AN INTEGRATED ANTENNA DESIGN NEARBY THE LAPTOP COMPUTER CLICK PAD

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An integrated antenna design nearby the laptop computer click pad

Abstract:

Consider about the modern laptop computer antenna design, the trend of the platform development is to have more antennas module have to design in the electric device for the multiple radio feature and increased spectrum in electric devices. In this invention, there will be a solution to integrate the components of the electric device when there is a lighting decoration with the antenna integration. In this document, we will use an example of the computer and there are 9 antennas in the laptop computer. 2 of these 9 antennas will be integrated by the click pad module and there will be a light guild which is used for the antenna integration and for the appearance purpose as a decoration part. By using this method, the opportunity for more antenna numbers is increased, and the platform performance or dimension will be improved while there will be diversity options for the antenna architecture.

Description of Invention:

Put the antenna nearby the click pad. The click pad metal part and metal C cover have a gap as a slot antenna structure, and there is light guide under the slot for the decoration.

There will be a gap between as following picture and the gap could fill in the plastic part depend on the antenna radiation requirement. In this invention the gap will fill in the plastic which is transparency as a decoration. Reference following picture (1) for the placement, and picture (2) define the material nearby the click pad module.

Picture 3 describes one of the applications which is to use the transparency material in between the c-cover metal to the click PAD.

Use the light guide to deliver the light from LED to the material as a decoration for the platform. The stacking cross section part is as the picture 4, and the antenna is underneath the light guide.
Picture 1
Ant1/2 located nearby the click pad module

Picture 2
Material nearby the click area

Picture 3
Left display with border and right display is the zero border design

*Disclosed by Albert Ma, Wallace Huang and Pat Chen, HP Inc.*