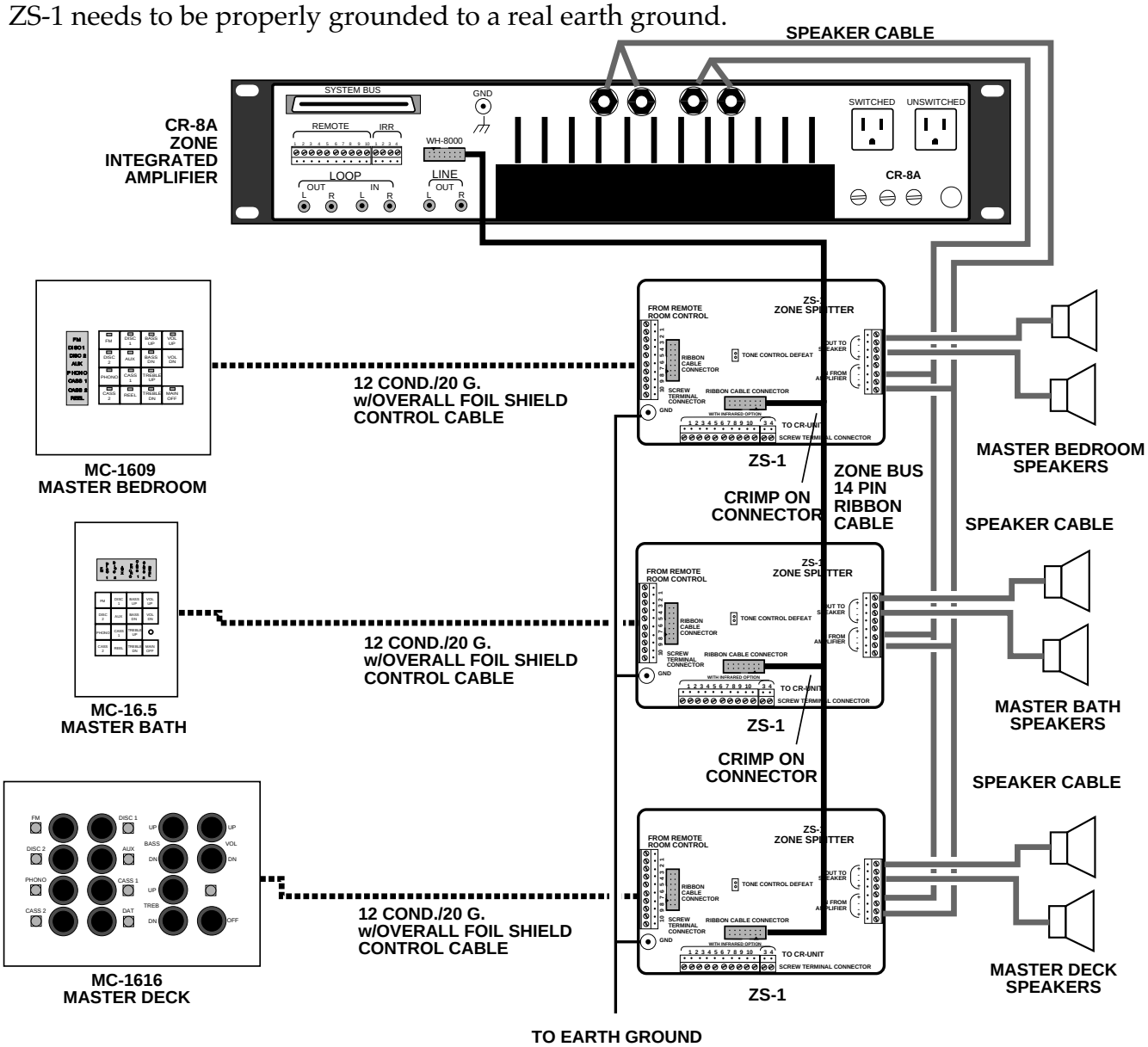
A ZS-1's wiring is simple and is identical to other zones which are not split. The ZS-1s are typically located behind the equipment rack and can be mounted against a wall. Each room's speaker wire and keypad cable is an individual home run. Each room's speaker wire terminates on its respective ZS-1 and the CR-8A's (or other amplifier) speaker output is paralleled to all ZS-1 speaker inputs for that zone.

The home-run wiring format will permit you to, at some later time, remove the ZS-1's and add additional CR-Units to change the system configuration. For example, a client with three young children, each with their own bedroom, may choose to initially place all three bedrooms on the same zone, with a keypad in each room. The equipment specified for this zone would include one zone amp (CR-8A) and three ZS-1 Zone Splitters. As the children grow up, the client may want to expand the existing system by providing each child with their own zone (each child could then listen to their own source). While the initial installation called for three ZS-1s and one CR-8A, the upgrade would call for the addition of two CR-8As and the removal of the three ZS-1s. This flexibility is also ideal for installations that are limited in size by the owners budget. Initially the home can be installed with only a handful of zones and then expanded upon at some future date.



ZS-1 Zone Splitters - Direct Connections

Keypads can also be directly connected to the ZS-1 Zone Splitters. The ZS-1 has both a Zone Bus input and a Screw Terminal connector. While the ZS-1 can be directly connected to keypads, using a WH-8000 or SODC-8 is typically easier and provides for a cleaner installation. Furthermore, service of the ZS-1 will be simplified when terminating all keypads on a wire harness. The diagram below details a direct keypad to ZS-1 termination. Please note that each ZS-1 needs to be properly grounded to a real earth ground.

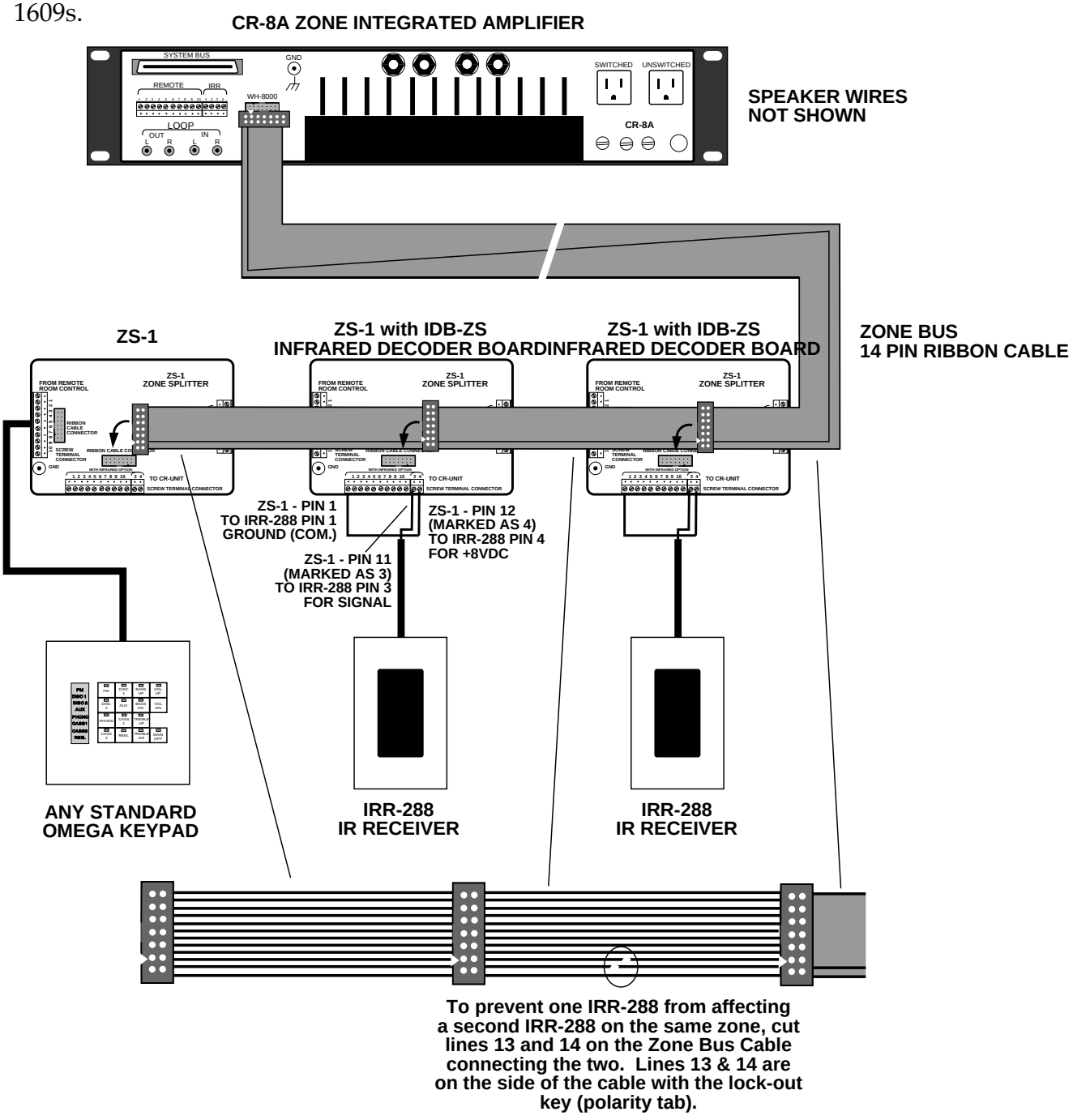


ZS-1 Zone Splitters - IRR-288 Connections

When using an IRR-288 IR Receiver on a Zone Splitter, the ZS-1 will need to house the IRR-288's infrared decoder board. This circuit will permit the ZS-1 to provide full control from an MC-009 Standard System Omega IR Transmitter. The infrared decoder board for the ZS-1, an IDB-ZS, needs to be ordered with the ZS-1. To determine which ZS-1 has an IDB-ZS, look on the side of the ZS-1 for two serial numbers, one for the ZS-1 and one for the IDB-ZS.

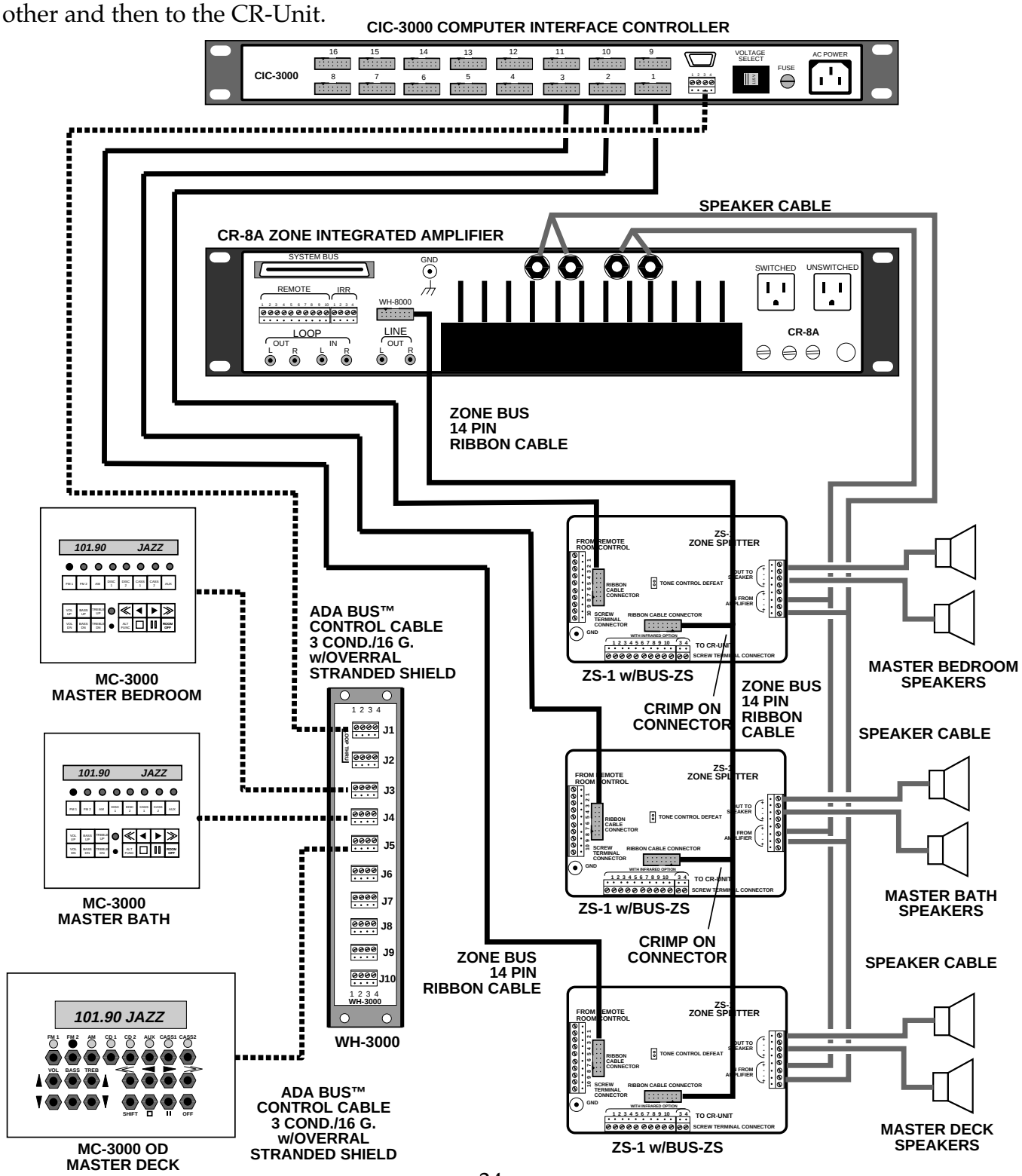
When using more than one IRR-288/ZS-1 combinations on any one zone, you will need to cut the 14 pin ribbon cable (Zone Bus) on lines 13 and 14, thereby preventing one IRR-288 from affecting both ZS-1s. Lines 13 and 14 lie on the ribbon cable's side in line with the lock-out key (polarity notch). Use a sharp blade to slice these two wires while leaving the other twelve lines on the ribbon cable in tact.

The IRR-288s must terminate directly on the ZS-1s. However, unlike the keypads which terminate on the input side, the IRR-288s terminate on the output side on screw terminal connector's pins 1, 11, and 12. The ZS-1 is marked with the numbers 1, 3, & 4 which match the connections on the IRR-288 to facilitate termination. ADA suggests working with MC-1609 Keypads with Built-in IR Receivers since the ZS-1 will not require an IDB-ZS for decoding. Furthermore, you will not need to cut the Zone Bus ribbon cable when using multiple MC-1609s.



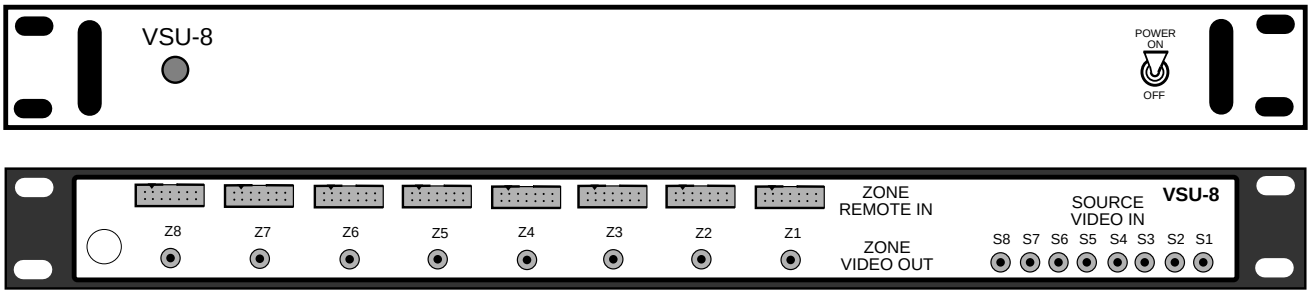
ZS-1 Zone Splitters - System 3000

System 3000 permits the use of ZS-1 Zone Splitters, however, the ZS-1s require a modification to permit control from the CIC-3000 System Controller and MC-3000 Keypads. This modification is a BUS-ZS and is required for each ZS-1 on the system. ZS-1s with BUS-ZS circuits will have two serial numbers, one for the ZS-1 and a second for the BUS-ZS. Zone Splitters will not work on a System 3000 without a BUS-ZS circuit. The ZS-1s Input Ports connect to a specific CIC-3000 room port using a Zone Bus ribbon cable and the ZS-1s output ports connect to each other and then to the CR-Unit.



VSU-8 Video-follow-audio Switching Unit

Regardless of whether you are installing a Standard System Omega or System Omega/3000, you may choose to provide composite video distribution throughout the house with the addition of the VSU-8. The VSU-8 is capable of switching as many as eight composite video signals to as many as eight zones. Several VSU-8s can be used together to switch video to more than eight zones, one VSU-8 for every eight zones. If you are installing a ten zone system, and two or more of the ten zones do not have a TV set, you would still need only one VSU-8.



The eight composite video inputs correspond to the eight audio inputs on the Alpha-8R Line Driver. For example, if your system has the following source format:

FM, AM, TV, VCR, LASER, CD 1, CD 2, CASS

the composite video signal from the MT-3000's (FM, AM, TV configuration) TV Module, the VCR, and the LASER disc feed into the VSU-8 on source inputs 3, 4, and 5 respectively while their audio signals feed into the Alpha-8R with the rest of the audio sources. The remaining video inputs on the VSU-8 are unused as they correspond to audio-only sources. The diagram on the following page details the connection of sources to both the VSU-8 and Alpha-8R.

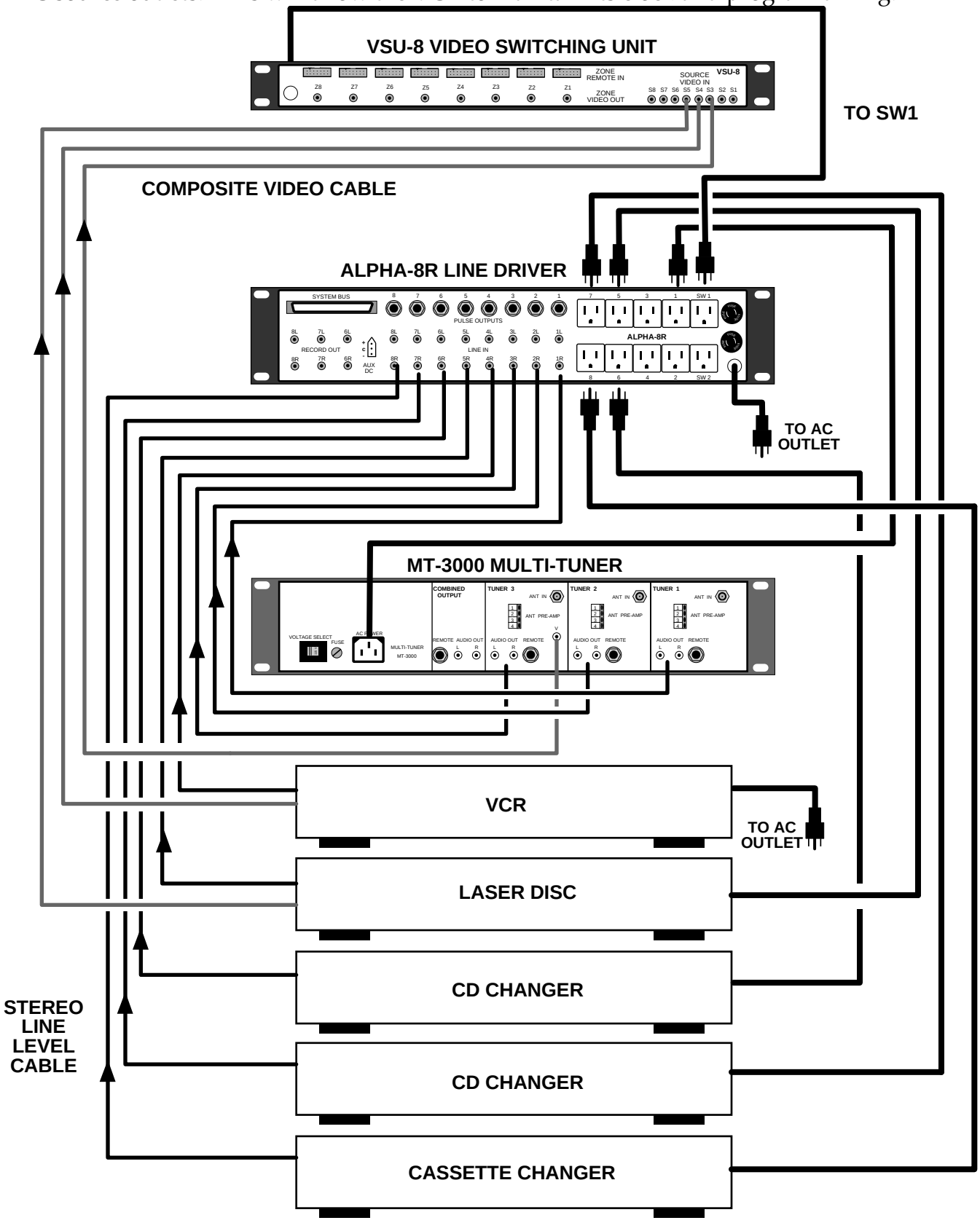
The VSU-8 is ideal for systems requiring some type of video distribution. When using System 3000 Series Keypads, the keypad's source transport functions can fully operate VCRs and Laser Disc Players without having to carry their handheld remote control to other rooms. When using a Standard System Omega MC-1609 Keypad with IR or IRR-288 IR receiver, you could only control the video sources from their remote controls.

The VSU-8 is only ideal for systems when the source configuration can include the video sources within the central primary eight sources (the eight sources that plug into the Alpha-8R). Therefore, if your system uses seven audio only sources and three central video sources, other video switching options will need to be implemented since typically, the audio sources are more important than the video sources (with respect to central distribution).

Several applications exist regarding how the central video sources are played to the remote rooms. These include, directly running the composite video signal to a projector while the audio is processed in a surround sound decoder, running the composite video signal to a TV's external video input along with a stereo line level signal, running the composite video signal to a TV's external video input without an audio line level signal, or modulating the video sources onto an open channel number.

VSU-8 Video-follow-audio Switching Unit (cont.)

This diagram details the source connections to both the Alpha-8R Line Driver and the VSU-8. Please note, the VCR is plugged directly into a wall outlet, bypassing the Alpha-8Rs switched AC source outlets. This will allow the VCR to maintain its clock and program timing.

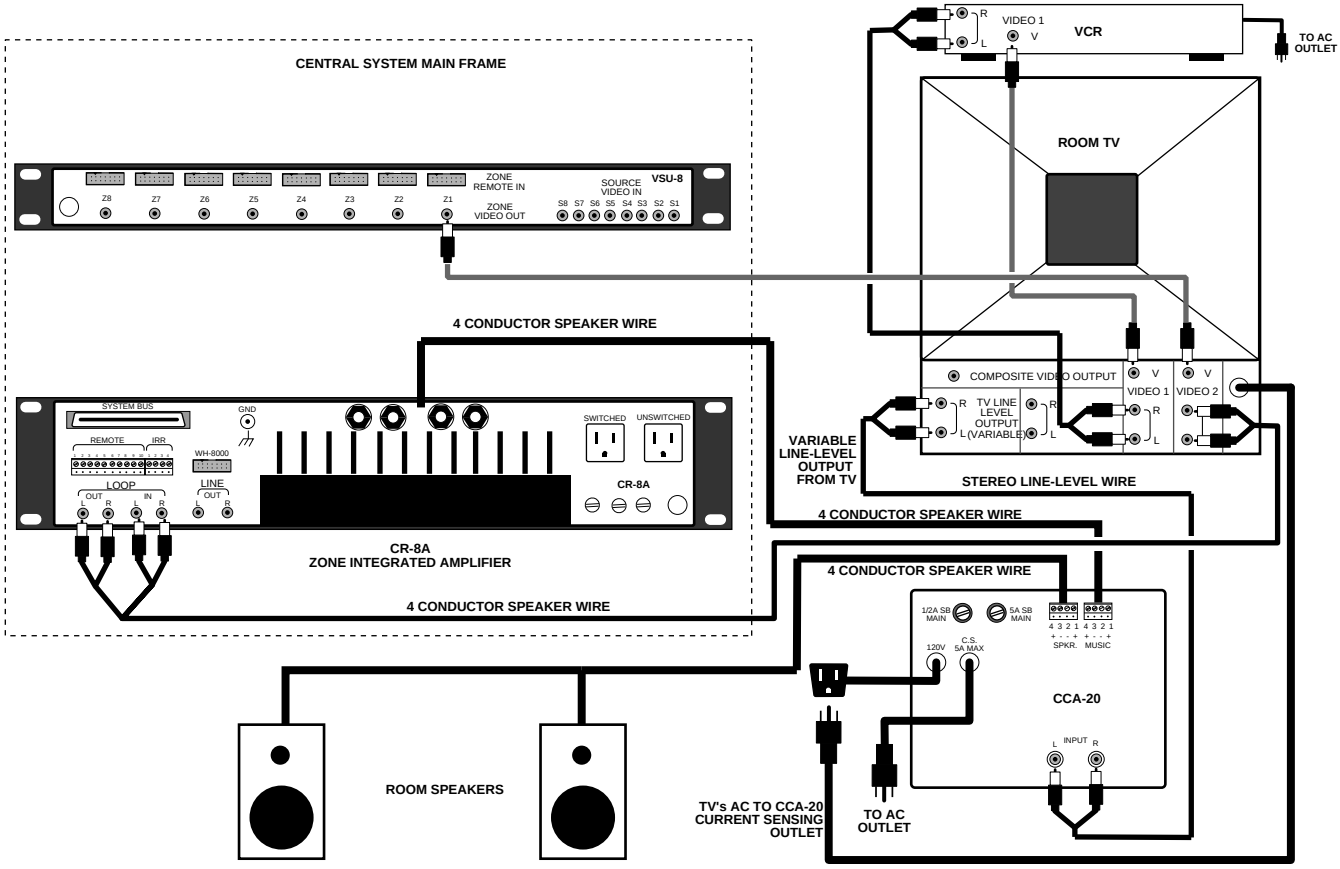


Using the VSU-8 for Composite Video Distribution to All Zones

If you are planning on distributing composite video signals to remote TV sets, you may also wish to run a stereo line level cable to these TVs in addition to the composite video cable. The audio signal is run from that zone's CR-Units Loop-Output to the TV. You will need to place a stereo "Y" splitter on the Loop-Output to permit the audio to also pass through to the CR-Units preamplification stage for non-video sources. The additional line level signal is required because many installations with local TVs, incorporate some type of automatic override such that when the TV is turned on, the speakers in that room trip over to the output of the TV set automatically. If no line level signal were run to these TVs, you would only receive the central video source's video signal without audio.

ADA recommends running both the composite video signal and audio line level to all TV locations while providing a local TV override. This way, when viewing either a signal from the TV's built-in tuner, a local VCR (plugged into the TV on "External Video 1"), or a central video source (plugged into the TV on "External Video 2"), is selected, the TV's audio signal plays through the TV's speakers (if on) for localized dialogue dispersion and through the room's speakers for a stereo surround effect. Both the TV's speakers and room's speakers will track volume, bass, treble, and etc. levels together using the TV's remote control. ADA provides several devices which will automatically switch the speakers over to the output of the TV whenever the TV is on. CCS-3 Current Sensing Speaker Switcher utilizes the TV's amplified output and the CCA-20 Current Sensing Speaker Switcher and TV Amplifier incorporates a 20 Watt per channel TV amplifier. Either combination will permit the same sound and speaker arrays for the TV's tuner, local video sources, and central video sources.

If you are not using any automatic TV overrides, you can eliminate the line level audio signal to the TV and listen to the central video source's audio signal through the room's speakers only.



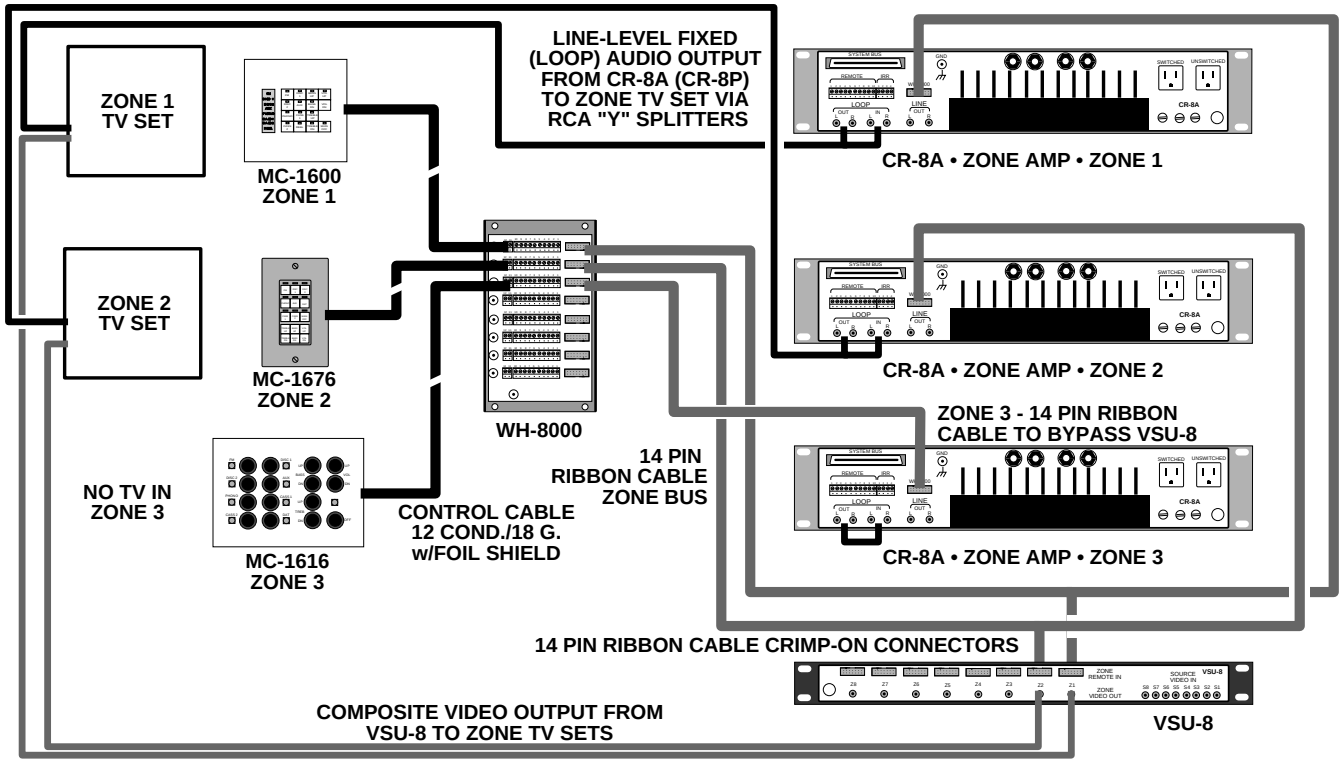
Installation of the VSU-8

The VSU-8 operates in conjunction with the zone control which operates the CR-Units. As a zone preamp or zone amp selects a source, from either the CR-Unit's front panel control, a Standard System Omega Keypad, or from a System 3000 Keypad (via the CIC-3000), the VSU-8 is told to track that selected source. This is individually done per each of the eight outputs.

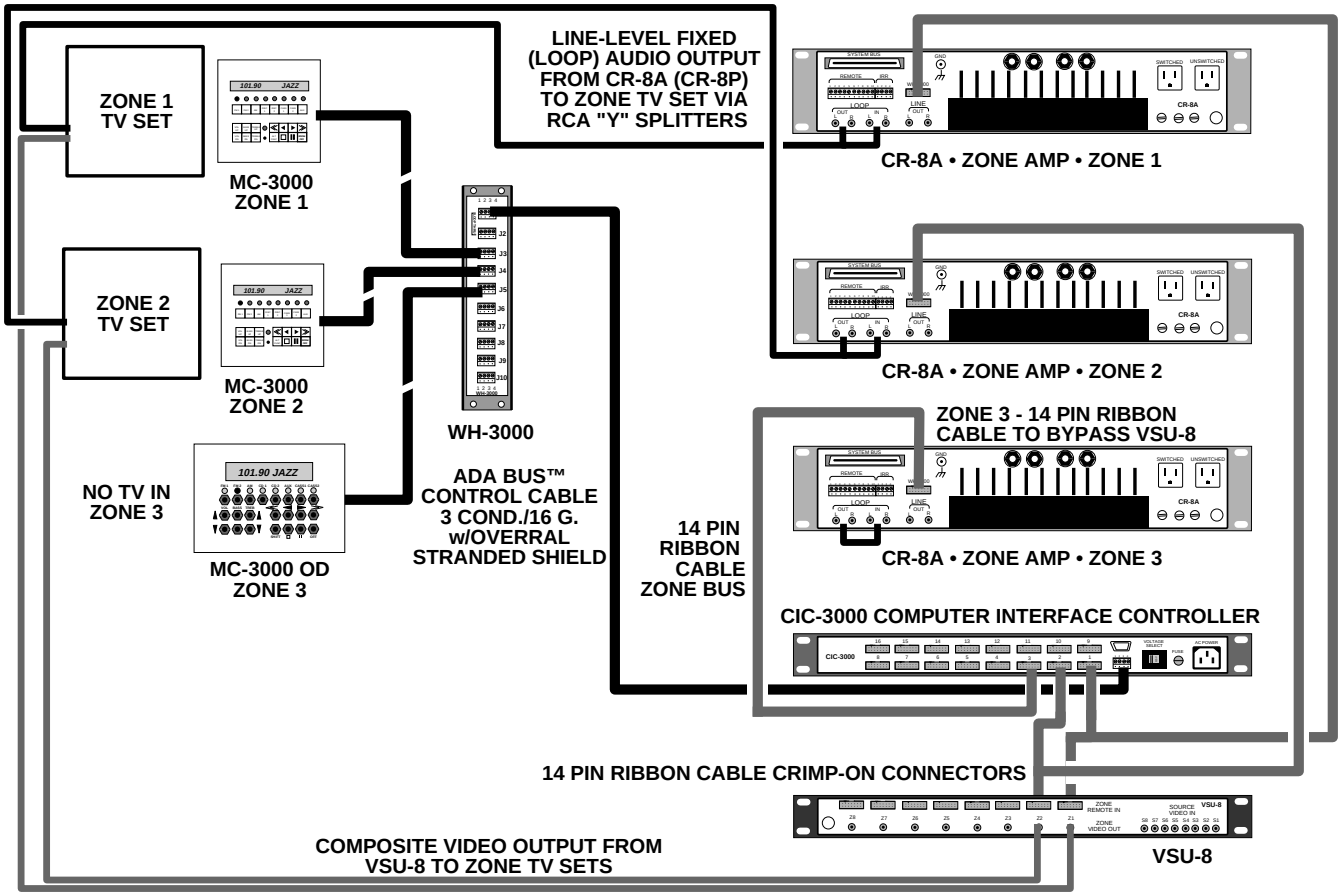
Each composite video output on the VSU-8 has a matching 14 Pin Ribbon Cable Control Input (Zone Bus connector). This connector, just as all other Zone Bus ports, has a lockout key which will prevent the 14 pin ribbon cable from being improperly inserted into the connector. When working with either a Standard System Omega using a WH-8000 for the Zone Bus terminator or a System 3000 using the CIC-3000 for the Zone Bus terminator, you will need to add a crimp-on 14 pin ribbon cable connector as was discussed on pages 28 and 29. Since the Zone Bus is a zone's information highway (or information bahn) it does not matter which component plugs into which connector on the zone bus. Naturally, a single zone bus is particular for a single zone and cross connecting ports on various components will cause one keypad to switch the wrong VSU-8 port or CR-Unit.

As a reminder, when placing the crimp-on connectors on a 14 pin ribbon cable Zone Bus, make certain to verify the position of the connector with respect to the side of the ribbon cable and the polarity of the lockout key. Also, make certain that the crimp-on connector perfectly pierces the ribbon cable. A sloppy crimp-on connector will ground all control lines together, causing the VSU-8 to lock up on a single source. Prolonged power on a zone bus with a shorted connector will cause permanent damage to the CR-Unit. You should test each crimp-on connection as it is made by verifying all switching control. If you experience peculiar switching patterns, shut down the system by turning off the Alpha-8R and check the zone bus crimp-on connections.

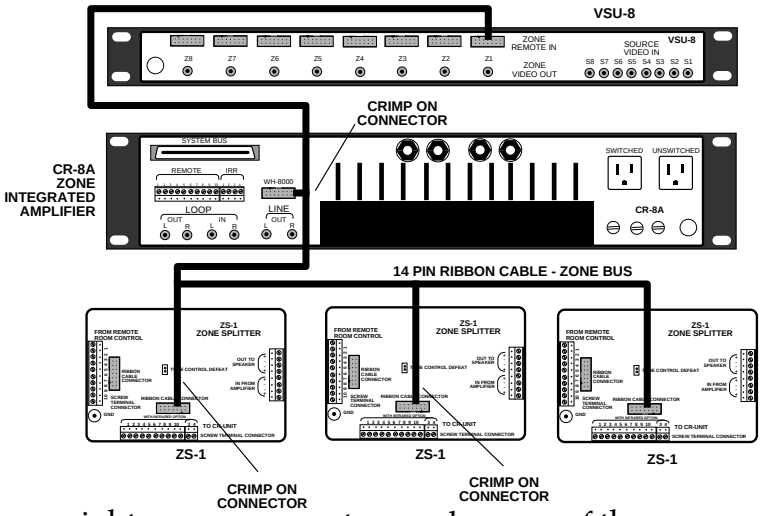
Installing a VSU-8 In-Line with a WH-8000



Installing a VSU-8 In-Line with a CIC-3000

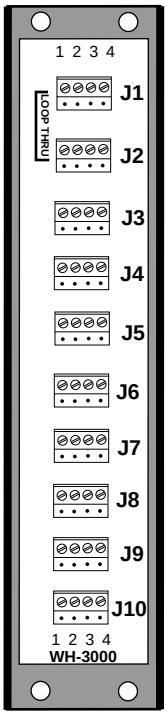


When connecting the VSU-8 in line with ZS-1 Zone Splitters in either a Standard System Omega or System 3000, use the 14 pin ribbon cable connection that runs from the CR-Unit to the Zone Splitter's Output ribbon cable port. Since all rooms on that zone track the same source, there is no need crimp each zone bus cable running to the input side of the ZS-1s. A single crimp on connection on the output side will do. If you have several TVs on a split zone, extra unused output ports on the VSU-8, and are experiencing distortion problems when splitting a single VSU-8's output to several TVs, you may choose to use additional unused ports on the VSU-8 for a single zone. Simply place additional crimp-on connectors in line to the first connector and parallel these connections to the open ports you are intending on using on the VSU-8.



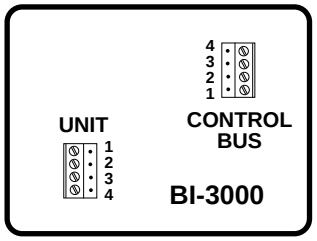
It is not unlikely, that while you may have eight zones on a system, only some of those zones may incorporate a TV or projector. Therefore, not all zones need to connect to the VSU-8. When planning your system layout, predetermine how many VSU-8s you will need based on the number of zones with TVs or projectors.

The WH-3000 and BI-3000 for a System 3000



The WH-3000 is the wire termination platform for the System 3000. All ADA Bus™ components terminate on this wire harness. The WH-3000 has a total of ten removable four pin screw terminal connectors. Two of these connectors, "J1" and "J2", are without an overload safety fuse and are designed to take the ADA Bus™ cable from the CIC-3000 and pass it to additional WH-3000s. The CIC-3000 must connect to the first WH-3000's "J1" connector. If a second WH-3000 is being used its "J1" connector wires to the first WH-3000's "J2" connector. A third and fourth WH-3000 connect in the same manner with their "J1" connector wired to the previous WH-3000's "J2" connector.

A WH-3000's "J3" to "J10" connectors are provided with safety fuses. Should you encounter a short on any keypad line, the fuse connector will trip on only that "J" connector, leaving the other keypads and components operable. It is extremely important that each ADA Bus™ component have its own "J" connector. Since the WH-3000 has eight fused "J" connectors, you will require one WH-3000 for every eight ADA Bus™ keypads, IR transceivers, or components. All ADA Bus components connect to the WH-3000 using ADA Bus™ cable, a three conductor, 18 gauge data grade wire with an overall stranded shield (80% braid). It is extremely important that all wiring connections be completely clean, with no fray strands making contact with other wires. Because all keypads terminate on the same wire harness network, isolating a poorly connected wire after the system is completely installed will be time consuming.

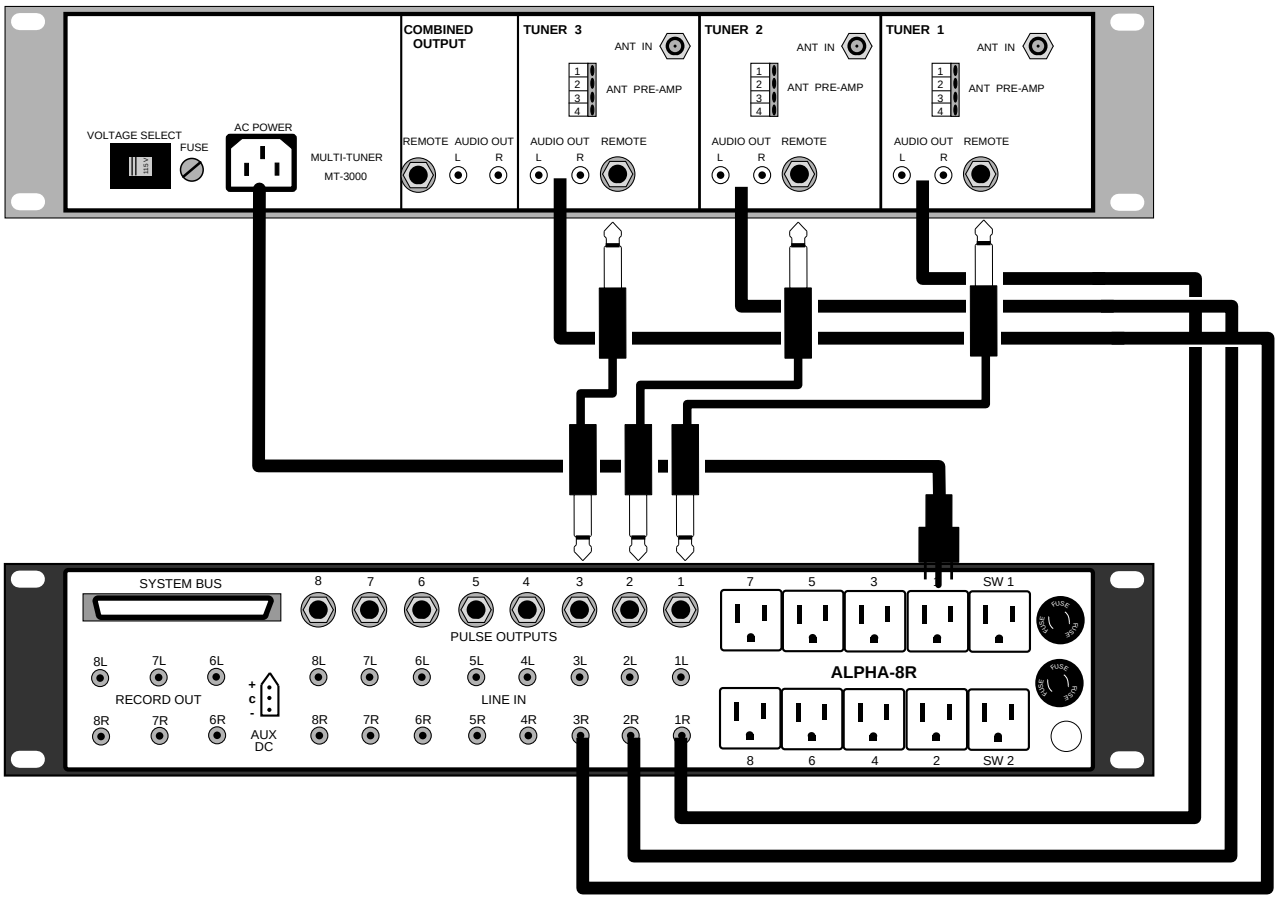


The BI-3000 Bus Isolator is used for several purposes. Most typically, the BI-3000 is used to isolate ADA Bus™ components which process audio from the control network, the ADA Bus™. The BI-3000 has two ADA Bus™ removable four pin screw terminal connectors on it. One is for the ADA Bus™ Component's connection (the side marked "Unit") and the other is for connection to the WH-3000 (the side marked to "Control Bus"). You must use a BI-3000 for every MT-3000 and SSD-66 (THX) connected to the ADA Bus™. If your system is using one MT-3000 Multi-Tuner and two SSD-66 Surround Sound Decoders, you will require three BI-3000s. Make certain that when you connect the BI-3000 in line with any ADA Bus™ component, the inputs and outputs are as labeled on the BI-3000.

