Digital Delay

MXR Professional Products Group


MXR
off
on
.31
.63
1.3
2.5
5
10
20
40
80
160
Delay
Time x1 msec
20
10
5
2.5
Bandwidth kHz
digital delay
Delay Time
Sweep
Width
Frequency
Mix
Regen
Level
IN
OUT
Delay
Bypass
÷2
×2
0 % 100
1 Hz 10
(Pull ×100)
dry
delay
(Pull: invert delay phase)
off
∞
-5
dB
+5

Digital Delay

The MXR Digital Delay is a self-contained audio delay line which utilizes sophisticated technology to achieve a new standard of professional quality performance. The culmination of an intensive design program, the MXR Digital Delay is unparalleled in versatility, ease of operation, and creative application.

Although the MXR Digital Delay is capable of a wide variety of effects, the basic function of the unit is quite straightforward. The input signal is processed through circuitry which delays the signal by a specific amount of time. It is then mixed back with the 'dry' or undelayed signal at the output of the delay. The effect produced will depend upon the amount of delay time chosen. The basic effects that can be obtained by using appropriate portions of the wide delay range provided by the MXR Digital Delay include discrete echoes, vocal doubling, and hard reverberation. In addition to these basic effects, the MXR Digital Delay contains associated circuitry which allows such unique effects as flanging, pitch alterations (vibrato, pitch bending), frequency modulation and infinite (non-deteriorating) repeat-hold.

The MXR Digital Delay employs digital random access memory to produce a time-delayed signal. This technique, derived from computer technology, represents a departure from previous shift register methods. The analog input signal is converted to digital form, stored in the memory circuitry and removed at some designated later time. It is then converted back to analog form and fed to the output.

This method provides the user with the advantages of a wider usable delay range, more precise control of delay time, and preservation of signal quality. The MXR Digital Delay makes available delay times ranging from 0.08msec. to 320msec. (1 second = 1000msec.), fully variable, without excessive noise or mechanical reliability problems. This delay range is expandable to 1280msec., in increments of 320msec., by means of up to three additional plug-in memory boards. These boards are available from MXR and are easily installed by the user.

The MXR Digital Delay is designed for a wide variety of applications including recording, P.A., and amplified musical instruments. The unit is rack-mountable for studio installation, and an optional road case is available for onstage use by the traveling musician.

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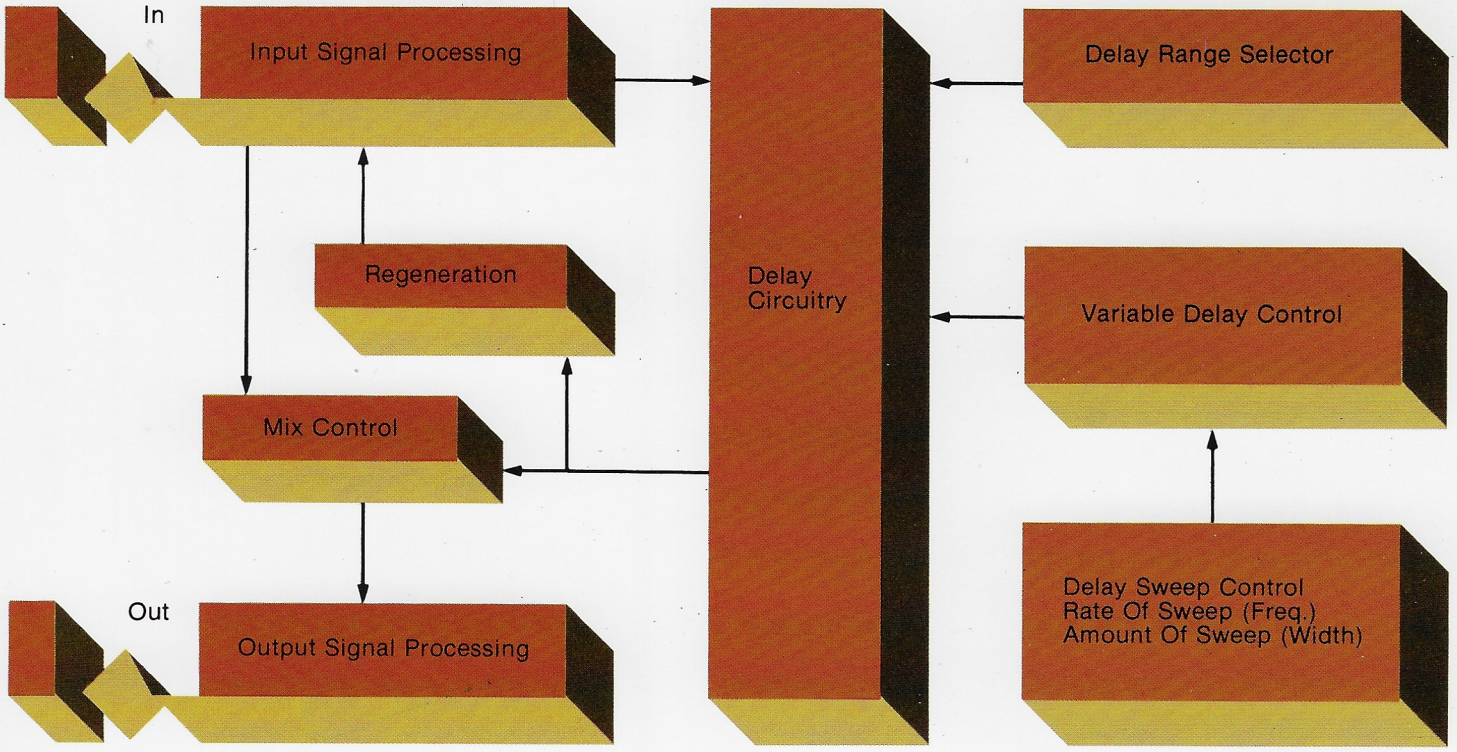

Digital Delay Specifications:

Maximum Delay (msec.)

Bandwidth Selected	Number of Memory Boards Installed			
	1	2	3	4
20KHz	40	80	120	160
10KHz	80	160	240	320
5KHz	160	320	480	640
2.5KHz	320	640	960	1280

Frequency Response Dry	±1, (20Hz–20KHz)
Bandwidth Selected:	
20KHz	+1,–3dB (20Hz–18KHz)
10KHz	+1,–3dB (20Hz–9KHz)
5KHz	+1,–3dB (20Hz–4.7KHz)
2.5KHz	+1,–3dB (20Hz–2.4KHz)
Input Impedance	200K ohm (balanced, ring or tip to ground)
C.M.R.R.	36dB (typical)
Output Impedance	100 ohms, designed to work into 600 ohms or higher
Maximum Input Level	+20dBm, LEVEL control past '3 o'clock' or 20dB above limit threshold
Maximum Output Level	+20dBm (unloaded) +18dBm (600 ohm load) (LEVEL control past '3 o'clock')

Residual Noise	greater than 80dB below limit threshold
T.H.D.	less than 0.1% near OVER-LOAD level (1KHz) less than 0.5% near OVER-LOAD level (40Hz–7KHz)
I.M.	less than 0.1% (60Hz/7KHz, 1:1) less than 0.5% (60Hz/7KHz, 4:1)
Level Matching Range	–20dBm to +15dBm
Regeneration Range	0 to 100%
Variable Delay Range	4:1 (continuous)
Sweep Frequency Range	0.1Hz to 1KHz (two ranges)
Sweep Width	0 to 100% (4:1)

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