Perseus Tech. International Corp.

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Application Note of Microwave Rubber Absorber

(1) Introduction

The market of digital equipment is growing fast nowadays. The function of new generation digital product is increasing and thickness is thinner and thinner. But the product life is shorter and shorter, the product developing time is also shorter and shorter. Manufacturers must spend as little time as possible on noise suppression measures.

Since the absorber sheet is proved work useful to absorb the microwave emission from the product. So apply the absorber sheet to solve the EMI/RFI problem become more and more important. If manufacturers can use absorber to rapidly resolve EMI issues caused by the additional new functions planned for digital equipment. It will be shorten the time-to-market.

Absorber is being used to cut spurious radiation in digital products like digital cameras, mobile phones, notebook PC microprocessors and ICs, LCD panels, LNB and GPS. In hard disk drive (HDD) recorders and DVD, the sheets have improved noise weighting in TV tuner video signals.

Recently, The RFID tag signal interference with the metal wall can also be eliminated by rubber absorber. The RFID equipment also can apply absorber to solve the RFI/EMI problem.

Other applications include using the EMI absorbent sheet to cut spurious radiation from camera modules and miniature memory card slots in digital cameras and mobile phones.

(2) Noise Source of EMI/RFI problem

Briefly, there are two major reasons cause microwave emission interference:

(2.1) The first is that the space of different component is insufficient for EMI-emission saving space, due to the digital product outline dimension is shrinking. Even the board level can be controlled; the multi-board mounted together can cause the secondary interference. And sometimes the microwave emission will be reflected from the covering and cause the interference noise.

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Apply Absorber to solve EMI/RFI problem: the absorber can be stuck on the noise emission source as Figure 1. Or it can be stick to the backside of the susceptible components as Figure 2. If the major noise caused from covering reflection, the absorber can be stuck on the covering as Figure 3.

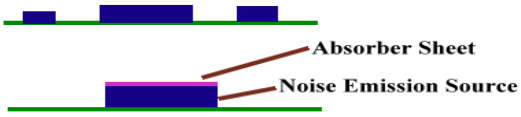

Figure 1 Absorber stick on the IC components (noise source)

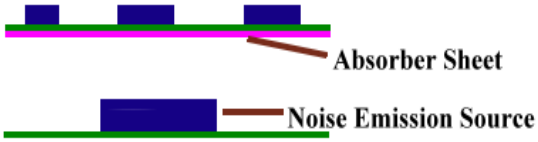

Figure 2 Absorber on the backside of the PCB for the susceptible components

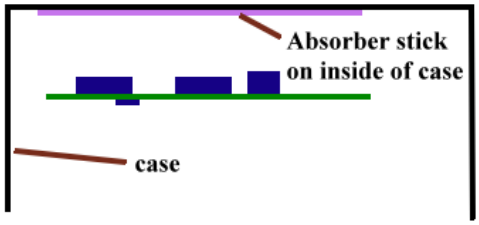

Figure 3 Absorber stick inside the case

(2.2) The second source is the spurious FPC/ cable radiation. The noise is generated by the high-frequency (radio frequency, or RF) weighting module such as: optical head FPC in a compact disk rewritable (CD-RW) drive or the FPC connecter in the notebook. The FPC/cable is work like an antenna cause the EMI problem.
Apply Absorber to solve EMI/RFI problem: the absorber can be stuck on the FPC or wrapped around the cable as Figure 4 and Figure 5.

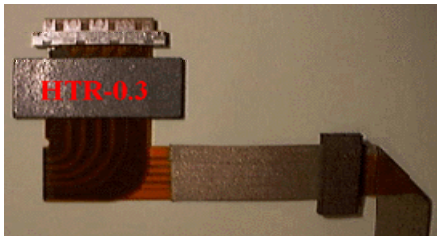

Figure 4 Absorber on FPC

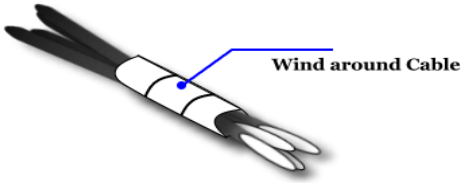

Figure 5 Absorber wrapped around cable

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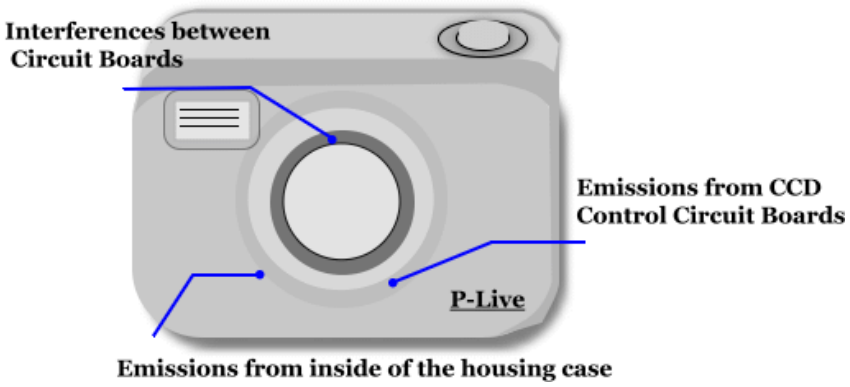
(3)Typical application of Absorber

(3.1) Digital Camera



(3.2) Mobile Phone

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(3.3) PCB typical application

Front-side of PCB

Back-side of PCB