The BI-3000 is also used to allow several ADA Bus™ Systems in the same home, to share source components and surround sound decoders. For example, if you are installing a System 3000 (using the CIC-3000 as the control brain) for the entire home and a System Titanus (using the VS-3 A/V Switcher as the control brain) for the home theater, yet wish to share the MT-3000 with both systems, you will need to isolate both ADA Bus™ networks from feeding false data to each other. In this case, you would need two BI-3000's for the MT-3000, not just one. The MT-3000's ADA Bus™ wire would feed the input to both BI-3000's. The output of each BI-3000 would feed the respective system bus. The use of multiple systems and the further application of BI-3000s are discussed under "Advanced System 3000 Options".

MT-3000 Installation in a Standard System Omega

The MT-3000 is designed to operate directly on a Standard System Omega or System 3000. It has both 5 Volt pulse inputs per tuner module for tuner preset skip and an ADA Bus™ input port. The 5 Volt pulse is generated by the Alpha-8R. Whenever the keypad's FM 1 button is repeatedly pressed after the source was selected, the Alpha-8R sends a 5 Volt Pulse to the MT-3000's FM 1 module through a 1/4 mono phone jack. The MT-3000 will then skip to the next preset. Options exist allowing the MT-3000 to "Seek Up" or "Tune Up" instead of "Tuner Preset Skip Up". See the MT-3000's Installation Manual to learn how to select these skip options.

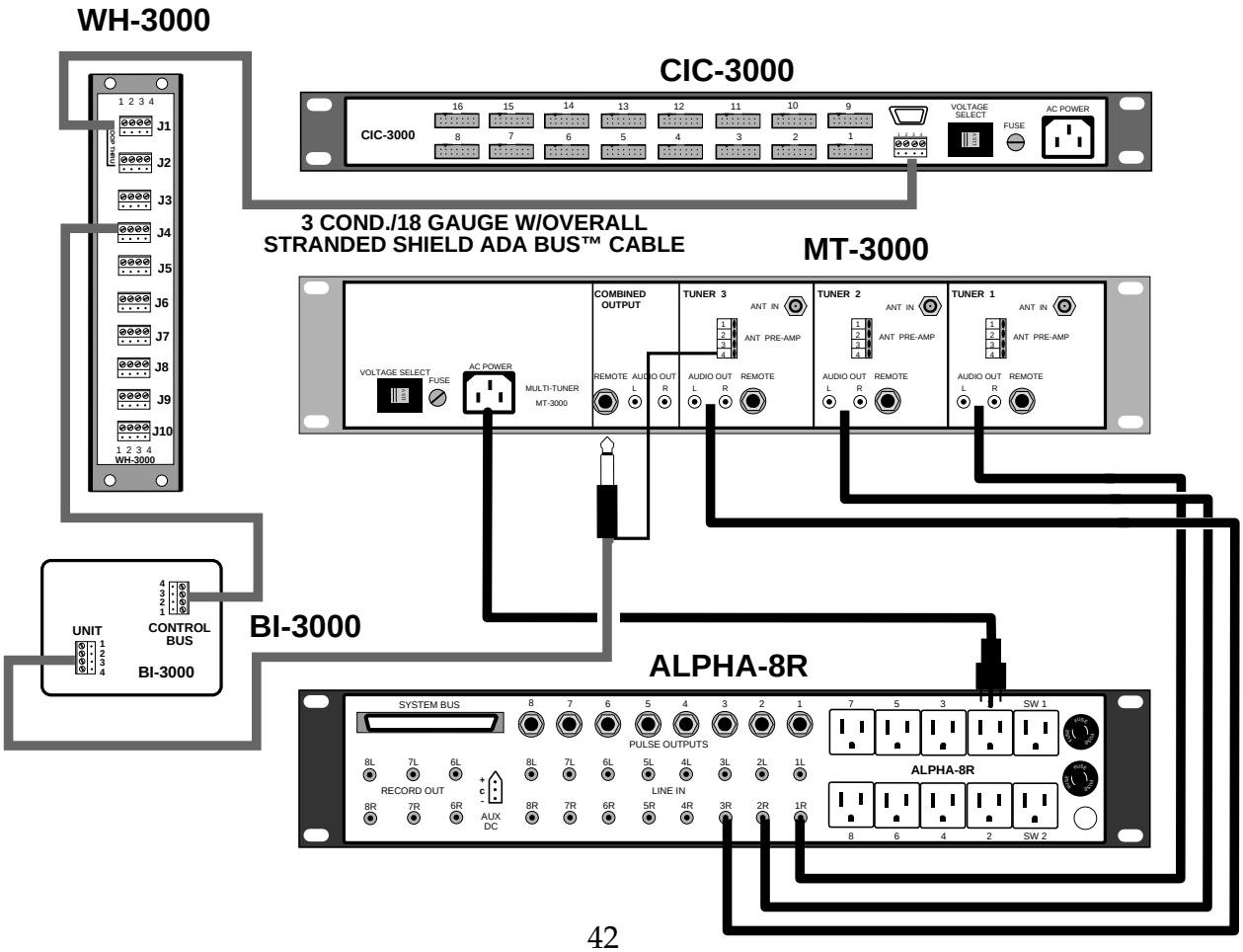


Installation of the MT-3000 in a System 3000

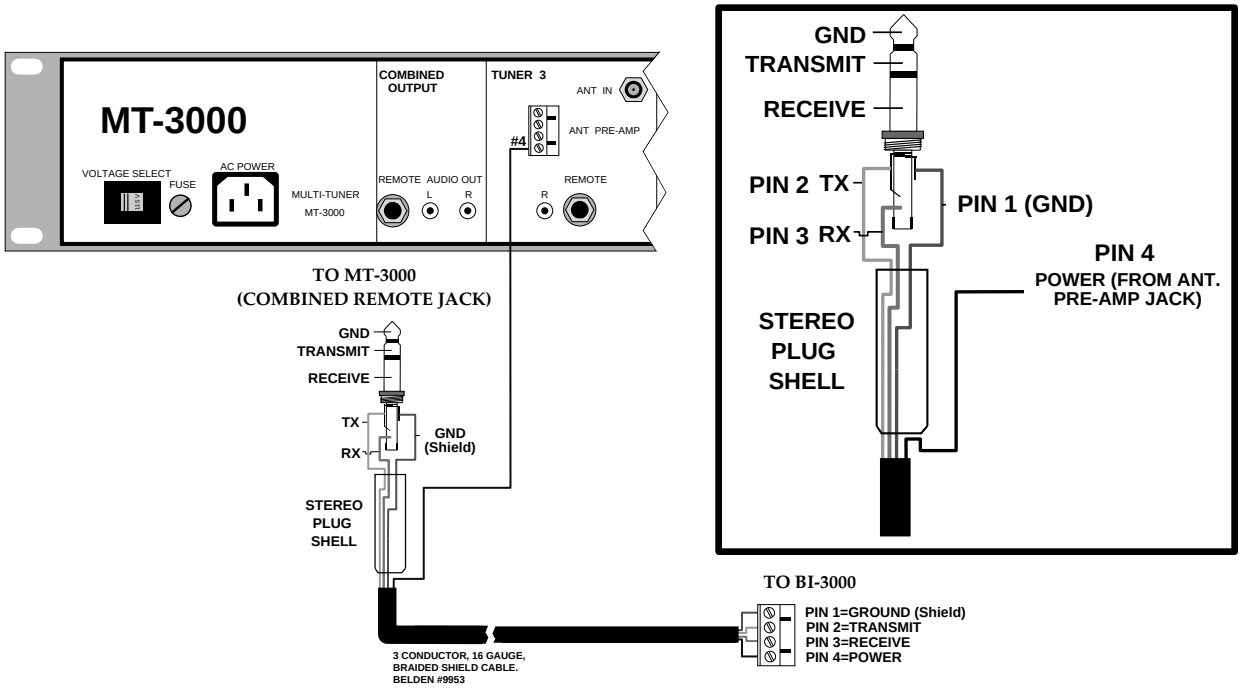
In a System 3000, the MT-3000 talks directly to all keypads through the ADA Bus™. In addition to the single transport function that normally would be accessed through the 5 Volt pulse, the MC-3000 Keypad can control several additional MT-3000 Tuner functions and display a tuner's frequency and preset symbols (i.e. *101.90 JAZZ*). The 1/4" mono phone jacks are not needed per tuner module as in a Standard System Omega. Unlike all other ADA Bus™ components, the ADA Bus™ port on the MT-3000 is a custom 1/4" stereo connector with a special voltage lead which connects to a tuner module's antenna preamp connector. This ADA Bus™ cable must run from the MT-3000 to a BI-3000 Bus Isolator. The BI-3000 then connects to a fused input on the WH-3000 (J3 - J10). Typically, this custom stereo 1/4" cable is provided with the MT-3000.

If you are planning a system with both Standard Omega Keypads and System 3000 Keypads, you will need to connect both the ADA Bus™ stereo phone jack connector and the three 1/4" mono phone jack connectors to permit both types of keypads control of the MT-3000.

The MT-3000's ADA Bus™ port can also be used to provide a 5 Volt trigger input when using the MT-3000 as a super tuner (using the combined RCA tuner outputs which access all three tuner modules, in order, for a total of sixty presets. If you are planning on using the MT-3000 as a super tuner in a system which combines both System 3000 and Standard System Omega Keypads, please consult with ADA as the MT-3000's control options. The DIP Switch setting described on the following page sets the ADA Bus™ input to operate the MT-3000 on the ADA Bus™ not as a super tuner.



Connecting an MT-3000 Multi-Tuner to the ADA Bus™



Setting the ADA Bus™ Address on the MT-3000

The MT-3000 should operate properly when it comes from the factory. However, if there is a problem, first check if the tuner's ADA Bus™ address is set to 0. You can check or change the tuner's address by following these steps:

STEP ONE: Press the LABEL button on the MT-3000 until its light begins to flash.
STEP TWO: Press the MONO/ST button until you have found ADA Bus™ address **0**.
S**TEP THREE:** Press the LABEL button again until its light stops flashing.

Connecting an MT-3000 Multi-Tuner to the ADA Bus™

The MT-3000 can be used in several systems, some of which do not require connection to the ADA Bus™. When connecting an MT-3000 to a System 3000, you must check to see if the COMBINED OUTPUT REMOTE jack is programmed to send and receive information. **NOTE: The unit should arrive with the jack pre-programmed to operate in a System 3000; therefore, check if the MT-3000 operates on the ADA Bus™ properly BEFORE following these steps:**

STEP ONE: Disconnect the power cord from the MT-3000.

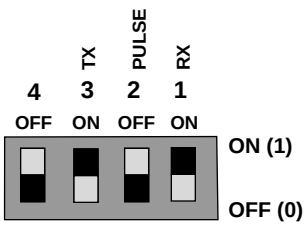
STEP TWO: Remove the top cover screws, then the cover. Keep these screws in safe place to avoid losing them.

STEP THREE: Locate the four position D.I.P. switch labelled "SW 4." This switch can be found on the upper right-hand portion of the main board.

STEP FOUR: Make sure that positions **1** and **3** are **ON**. Make sure that positions **2** and **4** are **OFF**.

STEP FIVE: Replace the top cover and screws.

SWITCH SETTINGS FOR ADA Bus™ OPERATION



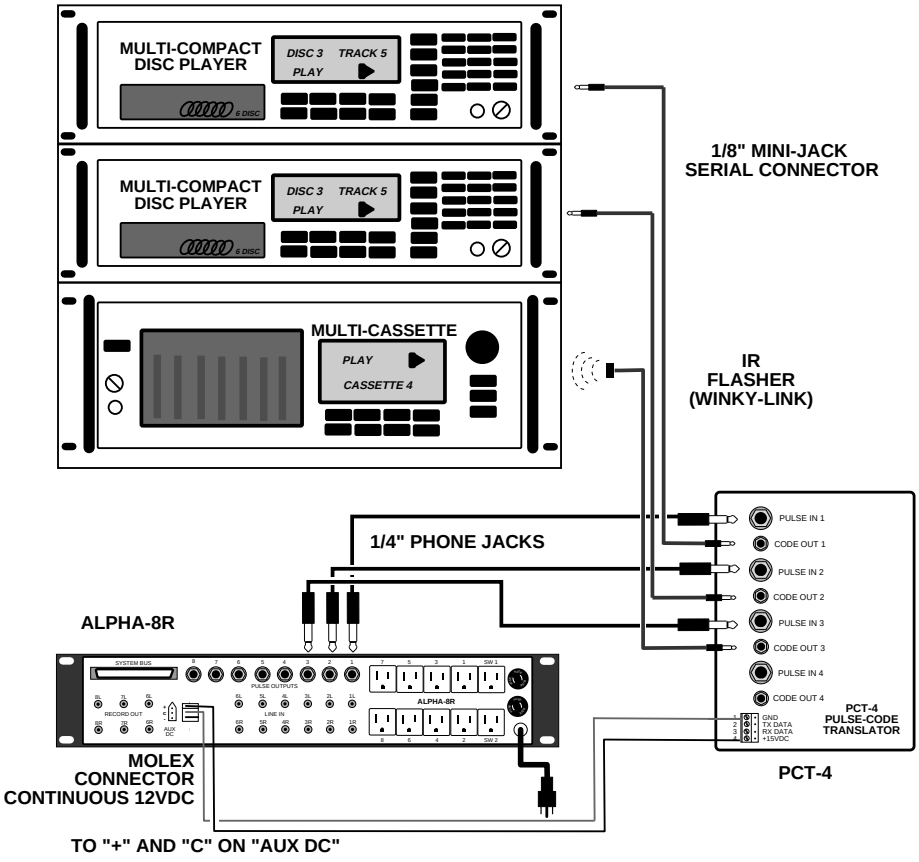
"SW 4"

The PCT-4 Source Controller in a Standard System Omega

A Standard System Omega is capable of providing a single source transport command for each of the eight source components on the system. After selecting a source from the front panel controls of the CR-Units, Standard Omega Keypads, or MC-009 IR remote control, repeated pressing of that source button causes the Alpha-8R to release a 5 Volt DC Pulse from that particular source's 1/4" mono phone jack output on the back of the Alpha-8R. This 5V pulse can be used to trigger a PCT-4 or PCT-8 to access one transport function for that source (i.e. tuners-preset skip, CD changers-disc skip, Cassette Changers-cassette skip). It is recommended that you select source components which incorporate a "timer/play" mechanism, such that, once the component is plugged in, it automatically engages into play. This will permit the source to engage with the touch of one button, reserving the single transport command for something other than just play.

ADA recommends using the PCT-8 for source control as this unit is on-sight programmable (load and custom label IR codes) and operates 8 sources with the same features as the PCT-4.

The PCT-4 Source Controller is capable controlling up to four different source components via a source's serial input (usually an 1/8" mini connector on the rear of the unit) or via an IR flasher (dealer provides) stuck over the IR receiver of the source component. Furthermore, the PCT-4 is capable of being used as an IR repeater, passing complete source IR commands to the source component from any system IR receiver. In order to permit IR repeating in a Standard System Omega, a special wire harness, the WH-IRX-8, will be needed to isolate zone specific IR codes and pass only source codes. This will be discussed in the upcoming pages under "Installation of the WH-IRX-8". In a System 3000, the WH-IRX-8 will not be needed for source IR repeating.



The PCT-4 is a preprogrammed device and usually is loaded with twelve source component codes. It has the ability to store up to seven IR commands per source. You will need to consult with ADA as to which IR codes are already available. If a particular source is not in the PCT-4's library, you will need to send both the source component and its IR remote control to ADA for programming. This process takes two to three weeks and a one time programming fee is assessed per source component. Not all source components can be coded into the PCT-4.

As many a two PCT-4s can be used per system to control a total of eight sources. If you are working with more than four sources and using some sources which are not in the PCT-4's library, you should consider using the PCT-8. The PCT-8 can handle as many as eight sources and permits in-the-field programming. Consult with ADA as to which unit will better operate in your system.

The PCT-4 has two types on inputs. Four 1/4" mono phone jacks are for the 5 Volt pulse generated by the Alpha-8R Line Driver. The removable four pin screw terminal connector is usually used as an ADA Bus™ input however, since a Standard System Omega has no CIC-3000, the PCT-4 will need to receive its voltage supply from the Alpha-8R's AUX DC output. When IR repeating through an MC-1609 Keypad with IR Receiver or IRR-288 IR Receiver using a WH-IRX-8, the IR signal also inputs to this connector. The PCT-4's four source outputs connect to the source's serial connector or a mini flasher (mini-jack or flasher not included).

Typically, ADA will preprogram the PCT-4 with the source names taped to the top cover next to the input and output jacks. Each PCT-4 has a library sheet associated to it. The PCT-4's IC Chip Release number matches this library sheets release number. Each library sheet will indicate DIP Switch positions for several sources. If you need to change a ports source setting to another source you will need to refer to this sheet for the new DIP Switch settings. The four DIP Switch banks are marked SW1 - SW4 on the main circuit board and correspond respectively to source outputs 1-4.

Each DIP bank has eight switches which set the port to a particular source make/model and single transport function. Switch numbers 4-8 are set to determine the source make and model. Switch numbers 1-3 are set to determine which of the seven possible functions you wish to access when that source's button is repeatedly pressed on the room keypads. Please note, the PCT-4 Library Sheet indicates the a "0" for "Off" and a "1" for "On". The top of the Library Sheet indicates the switch number as it refers to the "0"s and "1"s. Some sheets read left-to-right for switches 1-8. Other sheets, because they are generated by a computer, read right-to-left for switches 1-8. It is very important that you set the PCT-4's DIP switches in the correct order with respect to the Library Sheet which matches your PCT-4's release number. Not all sources have all seven functions. The chart below specifies the source type and the single function based on switch settings 1-3.

	DIP SWITCHES 1, 2, & 3						
OPTION	1	2	3	CD CHANGER	AM/FM TUNER	CASSETTE CHANGERS	DOUBLE CASSETTE
MAIN	OFF	OFF	OFF	DISC SKIP	PRESET SKIP UP	TAPE SKIP UP	PLAY
<<	ON	OFF	OFF	TRACK SKIP DN	TUNE DOWN	RANDOM PLAY	FAST REWIND
>>	OFF	ON	OFF	TRACK SKIP UP	TUNE UP	FAST FORWARD	FAST FORWARD
>	ON	ON	OFF	PLAY	PRESET SKIP UP	PLAY FORWARD	PLAY FORWARD
<	OFF	OFF	ON	RANDOM PLAY	PRESET SKIP DN	PLAY REVERSE	PLAY REVERSE
^	ON	OFF	ON	STOP	N/A	STOP	STOP
I I	OFF	ON	ON	PAUSE	N/A	PAUSE	PAUSE

IR Repeating in a Standard System Omega

The WH-IRX-8 Wire Harness is designed to filter out ADA IR control codes permitting only non-ADA IR codes (such as those from source components) to pass to the PCT-4 source controller.

In a Standard System Omega, all keypads and IRR-288 IR Receivers are zone specific and connect directly to a ZS-1 or CR-Unit, whether the termination is direct or via a WH-8000 Wire Harness (or SODC-8 Wire Harness). When using MC-1609 Keypads with IR Receivers or IRR-288 IR Receivers and coupling them to an IR repeater (the PCT-4), you are in effect, grounding all IR receivers to the same line. While the keypads would still operate their own room individually, aiming an MC-009 handheld IR Remote at an MC-1609 or IRR-288's IR receiver, all rooms with IR would turn on at once to the same source, adjust volume and tone levels together, and turn off at the same time. The WH-IRX-8 removes this problem while permitting non-ADA IR command codes to pass through to a single screw termination connector which is then wired to a PCT-4 (or PCT-8).

You will need one WH-IRX-8 for every eight rooms with IR. For example, if you are installing a 16 room home with 16 keypads, where only 7 rooms have IR Receivers, you would still use two WH-8000s. However, because only 7 rooms have IR Receivers, you would only require one WH-IRX-8.

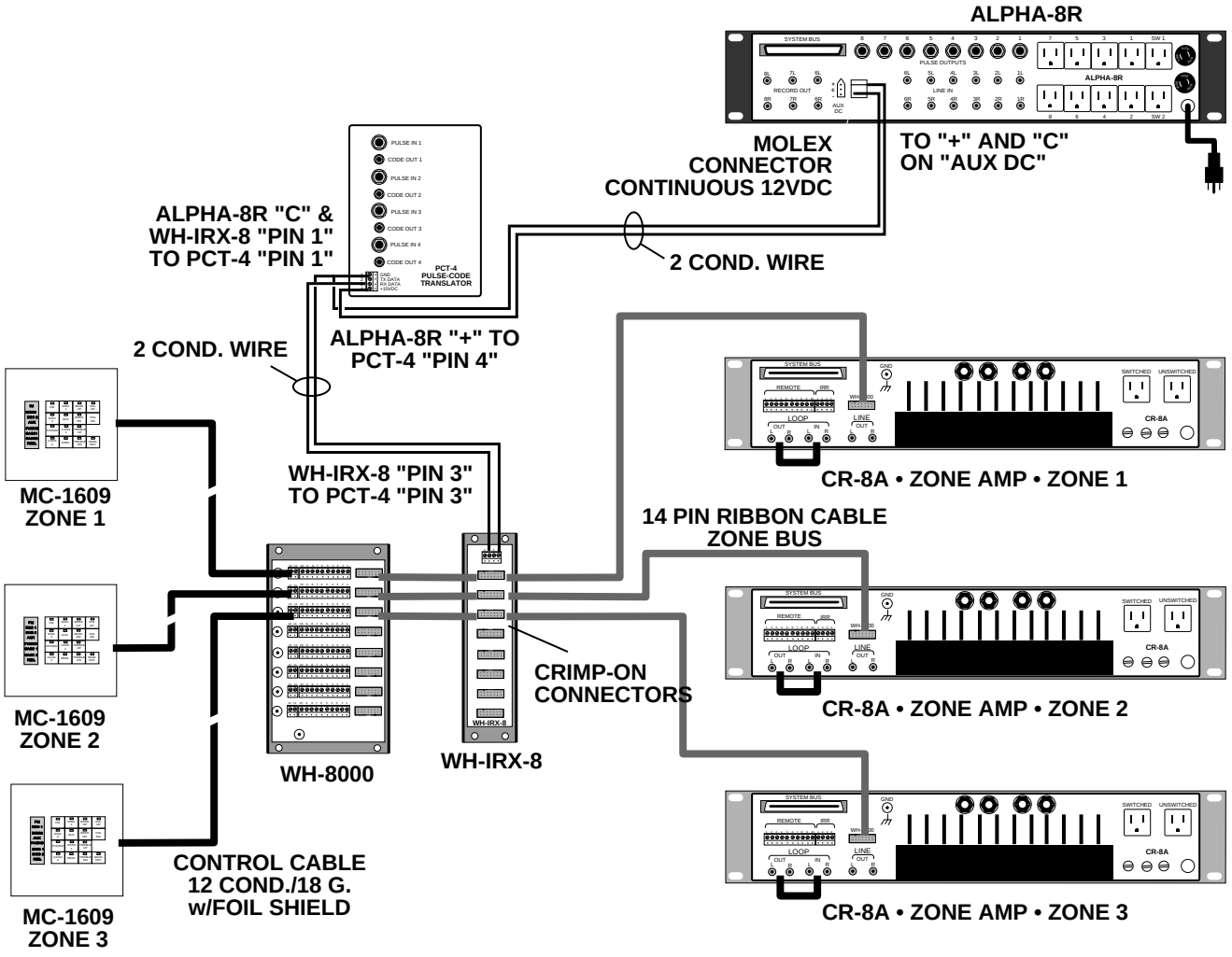
The WH-IRX-8 is usually mounted in proximity to the WH-8000 (or SODC-8) behind the equipment rack and only permits connection of MC-1609s or IRR-288s via the 14 pin ribbon cable connector, the Zone Bus. Eight 14 pin connectors are found on the WH-IRX-8. You will need to place a crimp-on ribbon cable intermediate connector (see pages 28 & 29) on the Zone Bus for each room with an IR receiver that requires IR repeating. In some installations, Guest Bedrooms, while although they may have an MC-009 for IR control, may not need to be configured for IR repeating. You will only need to connect rooms which require IR repeating to the WH-IRX-8. Again, make certain that all crimp-on connections are clean.

The removable four pin screw terminal connector is used to wire the WH-IRX-8 to the PCT-4 (or PCT-8). If you are using several WH-IRX-8s, simply parallel all connections maintaining the proper numeric code for all wires.

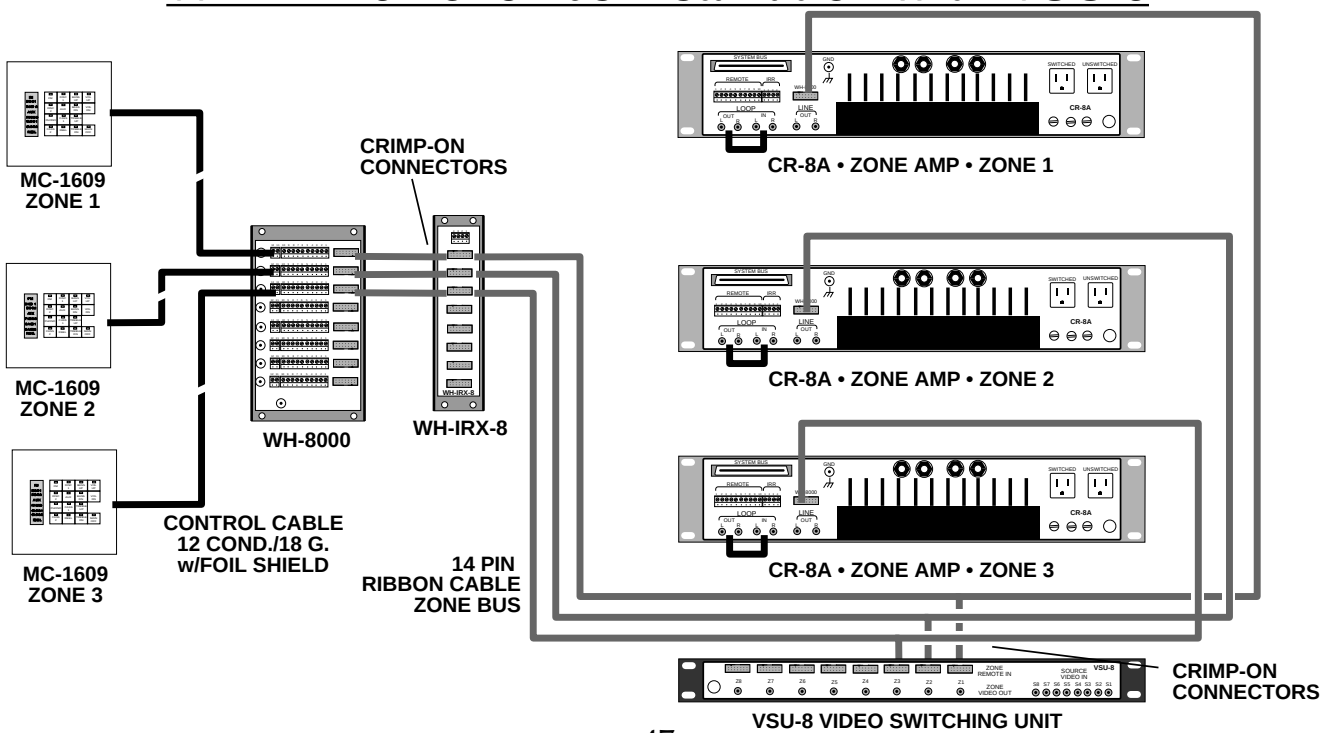
A quick note regarding IR repeating when using several identical source components on the same system. The PCT-4 also permits selective IR repeating were you can set specific sources to receive IR information from receivers throughout the house while other sources on the same PCT-4 do not. This is especially important if you are using identical source components with the same IR code settings. For example, three identical CD players would all function together from a hand-held remote. If these units were CD1, CD 2, and CD 3, you could turn off the IR repeating function for CDs 2 and 3 leaving CD 1 on line for control from a handheld remote. The next section on "PCT-4 Installation" details this option.

The PCT-4 SW5 Dip Switch Bank has four switches designed to pass (on) or not pass (off) IR codes for source ports 1-4. DIP switches 5-8 correspond to Ports 1-4 respectively. DIP switch 4 must also be on or the PCT-4 will not pass any IR codes at all.

WH-IRX-8 Standard Installation

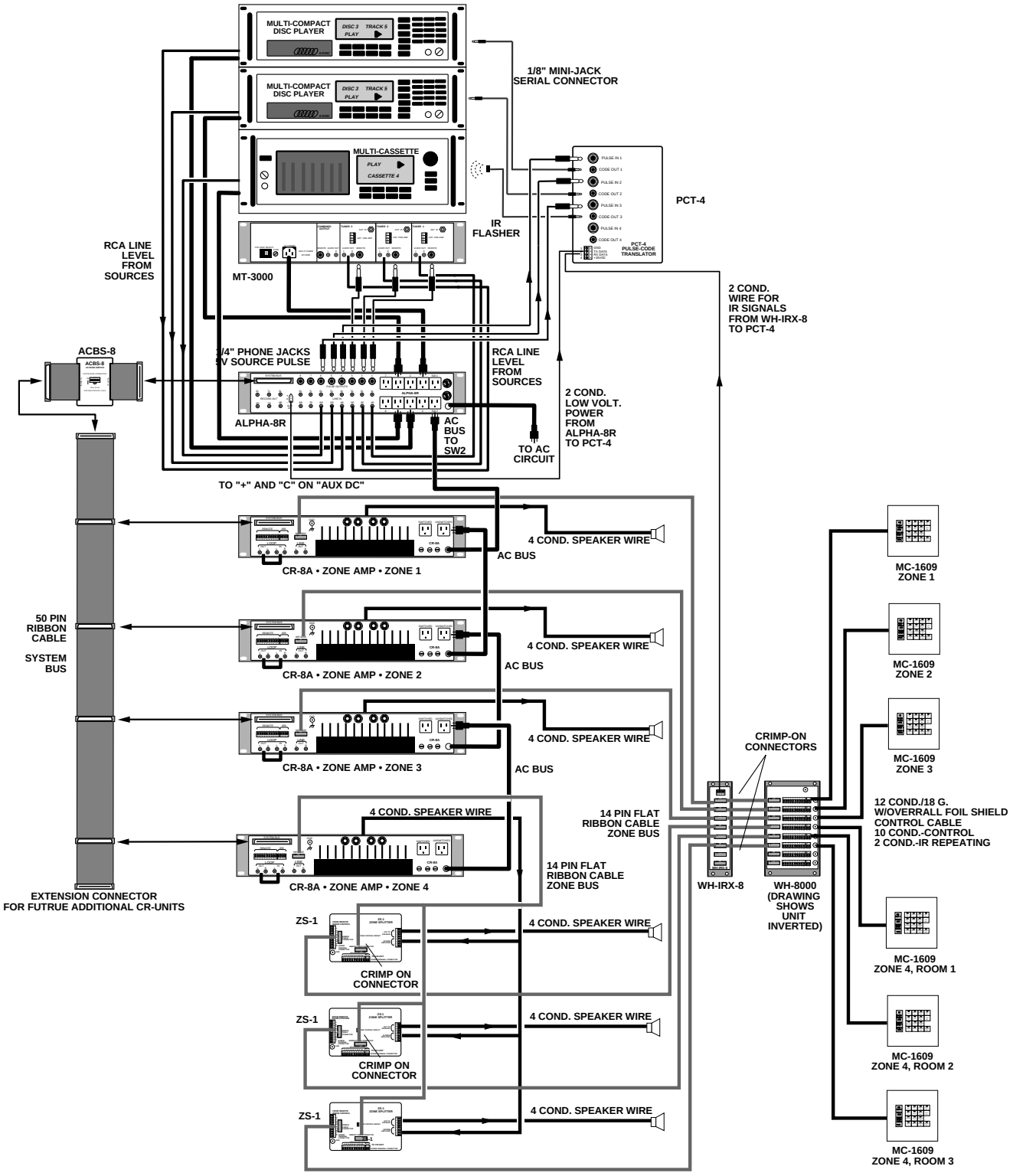


WH-IRX-8 Zone Bus Installation with VSU-8



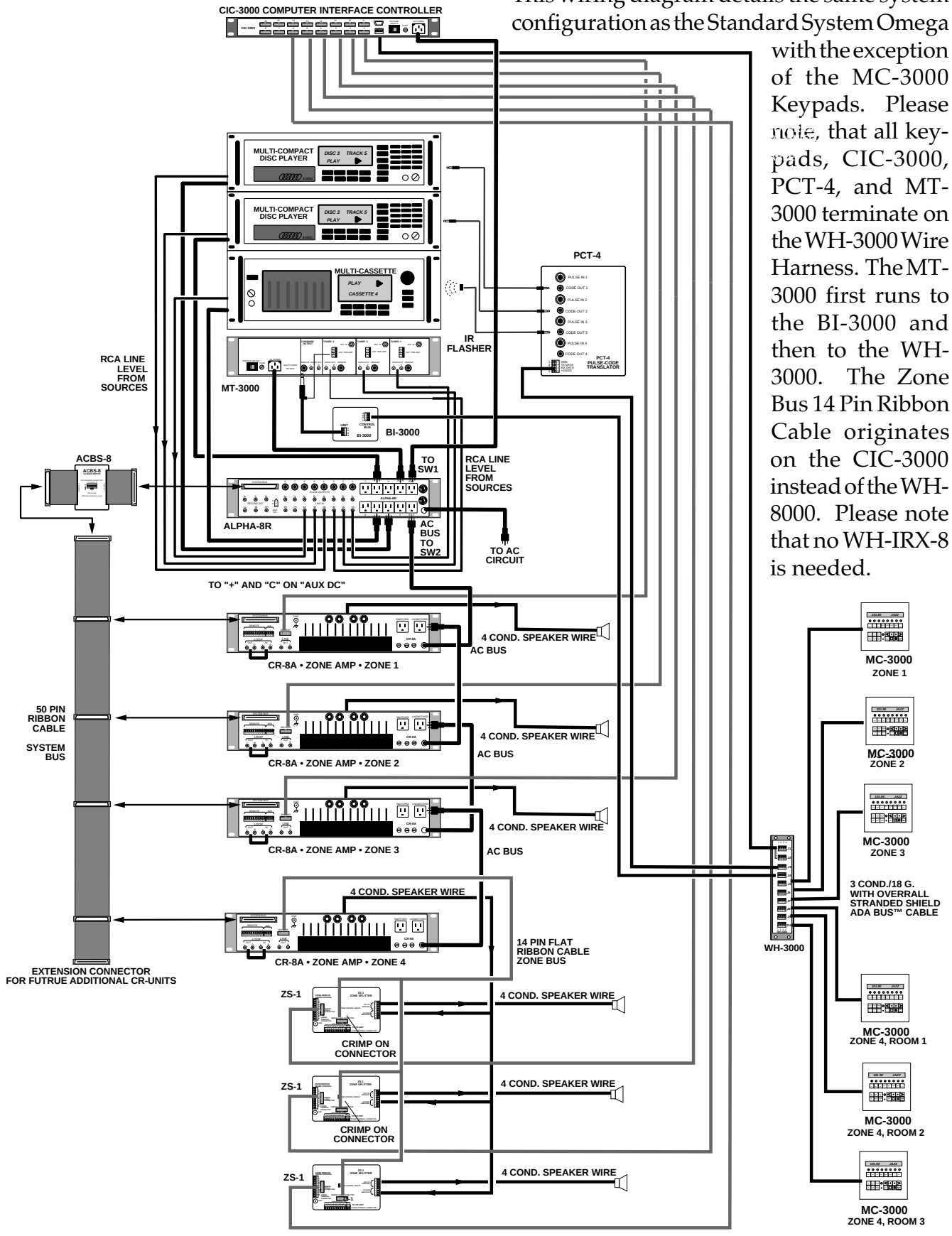
Standard System Omega Composite Wiring Diagram

The wiring diagram below combines several aspects of a Standard System Omega mainframe as discussed in the preceding pages. While not all components discussed are detailed below, the goal of this diagram is to highlight the building block versatility of System Omega. Please note, close inspection of the WH-8000 shows that it is inverted for this particular drawing.



System 3000 Composite Wiring Diagram

This wiring diagram details the same system configuration as the Standard System Omega with the exception of the MC-3000 Keypads. Please note, that all keypads, CIC-3000, PCT-4, and MT-3000 terminate on the WH-3000 Wire Harness. The MT-3000 first runs to the BI-3000 and then to the WH-3000. The Zone Bus 14 Pin Ribbon Cable originates on the CIC-3000 instead of the WH-8000. Please note that no WH-IRX-8 is needed.



PCT-4 Installation

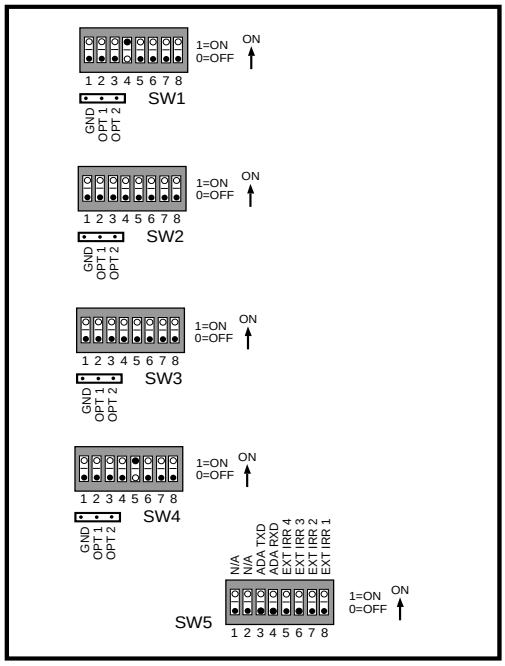
Connecting a PCT-4 to the ADA Bus™

ADA's PCT-4 Pulse Code Translator can be connected to the ADA Bus™ with the same four-pin connector that is on ADA Bus Components (except the MT-3000). The following is a detailed description of how to setup the PCT-4(s) in your system.

IMPORTANT: Before making any changes to the D.I.P. switch settings within the PCT-4, make sure to disconnect the four-pin ADA Bus™ connector, thus cutting power to the unit. Also, you will know which revision of the "PCT-4 Library" sheet to refer to when making the D.I.P. switch adjustments by making sure that the revision number at the top of the library sheet corresponds to the revision number on the microprocessor chip in the PCT-4.

Each of the mini-pin ports on the PCT-4 has a corresponding set of D.I.P. switches. Each set of switches can be used to control the transport functions on the piece of source equipment that is connected to it. These transport functions are activated with the transport control buttons on the MC-3000 music control. To set the D.I.P. switches labelled SW1-SW5, which are located inside the PCT-4, follow these steps:

A) Remove the cover of the PCT-4 by taking out the four corner screws. Pull out the unit, then remove the remaining screws from the cover. At this point, you can pull the bigger board off, thus exposing the D.I.P. switches.



SW 1 - SW 4

B) Refer to the sheet entitled "PCT-4 Library" to select the **STANDARD** transport function option for the specific piece of source equipment that you want to control. Keep in mind that 1=ON and 0=OFF (OPEN). Even though you have set the D.I.P. switch for the single STANDARD function, the other functions listed for the particular piece of source equipment on the library sheet will be performed, as well. This type of multi-function transport operation is called Advanced Transport Control.

SW 5

C) Make sure that positions 3 and 4 on SW 5 (labelled ADA TXD and ADA RXD) are both on. If you want to control a piece of source equipment with its original remote control, as well as from the MC-3000 keypad, you could do this by selecting the appropriate EXT IRR position on SW 5. For example, if you wanted to control the source unit connected to CODE OUT 1 with its remote control, put SW 5, position 8 in the ON position. For most applications, positions 5 through 8 should be on. ***NOTE: If the MC-3000 control is mounted in a room with a lot of fluorescent lighting, a problem might occur if the EXT IRR control is activated on SW 5 because of extraneous interference caused by the fluorescent. To remedy this type of problem, simply make sure that positions 5 through 8 on SW 5 are OFF (OPEN).***

D) When you are finished programming SW1 - SW5, reassemble the unit and replace the front cover and screws.

Using the PCT-4 with an IR Flasher

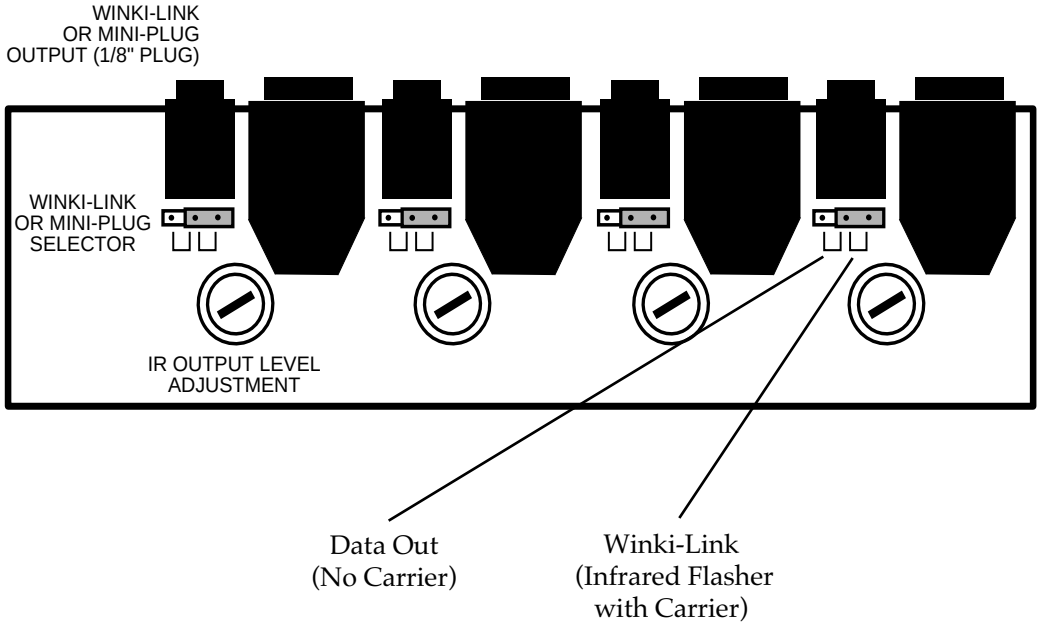
If you are using a piece of source equipment that does not have a mini remote input jack, you can attach an IR flasher (Winki-Link) to the front of the unit. Plug the flasher into the Mini Code Out jack on the front of the PCT-4 that corresponds to the particular source. With this setup, the PCT-4 will transmit the correct code when it is activated by the MC-3000(s) in the system. You can control the signal strength of the IR flasher within the PCT-4. Follow these steps:

A) Remove the cover of the PCT-4 by unscrewing the four corner screws. You will see a small board attached to the cover. On this board, there are four miniature pots, each corresponding to one of the Code Out jacks. Also, there are four sets of three-pin jumper groups above each miniature pot.

