

VOYETRA IGHT

REV 4

Octave-plateau Electronics, Inc.
51 Main Street
Yonkers, NY 10701
914-964-0225

VOYETRA EIGHT REFERENCE GUIDE

For use with REV 4 VOYETRA Modules

This guide is designed to enable you to familiarize yourself with the PAGE CONCEPT of the VOYETRA EIGHT module. The VOYETRA OWNER'S MANUAL should be used for detailed explanations of the VOYETRA functions. The following is a list of the PAGES and their functions:

NORMAL PAGE: All functions operate as labeled on the panel.

VOICE EDITING PAGE 1: VCO Functions, PWM select

VOICE EDITING PAGE 2: VCF, ADSR, LFO Functions

MODULATION BANK PAGES A-D: Set up modulation system and select velocity tapers
ALTERNATE PAGE: Arpeg Left functions, Keyboard Assignment Modes
POLYSEQUENCER PAGE: 2 track polyphonic sequencer

SONG PAGE: Sequencer looping

SET PAGE: Programmable foot switches and voice disable

USER VELOCITY TAPER PAGE: Total dynamic control over keyboard velocity

FACTORY VELOCITY TAPER PAGES: 3 Different tapers with upper & lower clip points

MIDI PAGES: MIDI Channel select, MIDI Controller mapping

BACK PANEL: Describes functions of rear panel jacks

A-440 FUNCTIONS: Describes the various A440 button combinations

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NORMAL PAGE

PARAMETER TRIMMERS

L & R Active in SPLIT and LAYER WHOLE 8=8 voices on Program R
Only R active in WHOLE 8 SPLIT=4 voices Prog L, 4 Prog R
Trimmers edit programs in a STEP Hold key where split is desired
without affecting original prog then press SPLIT
Trims are RELATIVE not ABSOLUTE LAYER=4 voices, Plays prog L&R
A, R=Attack, Release ADSR 1 & 2 simultaneously
LFO RATE=LFO1 speed

GLIDE (L is off in LAYER)

FC=Filter Cutoff

DETUNE=VCO 1 detune

VOLUME= program volume

STORE saves edited version of

program into prgm # with dots

MEMORY PROTECT switch on back

panel defeats STORE

STEPS will memorize:

KBD modes w/ Split pt & Unisons

Key assignment modes

All arpeg functions w/ ALT Page

Parameter Trimmers

REL DEF, PB DEF, PROG, OCT L/R

and more (see manual)

KEYBOARD MODES

LOADING A TAPE:
Press TAPE LOAD, Playback tape,
displays 00-99 for good load
BAD LOADS: Displays EE
Press any key to recover. Change
tape volume or use equalizer
to boost 500-2KHZ range
Turn off power to abort load
SELECTIVE TAPE LOAD
Hold A440 & TAPE LOAD, display
blanks out. Select 2 digits for
program to be loaded from tape
S 2 digits for destination.
Step window counts up to desired
prog# then blinks for good load.
VEL TAPER TAPE LOAD
A440 & TAPE LOAD, AUDIO MUTE
loads vel taper info into
VOYETRA memory from tape.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is ON.

RELEASE DEFECT is OFF.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

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RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

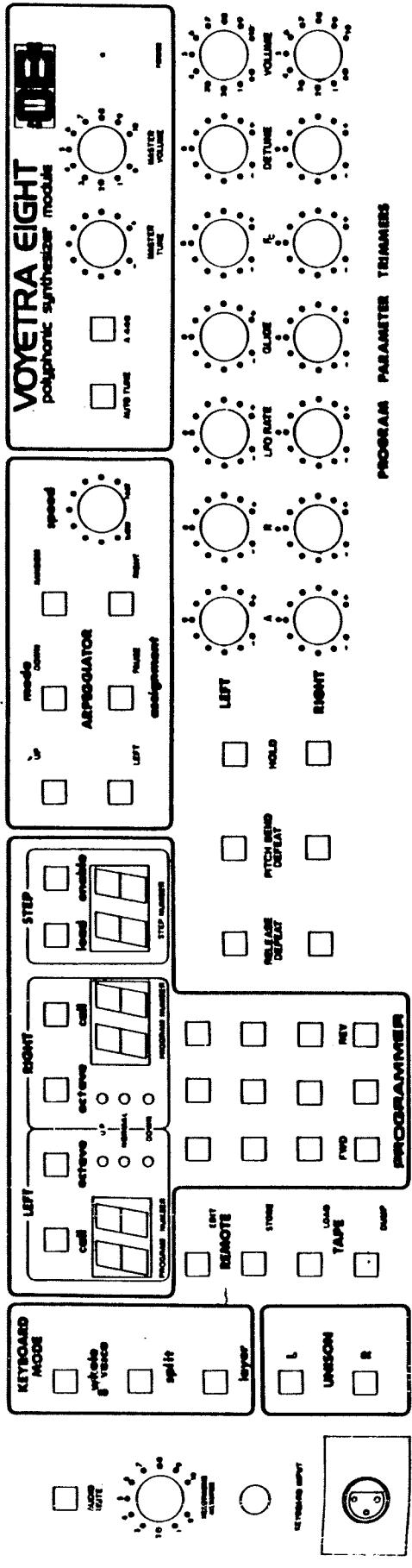
RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.

RELEASE DEFECT is ON.

RELEASE GETS DECAY is OFF.



VOICE EDITING PAGE 1

Use FWD & REV to move through Edit Pages

Program LEFT window indicates
L=Left or r=Right program

Prog # in window is being edited
STORE replaces old program
with edited version

MEMORY PROTECT switch on back
panel defeats STORE

LF01 KBD Tracking
LF01 speed increases at
top end of Keyboard
Full tracking= FULL Sw on
Half tracking= FULL & HALF on

PULSE WIDTH MODULATION (PWM)

1. Select PWM 1 (VCO1) or PWM 2
(VCO2) switch (dot will move)

2. Select PWM source (0-3) on
keypad.

NOTE: when using SYNC and/or LIN FM, VCO1 frequency should be
higher than VCO2 frequency for proper effect.

