RA222 Noise Gate

OPERATORS MANUAL

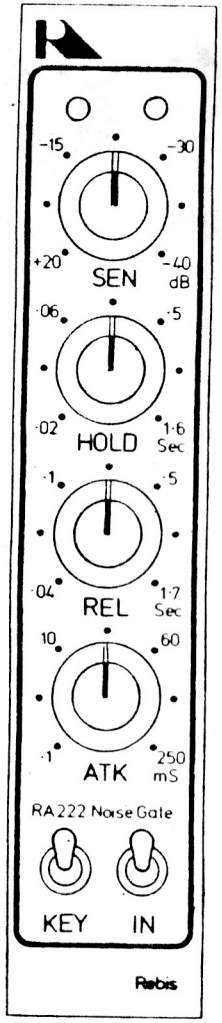
INTRODUCTION

The RA222 VCA Noise Gate uses the latest VCA technology to provide low distortion, low noise gating action with independant control of dynamic parameters. Separate Hold and Release controls allow this unit to be used on a wider variety of signals than previous generation gates.

Its applications include elimination of unwanted low level signals and cross mic pickup and modification of drum sounds.

The RA222 gate can be controlled by the signal it is gating or by an auxiliary audio source. This allows it to be used for frequency related gating, synchronising instruments, separating drum tracks and various special effects.

CONTROLS



LEDS: Indicate gating action. Red gate closed, Green gate open.

SEN: Adjusts the level at which the which the gate opens.
(-40 to +20dBm)

HOLD: Sets the time between the signal dropping below threshold and the gate starting to close.
(20mS to 1.6Secs)

REL: Sets how long the gate takes to close after the hold time.
(40mS to 1.7Secs)

ATK: Sets the time taken for the gate to open.
(20uS to 250mS)

KEY: Allows gating of normal through signal by an auxilliary audio source fed to the Key input.

IN: In/out switch, bypasses unit entirely. (LEDs still indicate gate's status.)

N.B. When linked for stereo operation all front panel controls should be set to the same positions on both modules.

INSTALLATION

Pin Connections

1) Keyway slot
9) Main 0 volts
10) +40 volts D.C.
12) Key Input
14) Output
16) Input

Pins 11, 13 and 15 are connected to 0 Volts on the module.

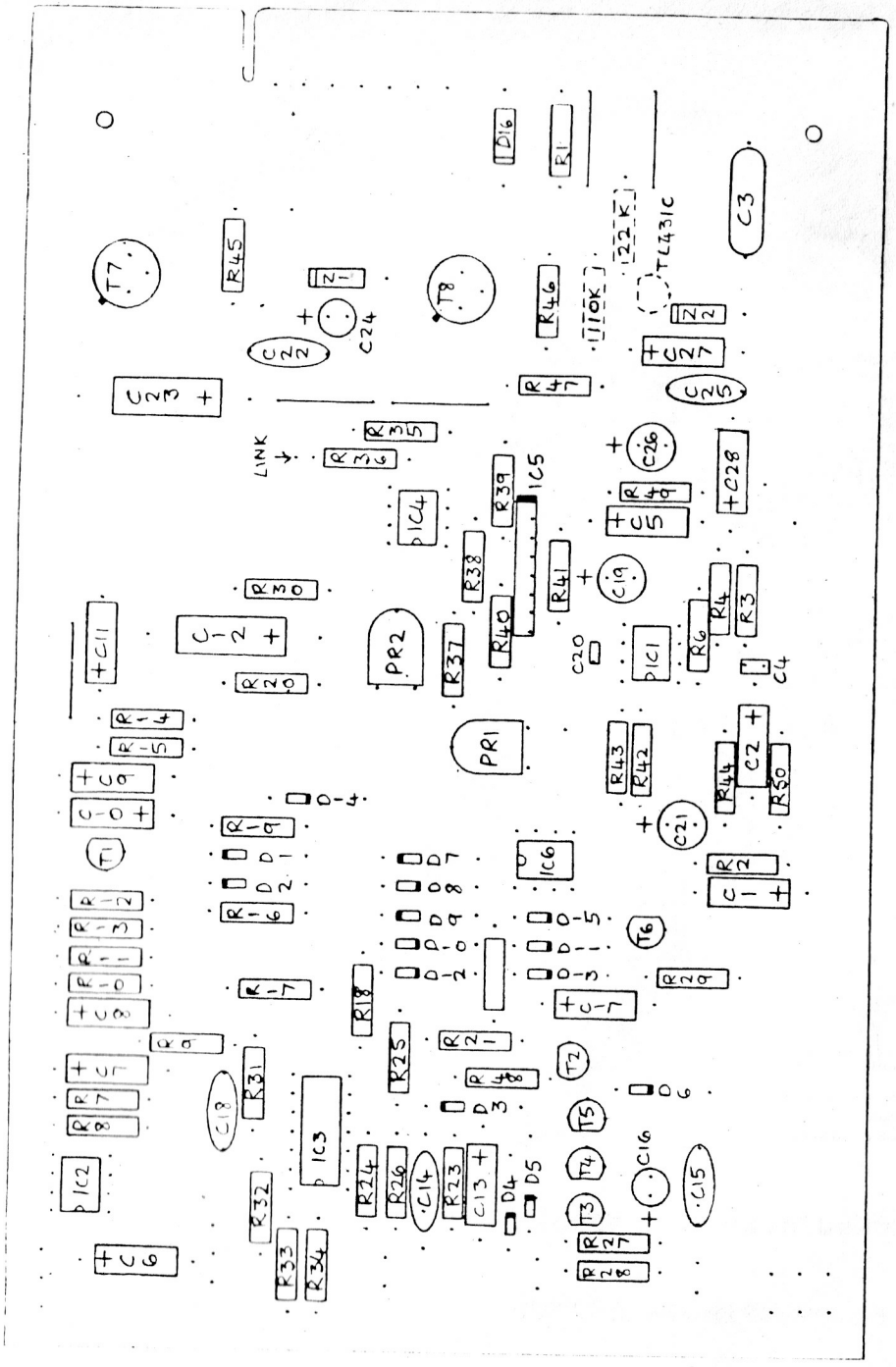
Screened cables should be used for all signal connections, the screens being connected to 0 Volts at the edge connector only for the inputs and at the jackfield only for the output.
A separate wire should join the Rack 0 Volts to the main Jackfield 0 volts.

