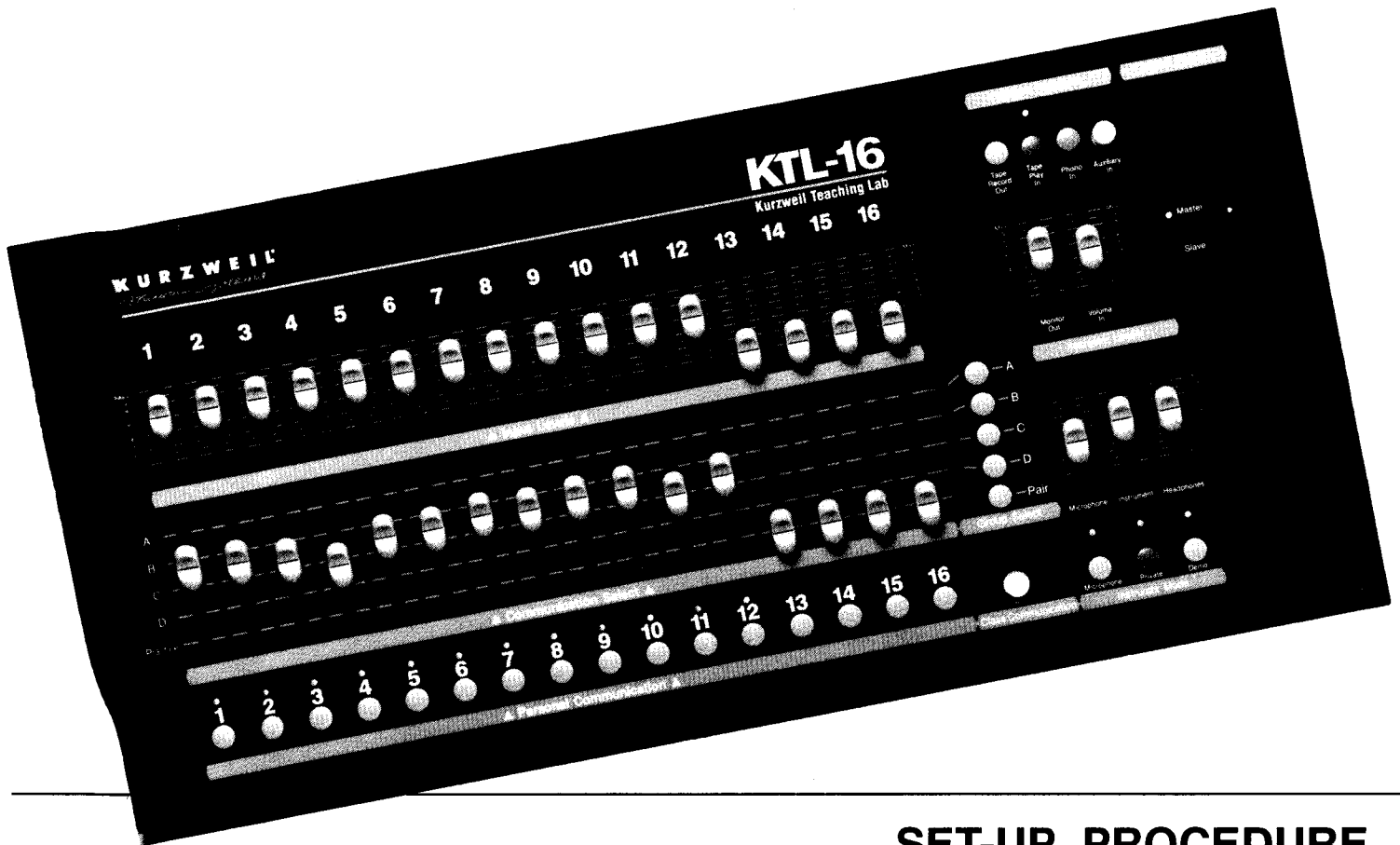*MODEL:*

KTL-16

KURZWEIL TEACHING LAB

SET-UP PROCEDURE
OPERATIONS MANUAL
WARRANTY

KURZWEIL
Music Systems

Kurzweil is a product line of Young Chang America, Inc.

INTRODUCTION

The Kurzweil KTL-16 is an advanced teacher's control station for piano or musical instrument instruction of up to 16 student stations. The KTL-16 offers the instructor options for group practice, group instruction, as well as private or small group teacher supervised practice.

The set up and operation of this system is simple and clear-cut, but prior to operating the system we suggest you read this manual to fully understand the potential and special features of your new KTL-16 instructor's console.
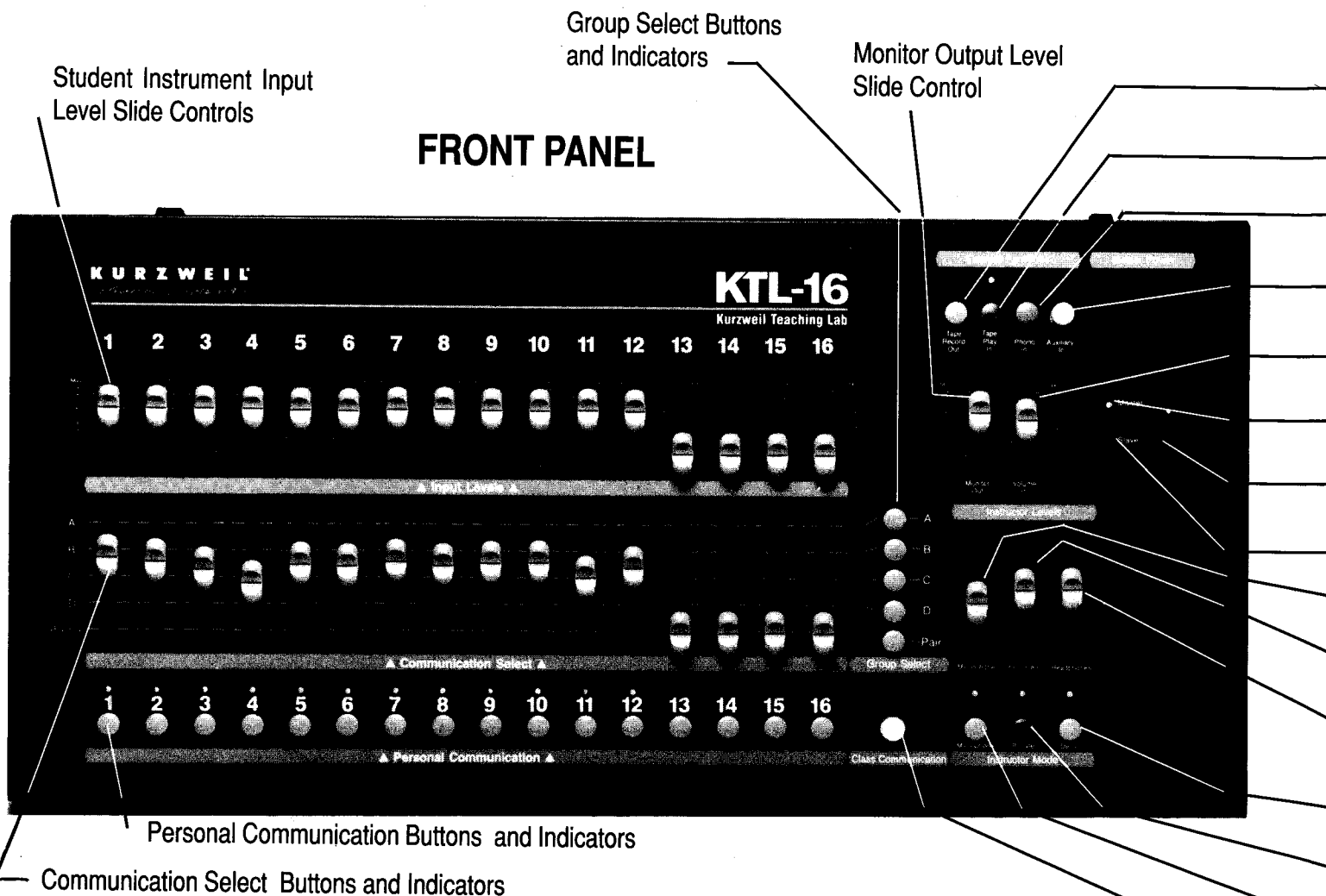
SPECIAL FEATURES

