RA223 Compressor Limiter-Gate

OPERATORS MANUAL

INTRODUCTION

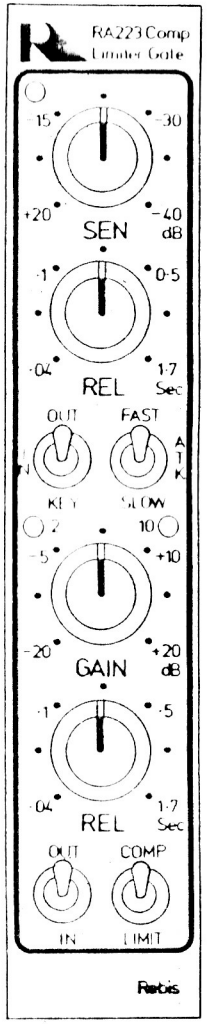
The RA223 Comp/Lim/Gate uses the latest VCA technology to provide low distortion, low noise compression and gating action in one module. This product will be equally at home on the road, in a PA system or in the studio large or small.

In any situation this unit allows simple but effective dynamic control of any signal, removing unwanted background noises and compressing large transients as the situation demands.

The two most popular standard items in any effects rack have been combined into one unit to make this the most compact and simple to operate device of its kind available.

The RA223 gate section 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



LED: Indicates gating action.LED on indicates gate closed.

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

REL: Sets the release time of the gate section. (40mS to 1.7Secs)

ATK Switch: Selects fast or slow attack. (25uS or 10mS)

OUT/IN/KEY Switch: Allows gating action to be disabled, enabled or controlled by an auxiliary audio source fed to the Key input.

LEDS: Indicate 2dB and 10dB of attenuation due to Comp/Lim.

GAIN: Provides up to 20dB of gain or loss at input to Comp/Lim.

REL: Sets the release time of the Comp/Lim section.
(40mS to 1.7Secs)

COMP/LIM Switch: Selects either 2:1 compression ratio with a threshold of 0dBm or 20:1 limiter ratio with a threshold of +8dBm

OUT/IN Switch: Disables or enables Comp/Limiter section.

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

INSTALLATION

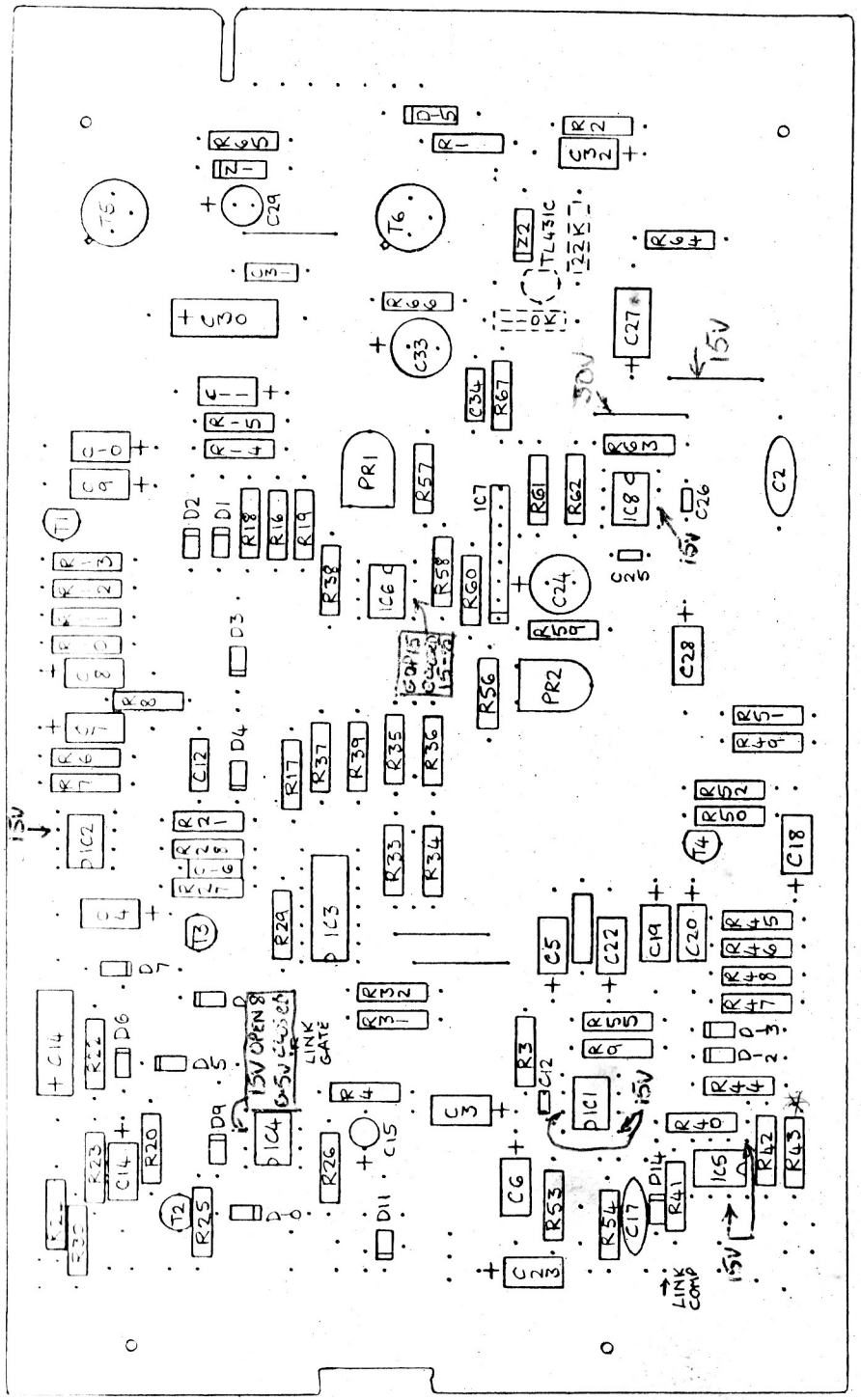
Pin Connections
1) Keyway slot
9) Main 0 volts
10) +40 volts D.C.
12) Key Input (Gate)
14) Output
16) Input

