



**RDL**<sup>®</sup>  
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## RACK-UP<sup>®</sup> SERIES Models RU-VCA2 & RU-VCA2D Digitally Controlled Attenuator

### ANYWHERE YOU NEED...

- Remote Controllable Audio Levels
- Wide Attenuation Range in 1 dB Steps
- Attenuation to -96 dB, then OFF
- Multiple Control Locations Possible
- Precise Level Tracking (Stereo)
- Line-Level Balanced/Unbalanced
- Adjustable Ramp Up/Down Times
- Control by Pushbutton, external 0 –10 Vdc or 10 kΩ Pot
- Return to PRESET Function (pushbutton operation)
- Mono (RU-VCA2) or Stereo (RU-VCA2D) Attenuation



### You Need The RU-VCA2!

**APPLICATION:** The RU-VCA2 is the ideal choice in many installations where either local and/or remote audio level control is desired. Single or multiple remote control locations are possible using optional RDL RLC2 Remote Level Controls; single location remote control is possible using an RLC10K.

The RU-VCA2 rear-panel input(s) and output(s) may each be wired balanced or unbalanced. Bridging inputs allow either high or low impedance sources. The output is line-level, low-impedance balanced.

The RU-VCA2 powers up in one of two operating modes set by a rear panel jumper. In the normal mode, audio level is controlled by momentary pushbuttons. Remote pushbutton terminals and front-panel pushbuttons are provided for *ramp up* and *ramp down* operation. If either button is held in, the audio will ramp automatically. If a button is pulsed (< ½ second), the audio will increment one step. The time of both the *up* and *down* ramps is individually adjustable on the front panel. Pushing remote **UP** and **DOWN** buttons simultaneously immediately returns the audio to a preset level. The *preset* level is set on the RU-VCA2 front panel by holding the **GO TO PRESET** button in while adjusting the **SET LEVEL** trimming potentiometer for the desired level. Multiple remote control locations are possible in the normal mode. In the alternate mode the preset function is disabled and the audio level is controlled by a remote 10 kΩ linear taper pot or by 0 to 10 Vdc. A single location is possible using a remote 10 kΩ pot. In both modes, two separate 0 to 10 Vdc outputs are provided. The **RAMP** output drives the level display on an RDL RLC2 Remote Control; the **EQ RAMP** output is used to control an RDL Loudness Equalizer (see ST-LEQ1). A front-panel, variable-intensity LED indicates the relative audio level. Two additional LEDs indicate when the RU-VCA2 audio level is off or fully on (unity gain).

Audio levels are controlled in the RU-VCA2 using digital attenuators for optimum reliability, precise tracking and long-term noise-free performance. Use the RU-VCA2 individually, or combine it with other RDL RACK-UP, STICK-ON<sup>®</sup> or FLAT-PAK<sup>™</sup> products as part of a complete audio/video system.



