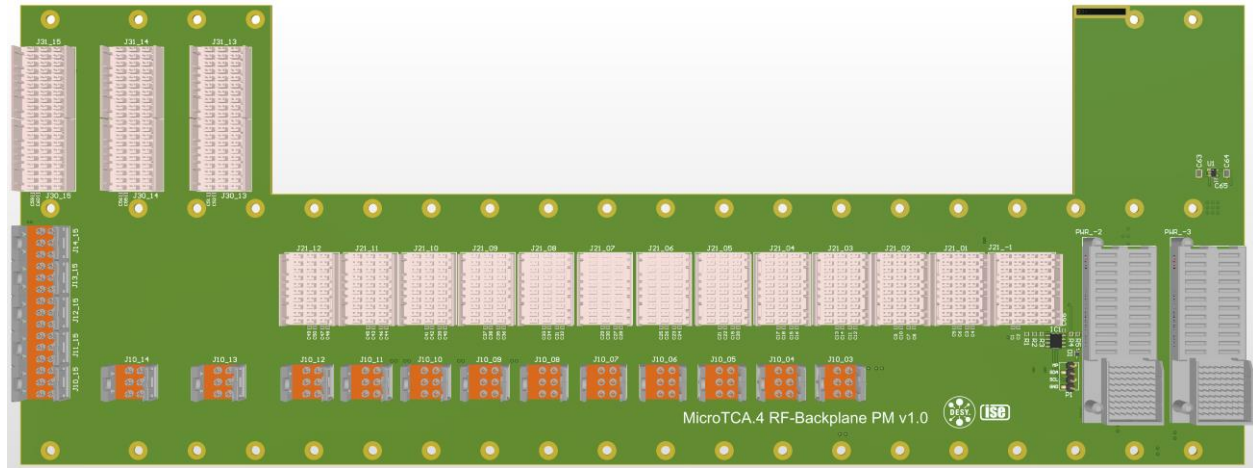


# MTCA.4 Phase-matched RF-Backplane

uRFB-PM



## FEATURES

Distributes **phase-matched** signals in range of DC to 6 GHz (30 single-ended channels, star topology)

Provides **phase-matched** Clocks (CLK) to RTMs

Has one **additional RTM-slot** with RF signals

Can be installed in commercially available 12-Slot 9U chassis from nVent/Schroff

Interfaces for up to 12 RTMs via Zone 3 connectors and for 3 dedicated eRTMs

System Management functionality support via MCH Backplane manager (MCH-RTM-BM)

Interfaces for 2 redundant RTM Power Modules

Phase-matched data communication links to eRTM boards (3 LVDS lanes per slot)

Provides low-noise separated analog bipolar power distribution (+VV, -VV) for RTMs and unipolar power distribution (PP) for eRTMs

Delivers additional power from dedicated rear power supplies to RTM boards

RF-Backplane ground can be connected to/ isolated from chassis ground (with screws)

The Phase-Matched Radio Frequency Backplane (PM-RF-Backplane) is an extension for MicroTCA.4 chassis, designed for customers needing various RF signals supplied to their rear transition module (RTM). It ensures full compatibility with existing MicroTCA.4 crates. The PM-RF-Backplane is a passive RTM backplane with phase-matched interconnection for precise RF and clock signals. It provides the connection for a high-performance and managed analogue RTM power supply. The high-frequency signal distribution network operates in the range from DC to 6 GHz.

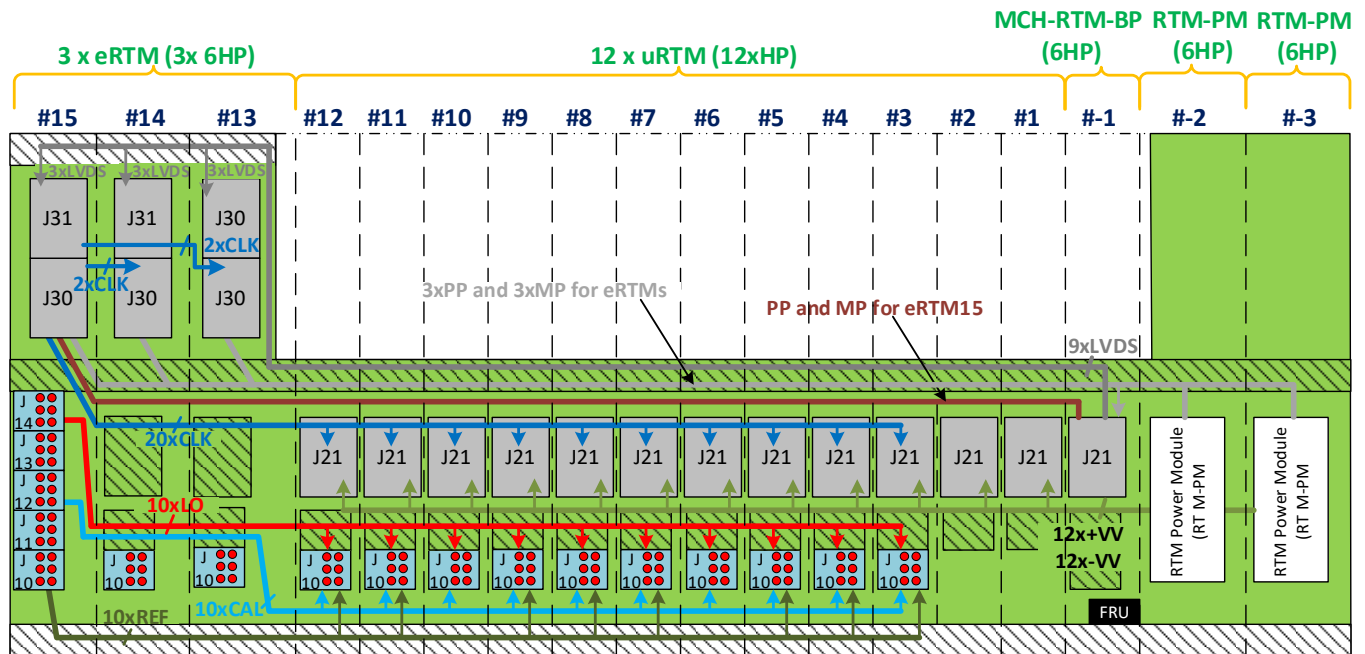
A Backplane Management Module (MCH-RTM-BM) enables system management functions to support up to 12 RTMs, up to 3 eRTMs, and 2 RTM-PMs (RTM Power Modules). Alternatively, the unit can operate in cost-effective configurations without an RTM Power Module installed. In such cases, only a limited amount of power is required for the rear side.

The RF-Backplane can be installed in a 9U chassis and includes a dedicated copper shielding board that protects against electromagnetic interference. The design was optimized to ensure signal integrity and low common-mode drift due to temperature or humidity changes. Phase-matching now ensures that differential-mode drifts become negligible

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## FUNCTIONAL BLOCK DIAGRAM



REF, CAL, LO, CLK, and LVDS interconnections are phase-matched

## THE PHASE-MATCHED RF-BACKPLANE IS SUITABLE FOR VARIOUS APPLICATIONS:

- Low Level RF
- Active and Passive Radar
- Laser Interferometers
- .....