

dbx
CX-2
CONTROL AMPLIFIER



Instruction Manual

Inspection and Installation

Your unit was carefully packed at the factory in a carton designed to protect it. Nevertheless, we recommend examining both carton and contents for any signs of damage that may have occurred during shipping. If there is evidence of damage, don't destroy the carton or any of the packing material, and notify your dbx dealer immediately.

In any case it is a good idea to save the carton and packing materials should you ever need to ship your unit in the future.

The carton should contain a model CX-2, this instruction manual, and a warranty/registration card.

No special ventilation is required in any installation; other components may be stacked above or below the CX-2 provided that they themselves do not get hot.

*dbx" is a registered trademark of dbx.

For Customers in the U.K. - Important for Your Safety

The wires in this mains lead are coloured in accordance with the following codes:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked by the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked by the letter L or coloured red.

Warning

Do not connect any wire to the larger pin marked E or \equiv when wiring a plug. Ensure that all terminals are securely tightened and that no loose strands of wire exists.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert you of the presence of uninsulated dangerous voltage within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons



This symbol is intended to alert you of the presence of important operating and maintenance instructions in the literature accompanying the unit

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Contents

1	FEATURES	3
2	CONNECTIONS	3
3	CONTROLS AND FUNCTIONS	6
4	OPERATION	8
5	BLOCK DIAGRAM	14
SPECIFICATIONS/WARRANTY AND FACTORY-SERVICE INFORMATION		Back Cover

1 Features

The dbx CX-2 is the control amplifier capable of switching a record, tuner, compact discs, and tapes for monitoring and dubbing between up to five tape decks. It can connect up to three audio processing devices, e.g. equalizer, expander, or imager, for monitoring or dubbing through the processor. The one of the features you will most appreciate of the CX-2 will be its two recording master lines, MASTER A and MASTER B, for conveying the signals to be recorded on the tape decks. By selecting a different source to each MASTER line by means of the SOURCE SELECTOR buttons, you can record two signal sources simultaneously on two tape decks. Other features include: Thanks to the built-in switchable output amplifier with the -30 dB mute, you can achieve the wide varying degree of output levels so that the CX-2 can substantially drive a wide variety of main amplifier systems. A phono preamplifier is also built-in with the MM and MC selection feature. The CX-2 comes complete with the multifunction infrared remote control system*.

* For details, refer to page 8, 'Remote Control Operation.'

2 Connections

See Typical Hookup Diagram, page 5.

Note for Connection

For the simplicity's sake, in this manual the terms "TAPE-1 deck," etc. are used for the deck connected to the TAPE-1 jacks, etc. on the rear panel. And, the term 'the master tape deck' is used for the tape deck which playbacks for dubbing, and the term "the slave tape deck" is used for the tape deck which records for dubbing.

See the rear panel diagram on next page.

① GND (GrouND) terminal

Connect the ground wire from the record player, for reducing hum.

② [SOURCE INPUT] PHONO/TUNER/AUX/CD-1 /CD-2 jacks

These are where you connect your various source equipment. Connect your record (phono) player's output to PHONO, tuner (e.g. the dbx TX-3) to TUNER, auxiliary equipment (VCR sound, for example) to AUX, first CD player to CD-1, and the second CD player to the CD-2.

③ [TAPE] 1/2/3/4/5 IN and OUT jacks

These are where you connect your cassette decks and/or your reel-to-reel recorders. The hookup is simple. Connect these OUT jacks to the 'Input' jacks on your tape deck, and return its 'Output' to the CX-2's IN jacks.*

* Same loop, 1 through 5, as going out.

④ [LINE OUT] DIRECT and NORMAL jacks

These are where you hook up the CX-2's audio output to the inputs of your main amp. Connect the NORMAL jacks, which may be the more common application, to your main amp through its 'Input' jacks, left channel to left and right channel to right. The DIRECT jacks bypasses the built-in output amplifier and the ATTENUATOR, MUTE, and the BALANCE controls for more serious listening demand.

⑤ [EXTERNAL PROCESSOR] 1/2/3 IN and OUT jacks

These are where you connect your audio processing devices, such as an graphic equalizer, expander. Connect the CX-2's OUT jacks to the 'Input' of the

processor. Return the processor's 'Output' to the CX-2's IN jacks.

⑥ AC outlets [600 W max.]

These are unswitched (not switched on and off by the CX-2's power switch) AC outlets which may be used to power the associated audio equipment.

Important

Do not plug in equipment with the total rated power consumption greater than 600 Watts.

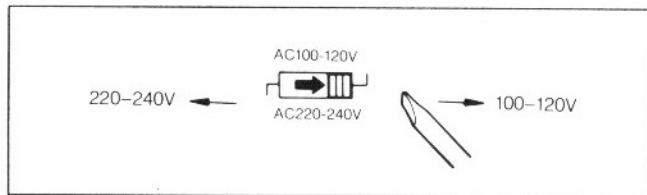
⑦ AC line voltage requirement indicator

The indicator displays the nominal AC line voltage for which the CX-2 has been set at the factory.

Warning

If you ever need to change the voltage setting, first, be sure to remove the power cord from the AC outlet before changing the setting.

Unscrew the small voltage cover plate near the AC cord. Move the switch with a small driver, and turn the plate upside down (180-degree or, in other words, which exposes the switch in its new voltage position), and screw it back on. Do not turn the plate over.