PULSE WIDTH MODULATION (PWM) (creates a chorusing effect)

1. Select PWM 1 (VCO1) or PWM 2
(VCO2) switch (dot will move)

3. Set PWM DEPTH for appropriate
VCO. This depth is added to the
INITIAL PULSE WIDTH setting

BYPASS VCF

VCO1 MODES

DISABLE KBD
Disconnects VCO1 from Keyboard

LINEAR FM

VCO2 waveform mix output is
routed to VCO1 linear mod input
Shifts harmonic structure
without affecting pitch center.
still sent to VCF

SYNC

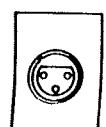
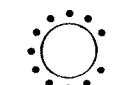
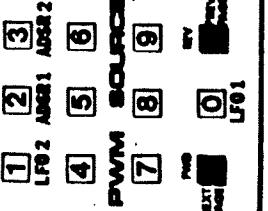
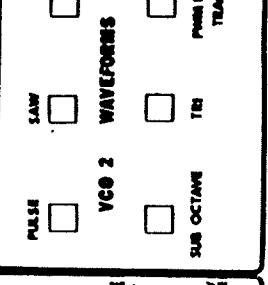
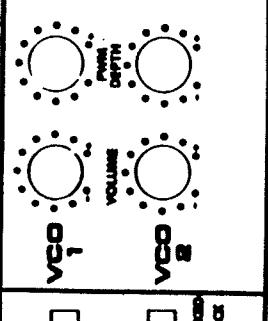
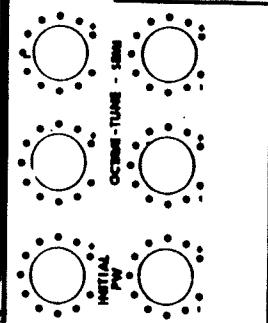
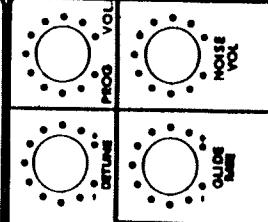
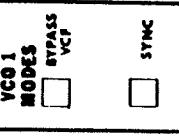
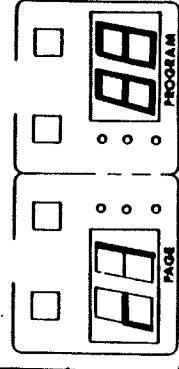
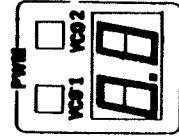
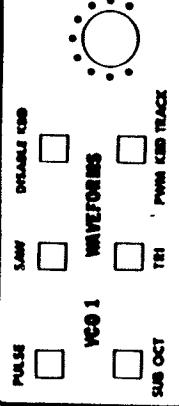
VCO1 locks on to related
harmonics of VCO2 creating a
wide variety of effects
depending on relative pitch
of both VCO's.

PWM KBD TRACK

Pulse Width Modulation Depth
decreases at bottom end of
keyboard.

Page 1 VOICE EDITING

ENTER : EDIT
EXIT : EDIT



VOICE EDITING PAGE 2

Use FWD & REV to move through Edit Pages.

Prog # in window is being edited
STORE replaces old prog with
edited version
MEMORY PROTECT switch on back
panel defeats STORE

Program LEFT window indicates
L=Left or r=Right program
GLISS (glissando)
Produces a semitone sweep in
place of smooth glide. Rate is
set by GLIDE rate on Page 1
VCA VELOCITY
Faster keystrike will produce
louder volume

FULL/HALF Switches
Full Modulations FULL Sw on
Half Modulations FULL & HALF on

ADSR is normalised to VCA's
UNCONDITIONAL RETRIGGER
ADSR cannot be retriggered until
current Attack is completed.

ADR
Decay falls to Sustain level
and then begins Release.
(percussive effect)

RESET TO ZERO ADSR
Select ADR & UNCOND RETRIG
ADSR envelope will reset to
zero on each key strike

LFO FUNCTIONS

LFO WAVEFORMS
Select LF01 or LF02 switch
Select waveform (0-3) on keypad
LF02 KEYBOARD TRACKING
LF02 speed increases at
top end of Keyboard

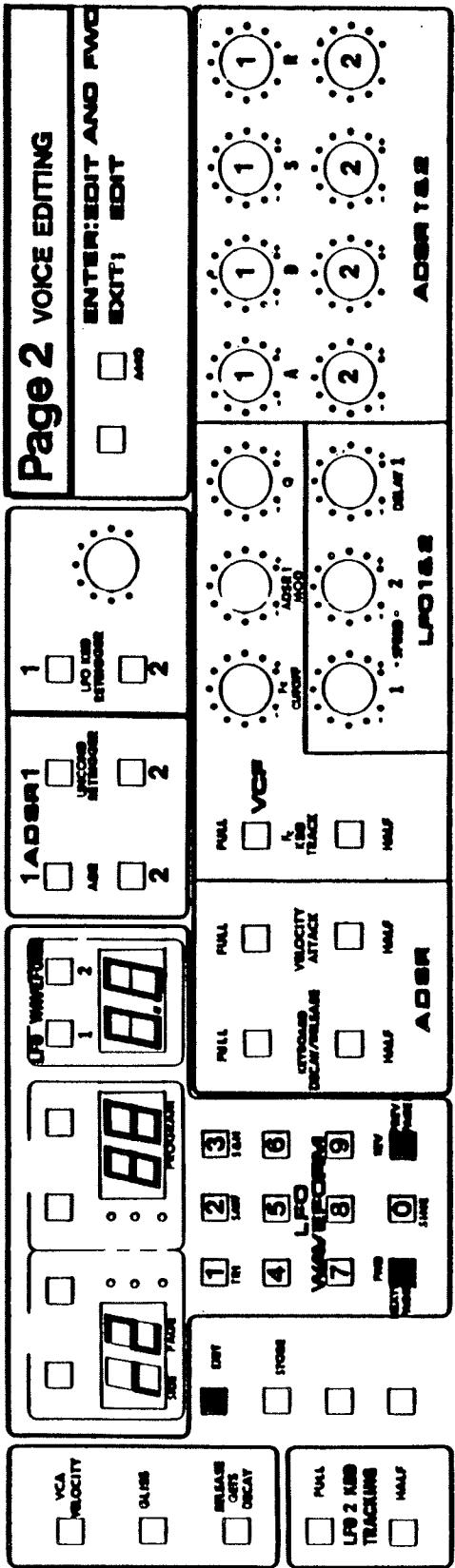
KEYBOARD DECAY/RELEASE
Top end of keyboard has faster
Decay & Release time

