

LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE
LAFAYETTE

Hola
esto es
de
Pablo
Roaegalis

SQ-W
SQ
Full-Logic
4-Channel
Decoder



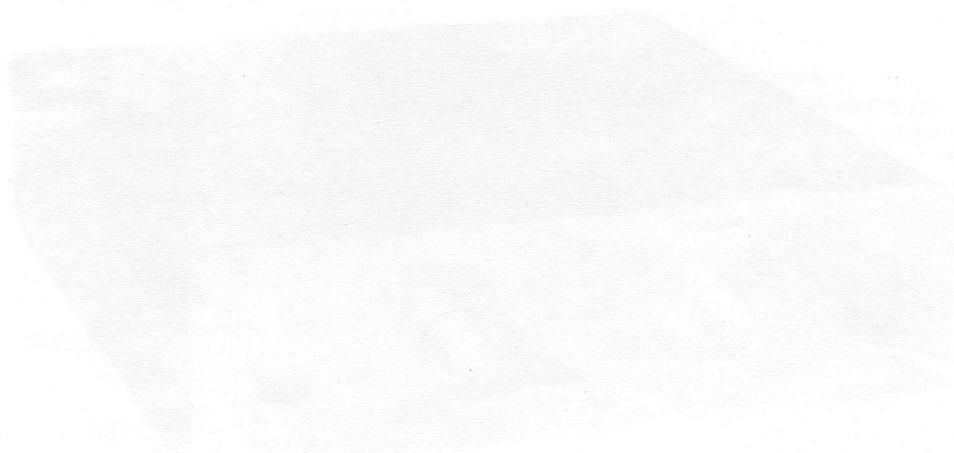
LAFAYETTE®

O W N E R ' S M A N U A L



**4-CHANNEL
SQ
FULL-LOGIC
DECODER
Model SQ-W**

99-03311



4-CHANNEL
SD
FULL-LOGIC
DECODER
Model SD-W

CONTENTS

SQ - STEREO QUADRAPHONIC SOUND	4
GENERAL DESCRIPTION	5
INSTALLATION	6
AC Power	6
Ground Connection	6
AC Convenience Outlet	6
CONNECTING THE DECODER	6
Initial Setting Of Sensitivity Switches	9
PLACEMENT OF THE FOUR SPEAKERS	13
DESCRIPTION OF CONTROLS	14
OPERATING INSTRUCTIONS	15
Initial Set-Up	15
4-Channel SQ Operation	17
Derived 4-Channel Stereo Operation	18
Discrete 4-Channel Stereo Tape Operation	19
SELECTION OF DECODER CIRCUITS.	19
OPERATING CHART	21
MAINTENANCE	22
RETURNING THE UNIT FOR SERVICE	22
SPECIFICATIONS	23

SQ*

STEREO QUADRAPHONIC SOUND

A new world of recorded sound on records has been created -- a world of sound in its natural environment. It is called Stereo Quadraphonic [SQ] because it is reproduced by playing four different channels through four separate speakers.

With four sound sources, and four speakers placed so as to surround the listening area, the listener will be provided with a startling listening experience. For example, concert music lovers will be placed right into the concert hall where the performance took place, instead of attempting to translate the performance into a living room environment. More than this, though, the SQ recording system also makes it possible to place the listener on the conductor's podium, on stage, in the middle of the orchestra, or at the back of the concert hall. And for pop music lovers, totally new experiences are possible. Sound swirling all around -- sound that can be placed at the front of, to either side of, or behind the listener.

This total realism and flexibility has been the goal of recording engineers the world over since sound reproduction was invented. It is now available to you on the new compatible 4-channel SQ disc.

The SQ disc is fully compatible with all existing home, broadcast or studio equipment. An SQ record will play like a regular 2-channel stereo record on any standard stereo unit. To play it in 4-channel stereo, you need an SQ decoding unit and 4-channels of amplification [plus four speakers]. No special record player or cartridge is required. SQ records can also be played over the air on FM in the same manner as standard stereo and received through conventional FM tuners.

The Lafayette SQ-W unit includes the necessary circuits for the proper decoding of SQ-encoded program material. When used with four channels of amplification, the unit will enable you to enjoy the remarkable realism of Stereo Quadraphonic sound. All you need is one of the many SQ records now available. And if SQ records are being broadcast over FM in your area, you can readily tune to these broadcasts if you have an FM tuner or receiver and enjoy the same superb stereo Quadraphonic sound.

*Developed by CBS Labs A Division of Columbia Broadcasting System, Inc.

GENERAL DESCRIPTION

The Lafayette SQ-W unit is a highly sophisticated, full-logic SQ decoder which will enable you to enjoy stereo Quadraphonic sound [4-channel] from any SQ-encoded program source, whether obtained from SQ records or from an FM broadcast of SQ records. The decoder will accept a "coded" SQ program at its input and present four decoded signals at its outputs. These four signals, when reproduced through four amplifiers and four speakers, will be presented in their proper placement as left front, right front, left rear and right rear channels of information.

The Lafayette SQ-W decoder incorporates the most advanced full-logic system commercially available, and includes the new, CBS-developed "Variable-Blend" circuit in the rear channels. The degree of separation produced by this SQ decoder cannot be surpassed by any other SQ decoder anywhere, and will thus offer the ultimate in 4-channel decoding of SQ program sources.

The SQ-W also incorporates two additional matrix decoder circuits [Composer A and B] which will enable you to enjoy "derived" 4-channel stereo sound from most conventional 2-channel stereo program sources [tapes, records or FM stereo]. These circuits can also be used with any 4-channel records that have been encoded by means of a system other than SQ to restore them substantially to their original 4-channel form.

The outputs of the SQ decoder are of sufficient voltage for use with any 4-channel amplifier or receiver, or with two separate stereo units. Two source inputs are provided on the decoder. One set permits the connection of the stereo source from the Tape Output jacks of the associated amplifier or receiver. The other set of inputs is provided for connection of high level stereo outputs from tuners, tape recorders, etc.

In addition to providing the SQ decoding function, the SQ-W can also be used to produce "derived" 4-channel sound from conventional stereo programs [records, tape or FM] using the special built-in Composer circuits. These circuits will also function as "decoder" circuits with 4-channel programs encoded by means of a system other than SQ. The SQ decoder also includes four input jacks for playback of discrete 4-channel program sources [such as tape]. Four tape recording output jacks are provided to permit the recording of the decoder output on a 4-channel tape machine.

Finally, optimum stereo quadraphonic performance will be realized only if the entire 4-channel system is installed and operated in the correct manner. Even if you have had previous experience with high fidelity equipment, we strongly urge you to read all the instructions before attempting to install or operate the decoder. Detailed diagrams illustrating the proper connections for various types of associated amplifiers or receivers have been provided to aid in the installation. Remember, the extra time spent in reading the instructions will enable you to obtain the best possible results from your 4-channel stereo system, and thus avoid any needless disappointment.

INSTALLATION

AC POWER

The unit operates from a power source of 105-120 volts AC 50/60 Hz. Do not attempt to use it on any other power source or damage will result. We recommend that the AC plug be connected to "switched" AC convenience outlet on the associated equipment [amplifier or receiver] and the decoder power switch left in the "on" position. In this way, switching on the associated unit will also switch on the decoder.