• Each KTL-16 can utilize up to 16 student instruments. Up to 3 more KTL-16 units can be combined for a total of 64 student stations.

• Four student groups can be set for instruction at various levels within the same class.

• Eight pairs of students can be set for duet or partner practice sessions.

• The KTL-16 has onboard line and tape jacks so that any or all students can be recorded, or taped examples of instructional lessons can be played to any or all students.
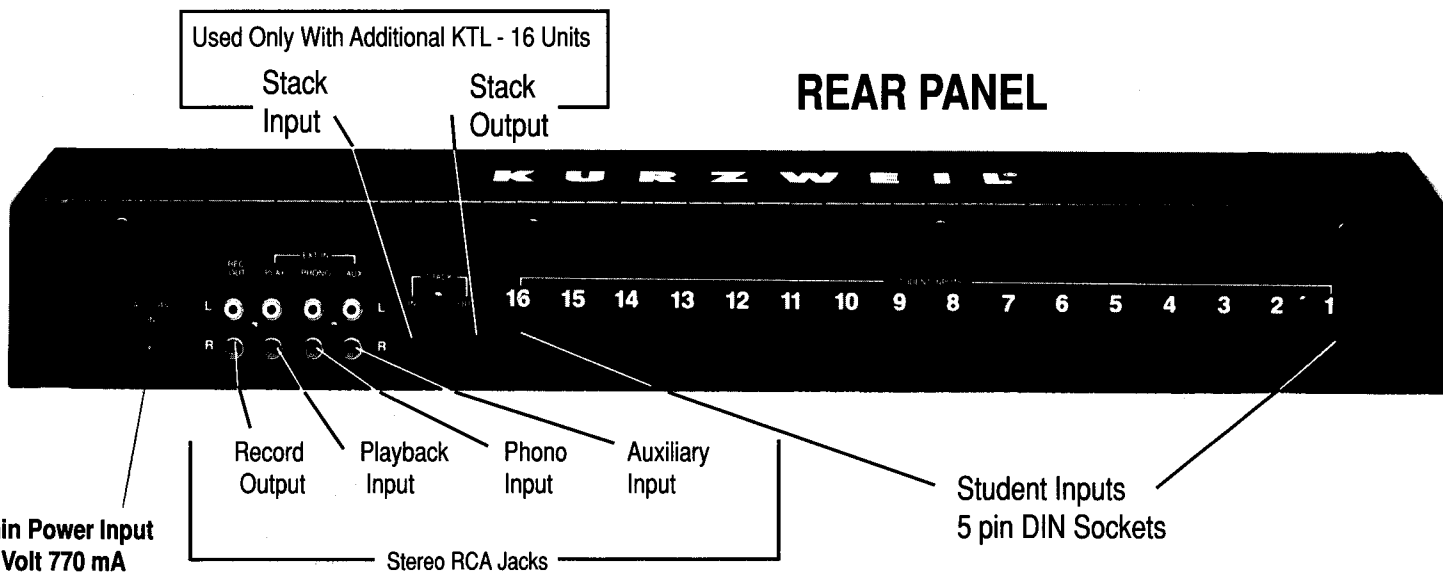
TABLE OF CONTENTS

CONTROLS & CONNECTIONS

Group Select Buttons
and Indicators

Monitor Output Level
Slide Control

Student Instrument Input
Level Slide Controls

FRONT PANEL

KURZWEIL

KTL-16
Kurzweil Teaching Lab

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

▲ Input Levels ▲

A
B
C
D
Pair

▲ Communication Select ▲

Group Select

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

▲ Personal Communication ▲

Class Communication

Instructor Mode

Personal Communication Buttons and Indicators

Communication Select Buttons and Indicators

Used Only With Additional KTL - 16 Units

Stack
Input

Stack
Output

REAR PANEL

KURZWEIL

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Record
Output

Playback
Input

Phono
Input

Auxiliary
Input

Student Inputs
5 pin DIN Sockets

**Main Power Input
14 Volt 770 mA
Use only Kurzweil
A/C Adaptor**

Stereo RCA Jacks

3 .

BEFORE YOU START

* Use only the Kurzweil A/C power adaptor supplied with the KTL-16. Using other A/C adaptors can damage the unit and void your warranty.

* Use a single 117v wall plug receptacle for the KTL-16. Other devices connected to the same 117v receptacle, such as electric motors or fluorescent lights could cause disturbing noise and hum when using the KTL-16.

* Be certain that the main power switch of the KTL-16 is set to "OFF" before connecting the A/C power adaptor to the 117v wall receptacle.

* Disconnect the A/C power adaptor from the wall receptacle if the unit will not be used for long periods of time. Do not place the KTL-16 near heater vents, areas of strong humidity or in direct sunlight.

* Use only a soft cloth and mild soap detergent to clean the KTL-16.

* Contact Kurzweil service if the unit does not operate properly. In such a case the unit should be switched off and disconnected from the 117v wall receptacle as soon as possible.

WHAT YOU NEED TO GET STARTED

Please Make Sure Your KTL-16 Includes All The Components Necessary:

INSTRUCTOR

• KTL-16 teacher's console unit
• Teacher's headset
• 4 sheets of student identification stickers
• Music rack
• One dual ended 1/4" instrument cable
• One 1/4" dummy male plug (for teacher's instrument headphone jack)
• One Kurzweil A/C power adaptor
• One Teacher's electronic piano (Optional) Must have 1/4" line out jack.

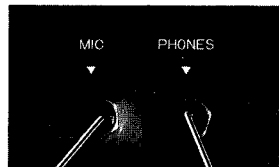### STUDENTS

One KTL-KIT required per student.
Kit includes:
• One student headphone & microphone unit
• One student interface connection box
• One 33' five-pin DIN cord
• One student electronic piano per student. Must have 1/4" headphone jack.

