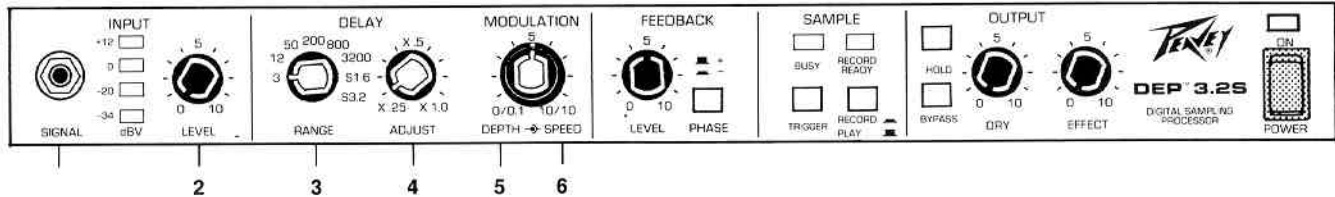




# DEP™ 3.2S

## DIGITAL SAMPLING PROCESSOR Operating Guide

**CAUTION**  
TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS INSTRUMENT TO RAIN OR MOISTURE.  
BEFORE USING THIS INSTRUMENT, READ BACK COVER FOR FURTHER WARNINGS.



### FRONT PANEL

#### INPUT SECTION

##### Signal Input Jack (1)

A stereo 1/4" phone jack capable of receiving either single-ended (unbalanced) or differential (balanced) input signals. When a balanced signal is supplied, (+) signal should be routed to the tip, (-) signal to the ring.

Both input jacks (front and rear panel) are wired in parallel. The Input Level switch position and the Input Level control setting determine the sensitivity of both inputs.

##### Input Level (2)

Used together with the Input LED array and the rear panel Input Level switch to properly match the input sensitivity to the input signal level. Correct adjustment is achieved when the 0 dBV LED flashes frequently and the +12 dBV LED flashes only on the highest signal peaks. Proper adjustment will yield minimum distortion and maximum signal-to-noise performance.

This control should be used only to set the input sensitivity. "Volume" adjustments should be made by varying the Dry and Effect output level controls.

#### DELAY SECTION

##### Range Switch (3)

Selects the desired delay memory range. The range number selected indicates the delay length (in milliseconds) available with the Delay Adjust control at full clockwise (X1.0)

The last two clockwise positions of the Range switch (S1.6 and S3.2) are the sampling mode ranges. Delay effects in these modes are disabled except when sample is "recording." See Sampling section elsewhere in this manual.

##### Delay Adjust (4)

Varies the delay time from 25% (X.25) to 100% (X1.0) of the selected delay range. In sample mode, this control adjusts sampling length. In hold mode, it provides pitch shift.

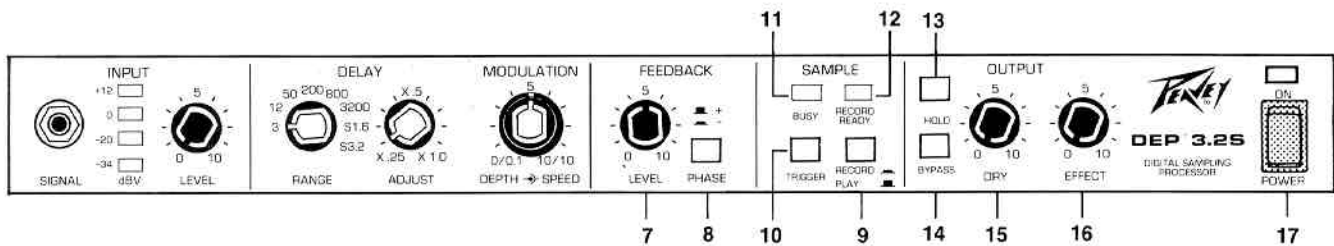
#### MODULATION SECTION

##### LFO Modulation Depth Control (5)

Adjusts the depth of the LFO (Low Frequency Oscillator) modulation or the width of the sweep. Rotating clockwise increases the width of the LFO sweep.

