

SELECTOR

LINE 3

LINE 4

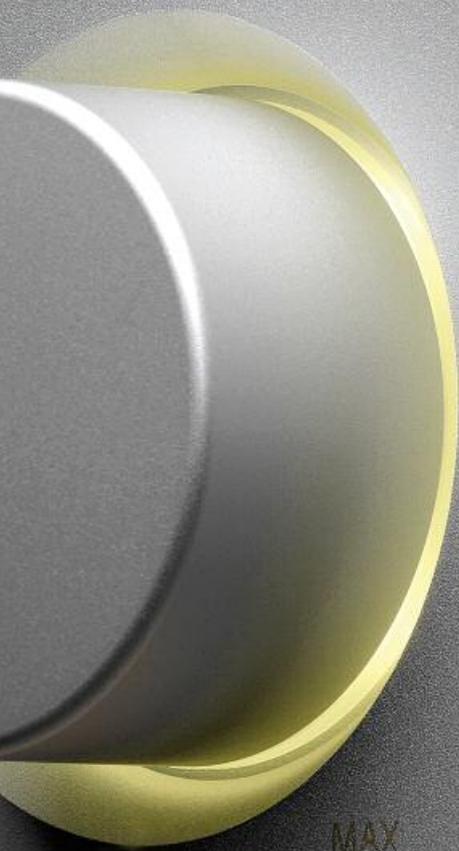
LINE 5



DESIGNER AUDIO
REAL-SOUND AMPLIFIER

MIN

VOLUME



MAX

POWER



OFF
WAITING

PULL UP/DOWN



Integrated amplifier SPEC RSA-M99

Author: Amré Ibrahim Photography: Rolf Winter

No amplifier range has received quite as much prejudice in recent years as Class-D concepts. Regardless, its advantages have become increasingly hard to ignore, so convincing in fact, that many audiophiles predict the end of the tube amplifier era. Such prophecies are due to equipment like this.

SPEC-tacular

Many audiophiles still turn their nose up at any mention of Class-D. Let's not forget though, that most won't have invested any real time in understanding the mechanics of switching amplifiers. To be honest, I wasn't exactly missing a Class-D amp amongst my own rack, but there is no denying their rapid development. Savvy 'digitals' are producing impressive results – compact design, minimal energy consumption, high user flexibility and best of all, notable tonal advancements. In the past, descriptions of the Class-D sound quality were often associated with unfavorable terms like 'sterile' and/or 'artificial'. Recent reviews however, seemed to have switched tone, now using attributes such as 'emotional', even 'musical'. Whilst this may seem like the result of clever marketing strategies, some of the latest tech fair demonstrations have proven otherwise. At the High End 2018 show in Munich, for example I was particularly impressed by the performance of Dynaudio speakers paired with NAD amps. Similarly so, the Neo speaker from Genuine Audio – based on active Class-D technology – left me dazzled with raw dynamism and subtlety alike at this year's show. In terms of the High End show 2019, I count the showrooms of Audio Note Kon-



do with Living Voice and Boenicke Audio amongst my personal favorites. Both brands offered a playback experience that felt holistic and complete despite the suboptimal room conditions. Whilst this holistic sensibility was based on completely different sound philosophies in both cases – the Kondo/Living Voice presentation focused on phono, tube amplifiers and high efficiency speakers while Boenicke Audio presented a CD drive, a DAC, switching amplifiers and speakers with ‘average’ efficiency – their tonal plasticity, fluidity and especially their emotional reach were also notably similar.

On the ground floor, situated in one of the smaller rooms of the fair, I was excited to discover the exciting performance of the gear presented by AudioTweaks. Based in Sellinger in The Netherlands, AudioTweaks is the distributor for the Japanese audio manufacturer SPEC Corporation in Germany. I first encountered SPEC and AudioTweaks’ CEO Piet de

Vries three years ago. I had been curious about the SPEC RPA-W7EX model and how it would perform with the Boenicke W8 SE+. De Vries kindly let me test two of his power amplifiers, which by the way also work as monoblocks. I still remember finding it extremely hard to return those amps amplifiers. The RPA-W7EX was my first experience of Class-D components worthy of comparison with the tonal flair of a good push-pull tube amplifier. I hindsight this wasn’t exactly surprising, considering what else was on display at the aforementioned AudioTweaks room in 2019. SPEC devices sat alongside renowned by Leben Hi-Fi tube amplifiers – both manufacturers represented by the same Japanese export company which is Muson Project.