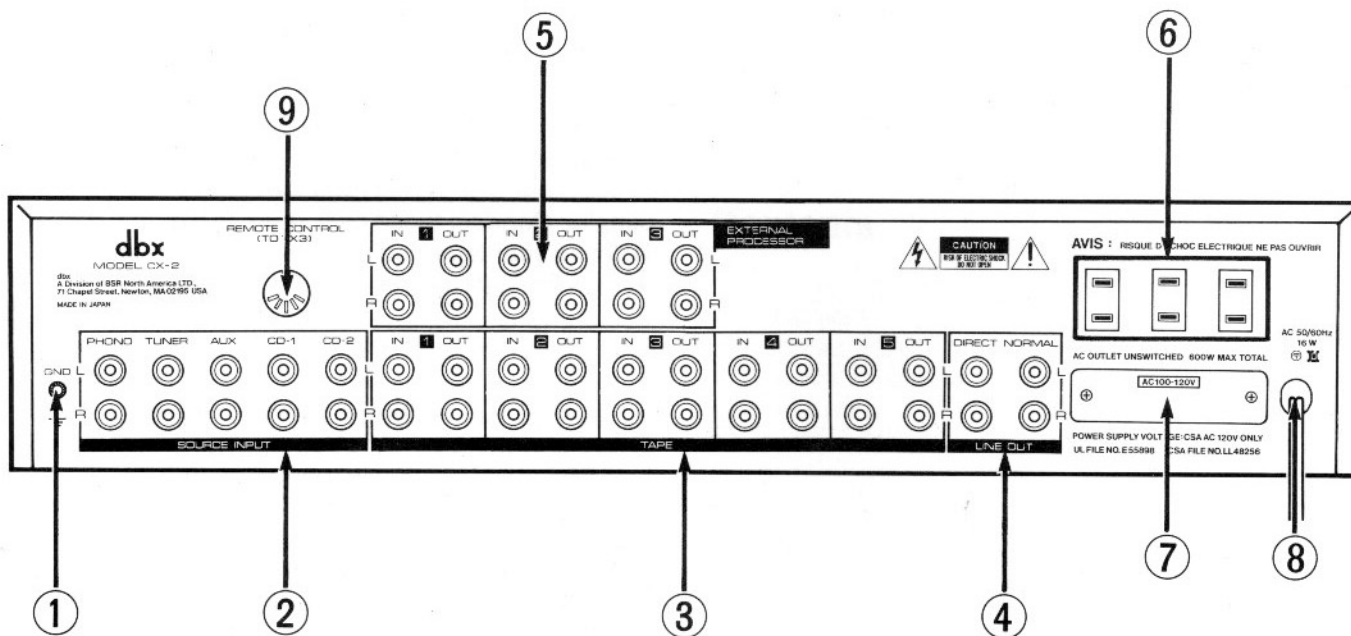


⑧ Power cord

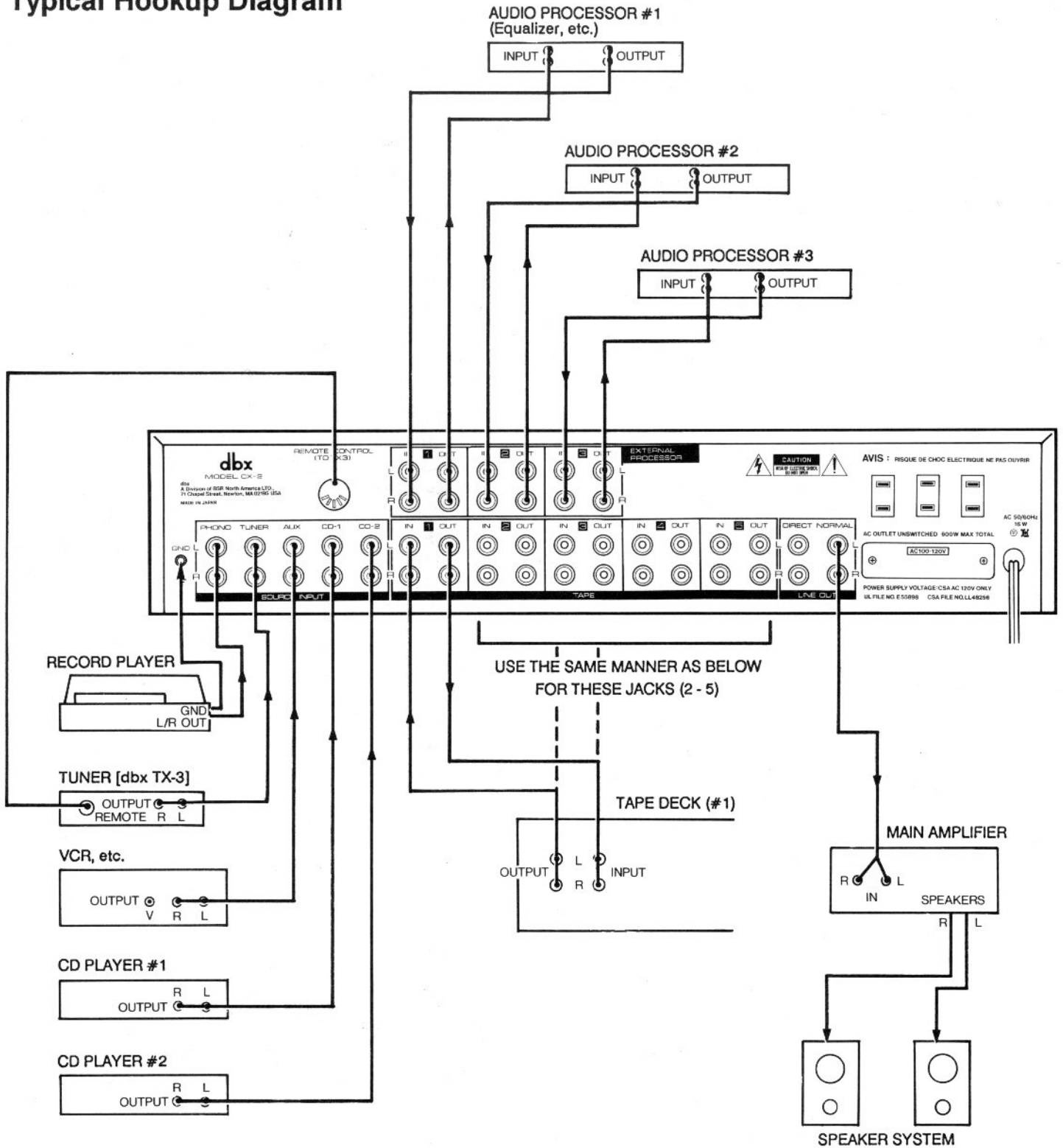
Connect this cord to the appropriate power source. The nominal power consumption of the CX-2 is 16W.

⑨ REMOTE CONTROL [TO TX-3] connector

The CX-2's remote control system can also command the TX-3 tuner, if its audio output is connected to the CX-2's TUNER inputs (above 2). Connect the matching DIN type connector on the TX-3 to this connector with a DIN cable.