VELOCITY ATTACK
Fast velocity will speed up
attack rate. Start with longer
attack times for best results

RELEASE GETS DECAY
Decay time is substituted for
Release time when RELEASE DEFEAT
is selected on NORMAL Page
(Sustain pedal effect)

LFO FUNCTIONS

LF01 DELAY varies onset time of
LF01. Active only in MOD BANKS.
LF01 & 2 RETRIGGER resets LFO
wave to zero on each keystrike



MOD BANKS A-D

Use FWD & REV to move through Edit Pages

OVERVIEW:

In each bank, one SOURCE may be sent to up to 4 DESTINATIONS thru a combination of up to 4 CONTROLLERS.

EXAMPLE:

PRESSURE SENSITIVE VIBRATO:

Using any one of the four mod Banks, set up the following:

SOURCE= LFO1

DESTINATION= VCO1 & VCO 2

DEPTH= 20

CONTROLLER= Pressure

Remaining three mod banks may be used to set up additional modulations.

Use FWD & REV to move through Edit Pages

TO SET UP A MODULATION BANK

SELECT SOURCE (0-7) on Keypad.
SOURCE INVERT switch, indicated by "—" will change direction of source.

SELECT DESTINATIONS (up to 4)
Q, FC, VCO1, VCO2
NOTE: Q increases when source is inverted.

SET MODULATION DEPTH
Range is 256 steps from 00 to FF
Coarse control jumps by 12 steps
Fine control jumps by 1 step.

VELOCITY TAPER SELECT
None on= User Taper
FACTORY A On= Factory Taper 1
FACTORY B On= Factory Taper 2
FACTORY A+B On= Factory Taper 3

CLIP VCA

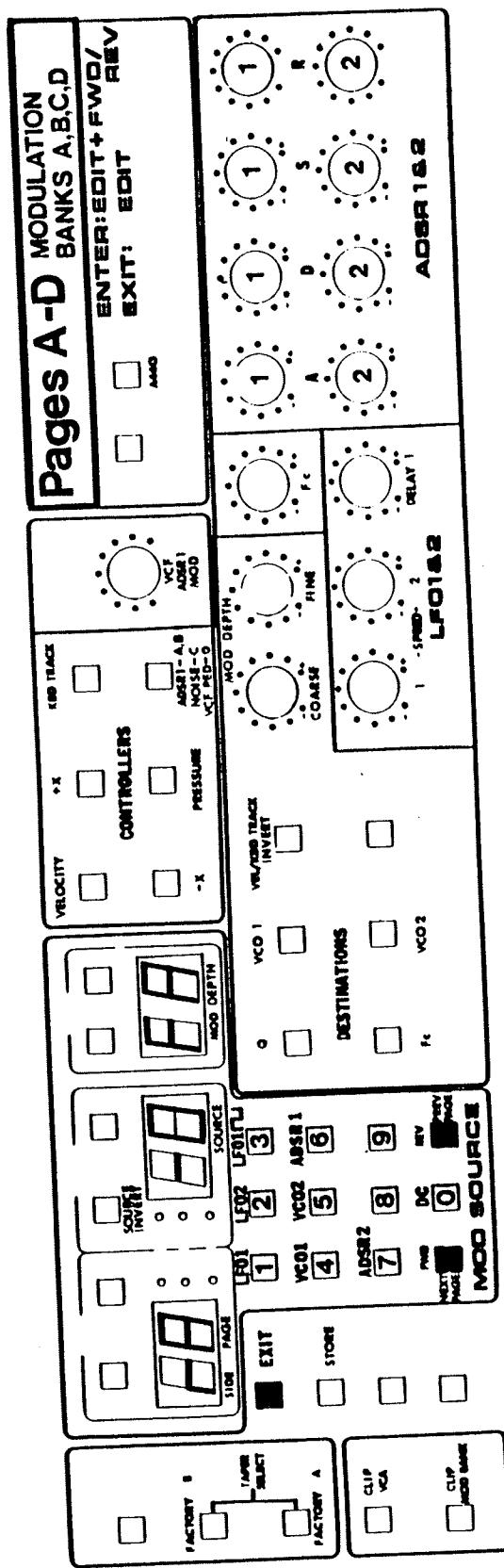
Enables velocity clipping function set on FACTORY TAPER VELOCITY pages. Acts like an audio compressor/limiter.

SELECT CONTROLLERS (up to 4)
-X=Joystick L +X=Joystick R
Pressure Velocity
KBD TRK (keyboard tracking)
will replace Vel by pressing VELOCITY & VELOCITY/KBD TRK
Each Mod Bank has one different controller replacing VEL/KBD TRK
ADSR1 in Mod Banks A & B
Noise in Mod Bank C

Programmable Pedal in Mod Bank D
(VCF sweep function disabled)
When Controllers are selected they must be activated to hear modulation. With no controllers selected, mod is always on.

