Contribution ID: **3** Type: **not specified**

# Performance evaluation of RF-Backplane option for MTCA.4 system

*Wednesday 10 December 2014 14:00 (15 minutes)*

RF-Backplane is an RTM backplane for MTCA.4 based LLRF system. Prototype implementation was designed for upcoming European XFEL accelerator to distribute CLK and analog RF signals (up to 6GHz) between uRTM/eRTM modules. Precision regulation of the RF fields performed by LLRF system forces high signal integrity demands on these RF and CLK distribution networks. Therefore one of the multiple aspects of R&D process was optimization of connector-PCB interfaces by employing 3D full-wave EM field solver. Laboratory test results confirmed, that the performance of RF signal transmission over RF-Backplane is comparable to the distribution by a network of RF coaxial cables.
The entire development effort has led to excellent performance in terms of reflection coefficients, insertion losses, channel-to-channel cross-talks and high phase stability over temperature. This talk covers performance evaluation of the designed RF-Backplane v3.2 prototype.

**Primary author:** Mr LEŚNIAK, Tomasz (Warsaw University of Technology, ISE)

**Co-authors:** Dr LEWANDOWSKI, Arkadiusz (Warsaw University of Technology, ISE); Dr LUDWIG, Frank (DESY); Dr SCHLARB, Holger (DESY); Dr CZUBA, Krzysztof (Warsaw University of Technology, ISE)

**Presenter:** Mr LEŚNIAK, Tomasz (Warsaw University of Technology, ISE)

**Session Classification:** New Products

**Track Classification:** New products and updates