RF LEAKAGE DETECTION SYSTEM FOR MICROWAVE
BASED INDUSTRIAL HEATING APPLIANCES

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Abstract: RF leakage above +10 dBm are hazardous to human being according to WHO standard. Leakage of RF signals my cause health and safety hazards affecting unintentionally exposed workers or general public members. In restaurants , cafeterias, lounges, kitchens, snacks bar and home microwave ovens are daily I use. `Health Canada discover that some microwave energy may leak from oven while you are using it, but this would pose no health known health risks, as long as the oven is properly maintained. Old or faulty door seals are most common causes of RF radiation leakage. Mechanical abuse, a build-up of dirt or wear and tear from continued use can cause door seals to be less effective. But, after long use of microwave leakage takes place in to the oven. A federal standard (21 CFR1030.10) limi the amount of microwave that can radiate fro the oven throughout its lifetime to 5 mW of microwave radiation per square centimeter at approximately 2 inches from the oven surface. Many studies prove that radiation leakage is similar to the atomic radiation that could lead serious health problems like cancer and it is hazardous for human being. Hence efforts has been done to detect the leakage radiation with the help of antenna. Raspberry pi is connected to check leakage radiation for threshold value. If this leakage is goes above the threshold value, then the owner will get message through the GSM module about leakage. So they can take further actions regarding leakage.

Keywords: Leakage detection, MAR 3 Amplifier, MCP 3008, Microwave Oven, Raspberry Pi