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# Characterization of the ColorPix-2 ASIC Hybrid Pixel Readout Chip with CZT Sensors

In this contribution we present the first measurements of the characterization of the ColorPix-2 ASIC communicating with the UniCorn readout interface. ColorPix-2 is the ASIC consisting of 32x32 pixel matrix with the pixel pitch of 70 um. It is designed for high-resolution, position and color sensitive X-ray imaging. A 2 mm-thick CZT layer is bump-bonded and used as the sensing material, providing a higher gamma-ray detection efficiency compared to the commonly used silicon. The ASIC acquires data in terms of hit counting across 10 settable energy levels. Due to the device tolerance, several DACs are needed to be tuned prior to measurements.

We describe the equalization procedure, including threshold scanning or pixel offset compensation, energy level calibration, and measurement under the X-rays exposure. The measurements validated the intended functionality of the chip. The charge sharing effect among pixels is demonstrated. Finally, we summarize the implications for the upcoming ColorPix-3 revision.

## Workshop topics

Front-end electronics and readout

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