Typical Hookup Diagram



Important -- Power Requirements

Power requirements for electrical equipment differ from area to area. Please ensure that your unit meets the power requirements in your area. If in doubt, consult a qualified electrician.

100V, 50 Hz for Japan,
 120V, 60 Hz for U.S.A. and Canada,
 220V, 50 Hz for Europe except U.K.,
 240V, 50 Hz for U.K. and Australia.

3 Controls and Functions

The remote control duplicates the function of the CX-2 controls except 7, 11, and 12, below.

① POWER button and indicator

Depress this button to turn the CX-2's power on and off. The indicator is illuminated while the power is on.

The remote control unit's POWER button can work as long as the CX-2 is plugged to the wall outlet.

② [SOURCE SELECTOR] SELECTOR MODE button

This button, each time pressed, toggles between the MONITOR, MASTER A, and the MASTER B mode; whether the [SOURCE SELECTOR] buttons are used to select the program source for monitoring (MONITOR), or for taping (MASTER A and B).

In the MONITOR mode, you can use the [SOURCE SELECTOR] buttons (PHONO, TUNER, etc.) to select the audio program source to be monitored (listened). To select the MONITOR mode, press the SELECT MODE button and illuminate the button itself. Pressing one of the [SOURCE SELECTOR] buttons (say, "CD-1") selects the audio program source to be fed to the rear LINE OUT jacks and listened.

By pressing the MODE button while the MODE button is illuminated, the MODE button is turned off, the ►MASTER A indicator will blink, and the [SOURCE SELECTOR] buttons select the program source which is fed through the MASTER A line to the tape decks for recording (or dubbing), illuminating the LED indicator in the MASTER A row.

By pressing the MODE button while the ►MASTER A indicator is blinking, the ►MASTER A indicator ceases blinking, the MASTER B indicator will then blink, and the [SOURCE SELECTOR] buttons select the program source which is fed through the ►MASTER B line to the tape decks for recording (or dubbing), illuminating the LED indicator in the MASTER B row.

Since you will find it more advantageous to set the [SOURCE SELECTOR] to the MONITOR mode usually, after you have made a selection in the MASTER A or B mode, we recommend you reselect the MONITOR mode.

Note: The MONITOR and MASTER (A and B) modes are not interactive: Changing either mode to the other does not affect the program selection made in the previous mode. e.g. You can switch to the

MONITOR mode after having selected a program to be recorded in the MASTER (A or B) mode, for listening to another program while recording.

③ [SOURCE SELECTOR] program source buttons

These buttons are used to select the audio sources from the record player (PHONO), auxiliary input, CD players, and the tape decks, for monitoring and recording.

③ A [SOURCE SELECTOR] MASTER A indicators

③ B [SOURCE SELECTOR] MASTER B indicators

④ PROCessor REC button

This button is used when the [AUDIO PROCESSOR] MODE is in the MASTER A or MASTER B, to monitor the recording at the output of the audio processor(s). This button, when pressed (the LED indicator illuminated), automatically cancels the MONITOR mode of the [SOURCE SELECTOR] MODE and thus enable you to monitor the recording information after the processor.

⑤ [AUDIO PROCESSOR] MODE button

This button controls the position of the audio processor(s) – equalizer, expander, imager – connected to the back of the CX-2, which may be connected to the rear panel [EXTERNAL PROCESSOR] IN/OUT jacks, relative to the tape decks.

With the MODE button pressed to illuminate the MONITOR indicator, the processor(s) is placed before the LINE OUT jacks, which means that you can alter the sound when you're listening to the program sources. Pressing the MODE button next time illuminates the MASTER A indicator and places the processor(s) ahead of the tape deck(s) in the MASTER A recording line (see next item in this section), and pressing the button one more next time illuminates the MASTER B indicator and the processor(s) is placed in the MASTER B recording line, both of which means that you can process (equalize, expand, etc.) the signal before it is recorded.

⑥ [AUDIO PROCESSOR] 1/2/3 button

These buttons let you switch in and out of operation the audio processor(s). Press one or more of the buttons (indicating the button) to place the corresponding processor(s) into the signal path. You will be sending the musical program through whichever processors are hooked up. Leave the button(s) off (not illuminated) to bypass the processor(s).

⑦ [RECORDING SELECTOR] TAPE-1/TAPE-2/TAPE-3/TAPE-4/TAPE-5 buttons

These buttons let you choose which deck(s) records (or dubs) the program source played on the recording master line A or B. Each time the button is pressed, it toggles the indicator through MASTER A, MASTER B, and off (not illuminated).* Note, this button is not duplicated on the remote control.

***Note**

If you select the [SOURCE SELECT] TAPE-1 button for the MASTER A line, you cannot select the [RECORD SELECTOR] TAPE-1 for the MASTER A line (the TAPE-1 button has no effect on illuminating the indicator in the MASTER A row), which means that you can not record the output of one tape deck on the same tape deck.

The controls 8 through 12 have no effect on the [LINE OUT] DIRECT jacks on the back of the unit.

⑧ OUTPUT AMP button

This button is used to switch in the built-in flat line amplifier in the output stage of the CX-2.

⑨ MUTING button

This button reduces the CX-2's output to a low level. This feature enables you to lower the volume temporarily, without losing the previous setting, when you find it necessary to interrupt your listening, to answering a phone, etc.

⑩ ATTENUATOR knob

This knob controls the gain, or volume, of the sound.

⑪ BALANCE knob

This knob provides left to right channel balance of the sound. Note, this feature is not remote-controllable.

