

midi ingenierie

MonMiCom User Guide

Communication tool for Midi-ingenierie modules

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Auteur : E.LOPEZ

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1. General

The **MonMiCom** tool is a monitor to configure and control a Midi-ingenierie axis set.

This monitor uses the .NET communication component **MiCom** developed by Midi-ingenierie company.

The modules control is doing using the Midi-ingenierie module command set.

The user will refer to the module type user manual where the all command set are described.

In contrast, the user doesn't care about any communication protocol which is completely manage by the component.

The network topology has to be defined according to the available network. The user only needs to define unique module address from 0 to 63 regardless the link type COM (or Virtual port COM), Usb or ethernet.

For a Usb or an ethernet link, the module will get a such own link or it will be connected through a suitable Midi-ingenierie interface.

By default, the Midi-ingenierie modules are 0 address and 3840bauds configured.

The monitor allows to configure every module to comply with the network requirement.

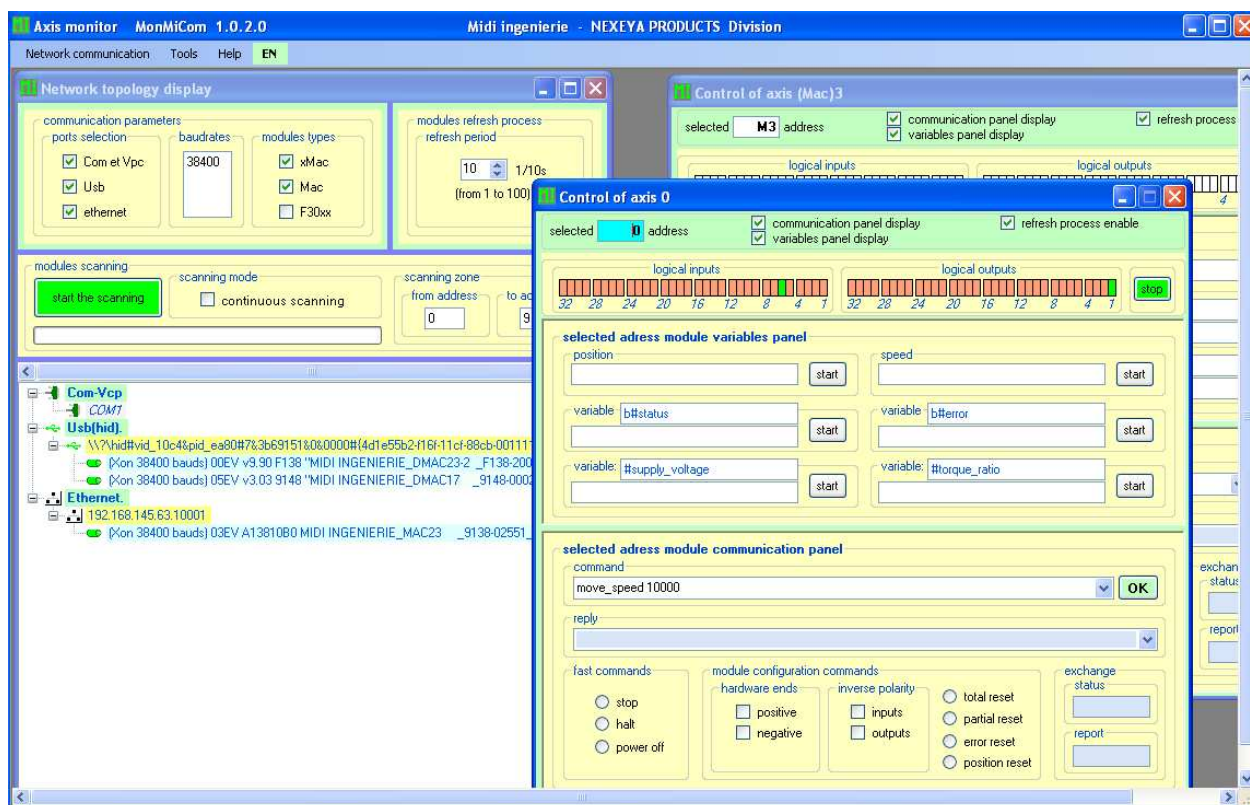
The module to configure must be the unique connected module on the used link (COM , VCP, Usb or ethernet)

2. Main menu



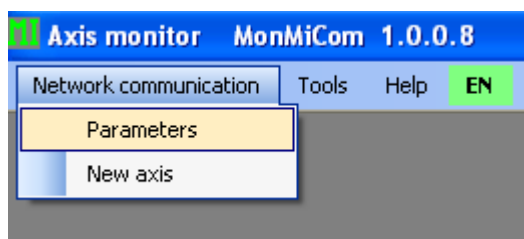
2.1. Network communication menu

It allows to access the communication window.



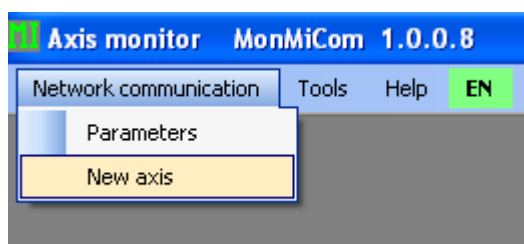


2.1.1. Parameters item



Open the parameters child window in the communication window.

