

PRELIMINARY ANALYSIS OF DAPHNE REQUIREMENTS AND COMING WORK IN FERMILAB

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ADC SPECIFICATIONS

Mu2e board uses Ultrasound ADC (12 bit, 80 MSps)

Impact of replacing current ADC's for new 14-bit versión, pin compatible

Bit resolution depends on the signal characteristics

Dynamic range could be defined directly on the ADCs

ADCs interface: LVDS, SPI, I2C?

Consider the Ethernet or other output interface that use byte-defined frames

FPGA SPECIFICATIONS

The proposal includes replacing 4 Spartan 6 devices

Consider the use of SoC (e.g. Zynq devices)

Implementing Xilinx Artix-7 device using compact module such as Trenz



MICROCONTROLLER SPECIFICATIONS

The proposal specified a microcontroller update

Is microcontroller used to multiplexing and control?

Consider replace the MC by CPLD device: multiplexing, control, alarms, etc

FINAL CONSIDERATIONS

Is possible to know more about the Mu2e board?

- Microcontroller function
- ADC reference and connection
- Output interface and protocol