SVX4 tests on hybrids

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- Full chain tests in DAB and KSU
  - Minimal configuration : Hybrid –Jumper Cable – Junction Card – Twisted Pair Cable – Adapter Card – Interface Board – SASEQ
  - Status DAB
    - Setup ready – debugging started
    - Upgraded IB firmware, set up 1553, use SMTIB_wide.py for monitoring
    - Correct voltages/currents at hybrid but no download..
  - Issues to study:
    - Signal propagation through twisted pair cable + jumper cable
    - Signal levels to/from SVX4/AC/IB adequate?
    - Can clock bypass AC ?
    - Any changes to AC design ?
    - Check max/min length of 80/50 conductor cables

Hybrid tests

- Power issues
  - Check dependence on AVDD and DVDD
  - same AVDD and DVDD?
    - Purple card and hybrid/L1/L0 modules
      - Test 1 : AVDD/DVDD shorted before regulators
      - Test 2 : AVDD/DVDD shorted after regulators
      - Test 3 : AVDD/DVDD shorted at the hybrid
  - AVDD bypassing
    - Are there difference for SVX4 V1 and V2?
      - With hybrid bypassing
      - Without hybrid bypassing
      - Can we remove big bypass cap from the hybrid?
  - DVDD bypassing
      - Can we remove big bypass cap from the hybrid?
      - Bypassing from the other end of the chip?
  - Voltage regulation
    - DVDD regulation during acquire/digitize/readout
    - Long cables – oscillations ?
    - Optimization of sensing
  - Separate AVDD/DVDD grounds at hybrid?

Hybrid tests

- Systematic tests of 12 L2A hybrids
  - So far one hybrid operational (+ one has DVALID problem)
  - Receiving 5 this week + 5 next week
  - Observations for one working hybrid:
    - First chip works ok up to a higher frequency than others ?
    - Last channel @ last chip problem (spreadsheet ?)
    - Stronger dependence of pedestal on cell # than 14th floor measurement
  - Map hybrids behavior for SVX4 parameter space and power
    - Look for differences in chips
  - HV bypassing ok?
  - Temperature measurement