##### LFO Modulation Speed Control (6)

Adjusts the frequency of the LFO modulator and sweep rate of any modulated effects. Rotating clockwise increases the speed of the modulator.



## REGENERATION SECTION

### Feedback Level (7)

Controls the number of repeats or the “decay time” for the delayed signal. A single repeat is available with the control set fully counterclockwise. Increasing numbers of repeats (or longer decay times) are obtained as the control is rotated clockwise.

Note: Setting this control too high can result in “delay runaway” or “oscillation.”

### Feedback Phase Switch (8)

Allows the feedback signal to be selected positive or negative. Feedback signal is negative (out of phase) with the switch in, positive (in phase) with the switch out.

## SAMPLING SECTION

### Sample Record/Play Switch (9)

Enables sampling of the input signal. Sample length is determined by the Delay Range switch and the Delay Adjust control. Maximum sampling time is 1.6 seconds at the S1.6 position and 3.2 seconds at the S3.2 position.

NOTE: The Delay Range switch must be set at S1.6 or S3.2 for sampling.

### Sample Trigger Switch (10)

Triggers “playback” of the sample in memory. Triggering is enabled only with Delay Range at S1.6 or S3.2 and with the Sample Record/Play switch in the “play” position.

Re-triggering during playback will re-start the playback from the beginning. Holding the trigger switch in will automatically re-trigger at the end of each playback.

Sample playback may be remotely triggered with an optional footswitch.

### Sample Busy LED (11)

Illuminates throughout the duration of a sample “recording.” When not in the sample mode, this LED remains on at all times.

### Sample Record Ready LED (12)

Indicates the record ready status. When the input level reaches the preset threshold, this LED goes off and the Busy LED illuminates while the sample is “recording.”

## SAMPLING

To “record” a sample, select either the S1.6 or S3.2 position on the Delay Range switch and set the Delay Adjust control to the approximate value needed for the sample. (Sampling time range is from 400 mS to 3.2 seconds.) Record a few trial samples to determine the necessary time setting.

Since modulation and feedback are best added after samples are recorded, set the Modulation Depth and Speed and the Feedback controls to full counter-clockwise.

Once the Input Level is properly adjusted, depress the Record/Play switch. The green Record Ready LED will illuminate and stay on until the input signal exceeds the preset threshold level. At that point, the green LED goes off, the red “busy” LED illuminates and sample recording begins. Recording continues to the end of the selected sample time.

To overdub or layer a new sample over previous sample(s) use the Feedback Level control to determine the level ratio of previous and new samples. To prevent sample overdubbing, set the Feedback Level to “0.”

The Output Dry control sets the output level of the signal being recorded. The Output Effect control sets the output level of previous samples in memory. During playback, the Output Effect control sets the playback output level.

## OUTPUT SECTION

### Hold Switch (13)

Provides an infinite repeat of the signal stored in memory without degradation. The Hold function may be remotely selected with an optional footswitch.

### Bypass Switch (14)

In bypass mode, the input signal is routed directly to the output and is unaffected by all front panel controls except the Input Level control. The bypass mode may be remotely selected with an optional footswitch.

### Output Dry Level (15)

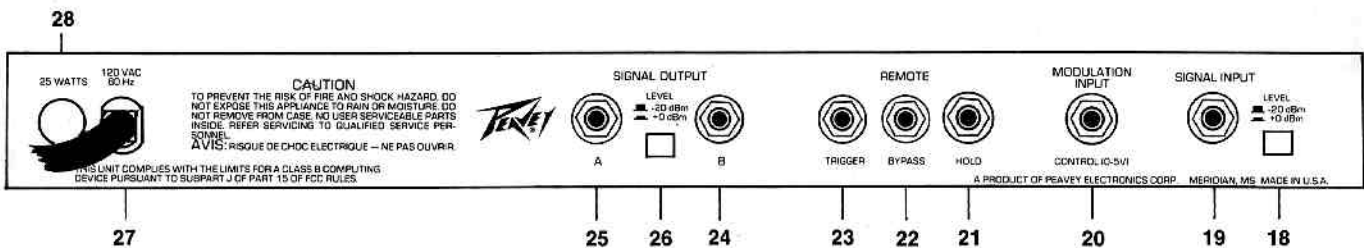
Controls the output level of the dry (undelayed) signal. The nominal dry output level is determined by the Signal Output Level switch.

