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Testing of back-end card(BEC) for JUNO experiment

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Jiangmen Underground Neutrino Observatory (JUNO) is a neutrino experiment currently under construction in China. Its main goal is to determine the mass hierarchy of neutrinos, and it will do this by detecting the antineutrinos produced by nuclear reactors using a large liquid scintillator (LS) volume. The JUNO detector will be instrumented with around 20,000 large photomultiplier tubes(20-inch), and the JUNO electronics readout system is composed of two parts: (i) the underwater front-end electronics system and (ii) the back-end electronics system.

The back-end card(BEC) is a critical component of the JUNO experiment's back-end electronics system, as it links approximately 7,000 underwater electronics boxes to the trigger system. Each BEC is comprised of a base board, 6 mezzanine cards and 1 TTIM (Trigger/Timing interface Mezzanine) module, located inside a mechanical box. A total of 180 boxes have been produced and installed at the JUNO site. This presentation will focus on the testing of the BECs, which include both self-tests and combined tests.

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