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MTCA.4 RF-Backplane Option : Features and Management

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Recently developed RF Backplane (uRFB) option for MTCA.4 crates allows for significant extension of crate capabilities. The backplane was developed to distribute low noise RF signals and high-precision, low-jitter clock signals to RTM cards. The hot-swap feature for RF signals allows the MTCA.4 crate users to build system with multi-channel analog signal processing without many coaxial RF cables connected to front panels of RTM cards. This improves system management, allows for cost reduction and simplifies system maintenance. The uRFB also offers possibility to supply RTM cards with managed, bipolar, high-performance (analog) power from two rear power modules independent from the noisy, digital AMC ones. Finally, uRFB concept defines extended RTM (eRTM) cards in the volume behind front power supplies and MCH cards not used by the standard MTCA.4 crate. Developed eRTM cards offer additional space that can be used for applications requiring more space than is available on uRTM cards.
This contribution describes the RF Backplane concept, management idea and performance measurement results.

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