Earthing

When installing the module in a Rebis Rack Frame ensure that it is firmly screwed in and that the rack is earthed, as it is essential both for safety and screening that the front panel is ultimately connected to mains earth.

Stereo Linking

These units can be linked in pairs for stereo operation but they have to be modified slightly as follows. Remove their screening plates and referring to the component layout connect an insulated wire from the hole marked LINK (just above R36) to one of the spare pins on the edge connector, say PIN 3. These pins can now be linked together on the rack connectors, either directly if the units are always to be used in stereo, or via a switch mounted in some convenient position.
Remove Z2 on both boards and insert the three components near to Z2 marked dotted on the layout.



SET UP INSTRUCTIONS.

General.
The only adjustments on a RA222 are RP1 which is set to minimise distortion and RP2 which sets control voltage feedthrough. It should not normally be necessary to adjust these parameters but if it is required to check their accuracy then proceed as follows.

Equipment:
1. Sine wave oscillator.
2. Distortion Meter.
3. Burst generator with variable mark/space.
4. Oscilloscope.

* **N.B.** If any of the above equipment is not available or after reading the following instructions carefully you do not understand any of them **DO NOT** proceed further but refer alignment to the Rebis service department.

Preliminary.
SEN control fully clockwise.
HOLD, REL and ATK fully anticlockwise.
IN switch down.
KEY switch up.

Procedure.
1. Inject 1kHz @ +10dBm into input from oscillator.
2. Monitor the output with the distortion meter and adjust RP1 for a minimum reading.
3. Disconnect the distortion meter and monitor the output with the oscilloscope.
4. Connect burst generator to input and set to 50mS bursts at -40dB with 100mS spaces at -50dB.
5. Adjust RP2 until the output waveform is symmetrical and contains minimum control voltage feedthrough.

SPECIFICATIONS

Threshold: Continuously variable from -40dBm to +20dBm.

Release: Continuously variable from 40mS/20dB to 1.7Secs/20dB.

Attack: Continuously variable from 50uS/20dB to 250mS/20dB.

Hold: Continuously variable from 20mS to 1.6Secs.

In/Out Switch: Bypasses unit entirely.

Key Switch: Audio input to allow control of side chain with an auxilliary source.

LEDs: Red indicates gate closed, Green indicates gate open.

Frequency Response: ± 0.5dB 20Hz to 20kHz.

Distortion: Below 0.05% THD at +12dBm at 1kHz.

Input Impedance: 100 kilohms.

Output Impedance: Less than 50 ohms.

Maximum Input: +21dBm.

Maximum Output: +20dBm into 600 ohms.

Noise: Better than -100dBm 20Hz to 20kHz.

Ratio: 20:1

Attenuation: Greater than 80dB.

Power Requirements: +40 Volts at 66mA.

Dimensions:5.25" x 1" x 7.9" behind front panel.