B) If you are using an IR flasher to control any of the sources, you must jump across the two pins on the right in the three-pin jumper group(s) (see picture) that corresponds to the source number(s).

C) Adjust the IR Output Level pot(s) as is necessary.

D) Replace the front cover and screws.



Note:

Any codes listed on the "PCT-4 Library" sheet that have a 1 in the far right-hand position (number 8) can only be used for SW1, SW2, and SW 3 (Code Outs 1-3). A piece of equipment that uses one of these codes cannot be connected to SW4 (Code Out 4). The PCT-4 will not operate correctly if the appropriate audio connections for the source equipment have not been made.

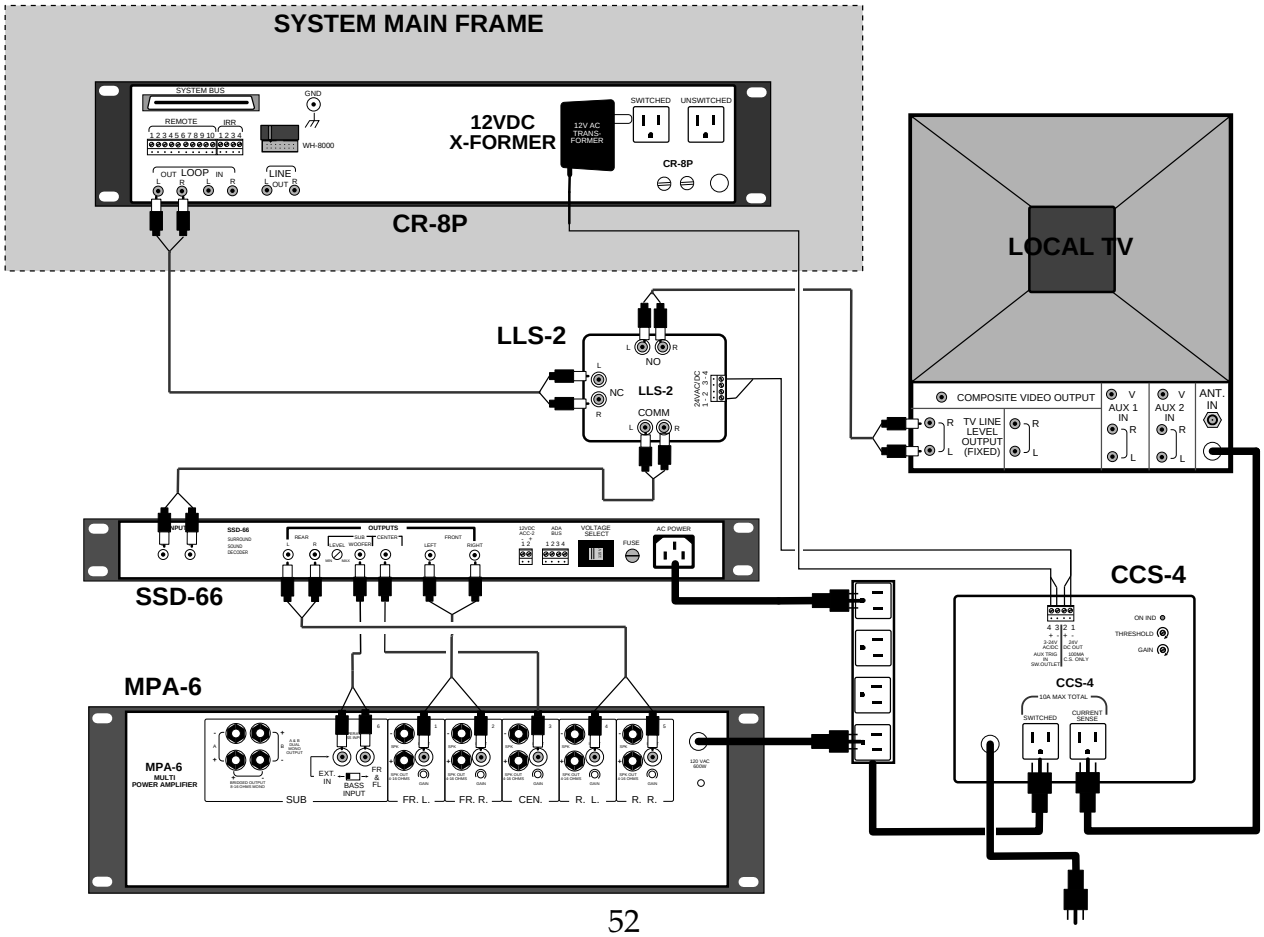
If you have two PCT-4s in your system, you must address each one separately. SW 4, position #8 on PCT-4 #1, should be set to 0. SW 4, position #8 on PCT-4 #2, should be set to 1.

Standard System Omega Home Theaters

A Standard System Omega permits the inclusion of a home theater system on any zone but presupposes that no ZS-1 Zone Splitters are used and any zone with a home theater stands as a single room-zone. As with any high-end home theater decoder it is best to pass a fixed line level signal to the processor for both music, TV, and film. ADA's SSD-66 Dolby ProLogic Surround Sound Decoder or SSD-66THX LucasFilm Home THX Controller operate as a room's preamplifier while the CR-8P, Zone Preamplifier for that zone, merely acts as a source selector. This allows a user to select a source on the room's keypad. Volume can then be controlled using the SSD-66's hand held remote control (SSD-66 REM). The MPA-6 Multi-Channel Surround Sound Amplifier is illustrated in the following diagrams. Other multi-channel power amplifiers are also available from ADA including the Delta-650, MPA-5, and MPA-500/BPA-500 High Powered Home Theater Amplifiers (THX).

Option 1 - Decoder and Surround Amp Located Near TV

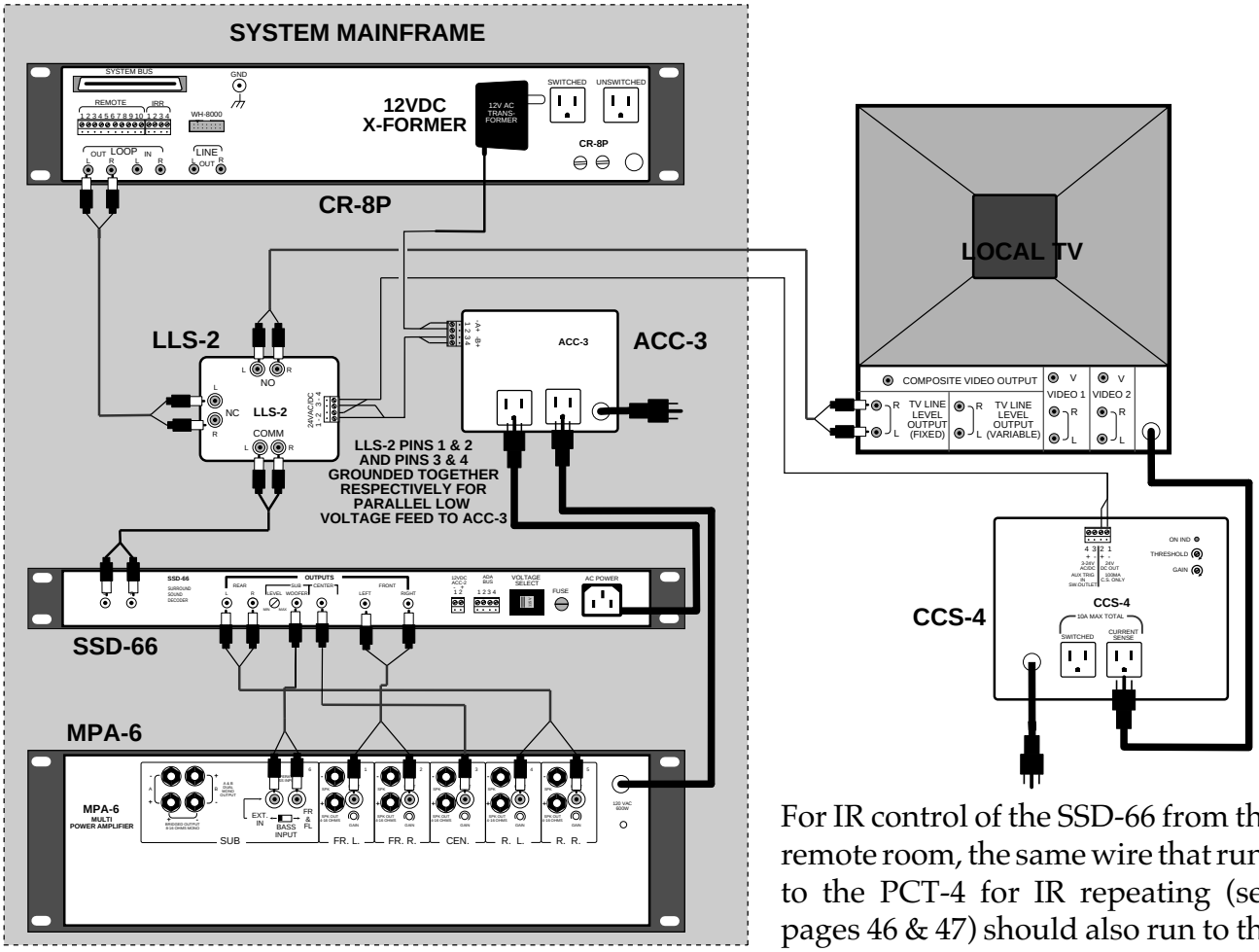
The most common application for a home theater system is based around a TV and local video sources with the surround sound decoder and surround sound amplifier located near the TV set. The video sources are plugged directly into the TV and the TV acts as both a video tuner and input selector for VCR and Laser Disc. These video sources are usually local to just the home theater room. The surround decoder and surround sound amplifier are used for processing both the TV's output (including video sources) and the central System Omega's audio sources. ADA provides two devices, the CCS-4 and LLS-2, which work in conjunction with each other, permitting automatic sharing of the home theater decoder and amplifier with both the central system and the local video system. The transformer illustrated <u>is not</u> provided by ADA.



The CCS-4 is a both a current sensing device (which triggers its switched AC outlet and low voltage output) and also a low voltage sensing device (which only triggers its switched AC outlet). The LLS-2 is an audio line level switcher which is triggered by a low voltage signal (from the CCS-4 when only the TV is turned on). Using these two products together permit the SSD-66 and MPA-6 (Multi-Channel Surround Sound Amplifier) to automatically turn on when either the CR-8P Zone Preamplifier or the TV are turned on. Furthermore, whenever the TV is turned on, its line level output will override that of the CR-8P. When the TV is turned off, the line level input to the decoder will reset to the CR-8P (music system). Please note, that ADA recommends using the fixed line level outputs from both the TV and CR-8P (Loop Output). When using the fixed line level outputs of the TV and CR-8P, you will need to adjust the room's volume levels using the SSD-66's font panel buttons or handheld IR remote control.

Option 2 - High Power System or Centrally Located Decoder and Amp

This application is ideal when all the equipment needs to be located at the central equipment location or you are using a MPA-500 THX Multi-Channel Amplifier (or any other high power amplification combination regardless of the location of the home theater equipment). Much like Option 1, this option uses the LLS-2 and CCS-4. However, since the decoder and amp are located at the mainframe, an ACC-3 will be used to power the decoder and amplifier automatically when either the TV or the CR-8P are turned on (for high power systems the ACC-3 is used because it can handle 15 Amps while the CCS-4 only handles 10 Amps). This combination of LLS-2, CCS-4, and ACC-3 operates the same way as Option 1 with the amp and decoder engaging with either the TV or CR-8P, where the TV overrides the music system.

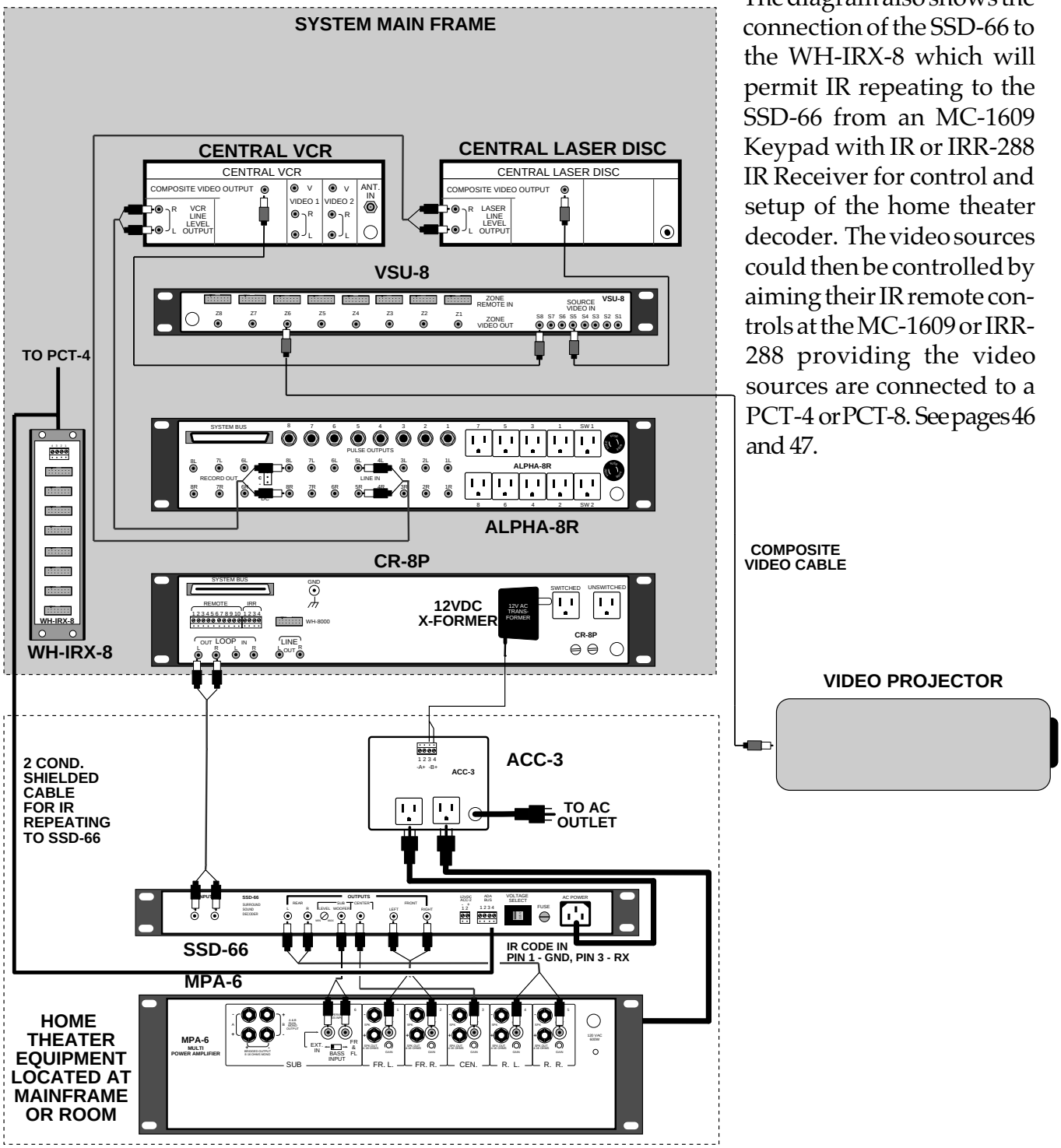


For IR control of the SSD-66 from the remote room, the same wire that runs to the PCT-4 for IR repeating (see pages 46 & 47) should also run to the SSD-66 (shown on page 54).

Standard System Omega Home Theaters - Continued

Option 3- Projector with Central (Only) Video Sources

For Standard System Omegas with video sources among the eight possible central sources (using the VSU-8 for video-follow-audio switching), the following diagram permits the home theater equipment to be located at the mainframe, in the home theater, or in a totally different location (i.e. a closet near the home theater room). When using an ACC-3, the SSD-66 and MPA-6 will automatically engage when the zone is turned on. The 12VDC transformer is not provided by ADA



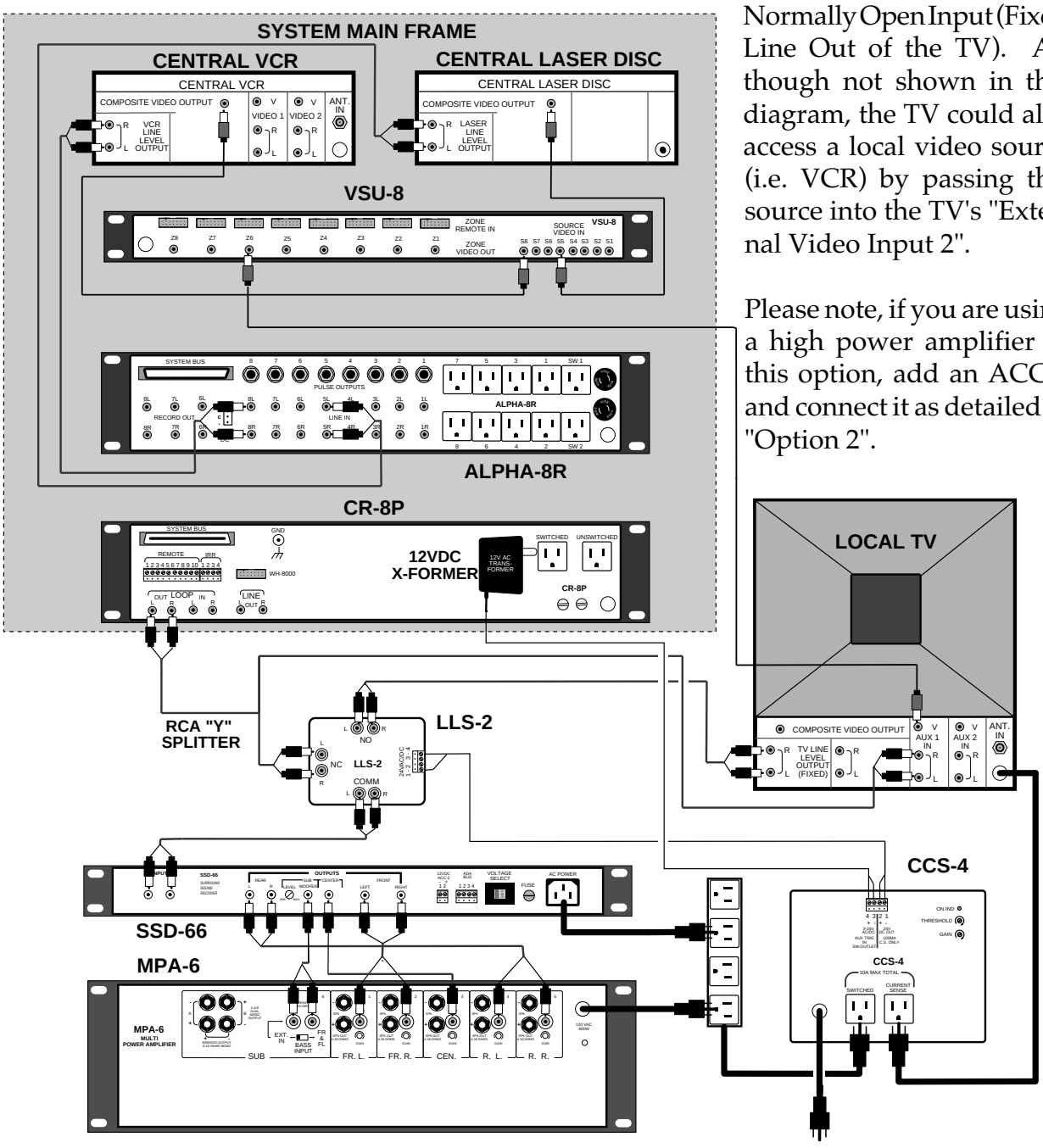
The diagram also shows the connection of the SSD-66 to the WH-IRX-8 which will permit IR repeating to the SSD-66 from an MC-1609 Keypad with IR or IRR-288 IR Receiver for control and setup of the home theater decoder. The video sources could then be controlled by aiming their IR remote controls at the MC-1609 or IRR-288 providing the video sources are connected to a PCT-4 or PCT-8. See pages 46 and 47.

Option 4- Central and Local Video Sources

This application is common for homes with more than one home theater, where the primary home theater system uses a projector which only accesses central video sources as in Option 3, while a secondary home theater system (i.e. in the Master Bedroom) accesses both the central video sources, local TV's tuner, and perhaps a local VCR connected to and switched by the TV.

As in Option 1, the CCS-4 and LLS-2 are used together to engage the decoder and amplifier when either the TV or the CR-8P are turned on, with the TV audio overriding the CR-8P's audio signal automatically. To access the central video sources on the TV, press the appropriate source button on the room's keypad and set the TV to "External Video Input 1". The VSU-8 will pass the corresponding video signal directly to the TV. The audio from the CR-8P will need to be "Y" split to pass audio to both the LLS-2 (Normally Closed Input - for Music) and to the TV ("External Video Input 1") because whenever the TV is on, the LLS-2 switches over to its Normally Open Input (Fixed Line Out of the TV). Although not shown in this diagram, the TV could also access a local video source (i.e. VCR) by passing this source into the TV's "External Video Input 2".

Please note, if you are using a high power amplifier in this option, add an ACC-3 and connect it as detailed in "Option 2".



System 3000 Home Theaters

As in a Standard System Omega, the inclusion of a home theater system on any zone presupposes that no ZS-1 Zone Splitters are used and any zone with a home theater stands as a single room-zone. As with any high-end home theater decoder it is best to pass a fixed line level signal to the processor for both music, TV, and film. The problem with most other multi-room systems is that the combination of a zone's source selector, surround sound decoder, and room keypad (or IR) has always been somewhat of a mismatch. The controls may communicate to the equipment but the equipment never communicates back to the user.

ADA has solved that problem through the incorporation of the ADA Bus™. In a System 3000, all major components actually communicate to each other. This bidirectional flow of data has unique applications, especially in the world of home theaters.

In a System 3000, the SSD-66 Dolby ProLogic Surround Sound Decoder or SSD-66THX LucasFilm Home THX Controller operate as a room's preamplifier while the CR-8P Zone Preamplifier for that zone merely acts as a source selector. This allows a user to select a source on the room's MC-3000 Keypad or MC-0064 Bidirectional IR Remote. The CIC-3000 communicates to the appropriate CR-8P through the Zone Bus ribbon cable and the CR-8P then passes the selected source's audio signal to the SSD-66 through the CR-8P's fixed line level output ("Loop Out"). When the user presses the keypad's volume up or down buttons, the volume levels on the surround sound decoder will change, not the CR-8P, while displaying the volume levels per channel on both the SSD-66 and the room's keypad. Furthermore, since the SSD-66 does not have any bass or treble functions, the room's keypad would have Mode, Volume Preset, Time Delay, and Stereo Enhancement buttons instead of bass up, bass down, treble up, and treble down buttons. Again, when these surround sound decoder buttons are pressed, the same information that appears on the SSD-66 itself also is displayed on the room's keypad.

The System 3000 is very flexible, permitting all sixteen rooms per CIC-3000 to incorporate an SSD-66 (as many as sixteen CIC-3000s can be used per system to permit a total of 256 home theaters on the same system). While this is not a typical installation, the same flexibility that permits this type of expansion, also comes into play when only one or two SSD-66s are used per system. Furthermore, because the SSD-66 is controlled over the ADA Bus™, its functions can be accessed even if the unit were to be located in another room other than the home theater. In fact, all 256 SSD-66s could be racked in one single mainframe location, while providing individual control for each room's SSD-66 from the rooms' keypads.

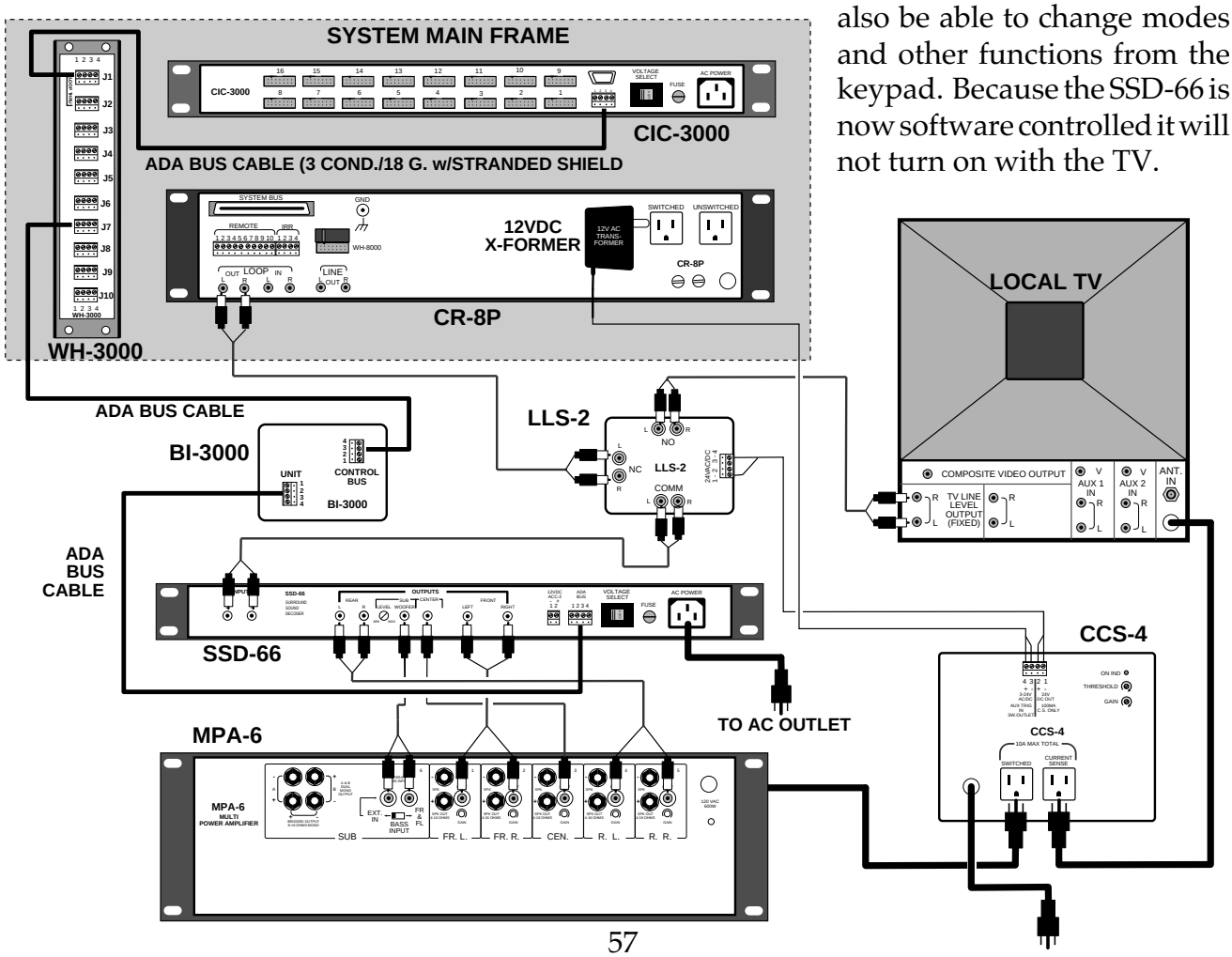
Each port on the CIC-3000 is zone specific in that it connects directly to a CR-Unit or ZS-1 Zone Splitter. When the CR-8P for the home theater is connected to port one of the CIC-3000, the SSD-66's address will need to be set to "00". The MC-3000 (or MC-0064) which is programmed to communicate with port one on the CIC-3000, will also be programmed to communicate with the SSD-66 for that zone. If the CR-8P for the home theater were on the CIC-3000's port number 5, the SSD-66 for that room would have to have its address set to "04". The relationship to CIC-3000 ports and SSD-66 addresses is always the CIC-3000 port number minus one. If two SSD-66s are used for two separate home theaters, one on CIC-3000 port number 6 and one on port number 14, the corresponding SSD-66s would have their addresses set to "05" and "13" respectively. The chart on page 60, details the relationship of CIC-3000 port number to SSD-66 address number.

The SSD-66 connects to the WH-3000 much like the MT-3000 Multi-Tuner. You must first connect the SSD-66 to a BI-3000 Bus Isolator and then connect the BI-3000 to the WH-3000 Wire Harness. The BI-3000 has specific Inputs and Outputs.

The SSD-66 comes with a remote control (the SSD-66 REM) which will control the SSD-66 when its address is set to "00" (on CIC-3000 port #1). If the SSD-66 were to be located away from the home theater room, aiming the SSD-66 REM at a MC-3000's IR receiver or IRT-3000 IR Transceiver, all functions, including channel balancing, could be done from the remote. The keypad would display, not just the surround sound decoder functions available on it, but all SSD-66 functions performed on the SSD-66 REM. You can fully setup a home theater even though the equipment were completely out of sight with full feedback to the keypad. It is therefore recommended, if you are including only one SSD-66 in a System 3000, place it on zone one (CIC-3000 Port #1, SSD-66 Address "00") to permit complete function from the SSD-66 REM. Additional SSD-66s can be setup and controlled on zones 2-16 (CIC-3000 ports 2-16) when using an MC-0064 Bidirectional Handheld IR Remote Control. An MC-0064 will also be able to fully control a home theater on zone 1 (CIC-3000 port 1).

Option 1 - Local Theater System were the TV Acts as the Video Switcher

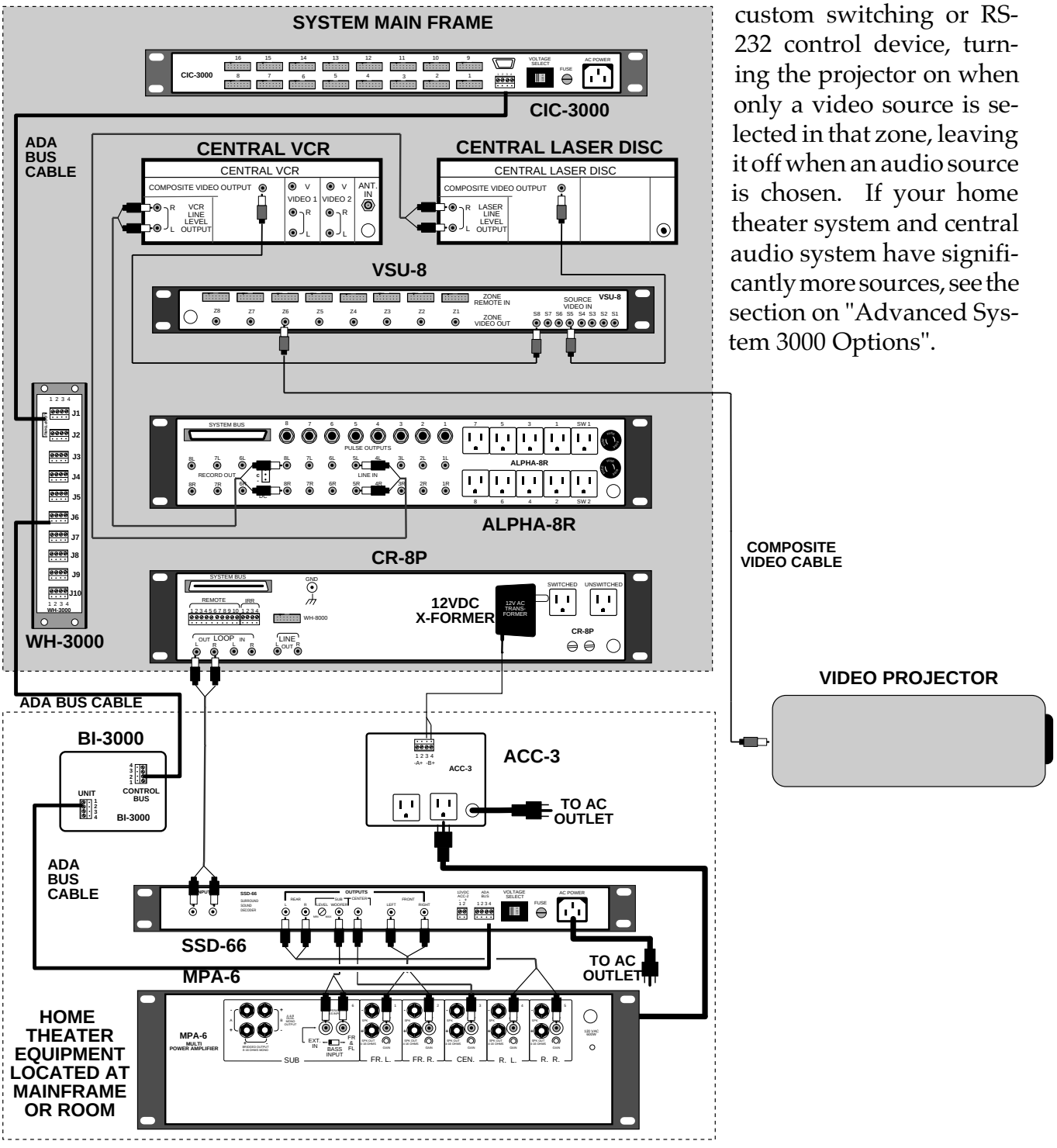
The diagram below is very similar to the Standard Omega "Option 1" (see page 52) in that the CCS-4 and LLS-2 permit the MPA-6 to engage when either the TV or CR-8P turn on with the TV's audio overriding that of the CR-8P. The two changes are with respect to the SSD-66. It should be plugged directly into a wall outlet and needs to be connected to the WH-3000 via a BI-3000 Bus Isolator. Please note, that in this setup, the user will need to turn on the SSD-66 by pressing any source button on the room's keypad whether the TV is on or off. The user will also be able to change modes and other functions from the keypad. Because the SSD-66 is now software controlled it will not turn on with the TV.



System 3000 Home Theaters (cont.)

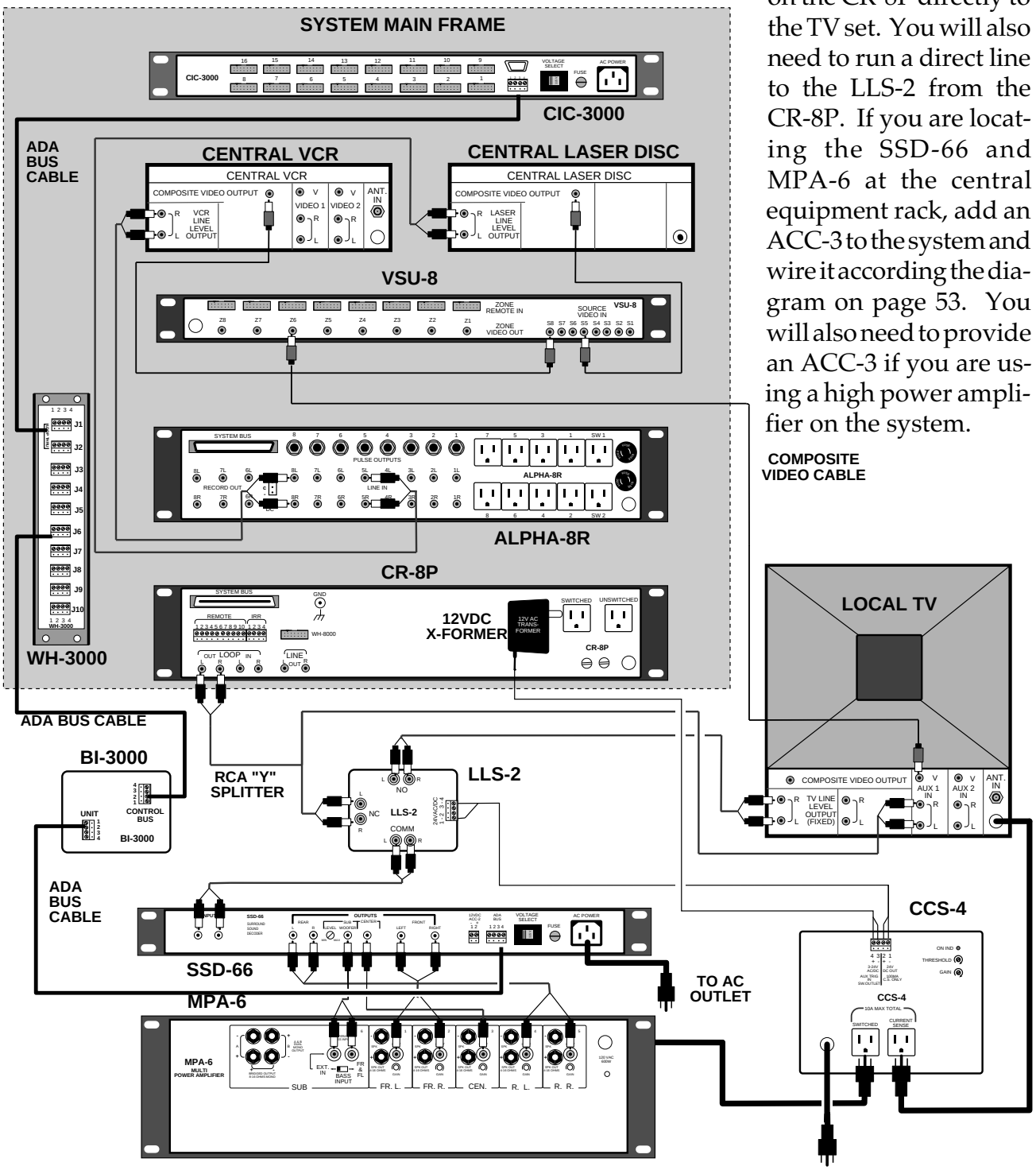
Option 2 - Central Only Video Sources

This application is perfect for multi-zone System 3000's were a high-end video projector is used which requires some type of external video switcher. Furthermore, this application is ideal when the total number of audio and audio/video sources does not exceed a total of eight combined sources. From the room's keypad (or MC-0064), the user will be able to select either audio or audio/video sources and fully control their transport functions because they are part of the central system. Depending on the type of projector you are using, ADA can provide a custom switching or RS-232 control device, turning the projector on when only a video source is selected in that zone, leaving it off when an audio source is chosen. If your home theater system and central audio system have significantly more sources, see the section on "Advanced System 3000 Options".



Option 3 - Combination of Central Video Sources and Local Video Sources

The diagram below is a combination of Options 1 and 2 permitting access of both central video sources through the TV's "External Video Input 1", the TV's tuner itself, or a local video source connected to the TV's "External Video Input 2". Whenever the room's keypad selects a source, the decoder and amplifier will turn on. If the TV is then turned on, the LLS-2 will switch the audio feed to the SSD-66 over from the output of the CR-8P to the output of the TV. The TV can then be set to either its built-in tuner, a local video source, or the central video sources. If the TV is set to the central video sources, the user would select the appropriate source on that room's keypad. Because the LLS-2 will automatically pass the TV's output to the SSD-66 whenever the TV is on, you will need to run an audio line level signal from a "Y" split connector on the CR-8P directly to the TV set. You will also need to run a direct line to the LLS-2 from the CR-8P. If you are locating the SSD-66 and MPA-6 at the central equipment rack, add an ACC-3 to the system and wire it according the diagram on page 53. You will also need to provide an ACC-3 if you are using a high power amplifier on the system.



SSD-66 Configuration for a System 3000

Each port on the CIC-3000 is zone specific in that it connects directly to a CR-Unit or ZS-1 Zone Splitter. Since home theaters must always stand as a single zone, CR-8P Zone Preamps are used to provide source selection in a home theater. When the CR-8P for the home theater is connected to port one of the CIC-3000, the SSD-66's address will need to be set to "00". The MC-3000 which is programmed to communicate with port one on the CIC-3000 will also be programmed to communicate with that SSD-66. If the CR-8P for the home theater were on the CIC-3000's port number 5, the SSD-66 for that room would have to have its address set to "04". The relationship of CIC-3000 ports to SSD-66 addresses is always the CIC-3000 port number minus one. If two SSD-66s are used for two separate home theaters, one on CIC-3000 port number 6 and one on port number 14, the corresponding SSD-66s would have their addresses set to "05" and "13" respectively.

If you wish to use the IR remote control that comes with the SSD-66 for setup, you must have the SSD-66 first set to address "00". Once you set the SSD-66 to another address, the SSD-66 hand-held remote will no longer function. If you are installing a single SSD-66, it is suggested that you configure your system such that the home theater is on zone one (CIC-3000 port number one). The chart below details the CIC-3000 port number and corresponding SSD-66 address.

ZONE NUMBER	CIC-3000 PORT	SSD-66 (THX) ADDRESS
1	1	00
2	2	01
3	3	02
4	4	03
5	5	04
6	6	05
7	7	06
8	8	07
9	9	08
10	10	09
11	11	10
12	12	11
13	13	12
14	14	13
15	15	14
16	16	15

To set the ADA Bus™ address on the SSD-66, follow these steps:

STEP ONE: Press the SSD-66's MODE button until “SETUP MODES” appears in the display. Move to Step Two before the SSD-66 times out of the SETUP MODE. If the SSD-66 times out, press the MODE Button until the display reads "SETUP MODES" again.

STEP TWO: Press the REAR or LEFT buttons until you have found the address that you need. The LEFT

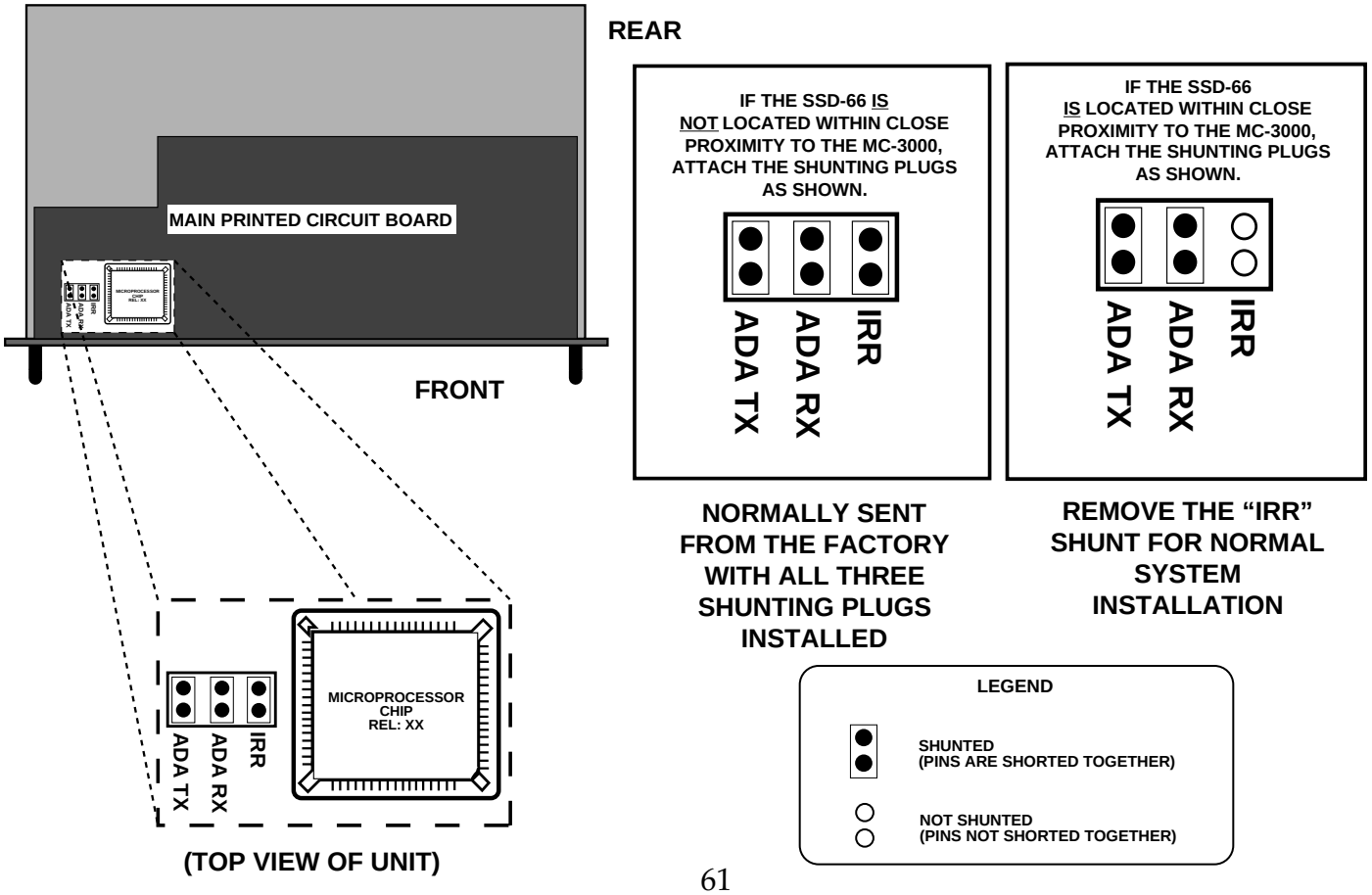
STEP THREE: Press the MODE button again to return to normal operation.

