

一种用于移动终端的新型内置五频芯片天线

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摘要 研制了一种用于GSM850 / GSM900 / DCS1800 / PCS1900 / UMTS频段的五频内置芯片天线. 芯片天线将FR-4介电质(介电常数为4.4)上的曲折线和螺旋线相结合, 两者分别产生谐振频段进行叠加从而实现天线宽频工作特性. 弯曲的折线结构实现了天线尺寸的小型化, 天线的体积为20mm×8mm×3.2mm, 适合用作移动手机终端的内置天线. 电路板的尺寸为40mm×93mm, 适用于新款小型手机. 在驻波比小于3时, 测试低频带宽为146MHz (1030~1176MHz), 高频工作带宽为530MHz (1756~2286MHz).

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Novel internal chip antenna with a penta-band for the mobile handset

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Abstract

An internal penta-band chip antenna for GSM850 / GSM900 / DCS1800 / PCS1900 / UMTS is presented. The resonance frequencies of the spiral line and meander line printed on the FR-4 with dielectric permittivity of 4.4 are combined to realize the wide frequency band. The bent line structure realizes the size reduction. The antenna occupies the volume of 20mm×8mm×3.2mm which is fit for the internal antenna of a mobile cell phone. The size of the circuit board is 40mm×93mm for the recent small cell phone. The measured bandwidth with VSWR<3 is 146MHz (1030~1176MHz) in the lower frequency band and 530MHz(1756~2286MHz) in a higher band.

Key words [chip antenna](#) [penta-band antenna](#) [internal antenna](#) [meander line](#) [spiral line](#)

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