KTM

Transistor Microphone

KTM – The First Neumann Transistor Condenser Microphone

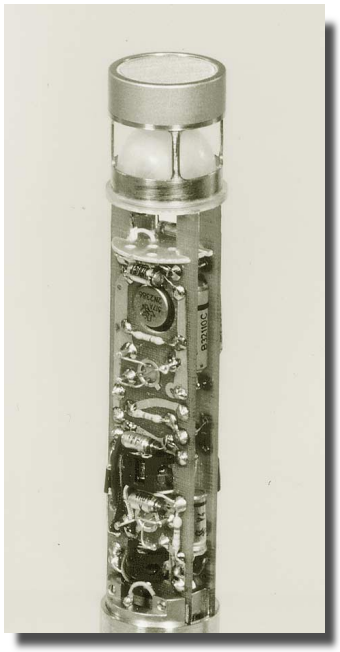
By the mid-'60s the tube age seemed to have passed and semiconductors taking over the market began to introduce a new chapter in electronics.

With it, the era of the 6-transistor pocket radio and numerous other devices also began. But with the popularity of these cheap, home entertainment products, the transistor gained a reputation for inferiority in recording studios.

However, Neumann had already begun developing studio products with transistors in the early '60s. Back then, germanium transistors were the only ones available. Neumann preferred to use the AC 151 r type for studio equipment, which led to the production of a complete series of devices for mixing boards. That technology became an important field for Neumann in the following years.

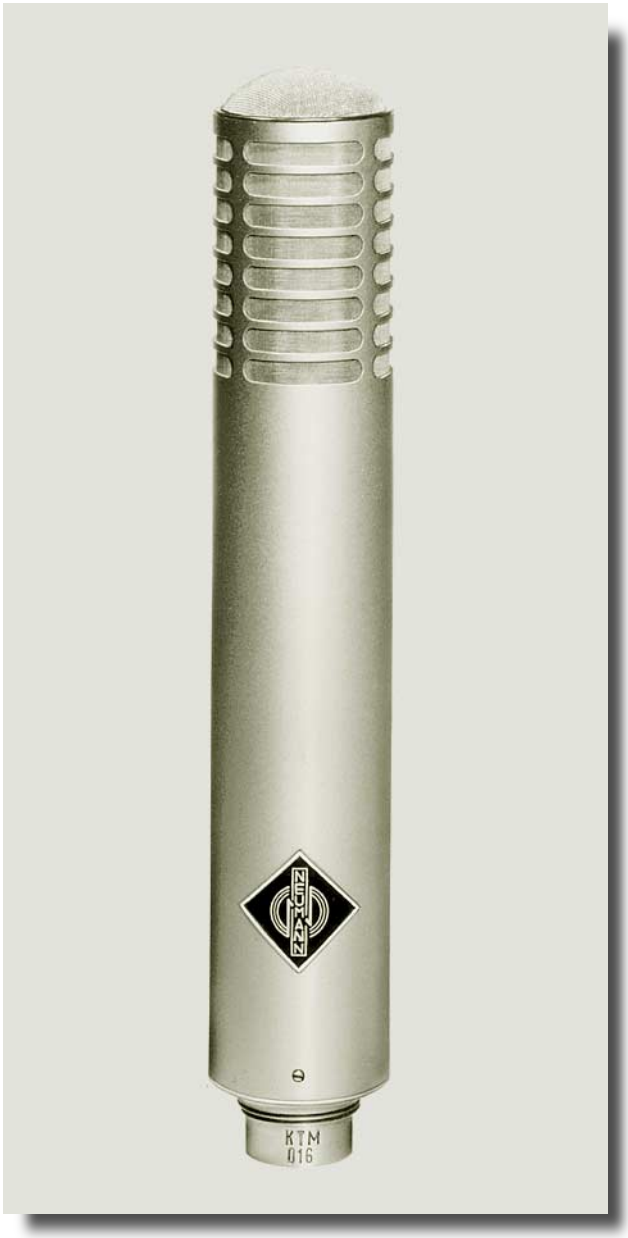
Because Germanium transistors feature an input impedance of approximately 1.2 kOhms, it makes them unsuitable for condenser microphones working with a low-frequency circuit, which requires an input impedance of several hundred MOhms. Of course, it is possible to build condenser microphones with such transistors.

One solution would be to use a high-frequency circuit, in which the condenser capsule represents a lower impedance in a radio-frequency circuit. This topology is used in Sennheiser condenser microphones. But all of Neumann's previous models had used low-frequency circuits, and Neumann intended to continue that practice.



With the development of the field-effect transistor, a solid state component had been created that featured a very high input impedance. In 1965, Neumann released its first condenser-transistor microphone, the KTM.

It's advantages were explained in the following product description: The microphone's built in amplifier has replaced the tube with semiconductor elements. This offers the advantages of easier implementation, low power input, fast operation, no tube noise and a high degree of operational safety.



The microphone contained the cardioid capsule KM 64, known for its outstanding acoustical qualities. Power was provided by a 12 volt wire feed, which was introduced by Sennheiser according to the DIN 45 595 standard. Today, it's DIN IEC 268 15.

The KTM was the first in a long line of Neumann solid-state-condenser microphones. It was soon succeeded by the KM 74, which was electro-acoustically identical to the KTM, but had the 21 mm diameter typical of Neumann miniature microphones at the time.