



A12-33 Programmable Audio Signal Generator

The A12-33 Programmable Audio Signal Generator, a tone/noise generator that can be both manually and programmatically controlled with **Graphic State Notation**. This unit delivers any frequency between 50Hz and 20 kHz, limited only by the response capabilities of your speaker. Users can configure *and change* practically any frequency-amplitude combination *during* an experiment. This makes the A12-33 an ideal auditory stimulus for paradigms such as: fear conditioning, passive or active avoidance, or simply as a precise auditory cueing device. The A12-33 is also unique in that it allows the user to present tone bursts as well as noise bursts through the same output.

Front Panel Controls

Frequency Control

The frequency can be controlled via the push-wheels on the front panel. The frequency is the value of the push wheel times the multiplier which is determined by the "Range" Toggle switch. In the X10 Range, the unit can produce frequencies from 50 Hz to 9 kHz. In the X100 Range, the unit can produce frequencies from 500 Hz to 20 kHz. The manual control is of no consequence when the programmable input is used to control frequency. However, the range toggle switch does determine the frequency range for a given programmable input.

Tone Amplitude Control

The amplitude of the tone can be controlled via the push-wheels on the front panel. The output is the setting times .1% Full Scale. However, when using the programmable control on the rear, the manual controls are bypassed and the output is controlled solely by the 0 to 2.5VDC input on the programmable amplitude input.

Noise Amplitude Control

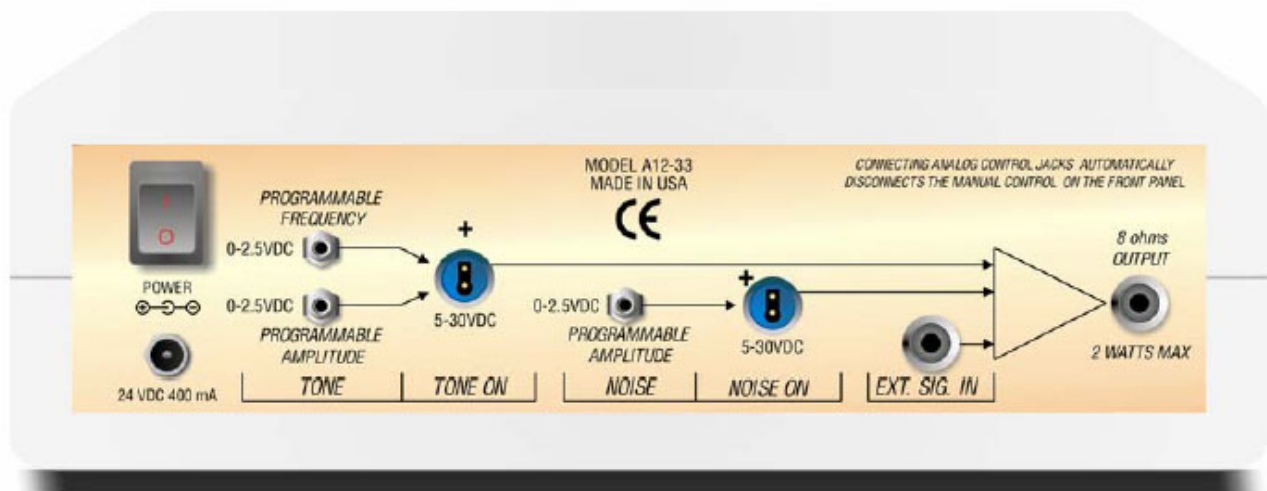
The amplitude of the noise can be controlled via the push-wheels on the front panel. The output is the setting times.1% Full Scale. However, when using the programmable control on the rear, the manual controls are bypassed and the output is controlled solely by the 0 to 2.5VDC input on the programmable amplitude input.

f -Transition

f -Transition is how quickly the frequency can be changed. If the unit is set to zero, the output will change as quickly as the frequency control changes, but if the unit is set for 100ms, the unit will roll-up or roll-down to the set frequency (in approx. 100ms) and the frequency will ramp up or down. In most cases this would be set to zero.

Shaped Rise

Shaping is used to eliminate the popping sound a speaker makes when initially gating the output on. The gating used in this unit is linear and the amplitude of the unit will rise linearly when gated on/off. The rate is determined by the Shaped Rise controls on the front panel. The available settings are 0, 1, 5, 10, 20, 50 and 100 ms. Shaping is provided for both the Tone and Noise outputs.



Rear Panel Controls

Programmable Frequency

This input is used to control the frequency via analog control. The frequency can be varied from 50Hz to 100 kHz. The frequency factor is determined by the range switch on the front panel. When in the X10 Range position, the frequency factor is 4 kHz/V and in the X100 Range position, the frequency factor is 40 kHz/V. The outputs of the H02-08 Linc have 12-bits of accuracy and thus provide a 10Hz resolution in the X100 Range and a 1Hz resolution in the X10 Range.

Programmable Tone Amplitude

This input is used to control the tone amplitude via analog control. The output can be varied linearly up to the maximum output amplitude via a 0 to 2.5VDC analog input. This input can be driven directly from the programmable outputs provided by the H02-08 Habitest Linc.

Tone Gate

This input is used to gate on the tone output. This input will accept a 5-30VDC input to turn on the output. It can be driven directly with an auxiliary output from the H02-08 Habitest Linc.

Programmable Noise Amplitude

This input is used to control the noise amplitude via analog control. The output can be varied linearly up to the maximum output amplitude via a 0 to 2.5VDC analog input. This input can be driven directly from the programmable outputs provided by the H02-08 Habitest Linc.

Noise Gate

This input is used to gate on the noise output. This input will accept a 5-30VDC input to turn on the output. It can be driven directly with an auxiliary output from the H02-08 Habitest Linc.

External Input

This input is provided to allow for external signals to be passed through the output amplifier for driving an 8 ohm load. When using the External Input, there is no need to gate the unit on. The presence of a signal at the input is all that is required. Thus, to gate on the external input, the user must be able to turn on/off the external signal.

SPECIFICATIONS

Frequency Range:	(X10) 50Hz to 9.4 kHz (X100) 500Hz to 20 kHz
Shaped Rise:	0, 1, 5, 10, 20, 50, & 100ms
Tone Source	
Frequency, 2 Ranges:	(X10) - 50Hz to 9.99 kHz (X100) - 500Hz to 99.9 kHz
Amplitude:	0 to 1.15V peak max
<i>f</i> -Transition:	0, 10, 20, 50 & 100ms
Programmable Tone Amplitude:	0 to 2.5VDC input
Tone Amplitude:	0 to 99.9% of full scale
Frequency Factors:	Range (X10) 4 kHz/V Range (X100) 40 kHz/V
Programmable Frequency:	0 to 2.5VDC input

Noise Source

Frequency Band:	20Hz to 20 kHz
Amplitude:	0 to 2.0V peak max
Programmable Noise Amplitude:	0 to 2.5VDC input
Noise Amplitude:	0 to 99.9% of full scale