2.1.2. Additional axis item

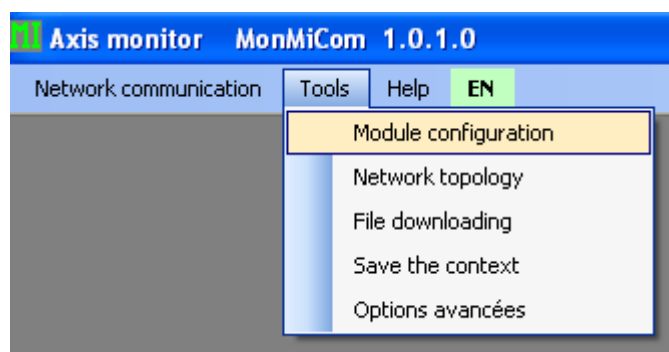


Allow you to open an additional control axis child window in the communication window.



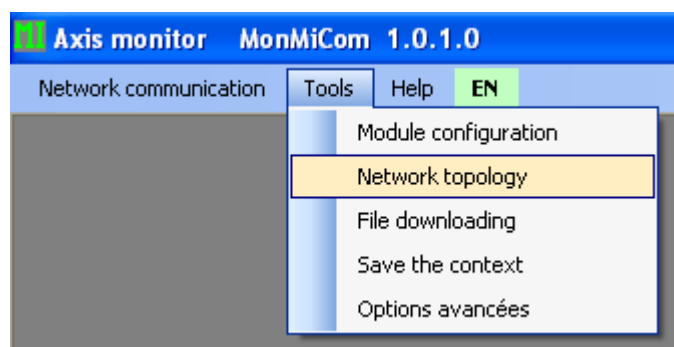
2.2. Tools menu

2.2.1. Module configuration item



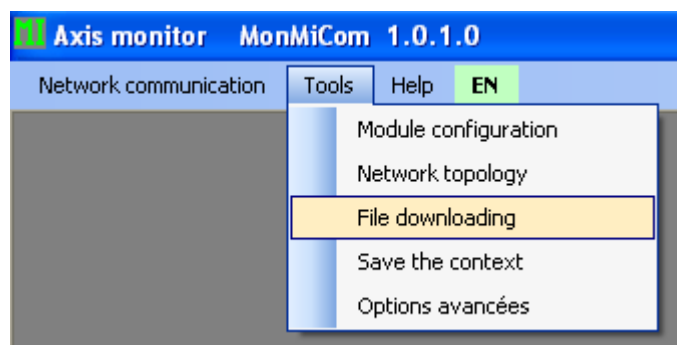
Allow to access to the configuration window.

2.2.2. Network topology item



Allow to access to the network topology display window.

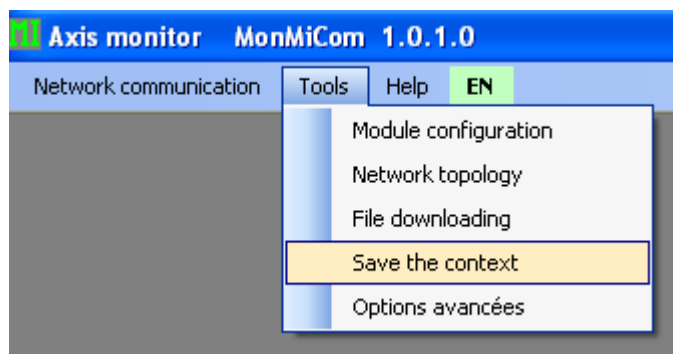
2.2.3. File download item



Allow to open the file download child window in the communication window.

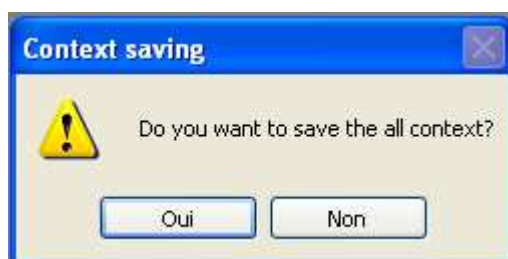


2.2.4. Context saving



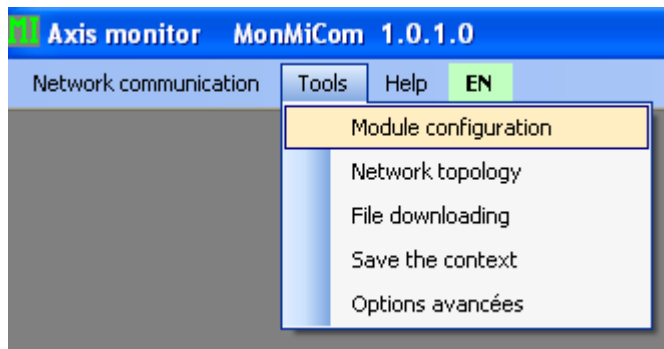
Allow to save the all monitor context.

