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Realization of high precision analog pattern output module by MicroTCA.4

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In the past, bus systems such as VME have been used for accelerator control and other systems that require stability, high reliability, and environmental resistance. For several decades, we have been designing and manufacturing VME bus boards and supplying systems. However, it has been more than 30 years since the birth of the VME standard, and the communication speed of the bus is inferior to that of the VME standard, and there are concerns about product supply in terms of maintainability. This time, we adopted the micro TCA bus standard as a module used in the pattern waveform output unit for controlling the paint bump power supply for J-PARC, which was conventionally built on the VME bus, and produced 2-channel 16-bit DA conversion analog modules as a replacement for the conventional unit. The pattern output board of the micro TCA bus standard makes the pre-set 16-bit data output patterns while synchronizing with the 1MHz clock, and outputs two types of output patterns, current patterns and voltage patterns of the paint bump power supply. This presentation will give an overview of the analog output module applying the micro TCA bus and the performance of the replacement evaluation with a conventional VME system.

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