

a 3-head deck. Special instructions are provided on page 24.

8. Remote Out. The CT-17 has two sets of main outputs: REMOTE OUT and PRE OUT. REMOTE OUT is designed for use with a second power amplifier and speakers in another part of your house. See Section 16 for details. If you are not creating such a multi-room system, REMOTE OUT will probably not be used.

9. External Processor In/Out. This feature does not have a corresponding button on the front of the CT-17 (basically, we ran out of room!). However, it is extremely useful for signal processing components which are either 1) left in the system all the time (such as the Bose speaker equalizer) or 2) have their own "defeat" switch which eliminates them from the circuit path (virtually all equalizers, expanders, etc.).

NOTE: Don't remove the connecting "U"'s which have been inserted into these sockets unless you intend to use an external processor which can return the signal to the CT-17.

10. Pre Out. These outputs are connected to your power amplifier.

11. Surround Out. Stereo outputs for left and right rear channel speakers. These should be connected to another power amplifier.

12. Center Out. This is a mono output for the special center channel speaker which distinguishes Dolby Pro Logic from "regular" Dolby Surround. It should be connected to one channel of a power amplifier.

NOTE: Dolby Pro Logic rear channel surround sound output is actually MONO. You can achieve the full "5-channel" Dolby Pro Logic Surround effect with just four amplifier channels. See Section 11 for details.

13. Convenience outlets. Four additional AC outlets are provided on your Carver CT-17. The two marked SWITCHED are only live when the CT-17's power switch is pushed. They are useful for other components which you use every time you play your system such as an equalizer, a speaker equalization box, etc.

NOTE: Do not plug power amplifiers into the CT-17's SWITCHED convenience outlets.

Two UNSWITCHED AC outlets are also provided. They are always live as long as the CT-17 is plugged into the wall. A device connected to one of these outlets may be left permanently on, or may be switched off with its own switch.

NOTE: In order to avoid turn-on transients, devices plugged in here should be powered up BEFORE the CT-17 is turned on.

NOTE: The total power drain on these receptacles should not exceed 1000 watts.

14. 75-ohm FM Antenna Terminal. You may connect directly to your local cable television system (consult your local cable operator for details), connect a 75-ohm antenna, or use the 300-ohm dipole antenna with the balun adaptor supplied.

CAUTION: Extreme care must be used when connecting your preamplifier/tuner to an external outside TV/FM antenna. See the Notice at the front of this manual. If you're not 100% sure of the procedure, consult qualified installation personnel.

15. AM Antenna hook-up. The AM loop antenna provided is adequate for good AM reception in most areas. Adjust the antenna for best sound. It may also be wall-mounted with the supplied bracket.

16. AC Line Cord. The CT-17 is designed to be plugged into a properly polarized outlet. (See Safety Instructions 17 and 18 at the beginning of this manual). The CT-17 may be attached to an extension cord or multiple outlet plug, provided they have the proper polarization (one wider and one narrower prong). If you are using an extension cord, we recommend 16 gauge or heavier.

17. Remote Sensor Connection. The CT-17 can be used with many external remote sensors (also called infrared receiver/booster systems) as well as with Carver's more elaborate RemoteSystemLink™ room-to-room system.

Virtually all external remote sensor systems have a standard 3.5mm phone jack output which plugs into this socket on the CT-17 (see page 25).

8. Remote Control

Batteries

The CT-17's wireless infrared remote requires two AA batteries. Remove the battery compartment door on the back of the remote control by sliding it outward parallel to the surface of the remote. Insert the batteries supplied, making sure to match the positive (+) and negative (-) ends as indicated by the diagram inside the battery compartment.

Remote Operation

The remote control unit will work in a range of approximately 20 feet in front of and about 30 degrees to either side of the preamplifier/tuner. If the remote control begins to occasionally not respond, 1) check its batteries; 2) make sure the infrared projection area on its tip is clean; 3) check that the CT-17's infrared remote sensor square is not dirty or blocked from direct line-of-sight contact with the remote.

Remote "Differences"

Seven EXTRA functions are found on the remote which are NOT found on the CT-17 front panel:

SURROUND Volume UP & DOWN
 CENTER Volume UP & DOWN
 CENTER MODE
 DIMENSION (Delay Time)
 REMOTE
 MUTE
 Four CD Transport controls

Remote Functions

1. Volume Control Functions. You can set three different individual volume levels with the CT-17 remote controls. Two of these are for adjusting relative Dolby Pro Logic Surround gain levels in a multi-speaker system: SURROUND and CENTER. Once they are adjusted, the MASTER control is used to actually control overall volume during listening.

If you *aren't* taking advantage of Dolby Pro Logic Surround, you will only need to adjust the MASTER volume.

REMOTE volume allows you to adjust the loudness of a second system in another room. It is especially valuable when used with Carver's RemoteSystemLink™ or remote transmitter systems, since you can take your CT-17 remote with you and use it in another part of the house. This signal is unaltered by tone, Holography, High Cut and Loudness controls.

2. Surround Sound Functions. CENTER MODE and DIMENSION control aspects of the CT-17's surround sound functions. The center channel is operational in Dolby Pro Logic mode. Front *center* channel output may be switched between three different modes: NORMAL, WIDE, PHANTOM and OFF (See Section 11 for details). The three different effects are selected by "cycling" through a set of four options.

Each push of the button advances you to the next CENTER MODE:

Not pushed	NO CENTER CHANNEL
Pushed once	NORMAL (used with Pro Logic) ON
Pushed again	WIDE center channel effect

Pushed again PHANTOM center channel effect
 Pushed again NO CENTER CHANNEL

DIMENSION selects a 20 or 30 millisecond delay time for the Dolby Pro Logic Surround, Hall and Simulated Stereo modes. (To change the delay time, Dolby Pro Logic mode must be ON.) Its use depends on listening tastes and room/system configuration. We discuss this function in more detail in Section 12.

3. Tuning Control Functions. UP and DOWN tuning buttons correspond to the rocker switch on the CT-17's front panel. Ten preset buttons are included, each of which activates two different FM or AM presets. An ACCD button is also provided near the bottom of the remote.

NOTE: To select a preset from 1 to 10, press the remote preset button *once quickly*. To select a preset from 10 to 20, hold the appropriate button down *for several seconds*.

4. Input Functions. These include AM, FM, PHONO, CD, VIDEO 1, VIDEO 2, AUX and REMOTE.

5. CD Transport Functions. The CT-17 remote control may be used to activate four functions of many Carver compact disc players: PLAY, PAUSE/STOP (depending on whether the button is pressed once or twice) and SKIP which lets you skip ahead or back through the tracks.