### Output Effect Level (16)

Controls the output level of the delayed signal and the level of sample "playback." The nominal delayed output level is determined by the Signal Output Level switch.

### Power Switch (17)

Depress the switch to the "On" position. The red pilot light (LED) will illuminate indicating power is being supplied to the unit.



## REAR PANEL

### Signal Input Level Switch (18)

Determines the sensitivity of both input jacks. The "out" position should be selected for most low level (-20 dBm) sources. The "in" position is for higher level (0 dBm) sources.

### Signal Input Jack (19)

A stereo 1/4" phone jack capable of receiving either single-ended (unbalanced) or differential (balanced) input signals. When a balanced signal is supplied, (+) signal should be routed to the tip, (-) signal to the ring.

Both input jacks (front and rear panel) are wired in parallel. The Input Level switch position and the Input Level control setting determine the sensitivity of both inputs.

### Modulation Input (20)

Used for external modulation of the delay time. External modulator pedals or other control sources connect here.

### Remote Hold Jack (21)

Allows remote operation of the Hold function. Use On/Off or momentary footswitch (optional).

### Remote Bypass Jack (22)

Allows remote operation of the Bypass function. Use On/Off or momentary footswitch (optional).

### Remote Trigger Jack (23)

Allows remote triggering of the Sample playback function. Use on/off or momentary footswitch (optional).

### Signal Outputs A & B (24 & 25)

Jack A provides the out-of-phase signal output and Jack B provides the in-phase signal output. Use both output jacks for stereo processing with stereo capable equipment. Either jack may be used for mono processing.

### Signal Output Level Switch (26)

Selects the nominal signal level available at the A & B outputs. Nominal output is +0dBm ("in" position) or -20dBm ("out" position).

The position of the Output Level switch is largely determined by the input sensitivity of the next component in the signal path. Consult the operating guide of the "next-in-line" component to determine the optimum signal level.

### Line Cord (120V products only) (27)

For your safety, we have incorporated a 3-wire line (mains) cable with proper grounding facilities. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the equipment without proper grounding facilities, suitable grounding adaptors should be used. Less noise and greatly reduced shock hazard exists when the unit is operated with the proper grounded receptacles.

### Voltage Selector Switch (28)

Export models of this product are equipped with a 220/240 volt selector switch. Before operating this product, be sure the switch is set to the correct voltage. NOTE: Operating this product at an incorrect voltage setting may cause transformer damage or loss of output power.

## TYPICAL EFFECTS DESCRIPTIONS

Shaded sections indicate areas of activation

### FLANGING

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

### CHORUSING

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

### DOUBLING

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

### SLAPBACK ECHO

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

### LONG DELAY - (Single or Multiple Repeats)

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

### LONG DELAY WITH MODULATION

INPUT: SIGNAL, +12, 0, -20, -34 dBV, LEVEL (0-10)

DELAY: RANGE (50, 200, 800, 3200), ADJUST (X.5, S1.6, S3.2, X.25, X1.0)

MODULATION: DEPTH → SPEED (0/0.1, 10/10)

FEEDBACK: LEVEL (0-5), PHASE (+, -)

SAMPLE: BUSY, RECORD READY, TRIGGER, RECORD PLAY

OUTPUT: HOLD, BYPASS, DRY (0-10), EFFECT (0-10)

DEP 3.25 DIGITAL SAMPLING PROCESSOR

POWER: ON

## DEP 3.2S SPECIFICATIONS

All specifications are typical unless otherwise noted.

