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High Throughput Optical Module for Large Size Experiment

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The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton multi-purpose underground neutrino detector which was proposed in order to determine, as its primary goal, the neutrino mass hierarchy using reactor anti-neutrinos produced by the nearby nuclear power plants as a source. The detector is currently under construction in China.

A module able to manage 0.5 Tbps of aggregate throughput board based on multi-gigabit optical serial links is presented. This module, called Reorganize and Multiplexing Unit (RMU), has been developed as a part of the JUNO experiment. It is used in the Trigger system in order to collect, manage and distribute the trigger information.

The system can also be exploited in ground telecommunications, satellite communications and other particle physics experiments.

The RMU functionalities has been physically divided on different PCB: supplies, slow control, clock distribution and optical links. This approach allows to maximize performance and reduces production and maintenance cost.

Minioral

Yes

IEEE Member

No

Are you a student?

No

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