

A MicroTCA Power Module Test Pad and a short status report on the MTCA evaluation project at CERN

Wednesday 10 December 2014 16:30 (15 minutes)

MicroTCA is a candidate platform for the upgrade of the Large Hadron Collider (LHC) experiments at CERN. The CERN PH-ESE group launched in 2011 the μ TCA evaluation project whose aim is to perform technical evaluations and provide support for selected components. Products tested are shelves, MicroTCA Carrier Hubs (MCH) and power modules (PM). The project includes the electrical evaluation of PMs, thermal characterization of shelves and IPMI functionality tests. The electrical evaluations of PMs include static and dynamic regulation tests, efficiency and power factor measurements, ripple and noise characterization as well as an overcurrent protection test. In order to evaluate the power modules on a dedicated setup as well as to be able to perform all PM related tests in a systematic manner, a dedicated automatic PM test pad has been developed. It offers the possibility to check certain μ TCA compliant functionalities as well as the possibility to evaluate the Power Module's EMI compliance that cannot easily be tested when the PM is installed in a μ TCA shelf. The test bench includes software and hardware components that provide information about the PM under test and verify its compliance with the standard.

This presentation will give an overview on the PM test pad, its hardware and software implementation and the functionalities it offers. We will present details about the test procedure as well as results obtained. Moreover, this presentation will give a brief status update on the μ TCA evaluation project currently being carried out in the CERN PH-ESE group.

Primary author: Mr MENDEZ, Julian (CERN)

Presenter: Mr MENDEZ, Julian (CERN)

Session Classification: Applications in research facilities

Track Classification: Applications in research facilities