



**RC-1590**  
Stereo Preamplifier  
PRELIMINARY



# RC-1590

## Stereo Preamplifier

It's all about control.

The RC-1590 stereo preamplifier has been engineered to the highest audio performance levels and provides an incredible level of control and flexibility for the user. Starting with a high performance power supply consisting of two Rotel custom built toroidal transformers for maximum efficiency and low magnetic fields, these transformers provide low-noise isolation between the analog and digital signals. They are part of a reference-grade power supply consisting of individual analog and digital regulator circuits with custom-made slit-foil capacitors. Slit-foil capacitors have very quick charge/discharge times and low signal loss ensuring tight bass performance.

Rotel engineers wanted to create a reference quality stereo preamplifier to match with our new RB-1590 stereo power amplifier. Every aspect of component selection and circuit topography was designed and carefully evaluated during multiple listening sessions to ensure the highest fidelity. For example, analog and digital circuits were designed separately, by specialized Rotel teams. Analog inputs are all very low noise circuitry and include a high performance moving magnet phono stage. Digital inputs are fully isolated and feature

a precision 32bit 768KHz Digital to Analog Converter (DAC).

The RC-1590 is fully feature-laden with Balanced XLR and Unbalanced RCA inputs and outputs, a TI precision volume control IC, a fixed volume line output, dual mono subwoofer outputs, digital outputs (Coax and Optical), digital inputs (3 Coax and 3 Optical), Aux, CD, and Tuner analog inputs, Internal APTX Bluetooth (supports APTX and standard Bluetooth) with rear mounted external antenna, a front USB iPod with 2.1A charging input, and rear panel PC-USB 24bit 192KHz input supporting DSD (Windows) and DoP (MAC computers DSD over PCM).

Other essential features include a remote control, 2 x 12-volt trigger outputs, a dimmable display, an automatic power off function (configurable), RS232 and IP control for automation system integration, Internet based software updates, Rotel Link connection, a detachable IEC power cord, an external IR remote input, and a front mounted 3.5mm headphone output jack.

For music enthusiasts who won't accept compromise, the RC-1590 preamplifier is in a class by itself, at a price that belies its incredible performance.



### SPECIFICATIONS

<b>Total Harmonic Distortion</b> (20Hz - 20kHz)	<0.004%	<b>Signal to Noise Ratio</b> (A weighting)	
<b>Input Sensitivity/Impedance</b>		Phono Input	80 dB
Phono Input (MM)	2.5 mV / 47k ohms	Line Level Inputs	110 dB
Line Level Inputs (RCA)	150 mV / 100k ohms	<b>Channel Separation</b>	
Line Level Inputs (XLR)	250 mV / 100k ohms	Phono Input	>75 dB
<b>Output Level</b>		Line Level Inputs	>75 dB
Line Level (RCA)	1 V	<b>Digital Section</b>	
Balanced (XLR)	2 V	<b>Frequency Response</b>	20Hz - 20kHz, (±0.5 dB, Max)
<b>Frequency Response</b>		<b>Signal to Noise Ratio</b> (A weighting)	90 dB
Phono Input	20Hz - 20kHz, 0 ±0.2 dB	<b>Digital Inputs</b>	SPDIF LPCM (up to 192kHz 24bit)
Line Level Inputs	10Hz - 100kHz, 0 ±0.1 dB	<b>PC-USB</b>	USB Audio Class 1.0 (up to 96kHz 24bit) USB Audio Class 2.0 (up to 192kHz 24bit)* <i>*Driver installation required DSD Replay - native or DoP</i>
		<b>Power Requirements</b>	
		USA	120 V, 60 Hz
		EC	230 V, 50 Hz
		<b>Power Consumption</b>	25 watts
		<b>Standby Power Consumption</b>	<0.5 watts
		<b>BTU</b>	78 BTU/h
		<b>Dimensions</b> (W x H x D)	431 x 144 x 348mm, 17 x 5 7/8 x 13 7/9 in
		<b>Front Panel Height</b>	3U (132.6mm, 5 1/4 in)
		<b>Weight</b> (net)	9.2 kg, 20.28 lbs.

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## Stereo Power Amplifier

Power - refined, detailed, and plenty of it. Rotel's new Class AB stereo power amplifier is rated at 350 watts per channel into 8 ohms both channels driven. That is a lot of power, but larger listening rooms or less sensitive loudspeaker designs require it to bring out the best possible performance and attain realistic audio dynamics.

The impressive capabilities of this amplifier begin with a solid foundation consisting of twin, massive toroidal transformers custom made by Rotel. These transformers are just part of a rock-solid power supply that includes eight special British made BHC capacitors, known for their low loss and quick response times. These components will continue to supply all of the voltage and current requirements needed, even under the most difficult load conditions.

But power unrefined has never been a Rotel design goal. Every aspect of circuit design has been carefully considered and each component has been rigorously selected after extensive listening sessions. The circuit topography has been laid out in a true monoblock design ensuring maximum signal separation and improved stereo imaging.

Features include: XLR Balanced and RCA input connections, two pair of 5-way speaker binding posts, 12-volt trigger control, thermal protection circuitry, over-current, over-voltage protection circuitry, dual staged power on relay to reduce surge current and extend longevity, and a detachable IEC power cord all in a 5 U chassis with included rack ears.

The RB-1590 has been designed for the most discerning audio enthusiast and will provide the highest levels of audio performance.