The SSD-66 Built-In IR Receivers

IMPORTANT: Disconnect the power cord from the SSD-66 before proceeding.

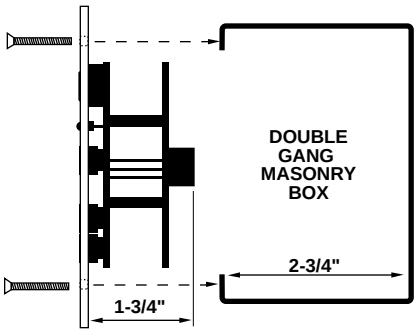
If you are using an SSD-66 in a System 3000 you may experience IR cancellation if the IR receiver of the MC-3000 Keypad and SSD-66 are both active. To deactivate the front panel infrared receiver on the SSD-66, follow these:

STEP ONE: Disconnect the power cord from the back of the unit. Unscrew the cover. **Make sure to put the screws in a safe place when they have been removed!**
STEP TWO: When you remove the cover, find the microprocessor chip and socket located at the lower left-hand corner of the unit (if you are facing the front of the unit).
STEP THREE: Next to the microprocessor chip, there are three two-pin headers. Each Delta-3 and SSD-66 comes from the factory with shunting plugs attached to all three two-pin headers. These shorting plugs are easily recognizable because they slide over the two-pin headers. They are used to connect the two pins of each header together, thus activating the corresponding function labelled on the main printed circuit board.
STEP FOUR: To deactivate the infrared receiver on the front panel, simply remove the shunting plug covering the "IRR" two-pin header. **Note: do not remove the shunting plugs that are covering the two-pin headers labelled "ADA RX" and "ADA TX." If there are no shunting plugs covering these headers, make sure to put them on.** The following pictures illustrate this procedure.
STEP FIVE: If you removed any shunting plugs, make sure to put them in a safe place until you need them. Replace the top cover and screws. It is a good idea to turn the unit upside-down briefly to make sure that nothing was dropped inside before tightening the screws.



Installation of ADA Keypads

Most ADA Keypads are provided on a custom plate which is 1/8" thick. Typically, screws provided with these plates are 1" long. The plates do not provide any play once installed. It is therefore essential that the box in which the keypad is mounted into is completely square. If the box is even slightly off-angle, the keypad, once installed will appear crooked.

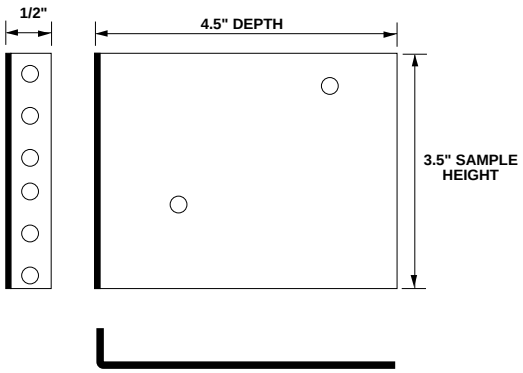


Furthermore, the box used, should be checked against a keypad to make certain that the keypad and circuit board will fit into the box. The box should be close to flush with the surface of the wall but should not extend beyond the surface of the wall. The plate should rest flush on top of the wall. The dimension of an MC-3000's circuit board (double gang keypad) 3.5" wide by 2.8 inches tall and will fit some double-gang masonry boxes but may not fit all types. For MC-3000 OD All Weather Outdoor Keypads (triple gang keypad), ADA suggests using a watertight masonry box such as the Mulberry 30601.

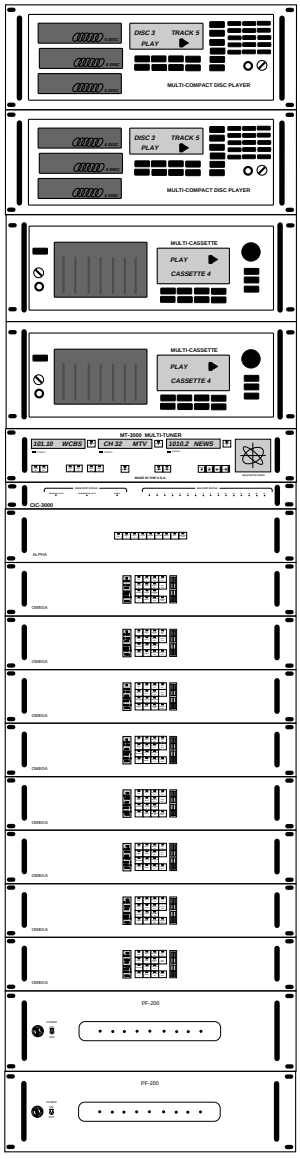
When installing a keypad, be extremely careful with the handling of the plate and screws. The plates can easily be scratched if handled improperly.

When wiring the ADA Bus™ to a keypad, you can remove the 4 pin screw terminal connector from the keypad's circuit board and first connect the wire to the connector. The shield (or ground) wire is typically completely exposed (without a jacket) and will require taping. This protection will prevent the ground wire from making contact with circuit board traces once the keypad is installed. Since the other three of the wires are not exposed when they are inserted into the connector, they will not require taping.

Rack Rail & Hardware and Rack Mounting Source Components.



ADA makes available to dealers, custom cut rack rail sections and rack hardware. Unlike most rack rail available, ADA Rack Rail is 4.5" deep, capable of mounting inside the cabinet, not just along the front edge, but firmly against a larger section of the cabinet's wall. Furthermore, ADA's Rack Rail is not pre-threaded, but rather, has holes spaced at EIA Rack Mount Standard intervals for rack nuts which clip onto the rack rail. Thus, if a hole is stripped, the stripped rack nut clip can be removed and a new one can be inserted in its place. Furthermore, the clip-on rack nuts provide some play, permitting you to adjust the component as it is inserted into the rack. ADA provides the rack nuts, rack screws, and rack washers by the dozen and rack rail by linear inch. Please note, if your rack height is 21 inches tall, you will need to order two 21 inch rack rails for a total of 42 inches of rack rail.



If you wish to provide the same 1/8" thick qaulity plate finish for sources (and other non-ADA components), complete with rack handles (some units cannot be rack mounted with handles), ADA can custom rack mount source components to match the look of the ADA rack of equipment. These surround plates are custom cut to a component's dimensions and are mounted to the plate itself, permitting easy installation into the rack using the functional rack handles to position the component into place. Unlike other rack plate manufacturers, components rack mounted by ADA are completely mounted to the plate and do not just sit on a shelf and slide through an opening. Also, because the plate is custom cut to the specific source component, the fit is much tighter than plates provided by other manufactures. To properly manufacture and mount the non-ADA components, ADA will require the sources in-house for a period of two to four weeks. As with all ADA components, custom rack plates for non-ADA components can also be made in Brass, Chrome, and Black Chrome.

When combining ADA components and other components (such as sources) which are racked in another manufacturer's rack plate, ADA recommends you allow a space between the other rack plates and the ADA components. This space can be small and could be filled with a piece of wood from the cabinet, providing a separation between the two types of plates. Even though another manufacturer's rack plates and ADA plates are both black anodized, there are usually definite differences in plate finish and thickness which may be noticeable. The cabinet separation will limit these difference from being obvious.

Standard Omega & System 3000 Wiring

There are several different types of wire and accessories required to install a Standard System Omega or System 3000. Depending on your system's configuration they may include:

ADA Bus™ Wire (System 3000 Only) - 3 Conductor 18 Gauge with stranded shield wire.
Speaker Wire - Typically 4 conductor wire.
Line Level Wire - Stereo RCA wires.
Composite Video Cable - 75Ω Cable with RCA connectors.
Low Voltage Wire - 2 Conductor Wire (Zip Cord).
IR Flashers - Mini IR Emitters (For control of sources)
Serial Connectors - For sources with serial control inputs.
AC Extension Cords - For connecting components to AC outlets.
AC Power Strips - Multiple AC Outlets.
AC Step Down Transformers - For Automatic Switching Options
14 Pin Flat Ribbon Cables (Zone Bus) - Provided by ADA
50 Pin Flat Ribbon Cable (System Bus) - Provided by ADA

Prior to initiating an installation, it will be helpful to assemble all the required cables, source control connectors, and AC connectors/extension cords.

ADA Bus™ Wires - System 3000 Only

The "short-wires" which connect ADA components to the WH-3000 wire harness can be prepared and tested prior to beginning the installation. Make certain that the wires are long enough to fit your installation layout. While ADA Bus™ connections to the WH-3000 are actually the last step of an installation, the ADA Bus™ "short-wires" can be connected to each component as you install the units into the rack. In installations without rear access, this will be necessary. The connection of the ADA Bus™ "short-wires" to the ADA components is discussed in "Step J".

All ADA Bus™ components were designed to easily plug into the WH-3000 System Wire Harness. The beauty in the wiring schematic is that all component ADA Bus™ connections are identical. Pins 1, 2, 3, & 4 all terminate exactly the same on all ADA Bus™ components (the LVI-3000 is the only exception {See Appendix H}). While ADA does provide the wire from the MT-3000 to the BI-3000, all other ADA Bus™ "short-wires" need to be provided by the Dealer. In this diagram you will need to prepare a total of three (3) ADA Bus™ "short-wires" for:

1	For the CIC-3000	CIC-3000 to WH-3000
1	For the MT-3000	MT-3000's BI-3000 to WH-3000
1	For the PCT-4	PCT-4 #1 to WH-3000

These wires may vary in length depending on your rack layout. A three conductor 18 gauge data grade wire with an overall stranded shield must be used. When using ADA Bus™ wire provided by ADA, the following color code can be used.

Wire Color	Termination	Function
SHIELD	PIN 1	GROUND
BLACK	PIN 2	TRANSMIT
WHITE	PIN 3	RECEIVE
RED	PIN 4	POWER

Whether you are using ADA's cable or a suitable substitute, make certain that all connections are clean. Any frays or loose strands may short a data line and can cause the system to lockup or function poorly. Tone out all cable runs to make certain that you have both, continuity and that none of the wires are shorting into each other. The most common problems result from sloppy wire termination.

Home Run Wires

Prior to installing any of the equipment into the rack, ADA suggests toning out the keypad, IR, speaker, and any other cables run from remote rooms to the equipment mainframe. Any short in the control and IR cables will cause problems when you start installing the system mainframe. Shorts in the speaker wire will cause the amplifiers safety fuse to blow. Connecting a speaker pair such that one speaker positive connection is to a negative amplifier connector will make the speaker pair sound poor.

Keypad & IRs Tips - You can remove some of the screw terminal connectors from the WH-3000 and connect them to keypad and IR home runs after you have tested their wiring. Label all of your home run wires. In a Standard System Omega, you may connect these wires to the WH-8000 or SODC-8 prior to installation or connection of the main rack. In a System 3000, do not connect these wires to the WH-3000 at this time. They will be connected in the final stages of the installation, one at a time to ensure proper system operation.

Speakers Tips - ADA power amplifiers are provided with removable "banana" jacks. You can terminate the speaker wire to the "banana" jacks before connecting them to the amplifier. For convenience, it is important to note that the little tab on one side of the "banana" jack is imprinted with the word "ground". If you maintain the speaker's proper polarity, this tab will limit confusion regarding as to which wire is ground.

ZS-1 Zone Splitters have a removable 8 pin screw terminal speaker connector. Four of the pins are for the amplified input to the ZS-1 and four pins are for the amplified output to the speakers. The ZS-1 is labeled as to which connections are for input and output as well as positive and negative. When connecting the ZS-1's amplified input to the zone's amplifier, it will be easier to make a short speaker wire with banana pins on one end and the ZS-1's screw terminal connector on the other end. Banana pins permit other banana pins to piggyback on top of each other. This will make connection to the amplifier quick and clean.

Rear Access

If you have rear access to the equipment rack, you are in luck. This access will permit you to wire the system after the components are racked. Furthermore, if there is a problem with any of your wire terminations, it will be easier to locate and repair the wire when you have rear access.

No Rear Access

If you do not have rear access to the equipment rack you will need to carefully plan the equipment layout such that components which take up large rack space and have few wires running to them are located at the bottom of the rack. These components can be left out while you install, wire, and test the system. Furthermore, you can locate non-rack mount units behind the lowest components such as WH-3000s, PCT-4s, BI-3000s, ACC-3s, BC-232s, and AC Power Strips. Since wires will always hang downward (gravity), they will be in reach of these devices. Components, such as amplifiers, can be located at the bottom of the rack when racks begin near floor level. Components, such as sources, can be located at the bottom of the rack when racks begin at counter top levels.

Standard Omega & System 3000 (cont.)

When wiring this type of rack, let the wires hang while you add components from the top of the rack downward. Make certain that the wires you are using for ADA Bus, line level, composite video, low voltage, and AC are long enough to maintain connection should the components need to be removed. By working from the top of the rack downward, you will not lose wires as you add components.

Step A - Installing the Rack

The first aspect to installing the system is to plan the placement of all the ADA rack equipment, amps, and source components. Typically, the equipment is best racked starting at the top and working downward. If you do not have rear access to the equipment, wires can be connected to components as they are installed permitting the wires to hang while the next component is added. Also, by lifting components into position rather than resting them on the component below, you are protecting the face plates and rack handles from knocking together. When racking from bottom to top, components can be easily dented and scratched.

ADA suggests planning your equipment rack such that sources are followed by the MT-3000 (if used), then the PCT-8 (if used), then the VSU-8 (if needed), then the CIC-3000, then the Alpha-8R, then the CR-Units, then the SSD-66/MPA-6s (or other surround amps), and then all other additional power amplifiers (PF-200's). This format for racking the equipment will provide a cleaner flow of components and the respective wires and cables which interconnect all the components.

For System 3000, the ADA Bus™ "short wires" which run from the main frame components to the WH-3000 can be connected to the component as it is installed but should not be connected to the WH-3000 at this time. You should however, mark the ADA Bus™ "short wires" that terminate on the WH-3000 with the name of the component they are for. This will make final testing quick and easy.

Step B - System Mainframe AC Wiring - Alpha-8R, CR-Units, RPS-1s

Running the high voltage cables prior to adding any line level wires gives you the opportunity to locate the heavier AC cords out of harms way. While wiring the AC is the first recommended step, the main switching components (such as the Alpha-8R, RPS-1s, & ACC-3s) should be left unplugged from an actual AC outlet at this time. For more information on the central system's AC wiring see pages 19 - 21.

For System 3000, the CIC-3000 needs to be plugged into the Alpha-8Rs SW1 or SW2. These two outlets turn on together with the power switch on the Alpha-8R and permit the CIC-3000 to be reset when the Alpha-8R is turned on. The first CR-Unit will also need to plug into one of these two outlets, permitting it to reset with the CIC-3000. Since all other CR-Units string together on the AC Bus (as described in pages 19 -21), they will also reset with the Alpha-8R.

RPS-1 Installation - When using more than one AC circuit to provide current to the CR-8Ps and CR-8As, you will need to install RPS-1s to permit the Alpha-8R's power switch to provide complete system reset control. For more information on the installation of the RPS-1, see pages 22 - 23.

When using a VSU-8, it will also need to reset with the Alpha-8R's power switch and should be plugged into either SW1 or SW2. Since there are only two switched outlets and both the CIC-3000, first CR-Unit, and VSU-8 (s) need to plug into them, you will need to add a power strip to permit more than two such components to plug into either SW1 or SW2.

Step C - Sources - Sources to Alpha-8R, PCT-4, & PP-1200 (Phonographs)

All central sources will need to connect their line-level wires and AC wires (not VCRs) to the Alpha-8R. See page 36.

The MT-3000 Multi-Tuner should have its three audio line level outputs connected to the Alpha-8Rs inputs 1, 2, & 3 respectively. Its AC wire is plugged into the Alpha-8R's source "1" AC outlet. You will need an ACBS-8 to engage the tuner when sources 2 & 3 are selected. For more information on the MT-3000's installation, see page 42.

Phonographs will need to also pass through a PP-1200 Phono Preamplifier (see page 12).

For source control, the sources will need to connect to the PCT-4 or PCT-8. Use either an 1/8" male mini jack to 1/8" male mini jack wire for accessing a source's serial control input or an IR mini flasher to access a sources IR receiver. You may need to adjust the PCT-4 after the system is up and running so make certain that future access of the PCT-4 is possible (also see pages 50 - 51).

Step D - Composite Video Wires (if needed)

Connect the composite video cables from the sources to the VSU-8 and from the VSU-8 to the TV's, projectors, and/or VCRs. For more information on the VSU-8, see pages 35 - 37.

Step E - Outboard Amplifier, Equalizer, and Sub Connections to CR-Units.

In many cases, additional power amplifiers are used to engage with a single zone. For more information on AC wiring and line level wiring to CR-Units for AC control of external zone amplifiers, equalizers, & subwoofers, see pages 7 - 10.

Step F - Speaker Wires

Connect the speaker wires to the CR-8As or other power amplifiers. Use the banana connectors attached to each CR-Unit or Amplifier. The banana connectors have a tab on one side marked "GND" for ground. This tab will permit you maintain polarity even if you cannot see the wires as you plug them into the CR-Units or Amplifiers.

ZS-1's do not use banana pins but instead use, a removable 8 pin screw terminal connector. For more information on connecting the speakers and amplified output of CR-8As to the ZS-1, see page 34.

Step G - Low Voltage Wires

Connect low voltage wires as needed to the various components when using ADA Black Box Switching Devices. For inclusion of a home theater system, see pages 56-60.

Standard Omega & System 3000 (cont.)

Step H - Connection of the Zone Bus Cable

For Standard System Omegas, you may connect the keypad and IR control cables to the WH-8000 or SODC-8 Wire Harnesses at any time prior to the installation of the system. Unlike the System 3000 Keypad and IR cables, the Standard System Omega home run control and IR cables are zone specific. If there is a short on any one cable, it will only affect the zone to which it is connected. Once the keypads and IRs are terminated on the WH-8000 or SODC-8, you can proceed to connect the wire harnesses to the respective CR-Units (when no VSU-8, WH-IRX-8, or ZS-1s are being used) using the 14 pin ribbon cable Zone Bus (See pages 24 - 26). When using the WH-IRX-8 for IR repeating, you will also need to pass the Zone Bus cable through the WH-IRX-8 using a crimp-on connector (See pages 46 - 47). For more information on "crimp-on" connectors, see pages 28 -29.

For System 3000, the 14 Pin Ribbon Cables (provided with the system - Zone Bus) are typically connected directly from the CIC-3000 directly to the CR-Units. For more information on the Zone Bus Cable and its installation, see pages 27 - 29.

For Both System Omega and System 3000, when using a VSU-8, you will need to connect the VSU-8 to Zone Bus cables, for zones who need to acquire the central video sources. Since the Zone Bus has only two connectors, one on each end, you will need to apply a crimp-on connector for input to the VSU-8. For more information on the Zone Bus Cable to VSU-8 and its installation, see page 38 for a Standard System Omega and page 39 for a System 3000. For more information on the Zone Bus Crimp-On Connectors, see page 28 & 29.

For Standard System Omegas, when using ZS-1 Zone Splitters, you will need to connect each ZS-1's input to a connector on the WH-8000 or SODC-8 Wire Harnesses using a Zone Bus cable. The outputs of ZS-1s on the same zone will be paralleled together using another Zone Bus cable and then run to the CR-Unit. Since the Zone Bus has only two connectors, one on each end, you will need to apply a crimp-on connector for input to the ZS-1s and then the CR-Unit. For more information on the Zone Bus Cable to ZS-1s and its installation, see pages 30 - 31. For more information on the Zone Bus Crimp-On Connectors, see page 28 & 29. When connecting IRR-288s to ZS-1s with IDB-ZS Infrared Decoder Board circuits, a special wiring configuration is required such that the IRR-288 bypasses the WH-8000 and SODC-8 entirely (see pages 32 - 33). For information on connecting keypads to ZS-1s directly and not using a WH-8000 or SODC-8, see page 32.

For System 3000, when using ZS-1 Zone Splitters with Bus-ZS circuits, you will also need to wire the Zone Bus into each ZS-1 directly from the CIC-3000 ports and then group ZS-1s, on the same zone, to the zone's CR-Unit. Since the Zone Bus has only two connectors, one on each end, you will need to apply a crimp-on connector for input to the ZS-1s and then the CR-Unit. For more information on the Zone Bus Cable to ZS-1s and its installation, see page 34. For more information on the Zone Bus Crimp-On Connectors, see page 28 & 29.

Step I - Connect the System Bus Cable

The 50 Pin Ribbon Cable (provided with the system - System Bus) is connected directly to the Alpha-8R and then to each CR-Unit. When using an MT-3000, an additional small black box with 50 pin ribbon cable connections on it, the ACBS-8, will also need to be first plugged into the Alpha-8R, with the 50 Pin System Bus cable then plugged into the ACBS-8. The System Bus has two connections for the Alpha-8R (or ACBS-8) on both ends. This will permit you to connect the cable such that it does not twist, regardless whether the Alpha-8R (and ACBS-8) is above the CR-Units or below them. The remaining connections on the System Bus are for the CR-Units. For more information on the System Bus Cable and its installation, see pages 19 - 21.

Step J - ADA Bus™ Connections - System 3000 Only

Connect the ADA Bus™ "short-wires" to the various ADA components (CIC-3000, MT-3000, & PCT-4). Do not connect any "short wires to the WH-3000.

BI-3000 Bus Isolators - In most applications, the BI-3000 serves to isolate devices which are subject to line noise from picking up any noise through the ADA Bus™. Components such as MT-3000 Multi-Tuners and SSD-66 Surround Sound Decoders need to first wire to a BI-3000 before connecting the ADA Bus™ "short-wire" to the WH-3000. In the case of an MT-3000, the ADA Bus™ "short-wire" from the tuner to the BI-3000 is included with the system in either the tuner's box or the "miscellaneous box" (if no MT-3000 short wire is found, you can make one by following the instructions on page 43). You can connect the MT-3000 to its BI-3000 with this wire and then connect the BI-3000 to one of the ADA Bus™ "short-wires". The two ADA Bus™ "short-wires" for the SSD-66 can at this time be connected to its BI-3000 as well. It is important to note that the BI-3000 has a distinct input and output. The input is marked "Unit" and connects to the MT-3000 or SSD-66. The output is marked as "ADA Bus™" and will be connected to the WH-3000 in "Step L". Do not connect any "short wires to the WH-3000.

Step K - AC Connections

After you have assembled the rack and connected all the wires (except the ADA Bus™ "short-wires" to the WH-3000, you may plug the Alpha-8R, RPS-1s, and ACC-3s into the appropriate AC wall outlets. If you are installing a System 3000, you are now ready to begin connection and testing of the ADA Bus™ "short-wires" to the WH-3000.

For a detailed wiring diagram of a Standard System Omega, see age 48.

For a detailed wiring diagram of a System 3000, see page 49.

System 3000 Wiring - The ADA Bus™

Step L - Connection of ADA Components to the WH-3000

WH-3000 Wire Harness - The WH-3000 Wiring Harness provides a clean and proper installation platform for wire termination. A total of ten (10) connectors are used on the WH-3000, eight of which provide thermally protective relays. Each connector has a "J" number assigned to it, with an order of J1 through J10. The first two connectors, J1 and J2, are used as primary WH-3000 inputs. When using only one WH-3000, the CIC-3000 connects directly to J1 and J2 is left unused. When using multiple WH-3000s, the CIC-3000 is connected to J1 on the first WH-3000 and the second WH-3000's J1 connector is connected to the first WH-3000's J2 connector and so on. The remaining ADA Bus™ components, including all keypads, IR transceivers, multi-tuners, surround sound decoders, can plug into any of the remaining WH-3000's connectors (J3-J10).

Critical Wiring Tips

The System 3000, like any complex network, permits several components to communicate to each other over the same data wire. ADA suggests building the system and testing each component as it is added onto the WH-3000. Therefore, if a problem exists, it will be noticed immediately and can be isolated to the last component added to the ADA Bus™. After each step, stop and test the system. This methodical building block approach may save several hours of tedious backtracking and troubleshooting should a wire strand be frayed. As you begin this step by step process, it may be necessary to refer to other sections in this manual, especially, "Initializing the MC-3000 Keypad". Once you have tested one keypad and the CIC-3000, move to the next step and build the mainframe. After the mainframe is operating, you can begin to add additional rooms. Again, you may need to initialize each keypad as you add them, one at a time, to the WH-3000.

1 Verifying AC Control to all CR-Units

Turn on the Alpha-8Rs power switch. Then turn on and test each CR-Unit (Omega) by selecting several sources on its front panel. This will verify that the CR-Units are operating. Press and hold the off button on any one CR-Unit. First it will turn off and then all other CR-Units will turn off. This will verify connection of the System Bus.

Again, turn on each CR-Unit by pressing a source. Turn off the Alpha-8R's Power switch. All the CR-Units should also turn off. This verifies proper connection of the AC Bus. If some CR-Units are still on after the Alpha-8R is turned off, you will need to rewire the CR-Units AC wires as described in pages 19 - 23. It is critical, that when resetting the CIC-3000 by turning on the Alpha-8R, the CR-Units also get their AC switched from off to on.

2 Checking Zone Bus Connections to the CIC-3000

Plug the CIC-3000 into "J1" on the first WH-3000. Turn on the Alpha-8R. The CIC-3000 should flash each port LED one at time, until all the CIC-3000 ports which are used have their LEDs flashing (very fast) such that they almost appear to be lit all the time. If you are using 11 ports on the back of the CIC-3000 for connection to either a CR-Unit or ZS-1, 11 port LEDs should be flashing on the front of the CIC-3000.

If you are experiencing continuous flashing of the TX and RX LEDs, check the ADA Bus "short wire" connected to the CIC-3000. Since no other device is connected to the WH-3000 at this time, only a short on the CIC-3000's "short wire" could cause continuous flashing of the RX and TX LEDs.

If a port is not flashing on the CIC-3000, turn off the Alpha-8R. The CIC-3000, if plugged into the Alpha-8Rs SW1 or SW2 outlet, should also turn off. Check the Zone Bus (14 Pin Ribbon Cable) connection on the CIC-3000's port that was not lit and check the cables other end (on the ZS-1 or CR-Unit) to make certain the plug is tightly in place. Turn on the Alpha-8R and recheck the CIC-3000 to make certain that all the port LEDs are flashing.

If a port is still not flashing, there most likely is a problem with the 14 pin ribbon cable connected to that port. In most cases, this problem is related to a misaligned crimp-on connector. If the connector is on wrong, it will short out the Zone Bus Cable and cause the CIC-3000 not to read a room. You can test the Zone Bus by toning out all pins for cross shorts. If no cross shorts are found check the polarity of the connectors on both ends and compare the crimp-on connectors to make certain that the polarity matches the connectors on both ends of the cable (see pages 28 & 29). Make certain that a polarity lockout key is also in place on the CIC-3000, CR-Unit, VSU-8, and ZS-1. If it is missing, you may be inserting the connector upside-down into these components. After correcting such problems, reset the system by turning on the Alpha-8R.

If you are still experiencing a problem with the CIC-3000's LEDs not matching its port connections, cross check a working port's ribbon cable with the nonworking port's component to further isolate the problem. Contact ADA if the problem appears not to be with the ribbon cable.

3 Checking the First Keypad and Zone

Turn off the Alpha-8R. Plug the first room's keypad onto any connector "J3" - "J10" on the same wire harness as the CIC-3000. Turn on the Alpha-8R and view the front panel of the CIC-3000. After a short while, all the used port LEDs should flash (very fast) and the RX and TX LEDs should stay off. If the RX and TX LEDs are still flashing, data is somehow coming on the ADA Bus line. This may be due to IR signals (some lamps, security motion sensors, or even sunlight) being picked up by the MC-3000's IR receiver. It may also be due to a crossed wire or shorted wire to the MC-3000.

Go to the MC-3000 Keypad. It should read REL or RELEASE and a number (the keypads software version). Press any source button and the keypad should read I'M AWAKE followed by the words ALL OFF. Press several source buttons, one at a time, allowing the keypad to update the source name from the CIC-3000. As you change sources, the keypad's display should read the new source name. If the names do not match the names on the keypad's buttons, you most likely will need to change the labeling of the source names. This will be discussed under "Labeling Sources From the MC-3000" on page 105. Typically, the CIC-3000 and keypads are preprogrammed by ADA during a system's final testing. Press the Room Off button and the keypad should again display ALL OFF. If you are adding a keypad to the system, the new keypad's buttons may not match the existing source configuration. Buttons easily pop off and can be moved or replaced. Contact ADA if you require new source buttons.

System 3000 Wiring (cont.)

If the CIC-3000's RX and TX LEDs were still flashing after the system had a moment to reset, some IR signals may be getting on the line through the MC-3000's IR Receiver. To turn off the keypad's IR receiver, press and hold the Shift button until the words ENTER CODE appear. Then type in the numbers 1-1-1-2 by using the source buttons 1-8 (one being the first source on the left and 8 being the first source to the right). Then press Shift button again. If the keypad's IR were on, the keypads display should read IR OFF. If it were off, the same code would turn it on. During system setup, ADA suggests turning all keypad IRs off as the keypad is added to the system. This will prevent unnecessary data from building up on the ADA Bus.

If the MC-3000 does not operate the room it is set for, you will need to reprogram the keypad for the correct room. This is discussed under "Initializing the MC-3000 for a Specific Room" on page 97. If the MC-3000 is not operating any room on the system, you will first need to program the MC-3000 for a System Omega discussed under "Initializing the MC-3000 for a Specific System Type" on page 96.

4 Testing all Zones from the First MC-3000

Once you have one room operating, you can actually test most other zones because the MC-3000 is capable of scanning other zones and performing basic control of these zones. Once the first zone, the one the MC-3000 is programmed to default to, is up and operating:

1 Press the Shift button once (for Release Versions of 7.0 or greater) or press the Shift button twice (for Release versions 6.9 or less), bypassing the program mode. The display will read ALT FUNCTIONS (Ver. 7.0 or >) or PROGRAM MODE ACCESS DENIED....OTHER ROOMS ACCESS GRANTED (6.9 or <).

2 Press the Treble Up button once, the display will read NEXT ROOM, followed by the room name and its status (at this point ROOM OFF).

3 Press a source button. The keypad's display will now read the source's name. Please note, the keypad will time-out of the access mode to other rooms automatically. If the treble up and down buttons are controlling treble levels, you will need to begin with Step 1.

4 Press the Treble Up button again, the keypad will again display NEXT ROOM followed by the room name and its status. Again select a new source in this room and continue the process pressing Treble Up and then a source. If you passed a room before selecting a source, press the Treble Down button to go back to the previous room. This procedure will scroll through all rooms on the CIC-3000, permitting you to verify the room names. Furthermore, if you note which sources were selected for the rooms, you could verify the completed control sequence by examining the CR-Units source buttons. They will be lit to the source selected for that zone.

5 Repeat the Treble Up button function and source selection until you have scrolled through all the zones on the CIC-3000. This procedure will permit you to test the system software and the function of the CIC-3000 to all ZS-1s and CR-Units.

Please note, zones with ZS-1s for the several rooms on the same zone, will track source selection together. Thus if the bedroom and bathroom are on the same zone, and you first selected FM 1 for the bedroom, performed a "next room" function to the Bathroom and selected FM 2, the CR-Unit for that zone will now read FM 2. To end this procedure and reset the keypad to the room it is programmed for, press the Shift button again. The display will read NORMAL MODE, followed by the room's name and source name.

If you are experiencing a switching problem with a particular zone, check the connection of the CR-Unit to CIC-3000 (or any other device plugged in-line on the Zone Bus). If a short occurred as a crimp-on connector was connected to the Zone Bus, it will affect the ability of the CIC-3000 to program the CR-Unit with a source selected on the MC-3000 Keypad.

Additional problems may exist if rooms are missing during the scrolling process from room to room. First, verify the CR-Units operation and its Zone Bus Cable's connections. If you have followed Steps 1 - 3 correctly, you should not experience any problems. To reset the system turn the Alpha-8R's power switch off and then on again.

5 Testing the MT-3000 Multi-Tuner

Once one room is functioning correctly and the mainframe (all other zones) are working from the first keypad you can begin to add other ADA Bus components one at a time. The MT-3000 should be connected to the BI-3000 with the special ADA Bus Cable (1/4" Stereo Phone Jack). It is important that the single wire trailing off of the stereo phone jack be plugged into one of the three MT-3000's Antenna Preamp connections (pin 4). This wire provides voltage to the BI-3000. Make certain that the special ADA Bus Cable connects to the BI-3000's "Unit" input.

Now connect the BI-3000's "Control Bus" output to the WH-3000's "J3" - "J10" connectors (any one). The tuner should already have its line level and AC connected to the Alpha-8R and have its RF inputs connected to an antenna or cable feed.

Take notes as to the MT-3000's tuner modules and source buttons and note it on the "System 3000 Source Worksheet" found in Appendix C. Go to the first source and select an MT-3000's source. The keypad should immediately read the source name (i.e. FM 1) and within a moment display the frequency from the MT-3000. Repeated pressing of the FM 1 button will advance the MT-3000 through presets. Please note, the presets may not match stations in your area unless you have already programmed the MT-3000. Once you have verified a particular tuner module (FM 1) for both feedback and control, press the next tuner source and repeat the testing of that module, then test the third tuner. When all three tuners appear operational, proceed to program the MT-3000 for your client (See MT-3000 Installation Manual).

While most systems are preprogrammed during testing, they still may require additional in-the-field programming apart from the loading of presets and preset labels. In order for the tuner to display its information on the MC-3000, both the tuner and the MC-3000 require specific programming. Therefore, if you are not getting the tuner to display any information or be operated from the keypad, follow these following steps.

a Verify the wiring of MT-3000 to the BI-3000 and BI-3000 to the WH-3000. If no wiring problem exists, try moving the connection on the WH-3000 to another "J" connector (J3 -J10)]

System 3000 Wiring (cont.)

b Program each tuner module with at least two presets. Consult with the MT-3000's installation manual on how to program presets.

c If the keypad is not displaying or controlling a tuner, first check the tuner's address. Typically, the tuner's address should be "0". To test the tuner's address:

1 Press and hold the LABEL button on the tuner's front panel until the LED on the LABEL button is flashing. While the LABEL button is flashing,

2 Press the MONO/ST button. One of the MT-3000's displays will read the address number. If the number is not address "0", press the MONO/ST button until address "0" appears.

3 Then press the LABEL button until it stops flashing.

d The keypads need to be programmed to both control and read a particular source. Again, typically this is done at the factory however, this may need to be redone at the job site. If the LED above the FM 1 button is flashing once FM 1 has been selected, the keypad is indicating that it is looking for information from the MT-3000. There are several MC-3000 address settings for the MT-3000. The following are the most commonly used MC-3000 addresses.

MT-3000 TUN 1, MT-3000 TUN 2, MT-3000 TUN 3

To check if the MC-3000 is properly programmed:

1 Press and hold the SHIFT button until the words ENTER CODE appear.

2 Enter the program code 1-8-6-7 using the keypad's source buttons (1-8, left to right). Press the SHIFT button again. The keypad will indicate that access to the program mode has been granted.

3 Press the BASS UP button until CHECK SETUP appears.

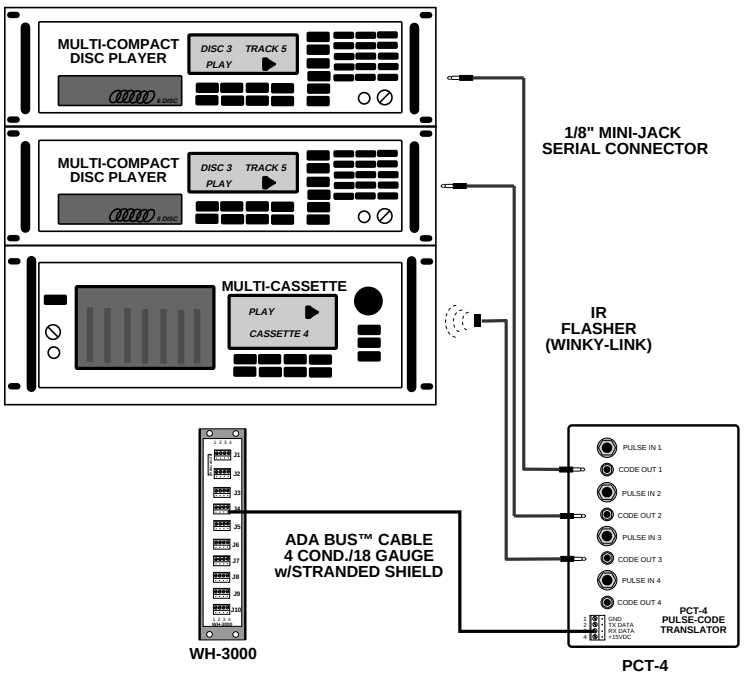
4 Press the tuner source buttons one at a time. The display will read the keypad's source button's address (i.e. MT-3000 TUN 1). If the keypad's source address is anything other than the above mentioned address, you may need to reprogram the keypad. Please note, if the display is reading *MT-30001 TUN 1,* the keypad's source address is wrong. If the source address is wrong or if the source address does not in any way match the above format you will need to change the MC-3000's source address. To program the keypad to control an MT-3000 follow the steps under "Initializing the MC-3000 for an MT-3000" on page 102.

e If the keypad is displaying the tuner's frequency but is not controlling the tuner's preset skip function, check to see that the tuner is loaded with at least two presets. Go to the tuner, press the appropriate TUNER button repeatedly. If the tuner advances through presets from its front panel but not from the keypad, there is a problem on the tuner's ability to receive information from the keypad. This problem exists on the tuner's RX line. Again test the wires for continuity on this line. If no problem is found with the wire, you may need to open the tuner and check its DIP switch settings as described on page 43. Please note, the problem of the keypad displaying a tuner's information but not controlling the tuner is typically due to the tuner not being loaded with any presets and is not necessarily a problem for all three modules. Consult the MT-3000's Installation Manual for programming presets. If the problem of the keypad displaying information without the ability to control a tuner is due to an improper DIP switch setting or damaged RX wire, the problem would be the same for all of the tuner's modules.

f If the keypad is not displaying the tuner's frequency but is controlling the tuner's preset skip function, there is a problem on the tuner's ability to transmit information from the keypad. This problem exists on the tuner's TX line. Again test the wires for continuity on this line. If no problem is found with the wire, you may need to open the tuner and check its DIP switch settings as described on page 43. Please note, the problem of the keypad display a tuner's information but not controlling the tuner is typically due to the tuner not being loaded with any presets and is not necessarily a problem for all three modules. Consult the MT-3000's Installation Manual for programming presets. If the problem of the keypad not displaying information while controlling a tuner is due to an improper DIP switch setting or damaged TX wire, the problem would be the same for all of the tuner's modules.

6 Testing the PCT-4 or PCT-8

After having tested one keypad, continue testing the system by adding on the next mainframe component, the PCT-4 or PCT-8 Source Controller, to the WH-3000 on any open "J3" - "J10". Typically, the PCT-4 will be set in the factory while the PCT-8 is set in the field. The PCT-4 may already be labeled for the sources used on the system. You will need to use the PCT-8's Installation Manual to learn how to program it. Take notes as to the source component and its PCT-4 (or PCT-8) Port Number and note it on the "System 3000 Source Worksheet" found in Appendix C.



Select a source button on the MC-3000 for a source to be controlled by the PCT-4 or PCT-8. The display should read the source's name. If the names do not match or are not programmed as you would like, you can alter the source name's label discussed under System 3000 Source Labeling on page 105.

System 3000 Wiring (cont.)

To test the PCT-4 or PCT-8's function, press several transport buttons and take note of the keypads display. When selecting a standard CD Changer on CD 1, continued pressing of the CD 1 button would advance the CD player to the next disc. The display will read DISC SKIP UP. At this time, it is not important that the source is actually being controlled, but rather, the PCT-4 or PCT-8 are connected properly and displaying information to the MC-3000 in correspondence to the source type. If the keypad is not displaying the correct source information check one or several of the following.

a Verify the wiring of PCT-4 or PCT-8 to the WH-3000. If no wiring problem exists, try moving the connection on the WH-3000 to another "J" connector (J3 -J10).

b The keypads need to be programmed to both control and read a particular source. Again, typically this is done at the factory however, this may need to be redone at the job site. There are several MC-3000 address settings for the PCT-4 or PCT-8. To check if the MC-3000 is properly programmed:

1 Press and hold the SHIFT button until the words ENTER CODE appear.

2 Enter the program code 1-8-6-7 using the keypad's source buttons (1-8, left to right). The keypad will indicate that access to the program mode has been granted.

3 Press the BASS UP button until CHECK SETUP appears.

4 Press the PCT-4 (or PCT-8) source buttons one at a time. The display will read the keypad's source button's address (i.e. *PCT-4/1 POS1* = PCT-4 Address 1, Port 1). If the keypad's source address is anything other than the address listed on the "System 3000 Source Worksheet", you may need to reprogram the keypad. Please note, if the display is reading *PCT-4/2 POS1* , the keypad's source address may be wrong if the PCT-4 itself is set to address "1". If the source address is wrong or if the source address does not in any way match the above format you will need to change the MC-3000's source address. To program the keypad to control a PCT-4 follow the steps under "Initializing the MC-3000 for a PCT-4" on page 100.

c If during "Check Setup", the MC-3000 Source Addresses appear correct (i.e. press the CD 1 button and the display reads PCT-4/1 POS 1 indicating the CD player is on PCT-4 #1 Port #1) but the display reads the wrong words for that source (i.e. a CD button when pressed reads "CASSETTE SKIP"), the PCT-4's Port 1 DIP Switches may be set to an incorrect source code. Use the PCT-4 Library sheet to make certain the DIP switches are set to the source you are using. See pages 50 - 51.

d If the MC-3000 Source Addresses appear correct and the source DIP switches appear correct, the PCT-4 may be programmed for the wrong address (i.e although the source button is programmed for PCT-4/1 {PCT-4 #1}, the PCT-4 itself is set to address #2). To verify the PCT-4's address, you will need to open the cover of the PCT-4. DIP switch bank #4 for source port #4 may have its DIP switch #8 in the on position. If this is the case, the PCT-4 is programmed to be controlled as PCT-4/2 or PCT-4 #2. If you have no sources on port 4 of the PCT-4, turn SW 4 switch 8 off. If you have sources connected to this PCT-4's port 4 output and their library setting requires switch 8 to be on, you will need to program the MC-3000 to control PCT-4 number 2. See pages 100.

