

Interferences of GPS Reception in PDA Phone

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Abstract

Recently, wireless industry is moving towards convergence of radio technology to cater for multi standards on a single platform—personal digital assistant (PDA). In the meantime, the platform have to satisfy small size, light weight, and low power consumption. The wireless sensitivity is by no questions affected by the digital and analog functions. The determents are from conductive and coupling noises. In this study, the sensitivities in GPS and 2G/3G are tested. The sources are identified step by step turning on each application function. It is found that the most deteriorated factors are from digital functions of camera and SD card, which are allocated near the GPS antenna. The solutions are nothing but improving the grounding, noise bypassing, and slit closure. Same phenomena are also found in the reception of 2G/3G operation. The GPS receiver sensitivity is affected not only by the digital noise but also by analog noise. GPS noise radiating from system digital noises (LCM driver IC/FPC, camera, light sensor, G-sensor, IR-sensor, SD-card, SIM card, processor or memory noise when running map).

Keyword : EMC, PDA, noise figure, sensitivity, GPS