

- Device supports were built to communicate oscilloscopes with the device driver.
- Related record supports were created with a link to the device supports. The software block diagram of establishing EPICS support for oscilloscopes is shown as Fig. 2.
- A user can easily analyse the acquired waveform data using specific toolkits (Python, C/C++, MATLAB, etc.) with the EPICS channel access library.
- To monitor bunch current, the waveform acquired from oscilloscope are
- SDK.
 Software framework of EPICS support is under construction and test, and can be verified with actual signals on-site in the future.

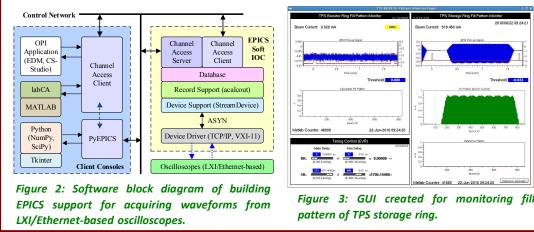
EPICS IOC to be developed the

waveform access support with provided



Figure 6: Outward of ADQ412 with PCIe form factor.

processed online by the MATLAB and formed to one dedicated waveform PV. The GUI has been created to show the calculated fill pattern as Fig. 3.



Summary

- To eliminate long distance cabling for improving signal quality, remote waveform access supports are necessary to be implemented.
- A dedicated EPICS IOC is used to acquire waveform data from Ethernetbased oscilloscopes.
- In addition, the EPICS IOC embedded data acquisition system which formed by the Zynq System-on-Chip architecture has been also used to monitor waveform during route operation.
- The EPICS support of PCIe digitizer with high sample rate and high bandwidth under construction and test.
- GUIs of waveform supports for specific purposes have been created and applied on the TPS and TLS control systems, and enhanced continually.

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