Once you have the keypad's display reading the correct transport function names for the sources you are controlling, you will need to test the source's actual functions. If you are not getting transport control of the sources check the following steps.

e Make certain the source you are using is the same make and model number of the sources programmed into the PCT-4. Some manufacturer's sources use the same IR codes. However some sources IR codes change from model year to model year.

f Check to make sure the serial connectors or IR flashers are working.

g Make certain that the PCT-4 or PCT-8 have their ports set to match the connectors used (i.e. when using an IR flasher, the PCT must be set for IR Carrier). Also see pages 50 - 51 or the PCT-8's Installation Manual. Note, some serial inputs do require an IR carrier and some do not.

h When using an IR carrier, you may need to adjust the PCT's carrier output level. Again, see pages 50 -51 or the PCT-8's Installation Manual.

7 Testing More Rooms

After you have most of the mainframe tested, you can proceed to add room keypads, one at a time. Again, by adding keypads step by step and testing their functions, you will be able to spot a problem quickly. If the system was functioning and the moment a new keypad was added to the WH-3000, the system started acting up, you will be able to quickly determine that the problem lies with the newly added keypad.

As keypads are added to the system, test them for control of a particular room. You may have to reprogram keypads using the ROOM CHANGE function under "Initializing an MC-3000 for a Specific Room". During the setup of all additional rooms, disregard their ability to control sources including the MT-3000. This can be done once all keypads are on line. When performing any programming functions, make certain that all zones are off by pressing a working keypad's room off button until it displays all off.

If you are adding a keypad and it does not seem to control or respond for any room, you will have to program the MC-3000 for a System Omega found under "Initializing an MC-3000 for a Specific System Type" under page 96.

8 Programming the first MC-3000 Keypad's Source Information to all Keypads

If you had to adjust the first MC-3000's programming to communicate to the MT-3000, PCT-4, and/or PCT-8, you will also need to reprogram this information to all operating keypads. Go to the first MC-3000 and test the sources to make certain they still operate from that keypad.

1 Turn off the system by pressing the ROOM OFF button until the display reads ALL OFF.

2 Press and hold the shift button until the display reads ENTER CODE. Type in the program access code 1-8-6-7 (using the source buttons 1-8, left to right) and then press the SHIFT button again. The display will indicate that access to the program mode has been granted.

3 Press the BASS UP button until the display reads AUTO PROGRAM.

4 Press the SHIFT button.

System 3000 Wiring (cont.)

The keypad should indicate the words PROGRAMMING followed by 25%....50%....75%....100%....PROGRAMMED. The AUTO PROGRAM downloads the information from the first MC-3000 to all other keypads and the CIC-3000. Now, go to other rooms and make certain the programming took by testing all the other keypads. Please note, if the display did not read the % symbols and then the word programmed, the programming did not take place. Again, check to see that the system was off and try the programming process again.

9 Programming Rooms with ZS-1s or CR-8P+ (CR-8A+) Esoteric Zone Preamps (Amps)
Rooms with a special device such as a Zone Splitter or Esoteric Preamp (or Integrated Amp) require that the MC-3000 be told that it is operating a room which has a ZS-1, CR-8P+, or CR-8A+ respectively. This type of programming is particular for just that room and not the entire system and is similar to "Initializing an MC-3000 for a Specific System" under page 98. Please note, the system may have already been preprogrammed in the factory. If your system is already functioning properly you will not need to proceed with the following.

1 To program a room for a ZS-1 Zone Splitter, go to that room's MC-3000:

1 Turn off the system by pressing the ROOM OFF button until the display reads ALL OFF.

2 Press and hold the shift button until the display reads ENTER CODE. Type in the program access code 1-8-6-7 (using the source buttons 1-8, left to right) and then press the SHIFT button again. The display will indicate that access to the program mode has been granted.

3 Press the BASS UP button until the display reads PROGRAM THIS.

4 Press the ROOM OFF button until the words ZONE SPLITTER appear.

5 Press the BASS UP button until PROGRAM THIS appears.

6 Press SHIFT. The keypad will display PROGRAMMED. The PROGRAM THIS function downloads the information from that MC-3000 to the CIC-3000 for just that room. Test the rooms keypad to make certain the keypad is now controlling the volume in the ZS-1, leaving the volume levels on that zone's CR-8P or CR-8A unaffected.

7 Go to other rooms with ZS-1s and repeat this programming.

2 To program a room for a CR-8P+ or CR-8A+:

1 Go to that room's MC-3000 and turn off the system by pressing the ROOM OFF button until the display reads ALL OFF.

2 Press and hold the shift button until the display reads ENTER CODE. Type in the program access code 1-8-6-7 (using the source buttons 1-8, left to right) and then press the SHIFT button again. The display will indicate that access to the program mode has been granted.

3 Press the BASS UP button until the display reads PROGRAM THIS.

4 Press the ROOM OFF button until the words F. VOL OMEGA appear.

5 Press the BASS UP button until PROGRAM THIS appears.

6 Press SHIFT. The keypad will display PROGRAMMED. Test the rooms keypad to make certain the keypad is now controlling the volume levels more in line with the speed other room's keypads controlling a standard CR-8P or CR-8A.

10 Connecting SSD-66s to the WH-3000 and Programming The MC-3000s

Rooms with a special device such as a Surround Sound Decoder require that the MC-3000 be told that it is operating a room which has a SSD-66. This type of programming is particular for just that room and not the entire system and is similar to "Initializing an MC-3000 for a Specific System" under page 99. Please note, the system may have already been preprogrammed in the factory. If your system is already functioning properly you will not need to proceed with the following.

Before proceeding, connect the SSD-66 to its own BI-3000 and then connect the BI-3000 to the WH-3000. Determine what CIC-3000 port the home theater CR-8P is on and follow the SSD-66 programming steps as discussed on page 60. Once the SSD-66 is programmed for a specific zone, follow these steps.

To program a room for an SSD-66 Surround Sound Decoder:

1 Go to that room's MC-3000 and turn off the system by pressing the ROOM OFF button until the display reads ALL OFF.

2 Press and hold the shift button until the display reads ENTER CODE. Type in the program access code 1-8-6-7 (using the source buttons 1-8, left to right) and then press the SHIFT button again. The display will indicate that access to the program mode has been granted.

3 Press the BASS UP button until the display reads PROGRAM THIS.

5 Press the ROOM OFF button until the words SSD-66/OMEGA appear.

6 Press the BASS UP button until PROGRAM THIS appears.

System 3000 Wiring (cont.)

7 Press SHIFT. The keypad will display PROGRAMMED. The PROGRAM THIS function downloads the information from that MC-3000 to the CIC-3000 for just that room. Test the rooms keypad to make certain the keypad is now controlling the volume in the SSD-66, leaving the volume levels on that zone's CR-8P unaffected. The button next to VOL UP should control the SSD-66's Mode function. The other buttons should be labeled as illustrated on page17.

11 Connecting IRT-3000s and Programming MC-0064s

The final step of installing a System 3000 is the connection of IRT-3000s to the WH-3000. These should be added one at a time while performing a complete system test as each IRT-3000 is added to the system. This will permit you to catch a wiring short on an IRT-3000, as you add it to the ADA Bus. You can at this time, also test the IRT-3000 for receiving data (RX) by taking a source's remote control and aiming it at an IRT-3000 to control that source.

Once all the IRT-3000s are installed, you can program the MC-0064 for a specific room. Please note, that like all MC-3000 Keypads, the MC-0064 will also require the three stage programming which are: Programming it for the correct system type (OMEGA, SSD-66/OMEGA, or F. VOL. OMEGA); Programming the source buttons (MT-3000 TUN 1, PCT-4/1 POS1, etc.), and then Programming the specific room. Typically, the MC-0064 will be preprogrammed for a specific system and may work correctly out of the box. For more information on programming the MC-0064, see Appendix I.

For a detailed wiring diagram of a System 3000, see page 49.

Advanced System 3000 Options

System 3000 permits several advanced options which include expanding a system to include as many as 256 rooms/zones, combining System 3000 and System Titanus (using a VS-3 for home theaters) to share the same sources, and using the VS-3 as a scrolling input selector expanding the standard eight source input capability to accept as many as 64 sources.

Both the CIC-3000 and VS-3 are primary controlling components in that they are the central brain to a particular control network. Thus, when several of these devices are used on a single system configuration or when sharing common sources, BI-3000 Bus Isolators are used to prevent the control commands from multiple CIC-3000s or CIC-3000 and VS-3s from affecting each other.

Multiple CIC-3000s on the Same System

In a system with more than 16 rooms/zones, additional CIC-3000s will need to be used to control the additional rooms/zones (1 additional CIC-3000 for every 16 additional rooms/zones. Each CIC-3000 will require its keypads to wire to their respective WH-3000 ADA Bus Networks. For example, if you have a 32 room System 3000, the first 16 rooms will wire to the first CIC-3000 while the second set of sixteen rooms wire to the second CIC-3000. When designing this type of system, you are actually installing two System 3000s even though the sources connect to a single Alpha-8R and the Zone Bus and AC Bus wired as usual. Each CIC-3000 is considered to control its own "network". You can have as many as 16 CIC-3000s (16 CIC-3000 Networks) on any one System 3000 permitting a system to operate as many as 256 rooms/zones.

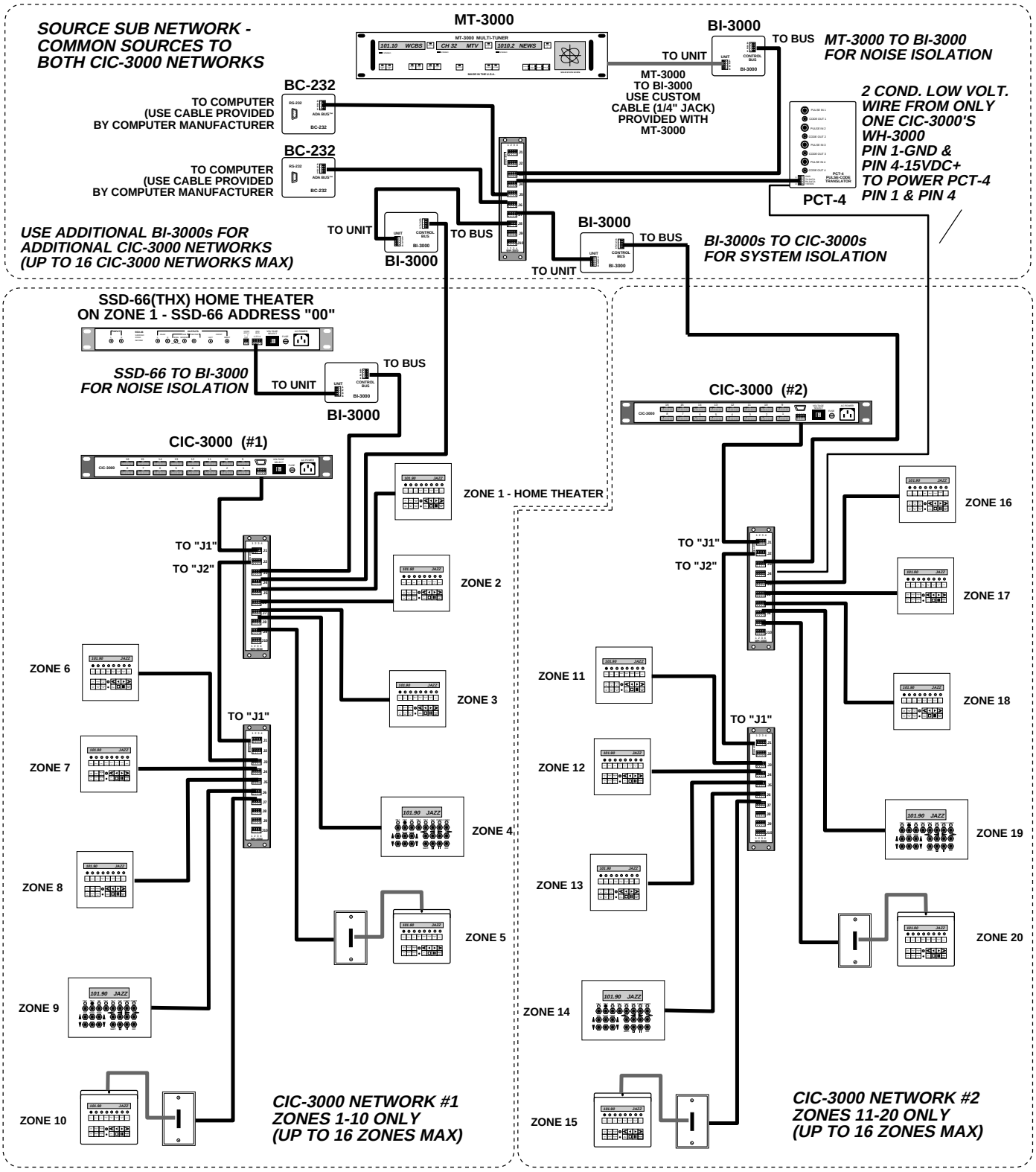
Please note, the ability of a keypad in one room to access and control other rooms elsewhere in the house, is specific to that keypad's CIC-3000. If rooms 1-16 are on CIC-3000 #1 and rooms 17-32 are on CIC-3000 #2, room #1's keypad could control rooms 1-16 but not control rooms 17-32 with the exception of System All Off. The same would be true for any room on one CIC-3000 trying to control a room on a second (or third, fourth, etc.) CIC-3000. Therefore, when planning a System 3000 for more than 16 rooms/zones, you will want to group rooms together on the same CIC-3000 that may need to be controlled or accessed by each other. Furthermore, when planning a System 3000, with for example, 24 zones, you may wish to break the zones up such that 12 zones are on each CIC-3000 rather than 16 on one and 8 on the other.

The MT-3000, PCT-4 (or PCT-8) Source Controllers, and BC-232 (RS-232 Interface for control of Library Software Systems {i.e. Gefen's CDJ-Pro}) will need to receive control information and transmit status information to both CIC-3000 networks. However, to prevent one CIC-3000's control information from feeding and confusing the second CIC-3000, BI-3000 Bus Isolators will be used to isolate the sources on their own control network. This control network will be called the Source Network and will be common to both CIC-3000s. Depending on the number of source control devices (MT-3000, PCT-4, etc.) and the number of CIC-3000 networks, you may wish to combine the source control devices on their own WH-3000. The various CIC-3000 networks could then connect to the source's WH-3000 network, while passing through their own BI-3000s.

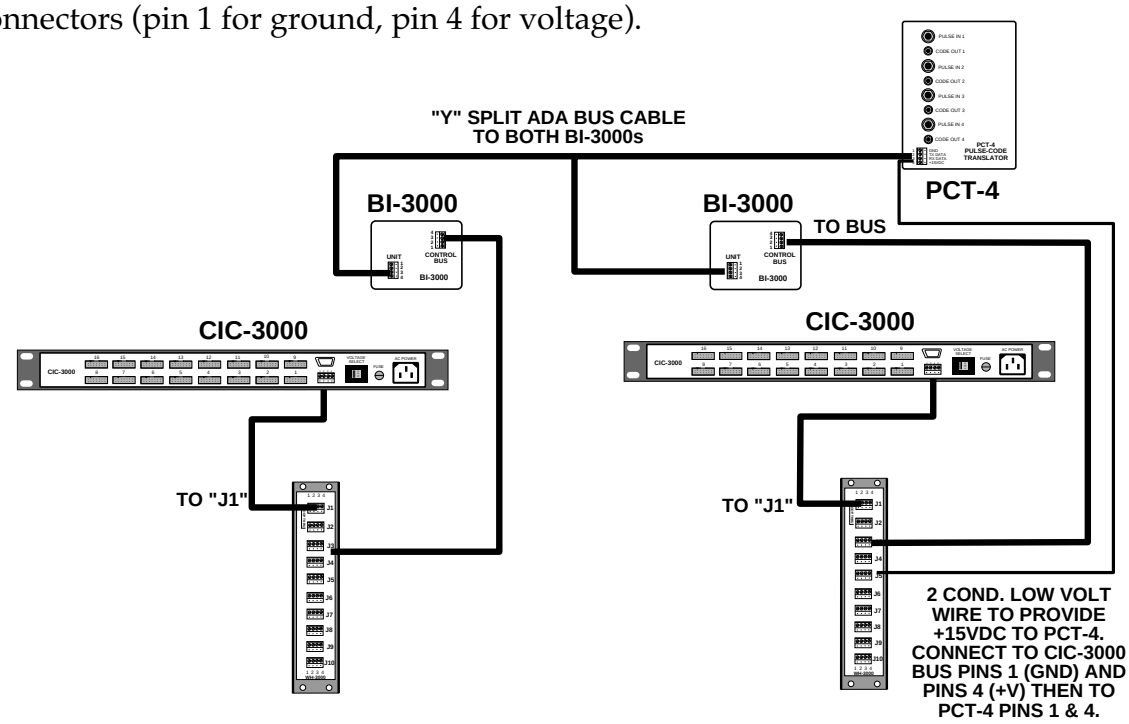
The diagram on the following page shows a detailed source network with two CIC-3000 networks.

Advanced System 3000 Options (cont.)

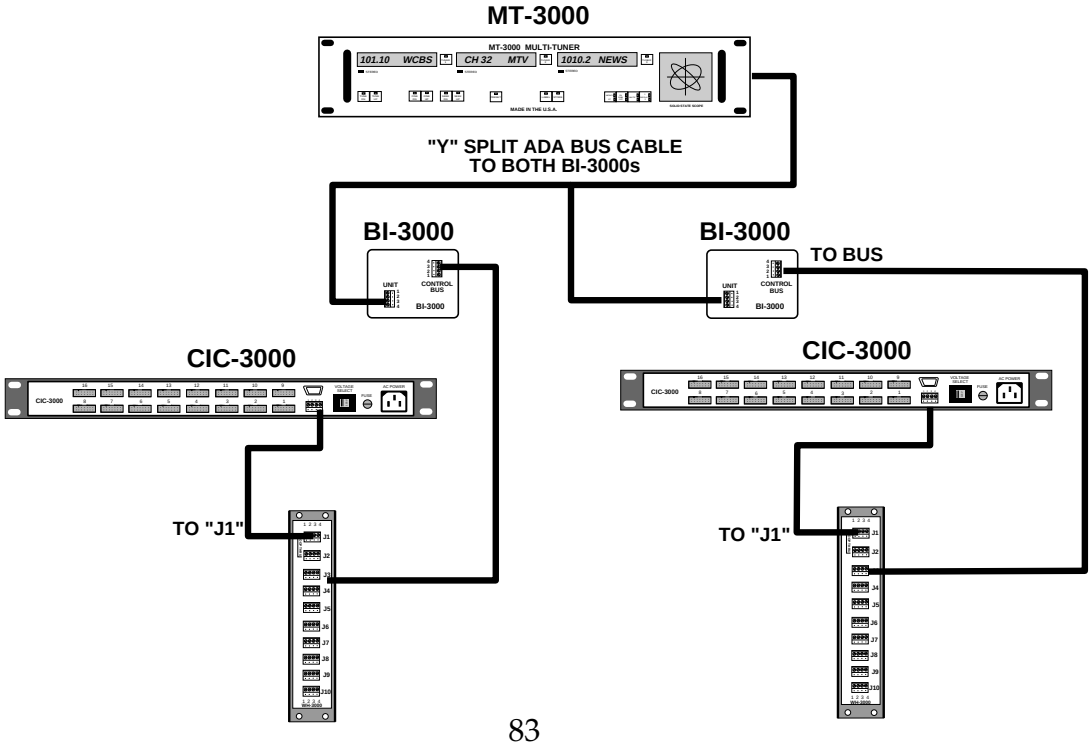
The following diagram details the combination of two CIC-3000 networks to a common source network. Because of the number of source control devices, a separate WH-3000 will be used to provide a clean wiring platform. All the source control devices will connect to the WH-3000 on connectors "J3" - "J10". The MT-3000 will require its own BI-3000.



The PCT-4 will require a separate low voltage feed because it does not have its own internal power supply. Typically on a single CIC-3000 system, the PCT-4 gets its power from the CIC-3000. However, when BI-3000s are used to isolate multiple CIC-3000s, the voltage lines are lifted and the PCT-4 does not get any power. Therefore, in this wiring scenario, the PCT-4 must draw voltage from one CIC-3000's WH-3000 Wire Harness. Take a two conductor low voltage wire and connect it to the PCT-4's voltage input (pin 1 for ground, pin 4 for voltage). Take the other end of the low voltage wire and connect it to one of the CIC-3000's WH-3000's "J3" - "J10" connectors (pin 1 for ground, pin 4 for voltage).



Both these diagrams detail the connection of the source control devices directly to the BI-3000's bypassing the need for a source network WH-3000. This can be practical when one MT-3000 and PCT-4 (or PCT-8) is used with two CIC-3000's. For larger applications, ADA recommends a separate source network WH-3000 as diagrammed on the previous page.

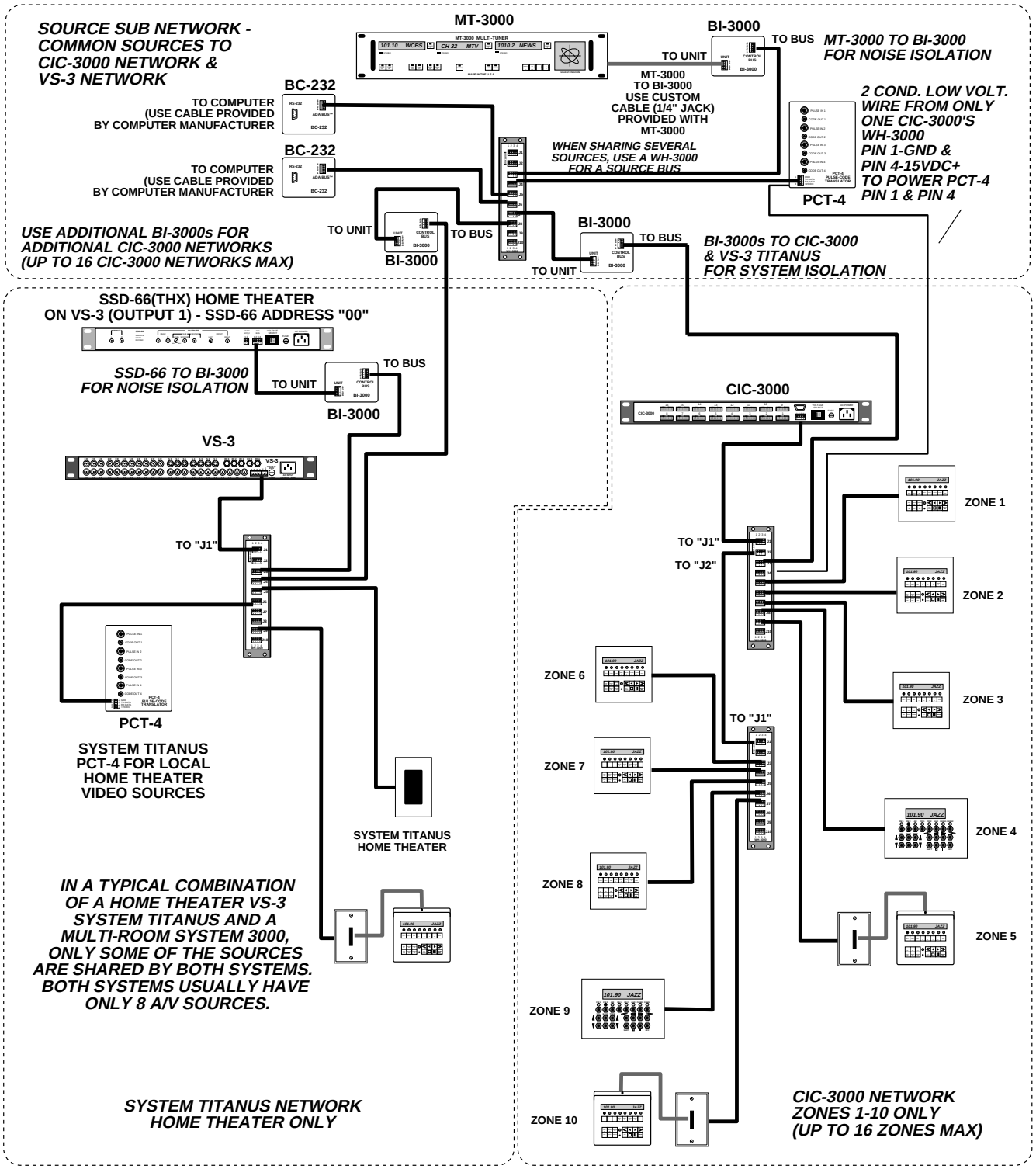


Advanced System 3000 Options (cont.)

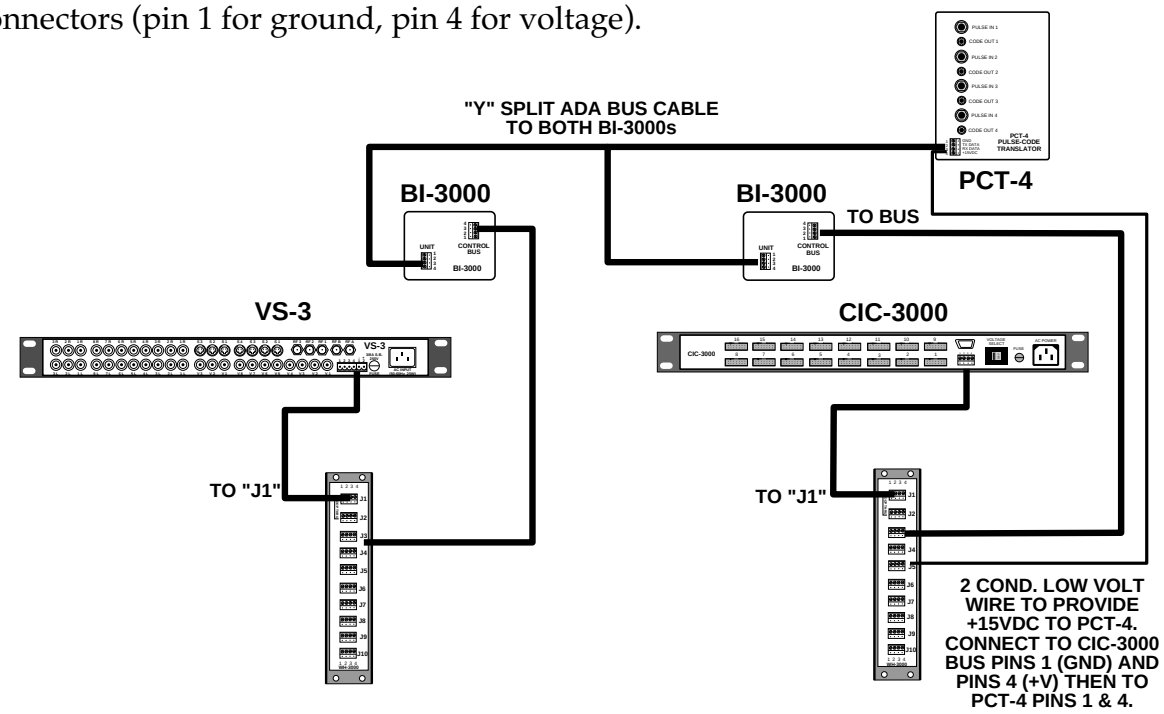
System Titanus & System 3000 Sharing Common Sources
A typical application of shared sources comes into play when a single room home theater is sharing some of the sources used on the central System 3000. In these applications, a System Titanus, based on the VS-3 A/V Controller, is used permitting keypad (or IR) control of as many as eight A/V sources to as many as three independent outputs. The System Titanus, also an ADA Bus™ system, can patch these eight source inputs independently to three projectors, TVs, monitors, or VCRs. System Titanus, the ideal home theater system, is installed as an independent system apart from the multi-zone System 3000. In most applications, the home theater system will share some of the central audio system's sources and use local video sources for the home theater only. The central audio system usually has some audio sources not accessed in the home theater. Again, under typical applications, both the central music system and the local home theater system utilize up to eight sources each.

The System Titanus uses the same keypad control options as the System 3000. The VS-3 acts as the system's input selector and central brain. Its ADA Bus™ output connects to its WH-3000 on "J1" much like the CIC-3000's ADA Bus™ output connects to its WH-3000's "J1" connector. The audio preamplifier for the home theater is either an SSD-66 Dolby ProLogic Surround Sound Decoder or SSD-66THX LucasFilm Home THX Controller. Again, the SSD-66 connects the System Titanus via a BI-3000. The keypad for a System Titanus permits source selection for the home theater; control of the SSD-66's volume, mode selection, volume preset, and stereo enhancement, control of the source's transport functions, and the ability to select a source and control a source's function to two additional VS-3 outputs. These outputs could be additional outboard monitors (sports nuts) or inputs to video recording devices (video enthusiasts). This last function makes a System Titanus keypad distinctly different from a System 3000 keypad for a home theater when using a VSU-8. Because of the multiple output keypad selection, in addition to being able to have a different set of eight sources play to the local home theater than the central music system, a separate System Titanus becomes a serious option for some installations.

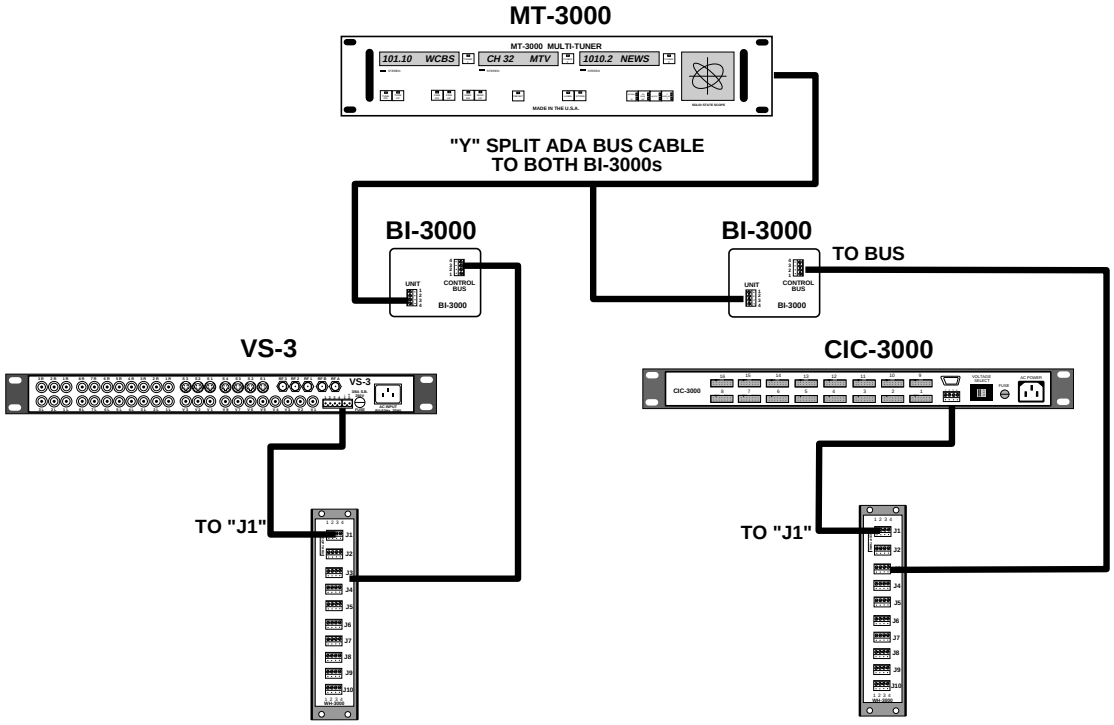
The wiring diagram below details the three ADA Bus™ networks. One network is for the common sources, the second network is for the home theater System Titanus, and the third network is for the multi-room System 3000. Please note, the PCT-4 does not have its own power supply and will require voltage from one of the two primary networks. It is recommended that the voltage for the PCT-4 be drawn from the CIC-3000's ADA Bus™ network and not the VS-3's network. A two conductor low voltage wire should be run from the CIC-3000's wire harness directly to the PCT-4. The second PCT-4 on the VS-3 Network is for video sources local to only that room's home theater system.



The PCT-4 will require a separate low voltage feed because it does not have its own internal power supply. Typically on a single CIC-3000 system, the PCT-4 gets its power from the CIC-3000. However, when BI-3000s are used to isolate a CIC-3000 and VS-3, the voltage lines are lifted and the PCT-4 does not get any power. Therefore, in this wiring scenario, the PCT-4 must draw voltage from the CIC-3000's WH-3000 Wire Harness. Take a two conductor low voltage wire and connect it to the PCT-4's voltage input (pin 1 for ground, pin 4 for voltage). Take the other end of the low voltage wire and connect it to one of the CIC-3000's WH-3000's "J3" - "J10" connectors (pin 1 for ground, pin 4 for voltage).

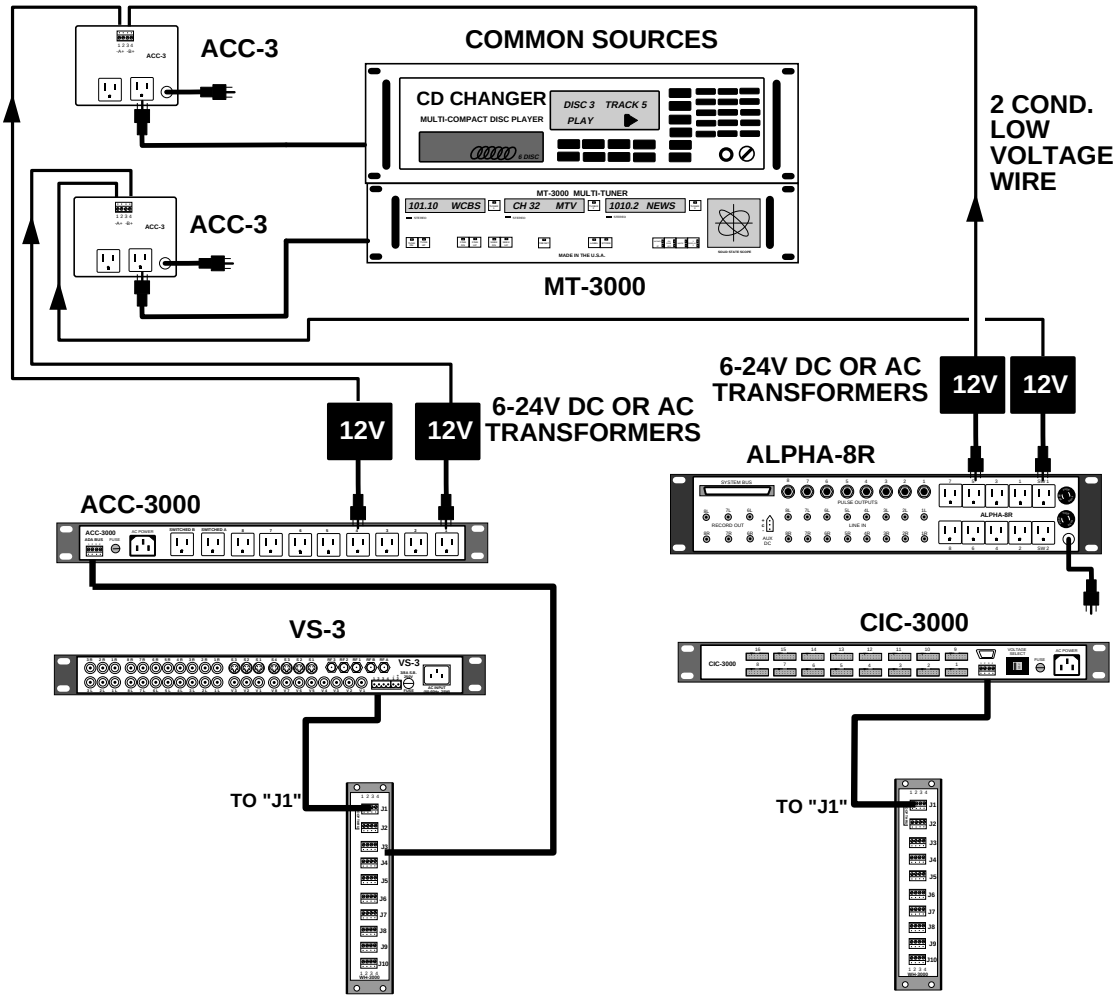


Both these diagrams detail the connection of the source control devices directly to the BI-3000's bypassing the need for a source network WH-3000. This can be practical when one MT-3000 and PCT-4 (or PCT-8) is used with a CIC-3000 and VS-3. For larger applications, ADA recommends a separate source network WH-3000 as diagrammed on the previous page.



The System Titanus (also known as VS-3 System) is its own network and the System 3000 (based on the CIC-3000) is its own network. The sources common to both systems are considered to be on their own network as well. When combining a System Titanus and System 3000, the sources common to both systems will not only need to have their audio (and video if applicable) lines split to both the VS-3 and Alpha-8R, but will also require a unique AC switching wiring configuration.

Two AC switching options exist, one permitting independent AC control of all sources, those specific to the local home theater system, central audio system, and shared by both systems. This requires that the System Titanus utilize an ACC-3000. The Alpha-8R Line Driver provides independent AC switching and the addition of the ACC-3000 will provide the same independent AC switching to the System Titanus. Each source common to both systems will need to be switched by an ACC-3. The ACC-3 permits one of two low voltage signals (3-24V AC or DC) to trigger both of its switched AC outlets (only one AC outlet is used). You will need to provide step-down transformers, two for each shared source, and connect them to each system's source AC outlet corresponding to that source's input into the Alpha-8R or VS-3. While a source could be input 4 on the Alpha-8R, it could be a totally different input on the VS-3 (and ACC-3000). The output of each transformer is run (2 cond. low voltage wire) to that source's ACC-3. The use of the ACC-3000 on the System Titanus is ideal if your source components (CD and Cassette) are left on "timer/play". This way, regardless of which system is turned on to which source, only the actively selected sources are in play preserving their life-span.

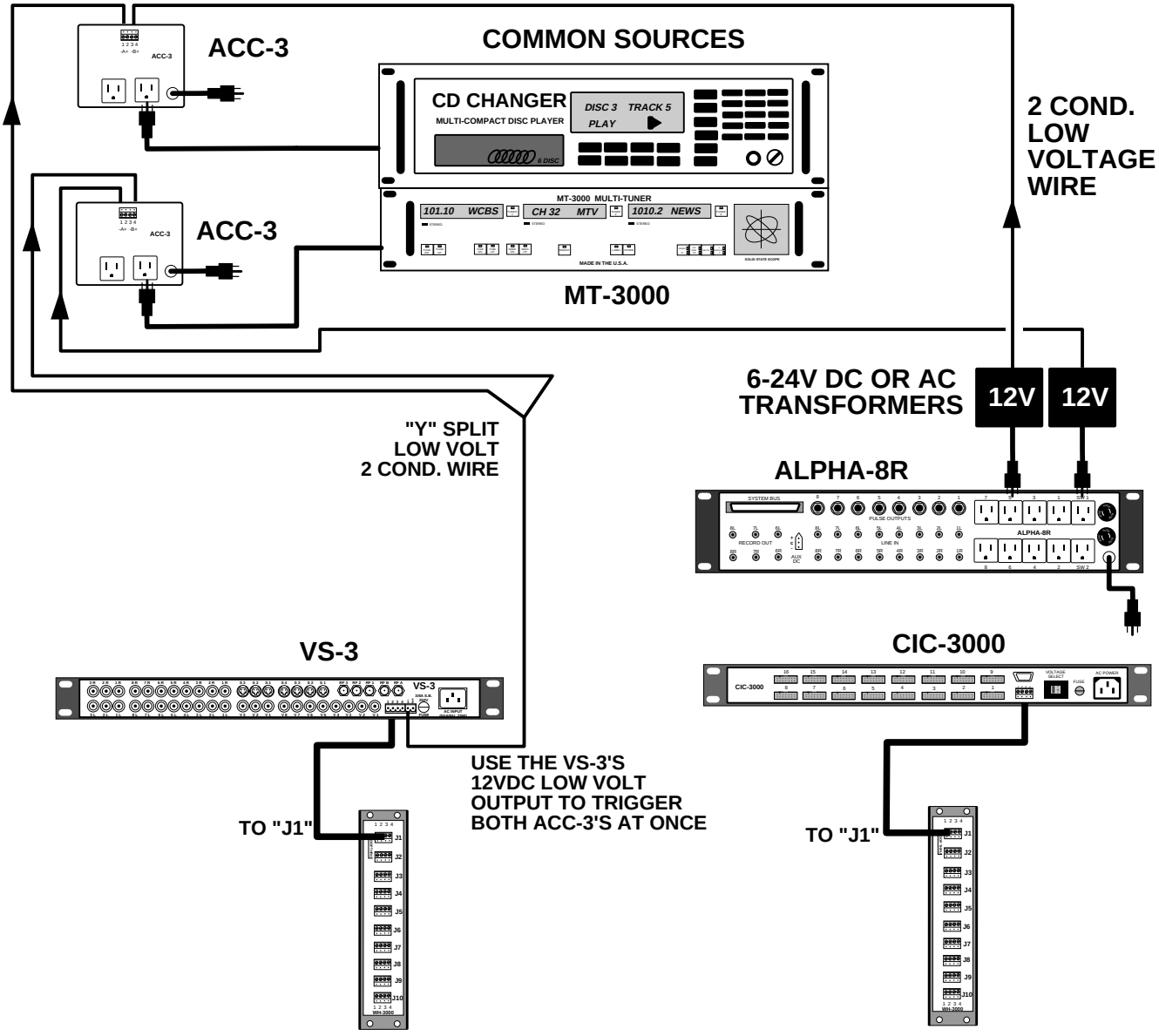


Advanced System 3000 Options (cont.)

The second option would still permit the central audio system to turn on the sources independently (both the central only sources and shared sources) when selected from a System 3000 control. However, whenever the System Titanus is turned on, all common sources and System Titanus only sources would engage at once. This scenario utilizes the low voltage output of the VS-3 to directly trigger all ACC-3s at once.

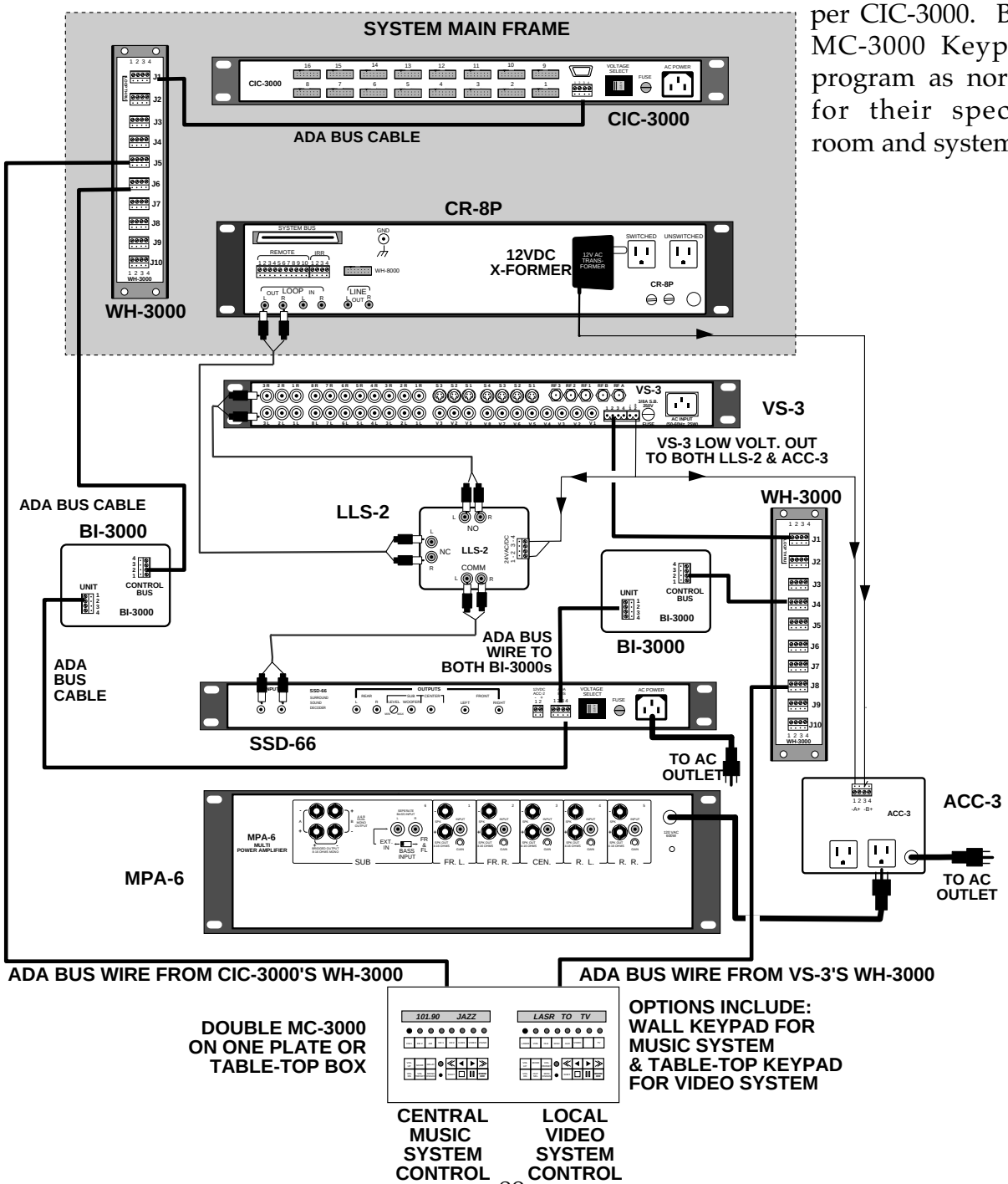
Please note, in either option, you may need to provide a short extension cord to the power transformers as the transformers AC connection will typically not fit in the tighter spacing on both the ACC-3000 or Alpha-8R. ADA does not provide the step-down transformers or the extension AC cords.

