

RS35

EXTERNAL PROCESSOR



The RS35 is a further development of the RS30, with greater flexibility and accuracy in the frequency-to-voltage converter and envelope follower (level-to-voltage) sections, and an additional frequency (trigger) extractor.

The converter works most effectively when the presented signal is pure and monophonic, so you may find it useful to insert a band-pass filter into the signal chain immediately before its input. If tuned to the frequency range of the instrument or voice being converted, this will attenuate upper harmonics and eliminate extraneous signals that may cause the RS35 to track less accurately.

FREQUENCY TO VOLTAGE CONVERSION

The RS35 F/V converter accepts an audio signal at its input, analyses its pitch and generates a pitch CV.

FREQ IN

The input accepts any audio signal in the range $\pm 10V$. Two frequency-to-voltage conversion modes are provided:

1OCT/VOLT:

The RS35 produces CVs conforming to the 1V/Oct standard. The maximum output voltage lies in the range -4V to +3V.

VARY:

Conversion ranges from approximately $\infty V/Oct$ (no response at MIN) to 0.5V/Oct (MAX) as determined by the position of

the VARY DEPTH knob. The maximum output voltage lies in the range -10V to +6V.

F-RANGE

Two frequency modes are provided:

1kHz:

The RS35 converts signals in the range 20Hz - 1.2kHz. The accuracy of the output CV is better than 1%.

10kHz:

The RS35 converts signals in the range 100Hz - 10kHz. The accuracy of the output CV is better than 2%.

F-V SLEW

The SLEW control prevents rapid changes in the CV derived from the input. At its maximum, the slew rate is approximately 2s, providing smooth transitions (portamento) between voltages.

FREQ-V V-OUT

The converter provides a single output with a maximum range -10V to +6V. When no signal is present at the input, the output voltage drops to the minimum determined by the conversion mode selected and (if appropriate) VARY DEPTH. This means that a voltage in the range 0V to -6V is generated at the output.

HELD-V OUT

At this output, no drop in the CV occurs when no input signal is present, and the output CV is held constant between instances of Trigger activity (see below). The accuracy at the HELD-V OUT is better than 1% between 100Hz and 1.2kHz, but will drop toward 5% in the deep bass (20Hz to 100Hz). The accuracy is better than 2% across the whole of the 10kHz range.

LEVEL TO VOLTAGE CONVERSION

The RS35's envelope follower, which incorporates a level control and a slew limiter, generates a CV corresponding to the average amplitude of the signal presented to the FREQ IN input.

L-V LEVEL

At its maximum anticlockwise setting, the LEVEL voltage is fully attenuated. As you turn the control clockwise, the gain increases and, at MAX, a voltage in excess of +10V can be obtained.

The red LED provides visual confirmation of the level-to-voltage activity. If this is not lit, there is no conversion, and you should increase the L-V DEPTH.

L-V SLEW

Slew prevents rapid changes in the signal derived from the input. At its maximum, the slew rate is approximately 1s.

LEVEL-V OUT

Provides an output in the range 0V to +10V.

TRIGGER GENERATION

A pulse wave is generated at the frequency of the input signal within the range 1Hz to 10kHz. If at a suitably low frequency, you can use this to clock sequencers, to trigger contour generators, and so on. At higher frequencies, use an RS280 clock divider to extract suitable triggers.

TRIG SENSE

The Sense (sensitivity) determines the amplitude level of the triggers generated.

TRIG OUT

The trigger output is nominally a +5V pulse.

The green LED provides visual confirmation of the trigger generator's activity. If this is not lit, the trigger level will be too low to drive the inputs of other modules, and you should increase the TRIG SENSE.