TIME MACHINE

RDS-1000
RDS-2000
RDS-4000
RDS-8000

OWNER'S MANUAL

The Time Machine

DigiTech's unparalled Time Machine produces nine different digital delay effects with crystal-clear sound reproduction. Choose from four different models, each delivering progressive amounts of delay and sampling capability.

The RDS-1000 provides 1000 milliseconds of delay and sampling with a bandwidth of 20 Hz to 10 kHz.

The RDS-2000 has two seconds (2000 msec) of delay and sampling in a bandwidth of 20 Hz to 16 kHz.

The RDS-4000 is highly versatile, with four seconds (4000 msec) of delay and sampling, between 20 Hz and 10 kHz.

The RDS-8000 is the big brother, sustaining up to eight seconds of digital delay and sampling, at 20 Hz to 16 kHz bandwidth.

The entire series of Time Machines now run with 12-bit VLSI engines for quieter, smoother performance. In addition to delay and sampling, there's chorusing, flanging, sound-on-sound layering, doubling, slapback, echo, and infinite repeat. DigiTech's Time Machines provide all of the most useful tools for studio and live performances.

Safety Precautions

Use only standard AC voltage. Uninsulated dangerous voltages are present within the product enclosure. Opening the chassis for any reason will void the manufacturer warranty.

Do not get the DigiTech Time Machine wet; doing so greatly increases the chances of electric shock and damage to the unit. If it becomes wet, shut the unit off immediately and take it to the dealer for service.

Use of a surge protector is recommended to decrease chances of equipment damage from voltage surges or spikes.

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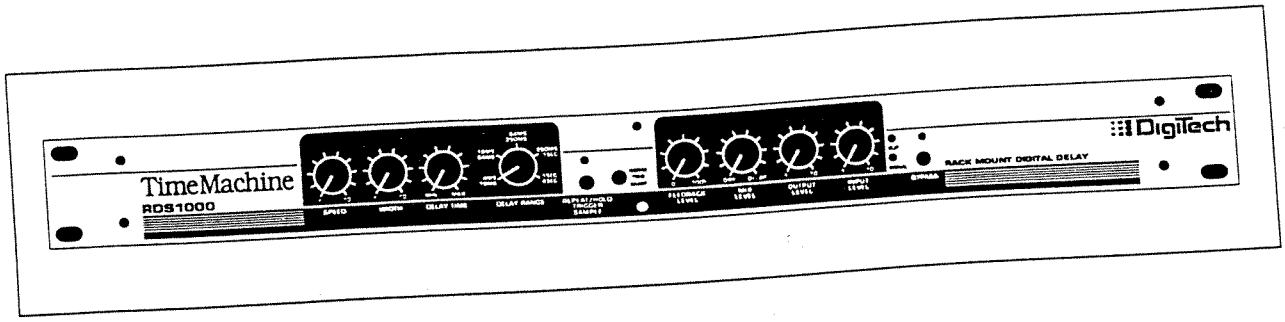
Front Panel Controls



SPEED Adjusts the speed of the delay time sweep from 0.04 Hz to 7.0 Hz.

WIDTH Adjusts the amount of delay time change, or the range of the sweep.

DELAY TIME Adjusts the amount of delay time within the selected DELAY RANGE.

DELAY RANGE Selects the desired delay range, as listed below:

RDS-1000
1 msec to 4 msec
4 msec to 16 msec
16 msec to 64 msec
64 msec to 250 msec
250 msec to 1 second

RDS-2000
2 msec to 8 msec
8.0 msec to 32 msec
32 msec to 125 msec
125 msec to 500 msec
500 msec to 2 seconds

RDS-4000
1 msec to 4 msec
16 msec to 64 msec
64 msec to 250 msec
250 msec to 1 second
1 second to 4 seconds

RDS-8000
2 msec to 8 msec
32 msec to 125 msec
125 msec to 500 msec
500 msec to 2 seconds
2 seconds to 8 seconds

NORM TRIG SAMP Switch selects normal play-through mode, play-back triggering, or sampling mode.

REPEAT/ HOLD TRIGGER SAMPLE Button turns on infinite repeat, play-back triggering, or sound sampling. In NORM mode, red LED shows infinite repeat is on. In TRIG mode, LED stays lit. In SAMP mode, LED is off while recording.

FEEDBACK LEVEL Sets the amount of signal fed back into the delay path to be delayed again. In long DELAY RANGEs, a high FEEDBACK setting results in more echoes. On short DELAY RANGEs, a high FEEDBACK setting gives a comb filter effect.

MIX LEVEL Adjusts the output signal from dry (no effects, counter-clockwise) to wet (maximum effects, clockwise).

