

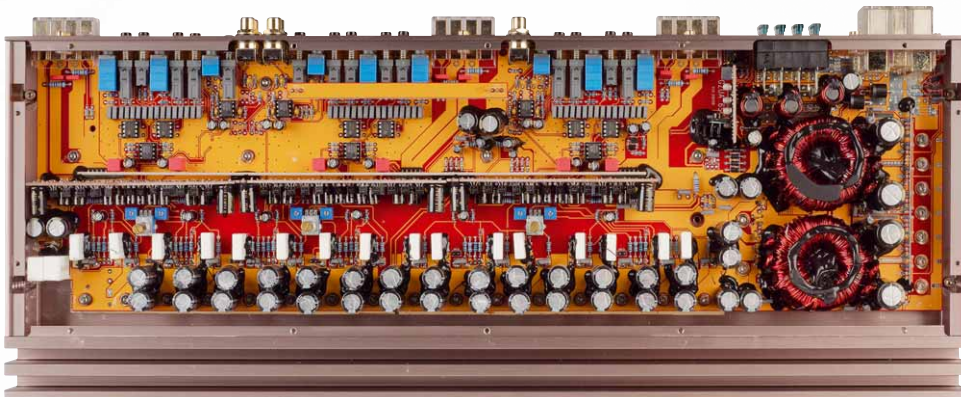


**Ground Zero GZUA 6SQ  
- analog six-channel power  
amplifier for sound gourmets**

# Highend six-channel amplifier

High-quality board with clear layout and discrete signal conditioning and amplification. Instead of an SMD assembly, there are through-hole components and socketed operational amplifiers

► Truly high-end six-channel amps are pretty rare. One came from Ground Zero and now gets a revised successor, the GZUA 6SQ.



The wonderfully analog, beautifully large amplifiers still exist, where sound is everything, and compactness and efficiency are relegated to the bottom of the list. There is a wide choice of four-channel and two-channel amplifiers on the market. With its six channels, the GZUA is not unique but quite alone with its high-end ambitions. Yet the concept makes perfect sense. The GZUA has four smaller channels and two particularly powerful ones – ideal for a large, sophisticated three-way system. Add a subwoofer solution, and



All connections and (almost all) controls are located on the front

you have a top system to make even the most demanding listeners happy.

The GZUA 6SQ is visually indistinguishable from its predecessor, the GZUA 6.200SQ-Plus. An elongated, titanium-colored strand cast housing with a height of only 48 millimeters, the cooling fins at the back and the connectors and potentiometers lined up next to each other at the front. On the far right are the solid power connections, then you'll find the four-pack of 30-amp fuses. After that, there are speaker connections, controls, and RCA input jacks for the three-channel pairs. Everything is solidly made with excellent, smooth-running controls and sturdy jacks fastened with nuts. There are only high and low pass filters to operate. One looks for frills in vain; instead, the crossovers are designed to perfection. That means you can switch them off so that the signal does not have to go through the potentiometer when the filters are not needed. The 10x multiplier switches are also helpful, as the frequencies can be adjusted over a wide range without using bad potentiometers with too broad a resistance range.

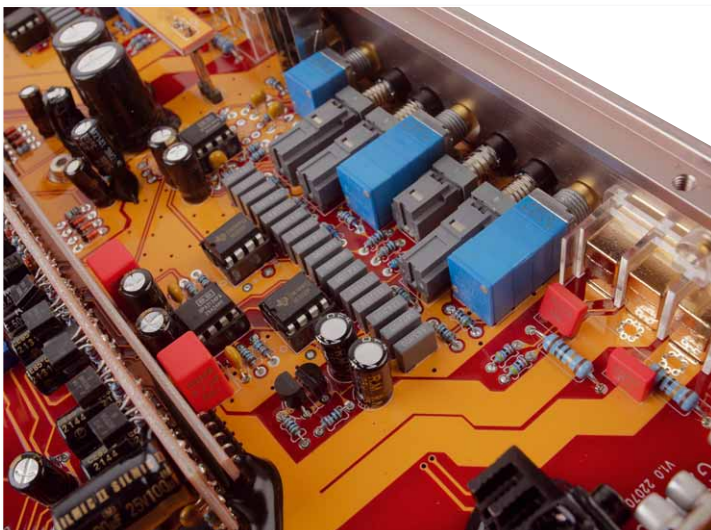
A look inside reveals a clean layout taken from the predecessor only at first glance. In fact, it is an entirely new PCB layout with enlarged paths to the speakers, improved cooling of the power transistors, and other detail optimizations. What remains is the very high-quality and beautiful red and orange PCB. As before, the finest components are used, such as the Burr Brown operational amplifiers in signal processing and the WIMA capacitors. New, however, are the Sanken transistors in the power amplification. Also revised is the bias control, which has been enlarged in its operating range - a specialty of Ground Zero. With three potentiometers located in the bottom, the operating point of the circuit can be shifted, which, with other manufacturers, is fixed by the developer. For the voltage supply of the amplification, we find two power supplies, one for each of the four small channels and one for the two large ones. The driver stages are similar in design. The increase in power of the large channels is due to the double final transistor assembly. There is one pair of MOSFETs per channel for channels 1-4 and two pairs for channels 5 and 6. The board is super cleanly assembled and completely discrete. Instead of drivers or even amplifier ICs, there are individual components. And that's damn old-school with