GROUND CONNECTION

A ground screw at the rear of the unit [marked GND] is designed for optional connection of a ground wire to the associated amplifier or receiver.

AC CONVENIENCE OUTLET

The decoder is equipped with an unswitched [always-on] AC outlet at the rear. The AC line cord from other accessory equipment you may be using may be plugged into this outlet.

Note, however, that if the decoder is plugged into a switched AC outlet on the associated amplifier or receiver, the AC outlet on the decoder will, in effect, also become a switched outlet, controlled by the on-off switch on the amplifier or receiver.

Figure 5 shows a number of ways in which the AC line cords from the various units in the audio system can be connected, depending on the type of units in use.

CONNECTING THE DECODER

NOTE: This decoder can only be used with equipment meeting the following requirements.

- [a] If the associated equipment consists of a 4-channel amplifier or receiver, the unit must have Tape Monitor facilities.
- [b] If the associated equipment consists of two separate stereo units [ie., an existing stereo amplifier or receiver plus a second stereo amplifier], the first [existing] stereo unit must have Tape Monitor facilities.

If the associated unit is a 4-channel amplifier or 4-channel receiver, refer to Figures 1, 2 and 3. For simplicity, connections for tape recorders have been shown separately in Figures 2 and 3, but remember that all other connections between the decoder and the associated amplifiers must be made as in Figure 1 or Figure 4.

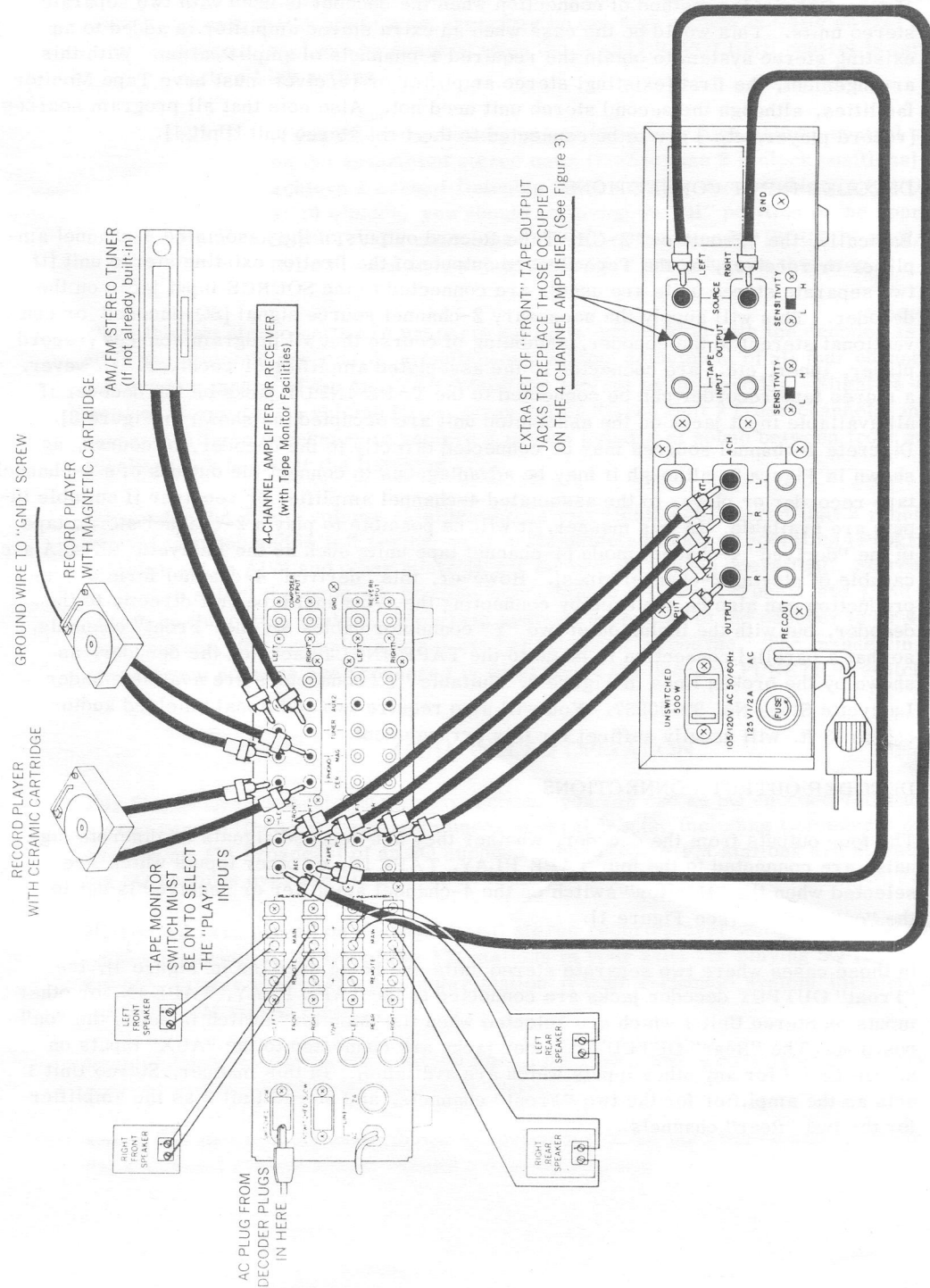


FIGURE 1. USING THE DECODER WITH A 4-CHANNEL AMPLIFIER OR RECEIVER

Figure 4 shows the method of connection when the decoder is used with two separate stereo units. This would be the case when an extra stereo amplifier is added to an existing stereo system to obtain the required 4 channels of amplification. With this arrangement, the first [existing] stereo amplifier or receiver must have Tape Monitor facilities, although the second stereo unit need not. Also note that all program sources [record player, etc.] are to be connected to the first stereo unit [Unit 1].

DECODER INPUT CONNECTIONS

Basically, the "Front" or "2-CH" Tape Record outputs of the associated 4-channel amplifier or receiver, or the Tape Record outputs of the first or existing stereo unit [if two separate stereo units are used], are connected to the SOURCE input jacks on the decoder. This will supply the necessary 2-channel source signal [SQ-encoded or conventional stereo] to the decoder, assuming of course that all program sources [record player, tuner, etc.] are connected to the associated amplifier or receiver. However, a stereo tape recorder can be connected to the TAPE-INPUT jacks on the decoder if all available input jacks on the associated unit are occupied [as shown in Figure 3]. Discrete 4-channel sources may be connected directly to the decoder, of course, as shown in Figure 2, although it may be advantageous to connect the outputs of a 4-channel tape recorder or player to the associated 4-channel amplifier or receiver if suitable inputs are available. In this manner, it will be possible to play a 2-channel stereo tape in the "derived" 4-channel mode [4-channel tape units such as the Lafayette RK-48A are capable of playing 2-channel tapes]. However, this "derived" 4-channel form of reproduction can also be achieved by connecting the 4-channel tape unit directly to the decoder, but with the inclusion of two "Y" connector cables for the "Front" channels, so that a parallel connection is made to the TAPE-INPUT jacks on the decoder, as shown by the broken lines in Figure 2. Suitable "Y" connectors are available under Lafayette Stock No. 99-00937. You will also require two additional shielded audio cables [3 ft. will usually suffice] for this arrangement.

