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ADF2 to TAB Transtion Test:

In this test we used two desktop computers one running windows, and the other running linux. Windows machine is used for controlling ADF2 system, the latter is used for TAB system. When configured, ADF2 system can send predefined data continuously.

To configure ADF2 system, two utilities should be used:
TCC program and, ADF configurator GUI. TCC(?) should be running before the L1GUI. To configure ADF2, after bringing up the two softwares (TCC and L1GUI), from the main menuof L1GUI, one should push command file button(the right most at the bottom), that brings up a window where one can choose with which file to configure the ADF2 system.

In this test, we used three different command files, first one fills EM towers with 0x55 and HAD towers with 0xff, second one fills EM and HAD towers with their respective address, third one fills the towers with pseudo-random numbers(events).
We were basically interested in the parity checks. We want to see that every event pass parity check tests done by both by the local computer and by TAB hardware.

For the test we used 1 ADF2 card, plugged in slot 11, 1 TAB card, module 1. In the TAB card, there are 10 FPGA chips that are responsible with making calculations. We used only the forth chip, because it has the newest version of firmware installed.
In the real experiment every chip will have three inputs sent by three different ADF2 cards (every ADF2 card produces the same information three times to send three different TAB). We feed our chip with one input on the central
region coming from central output pins of the three outputs fans.

The parity check calculations are done by TAB hardware all the time, but in the local computer we are limited by 32 events, since those events are kept in one of the buffers in TAB. If you let the system (ADF2-TAB) undisturbed in this mode, it runs continuously, and one can check parity errors over a long time period. We have run the system for two hours without getting any parity errors.

As a result the tests were successful.

The plan is to have the same tests done for multiple ADF2 cards with multiple TAB cards, using as many parts of the cards as possible.

NOTES:
commands that are used on linux machine:

*)program --> to configure the TABs
*)powerdown --> to shut down TABs
*)adftest --> to start ADF2 to TAB test
*) stratix_status_read --> to check the status of TAB