ADDITIONALLY: Kurzweil has available extension cables and connectors for distances of more than 33' between instructor and student and connectors that will combine 2 or more KTL-16 console units for classes of more than 16 students.

Monitor Output, On / Off Button and Indicator

Tape Playback Input On / Off Button and Indicator

Phono Input On / Off Button and Indicator

Auxiliary Input On / Off Button and Indicator

Volume Slide Control, Multiple External Input Sources

Master Power On / Off Indicator

Master Power On / Off Switch

Slave Unit On / Off Indicator (used only with multiple KTL-16 units)

Instructor's Microphone Output Level Slide Control

Instructor's Instrument Output Level Slide Control

Instructor's Headphone Level Slide Control

Demonstration Button and Indicator

Instructor's Private Button and Indicator

Instructor's Microphone On / Off Button and Indicator

Class Communication Button and Indicator

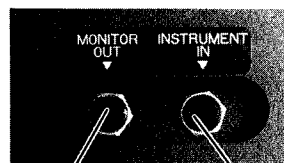## LEFT SIDE

Instructor Microphone Jack
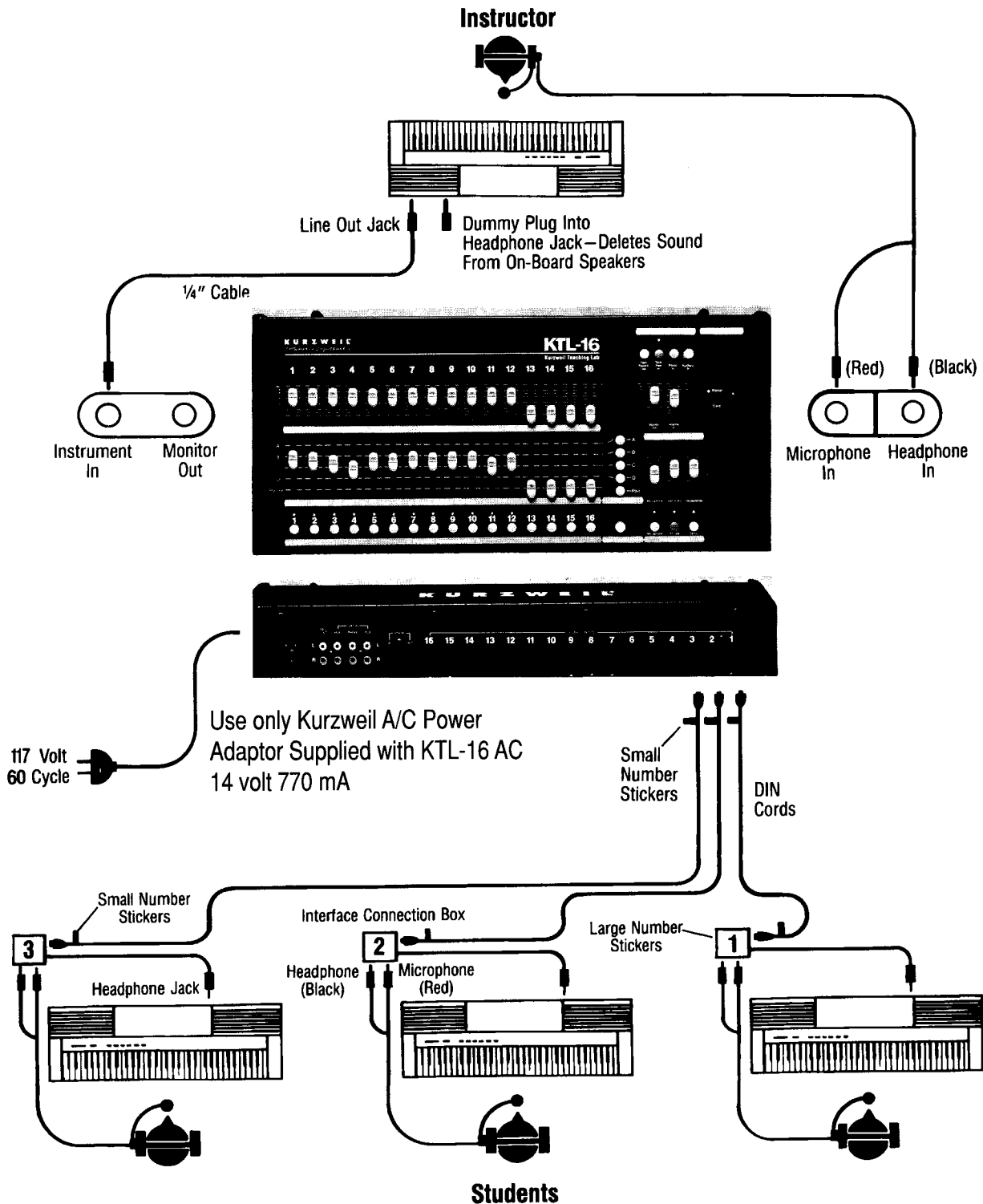
Instructor Headphone Jack

RIGHT SIDE

Monitor Out Jack

Teacher's Instrument In Jack

Follow this basic connection layout for your KTL-16. Be sure to secure all cords and cables out of the way of student's feet to avoid tripping on them and causing damage to the connection.

Instructor

Line Out Jack

Dummy Plug Into
Headphone Jack—Deletes Sound
From On-Board Speakers

¼" Cable

KTL-16
Kurzweil Teaching Lab

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

(Red)   (Black)

Instrument   Monitor
In   Out

Microphone   Headphone
In   In

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

117 Volt
60 Cycle

Use only Kurzweil A/C Power
Adaptor Supplied with KTL-16 AC
14 volt 770 mA

Small
Number
Stickers

DIN
Cords

Small Number
Stickers

Interface Connection Box

Large Number
Stickers

3

Headphone Jack

2

Headphone   Microphone
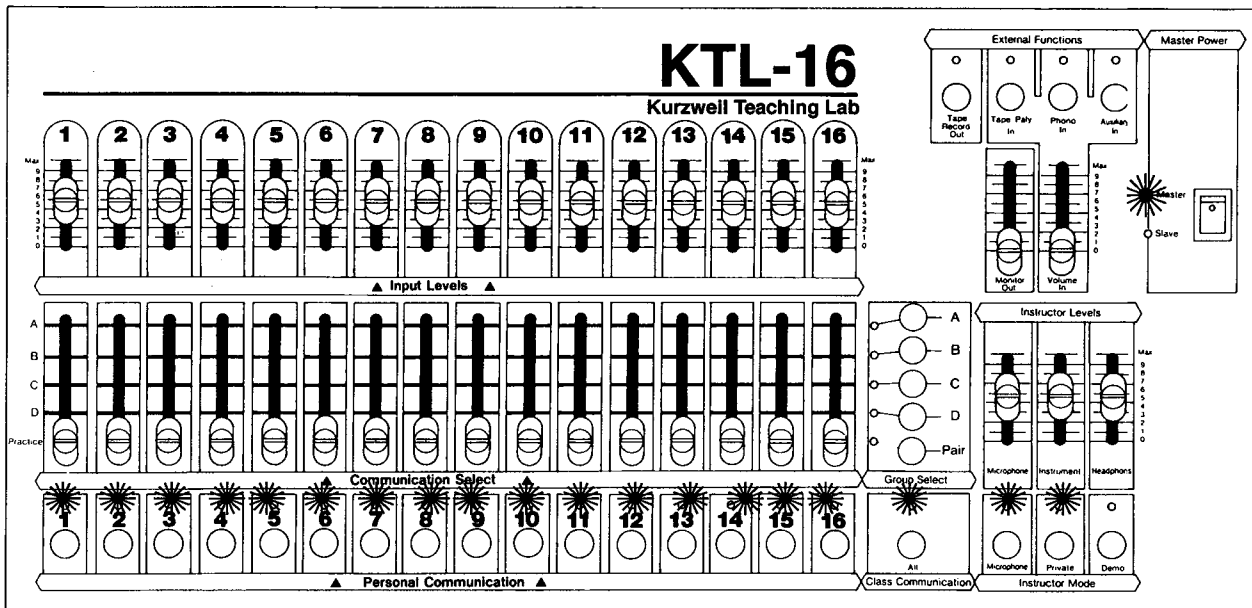(Black)   (Red)