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# RACK-UP® SERIES

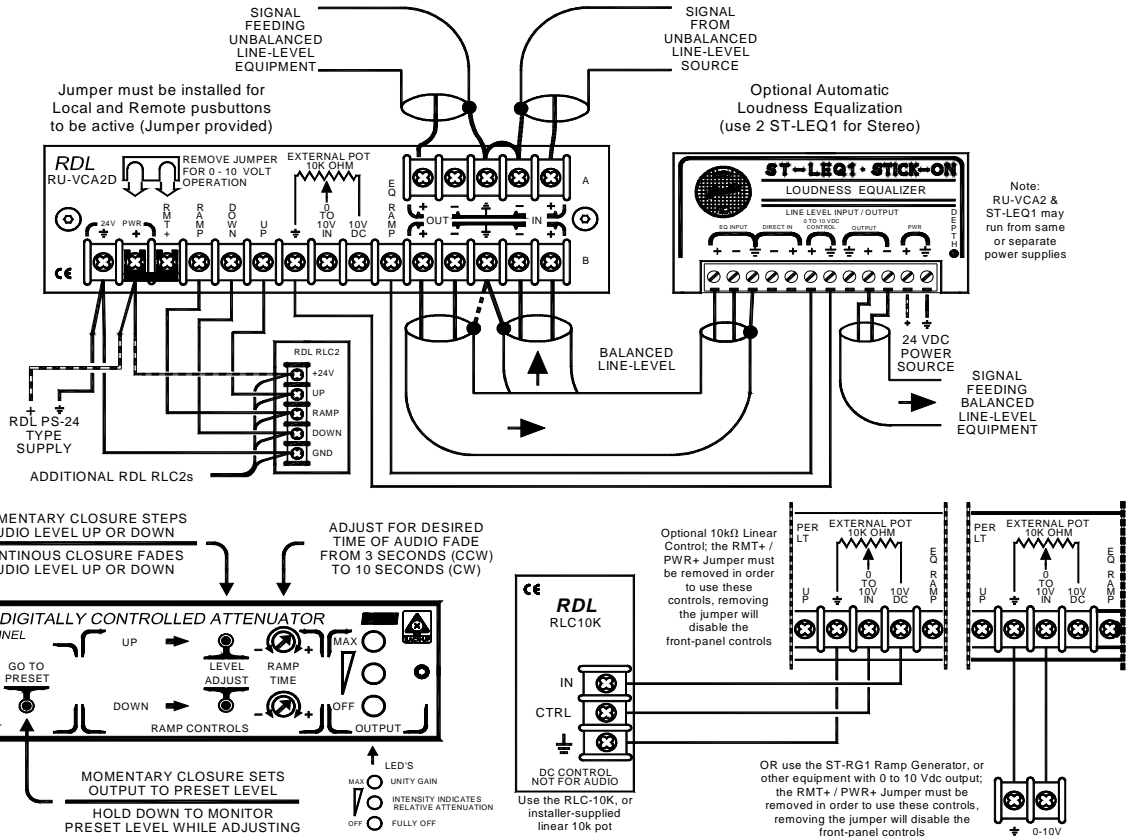
## Models RU-VCA2 & RU-VCA2D

### Digitally Controlled Attenuator

## Installation/Operation



EN55103-1 E1-E5; EN55103-2 E1-E4  
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



### TYPICAL PERFORMANCE

Input(s):	10 kΩ Balanced bridging, or Unbalanced, line level
Frequency Response:	10 Hz to 30 kHz (+/- 0.25 dB into bridging input)
THD+N:	< 0.002% (20 Hz to 20 kHz)
Gain:	Adjustable from unity to -96 dB, then OFF (bottom step)
Steps:	1dB (Unity to -50dB), 1.5dB (-50 to -60dB), 2.5dB (-60 to -68dB); -72dB, -77dB, -84dB, -96dB, OFF
Off Attenuation:	> 110 dB (1 kHz), > 85 dB (20 Hz - 20kHz)
Headroom:	> 20 dB (above +4 dBu)
Residual Noise:	< -95 dB (referred to +4 dBu with level set fully ON)
	< -100 dB (referred to +4 dBu with level set fully OFF)
Intermodulation Distortion:	< 0.0001 %
CMRR:	65 dB (50 to 120 Hz)
Crosstalk (RU-VCA2D):	< -90 dB (20 Hz to 20 kHz; Right into Left, or Left into Right)
Ramp Times:	0.5 second delay; then: 3 seconds to 10 seconds (UP and DOWN times individually adjustable on front panel)
Indicators (3):	Front-panel LEDs indicating; relative audio level (variable intensity yellow), fully ON condition (green), fully OFF condition (red)
Audio Output(s):	Balanced @ 150 Ω to drive hi or low impedance, balanced or unbalanced line
Ramp Output:	0 to 10 Vdc, (Ground-referenced) Note: Not intended to drive additional VCA 0-10V inputs
EQ Ramp Output:	0 to 10 Vdc, (Ground-referenced) Note: dc taper intended only to drive RDL Loudness EQ (ST-LEQ1)
Power Requirement:	24 Vdc @ 140 mA, Ground-referenced
Dimensions:	Height: 1.7 in. 4.3 cm
	Length: 5.8 in. 15.0 cm
	Depth: 2.0 in. 5.1 cm (case only)
	2.5 in. 6.4 cm (including barrier block)

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