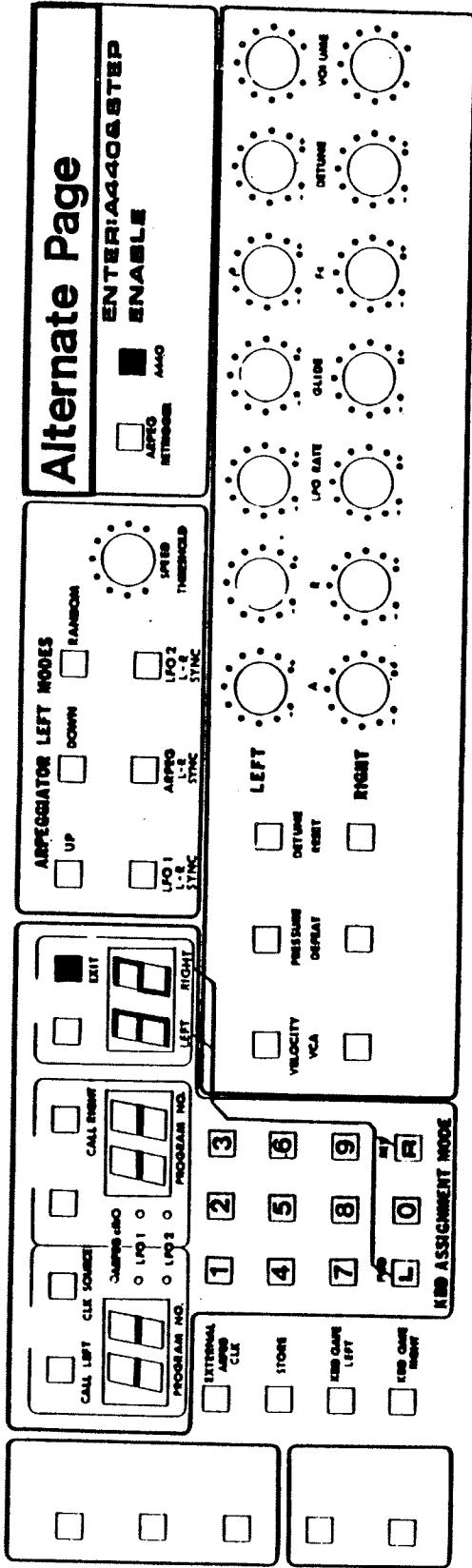
CLIP MOD BANK

Enables clipping functions set on velocity pages and restricts dynamic range of Mod Bank and ADSR response to velocity.



ALTERNATE PAGE

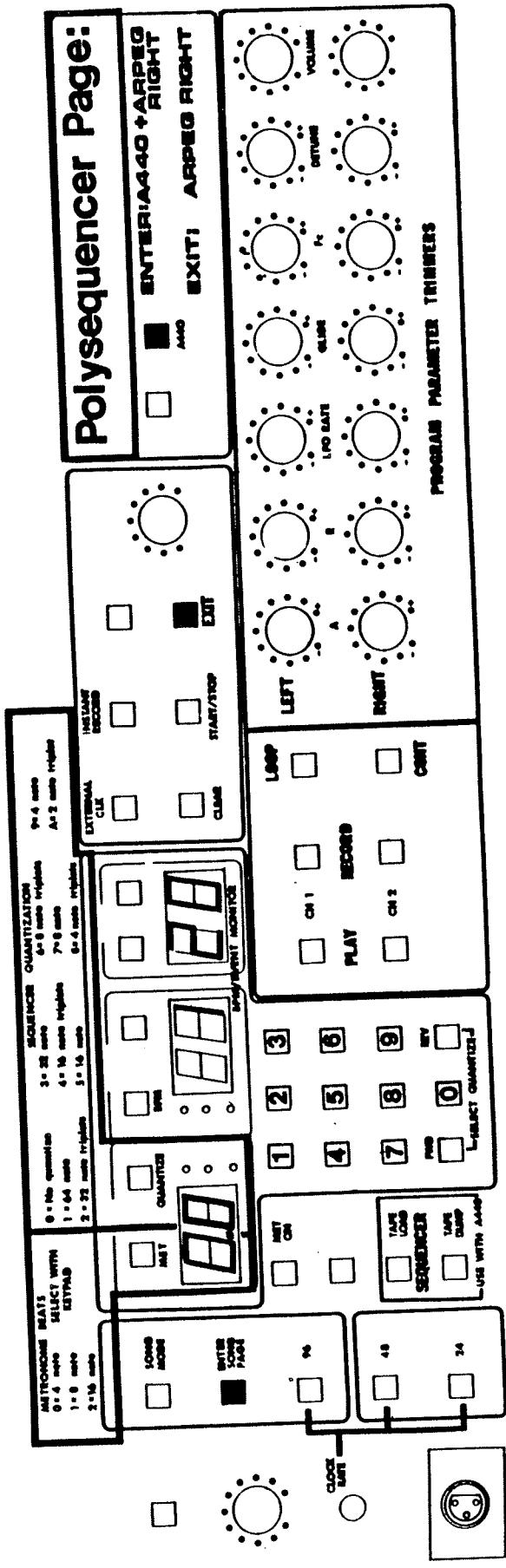
KEYBOARD ASSIGNMENT MODE	ARPEGGIATOR LEFT MODES	ARPEG L/R SYNC
There are 4 key assign modes	Function only in KBD SPLIT mode	Sync's Arpeg Left clock to
SINGLE VOICE reassigns the same voice if kbd is played one note at a time.	CLOCK SOURCE	Arpeg Right Clock
O=Normal Assign	Selects ARPEG CLK, LFO1, LFO2 for left ARPEG	ARPEG RETRIGGER
1=Normal w/single voice		Arpeg clock will retrigger whenever a new key is played
2=Circular Assign		
3=Circular w/ single voice	USING EXTERNAL ARPEG CLOCKS	KEYBOARD GATE L & R
Use FWD to select Left side	Insert clock signal into back panel ARPEG CLOCK IN jack (ring)	Gates all keys down at arpeg speed.
Use REV to select Right side	Enable EXT ARPEG CLK switch	
PROGRAM TRANSFER	SPEED/THRESH determines the Gate duration of the incoming clock	VCA VELOCITY
Select CALL LEFT or CALL RIGHT (depending upon which side has the program to be transferred)	CV LEFT	Faster keystrike will produce louder volume
Select 2 digits on keypad for destination. Press STORE.	Makes slave CV/GATE output track left side of KBD in SPLIT	PRESSURE DEFEAT
LFO L/R SYNC		Turns off pressure in STEP
	sync's LFO1 or 2 speed on Left side to LFO speed on right side	DETUNE RESET
		Resets VCO 1 detuning



