

## **TechNote 168 Noise at end of record buffer in clock-locked AD/DA**

**Manifestation:** When DA and AD clocks are locked, the record buffer does not show a complete recording (there may be noise at the end).

### **Problem**

AD converters run in a sample-and-hold mode. The AD samples data when it gets a trigger, but does not actually convert and send that data until the beginning of the next sample tick. Normally this does not matter to the user, because the AD typically generates its own clock pulses. However, when the AD and DA clocks are locked, the AD will sample on the beginning of the last clock tick of the DA, but it will never get another tick telling it to convert and send this value.

### **Solution**

To get the AD to sample correctly, you need to provide it an extra clock tick so that it can finish all of its conversions and allow the last bit of data to be read from the AD buffers. This can be done by adjusting the AD buffer to be one point shorter than the DA buffer(s), and convert one less point in the ADnpts() than DANpts(). Alternatively, one could increase the DA buffer size and number of points to be one more than the AD conversion.