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## A programmable clock generator for automatic Quality Assurance of LOCx2

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The ATLAS Liquid Argon Calorimeter (LAr) Phase-I trigger upgrade requires high-speed, low-latency data transmission to read out the LAr Trigger Digitizer Board (LTDB). A dual-channel transmitter ASIC LOCx2 have been designed and produced. In order to ensure all the LOCx2 chips behave properly, a Quality Assurance have to be conducted before assembly. The problem I am trying to solve in this project is to yield a clock signal with continuously adjustable frequency and phase offset to generate and control an eye diagram for the QA. By configuring the registers of an any-frequency generator IC, Si5338, the clock signal whose frequency range from 5Mhz to 200Mhz have been properly produced. For the purpose of further development, a C-language based DLL which packs up the function of adjusting frequency and setting phase offset was designed and built , and several evaluation was perform to ensure the robustness. It is a programmable clock generator with the interface –USB and easy to be integrated a test setup system. Through programming, the frequency of clock generator can be configured and changed in real time and integrated to an automatic test program.

### **Minioral**

Yes

### **Description**

clock

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