

@ctiveIO Toolkit

Operating Manual

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"< >" refers to keys on your computer keyboard (e.g. <RETURN>).

Note



Text following the "NOTE" symbol describes important features of the respective product.

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Literature

Revision History

Note:



The cover of this document shows the current revision status and the corresponding date. Drawings which can be in the appendix have their own revision history.

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1.Security aspect

- i** Damages can occur by initial operation due to falsely adjusted parameters or wrong wirings. In the extreme case people can be endangered or plants can be destroyed. In such cases, only well-trained staff may carry out the initial operation of the plant. At any case the accident prevention regulations should be adhered. TRsystems GmbH assumes no liability if product is wrongly handled.

2.General

The software of @ctiveIO toolkit is developed by TRsystems GmbH to parametrizing, diagnose and configuring of @ctiveIO Prints and -Controllers.

1.1. Main window

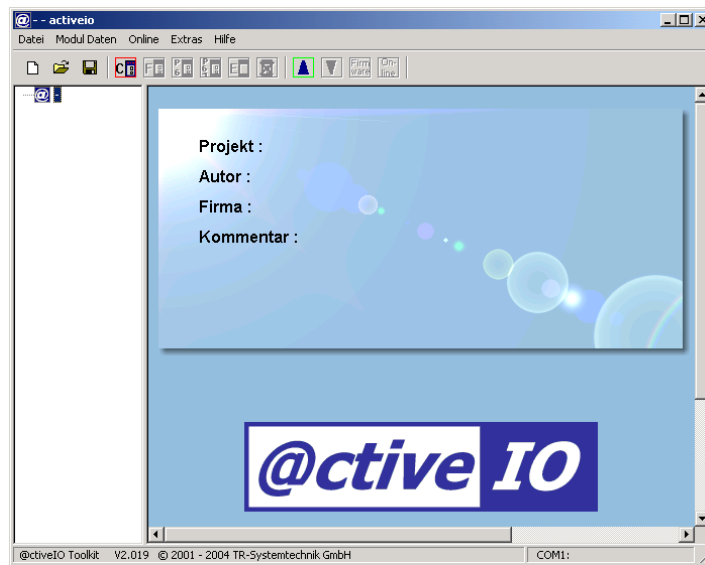


Illustration 1 Toolkit main window

The following elements are shown in the main window (illustration 1) of the @ctiveIO toolkits:

- Menu bar:**



Contain the menu orders.

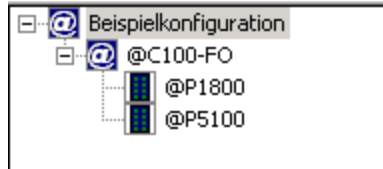
- Function bar:**



With buttons for fast execution of menu orders. The respective functions can be displayed for you by dragging the mouse to the according icon.

- **Project administration object:**

The project administration object is located on the left side of the toolkit main window and it displays the read-in and stored projects. The structure of the directory consists of main elements of the @controller and sub-elements of the I/O's. By clicking the ☒ icon of the main element, the according sub-elements are shown.



- **Workspace:**

The Workspace, the biggest window, is located on the right side of the toolkit main window and fulfils the purpose of displaying and working on the projects.



1.2. Information about @ctiveIO

The following illustration 2 shows general information, such as product or file version of the toolkit. This information you will find within bar under 'Help' = > 'information'.

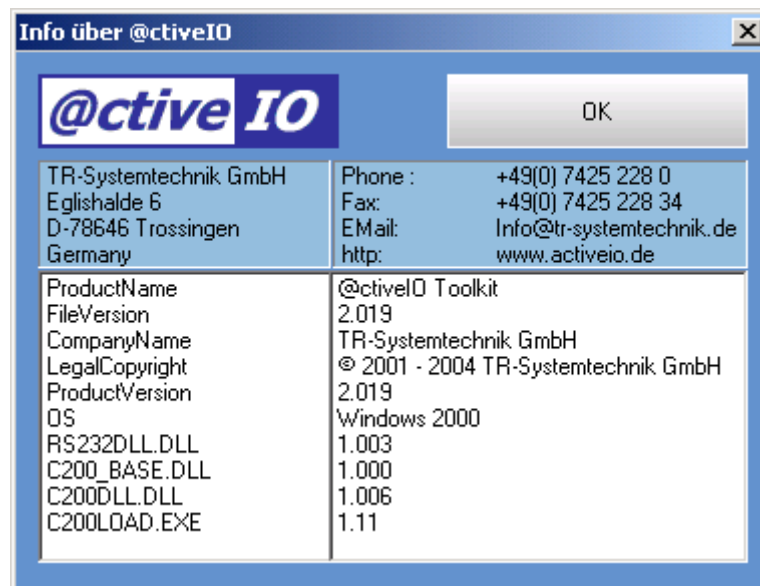


Illustration 2 information Toolkit

1.3. Definitions

- **@ Bus** = @ctiveIO bus expansion
- **@ Module** = @ctiveIO general modules
- **@ Controller** = @ctiveIO controller @C1xx and @C2xx CPU
- **@Print** = @ctiveIO modules @Pxxxx input / output modules
- **@ PLC** = @ctiveIO CPU with IEC 61131 programming
- **@AXIS** = @ctiveIO CPU with axis regulator
- **@CAM** = @ctiveIO CPU as cam controller
- **@COMLINK** = @ctiveIO < = > PC connecting cable (RS232 / RS485)