The parameters of the configuration, topology and communication windows are saved as well as all user defined controls positions of the communication window

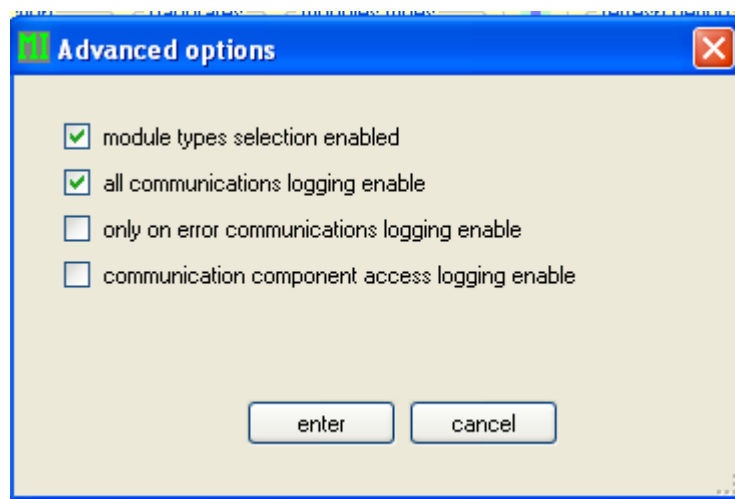




2.2.5. Advanced options item



Allow to access to advanced options window.



☒ module types selection enabled

default unchecked option

The next checkboxes enable to choose a optional trace mode.

The trace is saved in the **MidiIngenierie.Com.log** file created in the application directory.

Successives trace sessions are accumulated in the **.log** file.

This is the user responsibility to manage the file (**copy, rename, delete**)

☒ all communications logging enable

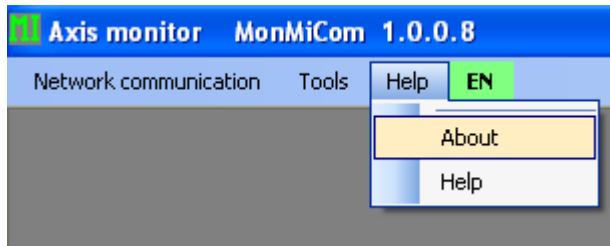
☐ only on error communications logging enable

☐ communication component access logging enable

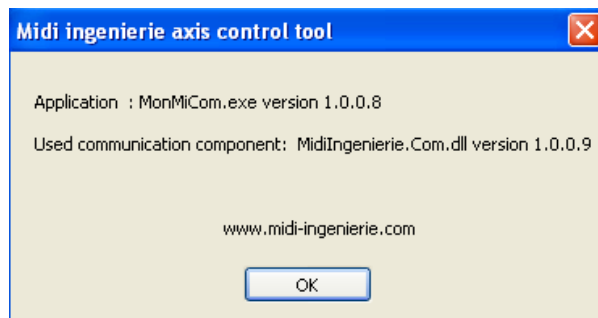


2.3. Help menu

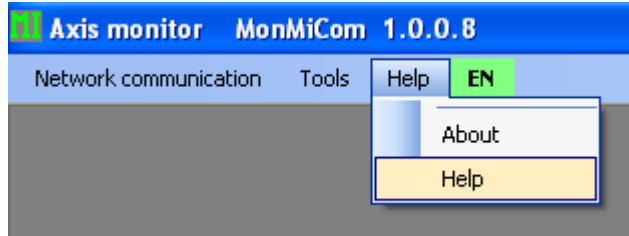
2.3.1. About ... item



Allow to get all soft version informations about the monitor .



2.3.2. Help item



Allow to access to the available help .pdf file.

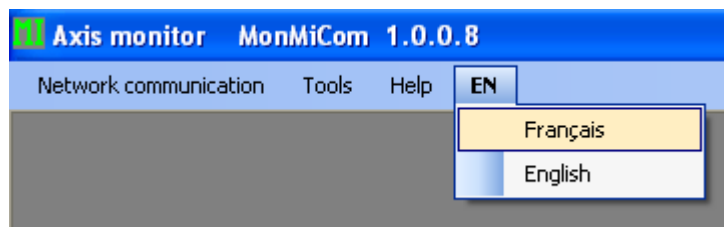


The ***monmicom_vx_um_en.pdf*** help file must exist in the application directory or in the ***help*** associated subdirectory.



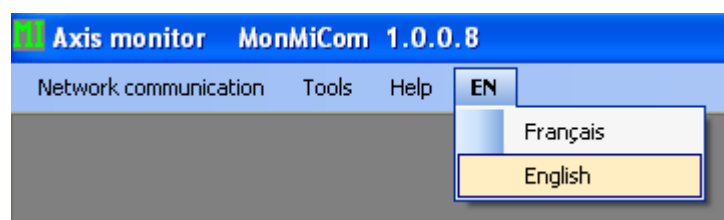
2.4. Language menu

2.4.1. French item



Click the tab to use the french monitor version.

