



Custom Home Wiring Packages

User Guide

Table of Contents

Page 1	Table of Contents
Pages 2 & 3	Introduction
Page 3	Network Interface Box
Pages 4 & 5	Top Half (Network Interface Box)
Page 5	Bottom Half (Network Interface Box)
Page 6	Wiring
Pages 7-9	Outlets
Page 10	Add Ons (Speakers & Volume Controls)
Page 11	Add Ons (Keypads & Communications)
Page 12	Phone Quick Reference Guide
Page 13	Add Ons (Satellite Systems & Cameras)
Pages 14 & 15	Keypad Operations
Page 16	Troubleshooting

Introduction:

The Audio Buys home wiring system consists of the following components:

1. Network Interface Box
2. Wiring
3. Outlets (phone and television)
4. Add Ons such as speakers, volume controls, satellite, etc.

1. Network Interface Box

This is the heart of the system, where all of the wiring will be “Home Run.” This means all of the outlets will have an individual wire running directly to this box. “Home Run” wiring allows for a variety of options in configuring your system.

This box contains the phone and TV wiring and may contain a video amplifier, speaker wiring, audio amplifier, etc. All connections will be made in this box including phone line distribution and cable/satellite distribution.

2. Wiring

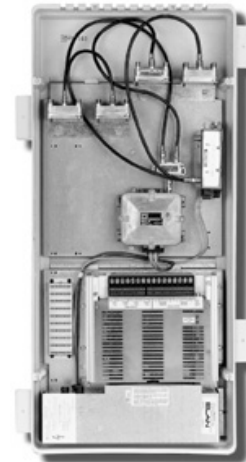
Communication in the future, as well as today, requires the use of the highest quality wiring available. The wiring in your home consists of Category 5 data wiring, for telephone and computers and RG-6 Quad Shielded Coaxial wiring for television, satellite, cable, or even distributed cameras (more on this later). Your home may also contain speaker wiring. This wiring is UL rated 16/4 (this means 16 gauge, 4 conductor) wiring. This wiring allows for high speed data transfer without degradation.

3. Outlets

There may be a variety of outlets in your home. The standard outlets are telephone and TV. You may also have “Homenet” or Home Office outlets, Speaker Input plates (more later), or an Input music wallplate. The standard telephone plates provide access to two telephone lines. The TV plates provide access to Satellite TV cable TV, and/or distributed sources such as cameras, VCR’s, etc. The Speaker Input plate is at the location you have chosen to place your stereo equipment. This plate provides access to the speakers in your home.

4. Add Ons

These add ons can consist of speakers, volume controls, keypads, communication systems, satellite dishes, and cameras. Each of these items will be discussed in the **Add Ons Section.**



Network Interface Box

This Network Interface Box is shown with several optional parts. Yours may look different. The Network Interface Box is configured to allow a standard set of options but can be reconfigured for your specific needs. If you need assistance please call (703) 934-5540 ext. 123 for service. The individual components of the box are discussed below.

Top Half

The top half of the Network Interface box usually contains:

1. The Telephone punch-down block
2. The Television splitter
3. The Television amplifier

1. The Telephone Punch-down Block is the device that is used to assign specific phone numbers to specific outlets.

The phone lines are color coded as follows:

- Line 1 Blue pair
- Line 2 Orange pair
- Line 3 Green pair
- Line 4 Brown pair

The standard configuration assigns Line 1 and Line 2 (if available) to every outlet. Line 1 can be accessed by plugging a **single line telephone** (SLT) in any outlet. Both lines 1 and 2 can be accessed by plugging in a two-line telephone. An optional method of accessing the individual lines is to purchase a two-line adapter from stores such as The Home Depot or Radio Shack. This adapter separates the lines into two different jacks to access either line.

2. The Television Splitter is used to distribute television signals throughout the house to all of the outlets. The television signals can be the local cable company, Satellite dish, or attic mounted antenna. Various signals can also be modulated¹ and mixed in with these signals. The standard configuration sends signals from the outside wire (cable company) to every outlet in the house.