6. Other Functions. Along with master POWER (on/off), there are buttons for activating SONIC HOLOGRAPHY® circuits and muting the CT-17's sound. When depressed, the MUTE button reduces the master volume level by 20dB. When the MUTE function is activated, the green LED in the master volume control knob turns red. Pressing the MUTE button again restores the previous sound level and the green LED. MUTE does not affect the REMOTE (second system) output.

7. Remote. If you're in another room and are using a remote transmitter system to "communicate" with the CT-17, REMOTE allows you to select a secondary source in the

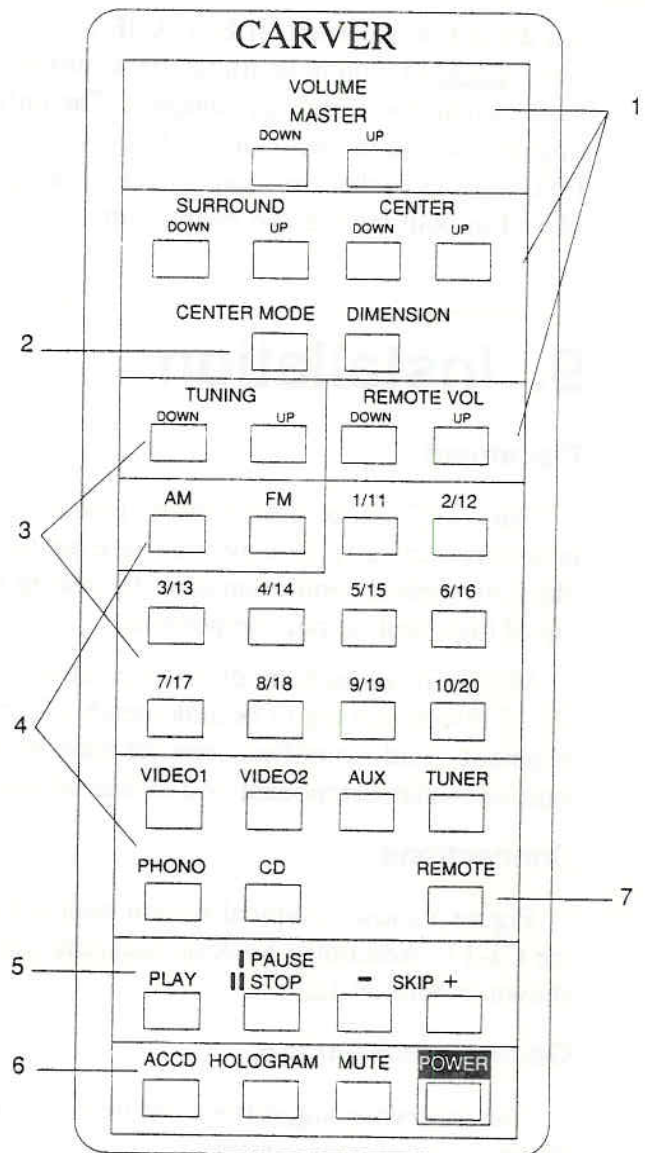


Figure 3 Remote Control

other room. Just press REMOTE and then select the source for the remote system.

Once a remote source is selected, the remote control automatically reverts back to main system source select. The REMOTE button must be pushed again in order to select another source for the remote system. If the REMOTE button is pushed and no remote source is immediately selected, it will remain in remote source select mode until a source is finally selected by the remote control.

VERY IMPORTANT: ENGAGE (on the front panel of the CT-17) MUST be OFF for REMOTE

(on the remote) to work. If ENGAGE is well...engaged, you must trudge back into the main system room and dis-engage it. The only time this would be necessary is if you've pushed ENGAGE in so that the same source is being played in both remote and main room.

If you leave ENGAGE off, you can still change both the main room and the remote room source using the CT-17 remote control from either room.

9. Installation

Placement

The CT-17 can be placed in any position including vertically. However, be sure not to block its vertical ventilation areas by setting it on top of high heat output components.

NOTE: To avoid hum, do NOT place the CT-17 directly on top of or underneath a Carver Magnetic Field Amplifier. Separate them by at least one other component or 2 inches of space.

Connections

Figure 5 shows a typical system built around the CT-17. Additional hook-up diagrams are shown in Section 12.

General hook-up tips

The following suggestions can help you get the most out of your system:

- Make sure all components are OFF before making any connections.
- Use high quality interconnects. Cheap, worn or frayed patch cords will not only degrade the sound, but can also be a source of hum and RF noise. Special higher-quality interconnects are available in many grades. These are often used from CD-to-preamplifier, preamplifier-to-power amplifier and video connections. Consult your Carver dealer for details.
- Double-check that *"left's go to left's and right's go to right's"*. It is general practice to use RED patch cord plugs for RIGHT channel connections and WHITE or BLACK patch cord plugs for LEFT connections. Whatever way you choose,

remain consistent while hooking up all of your components.

- Make sure that turntable input cables are well away from both power cords and speaker wires to eliminate the possibility of induced hum.

Specific CT-17 Considerations

- An external processor such as an equalizer, dynamic expander, etc. may be connected either to the EXTERNAL PROCESSOR plugs on the back of the CT-17 or into a tape loop. If you are using a 3-head tape deck, we recommend connecting the signal processor to the EXTERNAL PROCESSOR loop.
- Remember that the EXTERNAL PROCESSOR loop connections on the back of the CT-17 are not switchable from the front panel. Make sure the component you hook up to them has its own "defeat" button. Since this loop is "daisy-chained" with the main outputs of the CT-17, the status of the external processor will affect the entire signal path. If the component is off, no signal will reach the CT-17's PREAMP OUT outputs.

If you're not using an EXTERNAL PROCESSOR or have connected it to a TAPE loop, leave the metal "U" plugs in the sockets.

