

# RV-8

## RECEIVER

lexicon

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# HIGHLIGHTS



- Eight channels
- Eight configurable inputs
- Three independent zones
- Integrated 7-channel amplifier with massive toroidal transformer and thermal/DC protection
- AM/FM tuner with 40 presets
- Low noise MM phono input
- Two 5.1-channel analog audio inputs
- Analog bypass option for 5.1-channel and stereo audio inputs
- Auto switching between digital and analog audio input connectors
- Headphone output with available LOGIC7® processing
- Two 32-bit DSP engines
- Separate DSP engine for decoding compressed digital audio sources
- Four S/PDIF coaxial and four S/PDIF optical digital audio inputs
- One S/PDIF coaxial and one S/PDIF optical digital audio output connector
- 24-bit/192kHz D/A converters for all audio channels
- Two sets of analog A/V Zone 2 outputs; one fixed, one variable
- One set of analog audio Zone 3 outputs, variable level
- Broadcast-quality video switching
- Video conversion from S-video or composite video to component video
- Three component video inputs with full HDTV compatibility
- Five composite video inputs
- Five S-video inputs
- One component video output
- Four S-video outputs
- Five composite video outputs
- LOGIC7 processing
- Dolby Digital Surround EX, Dolby Pro Logic II and Dolby Pro Logic decoding
- DTS 96/24, DTS-ES (discrete and matrix) and DTS neo:6 decoding
- THX Ultra2 and THX Surround EX decoding
- THX Ultra2 certification
- Flash memory software upgrade capability
- Two internal expansion slots
- Rear panel access plate
- RS-232 control
- Rear-panel IR input connector
- Two trigger output connectors
- Powerful preprogrammed and learning IR remote control with LCD
- Optional 19-inch rack-mount kit

Based on the critically acclaimed line of Lexicon preamp/processors and power amplifiers, the RV-8 was designed from the ground up with the enthusiast in mind. The massive power amplifier section outputs an impressive 140 watts on each of its 7 channels across the entire audible spectrum with all 7 channels driven simultaneously. And it does so while retaining exceptional transparency, wide dynamic range and sonic neutrality. The RV-8 delivers real power that makes stand-alone multi-channel power amplifiers blush. Mated with an exceptional preamp/processor utilizing the latest algorithms, including LOGIC7 and an intuitive user interface, the RV-8 can be viewed as “separates” that happen to share the same chassis.

The RV-8 Receiver is an 8-channel audio and video control center with independent zone monitoring that provides control of audio and video source selection in three zones at the same time. The RV-8 includes a

host of inputs: a built-in tuner, eight digital audio, eight analog audio, phono, five composite video, five S-video and three component video input connectors. These can be assigned to any of the eight software configurable inputs. The analog input connectors can also be configured to accommodate up to two 5.1-channel analog sources such as DVD-A and SACD. The RV-8 features an integrated 7-channel power amplifier that is designed to achieve high levels of power and performance. Equipped with a massive toroidal power transformer, the amplifier also provides thermal and DC protection. A built-in AM/FM tuner allows for automatic or manual storing of up to 40 preset stations.

More than just an audio and video control center, the RV-8 offers the latest version of Lexicon's critically acclaimed LOGIC7 processing, which creates a 7.1-channel output signal from stereo, 5.1- and 6.1-channel sources. Unlike other decoders, LOGIC7 processing is



compatible with all input sources and requires no special encoding. Because the improvement it provides is clearly audible, LOGIC7 is widely regarded as the finest surround process currently available. A LOGIC7 downmix of multichannel source material is available when using the Headphone listening modes. If a stereo source is present, the dedicated HEADPHONE L7 listening mode utilizes Head Related Transfer Functions that introduce a subtle sense of surround sound, while preserving the original stereo image.