¹ The modulator allows an audio/video source such as a satellite or VCR to be distributed to every outlet on any unused TV channel.

3. The Television Amplifier is used only if required. Some picture problems can be cured by amplifying the signal. Equally the picture can be made worse by over-amplification. If you receive cable from the cable company they will provide the necessary amplification. Please contact us if you are experiencing problems with a system installed by Audio Buys.

The Bottom Half

The bottom half may contain:

1. AVEC amplifier/communications controller
2. Speaker Wiring
3. Power Strip

1. The AVEC amplifier/communications controller is the heart of the upgraded music and communications package. This single unit combines amplification for up to 12 speakers, front door communication via the front door callbox, added telephone features such as call hold, and paging using your existing phones.

2. Speaker Wiring will either be connected together and tied to the Speaker Input outlet for amplification by your equipment. Or, it will be connected to the AVEC amplifier.

3. The Power Strip, if needed, must be connected by a qualified electrician. This can supply power to the television amplifier or other accessories requiring 120 VAC.

The bottom half may also contain camera power supplies, modulators, or other accessories installed by Audio Buys.

Wiring

The wiring behind your walls may consist of the following:

1. Category 5 UTP 4-pair wire (for telephone or computer)
2. RG-6 Quad-shielded Coaxial Cable
3. 16/4 speaker wire

1. Category 5 UTP (Unshielded Twisted Pair) 4-pair wiring. This wire allows access of up to four telephone lines per outlet. Twisted pair wiring is used because it helps reduce problems such as crosstalk and interference. This wire is also capable of 100Base-T high-speed networking (additional components may be required).

2. RG-6 Quad-shielded Coaxial Cable is the wire used to distribute television signals throughout your house. This ultra-high bandwidth cable is specified by satellite manufacturers for use with their systems. It may also be used for technologies such as cable modems.

3. 16/4 speaker wire is a UL Rated wire. It is used if your home is equipped with distributed audio. 16/4, which means, 16 gauge 4 conductor wiring is used to carry the audio signals from the amplifier to individual volume controls (if equipped) and then to the speakers. This wire is thick enough that it will not cause degradation of the audio signals in your home.

Outlets

There may be several types of outlets in your house:

1. Telephone (single or double)
2. Television (single or double)
3. Homenet (or Home Office)
4. Speaker Plates
5. Input Music Wallplate

1. Telephone Outlet (single) This is the standard outlet installed in your home. This outlet has the ability of providing two phone lines (two different numbers). They are wired to allow access to Line 1 (primary line) simply by plugging in a Single Line Telephone (SLT). You can access both Lines 1 & 2 by plugging in a two line telephone. Line 2 can also be accessed by plugging in a two-line adapter available from stores such as Radio Shack and The Home Depot. This will allow two SLTs or an SLT and a computer modem to be plugged in.



Telephone Outlet (double) Your home may be equipped with a double phone plate. These plates can provide a variety of different configurations. The most popular ways are listed below.

1. Top jack = Line 1 Bottom jack = Line 2
2. Top jack = Line 1 & 2 Bottom jack = Line 3
3. Top jack = Elan (for house communication)
Bottom jack = Standard Line 1

The third configuration can be used with the whole house communication option. This allows devices such as modems or answering machines to be used, while still maintaining the benefits of the Elan upgrade.



2. Television Outlet (single) Your home will be equipped with either the Single Coaxial outlet (shown at left) or the Double Coaxial outlet (below). The single coaxial plate is typically only used in areas where two-wire cable (A/B Cable) is not available. Or, in cases when you have only a satellite (or antenna) and not Cable TV.



Television Outlet (double) Your home will likely have the double coaxial outlet installed. This outlet allows for A/B Cable to be installed or for locations where a satellite system will be installed along with a modulator (to view the satellite in other rooms). If only a single coax is needed the top jack will be used.