1

Students

1. With the stickers provided, number both ends of the 33' DIN cord to facilitate connection of the boxes to the KTL console. This will help you sort out wiring problems if the wires are disconnected accidentally. Then attach cables, interface box and student headphone/microphone cables to the student instruments as shown on page 5. The interface box may be attached to the keyboard with screws or velcro (both provided).

2. In this initial stage of set-up, all 117v power cords and/or A/C power adaptors should NOT be plugged into a live wall socket or connected to a live ll7v power strip. **The connection to the power source will be the last step of the set-up.**

3. Connect the teacher's headset to the KTL-16 as shown on page 5.

4. If the teacher is using a keyboard at the control station, the keyboard is connected from the Line-Out jack of the teacher's keyboard to the Instrument-In jack located on the right side of the KTL-16 console. Use the included dual ended 1/4" cable for this purpose. (See drawing on page 5.)

5. Insert the included 1/4" male dummy plug into the headphone jack of the teacher's keyboard (this will cut out the onboard speakers and allow the teacher's instrument to be heard only through headphone sets).

6. Check that all student and instructor headphone, microphone and instrument connections are complete. Care should be taken to make sure that all cords and cables are secured in a neat and orderly fashion to avoid tripping over them and ripping them out of their sockets, causing damage.

7. Connect all power cords and A/C power adaptors to your wall plug or ll7v powerstrip.

8. Switch all keyboards to the "ON" position, and switch the KTL-16 to "ON". Proceed to system check-out on page 7.

SYSTEM CHECK-OUT

FUNCTION: To check set-up and adjust student instrument volume and headphone levels, and to set the initial KTL control levels.

SET-UP: Begin by pressing the ALL button above Class Communication (LED will light). Press all the student Communication Buttons (LEDs will light).

KTL CONTROL SETTINGS

1. STUDENT MICROPHONE VOLUME: The volume of the students' voices to the teacher is adjusted by the teacher sliding the headphone level slider control in the Instructor Level section of the KTL console.

The instructor should now ask the students to count to 10 out loud and adjust the instructor level headphone slider to a comfortable level.

2. INSTRUCTOR'S MICROPHONE VOLUME: The volume of the teacher's voice (microphone) to the students' headphones is adjusted with the microphone slide control located in the instructor level section of the KTL console.

The instructor should start at a 1/3 setting and slowly increase this level until the students indicate that they can hear clearly and at a comfortable volume.

3. INSTRUCTOR'S KEYBOARD VOLUME: In the same manner the instructor's keyboard volume (as heard by the students) is set by sliding the instrument slider control located in the Instructor Level section of the KTL console to a comfortable listening level as indicated by the students.

Additionally the teacher's keyboard volume can be affected by the teacher's keyboard volume control. We recommend setting the volume control on the teacher's keyboard to 1/2 (mid-point) and then adjusting the instrument volume slider in the Instructor Level section of the KTL console as desired.

However, if the teacher's keyboard volume is changed, it will affect the volume to students. If a pink noise, hum or other electrical interference sound is noticed, it can usually be eliminated by increasing the instructor's keyboard volume control & decreasing the setting on the instrument level control in the Instructor Level section of the KTL or vice versa.

4. STUDENTS' KEYBOARD VOLUME: Begin by setting all student instrument volume controls to the mid-point (1/2 way) setting. This action governs the volume of the students' instrument in the students' headphones as well as the students' volume as heard by the instructor through the KTL console unit. Each student should adjust his keyboard volume to a comfortable level as heard through his headphones.

In most cases the mid-point setting on the student's instrument will be a comfortable level for the student's practice. If it is not (or if different brands and models of student keyboards are combined into the KTL lab) certain keyboard models may require different volume settings.

The instructor should now set all active input level sliders to 1/2, and set any non used input channels to 0. The instructor can increase or decrease the active channel input level controls until each student is heard at the same volume as through the instructor's headphones. This makes it enjoyable for the instructor to monitor individuals or students in groups without the need for any additional slider adjustments as well as for the class to hear (at a comfortable volume with no additional adjustments needed) any or all other students that the instructor wishes to have demonstrate a musical example for the rest of the class.
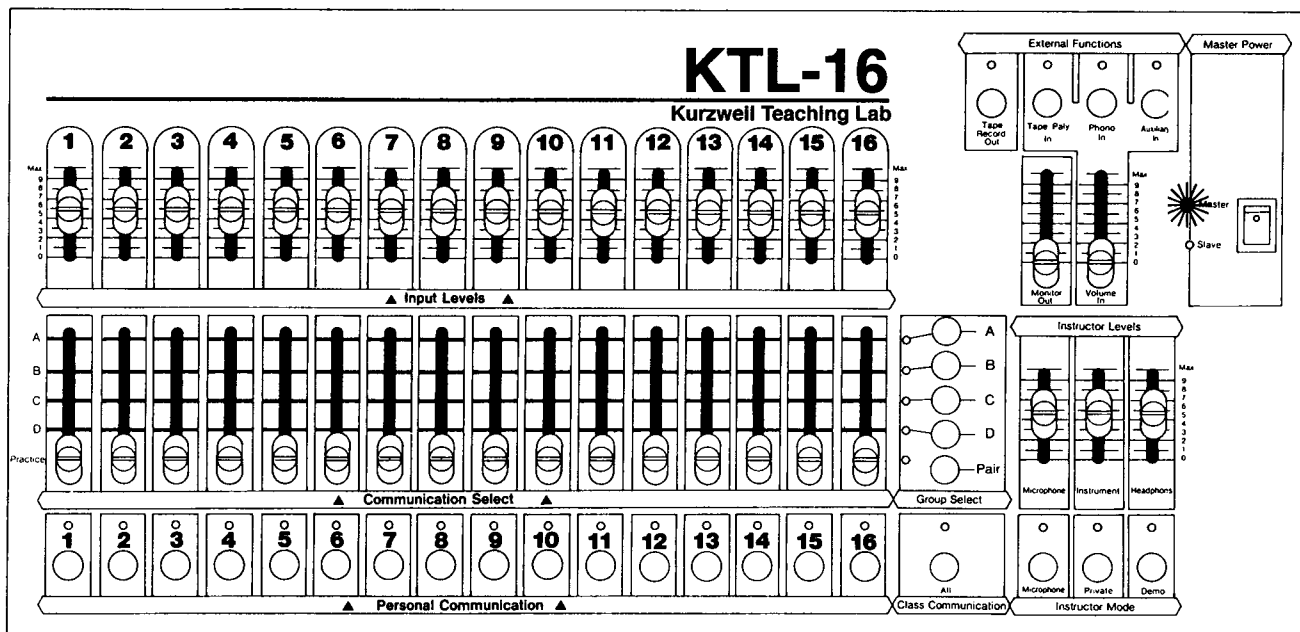
5. The slider controls in the external function section of the KTL console should be set to 0 unless they are in use (see external functions later in this manual).

