

## IPMI Support for FMC modules in MTCA.4 Systems – Current Status

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The FPGA Mezzanine Cards (FMCs) are commonly used in various industrial and scientific projects. FMCs are also often used as a modular extension of Advanced Mezzanine Cards (AMCs) in MicroTCA.4 systems. PICMG (PCI Industrial Computer Manufacturers Group) standard organization is currently working on the extended specification supporting management of FMC modules in MicroTCA.4 systems.

Some of the FMCs available on the market could be complex and can consume a significant amount of power, that is dissipated in form of heat. Components on the modules can easily reach significant temperatures and therefore the devices require active cooling. MicroTCA.4 systems use temperature sensors available on AMC and RTM cards to monitor temperature and actively control fan speed in the chassis. However, there is no standardization for additional sensors, including thermometers, present on FMC modules.

FMC temperature sensors could be implemented as dynamic sensors that are read by the Module Management Controller (MMC) and allow monitoring of the health of the module as well as allow increasing the speed of chassis fans when necessary as it is done in MicroTCA.4. Currently, VITA 57 standard does not specify temperature sensors nor the I2C addresses for them.

The presentation discusses the possible solutions for various FMC sensors and extension of MicroTCA.4 intelligent platform management specification.

### Summary

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