Design of High Directivity Ultra Wideband Antenna for High Resolution Microwave Image Application

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ABSTRACT

Apply high resolution microwave image to image diagnosis will have benefits as followings：reducing the effects on human body with low power and low radiation, cost-down the medical equipment, raising the domestic medical technique, less depend on foreign medical equipment and promoting the national ability in the competition of medical equipment. For increasing the resolution of microwave image, ultra-wideband antenna is developed in this thesis and applied for medical examination. The high directivity ultra-wideband antenna radiated in water is designed herein. This antenna consists of transverse electromagnetic horn antenna and wideband balun. By simulation and measurement in applications, the propagation characteristics in water and in air are studied to verify the performance of the antenna respectively.

Keywords : microwave image ; resolution ; Ultra-wideband antenna

Table of Contents

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