- Video 1 is an input only. Video 2 includes audio and video outputs for recording or dubbing.
- Connections for a 3-head cassette or reel-to-reel deck are somewhat unusual and

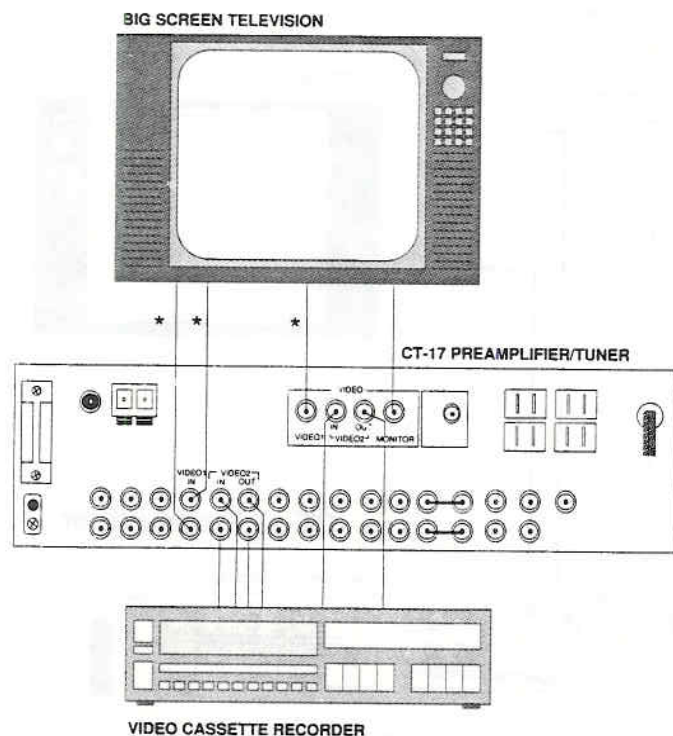


Figure 4 Video Connections

are covered in a special hook-up. (See Fig. 6.) An alternate version of this hook-up is also used for two separate external processors (Fig. 7).

Video Considerations

- The CT-17's video MONITOR output is designed to connect to a TV which has an RCA socket-type video input.
- If you have just one VCR, connect it to VIDEO 2 as shown in Figure 5.
- If you have a play-only video device such as a laser disc player, satellite dish receiver, CDV, or a second VCR, connect it to VIDEO 1 as shown in Figure 5.
- Many "deluxe" remote control cable boxes also have an RCA type video output and often a line level audio output as well. These may be connected to VIDEO 1 on the CT-17.

- * Many stereo televisions and bigscreens have both AUDIO and VIDEO outputs. These may be connected to VIDEO 1, allowing you to enhance the built-in TV speakers with your main stereo system loudspeakers. By connecting the TV's VIDEO OUT to the CT-17's VIDEO 1 IN, you can record what you're watching on TV through a VCR hooked up to VIDEO 2 IN.

A Word About FM Antennas

Even the finest tuning section can't do much if it can't get a good signal. If you live in a suburban area, chances are good you won't need a very elaborate antenna system. If you're in a rural area, heart of a city or want to receive extremely distant stations, a simple dipole antenna like the one provided with your CT-17 might not be sufficient, even with the magic of ACCD.

Basically, the most important consideration is height. The higher the antenna the better because radio waves travel in a straight line. If your antenna is free and clear of obstruction, it will perform better and you'll gain signal strength. A roof-mounted antenna is also much less likely to cause multi-path distortion from room reflections and passing cars, and will cause less hiss from low signal strength.

Dipole antennas tend to be susceptible to noise because they aren't very directional, and because they're usually mounted inside the home. Depending on your specific area and location, signal strength will be adequate at best. This is due to the lack of directionality and, in most cases, height of the antenna. But there are some advantages, including low cost. (One came with your CT-17, right?) In all fairness, the type of dipole antenna we provided will work well in many different places and situations. It should at least be used so you can start enjoying FM programming right away, before settling on another antenna system or commercial cable.

Powered indoor antennas are another possibility. Some new designs have come out

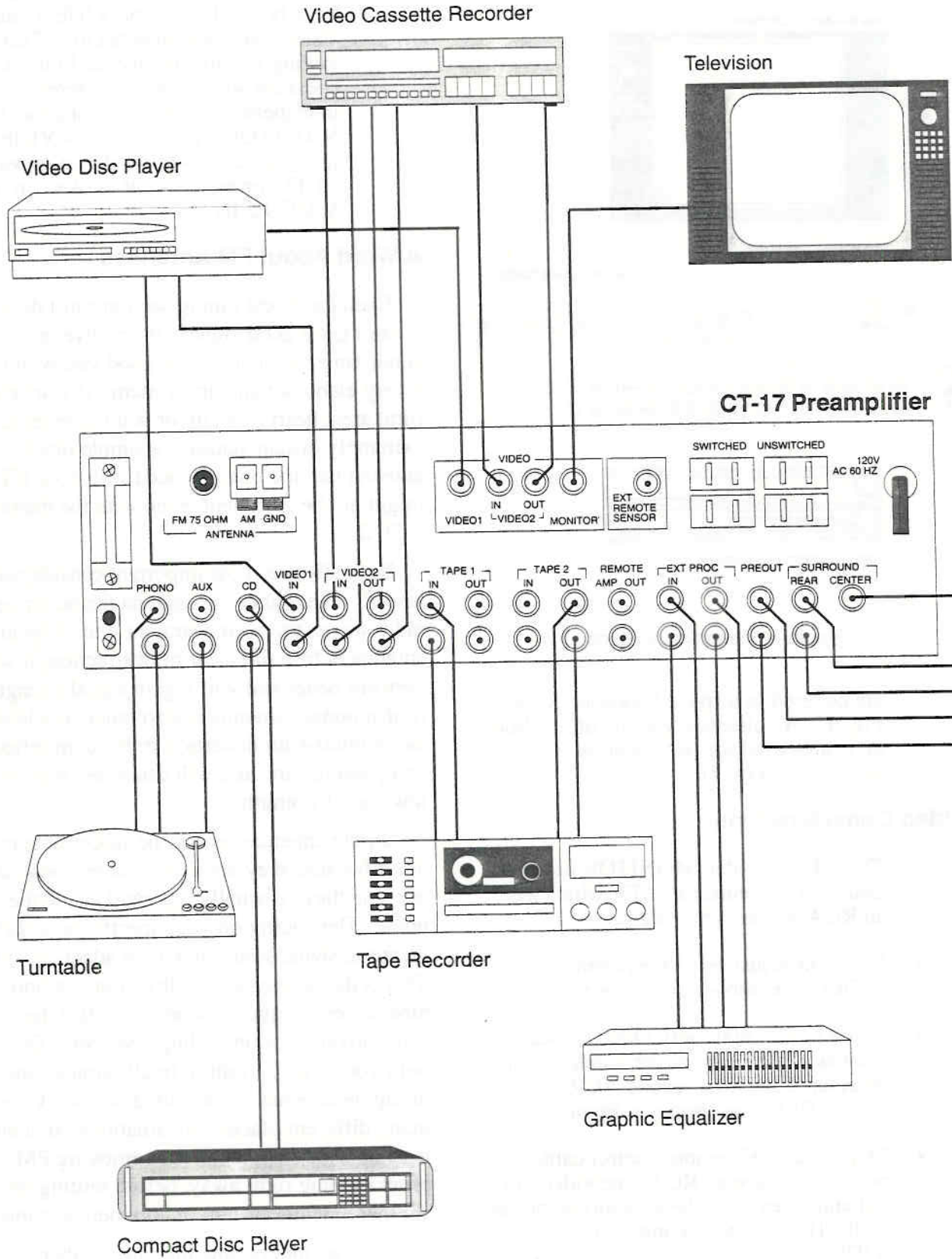
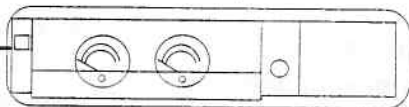
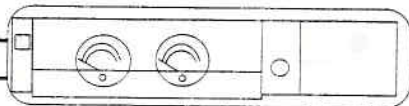