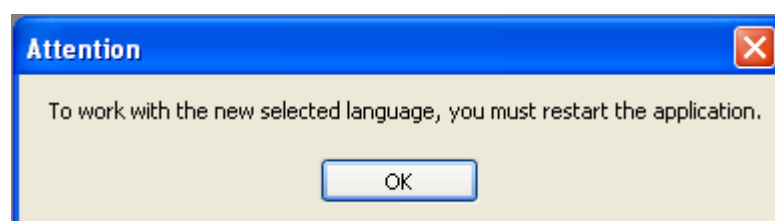
2.4.2. English item



Click the tab to use the english monitor version.



The language selection is automatically saved when you confirm your choice.

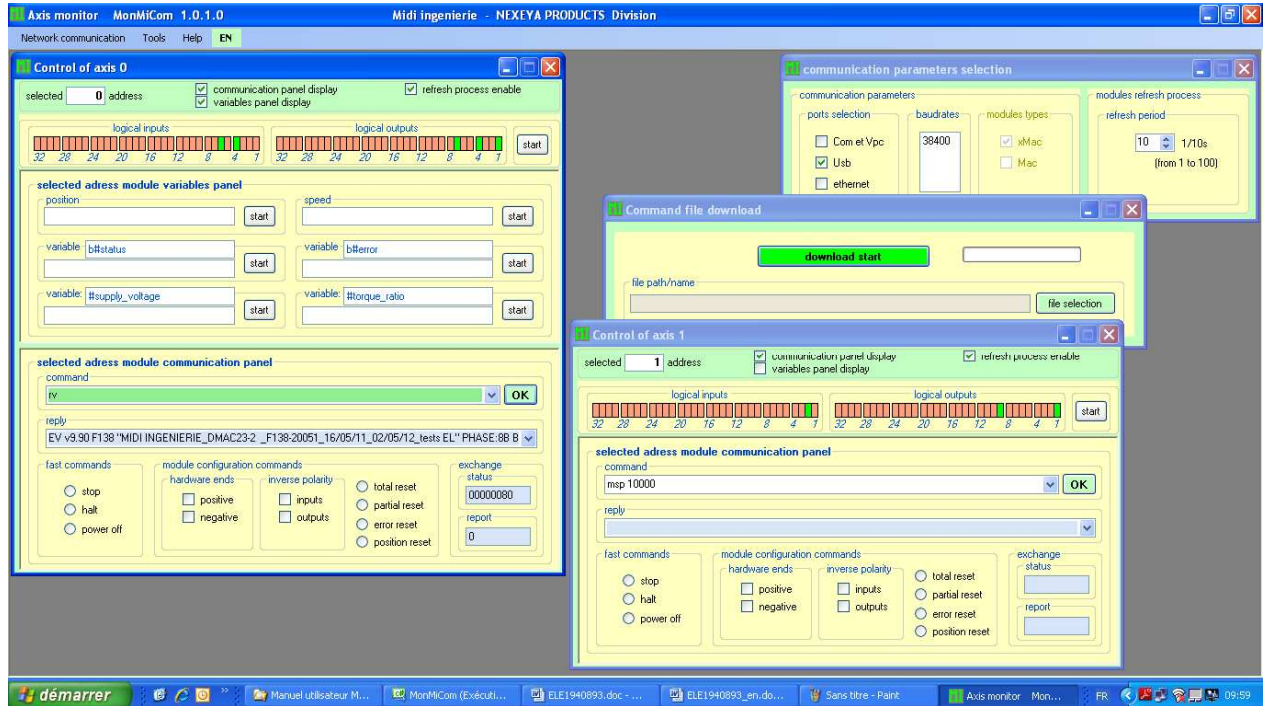


ATTENTION: To work with the new selected language, you must restart the application.



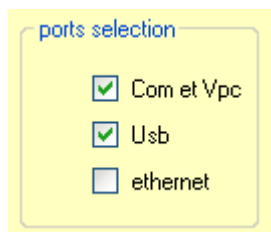
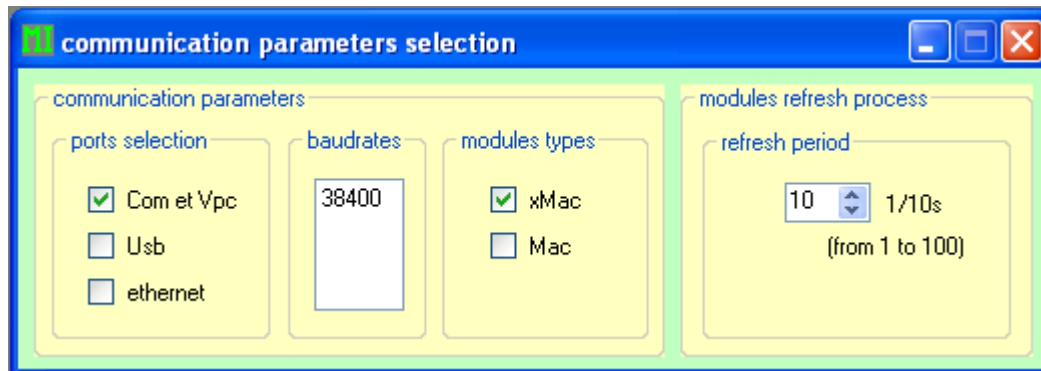
3. The communication window

This is a window where you can open, depending of the need, the parameters child window, the file download child window and all needing control axis child windows.

