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Subject: MC403 DAC Initialisation

TECHNICAL BULLETIN

1. Summary

The MC403 Digital to Analogue converter for the servo control analogue output is not initialised reliably in firmware versions up to and including 2.0174. This is due to a shortcoming in the D to A converter chip used and was informed to Trio by the Chip manufacturer.

The issue has been fixed in V2.0175 and all MC403s must be updated to use this version.

This document shows how to update the FPGA after installing firmware V 2.0175.

2. DAC errors on power up

The DAC initialisation issue causes the MC403 analogue outputs to power up with an output voltage range of 0 to 2.5 Volts. The result is that servo control becomes impossible and the axis may run-away in some circumstances because the output range is 0 to +1.25V when the software is asking for -10V to 0V.

3. Solution

1. Load system software version 2.0175.
2. Re-connect Motion Perfect and open the command line terminal.
3. Load the corrections to the FPGA program by typing this command in the terminal:

```
FPGA_PROGRAM(0)
```

4. Wait for the >> prompt in the command line.
5. Power cycle the MC403 to start it with the new FPGA settings.
6. Confirm the FPGA version by typing:

```
>>?HEX(FPGA_VERSION)  
10A
```

10A is the correct version returned by the firmware for the MC403 with incremental encoders.