Figure 5 System Interconnections

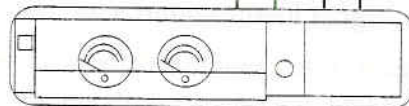
Mono or Stereo Amplifier



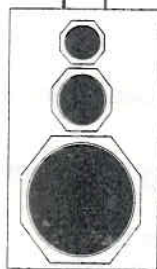
Stereo Amplifier



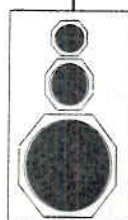
*Mono or Stereo Amplifier



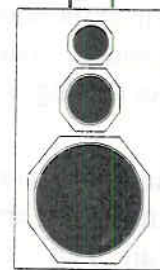
See Note under #12 page 17.



Left Front Speaker



Center Front Speaker

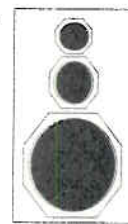


Right Front Speaker

Example of a Center Surround Installation Using Multiple Amplifiers



Left Rear Speaker



Right Rear Speaker

recently which provide high gain in a small, attractive package and your choice of directivity or non-directivity, depending on how the antenna is oriented.

Feedlines are another important part of getting good FM reception. If the link from your antenna to your CT-17 is poor, you'll cancel any advantage from height or from having a multi-element, high-gain antenna. 300-ohm twinlead is inexpensive, and if it's properly installed, signal losses within it are reasonable.

However, if the twinlead is poorly installed, it can act like an antenna itself, degrading the performance of the CT-17 by picking up extra unwanted signals and interference noise. Twinlead requires careful routing and must be insulated from everything made of metal, like gutters, other wires, etc. Compared to average twinlead, 75-ohm coaxial cable is more expensive and a bit harder for signals to get through but it has real advantages, too. It's not prone to pick up extra noise and interference because it's shielded. Also, you don't have to be as careful about routing, so installing 75-ohm is much easier.

When mounted and connected properly, a directional outdoor FM antenna can provide the best signal of all, with the lowest interference and noise factor. But you have to do it right (see the warnings and information at the beginning of this manual). Indeed, the greatest disadvantage to outdoor FM antennas is the cost of the antenna, mounting hardware, and a rotator if you want to point these highly directional antennas in more

than one direction. But when properly installed, an outdoor antenna can, in most areas pull in an incredible number of stations for the CT-17's ACCD processor to clean up. Which design you choose will depend on your FM listening habits and, of course, your location. Consult with your Carver dealer for more antenna insights.

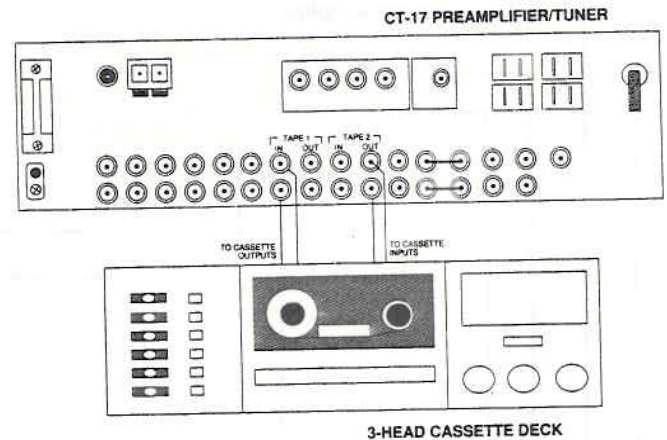


Figure 6 Connecting a 3-Head Cassette Deck

Connecting a 3-head Cassette Deck

See Figure 6.

1. Connect TAPE 2 OUT to the INPUTS of the 3-head cassette deck.
2. Connect TAPE 1 INPUTS to the OUTPUTS of the cassette deck.
3. See Section 10 for operating instructions.

Connecting Two Cassette Decks

See Figure 7.

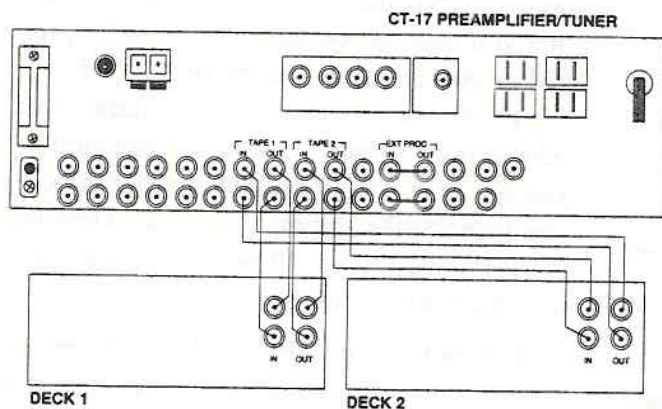


Figure 7 Connecting Two Cassette Decks

1. Connect TAPE 1 IN to the OUTPUTS of Cassette Deck 1.
2. Connect TAPE 1 OUT to the INPUTS of Cassette Deck 2.

3. Connect TAPE 2 IN to the OUTPUTS of Cassette Deck 2.
4. Connect TAPE 2 OUT to the INPUTS of Cassette Deck 1.
5. See Section 10 for operating instructions.

Connecting an External Remote Sensor

The CT-17 can be used with many brands of external remote sensors which use a receiver in another room connected to a cable. This allows you to use the CT-17 remote in some other part of your house. See Figure 8.

