

Introduction

- Document on Test Procedures: work is progressing fast towards the next draft version taking into account comments and different contributions (all on the web page hep.fi.infn.it/CMS/moduletest/procedures_2002/proc2002.html)
- As new draft will be ready it will be on web and all L3 Managers will be asked for final comments or corrections (by email): afterwards, if necessary, I will call a meeting before next CMS week
- M200 is approaching fast, lots of activities going on in home labs (see today presentations)
- A (not so) minor point: we still need to agree on a set of APV25 internal registers settings to be used as starting point in all our tests

Qualification Procedures

- The aim of the qualification procedures is to ensure that all the testing centres can perform a minimal standard set of tests on modules and hybrids, obtaining uniform results and bringing to evidence possible faults on the DUT (Device Under Test).
- The qualification is a process that will evolve through different steps, according to completeness of equipment and complexity of tests to be performed.
- For M200 we will start with simple basic requirements, to have all the centres ready and qualified for the “absolutely necessary”, fundamental tasks to be performed

Guidelines

- A possible way to go
 - circulate a few “well known” hybrids and modules among different labs (ex test beam modules ? express line ?)
 - perform minimal standard set of tests
 - verify obtained results
- Standard tests means: measure “usual” fundamental quantities: pedestals, channel noise, common mode noise, calibration, LV and HV currents. No led/laser, no cold box required for the time being
- Common algorithm is mandatory: close collaboration with Mod Test SW Team, HW experts

Some Details on First Step

- Hybrids/modules in a (closed) box, readout adapter always connected, some ESD protection required (both environment and operator), room Temperature and Humidity knowledge
- Configuration file: unambiguous ordering (APV & strip #)
- APV parameters: common set (SW team please check!)
- Standardize cable lengths (analog and dig) & delays
- HV: it should be same P.S. as for production test: is this already possible?
- Measure HV current at given bias V (depending on the module), but most likely will not be final one
- Tests to be repeated in pk and dec
- Test at least 2 different hybrids/modules

The SW Team Task

Module Test SW Team should provide tools for:

- Plots of fundamental quantities
- Thresholds and cuts (according to ARC or CMS) to define bad channels, strips and modules
- Identification of bad channel number
- Output file for verification, with results, distributions mean values and spread, non conformities, type of test etc.
- DB logging very welcome if possible !

Possible Future Steps

1. Intermediate configuration
 - Clean room required, Temperature and Humidity data readout in the detector box
 - Module qualification test “scenario”, HV controlled by SW, LV current readout card, full readout of all asics
2. The DB step:
 - Downloading from DB the data from previous tests
 - Log results to DB (format finalized in this phase?)
 - Bar code reader
3. Long Term test configuration
 - “Pilot” cold box scenario, HV, currents, T, H control in automated way
 - Interlocks active