

TECHNICAL NOTE # 401

MICROWAVE RADIATION EFFECTS FROM MOTION SENSORS

Microwave radiation effects on an individual's health has received a great deal of interest from all sectors in recent months due to the increased amounts of exposure in our daily environment. This exposure is a result of the continually advancing technological society and stems from such everyday causes as satellite communication, broadcasting and radar usage to mention a few. The question of whether microwave motion sensing devices used for security purposes pose a health hazard is expected to continually arise.

As a manufacturer of microwave security equipment, we want to make every effort to assure the users of such devices that no adverse health effects will occur due to human proximity to the units. Therefore, information has been studied from many available sources with the findings stated in the following paragraphs.

The allowable standard minimum of safe radiation exposure level in the United States as established by the American National Standards Institute is $10\text{mW}/\text{cm}^2$. There is currently a proposal to drop this limit to $1\text{mW}/\text{cm}^2$. The average Southwest Microwave sensor **surface** radiation level (when in operation) is approximately $.0186\text{mW}/\text{cm}^2$ or 1/50 of the proposed lower standard. This level rapidly dissipates at distances from the unit. For example, at one meter, the figure reduces to $.0012\text{mW}/\text{cm}^2$ or 1/800 of the proposed level.

A possible more meaningful figure is a comparison between consumer microwave ovens and microwave security devices. The U. S. Standard for Safety as established by the Department of Health, Education and Welfare (HEW) in regard to radiation leakage from microwave ovens is $1\text{mV}/\text{cm}$ prior to consumer purchase. Southwest Microwave units in operation emit an approximate level of radiation of 0.0001 of this standard or 1/10,000.

This level is so minimal that it is very close to that which one would be exposed to during a "nature walk" which would include exposure to microwave communication and long distance radar ever present in our day-to-day life.

It is very important to mention that to come in contact with even this very insignificant radiation level; a person would have to be within one meter or even touching the surface of an **operating** unit. In addition, this level only exists within the beam pattern of a unit. It should be obvious that there are absolutely no radiation levels whatsoever being emitted by virtue of the physical existence of a unit.