

Absolute Pure Sound Integrated Amplifier RA180



RA180 Introduction

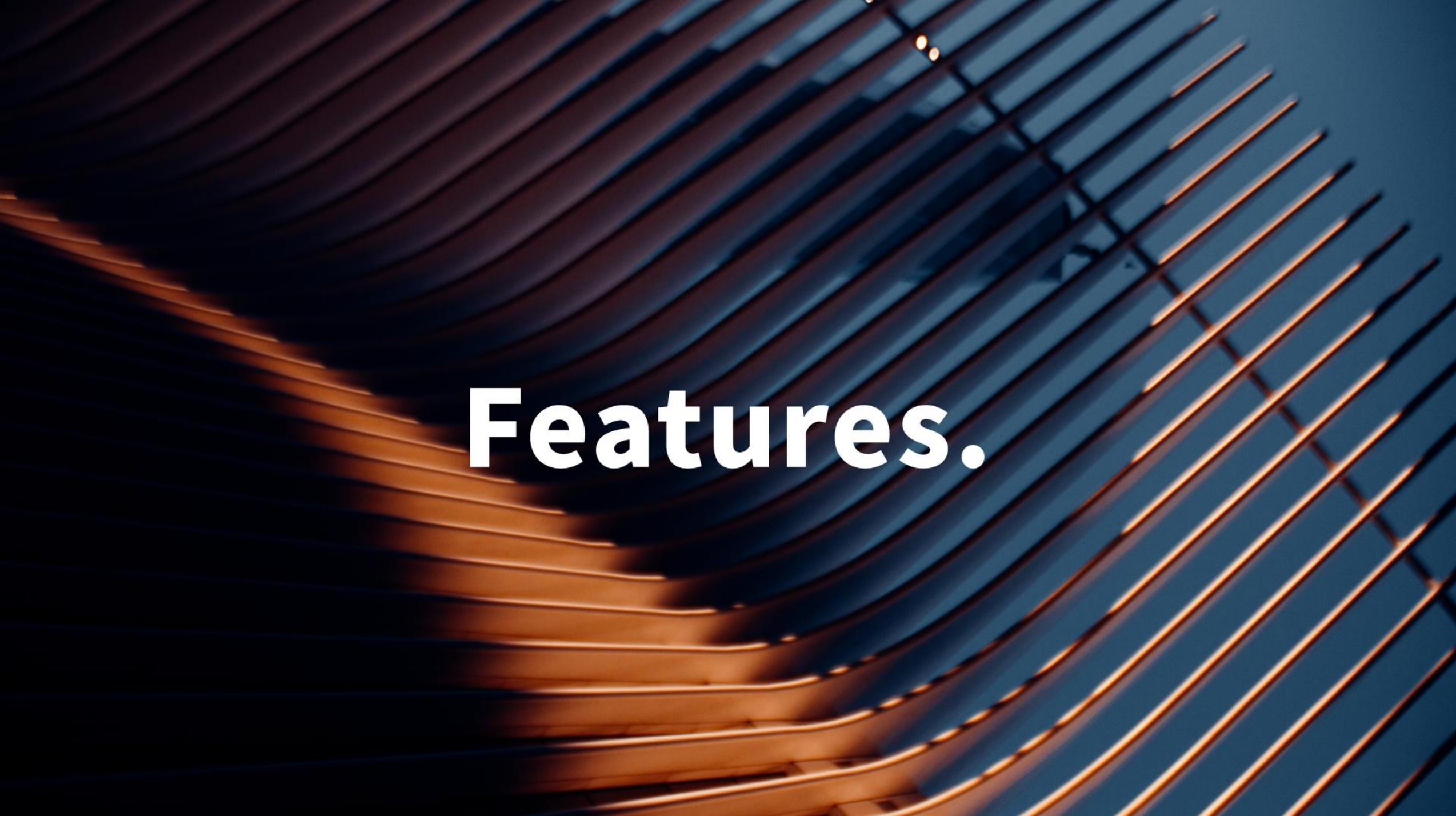
- 1) Design
- 2) Features
- 3) Specifications





Design.



The background features a complex pattern of curved, parallel lines in shades of blue and orange, creating a sense of depth and movement. A grid of thin lines is overlaid on this pattern, particularly visible on the right side. The overall aesthetic is modern and architectural.

Features.