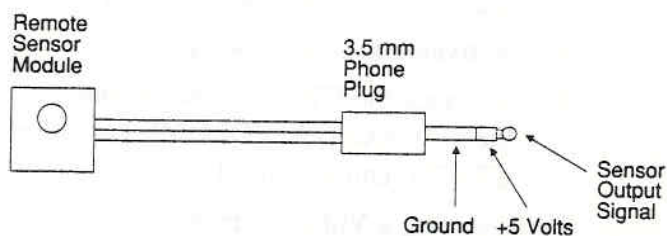


Figure 8 Connecting the External Remote Sensor

CAUTION: Unplug the CT-17 from the AC outlet before connecting or disconnecting the remote sensor from the back of the chassis.

10. Operating Steps

This section includes procedures for common CT-17 operations. Surround sound and remote (room-to-room) instructions are covered in Sections 11 and 17.

A. Selecting and Playing a Music Source (Other Than Tape)

1. Turn on the CT-17.
2. Turn on your power amplifier.
3. Press the appropriate INPUT SELECT button.
4. Make sure the volume control is turned down.
5. Activate the sound source.
6. Advance the CT-17's volume control or press the "+" MASTER VOLUME button on the CT-17's remote control.

B. Selecting a Video Source

1. Turn on the CT-17.
2. Turn on your power amplifier.
3. Turn on the VCR, TV, cable box, etc.
4. Press either VIDEO 1 or VIDEO 2 on the INPUT SELECT row of buttons.
5. Make sure the volume control is turned down.
6. Activate the video source.
7. Advance the CT-17's volume control or press the "+" MASTER VOLUME button on the CT-17's remote control.

C. Tuning an FM or AM Station

1. Turn on the CT-17 and the power amplifier.
2. Make sure the appropriate antenna is connected to the CT-17.
3. Select TUNER from the INPUT SELECT buttons.
4. Select AM or FM by pressing the appropriate button.
5. Advance the CT-17's volume control about 1/4 of the way.
6. Activate AUTO SCAN, then press the tuning bar until the desired station has been reached.

D. Setting FM/AM Station Presets

Your Carver CT-17 can memorize and recall up to 20 FM and AM stations in any order. Note that you may devote as many of the 20 presets to FM as you like (not just the first 10). For example, you could have 17 FM stations and 3 AM stations preset. Our only suggestion is that you put your station presets in order of how often you listen to the station. That way when you hit PRESET SCAN, you'll be previewing your favorite stations first.

The memory inside the CT-17 will retain preset information for about 3 days after it is disconnected. This helps prevent information loss when moving your system around or from power outages.

1. Tune in the station you want to preset.
2. Press the MEMORY button on the front of the CT-17. The MEMORY LED on the display will light up.
3. Now press the appropriate preset button. Press it once quickly to set the lower (1-10) preset number; push it and hold it down for several seconds to enter the higher (11-20) preset number. You will see the preset number appear on the numeric display.
4. When the MEMORY LED turns off, the station has been entered into the receiver's memory.
5. Repeat Steps 1-4 for up to 20 stations.

NOTE: If a station was already entered into a given preset, it will be erased if you choose the same preset number for a new station.

E. Playing an Audio Tape

1. Turn on the CT-17 and power amplifier.
2. Press in the TAPE MONITOR ON/OFF button.
3. Depending on which tape monitor loop the deck is connected to, select either TAPE 1 or TAPE 2.

4. Press play on the cassette deck.
5. Adjust the CT-17's volume control or press "+" and "-" on the remote control.

F. Recording with a 3-Head Cassette Deck

1. With ENGAGE OFF, TAPE MONITOR ON/OFF pushed IN and TAPE SELECT to 1, and the deck connected as shown in Figure 6, select the playback source on the Record/Remote Select row of Input Select buttons. Start the playback source and the record deck. The source will record onto the recording deck and the output from the recording deck can be monitored at the PREOUT. Pushing the Tape/Source Select button on the 3-head cassette deck will allow you to monitor either the source or the tape as it is being recorded. Pushing the TAPE MONITOR ON/OFF button OUT on the CT-17 will allow you to listen to another source selected with the Primary Input Select buttons at the PRE OUT while the recording is taking place.

G. Copying a Tape from Deck 1 to Deck 2

1. Turn on the CT-17, power amp and both cassette decks.
2. Make sure that the source deck is connected to TAPE 1 and the copy deck to TAPE 2.
3. With the ENGAGE switch ON, push in the TAPE MONITOR ON/OFF button and select the TAPE 1 position.
4. Start both playback and record cassette decks.
5. TAPE 1 can be monitored at the PRE OUT jacks. *NOTE:* Selecting TAPE 2 will allow dubbing from Deck 2 to Deck 1.

H. Copying a Tape While Listening to Another Source

1. Connect the recording deck as shown in Fig. 6. Connect the playback deck output to an unused input on the CT-17 such as AUX. Connect the TAPE 1 output from the CT-17 to the source deck's input jacks.

2. With the ENGAGE button OFF, AUX (or whatever the source deck is connected to) selected on the PRIMARY and REMOTE/RECORD Input Select buttons, and TAPE 1 monitor selected, start both playback and record decks.
3. With the TAPE MONITOR ON/OFF button IN, the recording deck can be monitored at the PRE OUT. If it is a 3-head deck, pushing the Source/Tape button on the deck will allow you to monitor either the source or the tape as it is being recorded. With the TAPE MONITOR ON/OFF button OUT, the playback deck can be monitored at the PRE OUT. Changing the selection on the Primary Input Select buttons allows you to listen to another source while recording.

I. Copying a Video Source

1. Turn on the CT-17 and power amp.
2. Turn on the two video sources connected to VIDEO 1 and VIDEO 2. VIDEO 1 should be the source; VIDEO 2 the copying deck.
3. With ENGAGE OFF, press VIDEO 1 on the RECORD/REMOTE SELECT input bank.
4. Start both the video source (hooked to VIDEO 1) and the VCR which is making the copy (hooked to VIDEO 2).
5. The video being sent to the MONITOR output is from the source deck.

J. Copying a CD to Video Tape

1. Turn on the CT-17 and power amp.
2. Connect the VCR that is making the copy to VIDEO 2.
3. With ENGAGE off, press CD on the RECORD/REMOTE SELECT input bank. Selecting another audio source on the MAIN INPUT SELECT bank will let you listen to something else while the recording is taking place. If ENGAGE is on, press CD on the MAIN INPUT SELECT bank. However, you may not listen to another audio source.
4. Start both the CD and the VCR.