Important: In certain instances, usually if you have a TV Niche, you may have a triple or quadruple coaxial plate. These plates should be labeled, but usually the middle jack (in the case of the triple plate) will go directly to the niche. If the plate is a quadruple plate the left jacks will be the input and the right jacks will go to the niche.

To wire a triple plate use the top and bottom jacks as the input for your cable or satellite box. The middle jack will connect to the output of the cable or satellite box.

To wire a quadruple plate use the left jacks as the input to your cable or satellite box. Use the top right jack as the output of the cable or satellite box.

If you choose to put the cable box in the niche with the TV you will need to place a short jumper between the upper two jacks and a second jumper between the bottom jacks.

3. Homenet Outlet (Home Office) These plates are used in home office applications or wherever a satellite decoder will be placed. The standard wiring of these plates is the same as the Telephone Outlet (single) for the phone portion. Line 1 and 2 will be accessible with a two line phone (or the adapter explained above). Line 1 will be accessible by plugging in a Single Line Telephone. The coaxial jack is connected to the splitter in the Network Interface Box to provide television signals. This jack can also be used for cable modems. In satellite locations the coaxial jack is used as the input to the satellite receiver.



4. Speaker Plates These plates are located where your stereo equipment will be placed (Audio Home Run Point). Simply plug the speaker output from your receiver into these ports to enjoy your in-ceiling speakers. These plates connect to the speaker wires in the Network Interface Box.



Important: Your receiver must be capable of powering 4-8 Ohm loads (this information should be on the back of the receiver or in the owners manual). When connecting the speaker wires be sure and observe proper polarity. Connect the red port to the positive, usually red, connection on the receiver. Connect the black port to the negative, usually black, connection on the receiver.

5. Input Music Wallplate This plate is installed with the Elan AVEC system simply plug in the output of your receiver usually a Tape output into this plate to hear your system throughout the house.

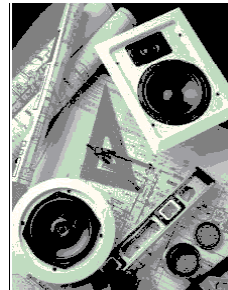


Add Ons

There are many add ons for your home. The most popular include:

1. Speakers
2. Volume Controls
3. Keypads
4. Communication Systems
5. Satellite Systems
6. Cameras

1. Speakers The most common type of speakers that will be installed are in-ceiling. Outdoor speakers are also available. They are generally wired to an in-wall volume control (see below). In-ceiling or in-wall speakers can also be used in home theater applications. For home theaters the speaker plates will appear different but are wired the same as above.



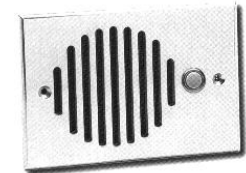
2. Volume Controls The volume controls are mounted in-wall. They provide independent control over the volume of music in each room. By turning the control all the way to the left you can turn off the speakers in that room.



3. Keypads The Elan keypad is available with the Whole House Audio and Communication System. The keypad allows control over the stereo system and its components. The keypad is capable of learning virtually any IR Code (Infra-Red code from the original remote) so it will be compatible with your system. Programming must be done by Audio Buys. The keypad allows you to turn on or off the whole house music as well as control the basic functions of 6 different components. (See Pages 14 & 15 for a list of possible functions.)



4. Communication Systems The Elan communications package is combined with the whole house audio system. It allows your existing phones to work together to provide intercom, paging, and front door communication. With a few simple keystrokes (telephone commands shown on next page) on any touch-tone phone you can mute the music and then page with your voice heard on the speakers installed in your home. Your front door will have a call box installed (pictured at right). When the button is pressed on this call box the music is muted and a pleasant chime is heard on the speakers. At this time you can pick up any phone, enter a few keystrokes, and talk with the person at the front door. All of this can be done from any touch-tone phone in your home, including cordless phones.