POLYSEQUENCER PAGE

RECORD/PLAYBACK Once REC1 or REC2, START/STOP (Play kbd), START/STOP to end Press PLAY1 or 2 & START/STOP	INSTANT RECORD Records as soon as START/STOP is selected (for starting with silence). Normally, sequencer begins recording when first note is played	METRONOME Use ARPEG CLOCK OUT or CASS OUT on back panel for audible click rate set by pressing MET button followed by 0-2 on keypad MET ON/OFF will defeat clicks
RECORD/PLAYBACK LOOP PLAY1, REC1, LOOP, START/STOP Play kbd, then press START/STOP EXTENDED RECORD	Provides 1700 events on one Ch Press REC1 & REC2 then START/STOP	CLOCK RATES/ EXTERNAL CLOCK Press EXT CLK sw and select appropriate clk rate. For use w/ drum machines & Ext Sequencer Insert ext clock on back panel
OVERDUB (Bouncing Channels) Record CH1 as above, when done PRESSPLAY1, REC2, LOOP, START/STOP	QUANTIZE (Autocorrect) Select QUANTIZE switch, press FWD/REV or a #. Affects Rec Only	START/STOP Begins record or playback.
CONTINUOUS OVERDUB REC1, CONT, START/STOP Play 1st track, then START/STOP	CLEAR is used for instant STOP Allows jumping between Rec and Playback in real time by using START/STOP or footswitch.	Playback will continue to end of sequence before stopping.
REAL TIME MODE PLY1, REC1, LOOP, CONT, START/STOP	SONG MODE Alternates looping playback of CH1 & CH2. Set on SONG PAGE.	Does not affect notes in memory.
	BEATS PER MINUTE (BPM) Press BPM followed by 3 digits on keypad or FWD/REV. (020-251)	BPM/EVENTS MONITOR Displays Beats per Minute. In Record Mode shows events remaining.
A440 & TAPE LOAD/TAPE DUMP	Save or load sequences using	Normal mode= 850 events Extended mode= 1700 events

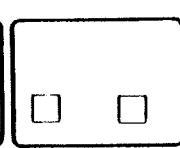
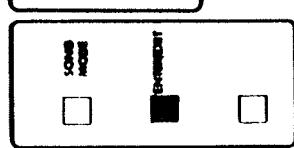
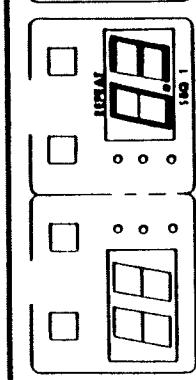
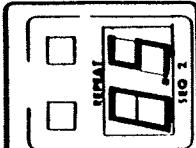
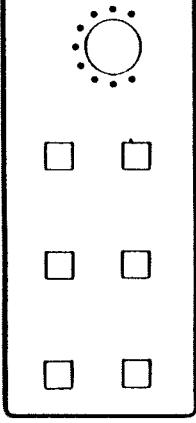
Polysequencer Page:



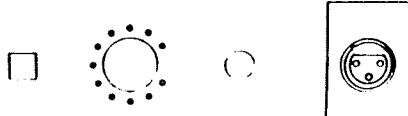
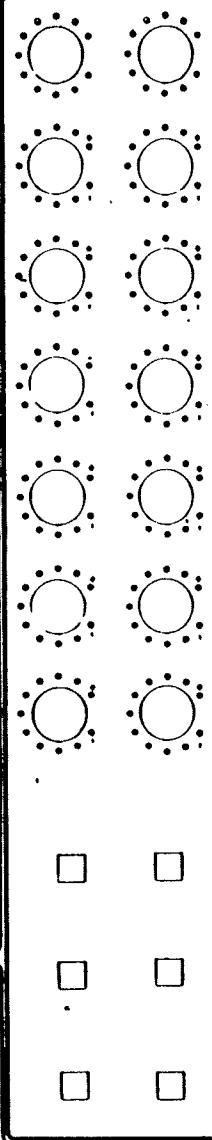
SONG PAGE	Enter From Sequencer Page by pressing SPLIT
SONG MODE	<p>Allows CH 1 (or 2) Sequence to repeat from 1 to 99 times followed by CH 2 (or 1) Sequence repeated from 1 to 99 times</p> <p>Press two digits on keypad to enter CH 1 "repeat number" followed by two digits to enter CH 2 "repeat number"</p> <p>Ex: 03 05 means Channel 1 will play 3 times followed by channel 2 playing 5 times</p> <p>Select SONG MODE switch to activate.</p>
MANUAL OVERRIDE	<p>PLAY 1 on POLYSEQUENCER Page will override SONG mode by switching to the other channel at the end of the current loop.</p> <p>NOTE: Other sequencer control buttons that are available on the sequencer page are also available on the SONG page.</p>

Song Page

ENTER SEQUENCER
(AD40 & ARPEG RT)
 ENTER SONG SPLIT



SEQUENCER PAGE CONTROLS ARE ALSO
AVAILABLE ON THIS PAGE.



SET PAGE

PROGRAMMABLE FOOTSWITCHES (stereo TO PROGRAM:
There are 4 footswitches (stereo TO PROGRAM:
jacks A & B on Back Panel)
0=B Left 1=B Right
2=A Left 3=A Right

Each switch controls 2 functions
Use FWD/REV to select Switch #
Use keypad to enter 4 digits
(2 for each function code)
Press STORE SW to save.

PROGRAMMABLE FOOTSWITCH FUNCTION CODES

00=Unison Left 29>Edit 32=Call Right
01=Unison Right 08=0 33=Call Left
02=Split 09=1 34=Step Enable
03=Layer 10=2 35=Step Load
04=Hold Left 11=3 40=Pitch Bend Defeat Right
05=Hold Right 12=4 41=Pitch Bend Defeat Left
06=Whole 8 13=5 43=Audio Mute
14=6 48=Release Defeat Right
15=7 49=Release Defeat Left
16=8 50=Arpeggiator Right
17=9 51=Arpeggiator Left
52=Arpeggiator Pause
56=Arpeggiator Down
57=Arpeggiator Random
58=Arpeggiator Up
99=NO FUNCTION

Each switch can be either:

MODE
MOENTARY=press on, release off
TOGGLE=press on, press off
Select with MODE button.