SPEC is a relatively young audio manufacturer founded by Syuzou Ishimi in 2010 in Tokyo. Ishimi’s company now has 15 employees and is based largely on the sound philosophy of Shirokazu Yazaki, who has since retired. Yazaki was already leaving a mark on the high-end market before the birth of SPEC. His inventions include the famous A-7300 tape machine by TEAC, the DV-AX10 DVD/SACD player which received numerous awards as well as the CT-95 tape deck by Pioneer – preferred by many tape buffs over the mighty Nakamichi Dragon. The legend goes that Yazaki spent many years developing and optimizing his own music system that was based on single-ended tube amplifiers and Onken horn speakers. Now when such creative spirits take it upon themselves to develop a Class-D amplifier, we can’t but expect outstanding sound results. No wonder that one of the first SPEC switching amplifiers that came on the market, the RSA-M3EX model, caused instant ripples amongst specialist media – praised for its enormous ‘musicality’ and compared to the sound of the Kondo Overture. More on that later.





Integrated amplifier SPEC RSA-M99



The iron case is manufactured by an experienced specialist of the Yamagata prefecture according to exact SPEC specifications. The Japanese manufacturer emphasises how their amplifiers are to be considered musical instruments. By that logic, the solid spruce base chassis provides the amplifier with an additional, instrument-like resonant surface. The three-point footing system comes with cone-shaped, rounded feet made of maple with hickory core, to counteract unwanted vibrations. The centre foot is also earthed

The integrated amplifier RSA-M99 succeeds the RSA-M3EX, the switching technology of which was optimized over a six months period. According to chief engineer Tsutomu Banno this new model exceeds the RSA-M3EX in both tonal range and accuracy. In response to all of my questions regarding circuit or components, Banno referred to the company design principle, the so-called 'Pure Direct System', meaning that every detail no matter how small was always aimed at making the amplifier sound as 'natural and musical' as possible – short signal paths and straightforward circuit design being key. Whilst SPEC is transparent about the term 'Class-D', Banno insists on the RSA-M99 being in fact an analogue amplifier. Beginning with the source signal, which he explains, unlike most amplifiers doesn't pass through the rheostat of a mechanical potentiometer. The Japanese manufacturer chooses not to use such volume regulators nor remote controls, which typically imply a decrease in sound quality. However, SPEC does offer the cabled RSR-1, a remote control option with infrared receptor that comes at an additional price of 700 Euros. At the preamp stage the RSA-M99 uses an electronic resistor network made up of 256 layers to generate an analogue control signal. Initially, this runs through an analogue pulse width modulation at the power amp stage before reaching the Class-D driver stage and finally arriving at high-speed switching power MOSFETs. With an output of 2 x 120 watt into 4 ohm, 90 watt into 6 ohm and 60 watt into 2 ohm respectively, this amp generates enough power and stability to control demanding speaker designs. Tsutomu Banno is convinced that from the perspective of 'dynamics', speaker diaphragms 'follow' sound signals from well-conceived switching amplifiers more easily than signals from tube or transistor-based amps. Speaker diaphragms are triggered extremely precise and fast due to the very low output impedance of Class-D designs as well as its ability to absorb the contrasting electromotive forces of the speakers.

I find it touching how passionate the chief SPEC engineer is about the RSA-M99 and how much care and dedication the entire company deploys in their pur-

suit of 'true sound'. I have been aware of the impeccable finishes typical of this manufacturer since encountering the RSA-M3EX power amplifier and found the same level of quality with the RSA-M99 model. Featuring an iron case exterior with aluminum front panel and dials, only one word describes what we're dealing with here: perfection! Fitted with a mechanism derived from aircraft manufacturing that prevents accidental start-ups, the on/off toggle switch alone deserves an award for haptics. The metal casing, meanwhile is supported by a solid spruce chassis with three cone-shaped maple feet. I am told that the inspiration for using the two types of wood came from violin making. Width and consistency of the wood are also not accidental: the added base plate functions as an analogue, instrument-like sounding board that together with the three-point connection to the rack and hickory core of the maple footing, counteracts unwanted vibrational effects. 'Banno-san' as the chief engineer is also lovingly referred to by non-Japanese clients, offers an almost romantic explanation: SPEC, he suggests, is as much an instrument maker as a manufacturer of amplifiers. It comes as no surprise that Mr. Banno is also a passionate cellist.