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
Each section of these units can be linked in pairs for stereo operation but the modules 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 GATE (just above R4) or LINK COMP (to the left of D14) to one of the spare pins on the edge connector, say PIN 3. (Dependant on which section you want to link) 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 RA223 are PR1 which is set to minimise distortion and PR2 which is set to minimise 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 PR1 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 PR2 until the output waveform is symmetrical and contains minimum control voltage feedthrough.

SPECIFICATIONS

Gate LED: 'Red LED indicates gate closed.
Gate Threshold: Continuously variable from -40dBm to +20dBm.
Gate Release: Continuously variable from 40mS/20dB to 1.7Secs/20dB.
Gate Attack: Switchable between 25uS and 10mS.
In/Out/Key Switch: Selects gate off, gate normal and gate Keyed with an auxiliary signal.

Gain: Continuously variable from -20dB to +20dB at input to Comp/Lim section.
Comp Release: Continuously variable from 4mS/20dB to 1.7Secs/20dB.
Comp LEDs: Indicate 2dB and 10dB of compression in Comp/Lim.
COMP/LIM Switch: Selects Ratio and Threshold of Comp/Lim section. Either 2:1 and 0dBm for compression or 20:1 and +8dBm for limiting.
Comp IN/OUT Switch: Enables the Comp/Lim section.
Comp/Lim Attack: Limit 5mS, Compress 10mS.

Frequency Response: ± 0.75dB 20Hz to 20kHz.
Distortion: Below 0.05% THD at +12dBm at 1kHz with no compression, 0.15% THD at +8dBm at 1kHz with 10dB of compression, Release max.
Noise: Better than -92dBm 20Hz to 20kHz Gate open. Better than -105dBm Gate closed.

Input Impedance: 100 kilohms Main input.
10 kilohms Key input.
Output Impedance: Less than 50 ohms.
Maximum Input: +21dBm.
Maximum Output: +20dBm into 600 ohms.

Ratio: Switchable 20:1 or 2:1
Attenuation (gate): Greater than 80dB.

Power Requirements: +40 Volts at 66mA.
Dimensions:5.25" x 1" x 7.9" behind front panel.