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CAVITY ANTENNA WITH MULTI-SLOTS

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Cavity Antenna with Multi-Slots

Abstract: In a mobile computer with all-metal covers, dual-band wireless LAN antennas are formed as two small slits on a metal cavity box. The antennas provide improved performance in the all-metal environment.

This disclosure relates to the field of antennas for laptop and notebook computers.

A technique is disclosed that provides quality Wireless LAN antenna performance in an all-metal environment.

Recently, laptop and notebook computers have been changing over from predominantly plastic covers to all-metal covers. An all-metal environment undesirably degrades the performance of internal antennas, such as for example those used for Wireless LAN communication. Up to now, it has been difficult to generate dual-band antenna resonant modes in such an all-metal environment, and antenna performance is poor in both low band and high band.

According to the present disclosure, and as understood with reference to the Figure, two small slits 10, 20 are formed on a metal cavity box. One signal cable line 30 from a source 40 is used to excite the two small slits to realize dual-band WLAN antennas, one 10 for 2.4GHz operation and the other one 20 for 5GHz operation.

In one example, the antenna occupies a volume of about 45 mm by 12 mm by 4.5 mm. Since the antenna holder is covered by copper, the slits can easily be implemented in the metal cover.

The disclosed technique advantageously provides competitive antenna dimensions which can easily be implemented in all-metal environments, while providing good antenna performance and immunity to spurious signals.

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