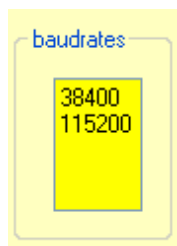




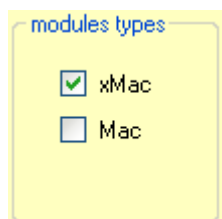
3.1. The communication parameters window



Select the network required link types.
When no control is user selected, the Com and Vpc control is automatically selected.

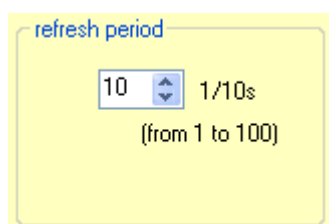


Select a baudrate list to use for network communication.
This list is used to try to connect a module through the network.
When the module has successfully connected, the same baudrate is used for further same module communications.
Be aware: more the list is long, more the connecting time could be long!
Be aware: modules on a single link must get the same baudrate. This is also right when modules are connected through a single interface!



Select the module types that are enabled to the detected.
This selection is default disabled. It could be activated checking the option in the **Advanced options** window of the **Tools** menu.

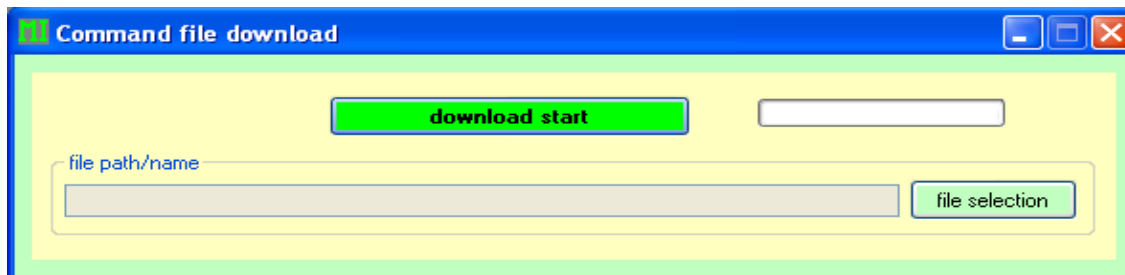
xMac (default selection) to access to the all DMac type modules family
(μ Mac17, DMac23, DMac34, BMac, RMac ...)
Mac to enable access to the Mac type modules family (Mac23 and Mac34)



Select the 1/10s refresh period for the all started refresh elements of the all opened control axis child windows in the communication window.
Every started element is refreshed at the programmed period.
Be aware: more elements there are, more the network communication is involved.

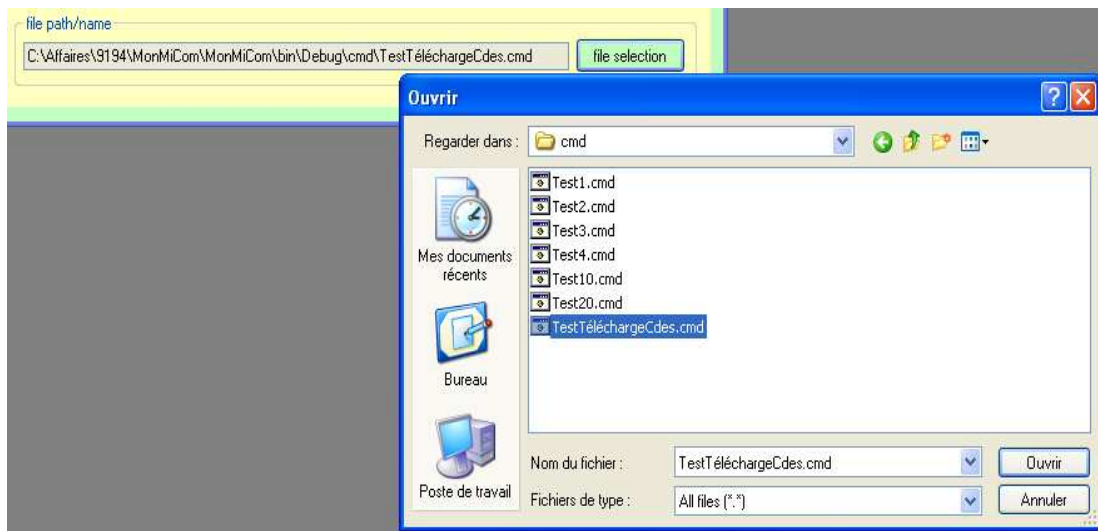


3.2. The file download window

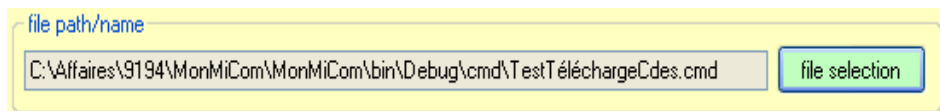


file selection

Allow to select a download command file.



