

JAN 8, 1981

DEAR TECHS,

HERE is an edited version of the procedure Oberheim uses for calibration of the OB-SX in house.

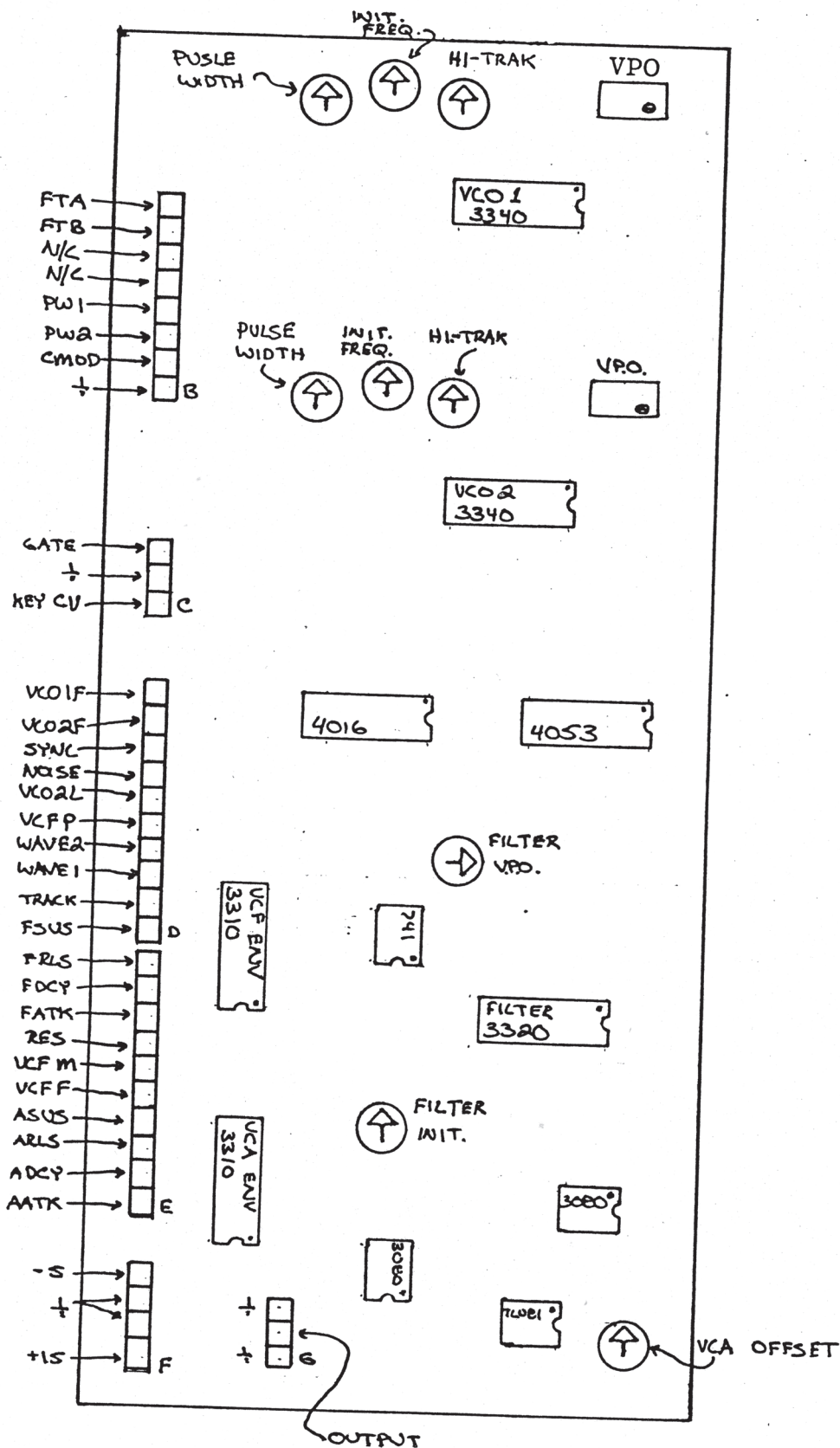
For critical tuning the following order should be followed:

- 1 - Check power supply; voltage and noise levels.
noise below μV is normal
- 2 - Control/Processor cal.
- 3 - VOICE CARDS - be sure 'fine-tune' voltages are centered, $\approx 2.850V$. DIP switch 7 & 8 down will center the 'fine-tune' voltage, then move to the desired position (do not press 'auto-tune').
Master-tune centered, VCO2 DETUNE centered.

