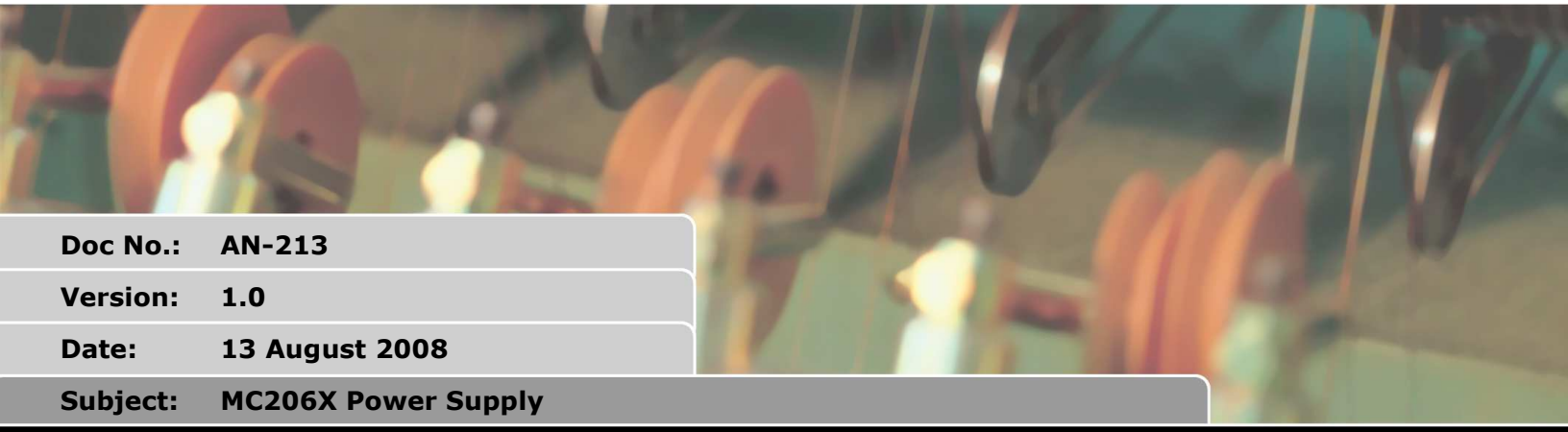
Trio Motion Technology Ltd.
Shannon Way, Tewkesbury,
Gloucestershire. GL20 8ND
United Kingdom
Tel: +44 (0)1684 292333
Fax: +44 (0)1684 297929

1000 Gamma Drive
Suite 206
Pittsburgh, PA 15238
United States of America
Tel: +1 412.968.9744
Fax: +1 412.968.9746

Tomson Centre
118 Zhang Yang Rd., B1701
Pudong New Area, Shanghai,
Postal code: 200122
P. R. CHINA
Tel/Fax: +86-21-58797659



Doc No.: AN-213

Version: 1.0

Date: 13 August 2008

Subject: MC206X Power Supply

APPLICATION NOTE

www.triomotion.com

1. Introduction:

This application note provides additional advice about connecting the MC206X to 24V supply and connecting external devices to the MC206X that draw current from the internal 5V regulated power source. It is necessary to also read the advice in the Trio Motion Coordinator Technical Reference Manual and the instructions given in the MC206X Quick Start guide.

The MC206X has the Trio part number P136.

2. Applicability:

This technical note is in two parts.

- Section 3 applies to serial numbers **P136-02890** and below.
- Section 4 applies to serial numbers **P136-02891** and above.

3. Connection of external loads to 5V supply:

The MC206X contains a 24V to 5V DC/DC converter. This device supplies the following:

1. Some internal circuits.
2. The daughter board, if fitted.
3. The 5V supply for external encoders. *(Pin 8 of each Encoder connector)*
4. The 5V supply for the Serial to Fibre-optic converter, if fitted. *(Pins 1 and 6 of serial connector A and pin 6 of serial connector B)*

The maximum rating of this supply is 150mA. This is the total supply available for features 2, 3 and 4 listed above. It is important that this limit is not exceeded.

If a daughter board is fitted, please contact Trio for its current consumption value. The serial port 5V outputs may be connected to external devices only after consultation with Trio. Attention must be paid especially to the inrush current of any proposed device during power-up.

Note that MC206X Motion Coordinators with serial numbers P136-02890 and below have a current limit circuit that is set higher than 150mA. If the total load on 5V outputs is greater than 150mA, then there is a risk that the main fuse will blow. There is also a low risk that other power supply components could be damaged.

Serial numbers P136-02891 and above have an improved current limit circuit that is set to 150mA.

4. 24V supply input – over-voltage protection:

MC206X Motion Coordinators with serial numbers P136-02891 and above have an improved over-voltage protection circuit on the 24V supply input.

- When the over-voltage protection is triggered, the main fuse will blow.

The acceptable voltage range for the 24V input is 18V to 29V. The main fuse is a soldered-in component. Therefore it is vital that the power source used for the MC206X does not exceed the normal operating range at any time.

For this reason Trio advise that all installers always fit a regulated 24V power supply.

The over-voltage protection threshold is set to the absolute maximum value above which damage occurs. This is 36 Volts. However, any constant running at voltages above 29V can still cause damage in the long term.

To avoid problems in general:

- Use a regulated power supply.
- Do not run the MC206X with a power supply that can exceed 29V at any time.
- When selecting a power supply, make an allowance for voltage swings on the local electricity supply.