Selecting a file



A file is selected

download start

Start the download process.

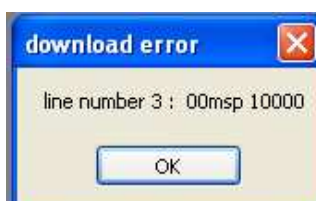


download stop

Stop the download process.

AXIS STOP

Stop the download process, stop all the motors and set power off the all detected modules.



When there is a command error in the command file, the download process is stopped, motors are all stopped and all the detected modules are set power off.

An error window is showing the line number and the affected command.



- ☒ communication panel display
- ☒ variables panel display

3.3. The control axis window

It allows a direct module communication through the communication panel and the display of chosen module variables through the display panel. Panels are simultaneously displayed (by default) or only one.

You can open as many as necessary axis control child windows. The default module address is 0, the user can modify it according to the actual network axis address.

selected address Allow to select the module address.
(default 0)

- access to a **xMac** family module with **Xon** default protocol
- (or **C1**) access to a **xMac** family module with **Console** protocol
- (or **M03**) access to a **Mac** family module with **Xon** default protocol
- (or **F16**) access to a **F30xx** family secateurs with **Console** protocol and **38400** bauds

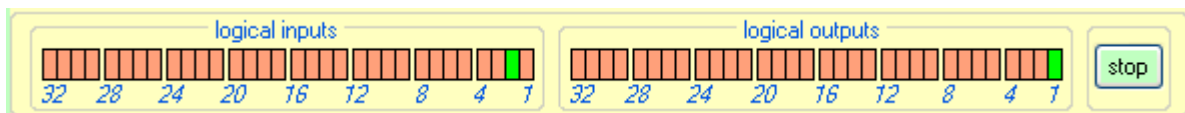


Select displayed panels.
(all panels by default)

☒ refresh process enable

Enable refresh process for all started refresh variables (or logical inputs and outputs).

The logical Inputs and outputs panel allows to display the state of these one when the **refresh process enable** checkbox is checked.



start

Click the button to start the logical Input and output refresh process (when the **refresh process enable** checkbox is checked).

stop

The button is flashing when the associated variable refresh process is started.
Click the button to stop the refresh process.



Show an active input or output.



Show an inactive input or output.



Show that no refresh has never success.

A click on a logical input has no effect on this one.

A click on a logical output is attempting to inverse this one. (**Be aware** : the display reflect the real state of the output not the desired state!)

Even when the refresh process is stopped, a single refresh is doing when clicking on any input or output.

Be aware : when the refresh process is stopped (the **start/stop** button is not flashing) inputs and outputs are displayed as they were on the last periodic or single refresh.



3.3.1. The control axis communication panel

It allows direct module communication with the selected address.

Complying with module user manual commands can be written in the next box :

OK Start the command transmission like to click the **Enter** key when the focus is on the **command** box.

▼ Allow an historic access to the previously used commands.

The next box is displaying the module reply, when the request command is used:

▼ Allow an historic access to the previously replies.



Command/reply example:

command

rv

OK

reply

EV v3.03 9148 "MIDI INGENIERIE_DMAC17 _9148-00028_04/05/11_13/06/12 " PHASE:3A B00

exchange

status

00000080

report

0

The **status** box gives informations about the exchange when there's no default (nul report)

The **report** box gives the error number **report** when the exchange fail.

fast commands

☐ stop
 ☐ halt
 ☐ power off

The **fast commands** zone allows to transmit some commands without to explicitly write them in the **command** box.

The command is immediately transmitted when there's a click on the associated radio button.

module configuration commands

hardware ends

☒ positive
 ☐ negative

inverse polarity

☐ inputs
 ☐ outputs

☐ total reset
 ☐ partial reset
 ☐ error reset
 ☐ position reset

The **module configuration commands** zone allows to directly set some module parameters without to explicitly write the suitable command in the **command** box.



3.3.2. The variables display and control panel


It allows to periodically display the actual value of some module working parameters (variables) when the **refresh process enable** checkbox is checked
Also it allows the modification of these parameters.

The **position** et **speed** variables are predefined and displayed with signed decimal format.
The other variables are predefined by default, but the user can choose the variable writing the associated box.
The variable name, with a forego **#** character, will be written with complete or mnemonic format as you can see in the appropriate module user manual.
The variable display (and writing) format is also respected with a specific character before the **#** character (**b** for binary, **h** for hexadecimal, **nothing** for decimal)





Clicking the button start the periodic refresh of the associated variable (when the **refresh process enable** checkbox is checked).

When the **the variable refresh process is off** and **the focus is on** the **variable name** associated writing/display box:

- An  key action allows to **display the variable actual value** with the associated display format.

When the **the variable refresh process is off** and **the focus is on** the **variable value** associated writing/display box:

- An  key action when the box is empty allows to **display the variable actual value** with the associated display format.
- An  key action after writing a new formatted value allows to **modify the variable value**.



The button is flashing when the refresh process is on. Clicking the button stop the refresh process of the associated variable.

The formatted actual variable value is updated with the period that is programmed in the communication parameters child window.