Phone Quick Reference

Page	#, 7	Speak into the phone and your voice will be heard over the house speakers.
Hold	#, 4	Allows you to place the caller on hold, hang up, and take the call on another phone in the house.
Intercom	#, 7 Then press 0	Allows you to talk with someone at another phone in the house after a page, without the conversation being heard over the speakers
Callbox	#, 3	Allows you to use a telephone to speak with someone over the door speaker
System Bypass	#, 9	Allows you to use outside phone services that require use of the # key, or to access phone company voice mail services.
Music Mute	#, 6	Allows you to mute the music coming through your speakers for the duration of an incoming or outgoing call.
Off Hook Alert		If a phone is left off hook, after two minutes a “beep” is heard over all the speakers.

5. Satellite Systems The satellite systems can be connected a variety of different ways, some of the more popular ways are listed below. To watch the satellite you typically need to tune the TV to a specific channel. If the satellite is only connected to one TV you will usually tune to channel 3 or switch to the Video 1 input. If the satellite is distributed to multiple TVs you will usually need to tune to a higher channel (usually between 40 and 60) this channel will be on the modulator or will have been told to you at the time of installation.

If the satellite is connected through a stereo system the TV is typically left on Video 1 (or Input 1) and the audio/video switching is done through the receiver.

6. Cameras can be installed in many locations usually the front door has a camera installed. To view the camera on any TV simply tune to the modulated channel (usually between 40 and 60).



BC-450/935C
CCTV Camera



Keypad Operation

These commands represent typical programming. Some functions may not be available for your particular system.

TNR

TNR	-Selects input (if applicable)
CNTL Up	-Tuner preset up
CNTL Down	-Tuner preset down
*CNTL Up	-Tuning up (if applicable)
*CNTL Down	-Tuning down (if applicable)
DISC	-Toggles auto tuning on or off; or changes preset class (group)
*DISC	-Changes band
*POWER	-Tuner Power

CD

CD	-Starts play and selects input (if applicable)
CNTL Up	-Track up
CNTL Down	-Track down
PLAY	-Play
STOP	-Stop
*STOP	-Pause
DISC	-Disc up (if applicable)
*DISC	-Disc down (if applicable)
*POWER	-CD Power

TAPE

TAPE	-Starts play and selects input (if applicable)
CNTL Up	-Fast forward
CNTL Down	-Rewind
*CNTL Up	-Automatic music search forward (if applicable)
*CNTL Down	-Automatic music search back (if applicable)
PLAY	-Play
STOP	-Stop
*STOP	-Pause
*POWER	-Tape Power

Keypad Operation

VCR

VCR	-Starts play and selects input (if applicable)
CNTL Up	-Fast forward
CNTL Down	-Rewind
*CNTL Up	-Channel up
*CNTL Down	-Channel down
PLAY	-Play
STOP	-Stop
*STOP	-Pause
*POWER	-VCR Power

DVD

DVD	-Starts play and selects input (if applicable)
CNTL Up	-Track up
CNTL Down	-Track down
*CNTL Up	-Scan up
*CNTL Down	-Scan down
PLAY	-Play
STOP	-Stop
*STOP	-Pause
*POWER	-DVD Power

DSS

DSS	-Selects input (if applicable)
CNTL Up	-Channel up
CNTL Down	-Channel down
*POWER	-DSS Power

Troubleshooting

Notes

Problem	Solution
Music is distorting	The input music wall plate level may be set too high. Use a small screwdriver and turn the dial to the left.
No dial tone on any phone outlet	If none of the jacks in the house work plug a standard phone in the test jack located in the phone company Network Interface Device. Usually a small grey box near the electrical meter. If there is no dial tone here call the phone company. Otherwise call Audio Buys for service.
No picture from the modulators	If you have cable the TVs should be set for cable reception. If you do not have cable the TVs should be set for the non cable mode to receive modulated channels. The power may be disconnected from the modulator(s).
Satellite Remote is unresponsive (Sony Satellites)	Be sure to press the function DSS button before operating the satellite.
The keypad lights do not stay lit	With the AVEC system the keypad only lights up when a button is pressed then they go off after about ten seconds.

Notes

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