Abstracts

Shielding Effectiveness of Improved Microwave-Protective Suits

C.-K. Chou, A.W. Guy and J.A. McDougall. "Shielding Effectiveness of Improved Microwave-Protective Suits." 1987 Transactions on Microwave Theory and Techniques 35.11 (Nov. 1987 [T-MTT]): 995-1001.

The shielding effectiveness of microwave-protective suits was determined by measuring the attenuation of sections of fabric by a waveguide-transmission-loss method. The attenuation of the entire suit on a full-sized phantom man model was determined by measuring the E fields at the surface of ten locations on the phantom by diode sensors during exposure to 915- and 2450-MHz radiation fields from standard gain horns in an anechoic chamber. The results indicate that both the material attenuation and the design of the suit contribute to its shielding effectiveness. A novel material which is fire retardant and provides good ventilation was tested. The attenuation of the fabric is 35 to 40 dB for the frequency range of 1.5 to 11 GHz and 28-35 dB for frequencies between 0.65 and 1.15 GHz. The final version of the suit has at least 25 dB shielding at 2450 MHz for the ten locations tested and 20 dB at 915 MHz at the head and torso of the model. It is concluded that the suit can provide good protection for microwave frequencies in the 0.65 to 11 GHz range in which the tests were made. More work is needed in developing a suit for broadcasting and shortwave bands.

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