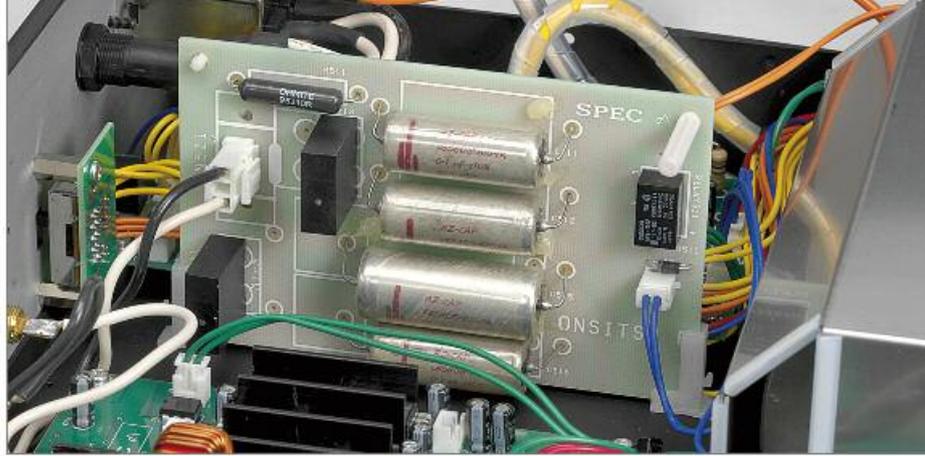
As to be expected, craftsmanship is as stellar on the inside as it is outside. Meticulously crafted, the circuit board based structure deserves the highest of

Components:

Turntables: Technics SL-1210M5G, TW AcousticRavenGT2 **Tone-arm:** Robert Fuchs 12" **Cartridges:** Grado Statement Statement 2, Lyra Kleos, SteinMusic Aventurin 6, AEC London C-91E **Headshells:** Acustical Systems Arché 5D, SteinMusic Ametrin 1, Oyaide HS-TF Carbon **Phono Preamplifier:** Rike Audio Natalija Pre 2 **MC Step-up:** Phasemation T-300 **Audio CD Player:** Lector CDP-707 with PSU-7T, OppoBDP-103 **Integrated Amplifier:** Kondo Overture PM-2i **Speakers:** Boenicke Audio W11 SE+ **Cables:** Kondo Vc-II, Kondo Operia SPc-2.5, Kondo ACc Persimmon, Boenicke Audio S3, Boenicke Audio IC3, cinch cable and LS8 speaker cable by Biophotone, Acoustic System Liveline cinch cable, fastaudio Black Science cinch cable, Bastanis Meta & Epilog cinch cables **Tuning Accessories:** Pi Perfect Interface turntable mat by Steinmusic, Audiophil-Schumann generator, TAOC racks, SteinMusic harmonizer and Blue Suns, Acoustic Revive RL-30 Vinyl record demagnetizer, Audiodesksysteme Gläss Vinyl Cleaner PRO and Sound Improver, Audio Exklusiv d.C.d. base and Silentplugs, FPH-Akustik vibration absorbers, Herbie's Audio Lab Tenderfoot, Audio Laboratory LittleFoot's/BigFoot's, Duende-Criatura damping rings, fastaudio absorber, Acoustic System resonators, MFE power socket, AMR-, Furutech- and AHP micro fuses, Biophotone Magic Akasha Quantum Power Plugs, Acoustical Systems SMARTtractor and HELOX record clamp, complete tube supply by BTB Elektronik



