Stage of the assembly process strict quality controls are applied. Paste height is measured prior to surface mount. Ovens profiled using populated boards.

Surface mount assembly checking with Fully Automatic Optical Inspection (AOI) (Diagnosis VisionPoint, ~100 components per minute) Programmed using a “gold” board and ODB++ data. Detects component misplacements, incorrect part nrs, poor solder joints, solder bridges.

BGA assembly verified with 3D X-Ray. Solder ball re-flow checked using Ersascope.
Boundary Scan Testing for Digital

VME Crate Testing for Analogue

Assembly Process:
1. Visual Inspection
2. Fit Front Panel & Deflector Bar
3. Multimeter tests
4. Serial Nr
5. Insert in Crate
6. Power On Crate
7. Boundary Scan
8. Program EPROM
9. Test VME Access
10. Test FPGA loading
11. Insert CFlash Card
12. Power Reset
13. Run Test Bench Programs

Quality Checks:
- E.g. AOI
- X-ray

Final Tests:
- Box up
- Reports to test over 10 months. Essential to catch any manufacturing faults early.

Acceptance Criteria:
For details of tests and checks and acceptance criteria see detailed diagrams