through-hole components without today's ubiquitous SMD surface mounting.

## Measurements and Sound

To say it in advance: The GZUA 6SQ is an absolute stunner in the lab. After Ground Zero broke all records last year with the ULTRA A-2, the developers have obviously been spurred on to other flights of fancy. The GZUA 6SQ delivers the best lab result of all multi-channel amps in the Absolute Top Class, which is open towards the top. First, there's plenty of power for a six-channel power amplifier: 100 and 160 W are already achieved by the small channels, while channels 5 and 6 deliver a whopping 173 and 284 W into 4 and 2 ohms, respectively. The damping factors are enormously high, around 500 for the small channels and above 600 for channels 5 and 6. The best thing, however, is the distortion behavior, which shines through the bank by the almost complete absence of distortions. A Class AB amplifier likes half-load; here, it is sensationally low, 0.002% THD+N across the board. But even at only 5 watts, the small channels come in at 0.003, and even the powerful channels are at only 0.005%. We achieved these record-breaking results with the bias in the max position. In the min position, not much happens in the mid and upper power ranges. However, at low power - the most crucial range for sound-conscious music listening - the „Class A“ operation with turned-up bias current is advantageous over the „Class AB“ operation.

Sound-wise, however, there is also something to like about the closed bias. The sound seems a bit more powerful, while the GZUA with the



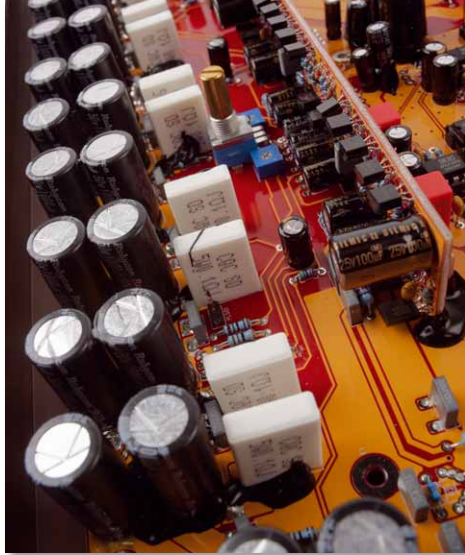
The socketed operational amplifiers are the finest types of the premium manufacturer Burr Brown



The GZUA 6SQ houses two power supplies, one for the small and one for the large channels



Excellent RCA jacks and controls, plus switchable crossovers, suit the audiophile concept



The power MOSFETs are hidden under the PCB. There one pair each for channels 1-4 and two pairs each for channels 5 and 6

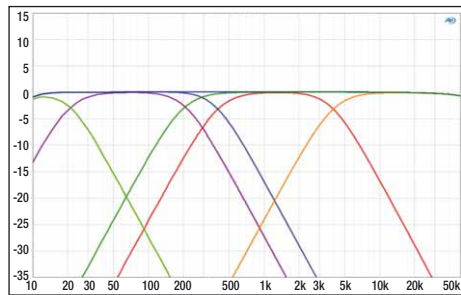
bias turned up seems to „breathe“ more and sounds more spatial. This leaves the user spoilt for choice – possibly the reason why other manufacturers set the bias at the factory. Basically, the GZUA 6SQ is a sound-wise highlight, no matter in which position the control is set. It handles the musical material wonderfully musically and simply sounds beautiful. However, by no means beautiful in the sense of glossy or dishonest, but always of one piece, without asking big questions of the music. At the top, it allows the finest harmonics to be heard without any problems; it packs the musical actors cleanly onto the stage. Natural instruments like trumpet or

double bass sound with masterly authenticity, as one rarely hears. And last but not least, the GZUA 6SQ has more than enough power to be heard at noise levels or to get a deep, clean bass out of the woofers. A well-rounded affair and sound at the very highest level.