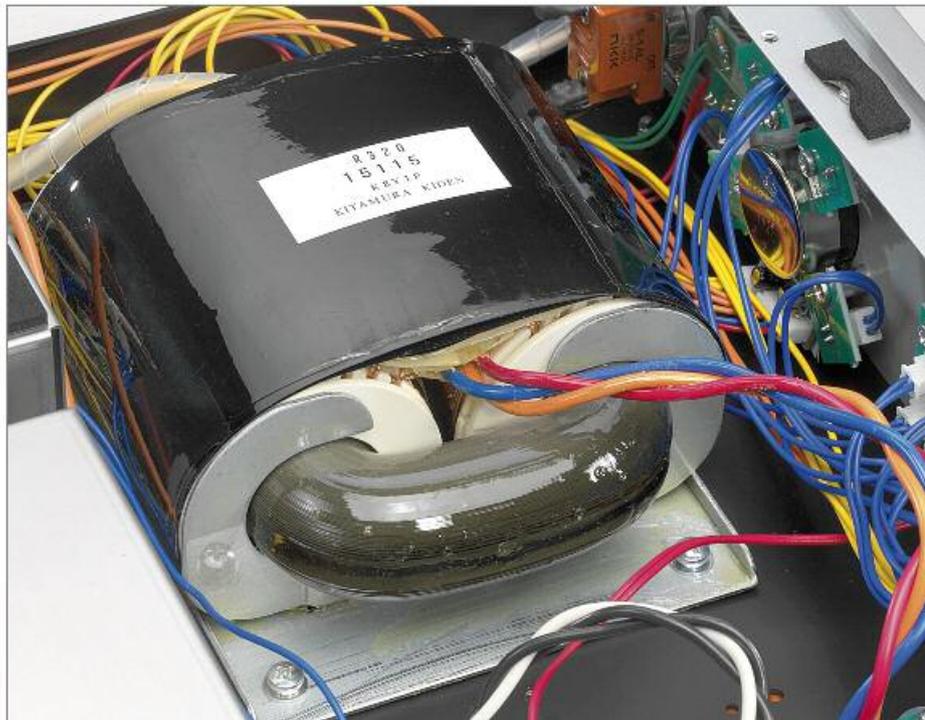
Left: Prevents electromagnetic interference: transformer section, circuit board with low-pass filter and choke circuit as well as the printed circuit boards featuring the pre and power amplifier sections are all shielded individually



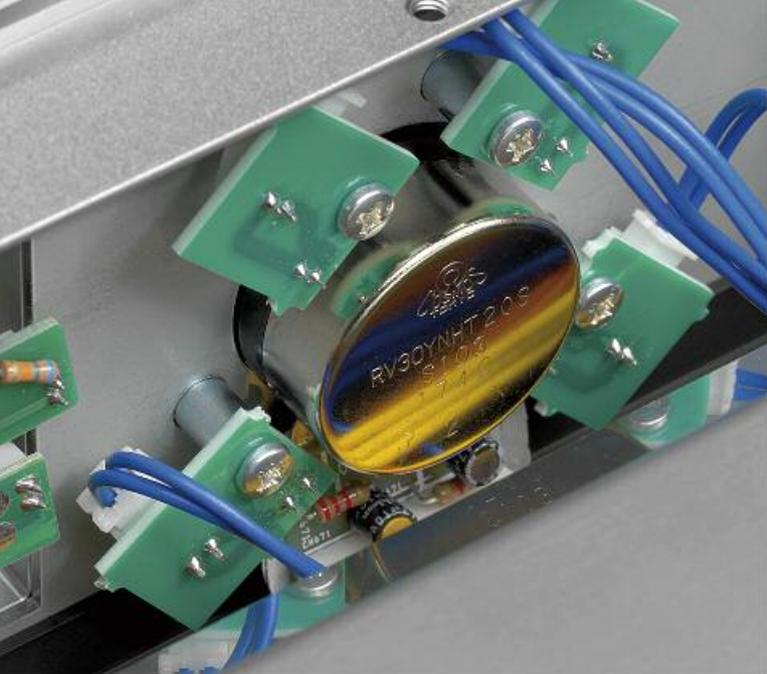
Above right: Red Cactus oil paper capacitors were especially developed by SPEC in collaboration with US manufacturer Arizona Capacitors. These are designed to meet the special requirements of SPEC's Class-D design. In addition, the Japanese manufacturer uses top quality ruby mica capacitors, renowned for providing an extraordinary stable sound as well as Hibiki Ichi electrolytic capacitors by Nichicon for their 'fast' and 'natural sounding' performance



