

Old Sct ROD DSP Bugs and Feature Requests

Bugs

1. Setting variable `MVAR_PRESENT` doesn't disable the appropriate formatter enable bit

To Do List:

- o Give this page a nicer name
- o Use savannah (project atlassctrodDAQ) for bugs
- o S-curve fitting on the SDSPs
 - An analytical fit is probably enough and easy to do, the main work is in transferring the data to the remainder of the system (make a `FitScanResult`) and making it understood
- o Sort out the CVS repository (or just move to SVN)
- o Expand physics mode scan:
 1. Now using 1 SDSP to do histogramming
 2. Mostly teaching the `SctApi` code to exploit different options
 - ◆ eg different trigger type on multiple SDSPs (this should be possible with the current DSP code)
- o Queue up primitives - Bruce in progress
- o Noise occupancy (different number of triggers per bin) is implemented as three scans running on top of each other. If the DSP knew the number of triggers for each bin this would be simpler
- o Implement further analysis of optical scans in DSP
 - Currently only for 2D RX scan, printed to text buffer and therefore ignored
- o Compress the data (don't use gzip but choose something smaller and quicker)
 - NB working on this should be balanced against reduction of information via analysis
- o Module masking primitive
- o Move the offline analyses to the SDSPs
- o Sort out M SDSP memory issues:
 1. Where are the text buffers? Pointer put in primitive buffer on reset, but then gets overwritten!

- ◆ The pixels have a solution, which is the start of the divergence
 - 2. Move code around to optimize further; ICODE to XCODE and vice-versa
 - 3. How much memory do we really have?
 - 4. How does the boot loader work? - Bruce almost worked it out
 - 5. Hence, would building the array of primitive functions at compile time save space?
- o Crashes during calibration scans:
 - 1. How and why do the scans crash? (hit error and chip sequence error?)
 - 2. Check the formatter and then mask off the link?
 - o Teach DSP and SctApi to communicate better about what the DSP is doing
 - 1. Several flags are set by the DSP and unused by SctApi (are they consistent enough?)
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