

EMI compliant design of MTCA.4 modules

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The MTCA.4 architecture is specially designed to fulfil the demands of scientific instrumentation with of-the-shelf modules. The use of MTCA.4 in accelerator control is exemplary for applications where there is a mix of highly sensitive analog signals and fast switching digital data. Minimizing the noise floor results in restrictions for the EMI design of the board. The direct coupling of signals and - even more important - the coupling via the power/ground system of the board must be avoided. The complexity of the board design makes it difficult to directly control the coupling paths. The only way to an EMI compliant design is the use of design rules comprising layer stack-up, routing of signals and decoupling of components. Special attention has to be paid to the layout of the reference planes

Primary author: Dr IBOWSKI, Heinz-Hartmut (brightONE ES GmbH)

Co-author: GANSS, Rudi (brightONE ES GmbH)

Presenter: Dr IBOWSKI, Heinz-Hartmut (brightONE ES GmbH)

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