Next Generation Class AD (Advanced D) Amplifier

1. Remarkably improved the linearity of the sound by applying the new material GaN (Gallium Nitride)
2. Supports Bi-Amping by applying 4 independent amplifier modules
3. Amplifier module supports up to 100kHz Super Tweeter range
4. Designed 1100W class high-output power stage
5. Supports PHONO AMP



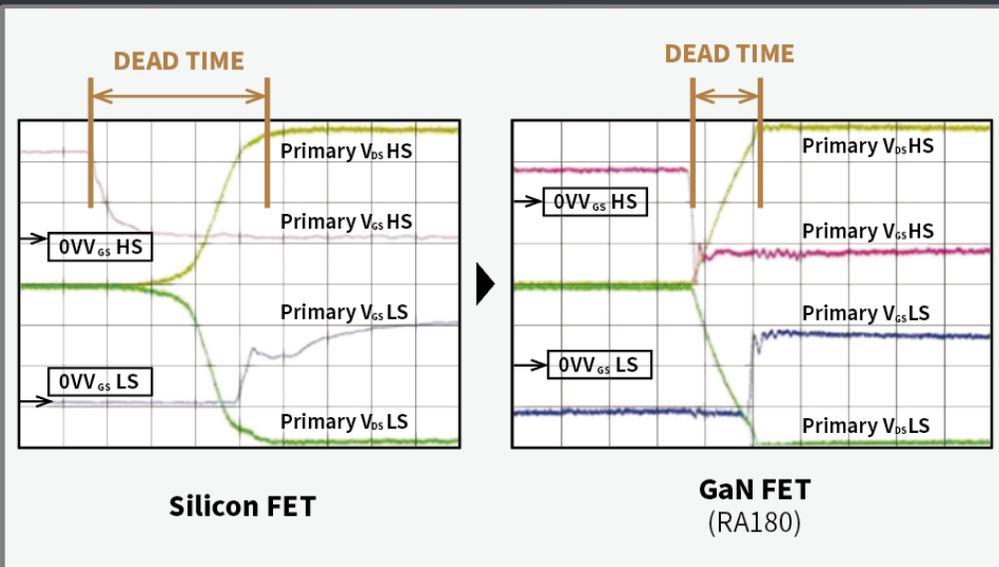
Next generation Gallium Nitride FET Applied Class AD Amplifier

In terms of power amplifier design, Class D is theoretically a topology that provides complete linear output at 0% distortion and 100% power efficiency.

In order to achieve the perfect Class D design theory, the switching operation speed and accuracy must be secured.

To improve this problem, RA180 implemented a perfect linear output by applying a Gallium Nitride FET instead of a Silicon FET to dramatically improve the Dead Time, which affects switching speed and accuracy, to less than 1/10.

The perfect linear output goes beyond the existing Class D limits and creates a natural sound like an analog amplifier.



Switching speed / Accuracy comparison between Silicon FET and GaN FET

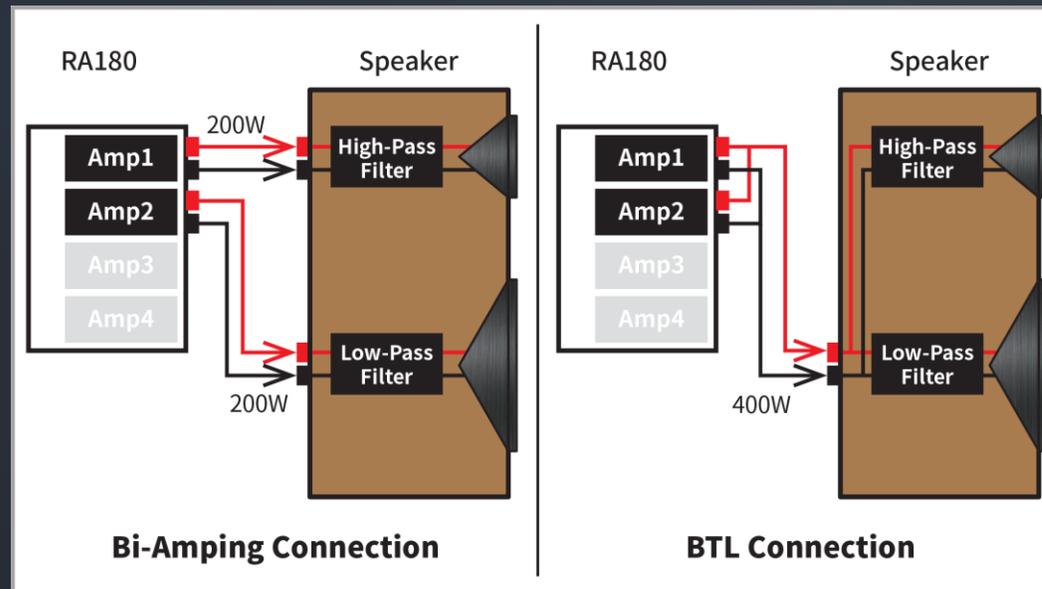
Four new mono amplifier modules

RA180 supports Stereo and provides two channels each for Left and Right.