⑫ Phono Preamp [MM-MC] select button

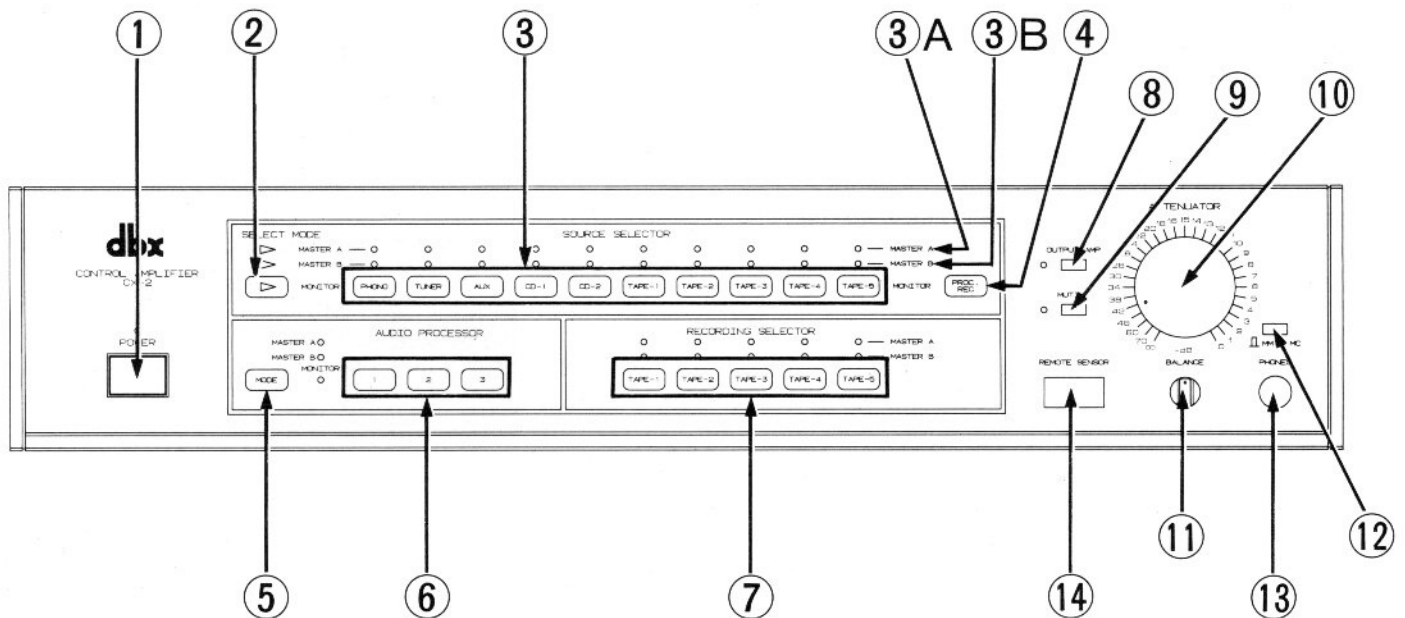
This button is for accommodation of the built-in phono preamp from either MM (moving-magnet) type cartridges or MC (moving-coil) type cartridges. Note, this control is not duplicated on the remote control.

⑬ PHONES jack

This headphones jack accepts a standard 1/4" stereo phone plug as found on most stereo headphones and provides for private listening.

⑭ REMOTE SENSOR

This window accepts the infrared command from the remote control transmitter (see page 8).



4 Operation

Contents for the Operation section

4-1	Monitoring the program sources	9
4-2	Recording	9
4-2-1	Recording the programs onto the tape decks	9
4-2-2	Recording from one tape deck to the other	11
4-3	Processor Operation	12
4-3-1	Monitoring the program source	12
4-3-2	Recording the program source	13
4-4	On last-time memory feature	13

Note on Open-circuit Input jacks

To avoid hum noise, we recommend you fit a shorting plug to the rear input jacks which are left unconnected. However, do not connect shorting plugs to any output ("OUT") jack.

Remote Control Operation

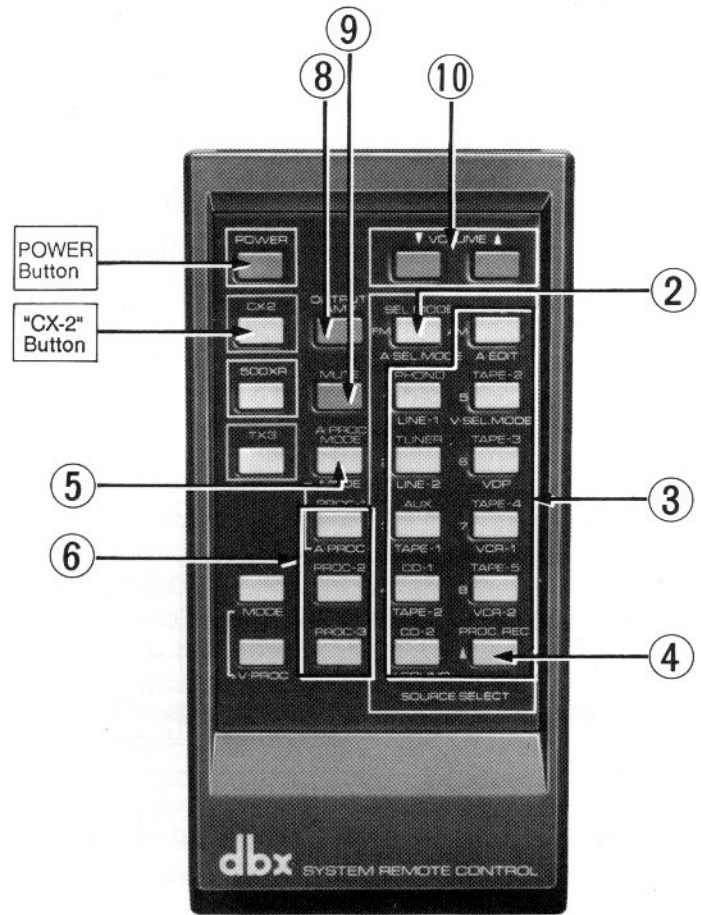
The handheld remote transmitter lets you control all of the CX-2's functions. The transmitter is not particularly directional and can operate over a range of approximately 25 feet (7 m). The supplied batteries should last a year or more in typical use; replace them with the same type.* Remove the batteries for prolonged nonuse period.

* SUM-3, AA, or IEC R6; 1.5V

The transmitter has been designed for the multiple use with all of the CX-2, dbx A/V remote center model 500XR, and the dbx tuner TX-3. The numbers below indicate the index numbers for the equivalent controls the transmitter duplicates of the main unit CX-2 controls, as described in the 'Controls and Functions' section in pages 6 and 7.

Note that the transmitter buttons are labeled in yellow for the functions of the CX-2. The labelings of other colors are for controlling the dbx A/V Remote Selector 500XR (purple) and/or the dbx tuner TX-3 (red).

Note that the "OUTPUT AMP," "MUTE," and "VOLUME" buttons (silver-labeled) are operable regardless of the present dedication of the transmitter to either of the CX-2, 500XR, or the TX-3.

