ART

Multiverb LT
USER GUIDE

TABLE OF CONTENTS

INSTALLATION

The Multiverb LT may be used in a variety of setups including: mixing consoles with reverb send and return facilities, in the effects loop of an amplifier, and in the tape loop of a home receiver. Self contained in an all steel single high 19" rack mount case, the Multiverb LT is designed for continuous professional use. For touring rack applications, care should be taken to support the units rear if the rack might be subjected to mechanical shock. NOTE: The front panel may bend if no rear support is provided. Mounting location is not critical, but for greater reliability we recommend that you not place the unit on top of power amps, tube equipment, or other sources of heat.

CONNECTIONS

All audio connections to the Multiverb LT are made at the rear of the unit via professional 1/4" phone jacks. The MIDI connection is accomplished via a five pin "DIN" jack on the rear panel.

INPUT

The LEFT and RIGHT inputs are single ended (unbalanced) with an impedance of 47K ohms. True stereo processing is accomplished by using both inputs in a left/right application. If only one input is used, the signal is automatically routed to both channels.

OUTPUT

The LEFT and RIGHT outputs are single ended (unbalanced) with a source impedance of 1.5K ohms, and can provide a stereo or mono output. When a true stereo signal is applied to the inputs, the resulting output is true stereo (dry signal only). If both outputs are used with a mono input signal, a stereo image is produced. Using one output with a mono or stereo source provides a mono signal combining the reverberant information from both outputs. If you do not want both output signals combined (such as only one delay time required), plug a dummy plug into the unused output.

NOTE: The effect output is a proccessed combination of both the left and right input signals.

A variety of input/output combinations may be used with the Multiverb LT. One in one out (mono), one in two out (stereo image), two in one out (summed mono), and two in two out (true stereo) may be achieved. NOTE: When using the Multiverb LT in the true stereo mode, only the dry signal will remain totally left and right orientated at the outputs. The processed signal will be a mix of the inputs with its own individual stereo image imposed by the algorithm used. This imitates the occurrence of natural reverberation in a normal room.

CONTROLS AND OPERATION

INPUT LEVEL INDICATORS

Front panel LED indicators show the input signal level at all times. For maximum dynamic range the -12 LED should be on most of the time with the 0dB LED briefly flashing on transients only.

OPERATING LEVEL

The operating level of the Multiverb LT may be set internally to either accept LINE or INSTRUMENT levels.

NOTE: The Multiverb LT is shipped from the factory set in the LINE position.

The INSTRUMENT position jumper is taped to the inside lid of the Multiverb LT.

When using mixing boards, tape decks, or higher level musical instruments such as keyboards, make sure this jumper is set for LINE levels. LINE level is approximately (-)10dBV. For guitars or other low output devices, the jumper should be in the INSTRUMENT position. This position provides for operating levels of less than (-)10dBV. The proper setting of this jumper will assure you of the best signal to noise ratio in your particular application.

To change the operating level to INSTRUMENT level first remove the top (lid) of the Multiverb LT (remove the two screws from the sides of the unit). Locate and remove the INSTRUMENT position jumper taped to the lid. With the front panel facing you, locate the LINE/INSTRUMENT header (J7). (Look towards the rear right of the circuit board near the input jacks, between U1 and U2). Install the jumper so all the pins are connected by the jumper. All of the pins should be "capped" by the jumper. Replace the top cover.

For LINE level operation remove the jumper and put it in a secure place. (Tape it to the inside lid so it does not get lost!)

NOTE: It is not recommended to plug a microphone directly into the input of the Multiverb LT. A microphone preamp should be used between the microphone and Multiverb LT to provide optimum input signal level.

CONTROL BUTTONS

The UP and DOWN buttons, shown as purple triangles facing up and down on the front panel are used to select PRESETs. Holding either button in will step you through all 192 PRESETs at a moderate rate. You can step at a much quicker rate by using the HYPERSPEED mode. To access HYPERSPEED mode, first press and hold in the button indicating the direction you want to go, simultaneously press the other button. As long as both are pressed the presets will increment by tens rather than one at a time.

Pressing the BYPASS button kills the effects signal in the mix and displays [- -] in the preset window. Pressing BYPASS again returns the unit to the previous PRESET.