VOICE DISABLING

Light on indicates that voice is

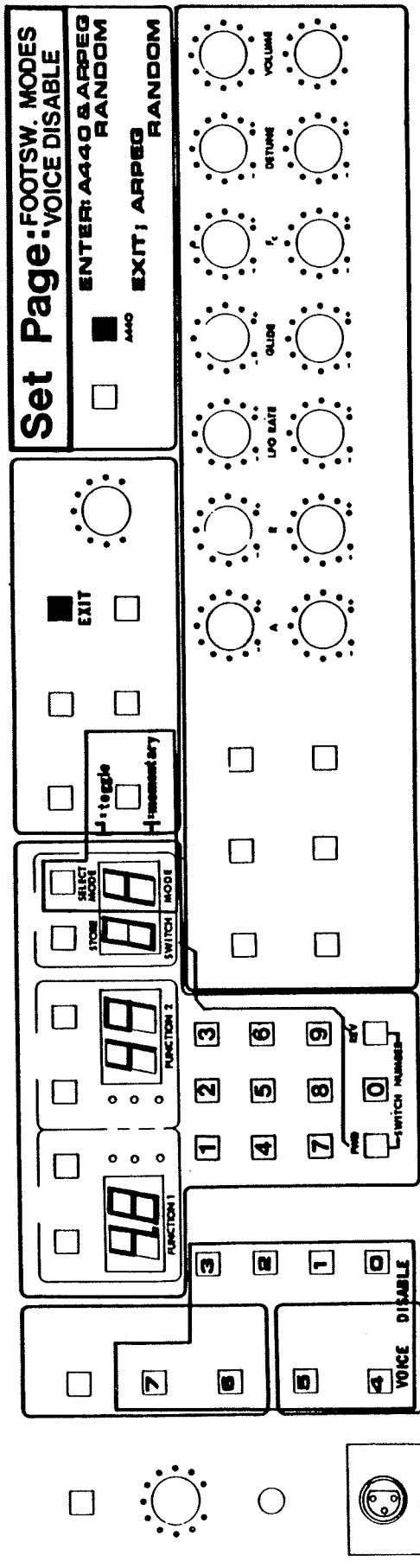
Disabled.

Autotune will disable voice if
defect is found.

7: 6, 5, 4= Left Voices
3, 2, 1, 0= Right Voices

LAYER MODE

In LAYER, voices are grouped:
7&3, 6&2, 5&1, 4&0
Note that in LAYER MODE,
disabling 7 will automatically
disable 3 even though the light
for 3 may be off. Similarly,
disabling 6, 5 or 4 will also
disable 2, 1 or 0.



USER VELOCITY TAPER PAGE

There are 4 Vel Taper Pages:

1 User & 3 Factory. FWD/REV will move between pages from the USER TAPER page

Each parameter trimmer represents an independent voltage for each of the 15 velocity speeds generated by keyboard.

To reset trimmers, turn fully in both directions and then set for desired value.

Fully counterclockwise = no voltage Fully Cikwise = full voltage Key Speed is displayed in the STEP window as kbd is played O=fastest speed E=slowest speed

Each speed corresponds to a parameter trimmer so that a specific taper can be set up by varying the parameter trimmer settings.

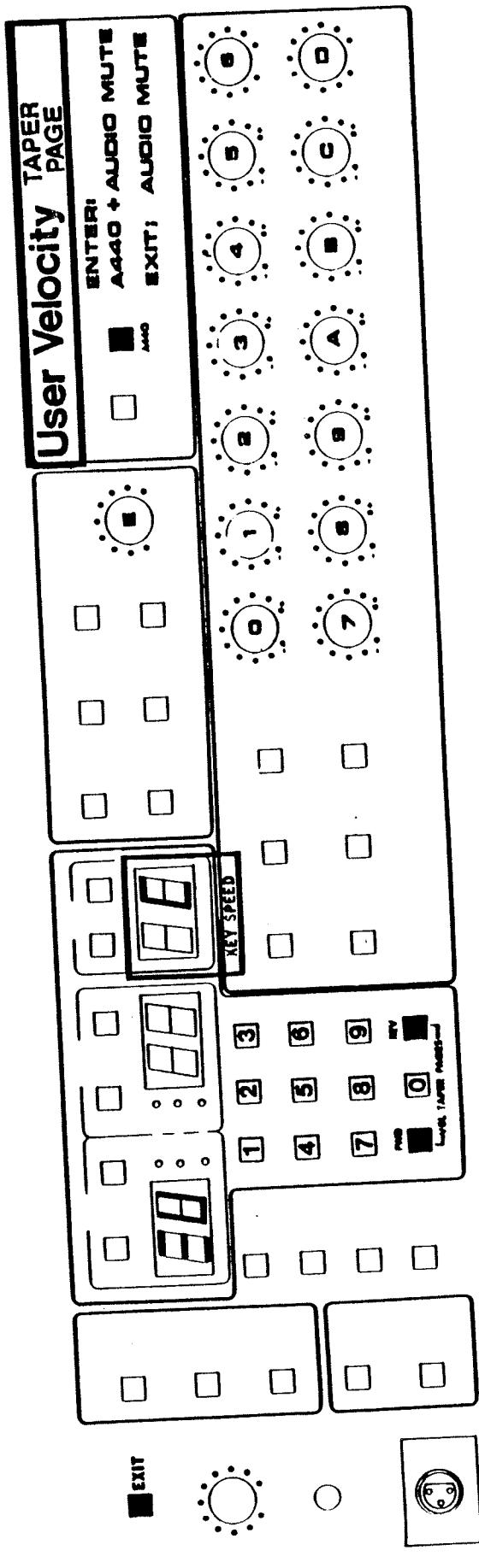
EXAMPLE:

If maximum velocity is desired for key strikes less than speed 9 and zero velocity for speeds above 9, then parameter trimmers 0-9 would be set fully clockwise while A-E would be set fully counter-clockwise. This could be used in the mod banks to bring in modulation only when the keys are struck fast.

User taper velocity is selected in the MOD BANK pages A-D.

A440 & TAPE LOAD, AUDIO MUTE
(used on NORMAL PAGE)

Loads velocity taper information into VOYETRA memory from tape.



FACTORY TAPER VELOCITY PAGE

CLIPPING
There are 3 different factory taper pages, each with its own characteristics. On each page, you may set upper and lower clip points.