If you are experiencing line loss or a poor audio or video signal, ADA suggests using an ISO-2 Line Level Isolation Amplifier or ISO-V Video Isolation Amplifier when splitting a sources audio or video signal to two input devices.



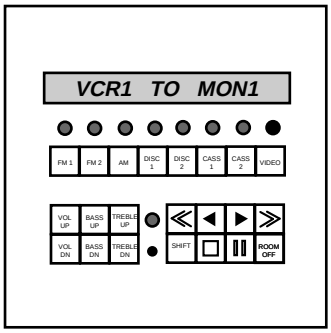
Sharing an SSD-66 and Surround Amp with a System 3000 & System Titanus

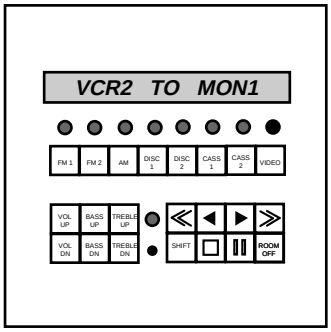
This option is ideal for home theaters which have their own local-only video sources (up to eight) and a central music system with its own sources (up to eight). The setup provides for two distinct systems, a System 3000 and System Titanus with the System Titanus (video) overriding the System 3000 in the home theater. The SSD-66 and MPA-6 are used by both systems, where the amplifier will engage when either keypad selects a source. The SSD-66 is shared by both ADA Bus networks using BI-3000s to isolate the two networks. You will need to place both a music system keypad and video system keypad in this room. The keypads can be mounted together on a custom plate or table-top box. You can also use standard keypads, a wall mounted one for the music system and a table-top one for the video system. This option is available when using CIC-3000 ports 1, 2, or 3 as the SSD-66 Address must correspond to the VS-3's outputs 1, 2, & 3 respectively. Therefore, when using CIC-3000 port 1, you must connect the SSD-66 to the VS-3's output #1, etc. You can include as many as three such System Titanus per CIC-3000. Both MC-3000 Keypads program as normal for their specific room and system.

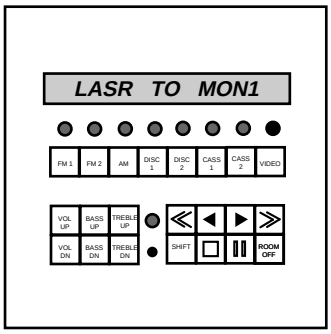


Advanced System 3000 Options (cont.)

Using the VS-3 to expand the Source Input Capability for control from one keypad.
This option uses the VS-3 as an alternate input selector directly tied into the System 3000 and not as a separate System Titanus. This versatility permits several options itself.







A common use of the VS-3 on a System 3000 is when the central music system requires seven sources. The client may also need to access in remote rooms as many as eight more video sources and does not wish to include a double keypad (double system) as in the previous diagram. You can provide the user with a single keypad where seven of the buttons are labeled with music sources and the 8th button labeled VIDEO. When the VIDEO button is pressed, the System 3000 turns on the VS-3, PCT-8, & ACC-3000 which switch, IR/serial control, and turn on/off the AC to the video sources. Repeated pressing of the VIDEO button will advance one of the VS-3's three outputs to the next source and the keypad will now display the new source name and output (i.e. VCR1 TO MON1). The keypad's transport functions will control the source which is selected. Since the VS-3 has three independent outputs, as many as three rooms can view three different video sources at the same time.

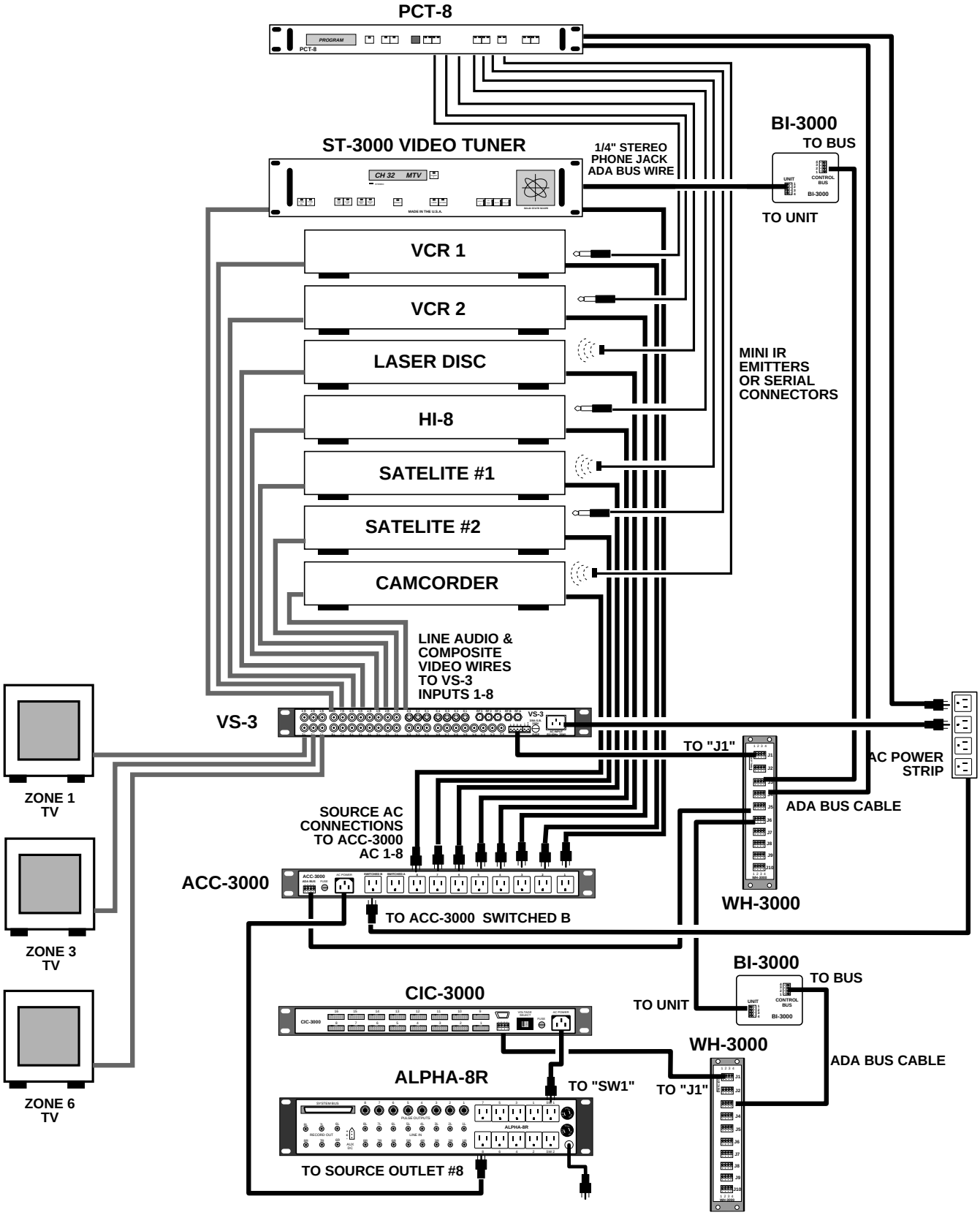
Each MC-3000 has its VIDEO button programmed individually to a particular VS-3 Address and VS-3 Output. For this example, Zone 1's VIDEO button will be programmed to control the VS-3's first output. The Output 1 on the VS-3 connects to the TV in Zone 1 (both audio and video). Zone 3 also has a TV and will access Output 2 on the VS-3. Its keypad's VIDEO button will be programmed to control the VS-3's second output. Zone 6 also has a TV and will access Output 3 on the VS-3. Its keypad will be programmed to access the VS-3's Output 3. To program the MC-3000's VIDEO button, see pages 101 under Initializing the MC-3000 for control of a VS-3.

You can duplicate this setup such that rooms 1-3 access one VS-3 and its video sources while rooms 4-6 would access a second VS-3 and a totally different set of video sources. You will need to provide an additional VS-3, PCT-8, ACC-3000, WH-3000, and BI-3000.

You can also permit several rooms to access and control a single output, programming each room's keypad's VIDEO button for the same VS-3 Output. You will need to split the VS-3's audio and video outputs to all TVs. Without adding a second VS-3, you could have all the rooms on the system access the VS-3, grouping them along the three outputs of the VS-3.

You can add VS-3s and set their address to a different number from the first VS-3. This VS-3 would provide three more independent outputs. There are a total of eight VS-3 addresses for a total of 24 VS-3 output address on the MC-3000 Keypad. Please note, each VS-3 will require its own PCT-8, as the PCT-8 will automatically track a VS-3's address. If you are using a single central bank of video sources and two VS-3s, you will need to have each VS-3's PCT-8 send an IR or serial signal to that source.

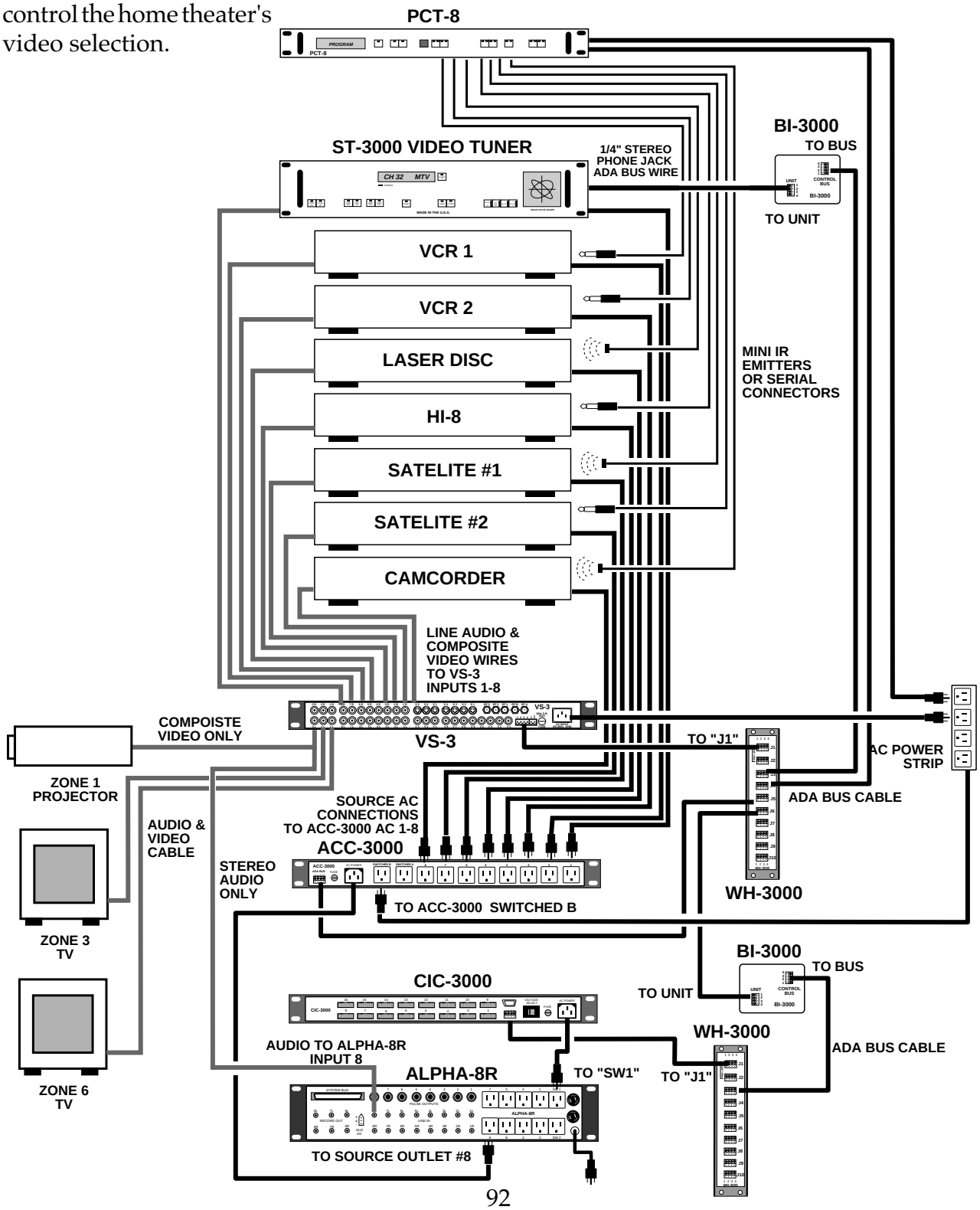
As with the previous combinations of CIC-3000 networks to other networks, a BI-3000 is used to isolate the VS-3's network (including the PCT-8, ACC-3000, and ST-3000 (Video Tuner-will require its own BI-3000 as would an MT-3000) from the CIC-3000's network. A WH-3000 will be needed to establish the VS-3's wiring platform. Furthermore, the VS-3 network should engage with the Alpha-8R's source 8 AC outlet.



Advanced System 3000 Options (cont.)

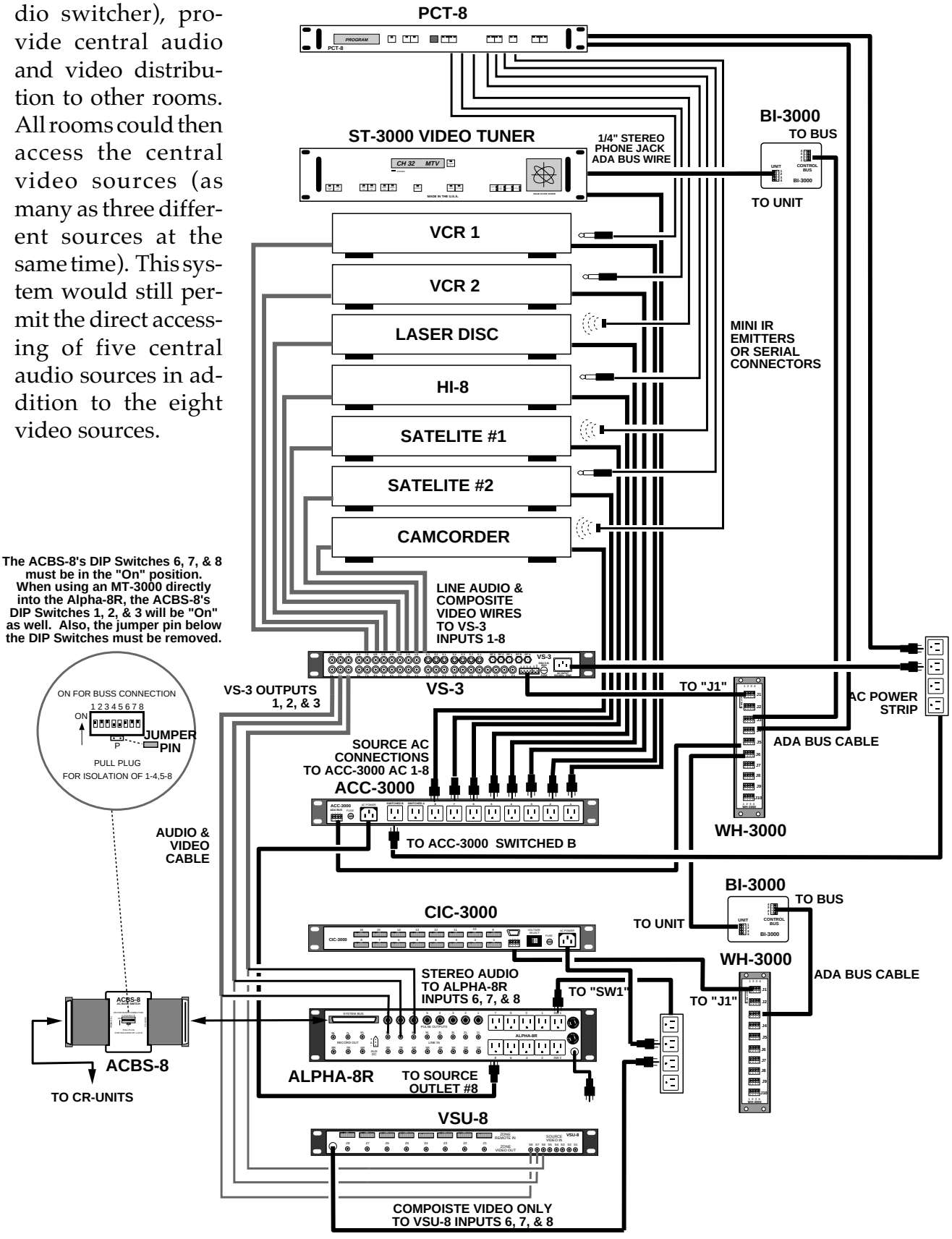
When Using A Single Projector

When a projector is used in a home theater, with an SSD-66 for the audio, the audio signal of the VS-3's output (the same output as used for the projector's video) must then run to the Alpha-8R's source 8 input. Thus when the home theater selects a video source, its corresponding audio signal feeds to the home theater's CR-8P and then to the SSD-66. Other rooms in the house can monitor the home theater's audio selection by pressing their VIDEO button. Since each room's VIDEO is individually programmed, these rooms could be programmed not to control the home theater's video selection.

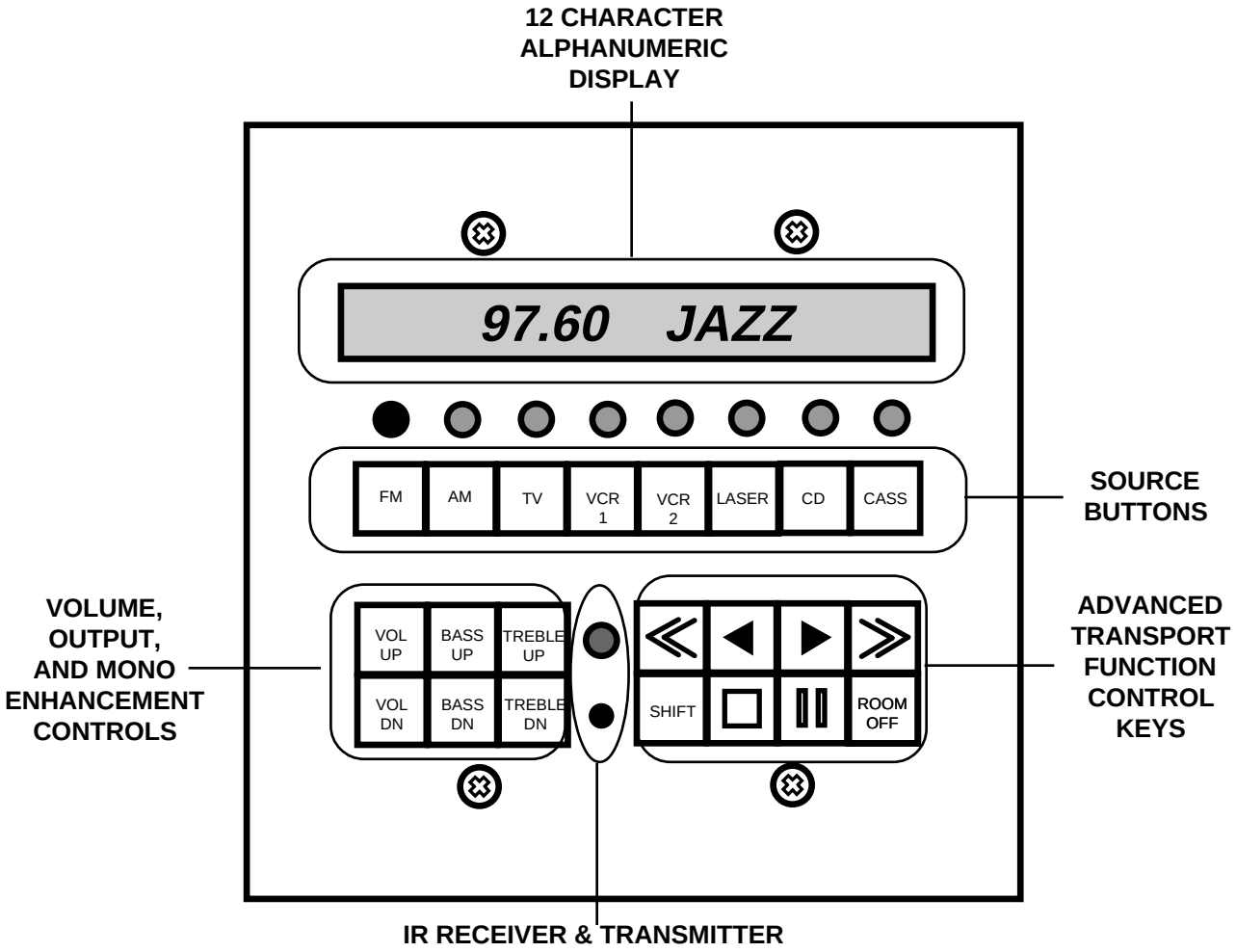


Using the VS-3 as Three Independent VIDEO Inputs into the Alpha-8R

The VS-3 can also feed its additional two outputs directly into the Alpha-8R (in this example source inputs 6, 7, & 8). The video could feed three independent projectors or, if using a VSU-8 (video follow audio switcher), provide central audio and video distribution to other rooms. All rooms could then access the central video sources (as many as three different sources at the same time). This system would still permit the direct accessing of five central audio sources in addition to the eight video sources.



Initializing the MC-3000 Controls



Turning the MC-3000 Keypad's IR Receiver On and Off

The Delta System Keypad, the MC-3000 incorporates both an infrared receiver and infrared transmitter. The IR transmitter is for sending conformation signals to the MC-0064 System 3000 Bi-Directional Hand-Held Remote Control. The IR receiver is for receiving IR signals from the MC-0064 (ADA Bus™ codes) and IR repeating (source components' IR codes). Some MC-3000 locations, especially true for MC-3000 Table Top Keypads, will receive IR signals not intended for the system. Sources of such IR signals include sun light, incandescent light, and IR motion security sensors. When these signals are induced onto the ADA Bus™, they can slow down the system's operation or completely lock up the system. It is strongly suggested, that when using an MC-0064 in a particular room, you specify an IRT-3000 Single Gang IR Transceiver. The IRT-3000 is fitted with a plexiglass IR lens which filters out ambient IR signals that the MC-3000 would pass onto the ADA Bus™. This unit also provides dual IR emitters (the MC-3000 Keypad provides only one) which dramatically improves the transmission of conformation commands to the MC-0064.

The MC-3000 Keypad has a software controlled relay which engages or disengages the IR transmitter and receiver. If you are using a tabletop keypad, chances are the IR receiver has already been disengaged. To engage or disengage the IR transceiver, please follow the instructions one the following pages.

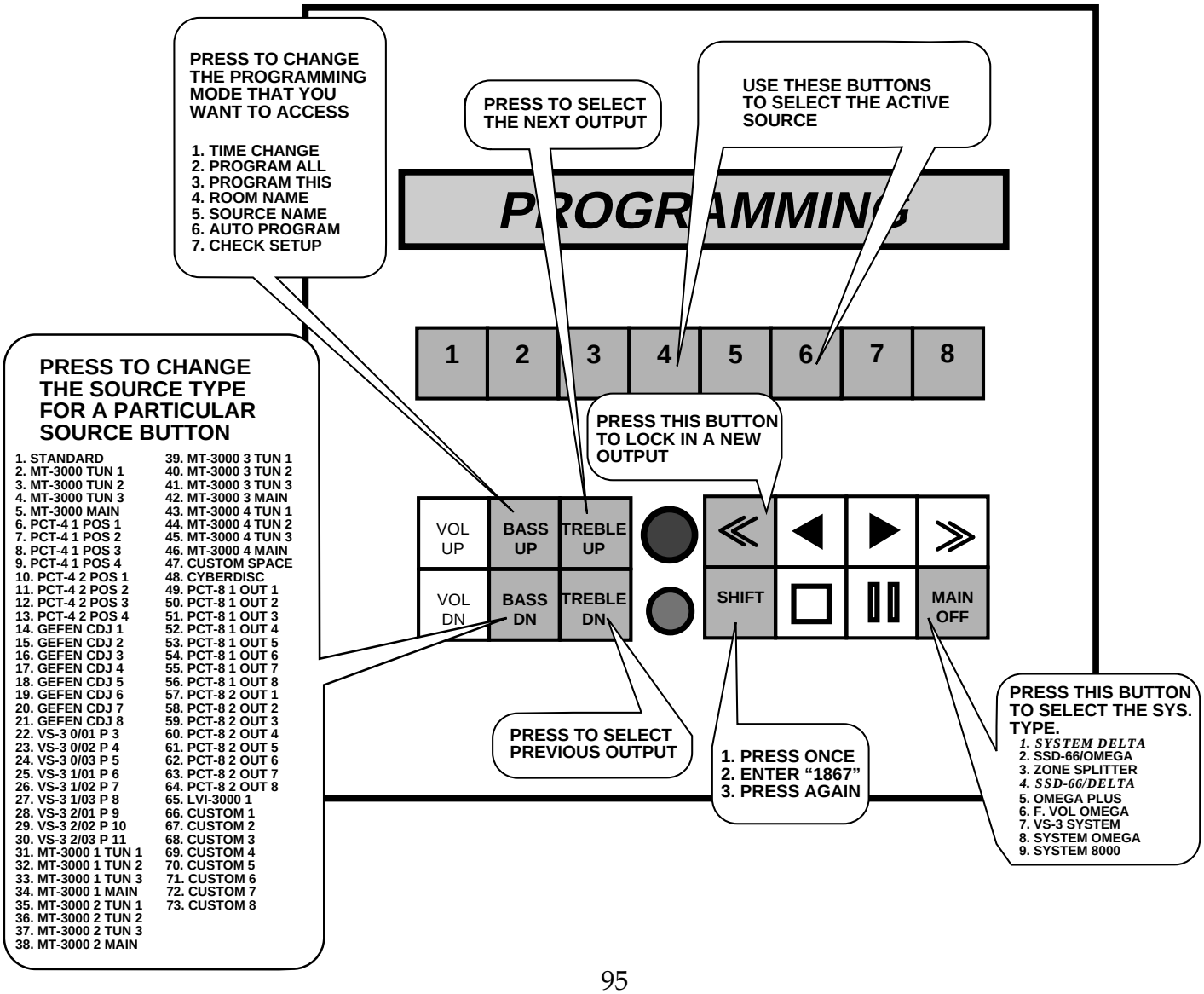
MC-3000 IR Receivers On/Off

To turn the MC-3000's IR receiver and transmitter on or off, please follow these steps.

STEP ONE: Press the SHIFT button. After the release number appears "R1.70 <C> ADA", "ENTER CODE" will appear on the display.

STEP TWO: Type in "1112" using the source buttons on the control (see diagram below). You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. The keypad will display "INFRARED ON" or "INFRARED OFF" and then "OK". The OK conformation indicates that the keypad has reset to its normal mode.



Initializing the MC-3000 Controls (cont.)

NOTE: Make sure that the system is off before programming the MC-3000 controls (except when programming the default output). You shouldn't unplug the system from the wall outlet, but make sure that the System 3000 is in the ALL OFF mode by pressing the keypad's Room Off button. By having the system in the off/standby mode, there is no chance of interference on the ADA Bus™ network, which could disrupt the programming process.

Programming the MC-3000 Using the Information in the CIC-3000

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.72 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (MODE button for home theater keypads) until "AUTO PROGRAM " is displayed.

STEP FIVE: Press the SHIFT button again. "PROGRAMMING" will be displayed followed by "25%", "50%", "75%", "100%" and then the words "PROGRAMMED".

Programming the MC-3000 for a "System Omega/3000"

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.72 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (MODE button for home theater keypads) until "PROGRAM THIS" is displayed. Then press the ROOM OFF button until "SYSTEM OMEGA" is displayed.

STEP FIVE: Press the BASS UP button again until "PROGRAM ALL" appears.

STEP SIX: Press the SHIFT button again. "PROGRAMMING" will be displayed followed by "25%", "50%", "75%", "100%" and then the words "PROGRAMMED".

Initializing the MC-3000 Controls (cont.)

Setting the MC-3000 to Control the Correct Room/Zone

After the MC-3000 is initialized for a System Omega, Zone Splitter, or Omega with SSD-66, it will need to be told which CIC-3000 Port # or Room Name it is controlling. Once the MC-3000 is programmed to control a specific room, it will always default back to this room.

The System 3000 permits one room's MC-3000 to access and control the other rooms on that CIC-3000. By pressing the shift button once, the keypad will prompt "ALT FUNCTION" and the user will bypass the program mode gaining access to the other rooms by pressing the TREBLE UP and TREBLE DN buttons. The user can also press the ≫ button once to enter a "ROOM SCAN" function which will scroll through all three rooms once, displaying the room name followed by it source. Once the keypad moves to the next or previous room, the user can turn on a source and adjust room volume levels. If the user wishes to have the keypad reset to its original room, they can choose to let the MC-3000 simply time out to "NORMAL MODE" or press the SHIFT button to return to "NORMAL MODE".

To program an MC-3000 for a particular room/zone, follow these steps.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed. Press the BASS UP button (MODE button for home theater keypads) until "PROGRAM THIS" is displayed.

STEP FOUR: Use the TREBLE UP button to advance to the next room or the TREBLE DN buttons to advance to the previous room. The display will first read "NEXT ROOM" or "PREVIOUS ROOM" followed by the room's name. If the MC-3000 is going to be controlling a home theater using the SSD-66, the DELAY and MONO ENHAN buttons will be used to advance to the "NEXT ROOM" or "PREVIOUS ROOM".

STEP FIVE: When the display reads the correct room name, press the REWIND (≪) button. The display will read "ROOM CHANGED."

STEP SIX: Wait until the source and output appear on the display again before continuing to operate the MC-3000.

Initializing the MC-3000 Controls (cont.)

Programming the MC-3000 To Control ZS-1 Zone Splitters
This should be done from the keypad for the room with the Zone Splitter, after the keypad has been initialized for that room.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.72 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button until "PROGRAM THIS" is displayed.

STEP FIVE: Press the ROOM OFF button until "ZONE SPLITTER" is displayed. Then press the BASS UP button again until "PROGRAM THIS" is displayed.

STEP SIX: Press the SHIFT button again.

Programming the MC-3000 To Control a CR-8P+ and CR-8A+.
This should be done from the keypad for the room with the CR-8P+ (or CR-8A+), after the keypad has been initialized for that room.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.72 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button until "PROGRAM THIS" is displayed.

STEP FIVE: Press the ROOM OFF button until "F. VOL OMEGA" is displayed. Then press the BASS UP button again until "PROGRAM THIS" is displayed.

STEP SIX: Press the SHIFT button again.

Initializing the MC-3000 Controls (cont.)

Programming the MC-3000 To Control SSD-66 Surround Sound Decoders
This should be done from the keypad for the room with the SSD-66, after the keypad has been initialized for that room.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.72 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (or MODE button) until "PROGRAM THIS" is displayed.

STEP FIVE: Press the ROOM OFF button until "SSD-66/OMEGA" is displayed. Then press the BASS UP button (or MODE button) again until "PROGRAM THIS" is displayed.

STEP SIX: Press the SHIFT button again.

Initializing the MC-3000 Controls (cont.)

Programming the Source Buttons on an MC-3000

After telling the control what system it is in and what room it is controlling, you must tell it what sources are connected to the system, and what type of components they are. By the time you are ready to install the System 3000, you should have completed the "System 3000 Source Form" found in Appendix C in the back of this manual. This form provides a clearly written record of the exact number, title, and location of the sources and outputs of the System 3000 you will be installing. Refer to this form before proceeding.

NOTE: Make sure that the system is off before programming the sources on the MC-3000 control.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (MODE button for home theater keypads) until "PROGRAM THIS" is displayed. Now refer to the "Delta System Source Form" to determine the source type that you want to program for a particular source button.

STEP FIVE Press the BASS DN button (VOL PRESET button if the MC-3000 is for a home theater) until you have found the appropriate source type (i.e. PCT-4 1 POS 1, PCT-4 1 POS 2). Then, press and hold the source button (i.e. CASS, CD, VCR 1) that you want to program. The button's light will flash, and the display will read "OK," followed by the source type that you just programmed.

STEP SIX: Repeat steps four and five for as many times as are needed to accommodate all of the sources in the system (the limit is eight sources).

STEP SEVEN: When you are finished programming each of the source buttons, press the BASS UP button again until "PROGRAM ALL" appears.

STEP EIGHT: Press the SHIFT button again. "PROGRAMMING" will be displayed followed by "25%", "50%", "75%", "100%" and then the words "PROGRAMMED".

Initializing the MC-3000 Controls (cont.)

Initializing an MC-3000 for a VS-3 as a Scrolling Input Selector

The System 3000 can use one or as many as eight VS-3s on the system as a scrolling input selector. This would permit the system to accept as many as 64 central sources (eight could be playing at any one time). The VS-3 could also be used to provide 8 video sources to rooms with TVs or Home Theater Systems with three rooms accessing these eight sources independently per VS-3. To program a particular source button to access a VS-3's output (one of three) follow these steps. Please note, it will be important to know which output is associated to a particular room and, when using multiple VS-3s, which VS-3 is associated to that room as well. Typically, MC-3000's are programmed individually to access a VS-3 and this programming should be done from that room's keypad.

NOTE: Make sure that the system is off before programming the sources on the MC-3000 control.

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (MODE button for home theater keypads) until "PROGRAM THIS" is displayed.

STEP FIVE: Press the BASS DN button (VOL PRESET button if the MC-3000 is for a home theater) until "VS-3 X/OUT Y" is displayed . X refers to the VS-3's address and the Y refers to the VS-3's output. Then press and hold the appropriate VIDEO button until the display flashes OK. Repeat this step for several VIDEO buttons if used.

Special Note: The MC-3000 Keypad has numerous VS-3 settings for installations requiring several VS-3s as scrolling input selectors. The VS-3 address and the "X" value that you program on the MC-3000 must match in order to control the VS-3.

STEP SIX: When you are finished programming each of the source buttons, press the BASS UP button again until "PROGRAM THIS" appears. If you are programming this button for all the keypads on the CIC-3000, press the BASS UP button until "PROGRAM ALL" appears.

STEP SEVEN: Press the SHIFT button again. "OK" will be displayed.

Initializing the MC-3000 Controls (cont.)

Initializing an MC-3000 for an MT-3000 Multi-Tuner

STEP ONE: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP TWO: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP THREE: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FOUR: Press the BASS UP button (MODE button for home theater keypads) until "PROGRAM THIS" is displayed. Now refer to the appropriate "Source Work Sheet" to determine the MT-3000 Tuner Module that you want to program for a particular source button.

STEP FIVE: Press the BASS DN button (VOL PRESET button if the MC-3000 is for a home theater) until "MT-3000 TUN X" is displayed . X refers to the tuner module location in a particular tuner. Then press the source button associated to that tuner. The display will flash "OK". For example, if you wanted source button one to control the MT-3000's first tuner module, then you would program that source button for "MT-3000 TUN 1." If, instead, you want to access the combined presets of all three tuner modules, program the source button for "MT-3000 MAIN." Then press the source button and the button's light will flash, and the display will read "OK," followed by the source type that you just programmed.

Special Note: The MC-3000 Keypad has numerous MT-3000 settings for installations requiring several MT-3000 Multi-Tuners. If you are using only one MT-3000 make certain that the MT-3000 has its ADA Bus™ address set to "0" (see page 23). Then set the keypad for the:

MT-3000 TUN 1, MT-3000 TUN 2, MT-3000 TUN 3, MT-3000 MAIN

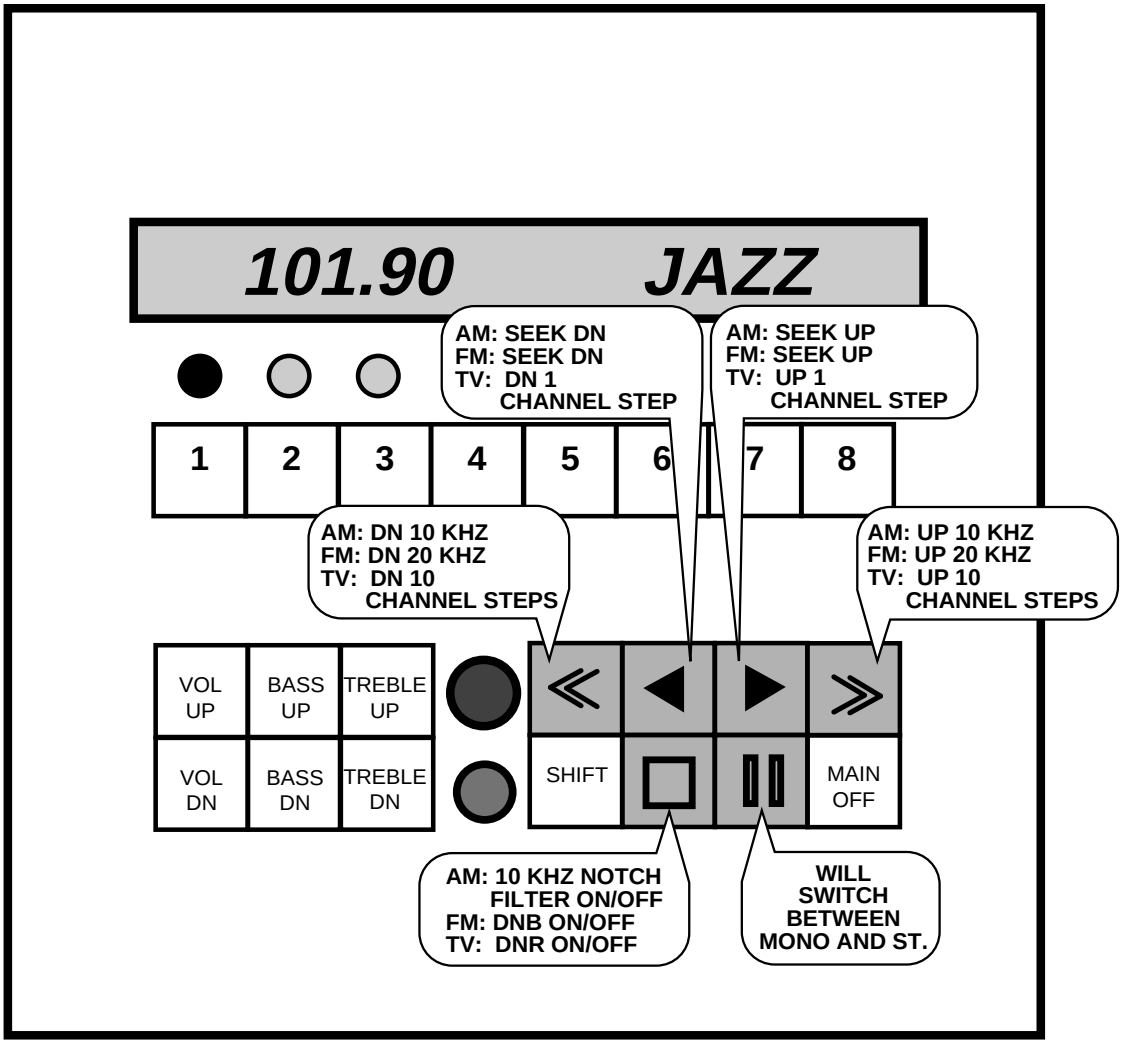
The MT-3000 Main setting accesses all three modules (60 Presets) and is seldom used. Note that the settings above do not include a number immediately after the word "**MT-3000_**". If you accidently programmed the keypad for "MT-30001 TUN1" or "MT-30002 TUN 2", for example, the tuner will not be controlled from a keypad and will not display stations on the keypad.

STEP SEVEN: When you are finished programming each of the source buttons, press the BASS UP button again until "PROGRAM ALL" appears.

STEP EIGHT: Press the SHIFT button again. "PROGRAMMING" will be displayed followed by "25%", "50%", "75%", "100%" and then the words "PROGRAMMED".

Operating an MT-3000 with an MC-3000 Music Control

The MC-3000 Music Control is capable of controlling many of the MT-3000's major functions. The functions are accessed with advanced transport control keys on the control. The following illustration shows what operation each advanced transport function button will perform when accessing any of the three different types of tuner modules.



System 3000
MC-3000 Music Control
MT-3000 Operations Legend

Controlling Rooms From an MC-3000

After you have set the MC-3000 for any particular Room, you can move to any other room and select a source, control the volume, or transport functions for that room's selected source. You could also turn another room off without affecting the room to which your control is locked. Please note, the System 3000 permits access to other rooms providing that these other rooms are all connected to the same CIC-3000. For systems with multiple CIC-3000's, users could access other rooms based on CIC-3000 room groupings. To move to another room, follow these steps:

STEP ONE: Press the and release the SHIFT button on the MC-3000. The keypad will indicate "ALT FUNCTION", then quickly display the "ROOM NAME" and then the "SOURCE NAME".

STEP TWO: Press the TREBLE UP or TREBLE DN buttons (DELAY and MONO ENHAN for keypads controlling home theaters with SSD-66s) to go the "NEXT ROOM" or "PREVIOUS ROOM" respectively.

STEP THREE: When you are done controlling other rooms, press the SHIFT button or do not press any buttons for approximately thirty seconds. The control will automatically return to its default output reading "NORMAL MODE".

A variation of the above will permit a keypad to scan all three rooms once, displaying the room name and the source (all Room Off) playing in that room. After the keypad has gone through all three rooms, it will automatically return to normal mode. To access room scan:

STEP ONE: Press the and release the SHIFT button on the MC-3000. The keypad will indicate "ALT FUNCTION", then quickly display the "ROOM NAME" and then the "SOURCE NAME".

STEP TWO: Press the FAST FORWARD () button. The display will read “ROOM SCAN” and begin displaying the room name followed by the source (or Room Off) then the words "NEXT ROOM" and its name and source. To end "ROOM SCAN" press the SHIFT button and the display will read "NORMAL MODE". The MC-3000 will also automatically reset after all three rooms have been scanned.

Turning the System Off

As part of the innate flexibility of a System 3000, there are two “levels” of off commands built in. Because a System 3000 could have up to many different rooms, these two levels are needed so that turning off one room would not turn off the others, unless so desired. Therefore, when the ROOM OFF button is first pressed, that room will turn off leaving the other rooms on. The keypad for the room who was just turned off will display "ROOM OFF" When the ROOM OFF button is pressed again, at the same control, the entire system will turn off.