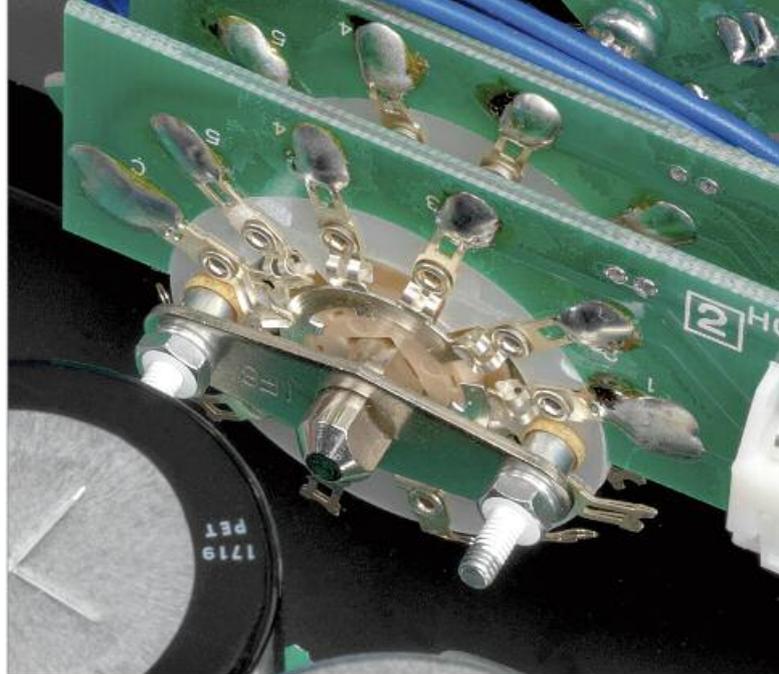
Centre right: The low-pass filter coils were custom developed in house and contain a core of carbonyl iron powder. Since Class-D develops practically no heat, no heat sinks are required, which results in less intensive circuit complexity and shorter signal paths. For this reason, the printed amplifier board which includes power MOSFETs by Infineon Technologies was mounted 'board to board'



Below right: No halfway measures: SPEC custom produces toroidal transformers in-house. The Japanese manufacturer promises superior 'musicality' and dynamics that exceeds other available transformer concepts



No sound degradation caused by mechanical potentiometers: the resistor network is fitted with 256 layers and generates an analogue control signal. Four circuit boards hold the LEDs for the circular lighting of the volume control and source selector



SPEC refrains from using relay-based source selectors: for reasons of improved sound quality, the Japanese manufacturer prefers to use good old mechanical contact. Moreover, the selector switch is said to be meeting 'high industry standards' that are totally reliable

praise. All sections sensitive to electromagnetic interference are shielded by solid stainless steel casing. Regarding components, SPEC doesn't shy away from high-end or custom-made additions either. Underneath the shielding I found custom low-pass filter coils with carbonyl iron powder core developed in-house, MOSFET power transistors by Infineon Technologies as well as Red Cactus oiled paper capacitors manufactured by Arizona Capacitors according to SPEC specifications as well as ruby capacitors with highest quality mica, exclusively sourced from the

foothills of the Himalayas. In addition, Special Hibi-ki Ichi electrolytic capacitors by Nichicon guarantee the high standard of the SPEC circuit design. This manufacturer definitely doesn't want anything to do with 1-bit digital modulation à la Delta Sigma: As previously mentioned SPEC are committed to using pulse width modulation (PWM), which instead of digitizing the audio signal, analogue processes the signal amplitude after passing the low-pass filter. According to Tsutomu Banno this method produces noticeably better sound results than digital transmis-



sion particularly when more complex timbre structures are at play. Equally important to him is the way power is supplied: “A good PSU is important for all amps, but particularly crucial for Class-D designs, because their switching power supplies are directly connected to the speakers! Sound quality immediately relates to the quality of the power supply in this case. This is why we only use custom-made, extra large toroidal core transformers that are produced in-house.”

Regarding connectivity, the RSA-M99 integrated amp which can also run as a power amplifier doesn't leave much to be desired. Fitted with three cinch and two XLR inputs, it allows for a total of five source devices. Considering the list price of 10500 Euro, some might rightly miss an integrated phono stage for MM cartridges. Anybody looking for fully balanced signal passing won't be getting it from the RSA-M99 either. The XLR signal routing of this amp is just not designed to run fully balanced. But that's just about the only conceptual flaws I could find, while intense listening sessions didn't reveal any sound-related weaknesses at all with this Japanese jewel! As a result of its high damping factor and less surprising fact to those familiar with Class-D designs was the unyielding control with which the RSA-M99 was able to power my Boenicke W11 SE+. What seems amazing however, is the perfect timing. In my experience some Class-D concepts are weak in this area, often displaying instantly audible distortions from any imprecisions that take place at the nanosecond level of high frequency technology. This timing teams up with what has to be called a SPEC-tacular holographic representation, which definitely meets that of my Kondo Overture PM-2i at eye level: the scale and presence of the sound is phenomenal!