Set-up and system check out is now complete. Additionally, all keyboard, voice and headphone levels are now set and no further adjustment should be necessary regardless of what mode or application your KTL lab system is used for.

MODE: PRACTICE

PURPOSE: This mode allows students to practice in private. Each student can hear only his own keyboard. This mode is most commonly used for student practice and/or if the teacher wants to monitor student practice.

OPTIONS: The teacher can choose to monitor any or all students. The teacher can choose to initiate a private 2-way conversation with any student or multiple students. In this application the teacher's instrument can be heard only by the student(s) chosen to communicate with. This is controlled by the individual student's personal communication buttons on the lower panel of the KTL.

TO MONITOR STUDENTS:

A: Turn off the microphone button in the Instructor Mode Section of the KTL console (the red LED light should be off). This is done so that students cannot tell if the instructor is listening to a student's instrument. If the microphone LED is on, a student can usually tell that he is being monitored.

B: To monitor a student, the instructor simply presses the personal communication button of the student he wishes to monitor (the LED over that student's personal communication button will light). All other personal communication LEDs will not be lit.

At this point the instructor can hear only the student. If you wish to discuss something or play a musical example, the instructor must press and light the microphone button in the Instructor Mode Section.

Now, full 2-way voice and instrument communication between the instructor and the selected student is possible.

To listen to a different student, the instructor turns off the microphone button LED and the student's personal communication button and selects a new student in the same method as described previously.

If more than 1 student's personal communication LED is lit, all students with lit LEDs can hear the instructor's voice and keyboard as well as hear the other students' keyboards and voices. This is useful when more than one student is having the same problem and the teacher desires to discuss this with all of the students having this problem. All students with un-lit LEDs will not be affected and can practice undisturbed.
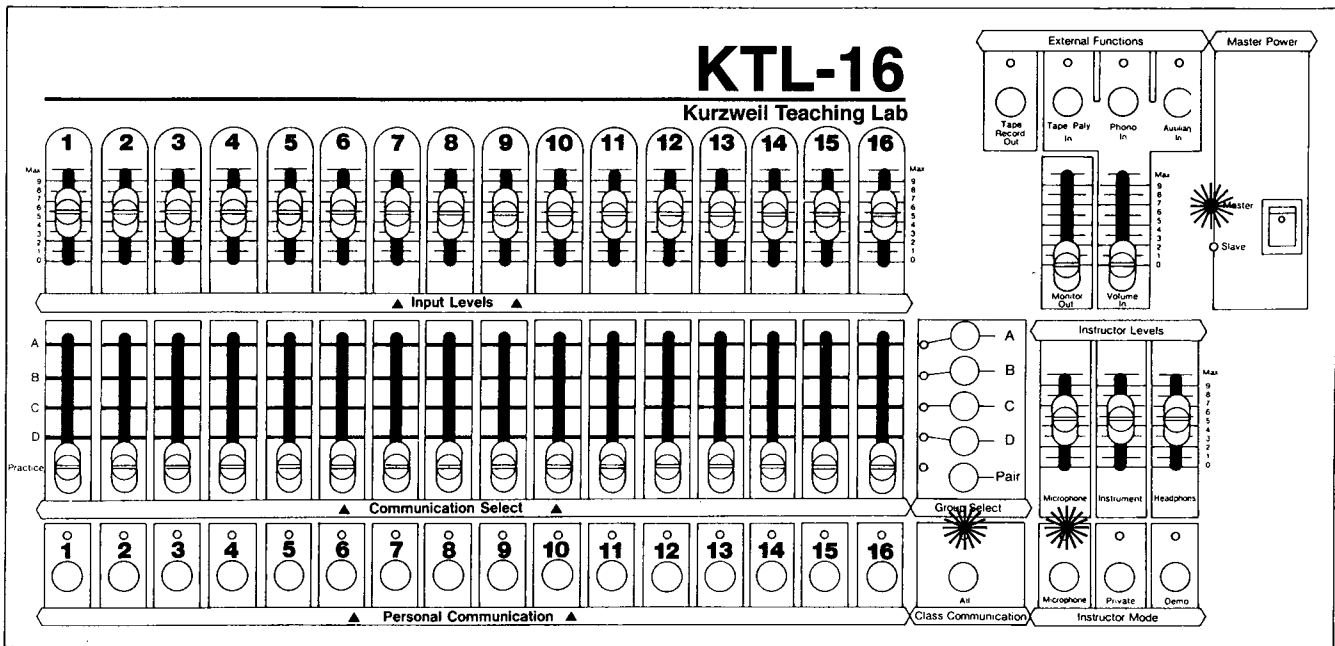
PRIVATE COMMUNICATION: If the instructor wishes to communicate in private with a particular student, press the private button in the Instructor Mode Section (the LED will light). Next press the personal communication button of the student selected. This operation prevents all other students from listening.

FUNCTION: All students can hear the instructor's voice and keyboard. The students can hear all other students' keyboards.

PURPOSE: For class discussion. For group playing with everyone hearing every instrument and the instructor's voice.

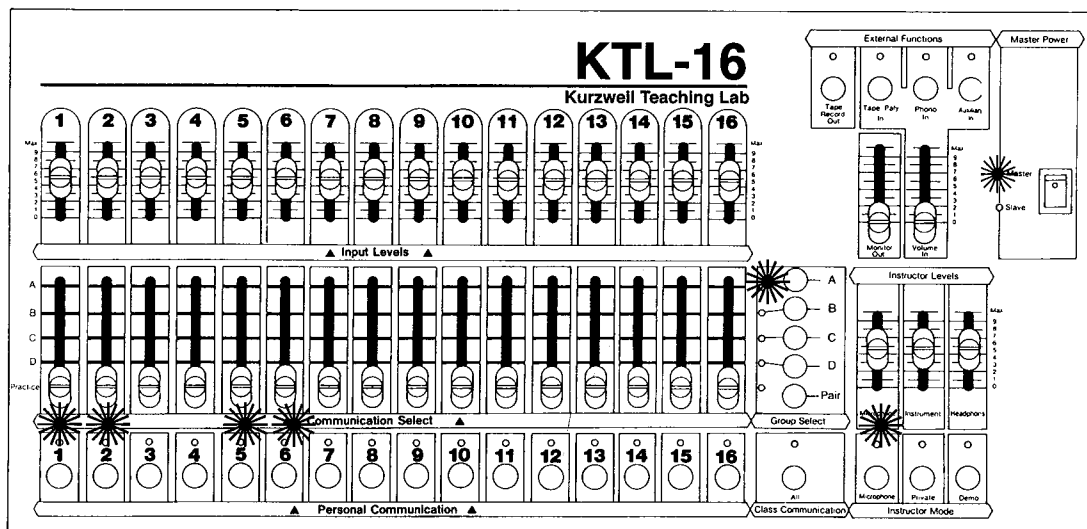**SET-UP:** Press the ALL button above Class Communication (LED will light).