NOTE: If the mix control is fully right (effect only), there will be no audio signal at the output.

Another way to bypass the unit is to program the REMOTE jack on the rear panel for BYPASS mode and use any footswitch and guitar cable.

MIDI

The Multiverb LT is shipped from the factory in OMNI mode, allowing it to receive MIDI PROGRAM numbers on any MIDI channel. To select a specific MIDI channel, press the MIDI CHANNEL ACCESS button and use the up/down buttons to select the desired channel. The right decimal point will be on whenever the display is showing MIDI CHANNEL ACCESS. The channel number is held in memory when the unit is turned off.

MIX CONTROL

The MIX slider controls the ratio of dry and proccessed signal. When the control is fully towards the left (0%), only the dry signal is heard at the output(s). As the slider is moved to the right, processed signal is mixed in. At the center detent position a fifty/fifty mix is achieved. When the slider is full right (100%), only processed signal is heard at the output(s).

REMOTE JACK

The REMOTE jack may be programmed to either bypass the Multiverb LT or access the Increment Preset Mode. A footswitch and any two conductor cable is intended to be used with this jack. A momentary (normally open) switch should be used. If the jack is programmed for the bypass feature, each time the footswitch is activated, (hot connected to ground) the BYPASS function is accessed.

This jack may also be programmed to increment up through a user selected set of presets. The maximum number of presets you may select for this function is one hundred twenty-eight.

Example four and five show how to program the REMOTE jack for BYPASS or INCREMENT PRESET.

PRESETS

Up to three different effects may be found in each of the Multi-verb LT's presets. The presets reflect various combinations of effects as well as singular effects.

Presets are arranged in specific application groups to make it a little easier for you to find the right sound. These include reverb, chorusing, flanging and delay groups.

NOTE: when you pass [9.9] a letter and a number appear. [A.0] is equal to 100, [C.0] is equal to 110, [E.0] is equal to 120. [E.7] is the last "number" and is equal to 127. Press the BYPASS button and set the display for the desired PRESET number.

Presets devoted to natural reverberation, cover a wide range from extremely short .2 second to 25 second decays. Predelay, high frequency damping, position, reverb density and reverb level are set for the most optimum sound in each preset.

Within each section of reverb are a variety of related effects, not just bigger or smaller versions of the same. Some of these effects would normally require multiple pieces of equipment to create.

A variety of algorithms each with its own unique characteristic are used to simulate a wide range of environments. Within the other presets are Gated Reverb effects, Reverse Reverb effects, Gated effects with regenerated delays, Flanging effects, Chorus effects, straight Echo effects, Delay based effects such as chorusing and flanging are combined with reverb and delay to create special effects reverb sounds.

A list of presets can be found in the back of this manual.

MIDI

PRESETs may be accessed at the front panel or remotely via MIDI. When the Multiverb LT receives a MIDI PROGRAM number, it recalls a PRESET. If the Multiverb LT was in BYPASS, it will become active. The PRESET recalled is determined by a table that equates MIDI PROGRAM numbers PRESET numbers. This table is called the MIDI PROGRAM TABLE (MPT). Multiverb LT's are shipped from the factory so that the MIDI PROGRAM numbers equal the PRESET numbers (MIDI program 0 = Preset 00). You can reassign any Preset number to any MIDI Program number.

The ability to reassign Preset numbers makes it much more practical when using MIDI in both simple and complex setups. We will refer to the MIDI PROGRAM number as the MIDI number. Any changes made to the MPT will be retained during power down by battery backup.

MPT EDIT MODE

The MPT may be edited from the front panel either alone or with a keyboard or MIDI controller that sends MIDI program change numbers. To enter MPT edit mode, momentarily press the MIDI CHANNEL ACCESS and BYPASS buttons simultaneously (Pressing MIDI CHANNEL ACCESS first then BYPASS will have no effect on the current BYPASS state, pressing BYPASS first toggles the current BYPASS state). Press MIDI CHANNEL ACCESS and BYPASS again to stop editing the MPT and return to normal front panel operation.

When MPT edit mode is entered, the LEFT decimal point will be blinking indicating that the display is showing a MIDI number. If BYPASS is then pressed, the RIGHT decimal point will blink and the display will be showing a PRESET. If MIDI CHANNEL ACCESS is pressed the left decimal point will blink again indicating the return to the MIDI number in the display. Use the UP/DOWN buttons to change the numbers in the display. When a MIDI number message is received, the corresponding PRESET number in the table will be recalled.