DECODER OUTPUT CONNECTIONS

The four outputs from the decoder, whether they are decoded signals or discrete signals, are connected to the four TAPE PLAY, TAPE IN, or other inputs which are selected when the "Monitor" switch on the 4-channel amplifier or receiver is set to the "on" position [see Figure 1].

In those cases where two separate stereo units are being used [as in Figure 4], the "Front" OUTPUT decoder jacks are connected to the TAPE PLAY, TAPE IN, or other inputs on Stereo Unit 1 which are selected when its "Monitor" switch is set to the "on" position. The "Rear" OUTPUT decoder jacks are connected to the "AUX" inputs on Stereo Unit 2 [or any other inputs which are available]. In this manner, Stereo Unit 1 acts as the amplifier for the two "Front" channels, and Stereo Unit 2 as the amplifier for the two "Rear" channels.

SPEAKERS

All speaker connections to the associated amplifiers or receivers [whether 2-channel or 4-channel] should be made in accordance with the instructions furnished with those units. Suggested speaker placement for optimum Stereo Quadraphonic performance in the home is shown in Figure 6.

INITIAL SETTING OF SENSITIVITY SWITCHES

The two SENSITIVITY switches on the rear panel of the decoder should be set to the "L" positions initially. An "L" and a "H" sensitivity position has been provided for each of the two sets of input jacks [INPUT and SOURCE] to accommodate different levels of signals that may be fed to the decoder. When using the decoder with Lafayette amplifiers or receivers, the "L" position will be correct in many cases.

However, a procedure for determining the proper position for either switch by means of a listening test is provided in a subsequent section of this manual.

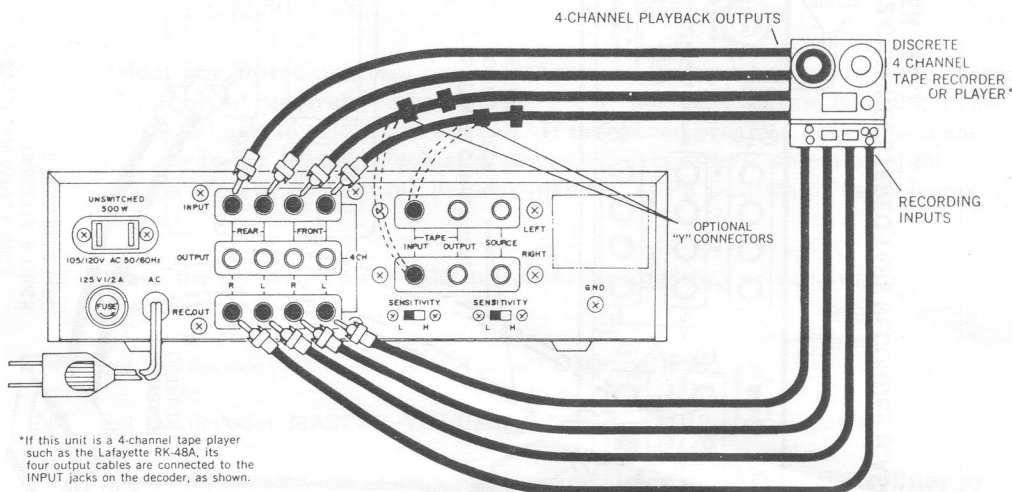
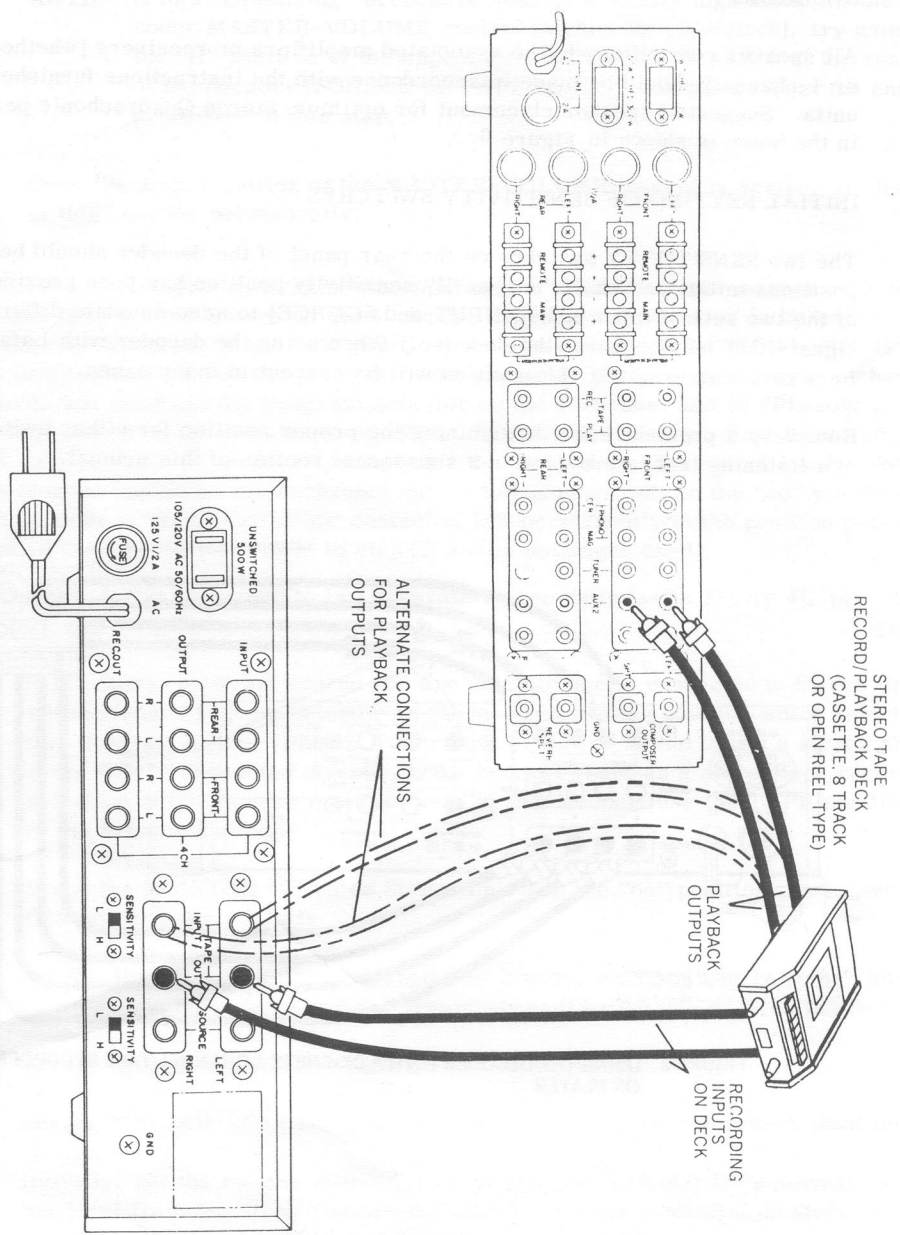


