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Accuphase Integrated Amplifier E-550

Precision Job

by Joachim Pfeiffer

The biggest and dearest integrated amplifier by Accuphase tested exclusively in AUDIO.

Not really a big surprise on the first sight. The new integrated flagship from Accuphase, the E-550, comes just slightly higher and a tad less wider than its already legendary predecessor E-530. The formerly rather matt side-cheeks are showing high-gloss now, and - I'm sure you'll be pleased to read this - its retail price has come down by an enjoyable margin! Well, the new model does not look really new and the old one not really old. So, what? Just a barely noticeable facelift?

You've done the wrong pools! This Accuphase-flagship operating in Class-A mode boasts - to stay in the picture - of its new "engine" of which the key feature is without doubt the highly elaborate volume control circuitry dubbed AAVA (Accuphase Analogue Vari-gain Amplifier). This is something that to this date had been reserved exclusively for the top-of-the-line and much more expensive preamplifiers from the same maker. Now, what's behind and how can the user take benefit of all this?

In conventional amplifiers, i.e. in the E-530 also, potentiometers are taking care of the volume control. Evidently, by turning the knob clockwise the music becomes louder and likewise is attenuated if the knob is turned to the left. And no matter how elaborate a potentiometer has been constructed and built there are nevertheless inherent weaknesses by principle. To wit: impedance is always increasing when the output level is increased which in turn is causing a higher noise floor. And even worse: channel imbalances as well as crosstalk between channels may spoil the listening pleasure, in particular when the potentiometer is in a position between 8 and 9 o'clock respectively beyond 11 o'clock and therefore in ranges below and distinctly above the average room volume level.

AAVA - the electronic trick

Fighting this root of all evil has ever since been put on top of the agenda by the Accuphase engineers: they simply made use of the best potentiometers on the market and consciously refrained from employing digital regulators which are (rightly so) said to rob the sound colour and resolution.

The analogue AAVA circuitry was designed to regulate the signal from soft to loud with absolutely no losses. The input signal first meets an array of 16 parallel voltage/current converters which are transforming the signal voltage into differently sized "current-figures" whereby from one to the next the transformation ratio is down-sized by one half. The resulting current portions can be combined in any way, yet the switching operation is controlled by a CPU according to the position of the volume control knob. Altogether there are 2^{16} or 65,365 combinations possible.

At first the voltage of the input signal is via AAVA converted into a signal current whereupon gain is set by a turn of the volume knob. Finally, the combined current is converted back into a signal voltage. This elaborate measure is to alter neither frequency response nor impedance and therefore has also no influence on the noise.

That AAVA makes sense indeed could be confirmed in the many listening sessions in which the E-550 had to mount the boxing ring versus its predecessor. Albeit not so clearly in the classic test configuration, in which both candidates could play with their muscles after a painstaking level-up procedure. It was in fact during the blind test when the newcomer could slightly distinguish itself from the E-530. In particular with symphonic music and choir (Listening Test CD-5, Audio Reference) the E-550 sounded more dynamic. Subjectively, the listening panel perceived the rendition to be "louder". The E-550 succeeded in shining a stronger light onto the lowest octaves and basses seemed a tad more precise.

As far as voices were concerned we had the impression that the E-530, which had been working hard for about four years now, was more expressive and melodious. Yet this lead over the E-550 certainly melted down after a few weeks when the latter began to render tenors as well as sopranos more differentiated if not more honest. As already the blind tests (a very nice procedure, but not to be carried out under stress) made clear, the E-550 follows the flow of the music with more inner excitement while timing and the silence between the notes are better rendered on the point.

Soft and loud: brilliant

This improvement however is not only due to AAVA. A look beneath the massive lid reveals heavily modified amplification stages as well as a completely new power supply. And the sensation of turning the volume knob from soft to loud and back was quite an experience: even at the lowest level this E-550 was simply "there". That is, it didn't need that notorious crank up to the right to get started. And likewise brilliantly it mastered the volume levels beyond the range of conventional potentiometers. Eventually, the E-550 was limited only by itself: as being a pure-bred Class-A amplifier it ran out of steam sometime or other. This happened earlier when connected to low-efficiency speaker and later or not at all when driving speakers with an efficiency of 90db or above.

Overall, the E-550 turned out to be superior to its rival E-530 in all issues. Objectively, there are really no acoustic dimensions between the two, yet from a subjective point of view, this can certainly be judged in a different way.

SUMMING UP

Have you not been wondering sometimes why second-hand audio components from Accuphase are fetching higher prices than those from the competitors? Well, that's certainly not (only) due to their rather conservative appearance, but also due to their sound, the service behind and the incredible reliability. So, whoever is going to invest in an Accuphase is unlikely throwing money out of the window. I guess this message is doing us good in these times.