11. Connections and Speaker Set-up for Dolby Pro Logic Surround

If you're a movie buff, you owe it to yourself to use the CT-17 as the centerpiece for a true home video theater. In its complete configuration, Dolby Pro Logic Surround requires four to five amplifier channels and five speakers, and the results are spectacular.

Figure 9 shows a complete 5-speaker Dolby Pro Logic Surround hook-up; Figure 10 shows the suggested placement of the loudspeakers. Figure 11 shows an alternative for even more impressive bass reproduction which is a hallmark of Dolby Stereo and Dolby Surround. It makes use of our AV-Sixty Four 4-channel Magnetic Field Power Amplifier which includes a built-in electronic crossover for subwoofer operation.

Speakers for Surround Sound

Main speakers. Obviously, your main Front Left and Front Right speakers should be of the highest quality possible. They should have excellent dynamic range and wide frequency response, especially if they are your primary audio-only listening system. Carver's Amazing Loudspeakers work very well for this purpose.

Since Dolby Pro Logic Surround includes a center channel, your main Front Left/Front Right speakers can be placed farther away from the TV monitor (than is normally recommended). The benefits are two-fold. First, the TV image is psychoacoustically enlarged without losing on-screen centered dialog. Second, the main speaker system needn't be video shielded.

Rear surround channel. The sounds which emerge from Rear Left and Rear Right speakers are not full-range. Rather, the Surround channel frequency range is limited (100 Hz - 7 KHz) output is strictly midrange and treble. This suggests that you don't need extremely expensive, full-range speakers for rear channels. The main considerations should be 1) *size* and 2) *non-directivity*. We recommend mounting rear

speakers high enough up so that rear channel sound can be dispersed throughout the viewing area. That usually necessitates a smaller speaker which can be wall-mounted. Since bass reproduction is not critical, bookshelf and even "mini-monitors" work well for this purpose assuming they have fairly wide dispersion

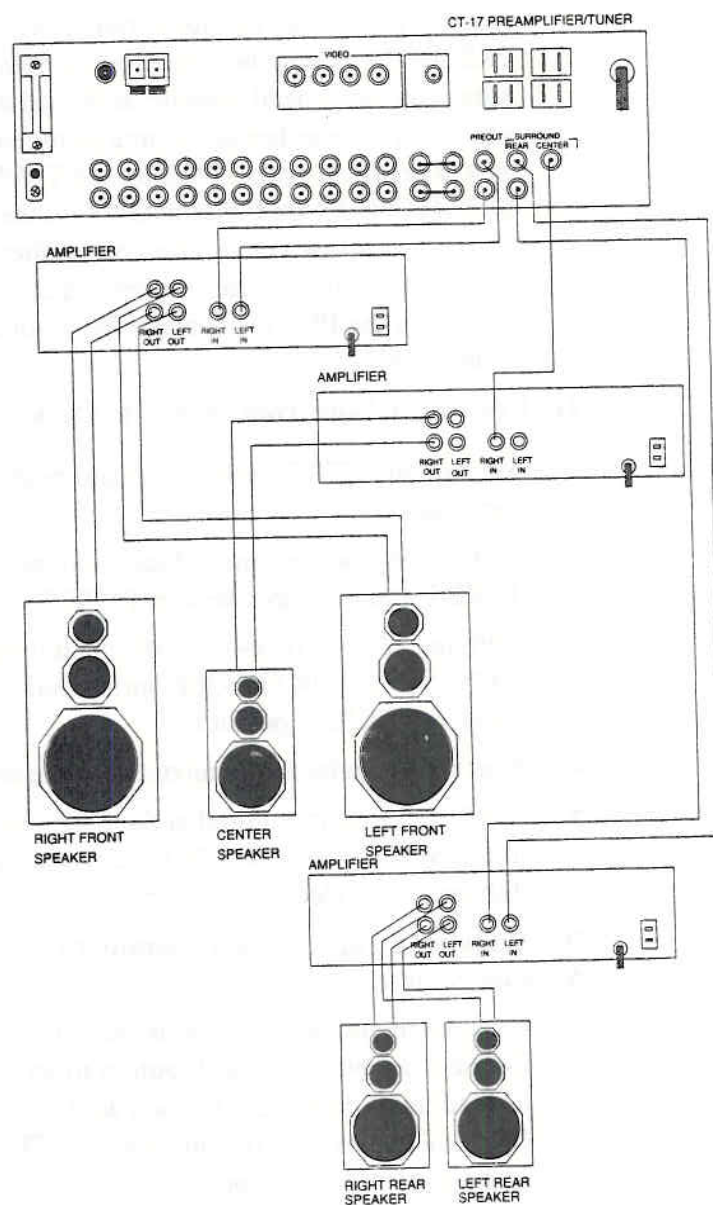


Figure 9 5-Speaker Pro Logic Hook-up

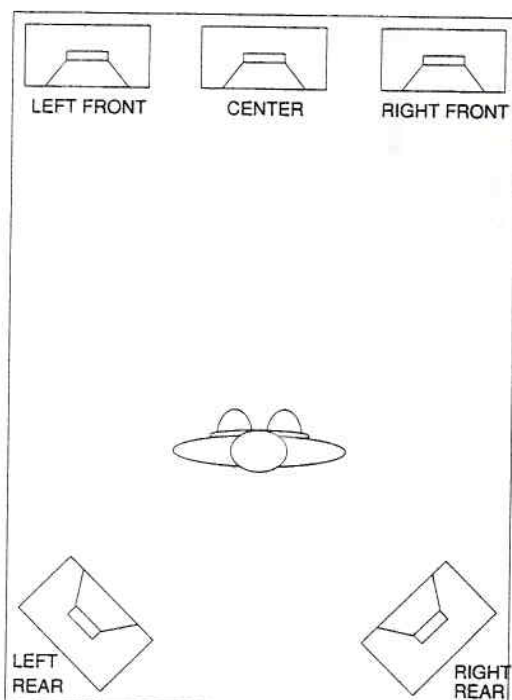


Figure 10 Speaker Placement for 5-Speaker Hook-up

patterns. See Figure 12. In a theater, Dolby Stereo is achieved with multiple rear channel speakers. To achieve the same effect with just two rear speakers requires a design which can disperse its sound across the listening area.

Center Channel. The Dolby Pro Logic center channel is mainly midrange and high frequencies. The considerations for choosing a center speaker boil down to 1) *video shielding*, and 2) *what you can buy just one of*. Video shielding is obviously important. A loudspeaker contains magnets whose force extends past the enclosure. These flux lines can severely distort a TV picture and actually damage the set. Since the center channel must be placed just under or above the TV, make sure to use a design which is specifically video shielded.