FIGURE 2. USING THE DECODER WITH A DISCRETE 4-CHANNEL TAPE RECORDER OR PLAYER

FIGURE 3
**CONNECTING A 2-CHANNEL STEREO TAPE RECORDER (CASSETTE,
 8 TRACK OR OPEN REEL)**



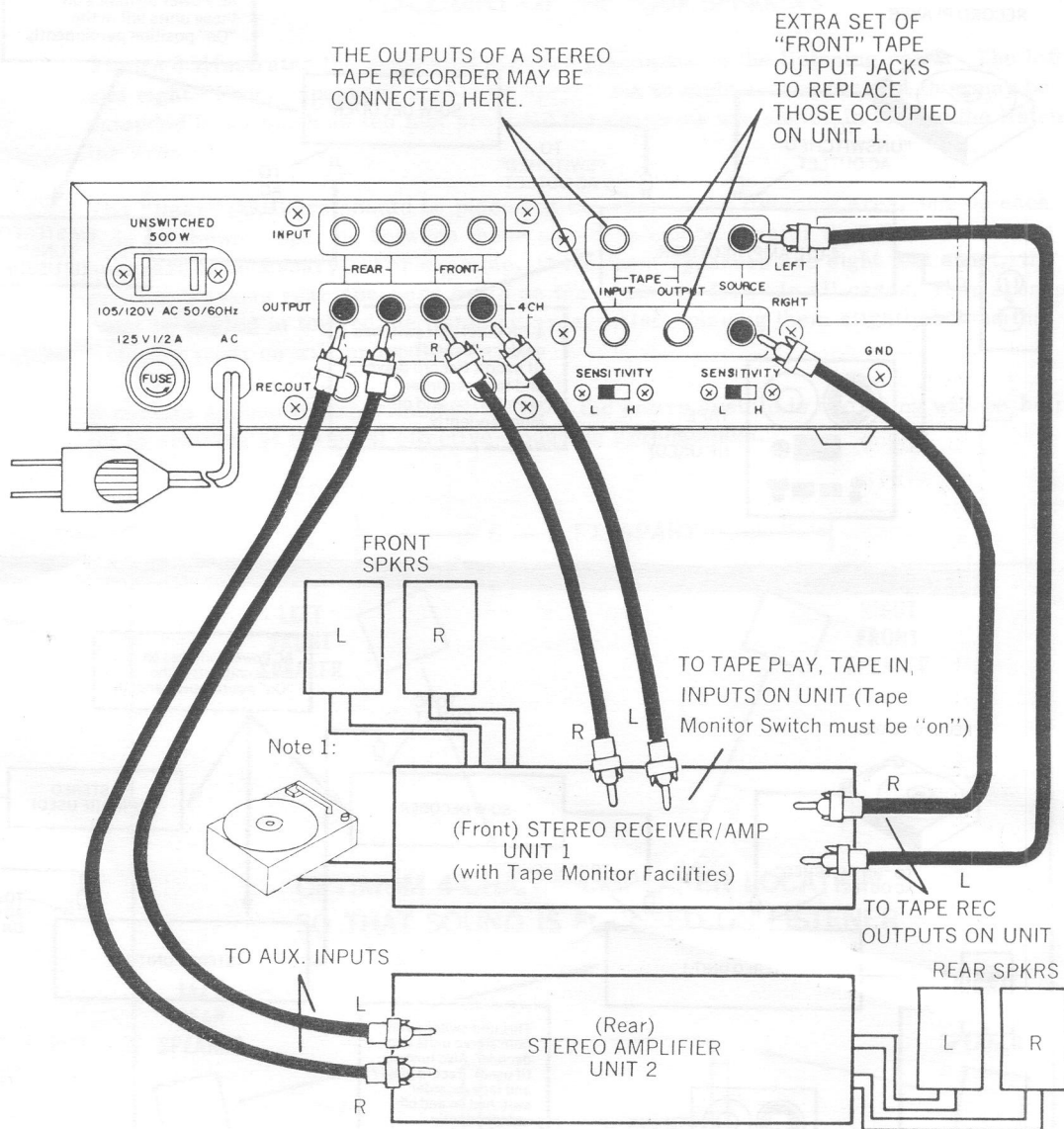


FIGURE 4. USING THE DECODER WITH TWO SEPARATE STEREO UNITS

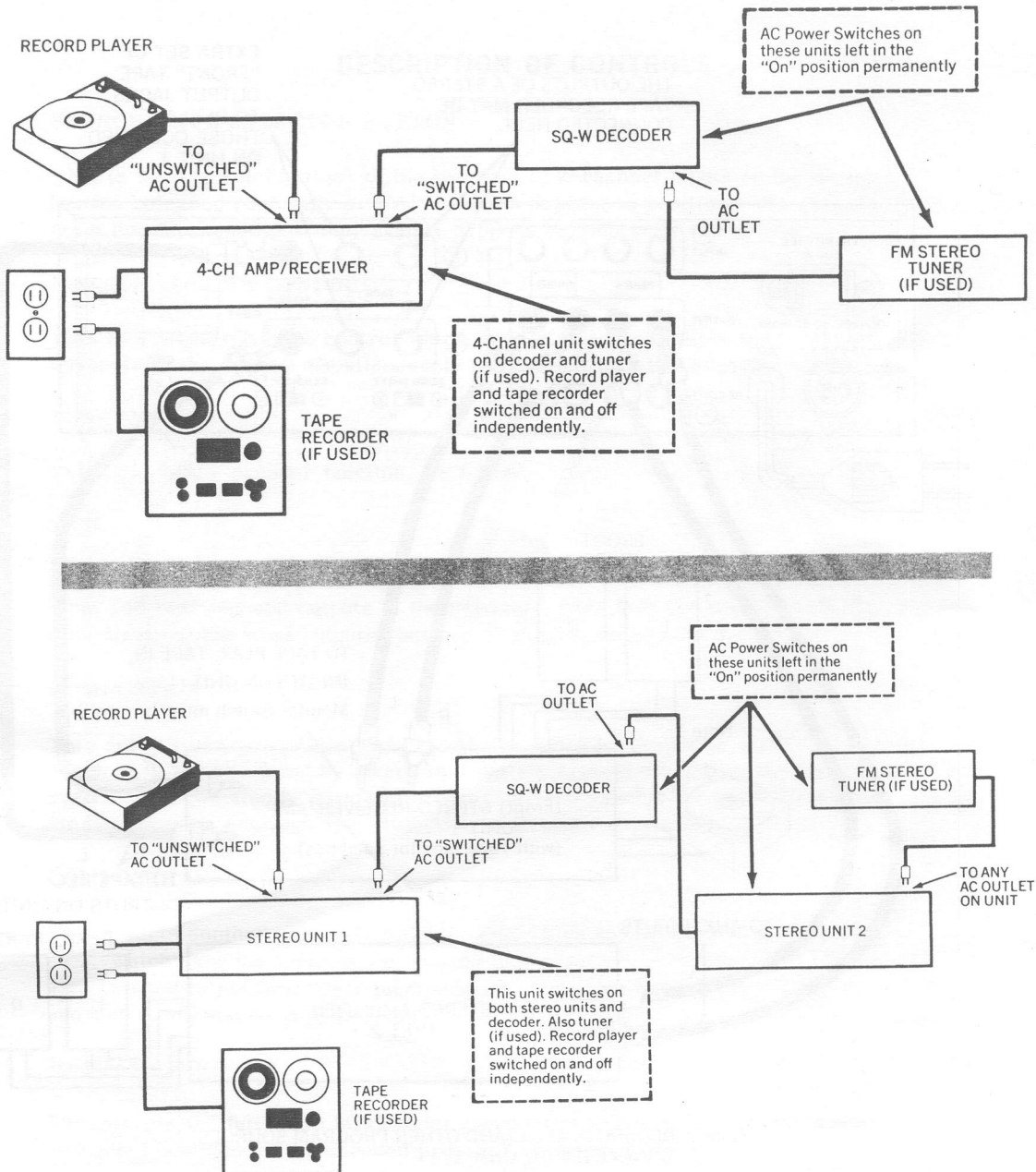


FIGURE 5. SUGGESTED AC LINE CORD CONNECTIONS

PLACEMENT OF THE FOUR SPEAKERS

Figure 6 illustrates the suggested speaker placement in the listening room. The left and right "Front" speakers should be spaced six to eight feet apart, but this may be extended to as much as ten feet provided the speakers are angled in toward the listening area.