For rooms with an SSD-66, the ROOM OFF button when pressed the first time will mute the SSD-66 with the keypad displaying the words "OFF-STANDBY" and "AUDIO MUTED". Pressing the ROOM OFF button again will turn off the room with the keypad displaying "ROOM OFF". Pressing the ROOM OFF button a third time will turn the system off. The keypad will display "ALL OFF" and after a few seconds change to the time.

Labelling the Sources From an MC-3000

You can create or change the name of the sources that are programmed into the system from any keypad on the CIC-3000. If you are using more than one CIC-3000, you will have to change the labeling on the second CIC-3000 by going to a keypad on its network as well.

Make certain that the system is off before continuing with the programming below.

STEP ONE: Press the SOURCE button you wish to change.

STEP TWO: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP THREE: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FIVE: Press the BASS UP button (MODE button for home theater keypads) until "SOURCE NAME" is displayed.

STEP SIX: Use the STOP () button to select the first character you wish to change.

Continued pressing of the STOP () button will advance the cursor's position to the next character. When you have scrolled through all twelve characters, the cursor will return to the first character.

STEP SEVEN: When you have the cursor on the proper character, use the PLAY FORWARD () button to advance the character generator or the PAUSE () button to go down the character generator. When you come the correct character, press the STOP () button to advance the cursor to the next character which needs to be changed and change it as well

STEP EIGHT: When the display reads the correct new SOURCE NAME, press the SHIFT button. The display will read the new source name.

Special Note: You will need to repeat Steps 1-8 for all source names you wish to change.

Labelling the Rooms From an MC-3000

You can create or change the name of the rooms that are programmed into the system from any keypad on the CIC-3000.

Make certain that the system is off before continuing with the programming below.

STEP ONE: Go to the room's keypad for the room whose name you wish to change.

STEP TWO: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP THREE: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FIVE: Press the BASS UP button (MODE button for home theater keypads) until "ROOM NAME" is displayed.

STEP SIX: Use the STOP (⏹) button to select the first character you wish to change.

Continued pressing of the STOP (⏹) button will advance the cursor's position to the next character. When you have scrolled through all twelve characters, the cursor will return to the first character.

STEP SEVEN: When you have the cursor on the proper character, use the PLAY FORWARD (▶) button to advance the character generator or the PAUSE (⏸) button to go down the character generator. When you come the correct character, press the STOP (⏹) button to advance the cursor to the next character which needs to be changed and change it as well

STEP EIGHT: When the display reads the correct new ROOM NAME, press the SHIFT button. The display will read the new room name.

Special Note: You will need to repeat Steps 1-8 for all room names you wish to change.

Controlling 2 or More Rooms one MC-3000

The System 3000 permits one MC-3000 to control several individual rooms even though these rooms have their own local keypad. This allows inclusion of a "Party Keypad" which may turn on several areas to the same source when entertaining, all with the touch of one button. As many as all 16 rooms per CIC-3000 can come on at once from one keypad. Several such keypads can be included with each keypad providing different grouping arrangements. Please note, that a single keypad can only group rooms on its CIC-3000.

STEP ONE: Go to the keypad which will be programmed to control several rooms.

STEP TWO: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP THREE: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FIVE: Press the TREBLE UP or TREBLE DN buttons until the display reads the room you wish to also control from this keypad. As you press the TREBLE UP and TREBLE DN buttons, the display will first display "NEXT ROOM" or "PREVIOUS ROOM" (respectively) and then the room name.

STEP SIX: When you get to the room you wish to include, press the REVERSE PLAY ( ) button. The display will read "ZONE EXCLUDE" or "ZONE INCLUDE". Continuous pressing of the REVERSE PLAY () button will toggle between these two options. To include this room on the keypad, leave the display on "ZONE INCLUDE". Continue with step six.

Special Note: If you wish to undo a room's from a keypad which controls several rooms, leave the display on "ZONE EXCLUDE" and continue with step six.

STEP SEVEN: While the display reads "ZONE INCLUDE", keep pressing the BASS UP button until the display reads "PROGRAM THIS".

STEP EIGHT: Press the SHIFT button. The display will read "OK" and the MC-3000 will reset to its normal mode.

Special Note: You will need to repeat Steps 1-8 for all rooms you wish to include for control from this keypad. If you want to undo a particular room, repeat steps 1-8, leaving the display in step 6 on "EXCLUDE" before moving to steps 7 & 8.

Setting the System's Clock from an MC-3000

The System 3000's clock is kept in the CIC-3000. You can access the time from any keypad when the room is off by pressing the TREBLE UP or TREBLE DN buttons. You can also program a new time into the CIC-3000 from any keypad on the system. When two or more CIC-3000s are used on a single system, you will have to program a keypad tied into each CIC-3000 network. Please note, you will have to change the clocks time when moving into and out of Daylight Savings Time.

STEP ONE: Go to a keypad and make certain the system is off by pressing and holding the ROOM OFF button.

STEP TWO: Press and hold the SHIFT button. The words "ALT FUNCTION" will appear followed quickly by the "ROOM NAME" and "SOURCE NAME". After the source name appears, the release number is displayed "R1.70 <C> ADA" followed by "ENTER CODE". You can release the SHIFT button once the release number appears.

STEP THREE: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. "PROGRAM MODE" will be displayed.

STEP FIVE: Press the BASS UP button until the display reads "TIME CHANGE".

STEP SIX: Use the TREBLE DN (clock time forward) and TREBLE UP (clock time descend) buttons to change the clock to a new time.

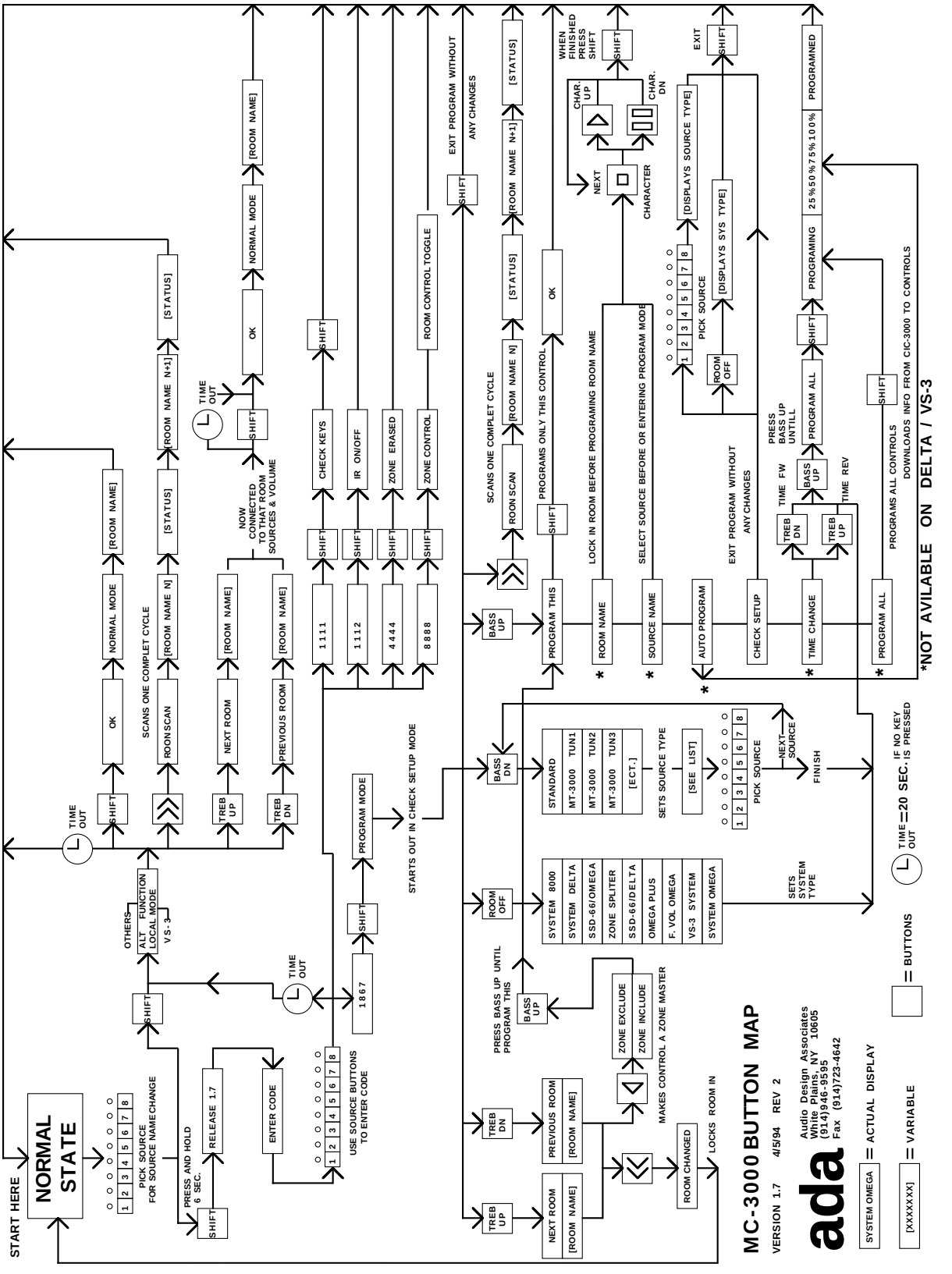
STEP SEVEN: Press the BASS UP button until "PROGRAM ALL" is displayed.

STEP EIGHT: Press the SHIFT button. The display will read "PROGRAMMING" followed by the symbols "25%", "50%", "75%", "100%" and the word "PROGRAMMED". The PROGRAM ALL function takes the information from this MC-3000 and downloads it to all MC-3000s and most importantly the CIC-3000 since it keeps the system's time. If the percentage symbols did not display, the programming did not take place. This may be due to other rooms turning on while the programming was in process. It is important that all rooms remain off during most programming processes. If the programming did not hold, repeat steps 1-8.

Appendix A

MC-3000 Button Map • Flow Chart

The MC-3000 Keypad has several menus, each with their own program levels. The following chart details the menus. Some options do apply to the System 3000.



Appendix B

ADA Bus Address & Release Numbers

Software Version Release Information:
The CIC-3000 SSD-66 (THX), MT-3000, and MC-3000 each operate on their own microprocessor. It is import that the corresponding software versions are in place for all these components to operate properly with each other. Since the Delta System is software based, out-of-date versions may not access functions on the various units. The following list details the current compatible versions at the time of this manual's printing.

CIC-3000	**Version 1.51**
SSD-66 (THX)	**Version 5.2**
MT-3000	**Version 1.51**
MC-3000	**Version 1.72**

Determining Which Software Version Is Installed:
Each of the previous components permits you to access the software release number. Follow the appropriate steps to regain the software release number respective to each component.

CIC-3000
The software release number can be found on the right side of the CIC-3000 with the units serial number. For older CIC-3000's, the software can be found on the inside of the CIC-3000, directly on the computer chip.

SSD-66 (THX)
Plug the SSD-66 into an AC outlet. If the SSD-66 is currently set up with an AC switcher and VS-3, it may be necessary to first turn on the VS-3. Press the MODE Button to turn the unit on. Keep pressing the MODE Button until the words SET UP MODE appear in the display window. Press the RIGHT Button on the upper right of the SSD-66 and the Release Number will appear on the twelve character alphanumeric display.

MT-3000
Plug the MT-3000 into an AC outlet. If the MT-3000 is currently set up with an System Omega/3000, it may be necessary to first select it as a source. Once the MT-3000 is on, press the LABEL Button until its LED is flashing. Press the DISPLAY Button and the MT-3000's Release Number will appear in the center alphanumeric LED display.

MC-3000
There are two ways to display the MC-3000's Release Number. However, in order to obtain the software release number, the MC-3000 will require some type of power supply. Most commonly, this power is derived through the ADA Bus™ from the CIC-3000. In order to obtain the release number, the MC-3000 must be wired correctly to a WH-3000 in a System 3000. If you only have the MC-3000 and a CIC-3000, you can plug the MC-3000 directly into the ADA Bus™ port on the CIC-3000. One way to obtain the Release Number is to plug the MC-3000 onto the ADA Bus™. The alphanumeric display will show the release number and hold it until another button is pressed. If the keypad is already wired into a System 3000, you can obtain the Release Number by pressing the SHIFT Button. The release number will appear for a brief moment before prompting the ENTER CODE line. To return to a normal status simply press the SHIFT Button again. The System 3000 will be back to normal after the label NORMAL MODE has appeared on the MC-3000.

NOTE: As part of an ongoing process to improve our products, Audio Design Associates reserves the right to change either the documentation for this unit, or the unit itself, without notice.

Appendix C

System 3000 Source Form For: _____ Dated:____

Client Name

Common Example

Source Number	Source Component Make & Type	Button Label On Keypad	12 Character Label LED Source Label	PCT-4(8) or MT-3000 Port #/Tuner Module
1	FM MT-3000 Tuner Module	FM	FM TUNER	MT-3000 TUN 1
2	TV MT-3000 Tuner Module	TV	TV TUNER	MT-3000 TUN 2
3	AM MT-3000 Tuner Module	AM	AM TUNER	MT-3000 TUN 3
4	VCR Recorder	VCR 1	VCR 1	PCT-4 1, POS 1
5	VCR Recorder	VCR 2	VCR 2	PCT-4 1. POS 2
6	Laser Disc Player	LASER	LASER DISC	PCT-4 1, POS 3
7	CD Changer	CD	CD PLAYER	PCT-4 1, POS 4
8	Cassette Changer	CASS	CASSETTE	PCT-4 2, POS 1

Source Form When Using MT-3000

Source Number	Source Component Make & Type	Button Label On Keypad	12 Character Label LED Source Label	PCT-4(8) or MT-3000 Port #/Tuner Module
1	____MT-3000 Tuner Module	_____	_ _ _ _ _ _ _ _ _ _ _ _	MT-3000 TUN ___
2	____MT-3000 Tuner Module	_____	_ _ _ _ _ _ _ _ _ _ _ _	MT-3000 TUN ___
3	____MT-3000 Tuner Module	_____	_ _ _ _ _ _ _ _ _ _ _ _	MT-3000 TUN ___
4	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
5	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
6	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
7	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
8	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____

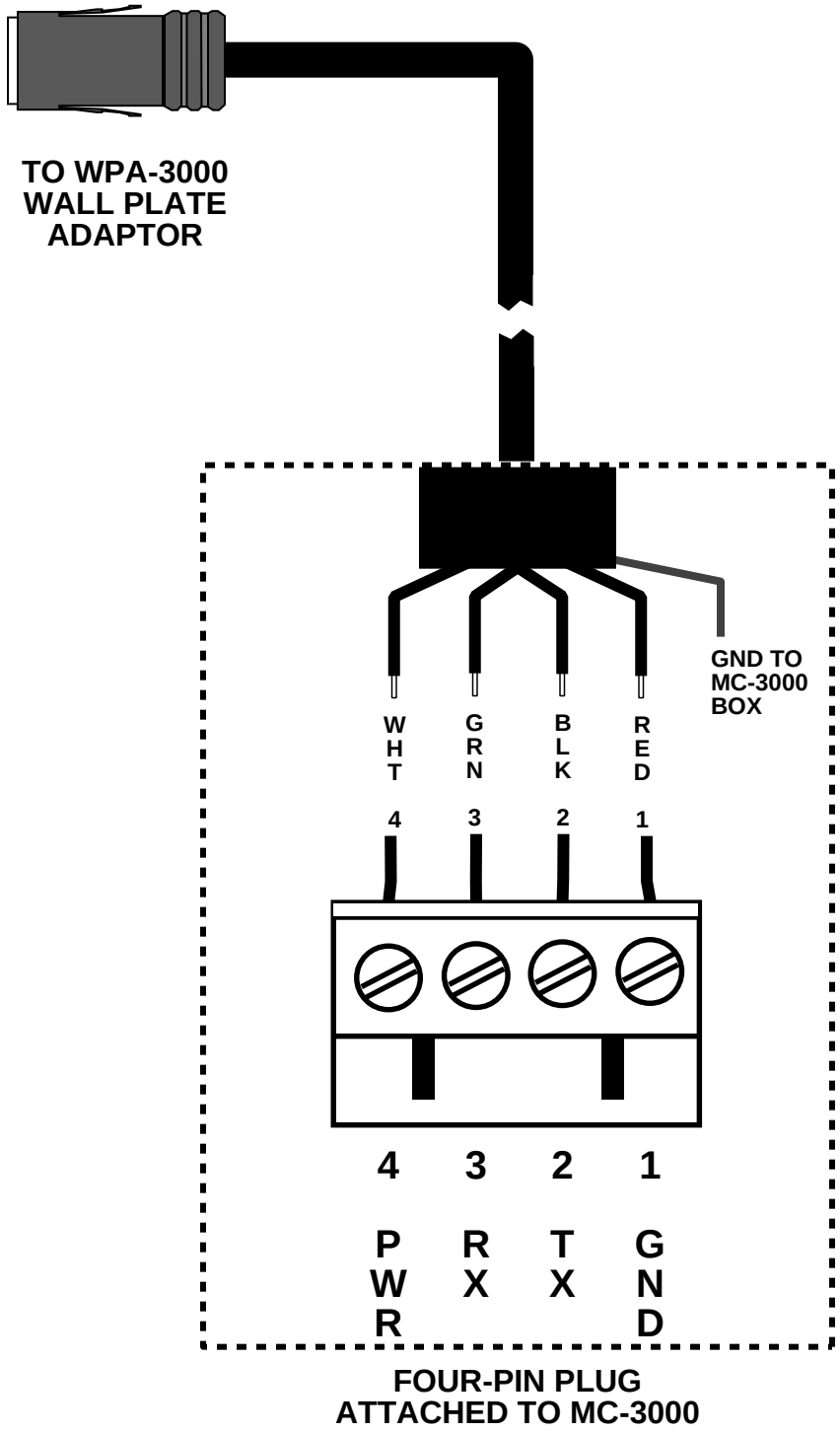
Source Form When NOT Using MT-3000

Source Number	Source Component Make & Type	Button Label On Keypad	12 Character Label LED Source Label	PCT-4(8) or MT-3000 Port #/Tuner Module
1	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
2	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
3	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
4	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
5	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
6	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
7	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____
8	_____	_____	_ _ _ _ _ _ _ _ _ _	PCT-4___, POS____

Appendix D

MC-3000 Table Top Keypad ADA Bus™ Connections

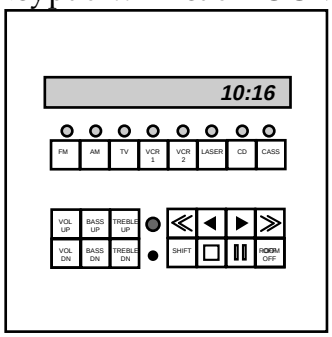
The MC-3000 Table Top Keypad uses a unique slim modular connector which is designed to plug directly into the WPA-3000 Wall Plate Adaptor. While this wire is provided installed into the MC-3000T prior shipping. Should the wire be disconnected, follow the wiring connection below.



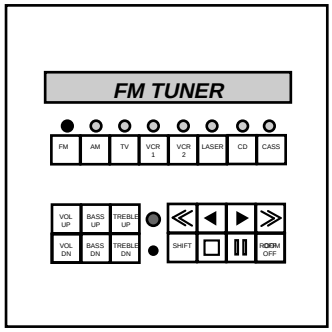
Appendix E
The System 3000 Quick User's Guide

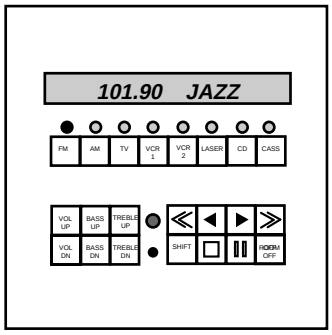
The MC-3000 Keypad consolidates and simplifies the control of your entire system, as well as providing responses to your commands in plain English

To Turn On The System:
The MC-3000 will typically display the time while the system is off. If other rooms are on, the keypad will read ROOM OFF. If the system was recently turned off, the keypad may display ALL OFF. To turn on the system and select a source, simply press the source button you wish to view or listen to (i.e. FM, AM, TV, CD, VCR buttons).

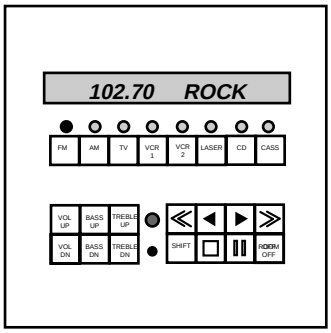


The MT-3000 Multi-Tuner • FM or AM Radio
To listen to FM Radio, simply press the FM button. The display will read FM TUNER, where you can choose any twelve letters to describe the listening area and sources).





The display will read FM TUNER for only a brief moment. By then the MT-3000 will transmit the FM station frequency and the four character preset label to the keypad. The display will then read the station and its preprogrammed preset label. This type of bidirectional information is only available if you are using the MT-3000. You or your installer can custom program the MT-3000 with up to twenty presets and preset labels per tuner module (the MT-3000 has 3 tuner modules). To advance the tuner to the next preset, press the FM button again. The tuner will advance to the next preset and the display will read the new station frequency and preset label. Since the display does not tell you exactly what source you are listening to when using an MT-3000 Tuner, you can still determine which source is selected because the red LED above the source's button will remain illuminated while that source is playing.



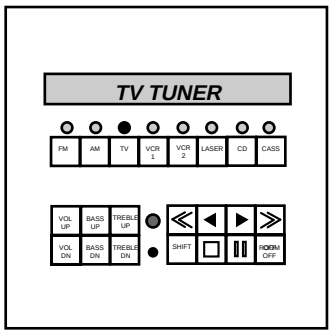
MT-3000 can tune up or tune down by pressing the ≫ or ≪ buttons. The MT-3000 can also seek up or down to the next station by pressing the ▶ or ◀ buttons.

Both the FM and AM tuners of the MT-3000 operate the same way. There are additional features available when listening to a radio station. Pressing the ▮▮ button will switch between mono or stereo. Also, for FM tuners, pressing the ▣ button will turn the DNB (Dynamic Noise Blend) off or on for particularly noisy stations. For AM tuners, pressing the ▣ button will turn the 10 KHz Notch Filter off or on to reduce whistling or squealing noises. For more information regarding the operation of the MT-3000, please consult the MT-3000 Operations Manual.

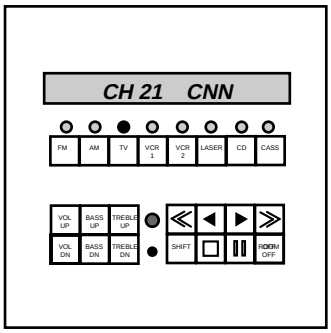
Appendix E continued
The System 3000 Quick User's Guide

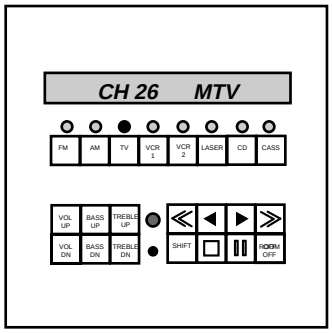
The MT-3000 Multi-Tuner • TV Tuner

To select a new source, for example TV, press the TV button. This function will turn on the MT-3000's TV Tuner but may not turn on your TV or projector. Your TV must be set to a video input in order to view broadcasts on the TV. Consult with your installer in order to determine how the TV or projector function in your system.

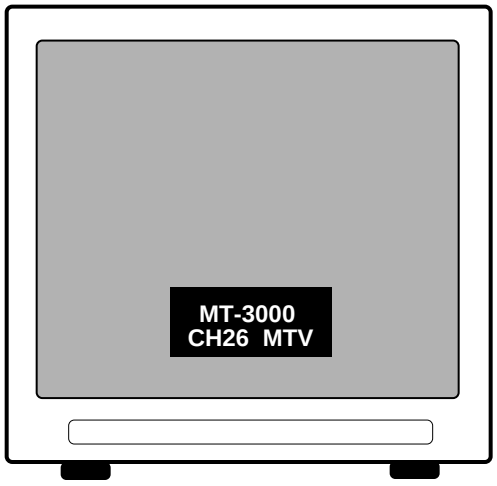


When the TV button is selected the MC-3000 will display TV TUNER and the red LED above the TV button will illuminate. Within a few moments, the display will read the last channel used. If this channel is one of the twenty presets, the display may also read a four character preset label in addition to the channel number, in this example, CH 21 CNN. Again, this type of feedback is only available when using the MT-3000 TV Tuner. Also, consult with your installer regarding the TV Tuner presets you prefer.





The MT-3000 permits up to twenty presets per tuner module. The TV Tuner is no exception allowing you to access twenty of the most frequently viewed TV channels. To skip to the next TV preset, simply press the TV button. The TV Tuner will advance to the next preset and the keypad's display will indicate the new channel number and its four character preset label.



The MT-3000 TV Tuner also has an on-screen character generator which will display the channel number and if it is a preset, the preset label on the TV's screen or projector's screen. As you change presets or channels, the channel number will change on both the keypad and TV.

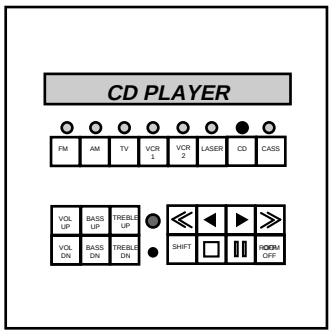
MT-3000 TV Tuner can change channels in tens and ones. The ⏭ or ⏮ buttons will change channels up or down in tens (i.e 2-12-22-32-22). The ▶ or ◀ buttons will change channels up or down in ones (i.e. 2-3-4-5-4). Use these buttons to directly select the channels.

There are additional features available when watching TV. Pressing the ⏸ button will switch between mono or stereo. Pressing the ⏹ button will turn the DNR (Dynamic Noise Reduction) off or on. This can help to reduce noise found in weak station signals.

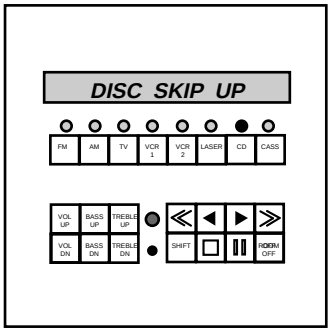
Appendix E continued
The System 3000 Quick User's Guide

CD Changers

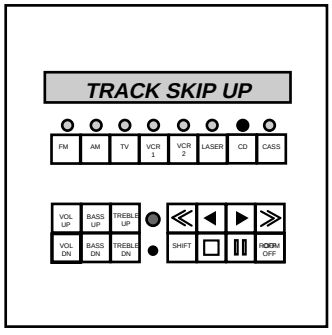
To select a CD player, simply press the CD button. Since most CD players incorporate some type of timer-play control, the CD may automatically go into play once this source is selected. Consult with your installer to determine if your CD player will operate in the system this way.



Most CD players are multi-CD changers, capable of holding several CDs at one time. This example uses such a CD player. Once you pressed the CD button, the keypad will display CD PLAYER. Also, the red LED above the CD button will illuminate. Again, depending on your system's configuration and the type of CD player you are using, the CD may automatically begin playing without pressing the ▶ button. Please bear in mind, that it takes some CD players as much as fifteen seconds to load a CD. Permit a few moments for this function to happen. If your CD does not automatically go into play, it will be necessary to press the ▶ button.

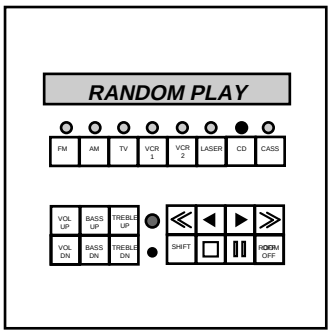


If your system is using a multi-CD changer, you can advance to the next disc by pressing the CD button again. Every time the CD button is pressed, the CD player is sent a command for disc skip from the ADA Delta System. The system will send a conformation signal back to the keypad, indicating that it told the CD changer to advance to the next disc. The keypad will read DISK SKIP UP. Unlike the MT-3000 Multi-Tuner, this response is not based on direct information from the CD player itself. All but a few CD changers provide actual computer data which can be read by Delta System. Please note, due to the nature of source technology, not just CD changers but also cassette players, VCRs, and laser discs, the command may sometimes be interrupted. You may, on occasion, need to repeat the control command even though the Keypad confirmed the first request.



The ≫ or ≪ buttons will cause the CD that is in play to skip to the next or previous track. The display will then read TRACK SKIP UP or TRACK SKIP DOWN.

The ◀ button will engage a random play function providing this function is available on your CD changer.

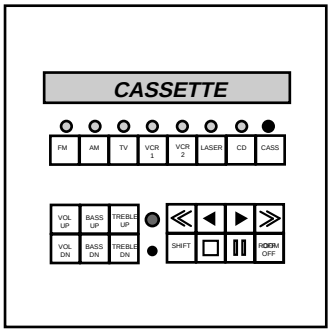


The ⏸ will pause the CD player. Depending on your CD player you will have to press ▶ or ⏸ to resume play. Pressing the ⏹ button will stop the CD player. While functions vary from component to component, consult with your installer as to which functions you can access. Bear in mind, if the function is not on the units IR remote control, it will not be available from the keypad.

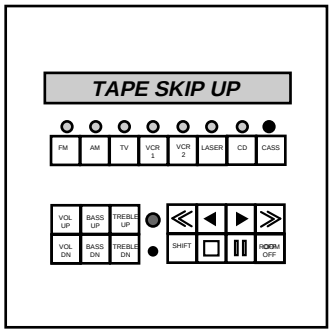
Appendix E continued
The System 3000 Quick User's Guide

Cassette Players • Single, Double, & Multi-Cassette Changers

To select a cassette player, simply press the CASS button. Since most cassette players incorporate some type of timer-play control, the cassette may automatically go into play once this source is selected. Consult with your installer to determine if your cassette player will operate in the system this way.

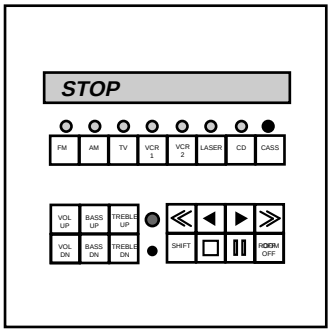


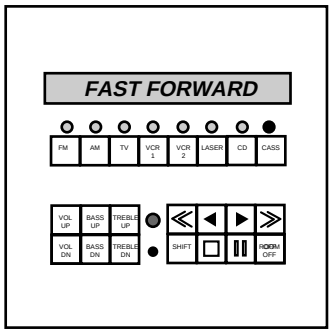
Some cassette players are multi-cassette changers, capable of holding several cassettes at one time. This example uses such a cassette player. Once you pressed the CASS button, the keypad will display CASSETTE. Also, the red LED above the CASS button will illuminate. Again, depending on your system's configuration and the type of cassette player you are using, the cassette player may automatically begin playing without pressing the ▶ button. Please bear in mind, that it takes some cassette players as much as fifteen seconds to load a cassette. Permit a few moments for this function to happen. If your cassette player does not automatically go into play, it will be necessary to press the ▶ button.



If your system is using a multi-cassette changer, you can advance to the next cassette by pressing the CASS button again. Every time the CASS button is pressed, the cassette player is sent command for cassette skip from the ADA Delta System. The system will send a conformation signal back to the keypad, indicating that it told the cassette changer to advance to the next cassette. The keypad will read TAPE SKIP UP. Unlike the MT-3000 Multi-Tuner, this response is not based on direct information from the cassette player itself. All but a few cassette changers provide actual computer data which can be read by the Delta System. Please note, due to the nature of source technology, not just cassette players but also CD players, VCRs, and laser discs, the command may sometimes be interrupted. You may, on occasion, need to repeat the control command even though the Keypad confirmed the first request.

Pressing the ◻ button will stop the cassette player. Then the ≫ or ≪ buttons will cause the cassette player to fast forward or rewind the cassette. If the ≫ or ≪ buttons while the cassette is in play, the cassette may skip to the next song depending on your type of cassette player. Please note, either way, when ≫ or ≪ buttons are pressed the keypad's display will read FAST FORWARD or FAST REWIND.



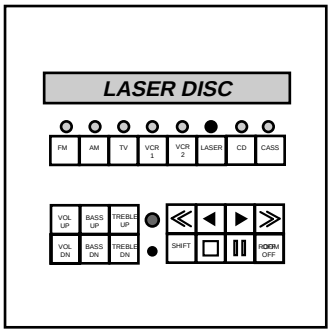


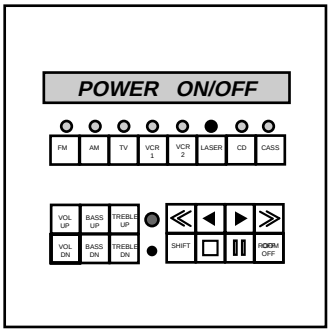
The ⏸ will pause the cassette player. The ◀ button may engage a random play function or reverse play function depending on the component and providing one of these functions is available.

Appendix E continued
The System 3000 Quick User's Guide

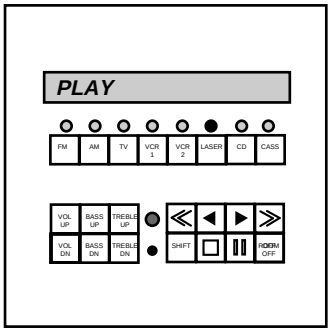
Laser Disc Players

To select a laser disc player, simply press the LASER button. The keypad will display LASER DISC. Also, the red LED above the LASER button will illuminate. This function may not turn on your TV or projector. Your TV must be set to a video input in order to view the laser disc. Consult with your installer in order to determine how the TV or projector function in your system.



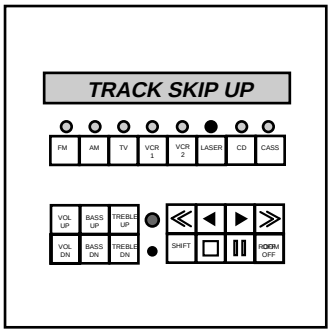


Depending on your laser disc player, you may need to turn the laser disc on even after selecting it. By pressing the LASER button again, a power on/off command is then sent to the laser disc. While the only way to be certain that the laser disc is on, is by looking at the unit itself, you may also be able to determine if the unit is on by looking at the screen. Many screens will be blue if the laser disc is on and dark if it is not. Once you have the laser disc player on, press the ▶ button. Please bear in mind, that it takes some laser disc players as much as fifteen seconds to load a laser disc. Permit a few moments for this function to happen.



Every time a control button is pressed, the laser disc player is sent a command from the ADA Delta System. The system will send a conformation signal back to the keypad, indicating that it told the laser disc to perform that function. The keypad will read the function performed. Unlike the MT-3000 Multi-Tuner, this response is not based on direct information from the laser disc itself. All but a few laser discs provide actual computer data which can be read by the Delta System. Please note, due to the nature of source technology, not just laser disc players but also CD players, VCRs, and cassette players, the command may sometimes be interrupted. You may, on occasion, need to repeat the control command even though the Keypad confirmed the first request.

Then the ⏭ or ⏮ buttons will cause the laser disc to skip up or down to the next chapter. This is only true if the laser disc you are viewing has chapters. On some laser disc players, if the ⏭ or ⏮ buttons while the laser disc is in play, the laser disc player may scan for a brief moment. Please note, either way when ⏭ or ⏮ buttons are pressed the keypad's display will read TRACK SKIP UP or TRACK SKIP DOWN.

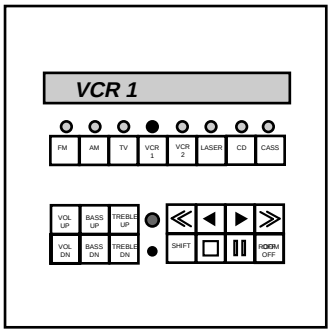


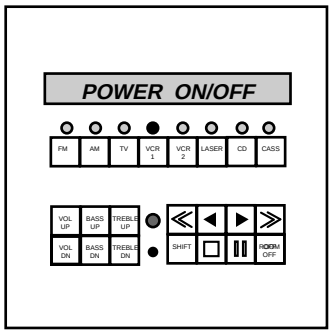
Pressing the ⏹ button will stop the laser disc player. The ⏸ will pause the laser disc player. The ◀ button will most likely not perform any function.

Appendix E continued
The System 3000 Quick User's Guide

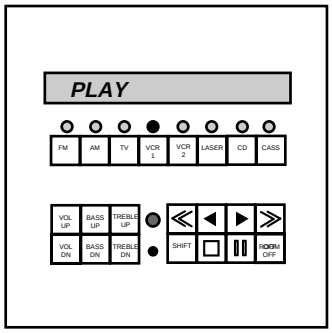
VCRs

To select a laser disc player, simply press the VCR 1 or VCR 2 button. The keypad will display VCR 1. Also, the red LED above the VCR 1 button will illuminate. This function may not turn on your TV or projector. Your TV must be set to a video input in order to view the VCR. Consult with your installer in order to determine how the TV or projector function in your system.

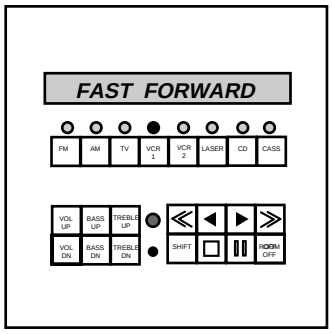




Depending on your VCR, you may need to turn the VCR on even after selecting it. By pressing the VCR 1 button again, a power on/off command is then sent to the VCR. While the only way to be certain that the VCR is on is by looking at the unit itself, you may also be able to determine if the unit is on by looking at the screen. Many screens will be blue if the VCR is on and dark if it is not. Once you have the VCR on, press the ▶ button. Please bear in mind, that it takes some VCRs as much as fifteen seconds to load a tape. Permit a few moments for this function to happen.

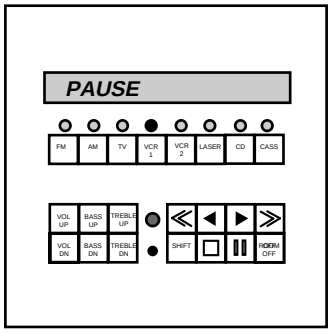


Every time a control button is pressed, the VCR is sent a command from the ADA Delta System. The system will send a conformation signal back to the keypad, indicating that it told the VCR to perform that function. The keypad will read the function performed. Unlike the MT-3000 Multi-Tuner, this response is not based on direct information from the VCR itself. All but a few VCRs provide actual computer data which can be read by the Delta System. Please note, due to the nature of source technology, not just VCRs but also CD players, laser disc players, and cassette players, the command may sometimes be interrupted. You may, on occasion, need to repeat the control command even though the Keypad confirmed the first request.



The ≫ or ≪ buttons will cause the VCR to fast forward or rewind if the VCR is in stop. On some VCRs, if the ≫ or ≪ buttons will scan while the VCR is in play. Please note, either way when ≫ or ≪ buttons are pressed the keypad's display will read FAST FORWARD or FAST REWIND.

Pressing the ■ button will stop the VCR. The ❚❚ will pause the VCR. The ◀ button will most likely not perform any function for your VCR. Consult with your installer to determine what functions are available on your system.



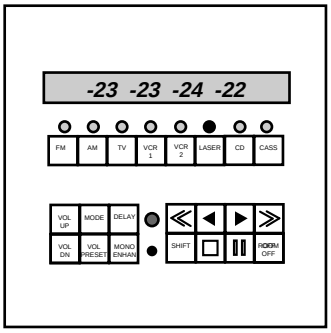
Appendix E
The System 3000 Quick User's Guide

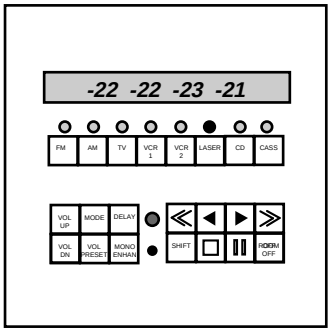
The SSD-66 (THX) Surround Sound Decoder

The Delta System permits any one, two, or all three zones, to become home theaters when using ADA's SSD-66 Surround Sound Decoder. For such rooms, the MC-3000 keypad not only communicates and controls the Delta-3 for source selection, but also the SSD-66 for volume control, mode selection, setting of rear channel delay times, recall of the volume preset, and engage the AGL Enhancement circuit on, off, or auto (not available in all modes.) Keypads for ADA home theaters will not have bass and treble buttons.

Adjusting Volume

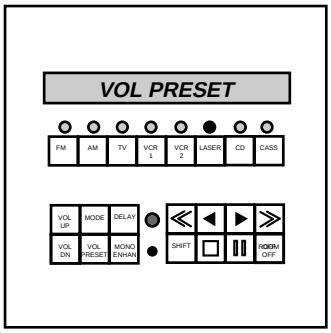
The SSD-66 is unique in that it displays volume levels, not as an overall volume indication, but rather in numeric levels for each channel, front right, front left, center, and surround. These numeric levels are calibrated in decibels (dBs) and appear both on the SSD-66 and the keypad. To raise or lower volume levels, simply press and hold the VOL UP or VOL DN buttons. The display will indicate the volume levels going up, -67 (full mute) to +12 (extremely loud). While volume levels may differ between channels, the SSD-66 will track the volume levels maintaining the separate levels. The volume level will not exceed the first channel to reach +12. The volume will drop as low as -67 for all channels.





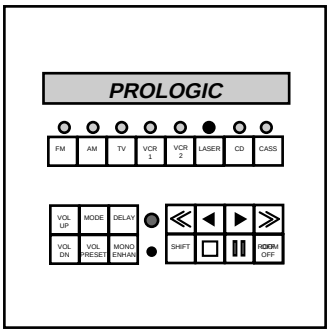
Regaining the Volume Preset

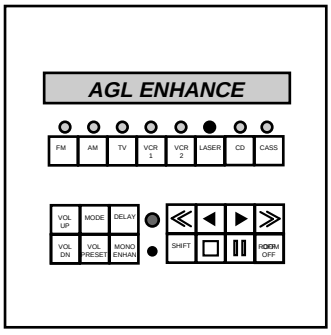
Your installer will program in a volume preset which is designed to provide the optimum volume levels for your home theater. To regain these volume parameters, simply press the VOL PRESET button. The display will read VOL PRESET and then the numeric volume levels will appear on the keypad. You can then raise or lower the volume by pressing the VOL UP and VOL DN buttons.



Changing Modes

The SSD-66 has several modes ideal for film, TV, and music. To scroll through the various modes, press the mode button. Every time you press the mode button, the SSD-66 will advance to the new mode. The name of the mode will appear on the keypads display exactly as it appears on the SSD-66's.





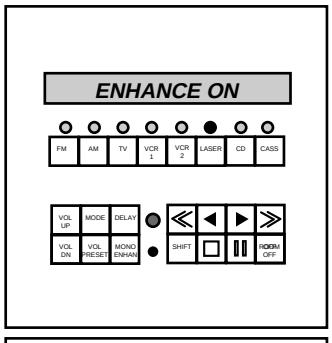
Consult your SSD-66 (THX) Owners Manual as to the modes available on your SSD-66 and how they augment your viewing or listening experience.

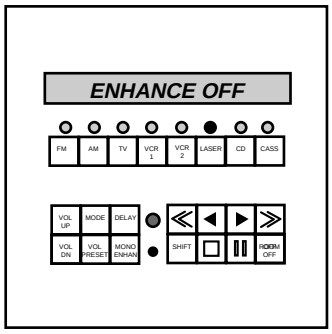
Appendix E
The System 3000 Quick User's Guide

The SSD-66 (THX) Surround Sound Decoder (continued)

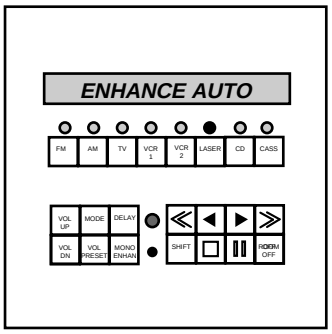
Mono Enhancement

The SSD-66 provides a Mono Enhancement circuit which can be engaged on most surround modes. This unique feature broadens stereo signals by providing the sense of wider separation for stereo simulation of mono signals. For strictly mono signals, the Mono Enhancement circuit provides a simulated surround sound.