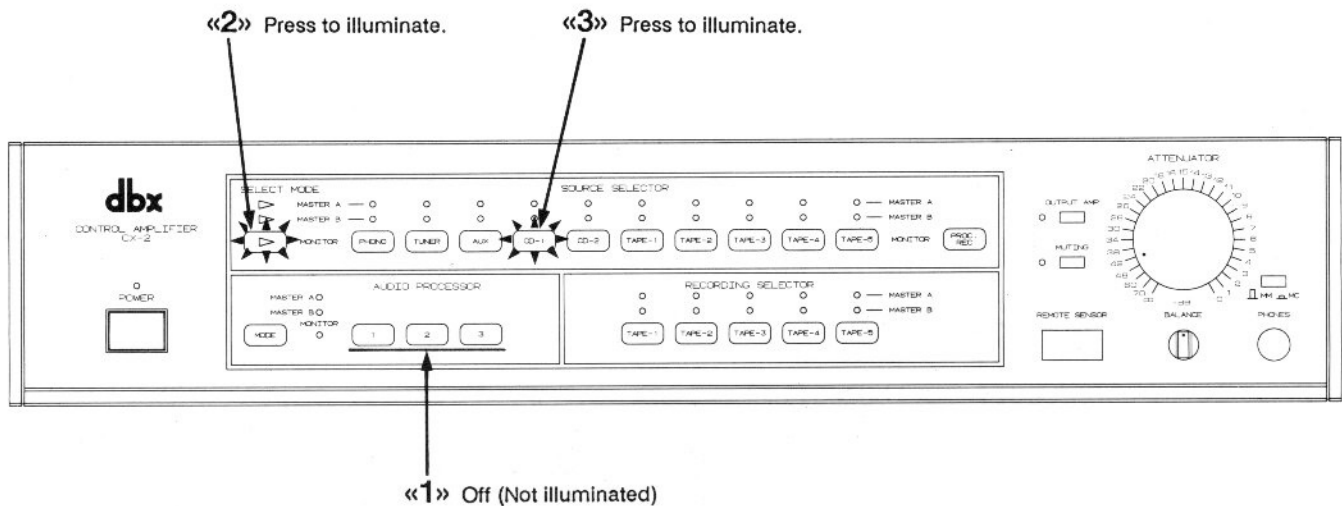


To achieve the transmitter to be usable for the CX-2, you must first (after having turned on the CX-2's power) press the "CX-2" button on the transmitter. It should be noted that the transmitter may not operate properly unless this step has been done successfully.

4-1 Monitoring the program sources

- «1» Make sure that all the [AUDIO PROCESSOR] 1 through 3 buttons are off (not illuminated). (Refer to page 12, for the use of the audio processor for monitoring.)
- «2» Make sure that the source [SELECT MODE] button is illuminated. Or, if the MASTER A or B indicator is blinking, press the [SELECT MODE] button to illuminate itself.
- «3» Press one of the SOURCE SELECTOR buttons (e.g. "CD-1") which selects the program you monitor.

Example: To monitor the CD-1 input



4-2 Recording

4-2-1 Recording the programs onto the tape decks

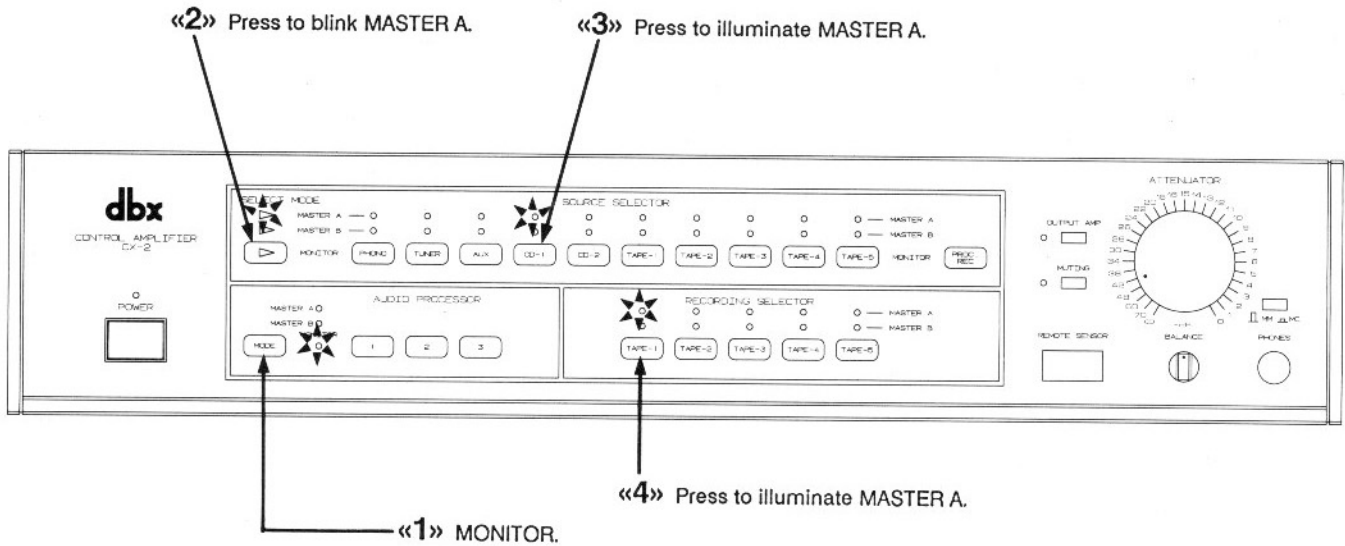
- «1» Make sure that the [AUDIO PROCESSOR MODE] button is in MONITOR, illuminating the MONITOR indicator, not the MASTER A or B.
- «2» Press the SOURCE [SELEC MODE] button to select the MASTER A (or B) mode (blinking the ►MASTER A (or B) indicator).
- «3» Press any of the [SOURCE SELECTOR] PHONO, TUNER, AUX, CD-1, and CD-2 buttons, which selects the program source desired.
- «4» Press one of the RECORDING SELECTOR buttons (e.g. "TAPE-1"), which selects the tape deck for recording, so that the indicator is illuminated in the MONITOR A (or MONITOR B, if you selected "MASTER B" in step 2 above) indicator row.
- «5» Start playing the program source and record it on the tape deck(s).

