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**Subject:** Using MC\_CONFIG to set system parameters

## APPLICATION NOTE

### 1. Applicability

The MC\_CONFIG program is an initialisation script which can be used in the MC464 Motion Coordinator.

MC464 system software version 2.0110 and later.

#### 1.1. Document History

V1.1 Added new Flash parameters to list in section 4.

17 March 2011

### 2. Features

- Special reserved program name MC\_CONFIG.
- MC\_CONFIG runs automatically on power-up if present.
- Only certain approved keywords can be used in MC\_CONFIG.
- MC464 uses parameters stored in Flash if there is no value set in MC\_CONFIG.
- MC\_CONFIG is the recommended way to set system parameters.

### 3. Description

During power up the MC464 configures itself depending on the values in a number of system parameters permanently stored in the Flash Memory. System parameters stored in this way are not saved by Motion Perfect so the MP2 project is therefore not a complete record of the MC464 setup. The MC\_CONFIG is designed to solve this issue. MC\_CONFIG is run by the system software on power-up during the initialisation of the system parameters. MC\_CONFIG is a program file in the project and so a backup is saved by Motion Perfect so that a more complete record of the MC464 programs is kept.

If the project does not have a program MC\_CONFIG, then the power up uses system values stored in Flash as before.

If the project has a program called MC\_CONFIG then the system software will use values in the

MC\_CONFIG file in place of the ones in Flash.

## 4. MC\_CONFIG system parameters

The following system parameters can be written in the MC\_CONFIG program. No other BASIC commands or parameters are allowed. If an illegal parameter is put in the MC\_CONFIG program then it will cause a compiler error.

Parameter Name	Parameter Stored in
AUTO_ETHERCAT	Ram
AXIS_OFFSET	Flash
CANIO_ADDRESS	Flash
CANIO_MODE	Flash
IP_ADDRESS	Flash
IP_GATEWAY	Flash
IP_NETMASK	Flash
MODULE_IO_MODE	Flash
REMOTE_PROC	Flash
SCHEDULE_TYPE	Flash
SERVO_PERIOD	Flash
IP_MEMORY_CONFIG	Ram
IP_PROTOCOL_CONFIG	Ram

Note that parameter modifiers; SLOT and AXIS are also allowed.

## 5. Parameter description

### 5.1. AUTO\_ETHERCAT

Select the startup mode of EtherCAT. (Default: ON)

```
AUTO_ETHERCAT = OFF ' do not start the EtherCAT network on power up
```

### 5.2. AXIS\_OFFSET

Set the start address of an MC464 axis module. (Default: 0)

```
AXIS_OFFSET SLOT(1)=16 ' set start axis of module in slot 1
```

### 5.3. CANIO\_ADDRESS

Set the operating mode of the built-in CAN port. (Default: 32)

```
CANIO_ADDRESS=40 ' set the CANIO_ADDRESS to use CANopen IO
```

### 5.4. CANIO\_MODE

Determines the mode used with CANIO modules P317 (output), P318 (input) and P327 (relay).

Set to 0 to use the “up to 512” IO point mode. Set to 1 to use the mode compatible with MC2xx Motion Coordinators. (Default: 0)

```
CANIO_MODE=1 ' set the CANIO to compatibility mode
```

### 5.5. IP\_ADDRESS

Set the network IP address of the main Ethernet port. (Default: 192.168.0.250)

```
IP_ADDRESS = 192.168.0.110
```

## 5.6. IP\_GATEWAY

Set the default gateway of the main Ethernet port. (Default: 192.168.0.255)

```
IP_GATEWAY = 192.168.0.103
```

## 5.7. IP\_NETMASK

Set the subnet mask of the main Ethernet port. (Default: 255.255.255.0)

```
IP_NETMASK = 255.255.240.0
```

## 5.8. MODULE\_IO\_MODE

Define the operation and position of the axis module digital IO. (Default: 1)

```
MODULE_IO_MODE = 2 ' set so that module IO is after CAN IO
```

## 5.9. REMOTE\_PROC

For use in systems with the TrioPC ActiveX. When the programmer needs to allocate the ActiveX synchronous connection to use a certain process number, set this value. (Default: -1)

```
REMOTE_PROC = 10 ' set the ActiveX to use process 10
```

## 5.10. SCHEDULE\_TYPE

Alters the MC464 multi-tasking scheduler. See MC4xx Technical Reference Manual. (Default: 0)

```
SCHEDULE_TYPE = 0 ' WA() commands release their process for other  
programs to use.
```

```
SCHEDULE_TYPE = 1 ' WA() commands use up all their process time
```

## 5.11. SERVO\_PERIOD

Set the scan period of the servo loops and motion in microseconds. (Default: 1000)

```
SERVO_PERIOD = 500 ' set to half millisecond servo period.
```

## 5.12. IP\_MEMORY\_CONFIG

Set the Ethernet processor memory allocation. Buffer sizes can be increased to allow better processing of Ethernet Packets on a busy network. There is a trade-off between buffer size and the number of available protocols that can be connected. The default buffers are 2 for Tx and 2 for Rx. This allows all protocols to be used. Increasing the buffers sizes must be done according to instructions from Trio Motion Technology, otherwise an unstable configuration may result.

- Contact Trio for more information.

## 5.13. IP\_PROTOCOL\_CONFIG

Set the available protocols ON or OFF. Use with caution after referring to Trio for advice about the most appropriate value. By default all protocols are available.

- Contact Trio for more information.