Hope this helps!



HEAD TECHNICIAN
OBERHEIM



VOICE CARD REPLACEMENT AND CALIBRATION PROCEDURE

This document describes the procedure for calibrating voice cards in the OB-SX. The following equipment is necessary for calibration.

- Strobe Tuner
- Audio Amplifier with speaker or headphones
- Oscilloscope (optional)

VOICE CARD REPLACEMENT AND DIP SWITCH FUNCTION

With A.C. POWER OFF, install new voice cards. Close the cover, turn on power, and wait 15 minutes to allow the unit to warm up. Do not press auto-tune.

Open cover and locate DIP switch on P.C. board holding the program select switches. The 8 positions on the switch are as follows: Positions 1 through 6 are voice selection (I.E. position 1 = voice 1, 2 = voice 2, and so on). If the switch is up (on) that voice is enabled. For a 4 voice unit positions 1 through 4 are up, 5 and 6 are down. For a 6 voice unit positions 1 through 6 are up. Positions 7 and 8 for calibrating. Their function follows:

- 7 up, 8 up-normal operation
- 7 up, 8 down-oscillator 1 on, auto-tune enabled
- 7 down, 8 up-oscillator 2 on, auto-tune enabled
- 7 down, 8 down-oscillator 1 and 2 on, auto-tune disabled

When any combination of 7 or 8 is down the unit is affected as follows:

No modulation to any parameter

Waveform-Pulse; the duty cycle being dependent on the voltage (pulse width C.V.) on connector B3 and B4 of the voice cards. This will vary according to the program selected. Therefore when setting the pulse width it is important the voltage at B3 and B4 is 0.00 Volts +/- 20mV.

No Unison; LED on unison switch lights but without the unison function.

To re-enter normal operation; 7 and 8 up, depress a program switch, auto-tune.

PRELIMINARY CONTROL SETTINGS

- With the DIP switch turn all voice cards off, except the one to be calibrated.
- Program A1
- Octave switch (bend assembly), down octave
- DIP switch position 7 up, 8 down (YCO 1 only)
- Plug amplifier into the output jack

VO 1 CALIBRATION

The following adjustments are performed at the factory and should not require readjustment. However if the card doesn't sound correct, they should be performed. Refer to diagram #1 for trimmer locations,

PULSE WIDTH ADJUSTMENT

Adjust pulse width trimmer for 50% duty cycle. If a oscilloscope is available, the voice output can be monitored at connector G2; if the adjustment is being made by ear, adjust for the most "hollow" sound.

INITIAL FREQUENCY ADJUSTMENT

Connect strobe tuner to the output jack and set the strobe as follows:

Note - C
Cents - 0

Hold note C1 and adjust initial frequency trimmer until the 1st octave scale stops.

VOLT/OCTAVE ADJUSTMENT

Hold note C2 and adjust VPO trimmer until the 2nd octave scale stops. Readjust initial trimmer at C1. Hold note C3 and adjust VPO trimmer until 3rd octave scale stops. Readjust initial trimmer at C1. Hold note C4 and adjust VPO trimmer until 4th octave scale stops. Readjust initial trimmer at C1. It will be necessary to repeat these adjustments a few times until proper tracking is obtained.

It is important to work up the keyboard in octaves to obtain proper tracking of the voice card.

HI-TRACK ADJUSTMENT

Octave switch - center octave position.

Hold note C4 and adjust Hi-track trimmer until 5th octave scale stops

VCO 2 CALIBRATION

DIP switch- 7 down, 8 up (VCO 2 only)

Repeat steps for VCO 1, and adjust trimmers for VCO 2. See diagram #1 for locations.