You can press two or more buttons if you wish to record one program on two or more tape decks.

You can select one of the TAPE-1 through TAPE-5 buttons for copying (dubbing) a cassette onto the other tape deck(s). For details, see page 11.

(See example on next page.)

Example: To record the CD-1 input on the TAPE-1 deck

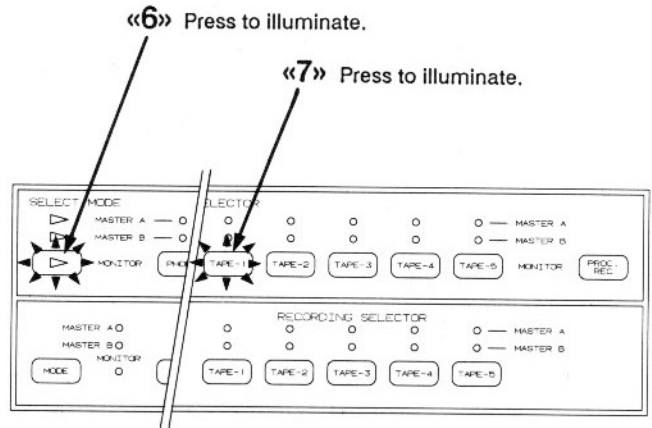


Monitoring the Recording

You can monitor the program information that is being recorded by using the MONITOR mode.

- «6» Press the source [SELECT MODE] button to select the MONITOR mode (illuminating the button).
- «7» Press the one of the [SOURCE SELECTOR] TAPE-1 through TAPE-5 buttons which selects the (output of the) recording tape deck(s).

If the tape deck(s) you are using has tape monitoring facilities – 3-head type –, you can "after-monitor" the recording being made.



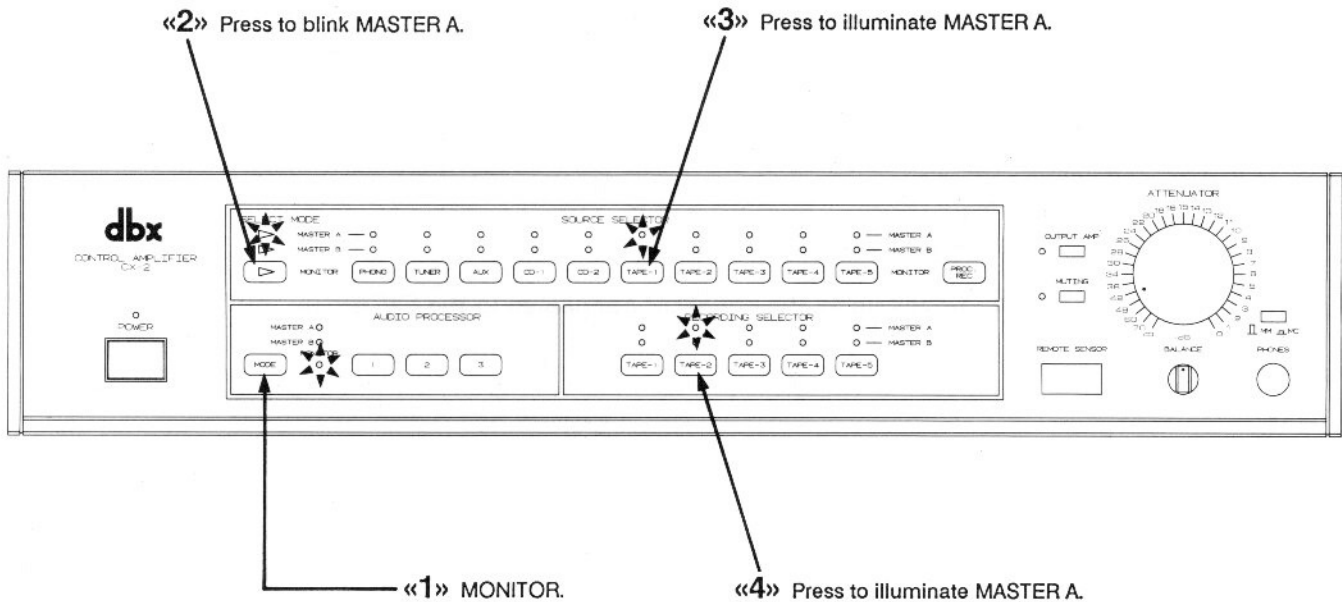
Recording two programs simultaneously

Since the CX-2 has been designed to incorporate two master recording lines, MASTER A and MASTER B, which feed the source signals on-line to the tape decks, you can record two program sources onto the different tape decks at the same time. For example, while you are making recording the CD-1 onto the TAPE-1 deck using the CX-2's MASTER A line as example above, the FM broadcast (TUNER) can be recorded onto the TAPE-3 deck using the CX-2's MASTER B line, tracing the same steps as 2 through 4 above.

4-2-2 Recording from one tape deck to the other (Dubbing)

- «1» Make sure that the [AUDIO PROCESSOR MODE] button is in MONITOR, illuminating the MONITOR indicator, not the MASTER A or B.
- «2» Press the [SOURCE SELECTOR] MODE button to select the MASTER A (or B), blinking the ►MASTER A (or B) indicator.
- «3» Press any of the [SOURCE SELECTOR] TAPE-1 through TAPE-5 buttons (e.g. "TAPE-1") which selects the master (playing) tape deck for dubbing.
- «4» Press the one of the RECORDING SELECTOR buttons (e.g. "TAPE-2"), which selects the slave (recording) tape deck, so that the indicator is illuminated in the MASTER A (or B, if you selected the "MASTER B" in step 2 above) indicator row. If you wish, you can press two or more buttons for simultaneous dubbing.
- «5» Start playing the cassette on the master tape deck and record it on the slave tape deck.