### SPECIFICATIONS

<b>Continuous Power Output</b> (20 - 20kHz, <0.03%, 8 ohms)	350 watts/channel	<b>Signal to Noise Ratio</b> (A weighting)	120 dB
<b>Total Harmonic Distortion</b> (20Hz - 20kHz, 8 ohms)	<0.03%	<b>Channel Separation</b>	>64 dB
<b>Intermodulation Distortion</b> (60Hz : 7kHz, 4 : 1)	<0.03%	<b>Input Impedance/Sensitivity</b>	
<b>Frequency Response</b> (±0.5 dB)	10Hz - 100kHz	Unbalance	12k ohms / 2.2 V
<b>Damping Factor</b> (1kHz, 8 ohms)	300	Balance	100k ohms / 3.5 V
<b>Speaker Impedance</b>	4 ohms minimum	<b>Gain</b>	
		Unbalance	27.5 dB (±0.5 dB)
		Balance	23.5 dB (±0.5 dB)
		<b>Power Requirements</b>	
		USA	120 volts, 60 Hz
		EC	230 volts, 50 Hz
		<b>Power Consumption</b>	
		<b>Standby</b>	< 0.5 watts
		<b>BTU</b> (4 ohms, 1/8th power)	2100 BTU/h
		<b>Dimensions</b> (W x H x D)	431 x 237 x 454mm
			17 x 9 3/8 x 17 7/8 in
			5U / 221mm / 8 3/4 in
		<b>Front Panel Height</b>	
		<b>Weight</b> (net)	38.1kg, 84 lb

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**DESCRIPTION**

The RT-1570 not only offers conventional radio reception for FM and DAB stations (including DAB+ where available), but features internet radio streaming and audio playback from a media server.

Internally the RT-1570 features one of Rotel's renown toroid transformers with separate windings for four independent power supplies; Two for the DAC circuits and a third for the filter and output stages. The filter/output circuits also include 'Slit-Foil' capacitors specifically developed for this model. The fourth power supply supports subsidiary circuits including the CPU and display. All of these circuits feature independent regulation and filtering as befits an audiophile product.

The Wolfson DAC offers the advantage of differential outputs to maximise performance, in conjunction with selected components for the signal path, filter circuits and output stages.

As well as receiving FM and DAB (DAB+) stations, the RT-1570 will accept a range of audio codecs (most notably mp3, FLAC and AIF), with resolution and sampling rates up to 24bit/96kHz. This versatility means that most internet radio services and very high-resolution audio files (normally stored on a local media server) will be reproduced in their native format and resolution. You may also be interested to know that other Rotel products, such as the RA-1570 or RC-1570 feature a special PC-USB input that can reproduce digital audio files of up to 24 bit/192kHz resolution.

The RT-1570 can easily be incorporated into multi room systems via RS232 and controlled with the likes of Crestron or AMX. The 'Rotel Link' is a straight forward 'plug and play' method of controlling compatible 'Rotel Link' products including amplifiers and CD players. The RT-1570 includes a 12V trigger for simple system on-off control.

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**FEATURES** **SPECIFICATIONS**

- DAB+ / FM / internet radio with network streaming
- Separate 30 pre-set memory banks for DAB, FM and internet radio
- Audiophile Wolfson DAC converts the FM / DAB+ module's digital output to analogue for improved audio performance
- Playback of high resolution files up to 24bit/96KHz
- High performance Rotel designed and built toroidal transformer
- Wound sectional transformer to separate digital and analogue circuits for virtually noise free audio signal paths
- 4 independent voltage regulator circuits for the digital and analogue circuits
- Slit foil capacitors utilized in power supply section to minimise noise and distortion.
- RT-1570 circuit layout and components derived from the RC-1570 pre-amplifier development
- Both digital and analogue outputs are available for maximum system integration and flexibility

<b>FM Tuner</b>	
<b>Usable Sensitivity</b>	22.2 dBf
<b>50dB Quieting Sensitivity</b>	27.2 dBf (mono)
<b>Signal to Noise Ratio (at 70 dBf)</b>	
Mono	65 dBf
Stereo	60 dBf
<b>Harmonic Distortion (at 70 dBf)</b>	
Mono	0.2%
Stereo	0.3%
<b>Frequency Response</b>	10Hz-15kHz, ±3 dB
<b>Stereo Separation (100Hz/1kHz)</b>	40 dB/30 dB
<b>Output Level</b>	
Line	1V
Digital	0.7V
<b>Antenna Input</b>	75 ohms unbalanced
<b>DAB Tuner</b>	
<b>Sensitivity</b>	-80 dBm
<b>Tuning Range</b>	Band III (174-240MHz)
<b>Audio Data Rate</b>	224Kbps (Max)
<b>Frequency Response</b>	20-20kHz, ±0.2 dB
<b>Analog Output</b>	2.3V at 0 dBFs
<b>Antenna Input</b>	75 ohms F connector
<b>General</b>	
<b>Network Connection</b>	802.11 b/g
<b>Security</b>	WEP, WPA1 (TKIP) WPA2 (TKIP)
<b>File Formats</b> (UPnP Music Server)	AAC, MP3, WMA (except lossless), OGG vorbis, WAV, AIFF, FLAC and AU
<b>Power Consumption</b>	16 watts
<b>Standby Power Consumption</b> (normal mode)	0.5 watts
<b>Power Requirements (AC)</b>	
USA	120V, 60 Hz
Europe	230V, 50 Hz
<b>Dimensions (W x H x D)</b>	430 x 99 x 310mm 17 x 4 x 12 1/4 in
<b>Front Panel Height</b>	2U (88.1mm, 3 1/2 in)
<b>Weight (net)</b>	6.33kg, 13.96 lb

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