The Amplifier module supports 200W (4 Ω , 8 Ω) to output 400W of stereo channels.

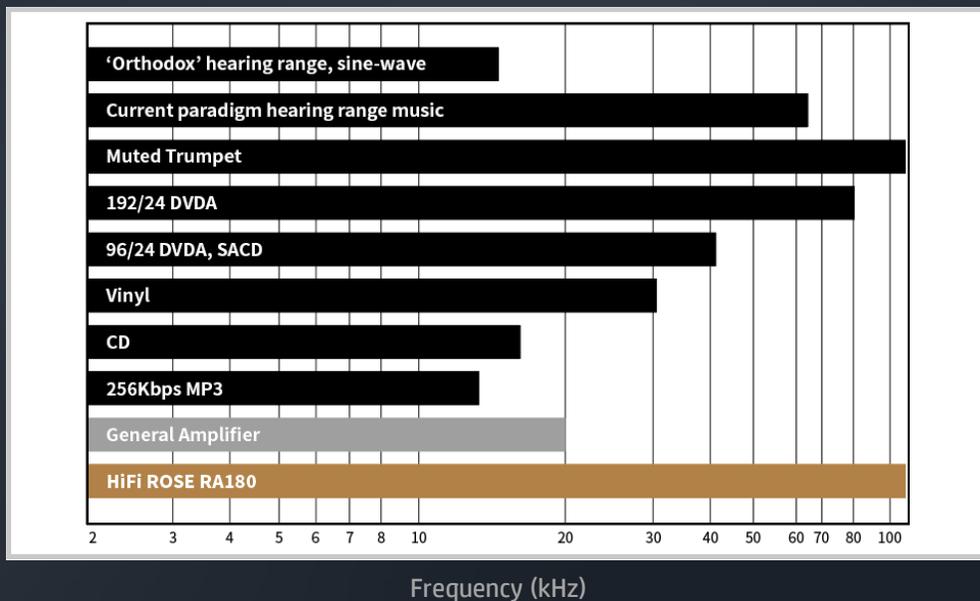
In addition, BTL mode is supported, and speaker operation is possible by configuring 2 channels 400W+400W.

Two independent amplifier modules per channel supports bi-amping to drive the high, mid, and low frequencies respectively, reducing the effect of back electromotive force generated by the speaker to create a more natural sound.



Generous design that outputs even the super tweeter area

It is known that the human hearing range has an upper limit of 15 kHz to 20 kHz. Temporarily high treble extends well beyond 20 kHz. If the sampling rate of the sound source is 88.2 kHz ~ 192 kHz, the frequency range of 40 kHz ~ 96 kHz is recorded.



RA180 contributes to the realism of the original sound as it faithfully reproduces a wide frequency range by designing a wide frequency response so that even high-resolution sound sources are not filtered with an output range of 20Hz to 100kHz (+/-1 dB).

PHONO Amplifier with Variable EQ

It supports MOVING MAGNET and MOVING COIL inputs with simple switch selection.

To respond to various records, it is equipped with a low-band BASSTURNOVER and high-band ROLL OFF selection function and provides high-purity EQ values using 0.1% error range parts for high-precision calibration circuits.



EQ Setting List (Most of representative manufacturers)		
Manufacture	TurnOver	RollOff. (10kHz / dB)
RIAA	500Hz	-13.7
Decca LP	500Hz	-13.7
TELDEC/AES	500Hz	-11
NAB	500Hz	-16
Columbia LP	500Hz	-16
CCIR	300Hz	-11
European 78s	300Hz	FLAT
American 78s	300Hz	-5
Columbia 78s	300Hz	-16

RA180 contributes to the realism of the original sound as it faithfully reproduces a wide frequency range by designing a wide frequency response so that even high-resolution sound sources are not filtered with an output range of 20Hz to 100kHz (+/-1dB).

