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## **Ultra High Frequency and Microwave Non-linear Interaction Device for Cancer Detection and Tissue Characterization**

**Clarbruno Vedruccio\***

**Abstract.** C. Vedruccio invented an electronic system for non-invasive EM cancer detection, requiring only that a handy probe be moved a few centimetres over the surface of the body, close to the organ that should be tested. The probe contains a *non-linear* oscillator, emitting a very weak EM wave, with several frequency components (at 450, 900 and 1350 MHz, for instance). They are displayed on the screen of a spectrum analyser, which is fed by a small antenna that is situated about 2 meters away from the probe. The relative intensities of these spectral lines are predetermined, but when the probe is brought close to biological tissue, the height of one or several lines can be *strongly reduced*, according to the pathological state of the tested tissue. We explain this phenomenon, by establishing a mathematical model and by solving the resulting equations. Actually, the probe does stimulate minute electrical oscillations inside the tissue, but this requires an energy transfer, which is clearly detectable because of the peculiar properties of *non-linear resonance interaction*. This technology, commercially available with the name of Trimprob, is CE certified and it is used for prostate cancer detection as well as bladder, breast, thyroid, stomach and duodenum and for veterinary uses.

\* Commander, COMSUBIN Research Office, Italian Navy- La Spezia