### SYSTEM ARCHITECTURE:

Analog Logarithmic Compression and 12 bits D/A quantizing system

### DELAY TIME:

Maximum 3.2 seconds (S)

Minimum .781 milliseconds (mS)

RANGE	DELAY
3	0.781 - 3.125 mS
12	3.125 - 12.5 mS
50	12.5 - 50 mS
200	50 - 200 mS
800	200 - 800 mS
3200	800 - 3200 mS
1.6S	400 - 1600 mS sampling time
3.2S	800 - 3200 mS sampling time

### DYNAMIC RANGE:

Delay Signal Path: Greater than 100 dB

### FREQUENCY RESPONSE:

Dry (Direct) Signal Path: +1/-3 dB 20-60,000 Hz

Delay Signal Path: +1/-3 dB 30-9,000 Hz

### MAXIMUM INPUT SIGNAL LEVEL:

2 V RMS, 1 kHz

### REMOTE FUNCTIONS:

Trigger

Bypass

Hold

Delay time modulation

### INPUT IMPEDANCE:

1 M ohm

### OUTPUT IMPEDANCE:

1 K ohm

### INSERTION POINTS (JACKS):

Signal Input (two ¼" phone jacks with switchable 20 dB pad)

Signal Output (two ¼" phone jacks, "stereo")

Modulation Input (¼" phone jacks)

### POWER REQUIREMENTS:

120 VAC, 60 Hz

### POWER CONSUMPTION:

25 watts

## CLASS B COMPUTING DEVICE: INFORMATION TO USER

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the equipment with respect to the receiver
- move the equipment away from the receiver
- plug the equipment into a different outlet so that the equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio-television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

*"How to Identify and Resolve Radio-TV Interference Problems"*

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Due to our efforts for constant improvement, features and specifications are subject to change without notice.

**DANGER**

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:

DURATION PER DAY IN HOURS	SOUND LEVEL dBA, SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS.

EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

**CAUTION**

THIS MIXING CONSOLE/EFFECTS DEVICE HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE SIGNAL (VOLTAGE) FOR PLAYING MODERN MUSIC. IMPROPER USE OF THE GAIN/EQUALIZER CONTROLS AND/OR IMPROPER USE OF INTERNAL/EXTERNAL BUSES MAY CREATE CLIPPING (SQUARE WAVES) AND POSSIBLY CAUSE SUBSEQUENT DAMAGE TO THE LOUDSPEAKER SYSTEMS. EXTENDED OPERATION OF THE GAIN/EQUALIZATION CONTROLS IN THEIR MAXIMUM POSITIONS IS THEREFORE NOT RECOMMENDED. PLEASE BE AWARE THAT MAXIMUM POWER CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE GAIN/EQUALIZATION CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

IT IS COMMON PRACTICE AMONG USERS OF SOUND REINFORCEMENT EQUIPMENT TO IDENTIFY THE INDIVIDUAL CHANNELS WITH A STRIP OF TAPE PLACED ABOVE OR BELOW THE ROW OF VOLUME FADERS. MANY TYPES OR BRANDS OF TAPE HAVE A VERY STRONG ADHESIVE WHICH CAN INHIBIT THE PAINT ON THE FACER PLATE AND ACTUALLY REMOVE THE PAINT WHEN THE TAPE IS REMOVED. WE STRONGLY RECOMMEND THAT SCOTCH TAPE NOT BE USED ON PAINTED SURFACES NOR ANY OTHER TAPE THAT IS NOT ESPECIALLY DESIGNED FOR SUCH APPLICATIONS. MEDIUM OR LIGHT ADHESIVE MASKING OR LABEL TAPE IS RECOMMENDED IF TAPE IS USED. ANY TAPE LEFT ON PAINTED SURFACE FOR EXTENDED PERIODS WILL BE DIFFICULT TO REMOVE. NEVER USE CLEAR OR SCOTCH TAPE FOR THESE APPLICATIONS.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia based household cleaner if necessary.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if:
  - A. The power supply cord or plug has been damaged.
  - B. Anything has fallen or been spilled into the unit.
  - C. The unit does not operate correctly.
  - D. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.



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