It is equipped with a high-solid Active (OP-AMP type: 12dB Slope) EQ, not a 6dB gentle Slope Passive (CR type).

Active X-OVER for H/F output

RA180 supports H/F speaker output and has an active crossover function that sets high frequency output when using a super tweeter.

It is adjusted from a minimum of 600Hz to a maximum of 6kHz and outputs from the set frequency to 100kHz.

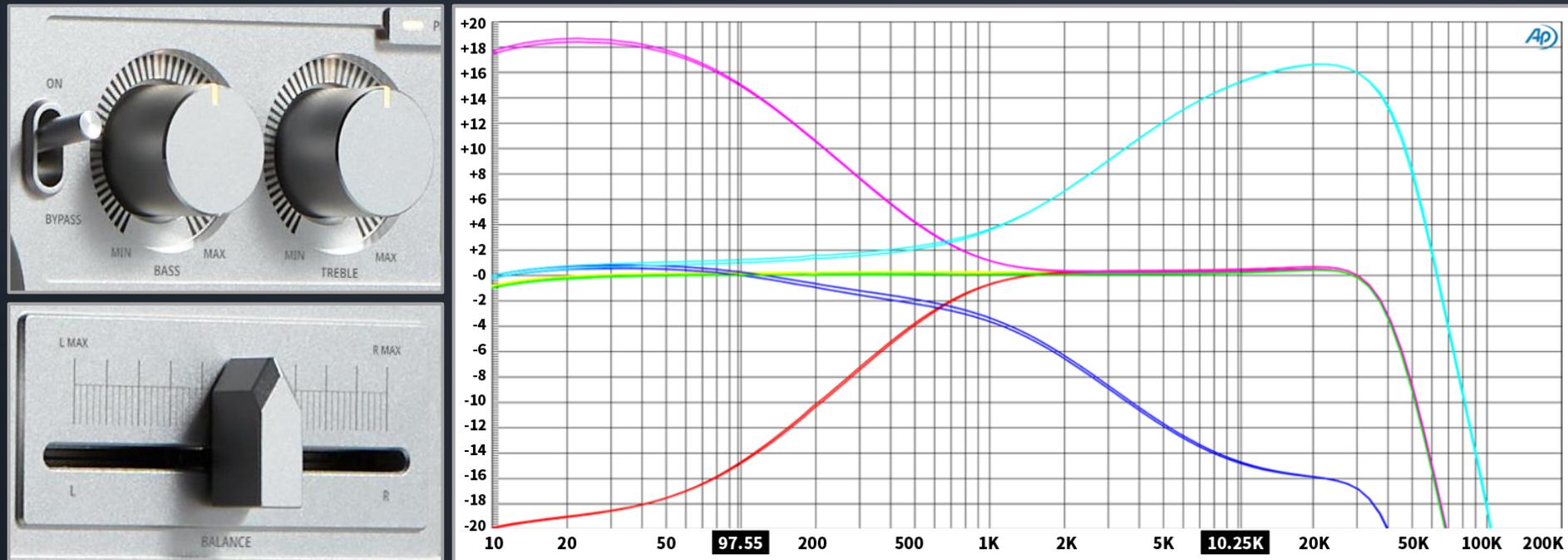


Super Tweeter improves low-pitched details and adds details to the harmony of the entire audio range. Feel the potential of recorded sound sources by adding super tweeter to your typical speaker environment