Amplifiers for Surround Sound

Front Channels. Select an amplifier which can deliver as much power as the Left Front and Right Front speakers can handle. This is especially critical when using laser disc video sources with digitally encoded soundtracks or CDV's. We recommend a Carver TFM 22,

TFM-25 (225 watts RMS/ch. each) or TFM-45, TFM-42 (375 watts RMS/ch. respectively).

Rear Surround Channels. No more than 60 watts per channel is necessary. Many experts recommend as little as 10 or 15 watts. Because many small bookshelf speakers are relatively inefficient, we recommend basing your rear channel amp choice on the speakers' minimum and maximum power specifications. Try to select an amp which falls toward the high end of the speaker's power specs, i.e., a 60 watt/ch. amp for a speaker with a 25 watt minimum and an 80 watt maximum.

Center Channel. This will again depend on the speaker, and an amplifier should be chosen that will provide enough power to match the speaker's power specs. Since the center speaker is mostly dialog, there need not be concern about providing extra power for low frequency reproduction. You might consider using a Carver 4-channel AV-Sixty Four. Two channels can be used in mono to provide 120 watts for the front center channel and 60 watts each for the rear surround channels.

Speaker wire

The speaker wire from the rear channel amp to the rear surround speakers can be as thin as 18-gauge. However, the cable from the center channel amp to the center speaker should be as thick as the wire you use for your main speakers.

Three "Compromise" Approaches

4 Channels/Single Rear Channel Speaker. If you simply cannot afford five individual amplifier channels, it IS possible to get away with four. This means just two stereo power amplifiers (or our AV-Sixty Four if 60 watts is sufficient for each front channel). The key is the fact that Dolby Surround rear channels are mono. This means that you can use a single power amp channel and connect two 8-ohm impedance rear channel speakers in parallel to its outputs. This will work with HALL and SIMULATED stereo,

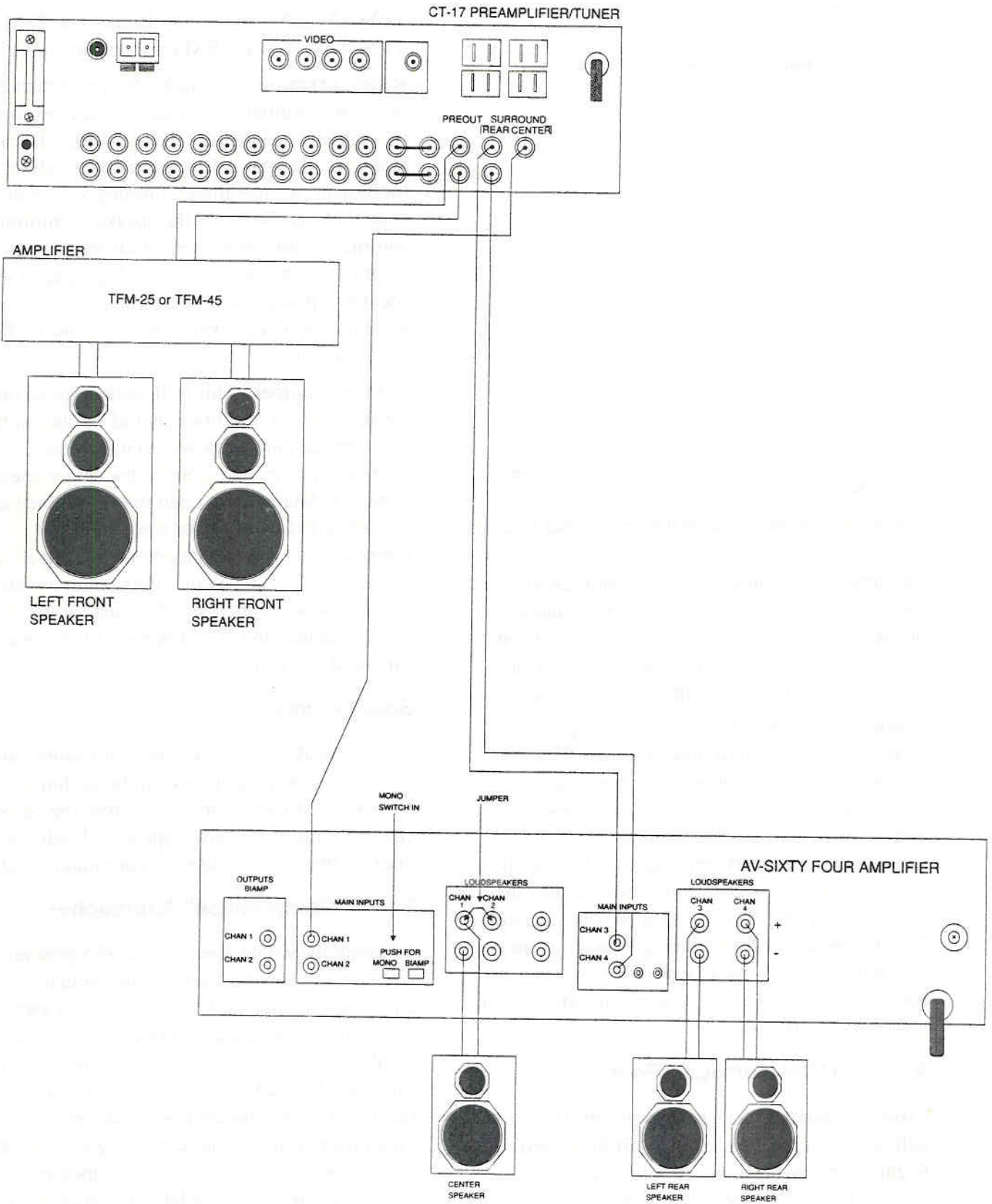


Figure 11 Pro Logic Set-up with AV-Sixty Four Amplifier Driving Center Channel and Left and Right Rear Channels

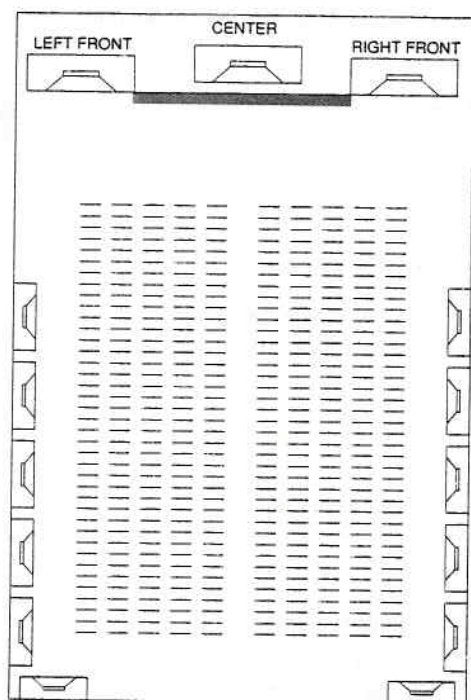


Figure 12A Rear Speakers in Dolby Stereo Surround

since the rear channels are also mono in these modes (Fig. 13.)