Example: Recording from the TAPE-1 to the TAPE-2 deck

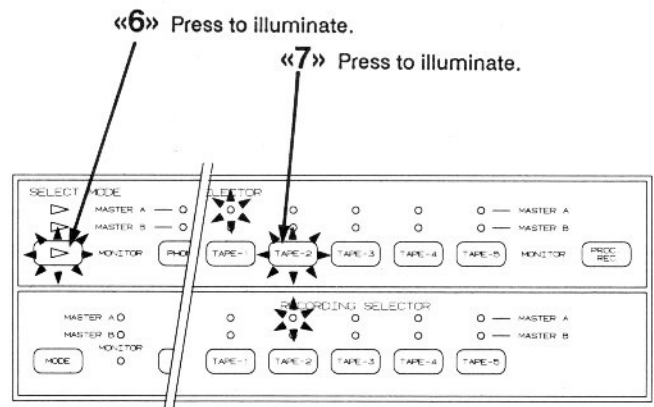


Monitoring the Recording

To monitor the output from the slave (recording) tape deck

- «6» Press the source [SELECTOR MODE] button to select the MONITOR mode (illuminating the button).
- «7» Press the [SOURCE SELECTOR] TAPE-2 (the slave deck) button.

If you select the master (playing) tape deck (e.g. "TAPE-1"), the output from the master tape deck, before it is recorded, can be monitored.



4-3 Processor Operation

An audio processor, such as an equalizer, expander, subharmonic synthesizer, may be used for processing the audio signals from any sources, for both monitoring and recording.

The CX-2 sends the source signal through the (up to) three connected processor in order, 1 to 2 to 3. If the corresponding button is on (illuminated), the processor in the EXTERNAL PROCESSOR loop "1" gets the signal first, after which it's passed to the processor loop "2," and so on. If the button is disengaged (not illuminated), the signal bypasses that loop and proceeds to the next.

The selection of the position at which the actions of the audio processor(s) take place, with respect to the tape deck or VCR, is made with the [AUDIO PROCESSOR] MODE button. For details, review the "3 Controls and Functions" section, item 8, page 6.

To ensure that you follow the proper operation of your audio processor, read the instructions accompanying the audio processor carefully.

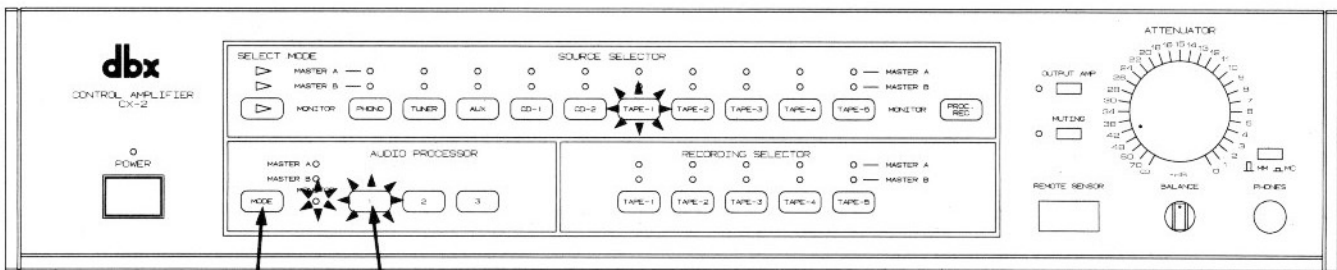
Example: To monitor the TAPE-1 deck using the equalizer connected to the EXTERNAL PROCESSOR loop "1"

4-3-1 Monitoring the Program Source (AUDIO PROCESSOR [MONITOR] mode)

- «1» Refer to "4-1 Monitoring the program sources," page 9, and ready for start monitoring.
- «2» Press the AUDIO PROCESSOR [MODE] button to turn on the MONITOR indicator.
- «3» Press any of the [AUDIO PROCESSOR] 1 through 3 buttons you desire to use (the button illuminated).

Start playing the program source.

«1» Ready the CX-2 for monitoring the TAPE-1 deck.



«2» Press to illuminate MONITOR.

«3» Press to illuminate.

4-3-2 Recording the Program Sources (AUDIO PROCESSOR [MASTER A or B] mode)

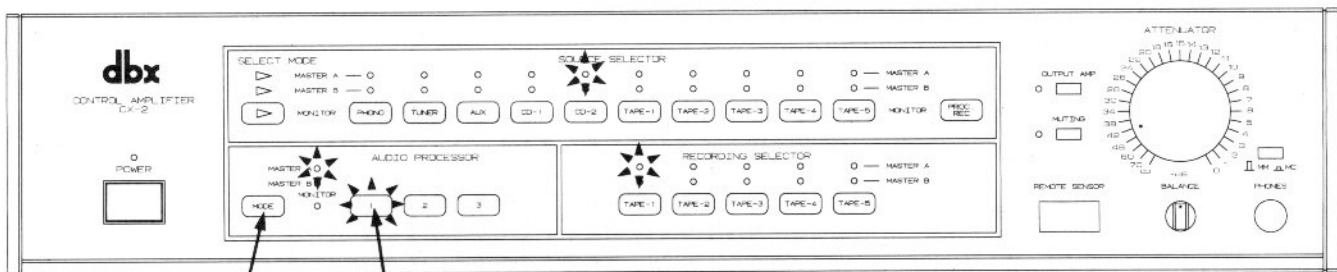
- «1» Refer to "4-2-1 Recording the programs onto the tape decks," or "4-2-2 Recording from one tape deck to the other" section and ready your system for recording.
- «2» Press the AUDIO PROCESSOR [MODE] button to turn on the MONITOR A or MONITOR B, depending on the master line being used for recording.

- «3» Press any of the [AUDIO PROCESSOR] 1 through 3 buttons you desire to use (the button illuminated).

Playback the source and record it on the recording tape deck.

Example: To record the CD-2 input onto the TAPE-1 deck using the compressor connected to the EXTERNAL PROCESSOR loop "1"

- «1» Ready the CX-2 for recording CD-2 on the TAPE-1 deck.



- «2» Press to illuminate MASTER A.
- «3» Press to illuminate.