The "Rear" speakers should be placed at the rear of the listening area, one on each side as shown. Spacing between these speakers can be greater than that of the front speakers if necessary. For example, if the front speakers are eight feet apart, the spacing between rear speakers could be ten to twelve feet. In all cases, rear speakers must be angled in toward the listening area. Also, placing them slightly behind the listening position will prove beneficial.

A certain amount of experimentation after the entire system is operating will be helpful in arriving at the most effective-sounding arrangement.

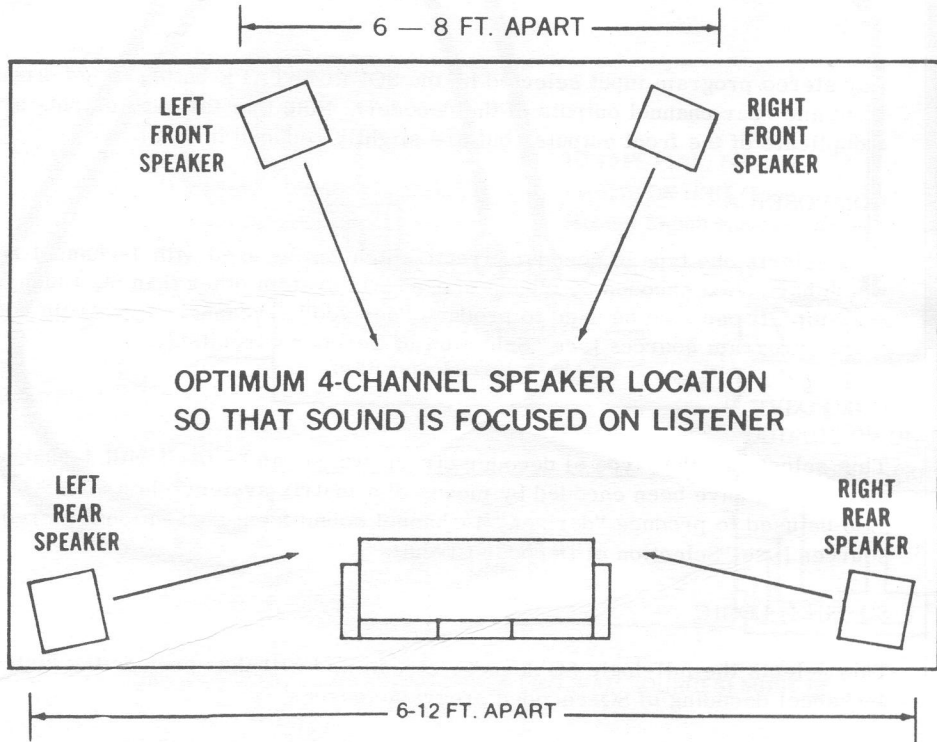


FIGURE 6. SUGGESTED SPEAKER PLACEMENT IN HOME

DESCRIPTION OF CONTROLS

SOURCE-TAPE SELECTOR BUTTON

This is used to select either of the two sets of 2-channel inputs on the decoder, SOURCE [button released position], or TAPE [button depressed position]. To release the button from the depressed position, simply depress momentarily and release.

MASTER VOLUME CONTROL

This is a master volume control which is used to control the sound level of all four channels in the system simultaneously [when used with two separate stereo units].

FUNCTION SWITCH

This selects the decoder function, as follows:

2 CH

Any stereo program input selected by the SOURCE-TAPE button is fed directly to the front and rear channel outputs of the decoder. Note that the rear outputs are therefore a duplicate of the front outputs, but are slightly reduced in level.

COMPOSER A

This selects one type of decoder circuit which can be used with 4-channel records, etc., which have been encoded by means of a matrix system other than SQ [such as the RM system]. It can also be used to produce "derived" 4-channel sound from conventional stereo program sources [see "Selection of Decoder Circuits"].

COMPOSER B

This selects another type of decoder circuit which can be used with 4-channel records, etc., which have been encoded by means of a matrix system other than SQ. It can also be used to produce "derived" 4-channel sound from conventional stereo program sources [see "Selection of Decoder Circuits"].

SQ-FULL LOGIC

This selects the full-logic SQ decoder circuit and will thus provide the highest degree of 4-channel decoding of SQ-encoded program sources.

DISCRETE

This selects any discrete program source that may be connected to the four INPUT jacks [a 4-channel tape recorder or other type of 4-channel decoder, for example].

POWER BUTTON

Depressing this button switches on the decoder and illuminates the pilot light. To switch off, depress the button momentarily and release.

OPERATING INSTRUCTIONS

INITIAL SET-UP

Switch on the decoder and the associated 4-channel stereo amplifier or receiver [or two separate stereo units if this is the case], and set all volume controls to minimum initially. The H-L switches at the rear of the decoder should be set to "L" initially.

1. If the decoder is connected to a 4-channel amplifier or receiver [as in Figure 1], proceed as follows:
 - a] Select any stereo program source. If this source is connected to the 4-channel amplifier or receiver [Phono, Tuner, etc.], use the Program Selector on the 4-channel unit to select this source. If the stereo program source is connected directly to the decoder [such as a stereo tape recorder], selection of this source must be made at the decoder [use the TAPE position on the Selector button].
 - b] Place the 4-channel MONITOR switch on the amplifier or receiver in the "on" position.
 - c] Set the decoder FUNCTION switch to COMPOSER A.
 - d] Set the decoder MASTER-VOLUME control to the 12 o'clock position.
 - e] Adjust the "front" and "rear" volume controls on the 4-channel amplifier or receiver for a normal listening level -- these controls should operate in the normal manner to provide the desired output level from the four speakers.
 - f] Now check as follows: switch the Tape Monitor between the "on" and "off" positions -- there should be virtually no change in speaker output levels in the two positions. If the level is lower in the Monitor "on" position, increase the decoder MASTER-VOLUME control to equalize the levels. If the level is higher in the Monitor "on" position, decrease the decoder MASTER-VOLUME control to equalize the levels.

NOTE: If this "equalizing" procedure results in a very high setting of the decoder MASTER-VOLUME control [higher than 3 o'clock], try using the "H" position of the appropriate SENSITIVITY switch at the rear of the decoder [SOURCE or TAPE INPUT], and then repeat the entire procedure in this step.

Once the proper setting of the MASTER-VOLUME control is arrived at, leave in this position permanently.

