

HPM Environment Characteristics Versus Antenna Orientation, Position and Drive Waveform

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In a free-field environment representative of a building, the effects of waveform design on a wide range of electromagnetic field characteristics ($|E|$ peak, for example) will be shown. In previous studies, $|E|$ peak has been shown to correlate with EMI problems. Providing an accurate simulation strategy facilitates studies of shielding strategies as one possibility. Regions of interest and their definitions are studied versus the field characteristics. A range of antenna drive waveform parameters are investigated while antenna orientation and position also vary. The results highlight the capabilities of electromagnetic field characteristics to indicate changes in antenna parameters without the presence of a physical structure which is important once a structure is considered. This information can be useful when physical test information is available without the corresponding information on the antenna utilized in the physical test.