

# Study of performance optimization for band-Pass shielding enclosures and their internal antennas for

黃冠智、邱政男

E-mail: 343855@mail.dyu.edu.tw

## ABSTRACT

In this thesis, the performance optimization of a bandpass shielding enclosure (BPSE) combined with its internal antenna is investigated in details. As this investigation shown, the performance optimization highly depends on the internal antenna, as well as the adjacent periodic elements and the sideboards of the BPSE. For this optimization, an internal high-permittivity dielectric-resonator antenna is newly suggested. This is not only for the more compact antenna size, but also for the minimum distance allowed between the antenna and the metallic sideboards of the BPSE. In addition, an appropriate zone for locating the antenna is suggested in terms of the relative position between the antenna and its adjacent BPSE elements. According to these suggestions, the antenna is therefore capable of being located in BPSE corner deeply, which position is usually required in practice.

Keywords : Shielding、frequency-selective surface、wireless communication

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