PURPOSE: This mode allows students to practice in groups. Each student can hear his own keyboard and the keyboards and voices of other students assigned to the same group only.

OPTIONS: The teacher can choose to monitor any or all student groups. The teacher can choose to initiate 2-way group conversation with all students in a selected group. In this application the teacher's instrument can be heard by the selected student group.

Whether or not the teacher is monitoring a particular group, all students assigned to that group have full 2-way instrument and voice communication.

SET-UP: The instructor has available 4 groups to assign students to. This is done by sliding the student's communication select slider switch to group A, B, C or D position. Students within each group can now speak to each other as well as hear each other's keyboards.

TO MONITOR STUDENT GROUPS:

A: Turn off microphone button in Instructor Mode Section of the KTL console (the red LED light should be off). This is done so that students cannot tell if the instructor is listening.

B: To monitor the student group A, the instructor simply presses the A button in the group select section of the KTL panel. When this is done, all the student personal communication LEDs of students within that group will light on the bottom panel. If the instructor wishes to address the group, press the microphone button (LED will light).

To monitor a different group, turn off Group A and press another group letter (B, C or D). The students' LEDs on the bottom panel will automatically change to show which students are in the selected group.

If the instructor wished to discuss something privately with one or more students from the group, the instructor would slide those students' communication select slider switches down to the lowest setting (Practice) and the instructor would then press the personal communication buttons for those students. At this point the teacher and the selected students would be removed from the group while allowing the rest of the students in the group to proceed without disruption. At the end of the personal communication the student's communication select slider switch is moved back to the original group position. When the instructor presses the group select button for monitoring, all personal communication LEDs will extinguish or light normally as described earlier in this section.
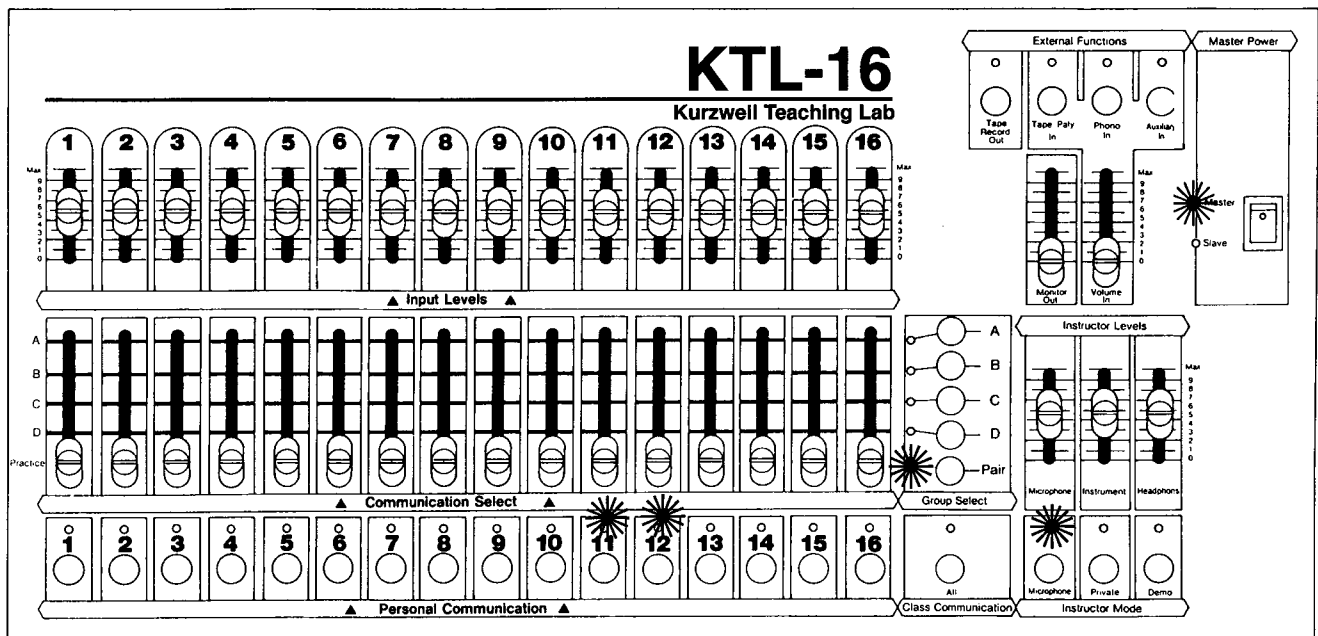
PURPOSE: This mode connects 2 students to each other for practice together or to practice duets. The students can hear each other's keyboards and have full 2-way communication.

The teacher can monitor or join any of the student pairs by pressing the 2 student Personal Communication buttons so that both are lit. To speak to the students, press the Microphone button in the Instructor Mode Section (LED will light).

SET-UP: When the Pair button in the Group Select Section of the KTL console is lit, student stations 1 & 2, 3 & 4, 5 & 6, etc., are paired or joined together, regardless of how the Communication Select controls are set. This feature allows quick changes from the pair to any mode without resetting the Communication Select controls.
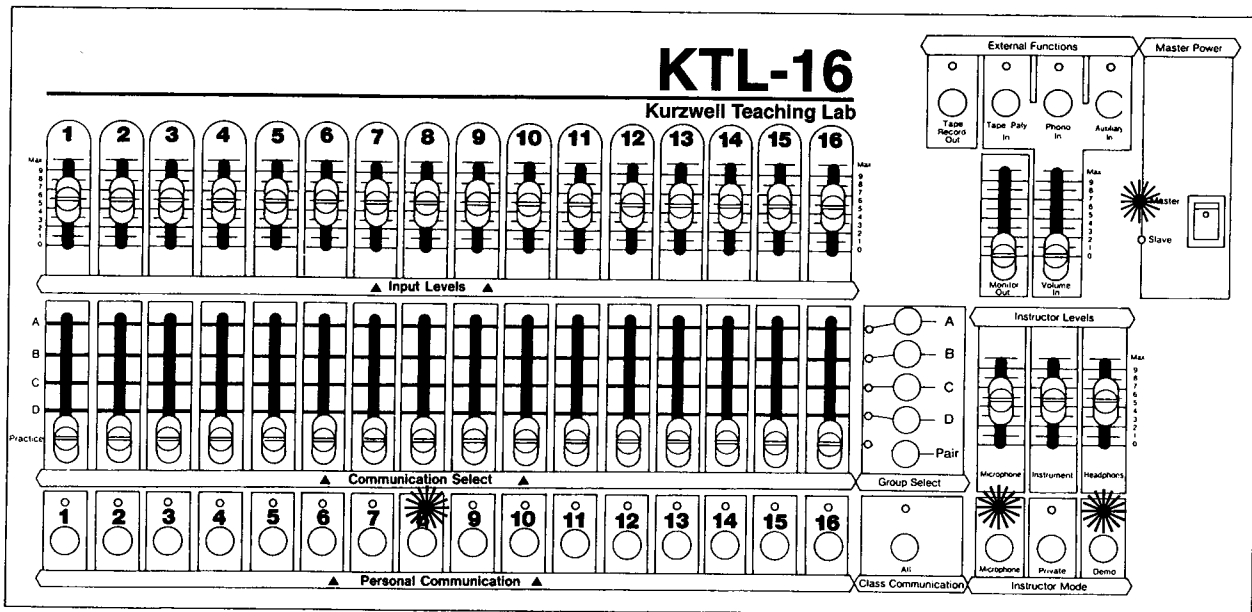
FUNCTION: This feature allows the entire class to hear the teacher's or a selected student's instrument for purposes of demonstration or example.