4. Configuration window

On factory output, Midi-ingenierie modules are default configured with **0** network address and **38400** bauds.

Address and baurate could be modified according the network requirements.

two possibilities for that:

- the module address is unknowned, only one module has to be connected through the configuration used link (COM , VCP, Usb/hid or ethernet).
- the module address and the module path are knowned,, they will be written in the configuration window original parameters zone.

4.1. The original parameters

Select, in the checkboxes, the used link types when scanning one module on the network. When no control is enabled, the **Com et Vpc** selection is automatically settled.

The textboxes enable to select a port name when this one is knowned.

Select a baudrate list.

This list is used to try to connect one module through the network.

Be aware: more the list is long, more the scanning time could be long!

When the list is empty, the scanning is doing with the sorted following baudrates:

38400 115200 19200 9600 bauds



modules types

☒ xMac

☐ Mac

Select the module types that are enabled to the detected. This selection is default disabled. It could be activated checking the option in the **Advanced options** window of the **Tools** menu.

xMac (default selection) to access to the all DMac type modules family (µMac17, DMac23, DMac34, BMac, RMac ...)

Mac to enable access to the Mac type modules family (Mac23 and Mac34)

address

1

Select the original module address when this one is known.

4.2. Module configuration parameters

new module address

2

Enter the new module address.

new module baudrate

38400

Enter the new module baudrate.

4.3. Start the configuration process

One module configuration tool

original parameters

ports selection

☒ Com/ Vpc

☒ Usb

☒ ethernet

module types

☒ xMac

☐ Mac

baudrates

38400

address

configuration parameters

new address

3

new baudrate

38400

module configuration

used port

stop the configuration

just configured module reply

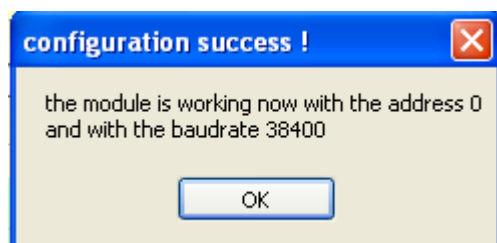
start the configuration

stop the configuration

Start or stop the process.

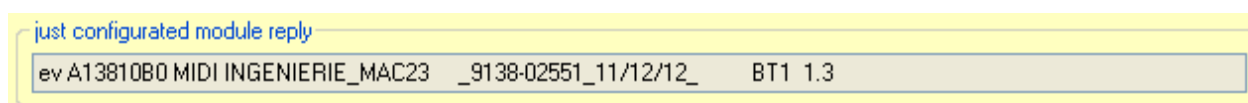


The process finish:



With
success or
failure.

When succeed, the complet module identity is written:





5. Network topology window

5.1. The communication parameters

These parameters are those defined in the **chapitre 3.1** communication parameters window. Because parameters are identical, the network topology display window and the communication parameters window are exclusive. When you access the topology window, the communication parameter window is automatically closed.

5.2. The scanning parameters

Select a limiting scanning address zone.
This reduces the process scanning time

5.3. Start the scanning process

☒ continuous scanning

Checked for a permanent cycling scanning
Unchecked for a single scanning

start the scanning

Start the scan process with the choosen parameters.