NOTE: Multiple MIDI numbers may have the same PRESET number assigned to them.

When the MIDI number is changed with the UP/DOWN buttons, the PRESET number will change to reflect the corresponding PRESET. The following examples illustrate editing of the MPT from the MULTIVERB LT alone (Example 1) and with a keyboard or external controller (Example 2).

EXAMPLE 1

Editing the MPT with the Multiverb LT front panel controls.

In this example, we will edit the MPT so that when MIDI numbers 0 and 1 are received, presets 64 and A1 will be recalled. It is assumed that the Multiverb LT's MPT has not been edited.

Press and hold MIDI CHANNEL ACCESS, then BYPASS buttons, release both.

The display will show [0.0] with the decimal point blinking indicating that you are in MPT edit mode, this left decimal point means that the MIDI PROGRAM number is in the display.

*-Press and release BYPASS. The display shows [00.] indicating that MIDI number 0 recalls PRESET 0.
*-Press and hold UP until [64.] appears in the display. Now MIDI number 0 will recall PRESET 64.
*-Press and release MIDI CHANNEL ACCESS. The display shows [0.0]
*-Press and release UP. The display shows [0.1]
*-Press and release BYPASS. The display shows [01.] indicating that MIDI number 1 recalls PRESET 2.
*-Press and hold UP until [A1.] appears in the display. Now MIDI number 1 will recall PRESET A1.
*-Press MIDI CHANNEL ACCESS and BYPASS to exit MPT edit mode. The display shows [A1] indicating the last PRESET referenced is the current PRESET selected.

During the above example, anytime a MIDI number is changed or PRESET number is changed, the Multiverb LT recalls the corresponding PRESET. This allows you to listen to the PRESETs while the MPT is edited.

EXAMPLE 2

Editing the MPT with a keyboard or external controller. When used with a keyboard or other device that will send MIDI PROGRAM CHANGE messages, MPT editing is simplified. We will edit the MPT so when MIDI numbers 2 and 3, are received, presets 55 and Y4 will be recalled. It is assumed that the Multiverb LT has not had its MPT edited. The keyboard MIDI OUT must be connected to the Multiverb LT MIDI IN jack. The MIDI CHANNEL ACCESS on the Multiverb LT must be set to the same channel the keyboard will be sending messages on, or the Multiverb LT MIDI CHANNEL ACCESS must be set to [AL.] for OMNI mode.

Press and hold MIDI CHANNEL ACCESS, then press BYPASS. The display will show [0.0] with the decimal point blinking indicating that you are in MPT edit mode, this left decimal point means that the MIDI PROGRAM number being displayed.

Select a patch on the keyboard so that a [0.2] appears in the display. This may not be sound 2 or patch 2 on the keyboard. Manufactures number their presets in a variety of ways. The patch that causes [0.2] to appear in the display is usually the first or second patch of the lowest numbered bank if the keyboard or controller has banks of patches.

*-Press and release BYPASS. The display shows [02.] to indicating that MIDI number 2 recalls PRESET 2.
*-Press and hold UP until [55.] appears in the display. Now MIDI number 2 will recall PRESET 55. To program the rest of the entries, you do not need to switch back to the MIDI number. You can let the unit remain showing the PRESET number. (When you select your keyboard preset you automatically recall the existing Multiverb LT preset.)
*-Select the next patch on the keyboard. The display will show [03.] to indicate that it recalls PRESET 4. *-Press and hold the UP button until [Y4.] appears in the display. Now the last patch number activated will recall PRESET Y4.

Using this method of editing, you select the desired patch on the keyboard or controller, and then select the desired PRESET on the Multiverb LT for that sound. You can do this while you are listening to the Multiverb LT. Exit MPT mode as in the previous example.

In the previous examples four of the MPT entries were edited, however, you may edit the entire MPT if desired. If you do not have access to a MIDI controller and you wish to change between PRESETs easily, you may want to edit the MPT for incrementing through a sequence of PRESETs. Example three illustrates how this is done.

EXAMPLE 3

Setting up a preset sequence including the BYPASS (Y1) preset.