INSTRUCTOR'S DEMONSTRATION: Press the DEMO button located in the Instructor Mode Section of the KTL. Only the demo LED will be lit. The entire class can hear the teacher's instrument, regardless of how the Communication Select controls are set.

STUDENT DEMONSTRATION: Press the DEMO button located in the Instructor Mode Section of the KTL and the selected student's personal communication button (the LED for this student) will light. In this setting the teacher and the selected student will have full 2-way communication, and the rest of the class can hear the selected student/instructor conversation and keyboard, but the other students' voices cannot be heard by the instructor or the selected student. To speak to the students, press the Microphone button in the Instructor Mode section (LED will light).

Various external devices such as tape decks, rhythm machines, CD players, etc., can be connected to the KTL. These devices can be used for students to listen to musical performances, as well as for the instructor to play pre-recorded lessons for the students. Additionally, the instructor can tape any or all students to make an audio recording of the students' progress.

CONNECTIONS:

All external device connections are made at the rear panel of the KTL. A tape deck is connected from the tape deck's out-jacks to the KTL Tape Play Jacks, and from the tape deck's record-in jacks to the KTL Record-Out Jacks.
The KTL Phono Jacks are used to connect a record player (turntable) to the KTL.
The KTL Aux Jacks are used to connect a CD player, rhythm machine or other external device to the KTL.

OPERATION:

For the class to hear an external device, first push the Tape Play In, Phono In or Aux In button located in the External Function section of the KTL. Second, adjust the volume by sliding the Volume In slider switch (located below these buttons) and by adjusting the volume control on the external device until a comfortable volume level is achieved. The sound generated from an external device can be heard by all the students when you set the KTL in the All mode, or when the group communication buttons are lit. The students will be able to hear their keyboards and play along with the external device if desired.
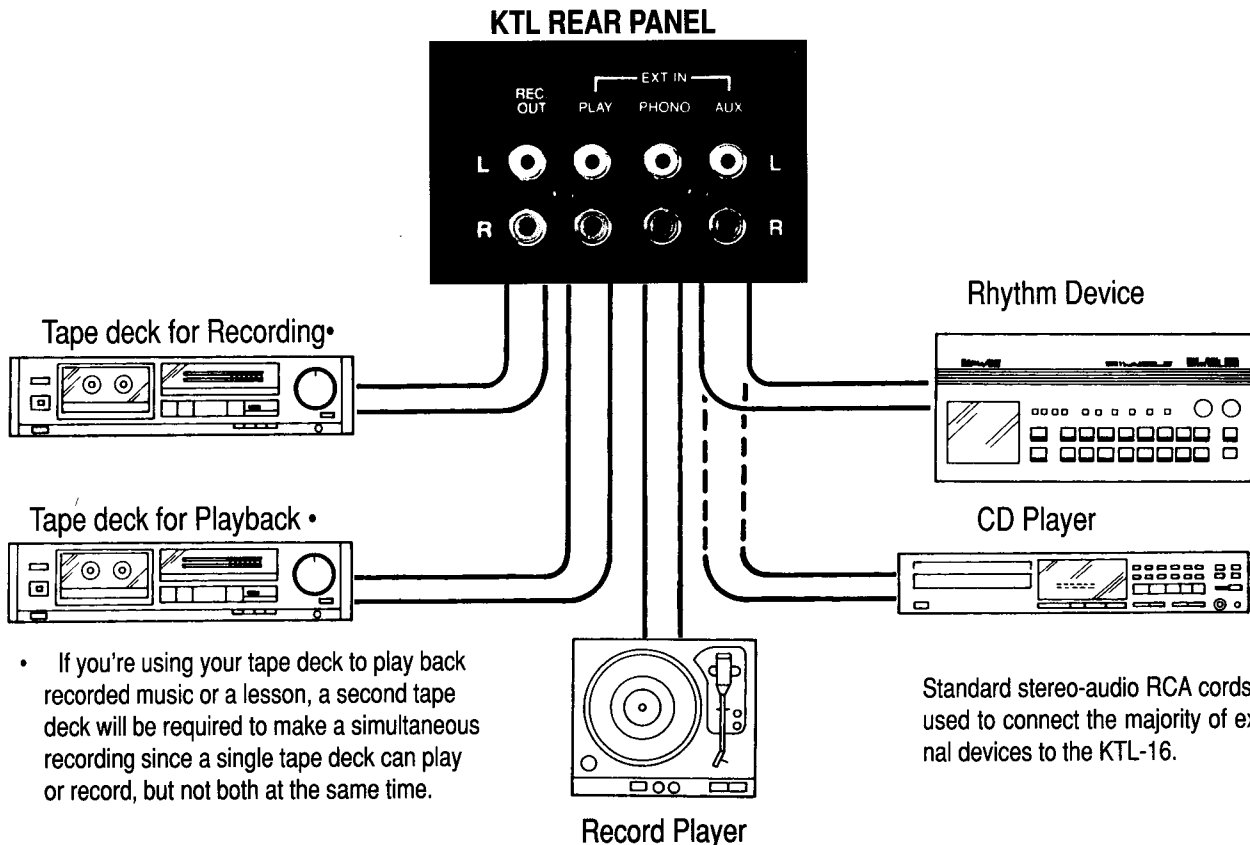
STUDENTS LISTENING ONLY:

For all the students to listen to the external device only, select the external device and also press the Demonstration button. In this mode, personal communication with one or more students is achieved by pressing the selected student(s) Personal Communication button.

RECORDING:

To record either a teacher's performance and/or voice, or a student's performance and/or voice, push the Tape Record-Out button on the External Function section of the KTL. Then set the tape deck to record mode and adjust the record level on the tape deck and the monitor-out level on the KTL until a satisfactory recording level is achieved.

The slider controls in the external function section section of the KTL console should be set to 0 unless they are in use.

