



Digitiser report

1. What exists, where and what state.
2. Self-test work.
3. Firmware updates

What exists, where and what state.

- Legnaro :
 - 6 working, 1 waiting repair.
- Strasbourg :
 - 2 being performance tested, 1 for testing standalone mode.
- Turkey :
 - 3 waiting for shipment to Strasbourg for performance testing.
- Daresbury UK :
 - 5 waiting shipment to Strasbourg for performance testing and being used for firmware and slow control development.
 - Core module from Legnaro waiting repair



Self-test work

- **Data transmission interface loopback self test** has been successfully implemented. Each digitiser channel can be tested to the output of the FPGA where it connects to the optical link.
- **Software checking** of the setup of the digitiser is in place.
- **Software configuration** (setup digitiser) includes a basic set of checks.
- **ADC bit failure test** is in development. This uses the 16bit DAC to ramp across the full range of the 14bit ADC. Firmware records the maximum and minimum values from the ADC. Carried out with no input connection. Software controls the test and records the result.



Firmware updates

- Experimental firmware for the Segment and Core ADC cards are produced from time to time as new functions are required. For example new self-test features.
- Unfortunately this requires all digitisers are re-programmed at Legnaro for each update. The firmware download via the network has not been implemented.



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Finally :-

As the experimental system in Legnaro has been assembled and set to work, problems have come to light.

These are the subject of the current work on the digitiser.