OUTPUT Adjusts the output signal level.

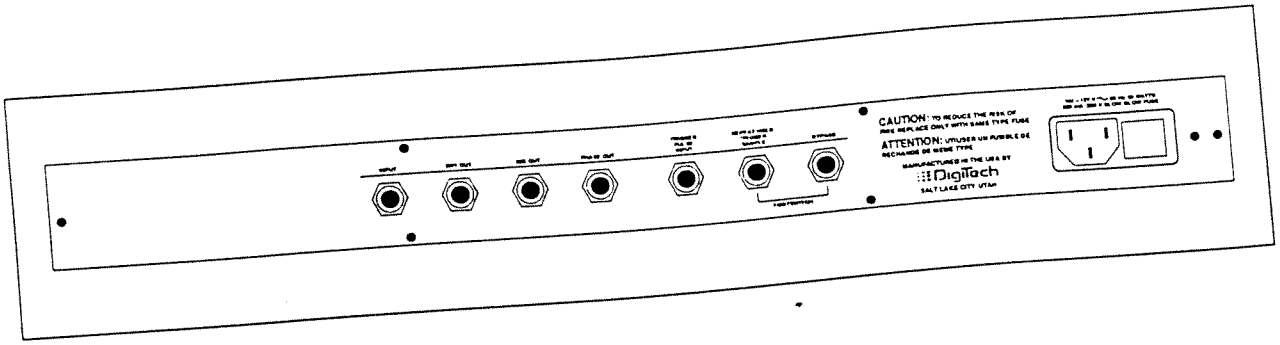
INPUT LEVEL Adjusts the signal level processed by the Time Machine.

CLIP Red LED indicates clipping caused by the input level being too high.

SIGNAL Green LED indicates the presence of an input signal.

BYPASS Bypasses Time Machine effects.

Rear Panel



BYPASS JACK For use with a momentary to ground footswitch. Toggles the signal bypass on and off.

REPEAT/ HOLD TRIGGER SAMPLE For use with a momentary to ground footswtich. Turns on infinite repeat, play-back triggering or sound sampling. Same as the front panel button.

TRIGGER INPUT For use with a drum machine or other triggering device. The low level input voltage should be between 0 and 1 volt, and the high level input voltage between 4 and 5 volts. Performs the same function as the REPEAT/TRIGGER/SAMPLE button on the front panel.

PHASE OUT Standard 1/4-inch jack for impedance balanced output. Inverts the delay signal.

MIX OUT Standard 1/4-inch jack for impedance balanced output. Non-inverted delay signal. Use of this jack in conjunction with the PHASE OUT jack will provide a stereo effect.

DRY OUT Standard 1/4-inch jack for (unbalanced) connection from the input jack. Relays buffered dry signal (without effects) to another effect device.

INPUT JACK Standard 1/4-inch jack for guitar or line signals.

Operation

Use the following procedures to optimize the performance of the Time Machine:

ADJUST INPUT AND OUTPUT LEVEL

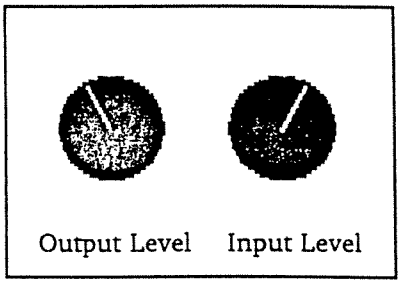
Input After connecting the Time Machine to other equipment, set the source to the loudest signal that will be used. Adjust the Time Machine INPUT LEVEL so the red CLIP LED only occasionally comes on. If the CLIP light comes on too frequently, turn down the INPUT LEVEL.

Output Adjust the output level to obtain the desired signal level for input to the next piece of equipment.

In most circumstances, best performance is achieved when the Time Machine OUTPUT and INPUT are set for unity gain.

UNITY GAIN

Unity gain is achieved by setting the Time Machine input and output signals at the same level. To do this, adjust the OUTPUT LEVEL so that it is the mirror opposite of the INPUT LEVEL, as shown below:



For example, if the INPUT LEVEL is set to the right of center (1 o'clock), set the OUTPUT LEVEL an equal amount to the left of center (11 o'clock).

CREATING EFFECTS

Flanging An effect originally produced by slowing tape reels by pressing against flanges. Created digitally by splitting the signal, using a small delay time on one, then joining it with the original. Create by setting the DELAY RANGE as follows:

RDS-1000: 1 msec to 4 msec
RDS-2000: 2 msec to 8 msec
RDS-4000: 1 msec to 4 msec
RDS-8000: 2 msec to 8 msec

Turn the FEEDBACK LEVEL full clockwise, then set the DELAY TIME, WIDTH and SPEED as desired.