In addition to LOGIC7, the RV-8 offers Dolby Digital Surround EX, Dolby Pro Logic II, Dolby Pro Logic, DTS 96/24, DTS neo:6, DTS-ES, THX Ultra2 and THX Surround EX decoding. THX Ultra2 certification guarantees that the RV-8 meets the most stringent THX specifications. With two floating-point Hammerhead™ Digital Signal Processing (DSP) engines, the RV-8 boasts enormous processing power. These powerful

processors perform custom Lexicon processing such as LOGIC7 decoding, bass enhancement, dialog enhancement, auto azimuth, 5-speaker enhancement, bass management, high-precision digital crossovers and audio controls. These features are available at sample rates up to 96kHz, with 24-bit resolution to retain top performance from all sources. In addition, a third DSP engine is dedicated to decoding multi-channel compressed audio sources.

The RV-8 is one of the most advanced audio and video control centers available. High-precision 24-bit/96kHz A/D converters can be used to convert stereo analog audio input signals to digital signals, allowing the RV-8 to provide the benefits of precise digital signal processing without sacrificing signal integrity. 24-bit/192kHz D/A converters are utilized for all output channels. Alternatively, 5.1-channel and stereo analog inputs can be set up individually to bypass A/D conversion and internal

processing altogether, following a pure analog signal path directly to the outputs. Digital audio input signals are processed through a two-stage phase lock loop for extremely low intrinsic jitter and high jitter rejection.

Lexicon's proprietary auto azimuth technology corrects timing and level imbalances in stereo sources, ensuring exceptionally accurate playback of surround-encoded sources. A digital audio pass-through output is available for recording digital signals with a CD recorder or a similar component.

Complementing its audio performance, the RV-8 features broadcast-quality video switchers. A wide-bandwidth component video switcher accepts analog component or RGB video signals, while a composite and S-video switcher accepts high-quality NTSC, PAL or SECAM video signals.

Composite and S-video sources can be converted to component video. The component video switcher can pass High-Definition TV (HDTV) signals, as well as Standard-Definition TV (SDTV) signals. The switcher is designed to pass video signals without alteration or degradation.

Built to professional standards, the RV-8 is designed to serve as the control center in any high-quality home theater. Even the most demanding enthusiast will be impressed with its unique combination of power, performance and flexibility. Add to this a powerful learning remote control that makes your entire system easier to use and you start to understand why the RV-8 is the ultimate receiver.



# SPECIFICATIONS

## Audio Inputs and Outputs

Analog Audio Inputs	8 stereo (RCA) or 5 stereo and one 5.1-channel or 2 stereo and two 5.1-channel connectors
Digital Audio Inputs	4 S/PDIF coaxial (RCA) and 4 S/PDIF optical (TosLink) connectors; coaxial and optical input connectors conform to IEC-958, S/PDIF standards
Sample Rates: Accepts:	44.1, 48, 88.2, 96kHz 16-24 bits PCM audio, Dolby Digital, DTS, DTS-ES and DTS-96k discrete data formats
Main Audio Outputs	8 Unbalanced (RCA) connectors for Front L/R, Center, Sub, Side L/R and Rear L/R
Zone 2 Audio Outputs	1 Unbalanced (RCA, variable output level) stereo connector, 1 Unbalanced (RCA, fixed output level) stereo connector, 1 S/PDIF coaxial (RCA) connector and 1 optical (Toslink) connector
Zone 3 Audio Outputs	1 Stereo (RCA, variable output level) connector
Headphone	1 Stereo (1/4-inch phone) connector
Amplifier	7 Channels, 2 channels assignable to Zone 2 or Zone 3

## Performance (Main Zone)

Analog-to-Digital Conversion	24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture
Digital-to-Analog Conversion	24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture
Frequency Response*	20Hz to 20kHz, +0.1dB/-0.2dB, -0.5dB at 10Hz, -0.5dB at 40kHz, reference 1kHz
THD + Noise*	Below 0.02%, 20Hz to 20kHz, 140Wrms all channels driven
Dynamic Range*	105dB minimum, 22kHz bandwidth, "A" weighted 102dB minimum, 22kHz bandwidth, unweighted
Signal-to-Noise Ratio*	105dB minimum, 22kHz bandwidth, "A" weighted 102dB minimum, 22kHz bandwidth, unweighted
Input Sensitivity	200mVrms (2Vrms for maximum output level) at 0dB input gain
Input Impedance	100k $\Omega$ in parallel with 150pF
Preamp Output Level	150mVrms typical, 3.5Vrms maximum (RCA connectors) Maximum value with full-scale input signal and volume at +12dB
Preamp Output Impedance	500 $\Omega$ in parallel with 150pF (RCA connectors)