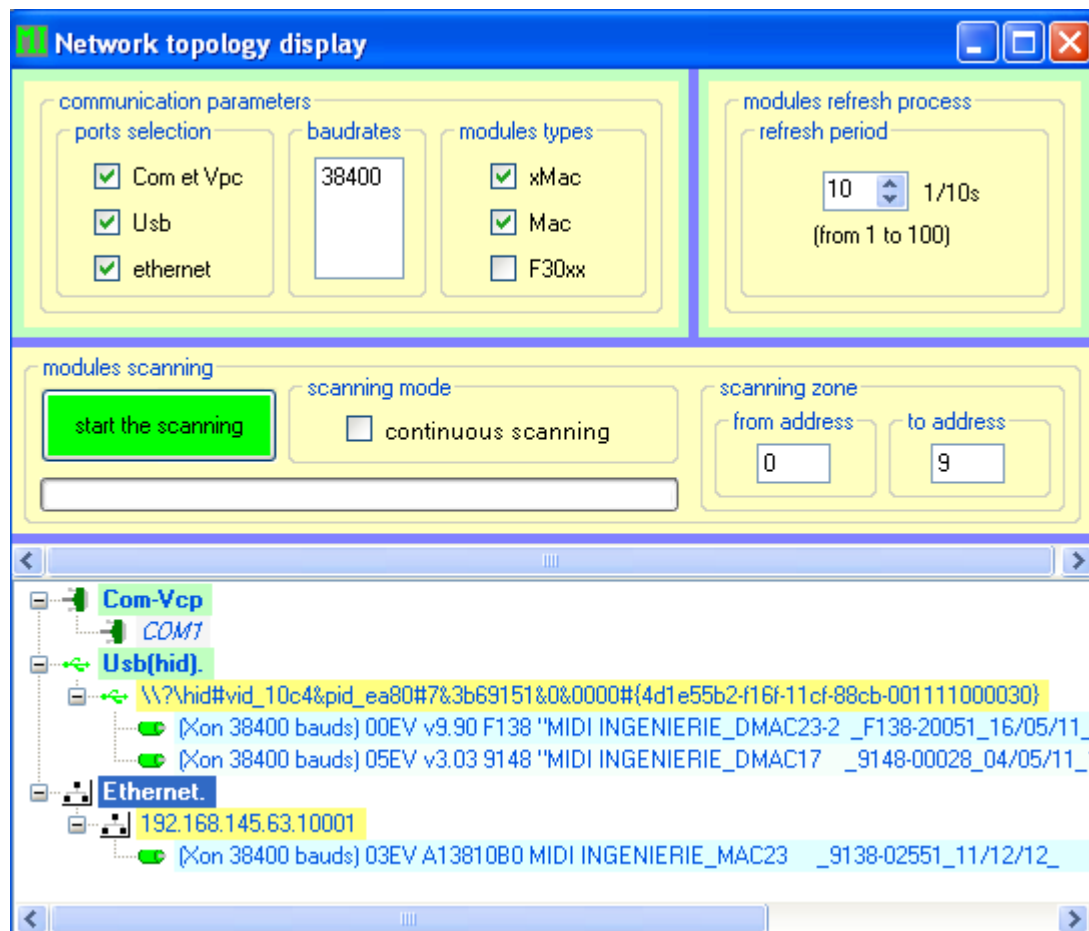
stop the scanning

stop the process.




Process activity display



5.4. Network topology display



Display of the used communication link :

-  **Com-Vcp** Pour lien de types **COM** et **Virtual Port COM**
-  **Usb(hid)** Pour lien de type **USB Hid Class**
-  **Ethernet** Pour lien de type **éthernet**

 **\\?\\hid#vid_10c4&pid_ea80#7&3b69151&0&0000#{4d1e55b2-f16f-11cf-88cb-001111000030}**

Display of the complete detected communication port path.

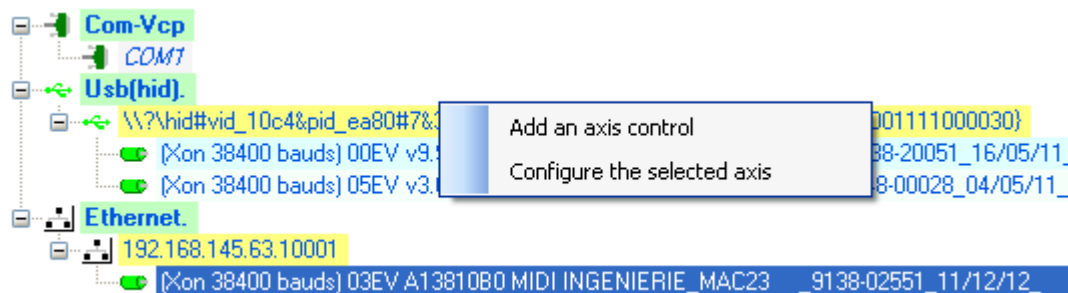
 **(Xon 38400 bauds) 00EV v9.90 F138 "MIDI INGENIERIE_DMACH23-2 _F138-20051_16/05/11_02/05/12_tests EL" PHASE:88 BOOT:v2.0**

Display of the communication parameters and of the detected module identity :

- Xon** The used **protocol** when module detecting .
- 38400 bauds** The used **baudrate** when module detecting .
- 00** The detected module **address**.
- EV v9.90 F138 "MIDI INGENIERIE_DMACH23-2 _F138-20051_16/05/11_02/05/12_tests EL" PHASE:88 BOOT:v2.0** The complete module **identity** when module replies to the **rv** command.



5.5. Module configuration and management access



Add an axis control
Configure the selected axis

Contextuel menu when right or link mouse clicking on a detected module.

Add an axis control

Control of axis (Mac)3

selected **M3** address

communication panel display ☒ variables panel display ☒ refresh process enable ☒

logical inputs: 32 28 24 20 16 12 8 4 1

logical outputs: 32 28 24 20 16 12 8 4 1

selected address module variables panel

position: [input] start

speed: [input] start

variable: b#status [input] start

variable: b#error [input] start

variable: #supply_voltage [input] start

variable: #torque_ratio [input] start

selected address module communication panel

command: [input] OK

reply: [input]

fast commands: stop, halt, power off

module configuration commands: hardware ends (positive, negative), inverse polarity (inputs, outputs)

exchange status: total reset, partial reset, error reset, position reset

Enable to directly open a axis management window as described in **3.3 chapter** but with an automatically selected module address.

Configure the selected axis

One module configuration tool

original parameters

ports selection: Com/ Vpc, Usb, ☒ ethernet (192.168.14)

module types: xMac, ☒ Mac

baudrates: 38400

address: 3

configuration parameters

new address: [input]

new baudrate: 38400

module configuration

used port: [input]

configuration start

just configured module reply: [input]

Enable to directly open the axis configuration as described in **4 chapter** but with an automatically selected module address and baudrate in the original parameters zone.