KTL REAR PANEL

Tape deck for Recording•

Tape deck for Playback •

Rhythm Device

CD Player

• If you're using your tape deck to play back recorded music or a lesson, a second tape deck will be required to make a simultaneous recording since a single tape deck can play or record, but not both at the same time.

Standard stereo-audio RCA cords are used to connect the majority of external devices to the KTL-16.

Record Player

CONNECTING THE KTL TO A SPEAKER SYSTEM:

To connect an external amplifier with speakers to the KTL for performance purposes, connect a cable from the side mounted Monitor-Out jack on the KTL to the External Amplifier In jack. The Monitor-Out Volume slide control on the KTL and the volume control on the external amplifier should be set to achieve the proper amplifier volume.
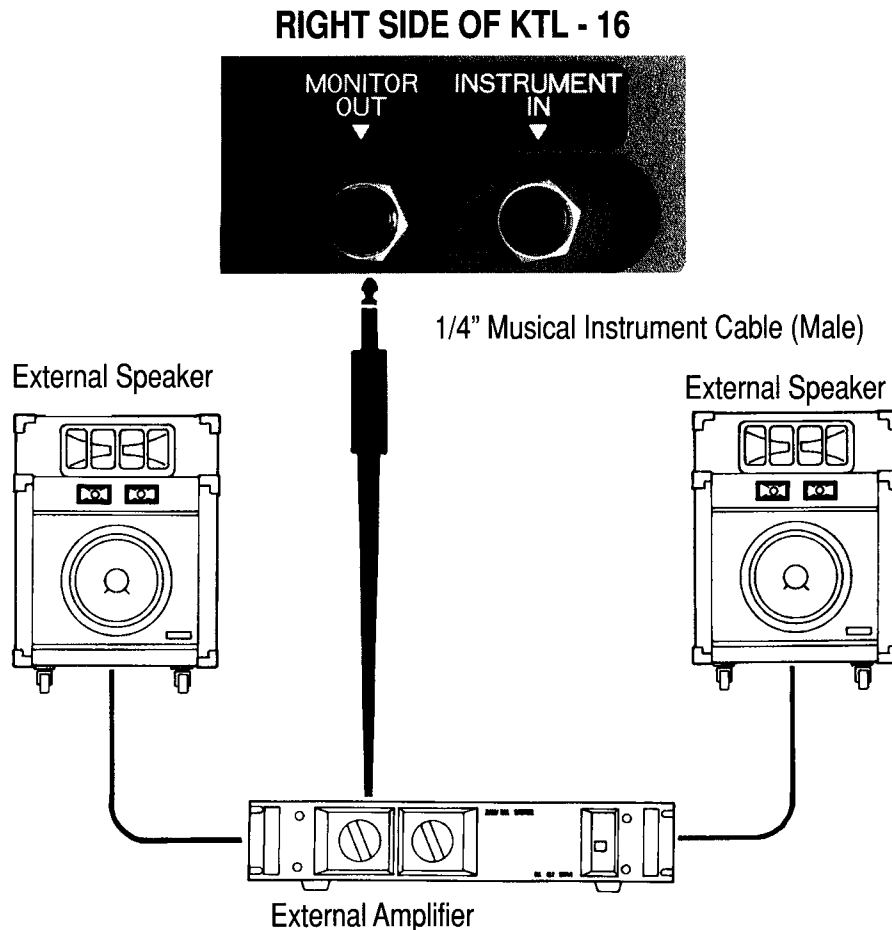
STUDENTS' PERFORMANCE:

Performance by all the students can be heard through the external speaker system by pressing the All button. An individual student's performance can be heard by pressing his personal communication button. The student microphone sound is automatically cut out in this mode.

The instructor's microphone will be active unless it is muted by pressing the Microphone button on the KTL panel so that the LED is not lit.

The KTL sound will be heard through the external amplifier speaker system and the volume can be adjusted with the Monitor Out slider volume control.
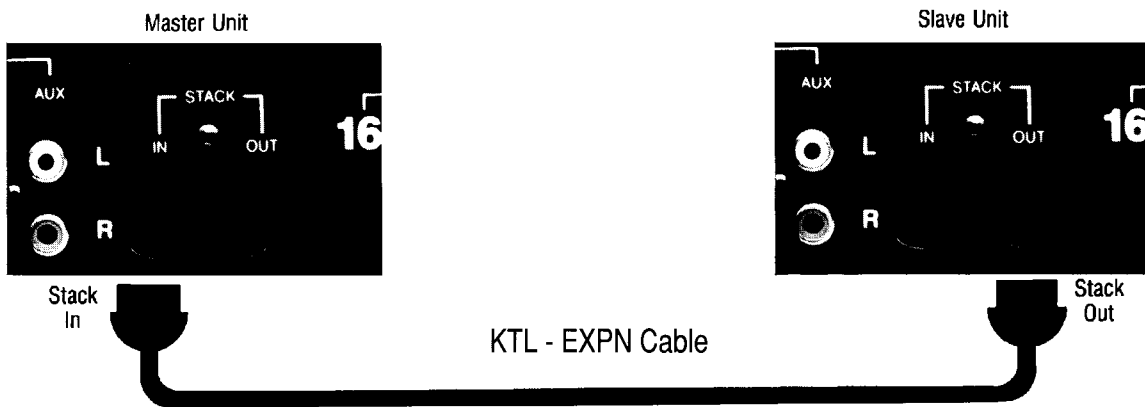
RIGHT SIDE OF KTL - 16

MONITOR OUT   INSTRUMENT IN

1/4" Musical Instrument Cable (Male)

External Speaker

External Speaker

External Amplifier

Up to three additional KTL-16 units can be interconnected allowing instruction of up to 64 students at once.

FOR SET-UP: Use the optional KTL-EXPN cable. Connect the Stack Out on the back of the slave unit to the Stack In on the back of the master unit (the KTL 16 which is connected to the instructor's head set and instrument).

When connection is complete, the master unit LED will light on the master unit and the slave unit LED will light on the slave unit when power is switched on.

When setting up an external device, always use the master unit for these connections.

Master Unit

Slave Unit

Stack In

Stack Out

KTL - EXPN Cable

Using more than one KTL - 16, you sometimes have to use the controls of both the master unit and the slave unit. See the chart below for these functions.

	Operation/ Connection			Operation/ Connection	
	Master Unit	Slave Unit		Master Unit	Slave Unit
Communication Select Switches	O	O	External In Volume	O	
Personal Communication Buttons	O	O	Monitor Out Volume Knob	O	
All Button	O		Microphone Button	O	
Pair Button	O	O	Headphone Volume Knob	O	
Group Select Buttons	O	O	Instrument Volume Knob	O	
Demonstration Button	O	O	Microphone Volume Knob	O	
Private Button	O	O	Monitor Out Socket	O	
Auxiliary Button	O		Play In Sockets	O	
Phono Button	O		Phono In Sockets	O	
Tape-Play In Button	O		Tape-Record In Sockets	O	
Tape Record Out Button	O				

INSTRUCTOR'S NOTES

INSTRUCTOR'S NOTES