## Performance (Zone 2 and Zone 3)

Analog-to-Digital Conversion	24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture (Zone 2 only)
Digital-to-Analog Conversion	24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture
Frequency Response	10Hz to 20kHz, +0.1dB/-0.25dB, -0.75dB at 40kHz, reference 1kHz
THD + Noise	Below 0.005% at 1kHz, (1Vrms output level)
Dynamic Range	102dB minimum, 22kHz bandwidth
Signal-to-Noise Ratio	102dB minimum, 22kHz bandwidth
Input Sensitivity	200mVrms (4Vrms for maximum output level)
Input Impedance	100k $\Omega$ in parallel with 150pF
Preamp Output Level	200mVrms typical, 4Vrms maximum; maximum value with full-scale input signal and volume at 0dB
Preamp Output Impedance	300 $\Omega$ in parallel with 150pF

## Video Inputs and Outputs

Video Inputs	Composite (RCA), 5 S-video and 3 component video (RCA)
Video Outputs	5 Composite (RCA), (2 monitor, 2 Zone2, 1 Zone3), 4 S-video (2 monitor, 2 Zone2) and 1 component (RCA)

## Performance (Composite & S-video)

Compatibility	NTSC, PAL and SECAM
Switching	Active
Output Level	1.0V peak-to-peak
Impedance	75 $\Omega$
Input Return Loss	>40dB
Differential Gain	<0.5%
Differential Phase	<0.5°
Bandwidth	>25MHz
K Factor	<0.3%
Gain	$\pm$ 0.15dB
Signal-to-Noise Ratio	>65dB
Frequency Response	10Hz to 10MHz + 0.1/-0.3dB

## Performance (Component Video)

Compatibility	3-Channel (Y/Pb/Pr), format-independent
Switching	Passive
Impedance	75 $\Omega$
Bandwidth	>150MHz
Insertion Loss	<3dB
Video Converter	NTSC, PAL, SECAM to Y/Pb/Pr

## Other

Trigger Outputs	1 Power on/off and 1 programmable connector on detachable screw terminals (+12 VDC, 0.5 amps each)
RS-232 Serial Input/Output	2 9-pin D-sub connectors
Power Requirements	120/230 VAC, 50-60Hz, 1300W (universal line input), detachable power cord

### Dimensions & Weight

Height (with feet)	7.76 inches (197.1mm)
Width	17.3 inches (440mm)
Depth	21.2 inches (538.48mm)
Weight	65lb (29.48kg)

**Rack Mounting**      Optional brackets are available for installation in a standard 19" equipment rack (4 rack units required)

### Environment

Operating Temp:	0° to 35°C (32° to 95°F)
Storage Temp:	-30° to 75°C (-22° to 167°F)
Relative Humidity:	95% maximum without condensation

Remote Control	Hand-held, backlit infrared remote control unit, preprogrammed & learning
Batteries:	Requires 4 AAA batteries (alkaline batteries recommended)

## Performance (FM Tuner)

Tuning Range	64MHz to 108MHz
Usable Sensitivity	<4uV, 1.6uV typical
Selectivity	>87dbmV, 93dbmV typical
Frequency Response	50Hz to 16kHz, +0.5dB/-2.0dB
THD + Noise	Below 0.4% at 1 kHz (stereo)
Signal-to-Noise Ratio	50dB minimum at 60dBmV (stereo, A-Wtg)
Image Rejection	>50dB, >60dB typical
AM Suppression	>45dB, >55dB typical

## Performance (AM Tuner)

Tuning Range	520 to 1720kHz
Usable Sensitivity	<8uV, typ. 4uV
THD + Noise	<0.56%, 0.32% typical (1kHz, 60dBmV, 30% mod)
Wideband AGC	>80dBmV

## Compatible Amplifier Connectors

Banana Plugs	Standard 0.75 inch plugs
Space Connectors	Size 10-12 gauge
Bare Wire	Up to 10 gauge bare wire



\* Combined measurements of preamplifier and power amplifier sections

Specifications subject to change without notice.