This functions as a compressor/ limiter for velocity.

To adjust upper and lower clip points, use respective trimmers (value 00-7F)
TO SELECT TAPER Enter Mod Bank and use combination of Taper Select Sw's A & B. Clipping may be sent independently to VCA or Modulation Banks

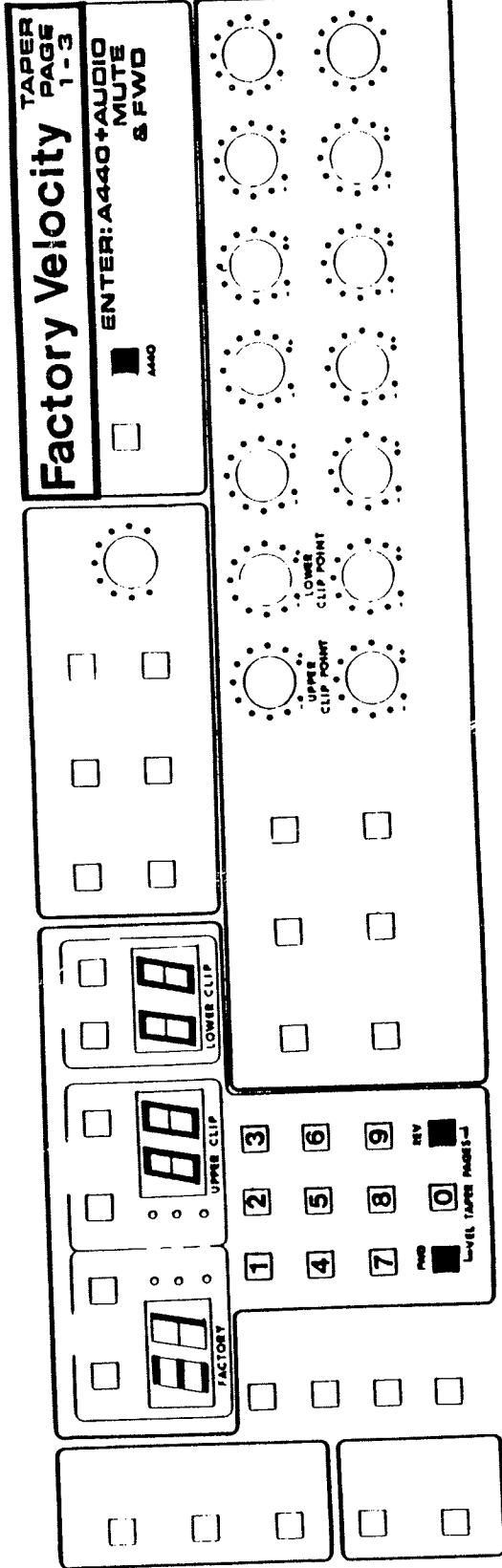
Enter USER VELOCITY TAPER page from Norm Page (A440&AUDIO MUTE) Advance to Factory Taper Page 1 with FWD switch To adjust Lower Clip Point, move LOWER CLIP POINT Trimmer until display reads 20. Then set UPPER CLIP POINT to 60.

Access velocity from Mod Bank using SELECT TAPER switch A (Factory 1). Then set up a modulation (eg. DC to FC through velocity). Selecting CLIP MOD BANK switch will now reduce the filter dynamic sweep range by half

EXAMPLE:

Enter USER VELOCITY TAPER page from Norm Page (A440&AUDIO MUTE) Advance to Factory Taper Page 1 with FWD switch To adjust Lower Clip Point, move LOWER CLIP POINT Trimmer until display reads 20. Then set UPPER CLIP POINT to 60.

Access velocity from Mod Bank using SELECT TAPER switch A (Factory 1). Then set up a modulation (eg. DC to FC through velocity). Selecting CLIP MOD BANK switch will now reduce the filter dynamic sweep range by half



■ EXIT



MIDI PAGES

Change MIDI pages using FWD/REV

PROGRAM LEFT Window indicates
MIDI CONTROLLER PAGES= nn
MIDI CHANNEL PAGES = ch
PROGRAM RIGHT Window indicates
IN CONTROLLER PAGES:
+H = +X -H = -X
Pr = Pressure
Fc = Prog Pedal
Pb = Pitch Bend

IN MIDI CHANNEL PAGE:

MIDI Channel LEFT

MIDI CHANNEL ASSIGN:
Press CALL Rt or STEP ENABLE
to select L or R side, then
enter 2 digit MIDI ch 1-16

MOD WHEEL:

Changes all L PRG controllers
to -X from +X for separate
mod capabilities in SPLIT

STEP Window indicates:

MIDI controller # in
controller Pages
Pitch Sensitivity in Pitch
Bend Page
MIDI Channel Right in MIDI Page
PRESETS:
UP= Slave to a MIDI Synth
RANDOM=Playback with multitrack
sequencer
HOLD LEFT=Slave to a VOYETRA

CONTROLLER MAPPING:

