## Visual inspection of modules

## Module on arrival

This inspection is performed when the module arrives at Glasgow from Manchester after it is recieved into the database

Perform all visual inspections in the bonding room using the microscope.

Leave the module in the handling frame with covers attached, back cover is transparent.

A: For the back of module check ASIC wirebonds to hybrid. Check for flattened bonds.

B: Inspect conditions of fan-ins, making sure there are no scratches, glue on top surface. Verify correct placement (noting height) of fan-ins.

C: Inspect conditions of back detectors, making sure there are no scratches or other defects caused during transport.

Remove the front cover of the handling frame.

D: For the front of the module check ASIC wirebonds to hybrid. Check for flattened bonds.

E: Inspect DORIC and VDC wirebonds. Make sure that all bonds are present and that they don't touch the edge of the chips.

F: Inspect conditions of fan-ins, making sure there are no scratches, glue on top surface.

G: Inspect conditions of back detectors, making sure there are no scratches or other defects caused during transport.

Replace front cover of the handling frame.

Place module into the N<sub>2</sub> storage cabinets.

Record observations in the traveller document and place the traveller document with the module.

Note that all minor wirebond errors found in checks A, D and E should be fixed, if possible, at the this stage with the module mounted on the bonding jig. Refer to document "Atlas\_module\_bonding\_in\_glasgow.doc" for details on mounting modules onto bonding jigs and the use of the wirebonder.

## Module after bonding

The bonder performs this inspection directly after the module is fully bonded Perform all measurements in the bonding room using the microscope.

While the module is in the bonding frame perform the front side inspection:

For the front side:

A: Check DORIC and VDC. Confirm no degradation has occurred during bonding process.

B: Check ASIC wirebonds to hybrid. Confirm no degradation has occurred during bonding process.

C: Inspect ASIC to fan-in wirebonds

D: Check conditions of fan-ins. Confirm no degradation has occurred during bonding process.

E: Inspect fan-in to detector wirebonds.

F: Inspect detector-to-detector wirebonds, if present.

G: Inspect HV wirebonds.

Connect the kaptons to the module. Remove the module from the bonding frame. Replace the backside cover of the module-handling frame. Replace front side of module handling frame.

For the back side:

Repeat steps B through G.

Place module into N<sub>2</sub> storage cabinets.

Record observations in the traveller document and place the traveller document with the module.

Record observations into the database.

The module is fully bonded and visually inspected and ready for electrical and thermal tests.