4 or 5 Channels/Single Rear Speaker. One problem is that speakers are often sold in pairs. If you need to economize further, you can use just one rear channel speaker, since Dolby Surround information is monophonic. However, the "compromise" is that you will lose some of the "surround" effect because the distribution of sound from the single rear speaker will be diminished.

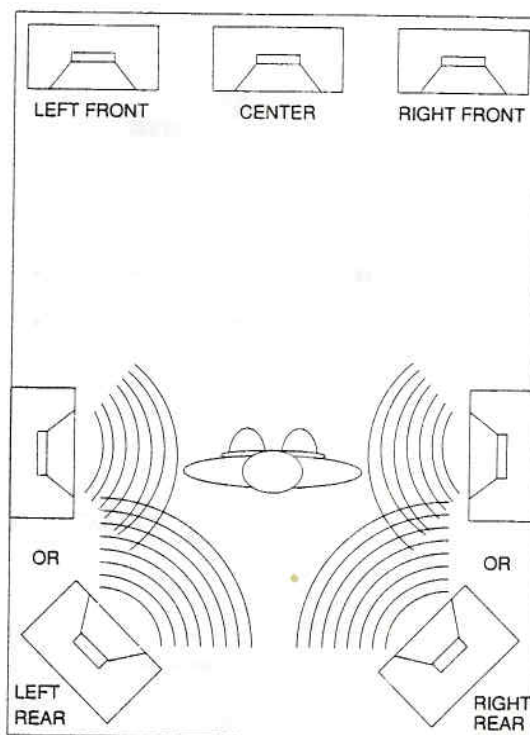


Figure 12B Dispersion Patterns of Rear Speakers

4 Channels/No Center Speaker. The most obvious benefit of the Dolby Pro Logic Surround system over passive Dolby Surround is the addition of an active center channel output. However, allowances have been made for use of the Dolby Pro Logic Surround decoder without a center speaker. Simply select PHANTOM mode with the CENTER MODE button on the CT-17 remote control.

To avoid excessive "spread" of dialog, the left and right front speakers may be moved closer together. Feel free to experiment.

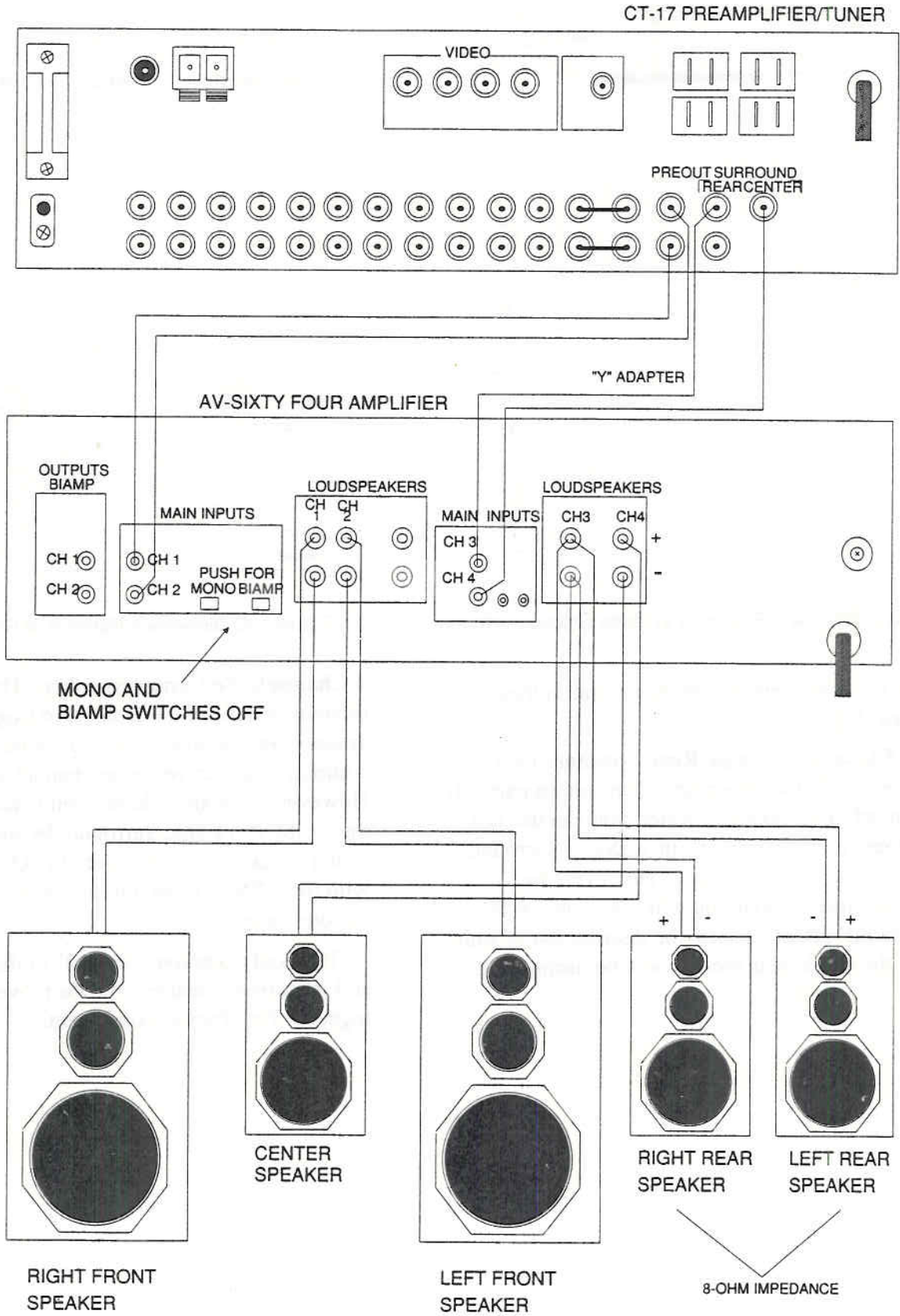


Figure 13 4 Channels/Mono Rear Channel Set-up