If you need to change between presets quickly without scanning, this procedure will be to your advantage. As in the other examples, editing the MPT is the key. In this example we will edit the MPT to sequence through ten PRESETS. These PRESETS are in the order: 26,J4,F2,69,E2,U2,69,Y1,82,26. Notice that we repeated some presets and included the BYPASS preset (Y1). Remember, you can assign any preset to a MIDI number including using a preset at multiple locations. Using the BYPASS preset enables you to select no effect without having to bypass the unit from the front panel and then continuing on with an effect preset next in the chain.

NOTE: If your mix control is fully to the right (all wet), no signal will pass through the Multiverb LT.

*-Enter the MPT edit mode.
*-With the left decimal point blinking, use the up/down buttons to get a display of [1.0].
*-Press the BYPASS button, the decimal point now blinks on the right side.
*-Use the up button to select PRESET 26. The display will be [26.].
*-Press the MIDI CHANNEL ACCESS button and set the display for [1.1].
*-Press the BYPASS button and set the display for [J4.].
*-Continue this way until all the PRESETs are entered the last being 26.
*-DO NOT LEAVE THE MPT EDIT MODE
*-Press the MIDI CHANNEL ACCESS button and go to [1.0]. As you increment up, you will recall the sequence of presets just entered.

This way of arranging presets is helpful when you have presets you need to get to quickly. Instead of scanning up and down through multitudes of presets, you need only scan through the ones you use the most. Make a table of the MIDI number and assigned Preset for quick reference since you are can only view the MIDI program number.

NOTE: Start your sequence at MIDI program number ten or twenty. This will leave you room for programming presets for the Increment Preset feature.

INCREMENT PRESET

Increment Preset Mode (IP) allows you to program the REMOTE jack on the rear panel so that you may use a footswitch to increment through a desired set of presets. IP also allows you to program the jack to operate as a normal bypass jack.

Example four describes how to set IP to sequence through five presets. A maximum of one hundred twenty-eight presets may be sequenced. You must always start at MIDI Program number one when using IP for sequencing.

Example five shows how to program the REMOTE jack for normal bypass operation.

IP is accessed through the MIDI Program Table. To enter the MPT edit mode, press and hold the MIDI CHANNEL ACCESS, then BYPASS buttons, release both. The display will show some number with the left decimal point blinking. Increment up (use the RAPID ACCESS mode!) until the display reads [I.P]. This indicates Increment Preset. You are now ready to program. Press the BYPASS button, the decimal point is now blinking on the right. Set this number for the last entry number desired. In this example we'll set the number to [04.] for the sequence of FIVE presets desired. If you set the number to [00.], you will have programmed the jack for use as a bypass jack. Now press the MIDI CHANNEL ACCESS button and increment down to the desired MIDI Program Number.

Note, when you pass [9.9] a letter and a number appear. [A.0] is equal to 100, [C.0] is equal to 110, [E.0] is equal to 120. [E.7] is the last "number" and is equal to 127. Press the BYPASS button and set the display for the desired PRESET number.

Program the sequence to be 64, A1, 55, Y4 and H1. If you have gone through Example 1, the first four presets have been set all ready. All you need to do is add the fifth preset. After programming is completed press and hold the MIDI CHANNEL ACCESS button then the BYPASS button to exit.

Now, each time the footswitch is activated, you will change presets in the selected sequence. The sequence of presets will wrap-around to the beginning at the end of the sequence.

EXAMPLE 4

Setting up five presets for Increment Preset Mode. Use preset numbers 64, A1, 55, 44 and H1.

*-Enter the MPT edit mode
*-With the left decimal point blinking, increment up (use RAPID ACCESS mode) until the display reads [I.P]. *-Press the BYPASS button
*-Adjust the display to read [04.].
*-Press the MIDI CHANNEL ACCESS button
*-Increment down (use HYPERSPEED) until the display reads [0.0].
*-Press the BYPASS button and set the display to read [64.].
*-Press the MIDI CHANNEL ACCESS button and set the display for [0.1].
*-Press the BYPASS button and set the display to read [A1.].
*-Continue this until you reach and program [0.4] to be [H1.].
*-Exit MPT edit mode
You have just programed the Multiverb LT to sequence through five PRESETS when the REMOTE jack is activated.

