

We developed specially designed RF surface coils for small objects including human skin and small animals at 3T. For making of enhanced coil structure, we adopted boundary condition value, such as Maxwell coils. Coils size and volume were evaluated by general equation of Biot-savart's Law. This procedure was essential for more advantageous steps to review the numerical values. Typical ping-pong balls were used as small phantoms on surface coils. One ball was filled with water and the other ball was empty. The image acquisition performed images by 3T scanner. B1 field was distributed by coils that double interlaced-rings driving prominent electronic magnetic force (EMF) to an arbitrary object. From image acquisition data, our interesting region is appeared blurring shape but it get over to coil making. The air and water filled small phantoms were not proved for biological components nor had physical density problems. But the present study accessed to boundary difference region existed some uniformity to available. A magnetic strength was measured and recalculated with maximum at surface coil. In the present study, we developed surface coils for small objects and animals at 3T. The relationship for optimum current distribution each images is complicated, but increasing of the sensitivity is useful to get conventional homogeneity in clinical area. This study was supported as "Development of New Medical Imaging Techniques in Radiation and Radioisotope" by a grant of the Mid and Long Term Nuclear R/D Plan Program, Ministry of Science and Technology, Republic of Korea.