BASS, TREBLE, BALANCE control

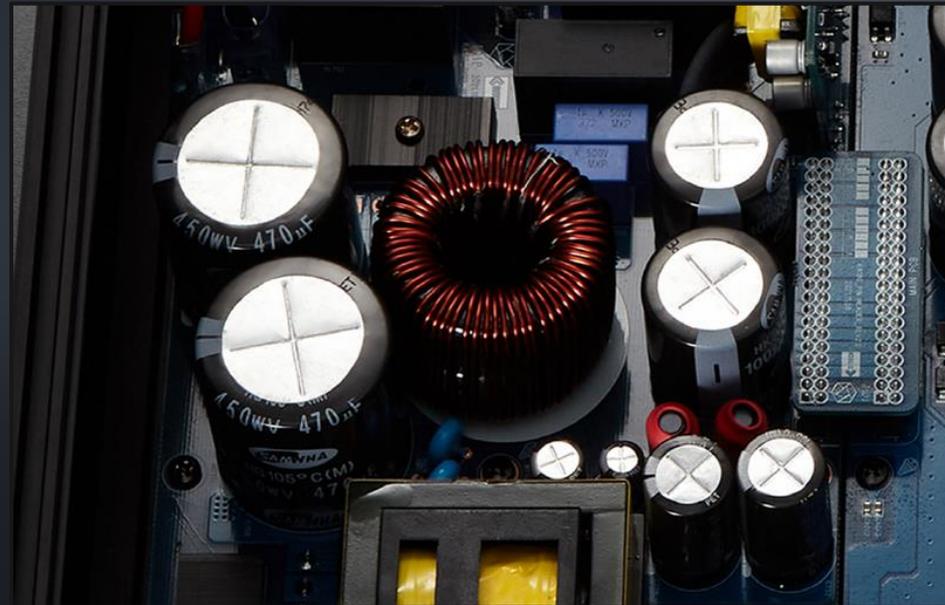
RA180 has a basic output tendency of FLAT and is equipped with a tone control, allowing maximum and maximum +/- 15 dB adjustment of Bass (100 Hz) and Treble (10 KHz), respectively.

The tone control circuit is equipped with a high fidelity active (OP-AMP type: 12dB slope) EQ instead of a passive (CR type) with a gentle slope of 6dB.



High-efficiency power supply

The power supply circuit developed exclusively for RA180 is suitable for power supply without using Silicon FET. Silicon Carbide FET (High Voltage, High Heat Resistance) technology is applied to provide high output with high efficiency and low heat generation. In addition, it responds to a rapid load by applying a self-designed 2.5kW class PFC circuit and a large-capacity capacitor.



In terms of figures, it has a damping factor of 200 or more and a high-output power supply of 1,000W, and it is a relaxed design that faithfully supports powerful bass and wide treble.

Convenient remote control function

The dedicated remote control allows you to adjust the remote-motorized analog main volume and input selector. It is convenient to use by controlling the input selector in a sophisticated control method. In addition, the LED display of the input selector automatically detects the input signal as it is saturated and notifies it by blinking.



