



# A CITATION FOR EXCELLENCE

In the early 80s, Harman/Kardon wanted to build the best-sounding amplifiers with its rare and expensive Citation line.

Harman/Kardon had already been setting standards for decades with its Citation line when the combination of the XXP preamp and the XX power amp was designed to shatter all existing qualitative, material, and price standards. This was the Big Bang of the company that Mark Levinson took over only years later and elevated to even greater heights.

Central to the design was Dr. Matti Ojala – a legendary developer in the audio scene, Nokia manager, and Finnish professor, who sadly passed away in the summer of 2015 – who is considered one of the central discoverers of dynamic (TIM) distortions. As early as the 1970s, his theories laid the foundation for the amplifier designs of Norwegian company Electrocompaniet.

Ojala was significantly involved in the even more spectacular Citation XX line by Harman/Kardon as a consultant, and delivered the circuitry blueprints in order to make the devices free of distortions, especially of the dynamic kind, while the hybrid driver amps also came from Finland. However, here “hybrid” is a something of a red herring: the design didn’t contain tubes, but rather thick-layer transistors and resistors whose values could be measured by a special computer and adjusted using a laser. Sapphire served as circuit material for these “hybrid”



▲ Two very easy to configure phono MM inputs make the Über-preamp stand out.

modules, with the metal film resistors of lowest tolerance using silver-palladium.

According to a white paper on the XX, the development of the Citation (which swallowed up millions of dollars) began 1978, two years before the combination was first announced in 1980, only becoming market-ready and in 1983. While one had to pay 9000 DM (then around US\$3500) for the preamp XXP in 1983, the 42 kg power amp XX, which had more interesting circuitry to deal with TIM distortions, came at 19,000 DM (\$7500). According to Harman/Kardon, the Citation was produced in Woodbury, New York, but the main development of the electronics was due to Mamoru Sekiya from Shin Shirasuna (Silver), whose name also appeared later at Onkyo.

In the April issue 1983, STEREO introduced the pairing to the public under the fitting heading “Two gentlemen - looking for high rollers”: in a critical test, it was confirmed that the imposing XX power amp had TIM distortions and the preamp XXP a “Japanese” frequency response. Since the TIM theory was often accompanied by quick fix solutions with fast components, and low feedback was not uncontroversial – opponents see the creation of dynamic distortion more as a result of the fundamental emitter follower topology used in almost all semiconductor amps – this gave a boost to quite a few competitors. In the August edition of the same year, after another test, we were able to consider both phenomena resolved and cancel the alert for the line.



◀ The front, made of brushed, black aluminum, comes to life when turned on.

With the same leveled output power, the XX always sounded slightly louder than the competition in listening tests, which our colleagues at the time attributed to the extraordinary high current capability and exorbitantly fast impulse processing. In addition, the basic sound of the XX was warmer, in particular when using a high idle current setting – one of three options –, which the majority of the test editors preferred. In this way the duo pulled way ahead of the competition in its time, the German magazine AUDIO even elevating the Citation to the status of reference amp in 1983.

However, at the end of 1983 there was a surprise: a simplified, almost affordable version of the amplifier pairing designated X-I and X-2. In contrast to the Übermodel, the smaller preamp contained a MC phono input, while the power amp lost almost half of its power compared to its older sister, but was based on the same principles and basic circuits.

**Overheating modules**

But the XX amp had a problem: the encapsulated modules of the output stages apparently broke down every now and then due to thermal problems and were

considered impossible to repair. Until now, that is.

When he received the assignment for a general overhaul and repair including complete cleaning of the switch/controllers and selective electrolytic capacitor replacement, Pierre Wittig, specialist in classic audio and boss of the HiFi line in Worpswede near Bremen, had an idea: He'd cut the defective circuits from the modules, replace them with possibly even better circuitry, and restore the original look.

He hired his friend, the development engineer Glenn Praetsch, who retained the cascaded J-FET circuit but changed it to make it short-proof and more thermally stable – despite being Class A – and more linear, thanks to six modern Toshiba dual transistors and two low-ohm final low-power transistors and only local feedback. They now plan a small line of phono modules since all XXPs are affected by the failures and their owners may be looking for help.

Our lab treated the XX power amp extremely carefully, but still detected about 450 Watts output power per channel at 4 Ohms, and at 5 Watts distortion and intermodulation at two digits after the comma; the preamp XXP displayed even better distortion values with a consistent 0.001-0.003 % and 110 dB signal-to-noise ratio at 0.3 Volt output voltage and 100 dB channel separation! And the error of the volume control, at 0.04 dB, is like a dream.

Even today, this kind of data is absolutely outstanding and rare. The supply

**harman/kardon  
Citation XXP/XX**

**Construction years (ca.): announced 1980, built 1983-85**

**Producer: harman/kardon**

**Availability: extremely rare**

**Price: ca. 9,000/19,000 DM**

**Price today: Collector prices**

regulation of the power amp with two huge toroidal transformers and 80,000 microfarad sieving capacity is supposed to make 200 Ampère peak current possible. The enormous bandwidth of more than 550 kHz is limited to 400 kHz at the input to avoid HF override and can be switched to 100 kHz if the power amp signals the existence of HF (!).

These amplifiers test so well that you could find yourself wondering whether there have been really any developments in the meantime. However, one shouldn't forget that the elementary knowledge for dynamic music has long since become common knowledge.

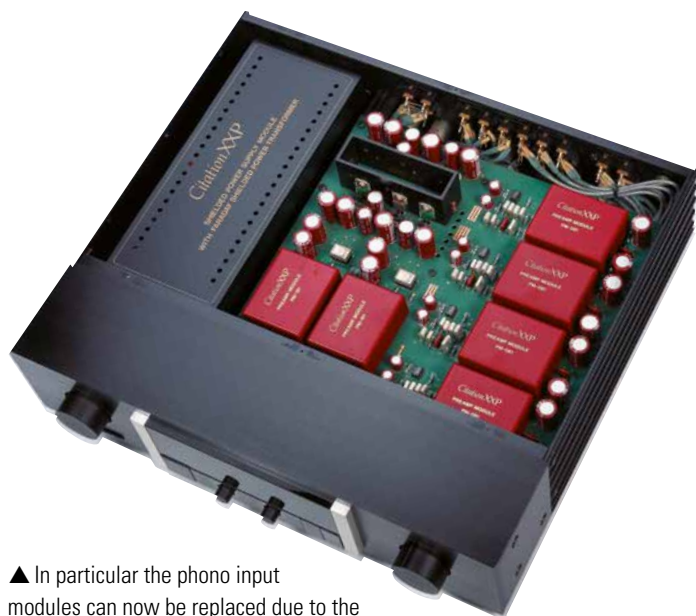
Otala's signed products were ahead of their time and – as the module failure shows – also not perfect. Apart from that, they only appeared in homeopathic numbers and at prices not much lower than that of the entire system.

*Tom Frantzen*

The Citation XX weighs 42 kg. Where others have one transformer of this size, this one has two. ▼

**LINKS**

- [www.hifi-zeile.de](http://www.hifi-zeile.de)
- [http://www.thevintageknob.org/harman\\_kardon-Citation\\_XX.html](http://www.thevintageknob.org/harman_kardon-Citation_XX.html)
- [http://www.eserviceinfo.com/downloads/46878/Harman/Kardon\\_CitationXXP.html](http://www.eserviceinfo.com/downloads/46878/Harman/Kardon_CitationXXP.html)
- [www.vinylengine.com](http://www.vinylengine.com)



▲ In particular the phono input modules can now be replaced due to the development work of Glenn Praetsch.

