Design of Internal Multi-Band Antennas for Mobile Handsets

賴彥儒、胡大湘 ; 許崇宜

E-mail: 9901158@mail.dyu.edu.tw

ABSTRACT

This thesis aims at designing internal antennas that can be used in mobile handsets. Two antennas have been designed, both being able to support the five commercial communication standards: GSM850, GSM900, DCS1800, PCS1900, and UMTS2000. One of the antennas can support an additional 2.4-GHz WLAN band, and the other an additional 1.57-GHz GPS L1 band. In other words, both antennas are hexa-banded. These antennas are designed using several electric monopole and dipole structures to obtain the required operating frequency bands. They are fabricated on commercially cheap FR4 substrates. Low cost, compactness, lightweight, and easy fabrication are the main advantages of these antennas.

Keywords : GSM850 ; GSM900 ; DCS ; PCS ; UMTS ; WLAN ; LTE

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