EXAMPLE 5

Programming the REMOTE jack for the BYPASS function.

*-Enter MPT edit mode.
*-Increment up until the display reads [I.P].
*-Press the BYPASS button.
*-Set the display to read [00.].
*-Exit MPT edit mode.
The FOOTSWITCH jack can now be used as an external BYPASS jack.

MISCELLANEOUS

MIDI technical information is located at the end of the manual. If you have questions or require additional information, contact Customer Service at (716)436-2720.

When power is terminated to the Multiverb LT, the edited MPT is retained via battery backed up memory. This as well as the last PRESET and the MIDI CHANNEL will be active when the unit is next powered up. Memory retention is expected to last four years. If you encounter memory loss, contact our service department.

PRESET Y1 is a non-sound preset. It is used as a MIDI bypass preset. Use Y1 when you don't want any effect to be in the signal chain for a particular keyboard preset. The MIDI PROGRAM NUMBER assigned to Y1 is (127) or [E.7] as it appears in the display.

On power up, the Multiverb LT indicates its software revision level in the display. The Multiverb LT's software is contained in a socketed EPROM and is field replaceable. This software controls the Multiverb LT's functions as well as its sounds.

Be sure to fill out the USER REGISTRATION CARD at the back of the manual and send it in to our Customer Service Department. This will ensure you of being notified of information regarding the MULTIVERB LT. Please don't forget to write in your serial number.

FACTORY RESET

It is very unlikely you would want to perform a factory reset to the Multiverb LT. Reseting the MPT to initial values is the only reason a factory reset would be performed. Normally you should just re-edit the MPT for new values.

In the unlikely event you should wish to do perform a factory reset, follow these directions:

Remove the battery inside the unit and let the unit sit overnight. In the morning, put the battery back in.

NOTE: Make sure the plus (+) is facing up.

APPLICATIONS

The presets found in the Multiverb LT cover a wide range of diversified reverb sounds and special effects. The following notes provide a starting point for you to use these presets to add that special if not essential sound to your own individual sound.

Though it is not mandatory it is strongly suggested you utilize the stereo capabilities of the Multiverb LT. Many of the reverb patches and delay effects rely heavily on stereo image or right left characteristics to achieve the brilliance and realism found in today's and yesterday's sound!

The most important application of all is to EXPERIMENT! Remember, these are only suggestions as to what may be used for some desirable effects.Your own ideas and expressions may be realized with just a few pushes of a button. Go ahead, have some FUN!

MISCELLANEOUS NOTES

The reverb presets come in a variety of ways, shapes and sounds. Emphasis is placed on different room types, image, position of the perceived sound and the brightness or dullness of the sound. The presets reflect a range of reverb effects with different combinations of these characteristics. Don't be afraid to cycle through a number of presets with the mix control fully wet so you can hear the actual image position or character of the preset. Above all don't be afraid to experiment. Bold expressive sounds are at your fingertips!

Multiverb LT MIDI System Exclusive Message Information.

Applies to Multiverb LT v1.00, February 1990.

One system exclusive message has been defined for the ART Multiverb LT. The message allows the loading of the MIDI preset table from an external device.

The message (in hex) looks like this:

      F0h 1Ah 0xh 0Dh 00h <256 bytes of preset numbers> F7h

      F0h = System exclusive data byte.
      1Ah = ART manufacturer's ID number.
      0xh = Channel number, 00—0Fh.
      0Dh = Multiverb LT product ID number.
      00h = Message ID.
      F7h = End of exclusive status byte.

When this message is received by the Multiverb LT, the first 5 bytes must be correct or the Multiverb LT will ignore any additional Midi messages until the next valid status is received. The Channel number byte must be 00h to 0Fh. If the MIDI CHAN that the Multiverb LT is currently set to is OMNI [AL], then any number from 00h to 0Fh will be accepted. Otherwise the channel number byte + 1 must match the MIDI CHAN set on the front panel. If the Multiverb LT has its MIDI CHAN set to [OF], all messages are ignored.

The message ID field is 0, there is only one message defined for the Multiverb LT.

The preset numbers are formatted as follows: There are 128 entries in the MPT. Each entry of the MPT may have a value of 0 to 199 and therefore requires 2 data bytes. The low byte (0..127, 0..7Fh) is first, followed by the high order data byte which may be 0 or 1.