The associated 4-channel unit can now be operated in much the same manner as before, except that the Function Switch on the 4-channel amplifier or receiver is by-passed when its Monitor switch is set to the "on" position, and the decoder FUNCTION switch is now used to determine the mode of operation. For example, if you wish to play a 4-channel SQ record, you must set the Program Selector on the 4-channel unit to "Phono", the FUNCTION switch on the decoder to SQ-FULL LOGIC, and simply adjust front and rear channel volume controls on the 4-channel unit for desired speaker output level. Note that the Monitor Switch on the 4-channel unit is left permanently in the "on" position, and that the decoder MASTER-VOLUME control is left permanently in the position previously determined through the procedure in step [f] and is no longer used.

2. If the decoder is connected to two separate stereo units [as in Figure 4], proceed as follows:
 - a] If the stereo program source you are going to use is connected to Stereo Unit 1, set the Input Program Selector on Stereo Unit 1 to the position which selects this program source [Phono, Tuner, etc.]. If you intend to use a stereo program source connected directly to the decoder [such as a stereo tape recorder]; selection of this source must be made at the decoder [use the TAPE position of the Selector button].
 - b] Place the MONITOR switch on Stereo Unit 1 in the "on" position, and leave in this position permanently.
 - c] Set the Program Selector on Stereo Unit 2 to the AUX position [or other inputs to which you have connected the "rear" channel output cables from the decoder].
 - d] Set the decoder FUNCTION Switch to COMPOSER A.
 - e] Set the MASTER-VOLUME control on the decoder to the 10 o'clock position.
 - f] Initially, set the volume control[s] on Stereo Unit 1 [front] for a normal listening level from the "front" speakers, and the volume control[s] on Stereo Unit 2 [rear] for the same sound level from the "rear" speakers.

To achieve a normal listening level, you will find it necessary to use high volume control settings on both stereo units. This is to be expected since it is the MASTER-VOLUME control on the decoder which will be used in future

to provide complete control of the volume for all four channels. The volume of both stereo units must therefore be set high enough initially so that a high volume level can be reached when the MASTER-VOLUME control is turned up to a high setting.

NOTE: If you find it necessary to use extremely high volume control settings on the associated stereo units [higher than 2 o'clock positions] to achieve a normal listening level with the decoder MASTER-VOLUME at 10 o'clock, you should try using the "H" position of the appropriate SENSITIVITY switch at the rear of the decoder [SOURCE or TAPE INPUT], and then repeat the entire procedure in this step.

When the two stereo units are properly set up in conjunction with the decoder as indicated in the previous procedure, simultaneous volume adjustment of all four channels is achieved by means of the MASTER-VOLUME control on the decoder. Slight re-adjustment of Stereo Unit 1 volume [front channels] or Stereo Unit 2 [rear channels] may occasionally be necessary to achieve a proper balance of sound between front and rear speakers, as heard at the listening area.

Except for the minor volume re-adjustments just mentioned, Stereo Unit 2 requires no control changes and is left permanently in its selected mode of operation [Program Selector set to AUX and other controls set for normal stereo operation]. Stereo Unit 1 is used to select the program sources connected to it [Phono, Tuner, etc.] and to switch on the entire system. Program sources connected to the decoder [2 or 4 channel tape sources, for example] are selected at this unit, of course. The manner in which all program sources are processed is determined the decoder FUNCTION switch.

4-CHANNEL SQ OPERATION

For Stereo Quadraphonic [SQ] Reproduction, you can use an SQ encoded 4-channel stereo record [these are available under several labels, including Columbia], or you can use an FM broadcast of an SQ encoded record [some FM stations are already playing SQ records over the air at special times].

SQ records are played on a conventional stereo record player which should be connected to your system. If any of the FM stations in your area are playing SQ records over the air, simply tune to the particular station if your 4-channel system includes a conventional FM stereo tuner.

Required control and switch settings for SQ operation with a variety of SQ program sources are provided in the Operating Chart.

There are several important things to remember in the installation and operation of the 4-channel system if best results are to be obtained:

1. All four speakers must be wired in proper phase. Re-check the connections to all speakers and make sure they are wired in accordance with the instructions provided with the associated amplifiers or receivers.
2. All four speakers should be positioned so that their sound output is directed toward the listening area, with the rear speakers placed behind and to each side of the listener [see Figure 6 for a typical example]. Also, there should be no obstruction between the listener and any of the four speakers.
3. The "Front" and "Rear" volume levels must be set so that the listener hears equal volume from the front and rear set of speakers. Remember, if the "Rear" volume level is too high, the program will appear to come only from the rear; if the rear volume is too low, the program will appear to come only from the front. The proper balance will have to be determined by experimentation while listening to a variety of SQ program material. The front and rear volume levels will be correct when different material is heard emanating from the various speakers.

With recordings which consist of a large symphony orchestra in a large concert hall, the sound should be heard mainly from the front, with the rear speakers generally producing the "ambience" or reflected sound heard in the hall. With "pop" recordings, vocalists and certain instruments may be heard anywhere around you -- directly in the front of you, at the left or right rear, or at the left or right front, depending on the record. The actual manner in which the program material is distributed over the four channels is dependent on the manner in which the SQ recording was made.

"DERIVED" 4-CHANNEL STEREO OPERATION

The decoder can be used to provide "derived" 4-channel stereo sound from regular stereo records, FM or tapes by using either of the "Composer" positions [A or B]. This form of reproduction is called "derived" because the program source used is a conventional 2-channel stereo source that does not contain any specially encoded program material. However, it has been found that even regular 2-channel stereo recordings do contain information which, when extracted and fed to the two rear channels, will provide added enhancement to stereo sound reproduction.

The Composer A or B circuits can be used to produce enhancement of any conventional stereo recording. The sound enhancement produced by the two Composer circuits are not identical, though both circuits will recover some of the ambience or acoustics of the recording location. [See "Selection of Decoder Circuits"]. When using 2-channel stereo program material, you should try each circuit and select the one which you feel provides the best overall sound effect.

The Operating Chart supplied indicates the required settings of all controls and switches for "derived" 4-channel reproduction from stereo records, FM or tapes. All settings are identical to those required for SQ operation, except that the decoder FUNCTION switch is set to either the COMPOSER A or B position instead of the SQ-FULL LOGIC position.

DISCRETE 4-CHANNEL STEREO OPERATION

Any program source providing four separate channels of sound will fall into the "discrete" category and will therefore be applicable to this section.

The outputs of a discrete 4-channel stereo program source such as an 8-track 4-channel tape player [or other type of 4-channel decoder you may wish to use] should be connected to the 4 CH INPUT jacks on the decoder.

To play a discrete 4-channel tape, set all controls and switches as indicated in the Operating Chart supplied [see Functions described as "Discrete 4-CHANNEL REPRODUCTION"].

SELECTION OF DECODER CIRCUITS

The 4-channel decoder features three different 4-channel decoder circuits -- COMPOSER A, COMPOSER B, AND SQ-FULL LOGIC. This choice of circuits assures optimum stereo quadraphonic performance with virtually any type of program source material. This includes regular stereo, encoded [matrixed] 4-channel stereo of various types, plus SQ-encoded program sources.

NOTE: These decoder circuits are not designed for use with monophonic program sources, and such a source will produce a low output in the rear channels.

A general description of the performance characteristics of the various circuits follows, including recommendations for the use of each.