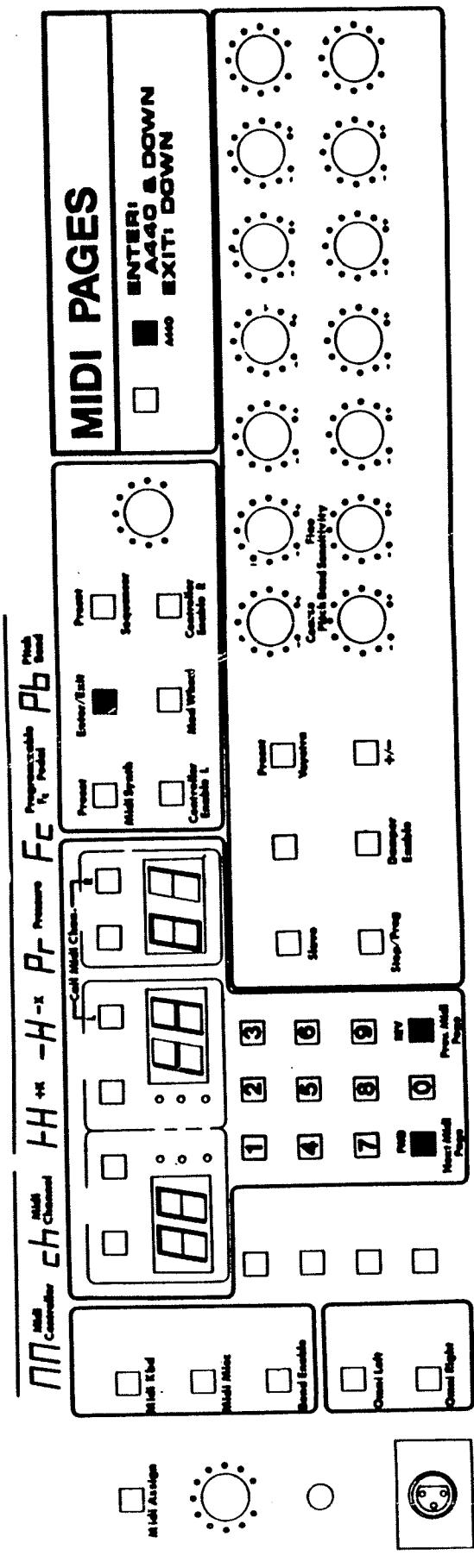
In Controller Pages, press
2 digit # to select MIDI
controller to be mapped to
VOYETRA controller

PITCH BEND:

In P Bend MIDI PAGE, set
coarse & fine until VOYETRA
P Bend tracks master P Bend

MIDI FUNCTIONS:

MIDI ASSIGN routes notes thru
VOYETRA kbd assign logic.
MIDI KEYBOARD enables transmit
Receive of MIDI notes.
MIDI MISC enables transmits &
receive of Prgm changes, etc.
BEND ENABLE allows receiving
MIDI controllers & MIDI P Bend.
OMNI L S R allows L or R side
to respond to all MIDI commands
SLAVE turns VOYETRA head into
slave synth and ignores VPK-5
+/- makes DX7 +/yes S -/no
buttons actuate VOETRA FWD/REV
STEP/PROG makes MIDI program
change VOYETRA STEPS.
DAMPER ENABLE makes MIDI damper
pedal turn Rel Defeat on/off.



BACK PANEL

ANALOG CONTROLLER INTERFACE

Provides access to the analog controllers +X, -X, Pitch Bend and Pressure
Connect output of MASTER to input of SLAVE using a 10 pin ribbon cable of 12" or less.
FOOTSWITCHES
FWD/REV: TIP=REV RING=FWD
Programmable on SET page
A: TIP=Right #3 RING=Left #2
B: TIP=Right #1 RING=Left #0
Activated by shorting to gnd
MEMORY PROTECT
Defeats STORE and TAPE LOAD
NOTE: VOYETRA will receive all MIDI Controllers but will not transmit +/-X, pressure or Pitch Bend. These are available on the analog controller output

EXTERNAL CLOCK INPUTS/OUTPUTS FOR ARPEGGIATOR and SEQUENCER

Stereo Jacks TIP=OUT RING=IN
OUTPUT=0 - 15 Volts
INPUT= Schmitt trig with 2.5V threshold driven from CMOS, TTL or switch shorting to ground.
Incompatible with AC coupled devices. Adapter available from factory.

FOOTPEDALS
Mono Jacks with pullup to +15V Accepts + control voltage or variable resistance to ground.

METRONOME OUTPUT

Low Level=Cassette out
High Level=Cassette out
Clock Out: (tip)
Pitch Bend. These are available on the analog controller output

EXTERNAL CLOCK INPUTS/OUTPUTS FOR ARPEGGIATOR and SEQUENCER

CV=GATE OUTPUT
CV= 0-5 Volts
GATE= 0 - 10 Volts (TIP)
Used for driving Mono Synths Normally tracks across the kbd except in SPLIT where it may track either side (ALT PAGE)
AUDIO OUTPUTS

Line level, 1000hm, unbal
SPLIT/LAYER, L & R independent
WHOLE 8 Voices panned L & R
MONO is mix of L&R
CASSETTE
For loading & storing program & sequencer data
Input=Line level from cassette
Output=Mic level to cassette
Line level cassette output is available at the arpeggiator clock output

A440 FUNCTIONS

The following functions are activated by pressing the button listed while holding down the A440 button on the NORMAL Page, except where listed.

ONLY ON SEQUENCER PAGE:

A440 & TAPE LOAD OR TAPE DUMP Loads sequences from tape and saves sequences onto tape (See SEQ PAGE)

& CALL LEFT =Null program loads into Prog L

& CALL RIGHT =Null program loads into Prog R

NULL PROGRAM= Sawtooths on both VCO's, FC UP, Q down, A,D,R fast, S up full, no modulation.

& TAPE LOAD =Selective Tape Loading (see NORMAL PAGE)

& TAPE LOAD followed by AUDIO MUTE =Loads only User Velocity from tape

& STEP LOAD =Reset ALT PAGE as follows:
Turns off VCA VEL L/R
Turns off PRESS DEFET L/R
Turns off LFO SYNC L/R
Turns off ARPEGGIATOR RETRIGGER
Sets ARPEG L mode equal to ARPEG R mode

Sets ARPEG CLK L to ARPEG CLK R

Enables all voices

Turns on normal KBD Assign mode

NOTE: Null program is useful as a starting point for creating custom programs.

& AUDIO MUTE =VELOCITY Page

& ARPEG RIGHT =SEQUENCER Page

& STEP ENABLE =ALTERNATE Page

& RANDOM =SET Page

& ARPEG DOWN =MIDI Page

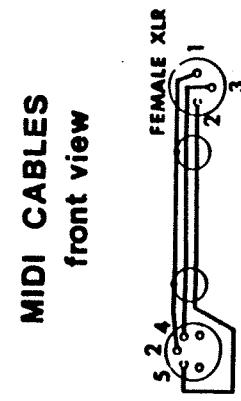
& AUTOTUNE =A440 tone

& OCT L =Arpeg L auto-octave

& OCT R =Arpeg R auto-octave

& REL DEFEAT L =VCA vel L

& REL DEFEAT R =VCA vel R



MIDI CABLES
front view

