University of hawaii, Instrumentation development Laboratory

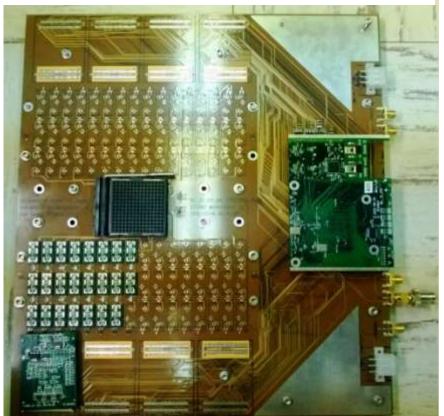
STURM2 2013 DESIGN

PREVIOUS DESIGN

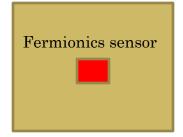
- In the previous design all the circuit boards and components were located on a single motherboard
 - → Complex design

Drawbacks

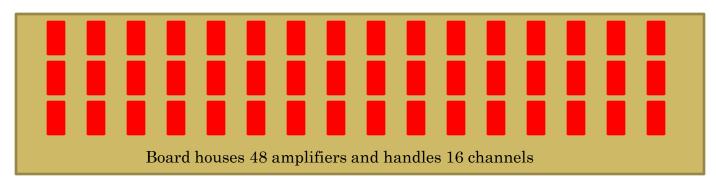
- > Difficult to make changes to design
- Changing design of one board would
 Mean redesigning the whole
 motherbord



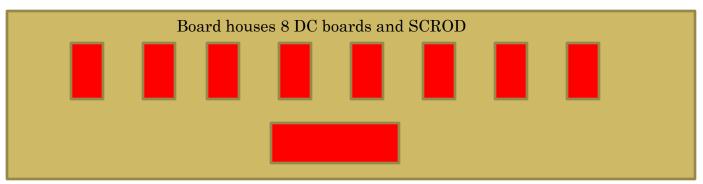
New 2013 Design



Fermionics sensor board



Amplifier power board



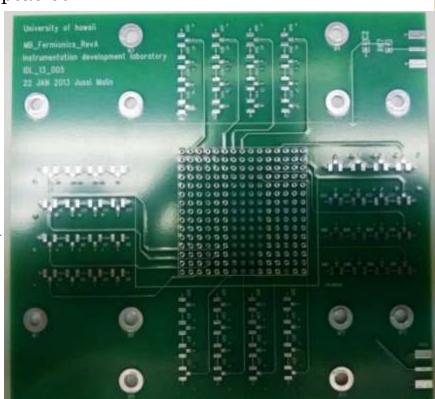
DC board power board

FERMIONICS SENSOR BOARD

• Board holds the fermionics sensor at the center

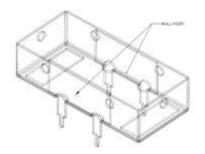
• RF signals are connected to UMCC receptacles around the board

- Impedance controlled cables are used to connect the signal to the amplifier boards
- Board has several mounting holes which allows it to be attached to a moveable desk

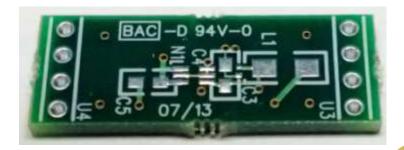


AMPLIFIER BOARD

- Single power connector replaced with two four pin array connectors for better stability and to make assembly easier and faster
- RF signal connectors changed to slightly larger UMCC receptacles
- Previous design had lot of interference in RF signals.
 New design will be enclosed inside a metal RF shield

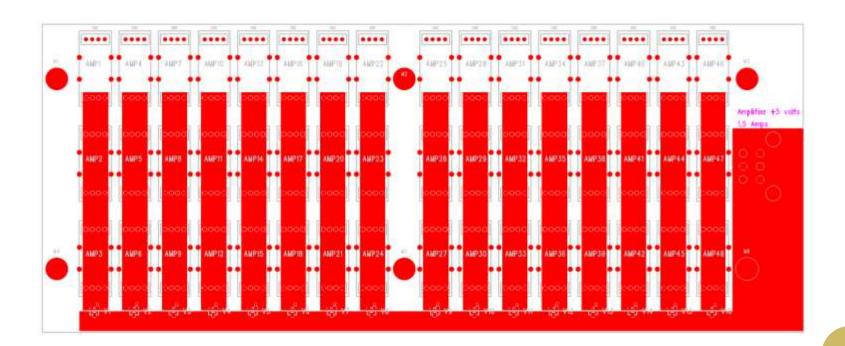






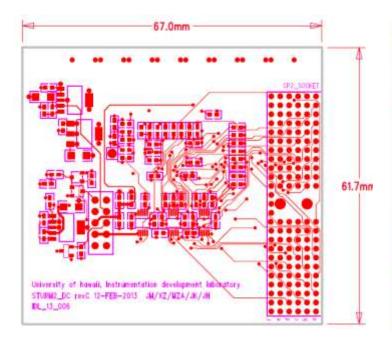
Amplifier Power Board

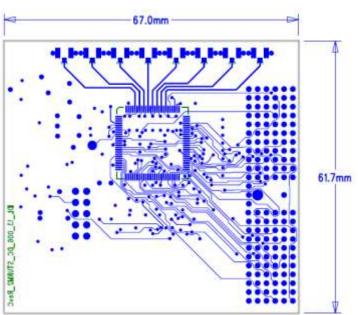
- Board supplies power for the RF amplifiers
- One board houses 48 amplifiers and handles 16 channels
- Board has no traces. All the connections are made using plane areas.



ASIC BOARD

- Revision D has new right angle CP2 connector
- RF Signals from the amplifiers are connected using impedance matched cables and UMCC receptacles





ASIC POWER BOARD

• Board houses the 8 ASIC cards and SCROD