The value saved in the MPT is:
MPTentry = lowbyte + 128 * highbyte

If the message terminates before all 128 entries are received, that portion which has been received will take effect and the remainder of the MPT will be unchanged. Any status byte (including an F7h, EOX byte) will terminate the system exclusive message.

APPENDIX D

MIDI Implementation Chart

ART MULTIVERB LT model 420
20 BIT MULTIPLE EFFECTS PROCESSOR.

Date: March 1990
Version: 1.01

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	X X	1-16 1-16	note 1
Mode	Default Messages Altered	X X X	Mode 1 X X	note 1
Note Number	True Voice	X X	X X	
Velocity	Note ON Note OFF	X X	X X	
After Touch	Key's Ch's	X X	X X	
Pitch Bender		X	X	
Control Change		X	X	
Prog Change	True #	X X	0-127	assignable to any preset
System Exclusive		X	O	See: manual
System Common	:Song Pos :Song Sel :tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	X X	
Aux Mes- sages	:Local ON/OFF :All Notes Off :Active Sense :Reset	X X X X	X X X X	

Notes
1: Factory default is channel 1, OMNI ON. Current setting is maintained in non-volatile RAM and does not change when the MULTIVERB LT is powered on.

Mode 1: OMNI ON, POLY   Mode 2: OMNI ON, MONO   O: Yes
Mode 3: OMNI OFF, POLY   Mode 3: OMNI OFF, MONO   X: No

00 **SHORT PLATE REV** CUSTOM REVERB	35 **MEDIUM HALL**	73 **REVERB + SYMPHONIC** CHORUS+DELAY+HALL
01 **DARK ROOM REV** CUSTOM REVERB	36 **MED. CLOSE PLATE**	74 **REVERB + SYMPHONIC** CHORUS+DELAY+HALL
02 **BRIGHT PLATE** CUSTOM REVERB	37 **MED. DEEP PLATE**	75 **WIDE SHORT CHORUS** CHORUS
03 **NOTRE DAME** CUSTOM REVERB	38 **MED. DARK ROOM**	76 **WIDE SHORT CHORUS** WIDE CHORUS+DELAY
04 **INFINITE SPACE** CUSTOM REVERB	39 **LONG ROOM**	77 **WIDE MEDIUM CHORUS** WIDE CHORUS+REVERB
05 **STUDIO FAT GATE** 250ms SLOPE	40 **MED. DEEP HALL**	78 **SWEET WIDE CHORUS** CHORUS+DELAY+REVERB
06 **SMOOTH GATE** 400ms SLOPE GATE	41 **MED. CLOSE HALL**	79 **LONG WIDE CHORUS** CHORUS+DELAY+REVERB
07 **FLAT GATE** 300ms FLAT REVERB	42 **DEEPER PLATE**	80 **BIG CHORUS** CHORUS+DELAY
08 **REVERSE GATE** 300ms REVERSE REV	43 **BIG DARK VOCAL**	81 **CHORUS IN THE HALL** CHORUS+REVERB+DELAY