The Mono Enhancement circuit has three positions, ON, OFF, and AUTO. When the mono enhancement is off, you will listen to the sound without any enhancement. To turn the circuit on, press the MONO ENHAN button. The display will read ENHANCE ON. The SSD-66 also provides an automatic mono enhancement position, where the SSD-66 will detect mono signals and only then automatically engage the enhancement circuit. Several modes will always have the SSD-66 play with the enhancement circuit on AUTO. To turn the enhancement circuit on automatic, press the MONO ENHANCE button until ENHANCE AUTO is displayed.

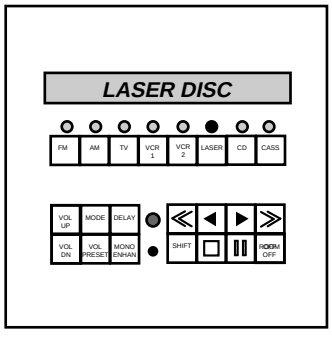


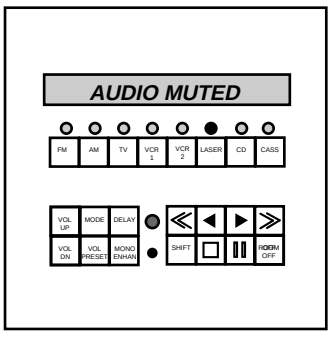
To defeat the enhancement circuit, press the MONO ENHAN button until ENHANCE OFF appears on the display.

Several other SSD-66 control functions are available from the SSD-66's hand held infrared remote control. These functions will also display on the keypad when selected even though the buttons do not exist on the keypad itself.

Muting The SSD-66

The SSD-66 permits you to mute the audio. This operation lowers the volume, permitting you to answer the telephone or simply view an image without any audio. To engage the mute function, press the ROOM OFF button once. The keypad will flash the words OFF-STANDBY and then begin flashing AUDIO MUTED and LASER DISC. This informs you that VCR1 is selected and that the system is muted. To regain the audio, press either the MODE, VOL UP, or VOL DN buttons once.

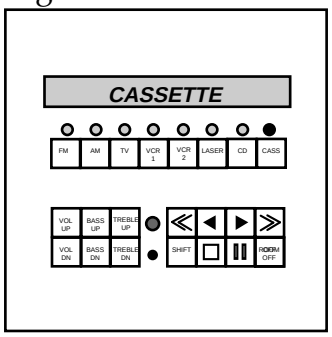


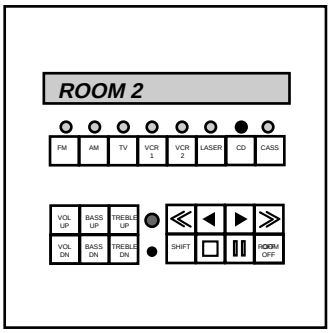


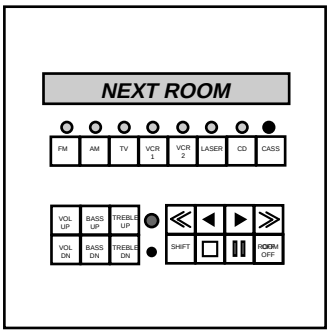
Appendix E
The System 3000 Quick User's Guide

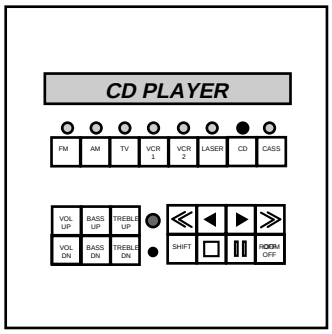
Accessing All Rooms From A Single Room's MC-3000
The CIC-3000 incorporates up to sixteen independent outputs, one for each room with each output capable of selecting its own source signal. Check with your installer to determine how the additional outputs are used in your system.

The System 3000 permits you to select a source for the room you are in and also allows you to program a source to the additional rooms/outputs. In this example, in addition to the home theater, we also have several other rooms receiving signal from the central system. To skip to the next room, press and release the SHIFT button on the MC-3000 Keypad. The display will read "ALT FUNCTION" followed by the "ROOM NAME" and then the "SOURCE NAME". Press the TREBLE UP and TREBLE DN (for MC-3000s for home theaters with SSD-66s use the VOL PRESET and MONO ENHAN buttons) to advance to the "NEXT ROOM" or "PREVIOUS ROOM" respectively. As you move to the next room or previous room, the keypad will display the "ROOM NAME" for a moment and then either the "SOURCE NAME" if the room is on or "ROOM OFF".

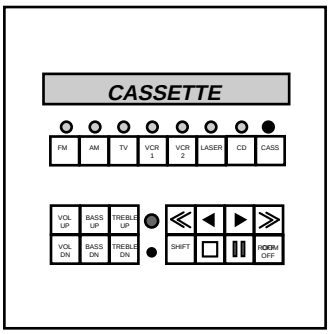








At this time you may direct a new source to this room and control its transport functions. To advance to the next room, press the TREBLE UP button again. The keypad will again display the "ROOM NAME" and the last source selected to that room or "ROOM OFF", in this example CD PLAYER. Again, you can select a new source for this output and control its transport functions. To return the keypad to the primary output, press the SHIFT button one more time and the keypad will display the "OK" and "NORMAL MODE" followed by the keypad's "ROOM NAME" and then the source playing in that room, "CASSETTE".



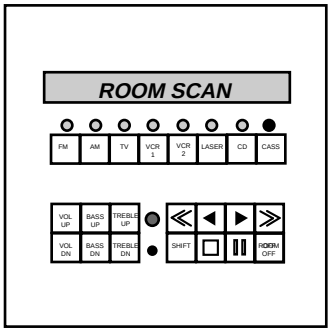
Please note, that while the keypad is controlling either the second or third room, the volume, bass, and room off buttons will be still be operative.

Since it may be possible to forget that you advanced to another room, the System 3000 will automatically reset the keypad to its original room within a short time period.

Appendix E
The System 3000 Quick User's Guide

The MC-3000 "Room Scan" Feature

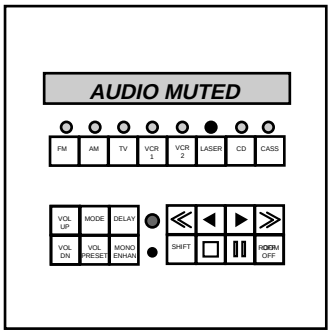
The MC-3000 Keypad capable of "scanning" all three rooms, displaying the room name and the source playing in that room (or Room Off). After the keypad has gone through all three rooms, it will automatically return to normal mode. To access room scan:



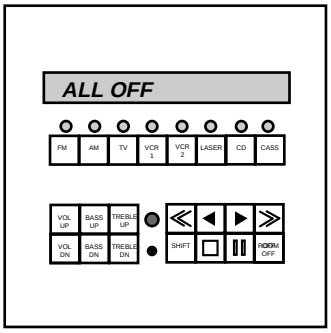
To engage the scan function, press the and release the SHIFT button on the MC-3000. The keypad will indicate "ALT FUNCTION", then quickly display the "ROOM NAME" and then the "SOURCE NAME". Then press the FAST FORWARD (≫) button. The display will read "ROOM SCAN" and begin displaying the room name followed by the source (or Room Off) then the words "NEXT ROOM" and its name and source. To end "ROOM SCAN" press the SHIFT button and the display will read "NORMAL MODE". The MC-3000 will also automatically reset after all three rooms have been scanned.

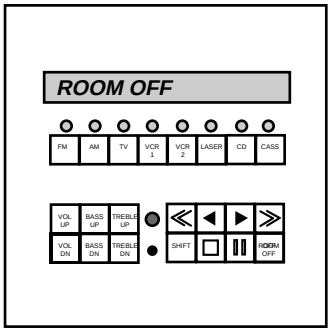
Room Off & All Off

For rooms that are home theaters using ADA's SSD-66, to mute the audio, press the ROOM OFF button once. The keypad will flash OFF-STANDBY and then display STANDBY and the selected source. Please note, that the SSD-66 is only muted at this time and will be off. To regain the audio, press either the MODE, VOL UP, or VOL DN buttons.



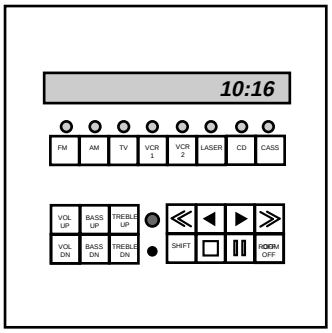
To turn off any room, press the ROOM OFF button. The MC-3000 will display "ROOM OFF". Once a room is off, pressing the VOL UP and VOL DN buttons will display the time. To turn off the entire system, press the ROOM OFF button again. The MC-3000 Keypad will display "ALL OFF". After a short time period, the display will convert to the time.





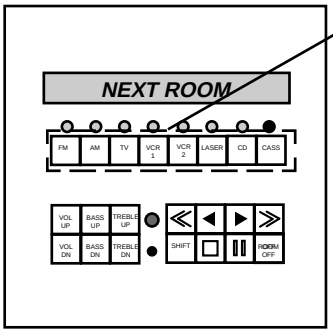
Shut Down Suggestions

Some components, particularly VCRs, may remain on or in play even though you shut the system off. For these components, it may be necessary to turn them off prior to shutting the system off. To turn off a laser disc or VCR, first select the source. Once selected, press the source's button (LASER, VCR1, or VCR2) once. The display will read POWER ON/OFF and the unit, if it was on, will turn off.



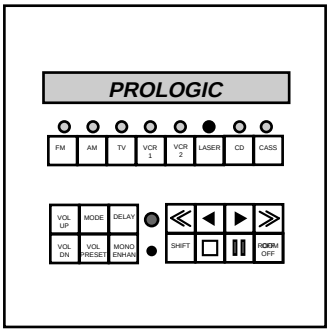
Appendix F
The System 3000 Quick Button Guide

MC-3000



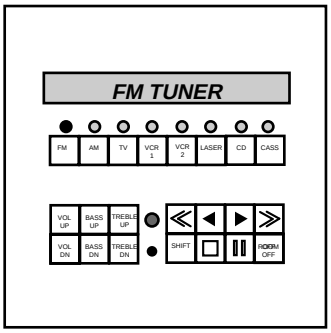
Room On - Press Any Source Input Button.
SHIFT & TREBLE UP/ DN - Will advance the Delta-3 to control the next room.
SHIFT & ≫ -Room Scan
ROOM OFF - To room turn off press once. Press a second time to turn off the entire system.

SSD-66 Surround Sound Decoder



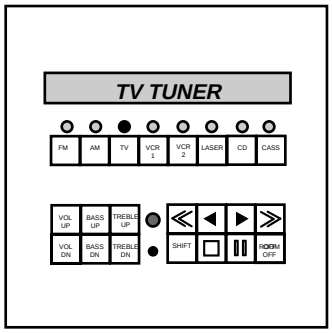
MODE - Will advance through surround modes.
VOL UP - Raises Volume
VOL DN - Lowers Volume
VOL PRESET - Regains installer programmed volume settings.
MONO ENHAN - Turns mono enhancement circuit on, automatic, or off.
DELAY - Adjusts Delay.

MT-3000 Multi-Tuner FM & AM Modules



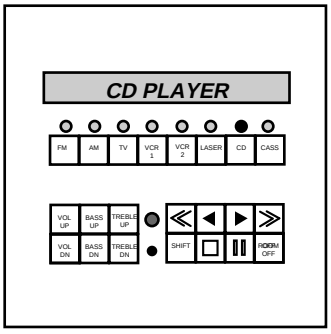
FM or AM Button - Advance tuner to next preset.
≫ **Tune Up**
≪ **Tune Down**
▶ **Seek Up**
◀ **Seek Down**
⏸ **Mono/Stereo**
□ **FM -** DNB On or Off
□ **AM -** 10KHz Notch Filter On/Off

MT-3000 Multi-Tuner TV Modules



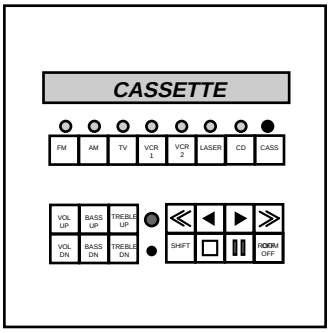
TV Button - Advance tuner to next preset.
≫ **Channel Up (10s)**
≪ **Channel Down (10s)**
▶ **Channel Up (1s)**
◀ **Channel Down (1s)**
⏸ **Mono/Stereo**
□ **Will Turn DNR On and Off**

Standard CD Changers



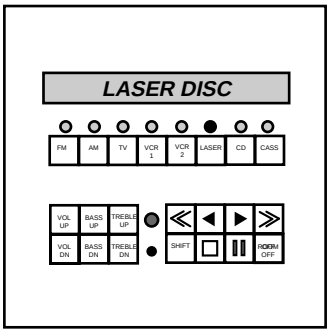
CD Button - Advance CD player to next disc.
≫ **Track Skip Up**
≪ **Track Skip Down**
▶ **Play**
◀ **Random Play**
⏸ **Pause**
□ **Stop**

Standard Cassette Changers



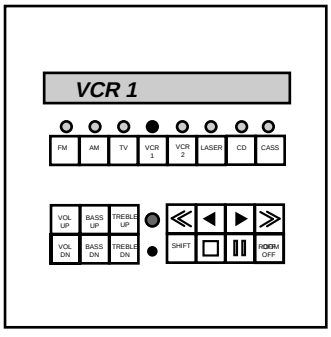
CASS Button - Advance Cassette player to next cassette.
≫ **Fast Forward**
≪ **Fast Rewind**
▶ **Play**
◀ **Random Play**
⏸ **Pause**
□ **Stop**

Standard Laser Disc Players



LASER Button - Turns laser disc power on and off.
≫ **Chapter Skip Up**
≪ **Chapter Skip Down**
▶ **Play**
◀ **N/A**
⏸ **Pause**
□ **Stop**

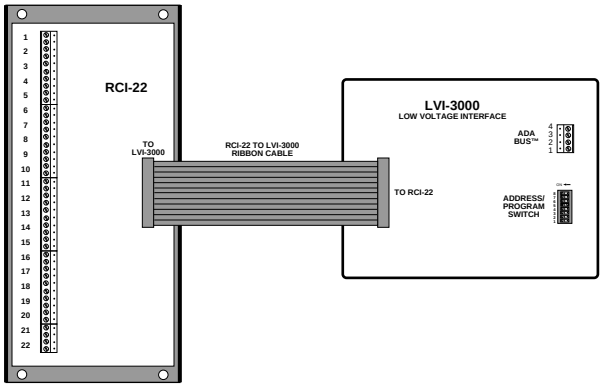
Standard VCRs



VCR Button - Turns VCR power on and off.
≫ **Fast Forward**
≪ **Fast Rewind**
▶ **Play**
◀ **N/A**
⏸ **Pause**
□ **Stop**

Appendix H
LVI-3000 & RCI-22
Low Voltage Relay Control Board

The LVI-3000 and RCI-22 are purchased together to provide low voltage contact closures for either source control or source tracking. One LVI-3000 and RCI-22 can be used to control sources which cannot be controlled through the PCT-4 or PCT-8 for example a slide projector or cable TV box. Another can be used to follow the source selection on the Delta-3. This setup will provide a relay closure for lowering a screen and engaging a projector when only a video source is selected. Please note, only one LVI-3000/RCI-22 can be used for source control per system and one LVI-3000/RCI-22 can be used for Delta-3 source tracking. You can use one for source control and one for source tracking in the same system.



The LVI-3000 connects to the RCI-22 via a 14 pin ribbon cable provided with the two units. The LVI-3000 incorporates a microprocessor and connects to the WH-3000 for control through the ADA Bus™ (removable 4 pin Bus connector). It is important to note, that when using the LVI-3000/RCI-22 to control a source component, the ADA Bus™ connection is made as usual.

LVI-3000	TO	WH-3000
PIN 1	TO	PIN 1
PIN 2	TO	PIN 2
PIN 3	TO	PIN 3
PIN 4	TO	PIN 4

However, when you are using the LVI-3000/RCI-22 to control functions based on what source is selected on a CIC-3000 the ADA Bus™ connection is **not** made as usual.

LVI-3000	TO	WH-3000
PIN 1	TO	PIN 1
PIN 2	**TO**	**PIN 3**
PIN 3	**TO**	**PIN 2**
PIN 4	TO	PIN 4

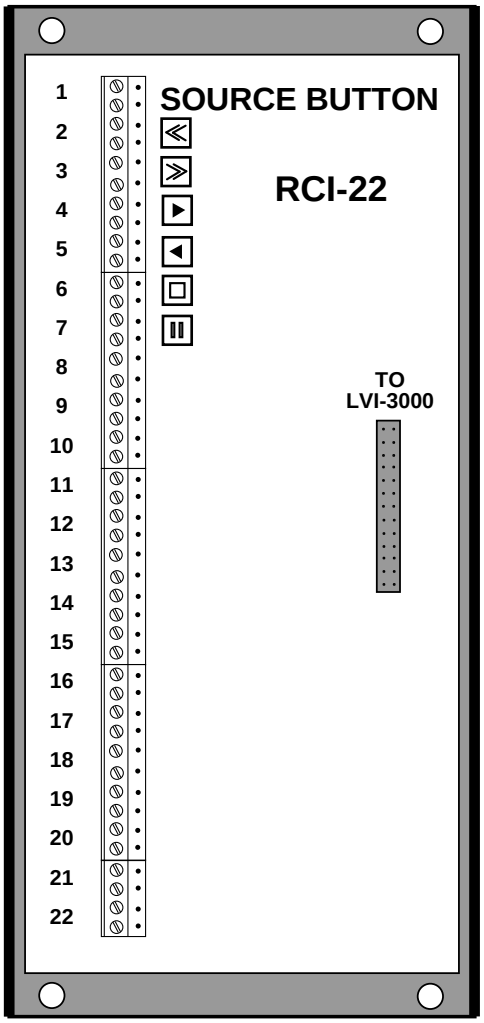
The LVI-3000 has eight DIP switches which can be set to provide the function you require. The LVI-3000 comes preprogrammed for both source control or source tracking.

The RCI-22 is a relay board with conformation LED indicators. Screw terminals 1 and 2 provide a closure across output one. Pins 3 and 4 provide a closure across output two, etc.). When a relay is closed the LED for that output will illuminate. When it is open, the LED will remain off. The RCI-22 includes eight relays, seven are used for source control and the full eight are used for source tracking.

Appendix H
LVI-3000 & RCI-22
Low Voltage Relay Control Board • Source Control

Source Control - See Page 42 for LVI-3000 DIP Switch Settings

The LVI-3000/RCI-22 offers the ideal source interface when using sources not capable of being controlled by the PCT-4 or PCT-8. Such sources may include a slide projector, Jerold cable TV box (IR commands will not code into PCT-4), or non-IR controlled source. While only one LVI-3000/RCI-22 can be used per system to control a source component, you may use a second LVI-3000/RCI-22 to track the Delta-3's source selection.



For source control, the LVI-3000/RCI-22 will provide momentary relay contact closures for low voltage signals when the transport command is selected on the MC-3000 Keypad. The keypad has a total of seven transport functions including the source button (i.e. FM, VCR, CD, LASER, etc.). The first time a source button is pressed, it selects a source on the Delta-3. Once the source is selected, the source button can then operate a transport command (i.e. Preset Skip, Disc Skip, Power On/Off, etc.). These seven functions are labeled on the RCI-22 Relay Closure Interface. Two screw terminals are provided for each function (Voltage Trigger In and Voltage Trigger Out). When a transport command is selected on the keypad, the corresponding relay will close for approximately one second. You can confirm this function by watching the LED next to the function label, on the RCI-22, illuminate and turn off.

You need not use all seven functions but please note, there are only seven functions to choose from. While ADA provides the low voltage relay closure to control a source, the remainder of the wiring to the source must be made by the installer. When using devices who's controls are low voltage switches, it will be necessary to hard-wire the control to the RCI-22. When using a PCT-4 in your system, it is important to note that some cable boxes can not be captured by the PCT-4. The LVI-3000/RCI-22 and MC-3000 will provide a cable on/off command along with channel up and down, if used with a low voltage triggered IR flasher product.

Connection of LVI-3000 to WH-3000 for source control.

LVI-3000	TO	WH-3000
PIN 1	TO	PIN 1
PIN 2	TO	PIN 2
PIN 3	TO	PIN 3
PIN 4	TO	PIN 4

Appendix H
LVI-3000 & RCI-22
Low Voltage Relay Control Board • Source Control

LVI-3000 DIP Switch Settings for Source Control - For Use With MC-3000 Version 1.6 or Up.
Once you have wired the LVI-3000 to the WH-3000 in the correct manner, you can program the LVI-3000 to provide the correct relay closure and the appropriate MC-3000 display readout (source control only) by setting the DIP Switches on the LVI-3000. The following steps detail the DIP Switch settings for Source Control. DIP Switch settings read left to right, switches one to eight. "1" signifies the switch is on, "0" signifies the switch is off.

FUNCTION	READOUT
Source Button	MAIN
⏭	>>
⏮	<<
▶	>
◀	<
⏹	O
⏸	OO

DIP Switch Setting - 1 0 0 0 0 0 0 0

FUNCTION	READOUT
Source Button	MAIN
⏭	NEXT
⏮	PREVIOUS
▶	PLAY
◀	REVERSE
⏹	STOP
⏸	PAUSE

DIP Switch Setting - 0 1 0 0 0 0 0 0

Source Button	DISC SKIP UP
⏭	TRACK SKIP UP
⏮	TRACK SKIP DN
▶	PLAY
◀	RANDOM PLAY
⏹	STOP
⏸	PAUSE

DIP Switch Setting - 1 1 0 0 0 0 0 0

Source Button	TAPE SKIP UP
⏭	FAST FORWARD
⏮	FAST REVERSE
▶	PLAY
◀	REVERSE PLAY
⏹	STOP
⏸	PAUSE

DIP Switch Setting - 0 0 1 0 0 0 0 0

Source Button	POWER ON/OFF
⏭	CHANNEL UP
⏮	CHANNEL DN
▶	CHANNEL UP
◀	CHANNEL DN
⏹	RECALL LAST
⏸	A/B SWITCH

DIP Switch Setting 1 0 1 0 0 0 0 0

Source Button	PRESET UP
⏭	TUNE UP
⏮	TUNE DOWN
▶	SEEK UP
◀	SEEK DN
⏹	FILTER
⏸	MONO/STEREO

DIP Switch Setting 0 1 1 0 0 0 0 0

Source Button	POWER ON/OFF
⏭	FAST FORWARD
⏮	REWIND
▶	PLAY
◀	REVERSE PLAY
⏹	STOP
⏸	PAUSE

DIP Switch Setting 1 1 1 0 0 0 0 0

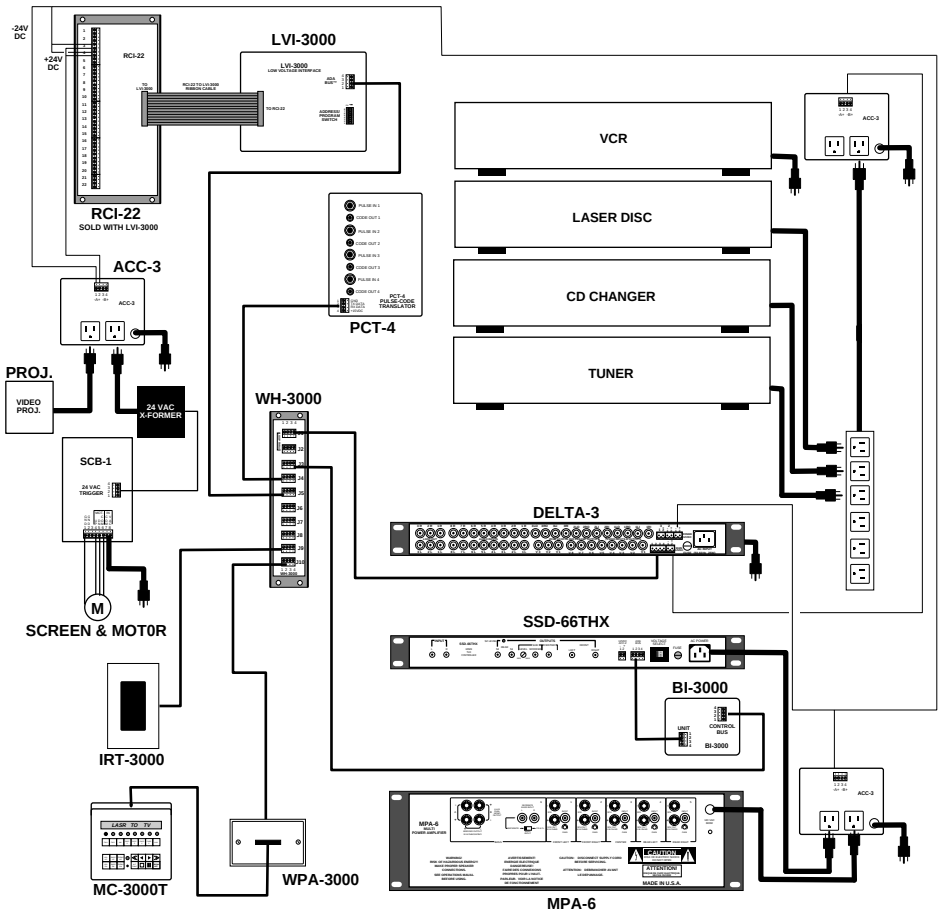
Source Button	POWER ON/OFF
⏭	CHAPTER UP
⏮	CHAPTER DN
▶	PLAY
◀	PLAY
⏹	STOP
⏸	PAUSE

DIP Switch Setting 0 0 0 1 0 0 0 0

Appendix H
LVI-3000 & RCI-22
Low Voltage Relay Control Board • Source Tracking

Source Tracking of the VS-3 - See Page 42 for LVI-3000 DIP Switch Settings

The LVI-3000/RCI-22 can also be used to track the sources on the Delta-3. When a source (sources 1 through 8) is selected on the Delta-3 or MC-3000 Keypad, its corresponding relay on the RCI-22 (Outputs 1 through 8) will close and remain closed while that source is selected. This closure can pass low voltage to an ACC-3 Low Voltage Controlled AC Outlet which can in turn engages a projector/screen or monitor (the monitor requires a hard-contact power switch). Thus you can design a Delta System which will automatically engage the projector (or monitor) and lower the screen only when a video source is selected. If your client is listening to an audio source, the screen will remain up and the projector (or monitor will remain off).



Since the Delta-3 has three independent outputs, you can program the LVI-3000 to track sources on any one output or all three outputs. This makes the LVI-3000 capable of providing low voltage contact closures per source for individual source AC control.

The diagram details a four source system in which sources one and two are video sources. When either of these two sources are selected, a low voltage signal, originating off of the Delta-3's 12VDC output will pass to an ACC-3, thereby engaging the projector and screen.

Connection of LVI-3000 to WH-3000 for Delta-3 source tracking. (Reverse Pins 2 & 3)

LVI-3000	TO	WH-3000
PIN 1	TO	PIN 1
PIN 2	**TO**	**PIN 3**
PIN 3	**TO**	**PIN 2**
PIN 4	TO	PIN 4

Appendix H
LVI-3000 & RCI-22
Low Voltage Relay Control Board • Source Tracking

LVI-3000 DIP Switch Settings for Source Tracking - For Use With MC-3000 Version 1.5 or Up.

Once you have wired the LVI-3000 to the WH-3000 in the correct manner, you can program the the LVI-3000 to provide the correct relay closure and the appropriate MC-3000 display readout (source control only) by setting the DIP Switches on the LVI-3000. The following steps detail the DIP Switch settings for Source Tracking. DIP Switch settings read left to right, switches one to eight. "1" signifies the switch is on, "0" signifies the switch is off.

Delta-3 • Track All Outputs 1, 2, & 3
DIP Switch Setting - 1 1 1 1 1 1 1 1

Delta-3 • Track Outputs 1
DIP Switch Setting - 0 1 1 1 1 1 1 1

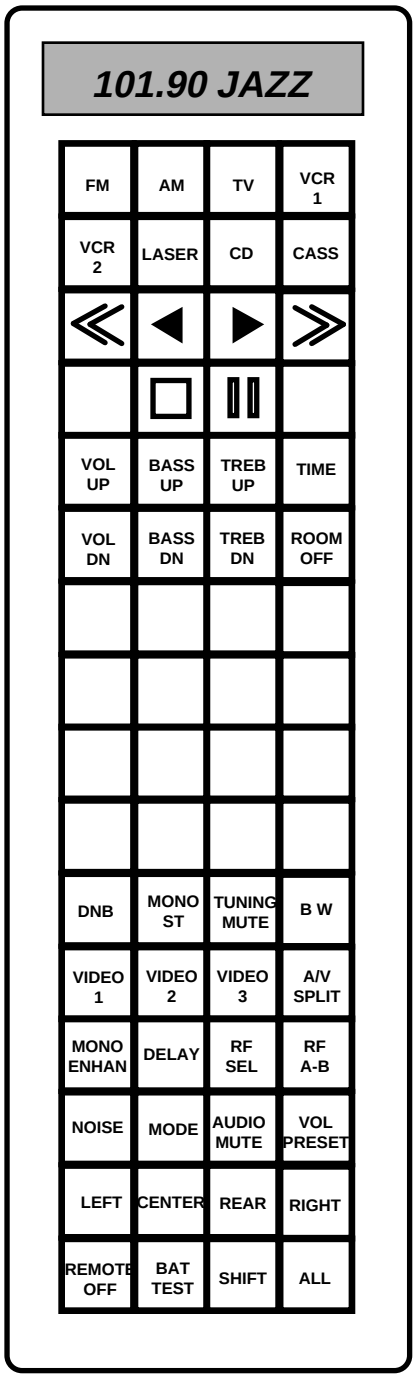
Delta-3 • Track Outputs 2
DIP Switch Setting - 1 0 1 1 1 1 1 1

Delta-3 • Track Outputs 3
DIP Switch Setting - 0 0 1 1 1 1 1 1

Appendix I
MC-0064
Bi-Directional Infrared Hand Held Remote Control

About the MC-0064

The MC-0064 is a two way infrared hand-held remote which both transmits and receives IR signals. This permits the MC-0064 to both transmit IR commands and receive conformation signals which are displayed on its twelve character alphanumeric LED display.



The MC-0064 functions similarly to the MC-3000. It incorporates a microprocessor which tells it what system it is operating, what room it is controlling, and what source buttons control which sources. Therefore, the MC-0064 requires configuration much like the MC-3000. Once programmed, the MC-0064 is locked into a specific room. Unlike other IR remote controls, the MC-0064 cannot be carried to other rooms and be expected to control that new room. When you attempt to use the MC-0064 in another room, it will still control the room it was programmed for. ADA suggests providing several MC-0064s, one for each room that requires one.

You can skip to other rooms on the MC-0064 and achieve control of those rooms just as can be done with the MC-3000. By pressing the SHIFT button twice and then pressing the VOL UP and VOL DN buttons, you can skip the "NEXT ROOM" or "PREVIOUS ROOM" respectively . As with the MC-3000, the MC-0064 will default back to the room it was initially setup for after a few minutes. This will be discussed in further detail on the next pages.

How the MC-0064 Operates

The MC-0064 is not a learning remote. It transmits strictly ADA Bus™ IR codes which are interpreted by the various ADA components. The sources can be controlled from the MC-0064 providing they are connected to a PCT-4 or PCT-8. These units receive ADA Bus™ codes from MC-3000s and MC-0064s and then release a source serial or IR code which the sources understand.

The MC-0064 incorporates one IR receiver and two IR emitters and works best with an IRT-3000 which also has one IR receiver and two IR emitters as well as a red plexiglass filter lens. The MC-0064 will also operate with an MC-3000 Wall Keypad providing its IR receiver and one transmitter have not been deactivated (see "Initializing the MC-3000 Control" page 44).

Appendix I (cont.)
MC-0064
Bi-Directional Infrared Hand Held Remote Control

1) Initializing the MC-0064 for the correct system type.

STEP ONE: Press any source button to wake the MC-0064 up. The MC-0064 will remain off until a source button is pressed. The display will read "READY".

STEP TWO: Press the SHIFT button. The words “ENTER CODE” will appear on the display.

STEP THREE: Type in “1867” using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. “PROGRAM MODE” will appear on the screen.

STEP FIVE: Press the MAIN OFF button until “SYSTEM OMEGA” and “OK” are displayed. If the MC-OO64 is controlling a home theater using an SSD-66, press the MAIN OFF button until "SSD-66/OMEGA" and "OK" are displayed.

STEP SIX: Press the BASS UP button until the words "PROGRAM THIS" are displayed and then press the SHIFT button. The word “OK,” and then “NORMAL MODE” are displayed on the control screen.

2) Programming the MC-0064 to control the correct sources.

By the time you are ready to install the System 3000, you should have completed the “System 3000 Source Form” found in Appendix C in the back of this manual. This form provides a clearly written record of the exact number, title, and location of the sources and outputs of the System 3000 you will be installing. Refer to this form before proceeding.

STEP ONE: Press any source button to wake the MC-0064 up. The MC-0064 will remain off until a source button is pressed. The display will read "READY".

STEP TWO: Press the SHIFT button. The words “ENTER CODE” will appear on the display.

STEP THREE: Type in “1867” using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FOUR: Press the SHIFT button again. “PROGRAM MODE” will appear on the screen.

STEP FIVE: Press the BASS UP button to unlock the source selector safety feature. Now refer to the “System 3000 Source Form” to determine the source type that you want to program for a particular source button.

Appendix I (cont.)
MC-0064
Bi-Directional Infrared Hand Held Remote Control

STEP SIX: Press the BASS DN button until you have found the appropriate source type (i.e. MT-3000 TUN 1, MT-3000 TUN 2, PCT-4 1 POS 1, PCT-4 1 POS 2). Then, press and hold the source button (i.e. FM, TV, CASS, CD, VCR 1) that you want to program. The button's light will flash, and the display will read "OK," followed by the source type that you just programmed.

STEP SEVEN: Repeat steps five and six for as many times as are needed to accommodate all of the sources in the system (the limit is eight sources).

STEP EIGHT: When you are finished programming each of the source buttons, press the SHIFT button. "OK" and "NORMAL MODE" should then be displayed.

3) Setting the MC-0064 to control a particular room.

For this procedure, you will need to aim the MC-0064 at an active ADA Bus™ IR transceiver. The system must be connected and operating in order to program the MC-0064 to control a particular room.

STEP ONE: Aim the MC-0064 at an IRT-3000 or MC-3000 with an active IR receiver.

STEP TWO: Press any source button to wake the MC-0064 up. The MC-0064 will remain off until a source button is pressed. The display will read "READY".

STEP THREE: Press the SHIFT button. The words "ENTER CODE" will appear on the display.

STEP FOUR: Type in "1867" using the source buttons on the control. You must type in the code within five seconds or the unit will time out. If the unit times out, you must start from the beginning of this procedure.

STEP FIVE: Press the SHIFT button again. "PROGRAM MODE" will appear on the screen. After that, the source and output that you have selected will be displayed. Then press the BASS UP button until "PROGRAM THIS" appears on the display.

STEP SIX: Use the VOL UP button to advance to the next room or the VOL DN buttons to advance to the previous room. The display will first read "NEXT ROOM" or "PREVIOUS ROOM" followed by the room's name.

STEP SEVEN: When the display reads the correct room name, press the REWIND (≪) button. The display will read "ROOM CHANGED" followed by the room name and the room's status.

Appendix J
MC-0064
Bi-Directional Infrared Hand Held Remote Control Operation Diagram

How To Use the MC-0064

The MC-0064 needs to be aimed at an ADA Bus™ IR transceiver (combination IR transmitter and receiver) to operate correctly. Since MC-0064s are designed to be room specific, your MC-0064 will have been programmed to control a specific room. While you can control other rooms from the MC-0064 (discussed below), it typically is used in one specific room. Carrying the MC-0064 into another will not control the new room. It will still control the room it was programmed for.

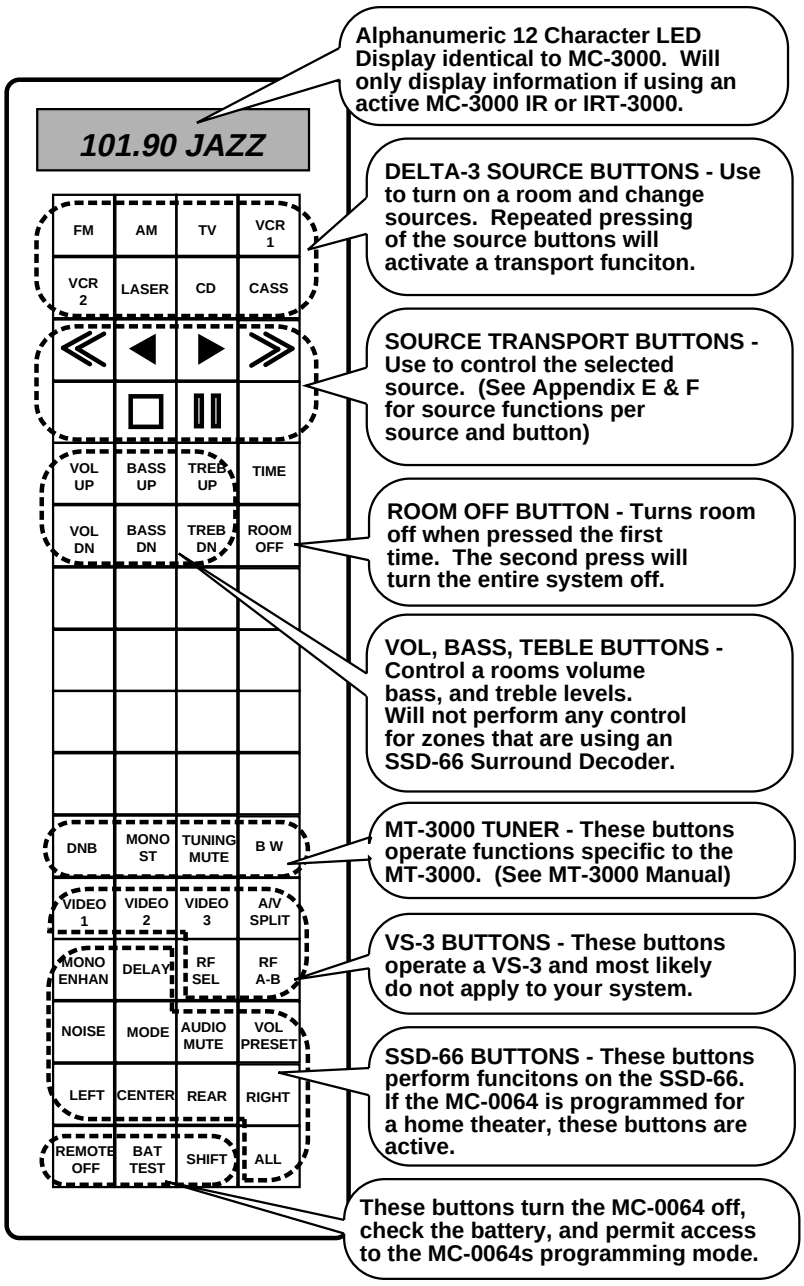
To turn on the MC-0064 simply press a source button. The MC-0064 will display source name. Continue controlling the room's volume, bass, treble, and source functions as with an MC-3000 Keypad. To turn off the room press the ROOM OFF button once. You cannot turn off the entire system from an MC-0064.

If the MC-0064 is set to control a home theater using ADA's SSD-66 Surround Sound Decoder, the VOL UP & VOL DN buttons will adjust the SSD-66's volume level. The BASS and TREBLE buttons will not function. Other SSD-66 functions are found on the lower half of the MC-0064.

The MT-3000's functions are also found on the lower half of the MC-0064.

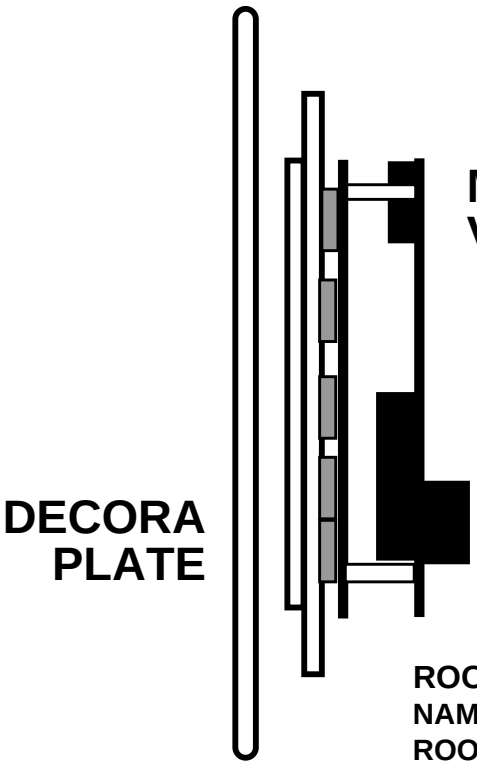
Depending on the components in your system some buttons may not provide any function such as the TIME, VIDEO 1, VIDEO 2, VIDEO 3, AV SPLIT, RF SEL, and RF A/B buttons.

To permit temporary control of other rooms from the MC-0064, press the SHIFT button twice and then skip to the "NEXT ROOM" or "PREVIOUS ROOM" using the VOL UP and VOL DN buttons. You can now control the functions in these rooms, selecting a source or turning it off. To return the MC-0064 to its "NORMAL MODE", press the SHIFT button again or wait for the MC-0064 to automatically reset to its programmed room.



Appendix K
MC-3011 Decora® Style Keypad

The MC-3011 Decora Style Keypads operate on the Delta-3 just as the MC-3000 Keypad. However, the MC-3011 does not include the alphanumeric LED display, IR receiver & transmitter, and transport functions. Therefore, the MC-3011, while providing source selection, volume, bass, and treble control, room off, and system off is a scaled down version of the MC-3000 providing more limited control and feedback. It fits into a single gang wall box and is available with a white, ivory, or black bezel. Decora wall plates are not included.

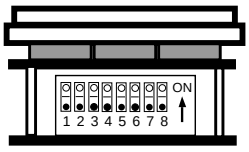


MC-3011 SIDE VIEW

Programming the MC-3011 DIP Switches

Unlike the MC-3000, the MC-3011 has no SHIFT key or display. In order to program an MC-3011 for the correct system and room, you must set the DIP switches located on the bottom of the keypad. Use the following chart to determine the proper DIP switch settings. Please note, the DIP settings 1 through 5 determine the system type. In the case were the keypads are controlling the Delta-3's preamplifier, switch 3 is on. Switches 7 & 8 determine the room.

ROOM	DIP SETTINGS (UP IS ON)							
NAME	1	2	3	4	5	6	7	8
ROOM 1	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
ROOM 2	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
ROOM 3	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF



MC-3011 BOTTOM VIEW

Programming the MC-3011 DIP Switches for Rooms with SSD-66s.

For rooms which are home theaters using ADA's SSD-66 Surround Sound Decoder and are controlled from an MC-3011, the following chart indicates the correct MC-3011 DIP switch settings.

ROOM	DIP SETTINGS (UP IS ON)							
NAME	1	2	3	4	5	6	7	8
ROOM 1	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
ROOM 2	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
ROOM 3	OFF	ON	OFF	ON	OFF	OFF	ON	OFF