**High vacuum measurement in electronic devices with small internal volume**

**Márcio Tarozzo** **Biasoli**; Nailson Aparecido de Carvalho, Peter Jürgen Tatsch\*, *Edelson da Silva Procopio Venuto\*\*, Alan Ribeiro Cerqueira\*\*, Johnes Soares Santos* \*\* e Francisco Tadeu Degasperi \*\*

Centro de Tecnologia da Informação Renato Archer, Km 143,6 Rodovia D. Pedro I, 13069-901, Campinas-SP, Brazil

\* Faculdade de Engenharia Elétrica e de Computação - UNICAMP, 400 Av. Albert Einstein, Cidade Universitária Zeferino Vaz, Distrito Barão Geraldo, 13083-852, Campinas-SP, Brazil

\*\* Faculdade de Tecnologia de São Paulo, CEETEPS, 615 Avenida Tiradentes, 01101-010, São Paulo - SP - Brazil.

This paper presents an initial evaluation of a method for determining the level of vacuum inside an electronic device of small volume. Some electronic devices such as Thermal Imaging Devices (DITs) requires for its proper functioning operation in a vacuum environment. The better the vacuum level, that is, the lower the pressure inside the best electrical performance of the electronic device and the better the quality of the image generated in the case of DITs.

The paper describes the measuring method established for this evaluation to the vacuum chamber used for the reference measurement.

Measurements were made on the basis of pressure (mbar) x Time (sec) using a membrane Capacitive gauge (MMC) and a Pirani gauge and the results were compared.

Early results have shown that the range of the both pre-vacuum measurements were well coincident.

The vacuum chamber where the DIT is connected, though small, was still insufficient volume for a comparison with the internal volume of the device.

New comparative measurements should be made based on a vacuum chamber reference even lower, in the design phase.

From the measurements take, and the mathematical models constructed will determine the sources of gases and vapors in the relevant vacuum system.