COMPOSER A and B POSITIONS

These are both matrix circuits, but having different parameters. By means of one or the other circuit, it is possible to obtain fairly substantial decoding of any matrixed 4-channel record that has been encoded by a system other than SQ. Although SQ records now predominate in the 4-channel category, there are still a certain number of 4-channel records around that have been encoded by other methods. With such a record [or FM stereo broadcast of such a record], try both Composer positions and select the one which provides the best results. It should be noted, however, that the Composer A position will provide substantial decoding of 4-channel records that have been encoded using the "QS" [RM or Regular Matrix] system.

The two Composer positions are also designed to produce enhanced 4-channel stereo from conventional stereo records, FM and tapes. Try both positions and use the one which you find produces the most effective results. In general, the COMPOSER A position will tend to place the listener in the midst of the musical instruments so that he is enveloped with sound, although vocalists or performers on center stage will be presented at the center front. In addition, a substantial amount of ambience is recovered and produced at the rear [provided the stereo program source contains such material].

The COMPOSER B position will present the performance predominantly in front of the listener, and with slightly less ambience developed at the rear.

NOTE: Stereo program sources that contain noise or that are of poor audio quality will tend to produce distortion in the rear channels, particularly in the COMPOSER A position. Use only programs of good audio quality to avoid this condition.

SQ-FULL LOGIC POSITION

This selects an advanced, full-logic SQ decoder circuit which will provide extremely precise 4-channel decoding of SQ-encoded program sources. Highly sophisticated electronic logic circuits are incorporated to ensure that the stereo quadraphonic performance is presented exactly as intended.

You may, if you wish use this position with 4-channel matrixed records that have been encoded by a system other than SQ. However, since the decoder matrix and logic circuits were designed for optimum decoding of SQ sources, the effects produced when other sources are used cannot be accurately predicted.

A GUIDE TO OPERATING THE ENTIRE 4-CHANNEL STEREO SYSTEM

FUNCTION	PROGRAM SOURCE	DECODER SETTINGS				ASSOCIATED EQUIPMENT		
		TAPE SOURCE BUTTON	FUNCTION SWITCH	MASTER VOLUME	POWER BUTTON	4-CHANNEL UNIT	UNIT 1	UNIT 2
4-CHANNEL SQ REPRODUCTION (For 4-Channel "Derived" Reproduction From Regular Stereo Sources, See Note Below)	4-Channel SQ Record	SOURCE (released)	SQ-FULL LOGIC	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Select Stereo Phono operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
		Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select Stereo Phono operation. 3. Volume for normal listening level at front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.
		Same as above	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Select FM Stereo operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
DISCRETE 4-CHANNEL REPRODUCTION	FM Broadcast or SQ Encoded Program	Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select FM Stereo operation. 3. Volume for normal listening level at front speakers.	Same as above
		TAPE (depressed) ⁶	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
		Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for same level as front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.
DISCRETE 4-CHANNEL REPRODUCTION	4-Channel Tape or other 4-Channel Source	—	DISCRETE ⁷	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
		—	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for same level as front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.

NOTE: If program source used is conventional stereo, 4-channel reproduction can be achieved by using decoder FUNCTION switch in COMPOSE A or B position instead of SQ-FULL LOGIC position.

¹ This is an initial setting. The procedure outlined under "Initial Set-Up" (see text) may result in a slight re-adjustment of this setting.

² These volume controls used for adjustment of volume for all four channels.

³ This control, subsequently used for simultaneous adjustment of volume for all four channels after Units 1 and 2 have been adjusted as indicated.

⁴ It is assumed that the rear channel outputs of the decoder are connected to the AUX inputs on Unit 2. If other inputs are used, these should be selected.

⁵ If a stereo tape recorder is used to record an encoded SQ program (record or FM), this taped program may be decoded during playback through the decoder.

⁶ Assuming output of 4-channel tape unit is connected to TAPE INPUT⁷ jacks on decoder, if connected AUX inputs on the decoder are used, select in the normal manner at the equipment (AUX position of Program Selector).

⁷ Assuming output of 4-channel program source is connected to "4 CH - INPUT" jacks on decoder.

MAINTENANCE

WARNING: Do not attempt to remove the cover -- there are no user serviceable parts inside this unit. Refer servicing only to a qualified personnel. [See "Returning For Service"].

AC POWER FUSE

If the pilot light fails to come on and the unit is completely inoperative when the power button is depressed, make sure first the AC power cord is plugged into an electrical outlet supplying 105-120 volts, 50/60 Hz AC. If this is not the problem, it is possible [although highly unlikely] that the AC power fuse located within the unit may have failed.

DO NOT ATTEMPT TO REPLACE THE FUSE -- THIS SHOULD BE CARRIED OUT ONLY BY A TECHNICIAN SINCE THERE MAY BE HAZARDOUS VOLTAGES PRESENT IN THE UNIT.

RETURNING THE UNIT FOR SERVICE

In the event that repair is necessary [either in or out of warranty], we recommend that you return the unit to the store from which it was purchased. In most cases, this will be your fastest and most efficient method of obtaining service.

If you wish to ship the unit to our main service center, please read the instructions which follow.

SHIPPING INSTRUCTIONS

Pack the unit very carefully to avoid damage in transit, preferably in its original carton. If the original carton is not available, use a sturdy carton with at least 6 inches of crumpled newspaper or other packing material packed tightly around the unit to avoid any change of damage in shipment. Be sure to use strong cord or tape around carton. If this unit is being returned under warranty, it must be accompanied by a copy of the original sales ticket or shipping documents to establish date of purchase. Also, include with the unit a letter explaining exactly what difficulties you have encountered [remember to add extra First Class postage and indicate on the outside of the carton that First Class Mail is enclosed]. Ship by prepaid express if possible and mark **ELECTRONIC EQUIPMENT ... FRAGILE**. Clearly address the carton as follows:

SERVICE DIVISION
LAFAYETTE RADIO ELECTRONICS CORP.
150 Engineers Road
Hauppauge, L.I., N.Y. 11787

SPECIFICATIONS

- FUNCTIONS [1] SQ Matrix Decoder with full-logic system [including rear Channel "Vari-Blend"].
- [2] Matrix Decoder for systems other than SQ, and for "derived" 4-channel sound from conventional stereo sources.
- [3] Inputs for discrete 4-channel sources.

INPUT SENSITIVITY [for 1 volt output*] SOURCE/TAPE INPUTS: 100 mV [High]
500 mV [Low]
DISCRETE INPUTS: 500 mV

MATRIX PHASE SHIFT CHARACTER-
ISTIC $90^{\circ} \pm 10^{\circ}$ from 50-20,000 Hz.

AGC CHARACTERISTIC [Logic Circuits] . ± 3 db for 35 db input level change [at 2 KHz].

DECODER CHANNEL SEPARATION
[at 2 KHz] LF to RF: 20 db.
LF to LB: 20 db.
RF to RB: 20 db.
LF to RB: 20 db.
RF to LB: 20 db.
CF to CB: 15 db.
LB to RB: 12 db.

- DECODER OUTPUTS [1] Front left and right, Rear left and right Outputs [decoded or discrete].
- [2] Front left and right, Rear left and right Tape Outputs [decoded or discrete].
- [3] 2-channel Tape Outputs.