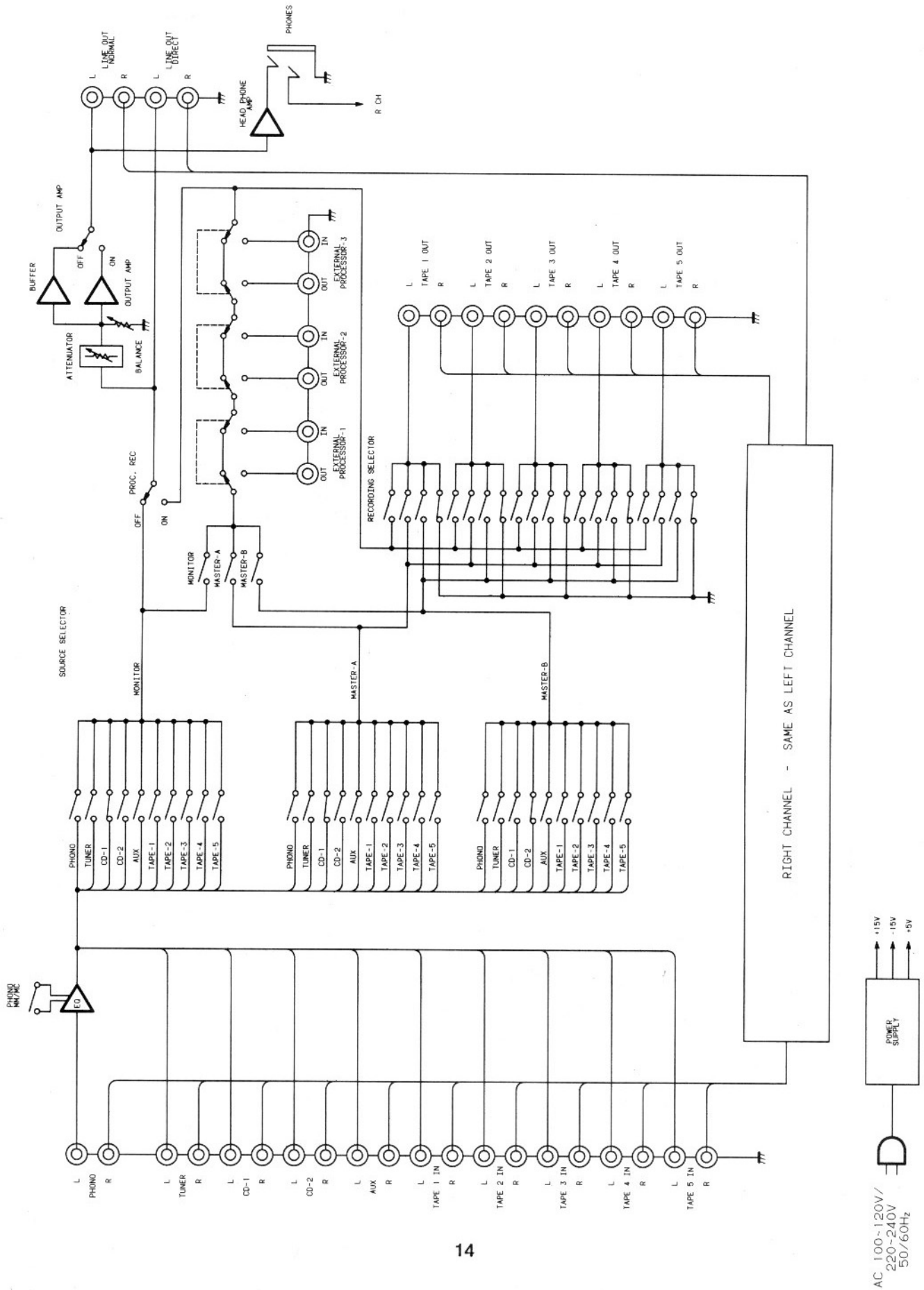
Monitoring the [PROCESSED MASTER] source sound

To monitor the processed master source, during recording, simply press the [PROC. REC] button in the [SOURCE SELECTOR] area.

4-4 On Last-Time Memory Feature

Any settings for the buttons made last-time the CX-2 is off are stored and retained indefinitely while power is off, as long as the power cord is plugged to a live outlet. Settings in memory can be reset simply by disconnecting the plug from power.

5 Block Diagram



AC 100~120V/
220~240V
50/60Hz

Specifications

Inputs/Outputs

[LINE OUT] DIRECT, NORMAL: 1 IN, 1 OUT each
[TAPE (L/R)]: 5 IN/OUT
[EXTERNAL PROCESSOR (L/R)]: 3 IN/OUT
[SOURCE INPUTS (L/R)]: PHONO, TUNER,
AUX, CD-1, CD-2
[REMOTE CONTROL] 1 (DIN) for TX-3 tuner

Electrical

Input sensitivity
PHONO: 2.5 mV MM/0.25 mV MC
Others: 150 mV
Maximum input level
110 mV MM/11 mV MC
Input impedance
PHONO MM: 47 kohm
PHONO MC: 100 ohm
Others: 47 kohm
Frequency response, +/- 1 dB
PHONO: 20 Hz to 20 kHz
Others: 10 Hz to 50 kHz
Equivalent input noise
-100 dBV
Total harmonic distortion, 1 kHz
0.008 %
[LINE OUT] NORMAL output level
0 to 1.2 V variable
Maximum output voltage
LINE OUT: 7V
PHONES: 0.225V (8 ohm)
LINE OUT impedance
600 ohm
Muting
-30 dB

Remote Control

Control range
7m
Batteries used
[1.5] SUM-3, AA, IEC R6

General

Power requirement
AC 100-120V/220-240V, 50/60 Hz, 16W
Dimensions, excluding protrusions
17-1/2" W x 3-1/2" H x 12" D
(446 mm x 88 mm x 328 mm)
Weight
10 lbs 2 oz (4.6 kg)

Design and specifications subject to change without notice.

Warranty and Factory Service

All dbx equipments are covered by a limited warranty (warranties for products purchased outside the U.S.A. are valid only in the country of purchase and the U.S.A.). For details, consult your warranty card or your dealer/distributor.

The dbx Customer Service Dept. will help you use this product. For answers to questions and information on problems, write:

dbx
71 Chapel St.
PO Box 100C
Newton, Mass. 02195 USA
Attn: Customer Service

You also may call (617) 964-3210 during business hours (USA Eastern time). The telex is 92-2522. Should it become necessary to have your equipment serviced at the factory:

- 1 Repack the unit, including a note with a description of the problem and the date of purchase.
- 2 Send the unit freight prepaid to the above address, marking it "Attn: Repairs."
- 3 We strongly recommend that you insure the package and send it by United Parcel Service whenever possible.

If you live outside the U.S.A., contact the nearest dbx dealer or distributor for the address of the nearest authorized repair center.

dbx

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