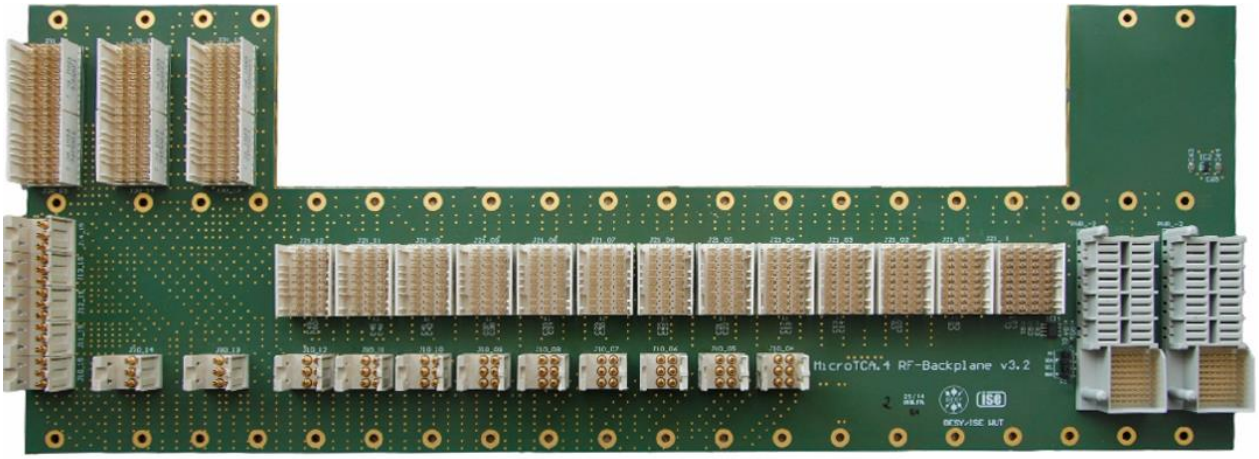
MTCA.4 RF - Backplane

uRFB



FEATURES

- Can be mounted in selected commercially available 9U chassis, for example 19 inch 12-slot crate from Pentair/ELMA
- High-frequency signals distribution in range of DC to 6 GHz (27 single ended channels, star topology)
- Provides low-noise separated analog bipolar power distribution (+VV, -VV) for RTMs and unipolar power distribution (PP) for eRTMs
- Interfaces for up to 12 RTMs with Zone 3 connectors
- Interfaces for 3 eRTMs
- System Management functionality (support for MCH-RTM-BM)
- Interfaces for 2 redundant RTM Power Modules
- Data communication links to eRTM boards (3 LVDS links per slot)
- RF-Backplane ground can be connected to/isolated from chassis ground (with screws)
- Delivers additional power from dedicated rear power supplies to RTM boards

The Radio Frequency Backplane (RF-Backplane) is an optional capability extension for MTCA.4 chassis. It ensures full compatibility with existing MTCA.4 crates. The unit is a passive RTM backplane suited for interconnection of high-precision RF and clock signals. It delivers a high-performance and managed analog power supply for RTMs and the newly defined extended RTMs (eRTM). The high-frequency signal distribution network operates in DC to 6 GHz band.

The MCH-RTM Backplane Management Module (MCH-RTM-BM) together with on-board RF-Backplane connectivity ensure system management functionality, which is needed to support up to 12 RTMs, 3 eRTMs and 2 RTM-PMs (RTM Power Modules). In addition the unit can operate in cost efficient configuration scenarios, where no RTM-Power Module is used. In those scenarios there is only needed a limited amount of power for the rear side.

The RF-Backplane can be mounted in a 9U chassis and it includes a dedicated shielding board which protects against electromagnetic interferences induced by the AMC backplane. Furthermore the signal integrity of the design has been optimized to achieve best performance.

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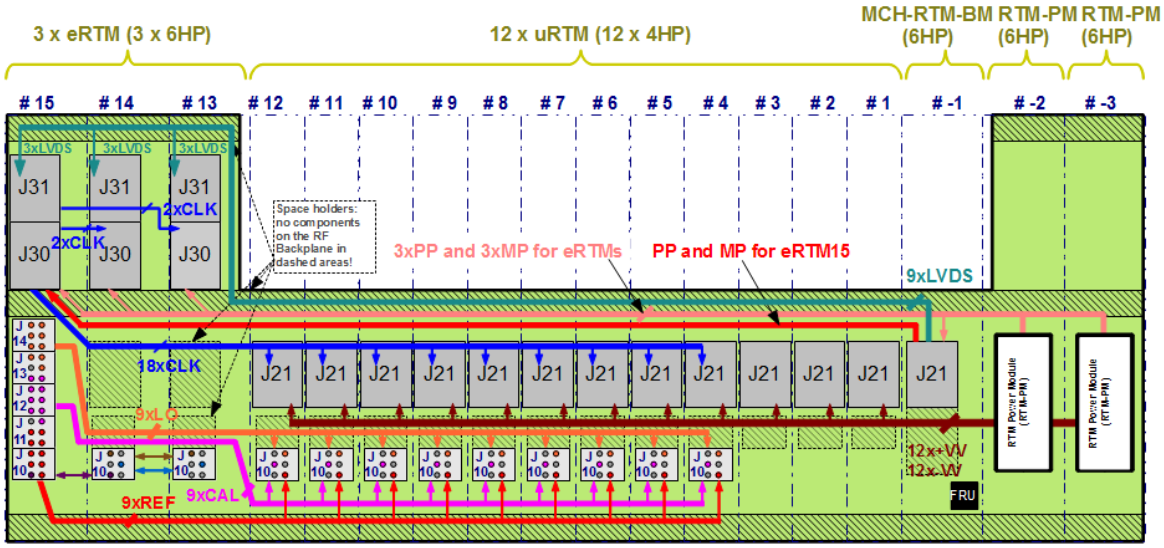
FUNCTIONAL BLOCK DIAGRAM



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