OUTPUT VOLTAGE* 1 volt at rated input [Master Volume at max].
 SIGNAL/NOISE RATIO 70 db.
 HARMONIC DISTORTION 0.2%.
 CONTROLS SOURCE/TAPE Selector, FUNCTION MASTER VOLUME, POWER ON/OFF, INPUT SENSITIVITY SWITCHES [SOURCE/TAPE].
 POWER REQUIREMENTS 105 - 120 volts, 50/60 Hz AC.
 DIMENSIONS 14 1/2" W x 3" H x 11 1/8" D.
 NET WEIGHT 5 lbs.

*This output voltage is only for "front" channels when decoder is the Composer A or B, modes. Rear channel output voltage will vary in accordance with the program content of the 2-channel input source.

BECAUSE ITS PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT, THE LAFAYETTE RADIO ELECTRONICS CORPORATION RESERVES THE RIGHT TO MAKE DESIGN CHANGES OR MODIFICATIONS AT ANY TIME WITHOUT INCURRING ANY OBLIGATION TO INCORPORATE THEM IN PRODUCTS PREVIOUSLY SOLD.

LAFAYETTE®

RADIO ELECTRONICS CORPORATION

111 JERICHO TURNPIKE, SYOSSET, L. I., NEW YORK 11791

1000 000001 001000 00 100000

A GUIDE TO OPERATING THE ENTIRE 4-CHANNEL STEREO SYSTEM

FUNCTION	PROGRAM SOURCE	S Q - W DECODER SETTINGS				ASSOCIATED EQUIPMENT		
		TAPE-SOURCE BUTTON	FUNCTION SWITCH	MASTER VOLUME	POWER BUTTON	4-CHANNEL UNIT	TWO STEREO UNITS	
							UNIT 1	UNIT 2
4-CHANNEL SQ REPRODUCTION (For 4-Channel "Derived" Reproduction From Regular Stereo Sources, See Note Below)	4-Channel SQ Record	SOURCE (released)	SQ-FULL LOGIC	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Select Stereo Phono operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
		Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select Stereo Phono operation. 3. Volume for normal listening level at front speakers.	1. Select AU 2. Volume fo as front s
	FM Broadcast of SQ Encoded Program	Same as above	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Select FM Stereo operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
		Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select FM Stereo operation. 3. Volume for normal listening level at front speakers.	Same as
	SQ Encoded Stereo Tape⁵	TAPE (depressed) ⁶	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
		Same as above	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for normal listening level at front speakers.	1. Select AU 2. Volume fo as front sp
DISCRETE 4-CHANNEL REPRODUCTION	4-Channel Tape or other 4-Channel Source	—	DISCRETE ⁷	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
		—	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for normal listening level at front speakers.	1. Select AU 2. Volume fo as front sp

NOTE: If program source used is conventional stereo, "derived" 4-channel reproduction can be achieved by simply placing decoder FUNCTION switch in COMPOSER A or B position instead of SQ-FULL LOGIC position.

¹ This is an initial setting. The procedure outlined under "Initial Set-Up" (see text) may result in a slight re-adjustment of this setting.

² These volume controls used for adjustment of volume for all four channels.

³ This control subsequently used for simultaneous adjustment of volume for all four channels after Units 1 and 2 have been adjusted as indicated.

⁴ It is assumed that the rear channel outputs of the decoder are connected to the AUX inputs on Unit 2. If other inputs are used, these should be selected.

⁵ If a stereo tape recorder is used to record an encoded SQ program (record or program may be decoded during playback through the decoder).

⁶ Assuming output of stereo tape unit is connected to "TAPE INPUT" jacks on connected to AUX inputs on the associated equipment, select in the normal management (AUX position of Program Selector).

⁷ Assuming output of 4-channel program source is connected to "4 CH - IN" decoder.

A GUIDE TO OPERATING THE ENTIRE 4-CHANNEL STEREO SYSTEM

Q - W DECODER SETTINGS				ASSOCIATED EQUIPMENT		
	FUNCTION SWITCH	MASTER VOLUME	POWER BUTTON	4-CHANNEL UNIT	TWO STEREO UNITS	
					UNIT 1	UNIT 2
	SQ-FULL LOGIC	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Select Stereo Phono operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select Stereo Phono operation. 3. Volume for normal listening level at front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.
	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Select FM Stereo operation. 3. Front/Rear Volume at 9 o'clock. ²	—	—
	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Select FM Stereo operation. 3. Volume for normal listening level at front speakers.	Same as above
d) ⁶	Same as above	12 o'clock ¹	Same as above	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for normal listening level at front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.
	DISCRETE ⁷	12 o'clock ¹	ON (depressed)	1. Set 4 CH Tape Monitor on. 2. Front/Rear Volume at 9 o'clock. ²	—	—
	Same as above	10 o'clock ³	Same as above	—	1. Set Tape Monitor on. 2. Volume for normal listening level at front speakers.	1. Select AUX inputs. ⁴ 2. Volume for same level as front speakers.

¹ This is an initial setting. The procedure outlined under "Initial Set-Up" (see text) may result in a slight re-adjustment of this setting.

² These volume controls used for adjustment of volume for all four channels.

³ This control subsequently used for simultaneous adjustment of volume for all four channels after Units 1 and 2 have been adjusted as indicated.

⁴ It is assumed that the rear channel outputs of the decoder are connected to the AUX inputs on Unit 2. If other inputs are used, these should be selected.

⁵ If a stereo tape recorder is used to record an encoded SQ program (record or FM), this taped program may be decoded during playback through the decoder.

⁶ Assuming output of stereo tape unit is connected to "TAPE INPUT" jacks on decoder; if connected to AUX inputs on the associated equipment, select in the normal manner at the equipment (AUX position of Program Selector).

⁷ Assuming output of 4-channel program source is connected to "4 CH - INPUT" jacks on decoder.

LAFAYETTE SQ-W Full Logic SQ Matrix Decoder

Gives Unsurpassed SQ 4-Channel Separation

- Features Ultra Sophisticated Wavematching Full Logic SQ Decoder Circuitry with Variblend
- Convert Your Present Hi-Fi System to Play 4-Channel SQ Records and Decode 4-Channel SQ FM Broadcasts
- Selector Switch for SQ Full Logic, Discrete, 2-Channel, Composer A, Composer B

Incorporates the most advanced decoding circuitry available today for converting your present high fidelity system to play 4-channel program sources: (1) SQ discs, and (2) enjoy listening to 4-channel SQ FM broadcasts. The only system (with many records available) presently approved for 4-channel FM broadcasts is the SQ system. Requirements for converting to 4-channel SQ: (1) 2-Channel System—add the SQ-W decoder, additional stereo amplifier, and 2 more speakers. (2) 4-Channel System not incorporating SQ—just add the SQ-W decoder (the SQ-W must be used with amplifiers or receivers incorporating a Tape Monitor Feature). For added convenience, the SQ-W also includes Composer A and B circuitry for deriving 4-channel sound from conventional 2-channel program sources. Two input sensitivity controls. Master Volume Control for adjusting volume on all four channels simultaneously. 14¼W x 11½D x 27¼H. For 117 VAC, 50/60 Hz. Imported. Wt., 7½ lbs. **99 K 03311W No Money Down*Net 99.95**