For example, Bread's 'Baby I'm-A Want You' (Mobile Fidelity Sound Lab/Elektra/Sieeking Sound, UDSACD 2205, USA 2019, Hybrid-SACD) album from 1971 stands out for its clear spatial structuring. The RSA-M99 allows the sound to disconnect from the speakers and create a vast, far-reaching soundscape that remains transparent to its edges, enabling the free unfolding of both voices

Even if an integrated phono amp would have been desirable: featuring five line inputs, two of which are XLR (unfortunately not balanced), the RSA-M99 which can also run as a power amp offers enough connection flexibility. A remote control, which due to improved sound quality uses an infrared receiver cable, can be purchased separately



Integrated amplifier SPEC RSA-M99

and instruments. I'm sure it's no coincidence that this makes me think of the famous cigarette ads of the 80s – cowboys on horseback, a whiff of freedom (or something like that). What makes the transparency of the SPEC device so enjoyable though, is the refrain from detached-seeming 'astral ethereal' sound qualities. Instead, the sound is grounded and has a bodily presence. Tsutomu Banno certainly wasn't exaggerating when describing the efforts that had been made to make wood sound like wood, metal like metal and fur like fur. To return to 'Baby I'm-A Want you', the timbre produced by the SPEC Amp is the best representation of the Class-D category that I have had in my rack. The drums sound real, the steel strings sound real, the stringed instruments sound real... and David Gates' voice is as soft as intended, even if the RSA-M99 is by no means a softie. If needs must, this Japanese power house knows how to go for it. When playing the electro house classic Cross (Ed Banger Records/Because Music, BEC5772110, Europa, 2007, 2-LP) of the French duo Justice, it really flexes its muscles. The massive sound architecture of 'Genesis/Let There Be Light' is transported to the speaker diaphragms with impressive stoicism and energy. Any compression effects at high volumes? None! The RSA-M99 just doesn't seem to buckle – strong in the truest sense of the word. I have a small tip though, if you are interested in the RSA-M99 be careful about choosing the right cables. I don't really understand why, but it seems to me that some Class-D amps are extremely sensitive when it comes to wiring. For example, my Acoustic System Liveline cables seem to thin out the sound a bit, which creates a lack of depth mostly in the bass range. In contrast, I've had a great experience with the copper versions of the current Kondo generation, which includes the NF cinch cable Vc-II, the Operia SPc-2.5 speaker cable and the ACc Persimmon power cable, which by the way, gave the SPEC an extra dynamic boost. Whilst this cable trio ensures a balanced broadband performance, it also seemed to support the very 'musicality' of the amp so praised by SPEC and Piet de Vries.

In addition to everything I have mentioned, the SPEC also demonstrates a wonderfully natural capa-

city for dissolution and finely tuned 'sense' for dynamic distinction that is extraordinary. This becomes apparent when listening to Henryk Górecki's Symphony N.3 op.36 as performed by Portishead singer Beth Gibbons as solo soprano and the Polish National Radio Symphony Orchestra under Krzysztof Penderecki (Domino/GoodToGo, WIGLP395X, UK 2019, LP). As a conceptual piece with the designation of 'Lento' and 'Lento e Largo', such display of sensitivity and capacity for 'inner flow' is obviously what makes the recording unfold in the lamenting, emotional force that it does, just as intended by Krzysztof Penderecki.

The SPEC RSA-M99 is one of the best 'tubeless tube amplifiers' I know. It is also a perfect example of how profound technical knowhow, dedicated passion for the product and an unflinching love of music has driven the advancements in Class-D to where it stands today. □

Integrated amp SPEC RSA-M99

Functioning Principle: Switching amplifier Inputs: 3 x Line (cinch), 2 x Line (XLR) **Power Voltage:** 2 x 120 W (4 ohm), 2 x 90 W (6 ohm), 2 x 60 W (2 ohm) **Frequency Response:** 10 Hz – 30 kHz Harmonic **Distortion:** 0,02 % (@ 1 kHz) **Input Sensitivity:** 300 mV **Power Consumption:** 215 W max. **Special Features:** Red Cactus oiled paper filled capacitors by Arizona Capacitors (custom-made for SPEC), top quality ruby mic capacitors, Hibiki-Ichi electrolytic capacitors by Nichicon, SPEC silicon carbide rectifier, SPEC low-pass filter coils with carbonyl iron powder core, Belden-8470 copper wire for secondary power supply and loudspeaker terminals, Belden-1503A copper wire for audio signal, volume control that can be switched, volume and selector control with switchable illumination, able to run as power amp, optional remote control RSR-1 with corded infrared receptor (700 Euro) **Options:** Silver only **Measurements (W/H/D):** 44/12,5/41,4 cm **Weight:** 16 kg **Guarantee:** 2 years **Price:** 10500 Euro

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