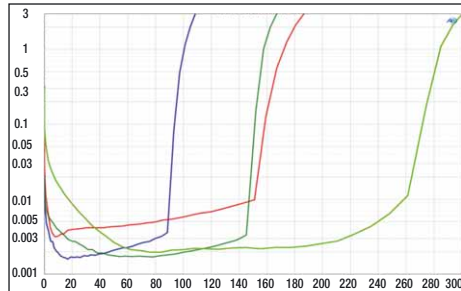
**Conclusion**

The GZUA 6SQ represents an almost exclusive opportunity to ascend to the highest spheres of sound with a six-channel amplifier. It shows that the good old Class AB circuit is far from dead – at least when it comes to uncompromising sound.

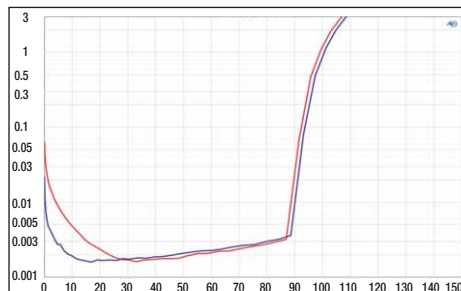
*Elmar Michels*



All three channel pairs have high-pass and low-pass filters with the same adjustment ranges. The filters range from 20 Hz to 4 kHz, also thanks to x10 switches



Already the "small" channels 1-4 achieve decent power (blue: 40hm, red: 2 Ohm). The "large" channels deliver a whopping 284 W into 2 ohms (light green) and extremely low distortions of around 0.002 %.



Comparison of bias full (blue) and bias off (red). At medium and high powers, nothing happens. At low powers, the "Max" setting produces less distortion

**Ground Zero GZUA 6SQ**

Price	um 1.000 Euro
Contact	Ground Zero, Egmatung
Hotline	08095-873830
Internet	www.ground-zero-audio.com

**Rating**

Sound	40 %	0,9	■■■■■
Bass	8 %	1,0	■■■■■
Neutrality	8 %	1,0	■■■■■
Transparency	8 %	0,5	■■■■■
Spatial imaging	8 %	1,0	■■■■■
Dynamics	8 %	1,0	■■■■■
Lab	35 %	0,9	■■■■■
Power	20 %	1,0	■■■■■
Damping factor	5 %	0,5	■■■■■
Signal-to-noise ratio	5 %	1,0	■■■■■
Distortion	5 %	0,5	■■■■■
Practice	25 %	1,3	■■■■■
Features	15 %	1,5	■■■■■
Build quality electronics	5 %	1,0	■■■■■
Build quality mechanics	5 %	1,0	■■■■■

**Specifications**

Channels	6
Power 4 ohms	4 x 101 + 2 x 158
Power 2 ohms	4 x 173 + 2 x 284
Power 1 ohms	0
Bridged Power 4 ohms	2 x 346 + 568
Bridged Power 2 ohms	0
Sensitivity max. mV	720
Sensitivity min. V	6,0
THD+N (<22 kHz) 5 W	0,003/0,005
THD+N (<22 kHz) Half Power	0,002/0,002
Signal-to-noise ratio dB(A)	94/93
Damping factor 20 Hz	497/745
Damping factor 80 Hz	497/639
Damping factor 400 Hz	497/639
Damping factor 1 kHz	497/639
Damping factor 8 kHz	497/639
Damping factor 16 kHz	407/497

**Features**

Low pass	20 – 4k Hz
High pass	20 – 4k Hz
Band pass	20 – 4k Hz
Bass boost	-
Subsonic filter	via HP
Phase shift	-
High-level inputs	-
Automatic switchon (Autosense)	-
RCA output	-
Start/stop capable	• (4,8 V)
Dimensions (L x W x H in mm)	550 x 209 x 48
Others	2, 4, 6 CH In, BIAS-Poti

**Ground Zero GZUA 6SQ**

**Absolute Top Class 1,0**



Price-Performance: excellent

"Spotless build quality and performance – highlight!"

For circuitry reasons, the bias potentiometers are located at the bottom of the cabinet; there is one per channel pair