09 **ECHOES TONIGHT** 600/300ms STEREO DELAY	44 **CHURCH HALL #1**	82 **SWEET SYMPHONIC CHORUS** CHORUS+REVERB+DELAY
10 **WONDER CHORUS** CHORUS+DELAY+REVERB	45 **BIG BRIGHT ROOM**	83 **DEEP SYMPHONIC CHORUS** CHORUS+REVERB+DELAY
11 **WET SWEET CHORUS** CHORUS+DELAY+REVERB	46 **CRYSTAL CATHEDRAL**	84 **WIDE SYMPHONIC CHORUS** CHORUS+REVERB+DELAY
12 **WHITE CHORUS** CHORUS+DELAY+REVERB	47 **CARNEGIE HALL**	85 **SHORT FLANGE FLANGE**
13 **DREAM FLANGE** FLANGE+DELAY+REVERB	48 **DEEP MED. PLATE**	86 **SHORT FLANGE** FLANGE+DELAY
14 **FUTURE FLANGE** FLANGE+DELAY+REVERB	49 **MEDIUM CATHEDRAL**	87 **REVERB+FLANGE** FLANGE+REVERB
15 **STUDIO ROOM**	50 **CHURCH HALL #2**	88 **REVERB + FLANGE** FLANGE+DELAY+REVERB
16 **CLOSE ROOM**	51 **BRIGHT LONG HALL**	89 **WHITE FLANGE** FLANGE+DELAY+REVERB
17 **STUDIO PLATE**	52 **DARK LONG HALL**	90 **MEDIUM FLANGE** FLANGE
18 **BRIGHT ROOM**	53 **STONE CATHEDRAL**	91 **ASYNC. FLANGE** FLANGE+DELAY
19 **DARK PLATE**	54 **WOOD CEILING HALL**	92 **FLANGE IN THE ROOM** FLANGE+REVERB
20 **OPEN ROOM**	55 **FRONT OF THE HALL**	93 **OPEN SKY FLANGE** FLANGE+REVERB+DELAY
21 **SHORT VOCAL**	56 **BRIGHT DEEP HALL**	94 **FLANGE IN THE NIGHT** FLANGE+REVERB+DELAY
22 **CLOSE PLATE**	57 **BRIGHT FRONT PLATE**	95 **SLOW FLANGE** FLANGE
23 **DRUM CHAMBER**	58 **PENN CENTRAL**	96 **ASYNC. SLOW FLANGE** FLANGE
24 **OPEN PLATE**	59 **ST. PAUL'S CATHEDRAL**	97 **SOFTER FLANGE** FLANGE+DELAY
25 **DARK PLATE**	60 **INF. DARK PLATE**	98 **KINDER FLANGE** FLANGE+DELAY+REVERB
26 **MEDIUM VOCAL**	61 **INFINITE DARKNESS**	99 **GENTLER FLANGE** FLANGE+DELAY+REVERB
27 **MEDIUM PLATE**	62 **WESTMINSTER ABBEY**	
28 **SMALL CHAMBER**	63 **INFINITE SPACE**	
29 **MEDIUM CHAMBER**	64 **FRONT ROW INFINITE**	
30 **SHORT DARK HALL**	65 **CLOSE CHORUS** CHORUS	
31 **CLOSE DARK HALL**	66 **MEDIUM CHORUS** CHORUS+REVERB	
32 **BACK OF THE HALL**	67 **MEDIUM CHORUS** CHORUS+DELAY+REVERB	
33 **BRIGHT PLATE**	68 **REVERB + CHORUS** MEDIUM CHORUS+DELAY	
34 **DEEP PLATE**	69 **REVERB + CHORUS** MEDIUM CHORUS+DELAY	
	70 **TREMOLO CHORUS** CHORUS	
	71 **SHORT FAST CHORUS** CHORUS+DELAY	
	72 **SYMPHONIC CHORUS** CHORUS+DLY+REV	