Chorusing Simulates a chorus of instruments playing at different tones. Created by splitting the signal, detuning and using a long delay on one, then joining it with the original. Create by setting the DELAY RANGE as follows:

RDS-1000: 16 msec to 64 msec
RDS-2000: 8.0 msec to 31.25 msec
RDS-4000: 16 msec to 64 msec
RDS-8000: 8.0 msec to 31.25 msec

Turn the FEEDBACK LEVEL full **counter**-clockwise, then set the DELAY TIME, SPEED, and WIDTH for just the right sound.

Operation (continued)

Slapback A doubling effect created by splitting the signal, delaying one with a short sweep width, then joining it with the original. Create by setting the DELAY RANGE as follows:

RDS-1000: 64 msec to 250 msec
RDS-2000: 32 msec to 125 ms
RDS-4000: 64 msec to 250 msec
RDS-8000: 32 msec to 125 ms

Set the WIDTH full counterclockwise, then set the DELAY TIME and FEEDBACK as desired.

Echo Similar to a slapback with a longer delay time. Create by setting the DELAY RANGE as follows:

RDS-1000: 250 msec to 1 second
RDS-2000: 500 msec to 2 seconds
RDS-4000: 250 msec to 1 second
or 1 second to 4 seconds
RDS-8000: 500 msec to 2 seconds
or 2 seconds to 8 seconds

Set the WIDTH full counterclockwise, then set the DELAY TIME and FEEDBACK as desired. The higher the FEEDBACK LEVEL, the more repeats.

Sampling Set the NORM/TRIG/SAMP switch to SAMP, then play a rhythm loud enough to start the recording cycle. The recording cycle cannot be triggered again by the guitar until the NORM/TRIG/SAMP switch is set to TRIG then back to SAMP. Pushing the REPEAT/TRIGGER/SAMPLE button or footswitch will start the cycle any number of times. The Time Machine records the sound for one memory cycle (equal to the model's delay time; i.e. 1000 msec for the RDS-1000, 2000 msec for the RDS-2000, etc).

Now set the switch to TRIG and push the REPEAT/TRIGGER/-SAMPLE button or footswitch. The sample is played back each time the button or footswitch is pressed. The sample can be synchronized with a drum machine by connecting the TRIGGER OUT of the drum machine with the TRIGGER IN of the Time Machine; the sample is played back each time the pulse goes high.

Infinite Repeat Set the DELAY RANGE as follows:

RDS-1000: 250 msec to 1 second
RDS-2000: 500 msec to 2 seconds
RDS-4000: 250 msec to 1 second
or 1 second to 4 seconds
RDS-8000: 500 msec to 2 seconds
or 2 seconds to 8 seconds

Set the DELAY TIME long and the FEEDBACK low. Set the NORM/-TRIG/SAMP switch to NORM, then play a riff with the REPEAT/TRIGGER/SAMPLE button off (shown by the LED). The sound is recorded for one memory cycle. Now push the REPEAT/TRIGGER/SAMPLE button or footswitch. The sample is repeated over and over until the button or footswitch is pressed again.

Sound-on-Sound Put down a rhythm riff as explained in the infinite repeat section. Turn the FEEDBACK LEVEL all the way up and set the NORM/TRIG/-SAMP switch to NORM. Press the REPEAT/TRIGGER/SAMPLE button or footswitch, play a lick that fits the rhythm, and press the button or footswitch again. Several tracks may be stored in the memory using this method; however, the earlier tracks will be slightly attenuated.

FCC Compliance

This equipment has been tested and found to comply with the limits of a Class B computing device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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 or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le prèsent appareil numèrique n'èmet pas de bruits radioèlectriques dèpassant les limites applicables aux appareils numèriques de Classe B prescrites dans le règlement sur le brouillage radioèlectrique èdictè par le Ministère des Communications du Canada.

Specifications

Freq. Response:

RDS-1000/4000 -- 20 Hz to 10 kHz
RDS-2000/8000 -- 20 Hz to 16 kHz

THD & Noise: Less than 0.3% at 1 kHz

SNR: Greater than 90 dB (ref 0 dB = $0.775v_{rms}$)

Maximum Input: +18 dBv (ref $0.775v_{rms}$)

Maximum Output: +18 dBv (ref $0.775v_{rms}$)

Input Impedance: 470k ohm

Output Impedance: 51 ohm

Weight: 5.6 lbs.
2.5 kg

Dimensions: 1.75" H x 19" W x 5.925" D
44mm x 483mm x 150mm

Fuse: 200 mA 250 v Slow Blow