Development for General Purpose Event Module (TrigNET) at J-PARC/MLF

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We have been developed an electronic system employing a high-speed network for readout of a linear position-sensitive ^{3}He gas detector (PSD) at KEK. This system consists of a neutron encode module (NeuNET) and a large-scale data acquisition (DAQ) system. It has been widely used in neutron scattering instruments at Materials and Life Science Experimental Facility (MLF) in Japan Proton Accelerator Research Complex (J-PARC).

So far, this system is utilized only for measuring the neutron signals from the detectors. It means that the present system has no function of collecting the data such as temperature and pressure, and these signals are monitored manually. Generally, structure of a target material is affected by these conditions. So, synchronizing those signals with neutron data would be useful. Here, a general purpose event module (TrigNET) has been started to fabricate. In the TrigNET, the experimental conditions are collected by converting to the data which can be read by DAQ system, through a field programmable gate array (FPGA).

A prototype circuit was fabricated and has been tested. In this poster, an overview and a present status of the development will be described.