Multiverb LT Preset List

A0 SHORT SLOPE GATE	F1 LONG FLAT GATE + DLY	L1 ECHO 4 400ms, 200ms
A1 SHORT DARK GATE	F2 SHORT REVERSE + DLY	L2 ECHO 5 500ms, 250ms
A2 MEDIUM SLOPE GATE	F3 MED. REVERSE + DLY	L3 ECHO 6 600ms, 300ms
A3 MEDIUM DARK GATE	F4 LONG REVERSE + DLY	L4 IMAGE #1, SMALL
A4 LONG SLOPE GATE	F5 INVERTED STEREO FLANGE	L5 IMAGE #2, LARGE
A5 LONG DARK GATE	F6 FAST WIDE FLANGE 1	L6 STEREO IMAGE #1
A6 LONGER SLOPE GATE	F7 FAST WIDE FLANGE 2	L7 STEREO IMAGE #2
A7 SHORT FLAT GATE	F8 FAST STEREO FLANGE	L8 STEREO IMAGE #3
A8 SHORT DARK GATE	F9 MED. STEREO FLANGE	L9 STEREO IMAGE #4
A9 MEDIUM FLAT GATE	H0 NORMAL STEREO FLANGE	P0 STEREO IMAGE #5
C0 MEDIUM DARK GATE	H1 FAST ASYNC. FLANGE 1	P1 STEREO IMAGE #6
C1 LONG FLAT GATE	H2 FAST ASYNC. FLANGE 2	P2 SLAP 1 20ms,30ms
C2 LONG DARK GATE	H3 MED. ASYNC. FLANGE	P3 SLAP 2 40ms, 30ms
C3 LONGER FLAT GATE	H4 NORMAL ASYNC. FLANGE	P4 SLAP 3 40ms, 50ms
C4 SHORT REVERSE GATE	H5 SLOW ASYNC. FLANGE 1	P5 SLAP 4 70ms, 60ms
C5 SHORT DARK REVERSE	H6 SLOW ASYNC. FLANGE 2	P6 SLAP 5 80ms, 100ms
C6 MED. REVERSE GATE	H7 WIDE FAST CHORUS 1	P7 SLAP 6 120ms, 100ms
C7 MED. DARK REVERSE	H8 WIDE OPEN CHORUS	P8 SLAP 7 120ms, 140ms
C8 LONG REVERSE GATE	H9 WIDE MEDIUM CHORUS	P9 SLAP 8 160ms, 140ms
C9 LONG DARK REVERSE	J0 WIDE FAST CHORUS 2	U0 SLAP 9 160ms, 180ms
E0 REVERSE GATE + SLAP	J1 STRETCH CHORUS 1	U1 SLAP 10 220ms, 200ms
E1 DARK REVERSE + SLAP	J2 STRETCH CHORUS 2	U2 REVERB + DELAY 1
E2 MED. REVERSE + SLAP	J3 MULTI-CHORUS 1	U3 REVERB + DELAY 2
E3 DARK REVERSE + SLAP	J4 MULTI-CHORUS 2	U4 REVERB + DELAY 3
E4 LONG REVERSE + SLAP	J5 SHORT ECHOREC	U5 REVERB + DELAY 4
E5 DARK LONG GATE + SLAP	J6 MEDIUM ECHOREC	U6 FLANGER + DELAY 1
E6 SHORT SLOPE +DELAY	J7 LONG ECHOREC	U7 FLANGER + DELAY 2
E7 MED. SLOPE + DELAY	J8 ECHO 1 160ms, 80ms	U8 FLANGER + DELAY 3
E8 LONG SLOPE + DELAY	J9 ECHO 2 240ms, 120ms	U9 PERCUSSIVE FLANGE 1
E9 SHORT FLAT GATE +DLY	L0 ECHO 3 300ms, 150ms	Y0 PERCUSSIVE FLANGE 2
F0 MED. FLAT GATE + DLY		Y1 NO EFFECT [BYPASS]

SERVICE INFORMATION

Returning the Unit to the Factory for Service

The following information is provided for the unlikely event your unit requires service.

1) Be sure the unit is the cause of the problem. Check to make sure the unit has power supplied, all cables are connected correctly, cables themselves are in working condition and you are in the correct operating mode for what you are doing.

2) If you find the unit to be at fault, write down a description of the problem including how and when the problem occurs. Include this information with your unit.

3) Call the factory for a Return Authorization Number. This number is used for tracking and proper routing of your unit. If we receive a box without an RA#, it may be refused!

4) Pack the unit in its original carton or a reasonable substitute. The packing box is not recommended for a shipping carton. If possible put the packaged unit in another box for shipping.

NOTE: The front panel is subject to damage in shipping if the unit is poorly packaged.

5) Include with your unit: a return shipping address (We cannot ship to a P.O. Box), a copy of your purchase receipt, a daytime phone number in case we need to contact you and the description of the problem.

6) Ship the unit to: APPLIED RESEARCH & TECHNOLOGY, INC., 215 TREMONT STREET, ROCHESTER, NY 14608, ATTN: REPAIR DEPARTMENT RA#: _____

7) To obtain an RA#, or if you have questions regarding repairs, or if you think your unit may (or may not) need to be repaired feel free to contact our customer service department at (716) 436-2720.

WARRANTY

Warranty service for this unit will be provided by Applied Research & Technology, Inc. in accordance with the following warranty statement.

Applied Research & Technology, Inc. warrants to the original purchaser that this product and the components thereof, will be free from defects in workmanship and materials for a period of one year from the date of purchase.

Applied Research & Technology, Inc. (ART) will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department, accompanied by proof of purchase date in the form of a valid sales receipt.

EXCLUSIONS: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

ART shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific rights and you may also have other rights which vary from state to state.