ProtoMCM 20130206

A proposal

The purpose of this card is to have some hardware to test logic and firmware before the true MCM is ready. In addition we can study power and currents, to get input for cooling and power issues.

The card should functionally be as similar as possible as the true MCM, same functionality but the size and layout will differ, only one SALTRO will be on the card.

*I2C same as on MCM:
Temperature sensor
DAC
CPLD
external master

*CPLD:
the same as final. I2C programming, and possibly also JTAG (may be easier to start with).
One could consider to have a simpler version of the CPLD firmware to test the carrier card.

*SALTRO:
at least for a packaged chip, since we have these (version 1 of packaged chip)
possibly another protoMCM for a carrier card + test socket. This will be decided later if needed.
Address set by jumpers.

*VOLTAGE REGULATORS:
to be put on the card. Only one external power supply for the voltages. Jumpers to break the power in to and out from the regulators. Manually measuring currents and voltages. Possibility to adjust voltages. Regulators always enabled. Possibility to reconfigure to have one regulator to supply two or more voltages on CPLD/SALTRO.

*REFERENCE VOLTAGES:
same as on the final MCM.

The reference voltage settings should be selectable either from the DAC or with potentiometers. Potentiometers can be used if no I2C handling is available.

*SERIAL INTERFACE:
SRU – Need CPLD/SRU communication firmware to be done, need a DAQ system that understand the SRU.

*TESTPOINTS:
Everything. All unused pins on CPLD to be on connector.

*IN/OUTPUT:
connector to PASAINPUTS, same as on FEC.
input for test pulse to SALTRO channels (in) (e.g. line over the input lines)
Send L1/L2 trigger on LEMO connector (out).

Connect all unused pins on CPLD to a connector, can be used to e.g:
Send power pulsing output (shutdown/power up) on LEMO connector (out)?
what more? Any input for power pulsing,L1 and L2 triggers instead of sending them as commands from “SRU/?” ?