Source Input Selector

Main Volume

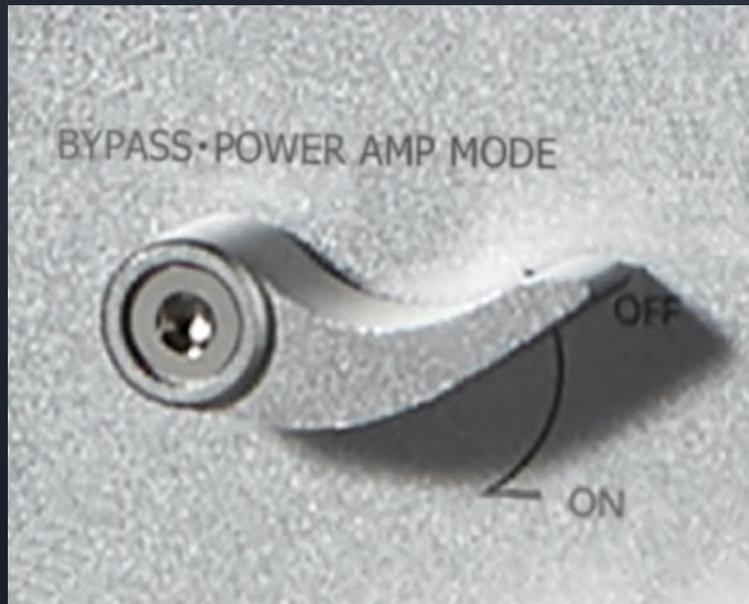
Remote controller

rose

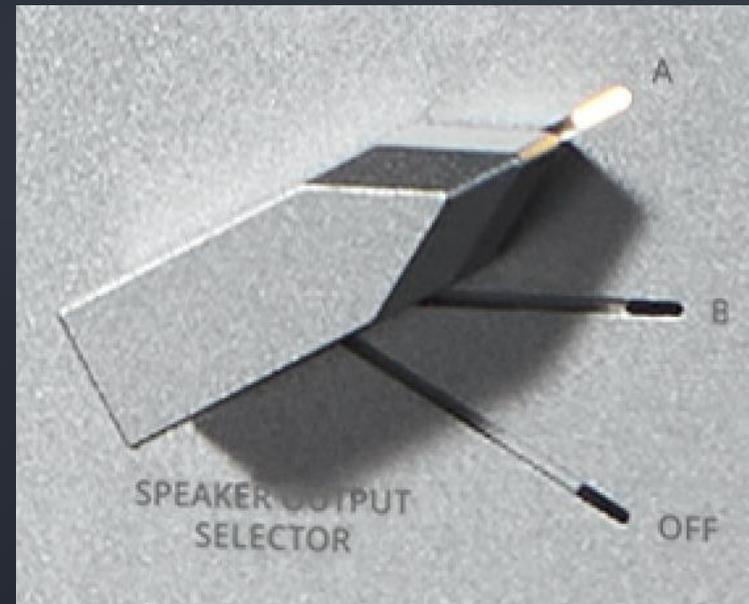


Bypass·Power AMP mode, Speaker A/B selector

Bypass·Power Amp mode is a function that connects the input source of LINE 3 to the POWER AMP without going through the PRE AMP. However, if the input level is high when switching to the Bypass·Power Amp mode, it may damage the speaker, so before using it, activate this function in the mobile app and then turn the switch OFF to ON. If you have 2 sets of speakers, you don't have to change the connection every time and simply change the output to switch operation.



Bypass·Power AMP mode



Speaker A/B Selector

An abstract composition of light and dark wood panels, possibly birch and oak, arranged in a complex, geometric pattern. The panels are cut at various angles, creating a series of triangles and polygons. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the texture and grain of the wood. The overall effect is one of modern, minimalist design.

Specifications.

Item	Condition	Specifications	Measurement Standard
Amplifier Output	4Ω	200W x 4ch (800W)	
	8Ω	200W x 4ch (800W)	
	BTL Mode On	400W x 2ch (800W)	400W x 2ch
Input Sensitivity	Balance Input	2,000mV	200W x 4ch
	Unbalance(Line1,2,3) Input	1,000mV	200W x 4ch
	Phono(MM/MC) Input	5mV / 0.5mV	200W x 4ch
Impedance Input	Balance Input	44kΩ	
	Unbalance(Line1,2,3) Input	47kΩ	
	Phono(MM/MC) Input	47kΩ	
Bandwidth (0dB \pm 3dB/8Ω)	Speaker Output	10Hz ~ 90kHz	100W x 2ch
	H/F Speaker Output	10Hz ~ 90kHz	100W x 2ch
Frequency Respond (1W, 0 \pm 1dB/8Ω)	Speaker Output	10Hz ~ 90kHz	1W x 2ch
	H/F Speaker Output	10Hz ~ 90kHz	1W x 2ch
THD Measure	Balance & Unbalance(Line1,2,3) Input	0.005% (50W)	200W x 4ch
Damping Factor	Speaker & H/F Speaker Output	>150	200W x 2ch
Signal to Noise Ratio Measure (S/N)	BTL / Balanced, Unbalanced / Phono MM, MC	107dB / 105dB / 80dB(MM), 60dB(MC)	200W x 4ch
Impedance Output	Speaker Output	53mΩ	200W x 4ch
Subsonic Filter with On/Off Switch	-3dB	50Hz	1W x 4ch
Tone Control with On/Off Switch	Bass(100Hz) / Treble(10kHz)	\pm 15dB	1W x 2ch (Speaker Output)

X-Over with On/Off Switch	HPF(-3dB)	600Hz ~ 6kHz	1W x 2ch (H/F Speaker Output)
Phono	Turnover	Flat	
		300Hz (+7.7dB@100Hz)	
		400Hz (+11.7dB@100Hz)	
		500Hz (+13dB@100Hz)	RIAA
		700Hz (+14.5dB@100Hz)	
	Roll-off	Flat	
		1.6kHz (-16dB@10kHz)	
		2.1kHz (-13.7dB@10kHz)	RIAA
		3.18kHz (-11dB@10kHz)	
		3.4kHz (-8dB@10kHz)	
Design	Size	430(W) X 350(D) X 110(H) (Including feet : 430(W) X 391(D) X 130(H) mm)	
	Weight	16.7kg	
	Body	High Purity Aluminum	
Power	Power	SMPS (800W)	Maximum Output : 1100W
	Voltage	AC100-230V, 50/60Hz	Standby Mode Power Consumption < 0.5W
Audio In/Out on Rear	Trigger	Trigger Voltage Can Be Turned On : 3.3V ~12V	
Remote Control	IR Input	38kHz Infrared Ray (Within 10m of Operating Distance)	