3. Setting of the interfaces

Prior to communicating between your PC and the @controller via the toolkit, the suitable interface at your PC has to be selected and adjusted. Basically, there are two possibilities (illustration 3) to communicate with the @controller via the toolkit:

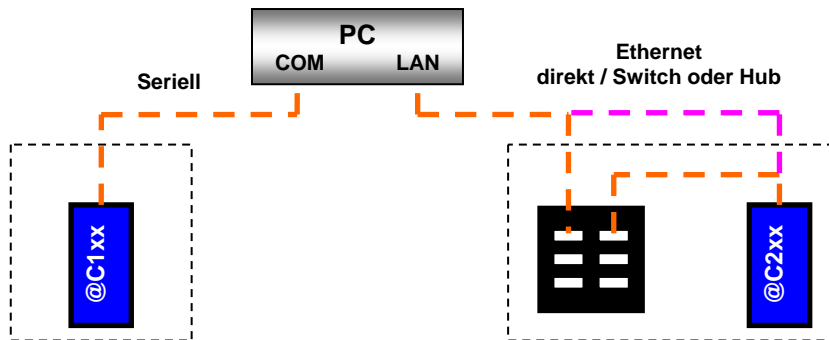


Illustration 3 interfaces

1. **Serial** (COM port). Available are **COM 1** to **4** (depending on the PC connection) to choose from. In this case, the communication between PC and the **@controller** is built via RS232 (@COMLINK1 RS232 3.0 or @COMLINK2 RS232 3.0).
2. **Ethernet** (network). In this case, the communication is built over a network cable (crossed cable having direct connection: PC -- **@ controller** or with a patch cable Cat.5 with connection to the network: **PC, switch/HUB - @controller**). With this connection an additional **IP-address** and **Port** of the @controller has to be preset.

These 2 different possibilities arise depending on which @controller is used.

- The **@C1xx** controller has a **serial** interface which is realized on the RJ45 socket.

- The **@C2xx** controller has a **serial** interface which is realized on a RJ45 socket with a miniUSB socket and an **Ethernet** connection (10/100 MBit/sec).

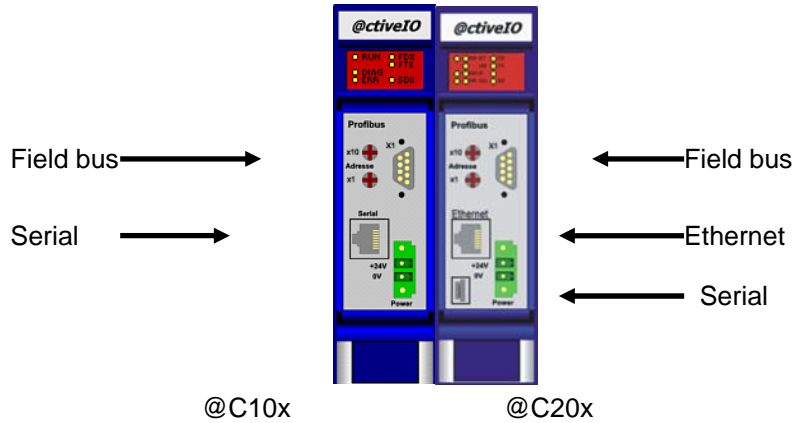


Illustration 4 @controllers

Note

i Are the @controller used as @plc modules, there will be no communication over the @C1xx and the only possible communication with the @ctiveIO toolkit software over @C2xx via Ethernet interface.

1.4. Selection

The selection of the interface will find within the at 'Online' => 'Port' (see illustration 5).

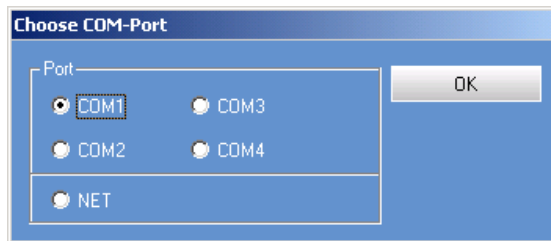


Illustration 5 COM port choice

1.5. Serial communication

Using serial communication a COM port is sufficient. The toolkit software is presetting all communication parameters for the serial interface and automatically recognizing the baud rate while connecting to the @controller.

1.6. Ethernet communication

Should the communication be over a network card, the IP-address and the port have to be adjusted. The IP-address and port has to be set at default values of 172.17.1.1 and 32000. For delivery both values are set to these default values.

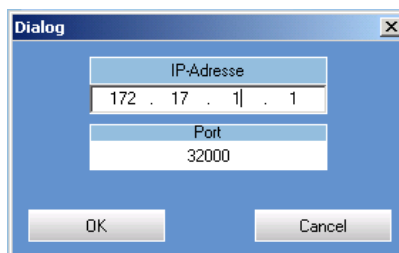


Illustration 6 IP attitude

4.Data read-out

There are 2 possibilities to reading out data of an attached controller.

- **Upload** The actually attached hardware is read-in.
- **Reading a stored configuration**

Unlike to the **upload** the hardware configuration that is saved within the @controller is read-in. This means if a prior made configuration has been saved in the module, it will be shown with this order.

This function is firmware dependent:
 - at **@C10x** as of version, **V1.20**, and
 - at **@C20x** as of version, **V3.0.0**

To read-out data, the @module should be connected to the power supply and the PC via a network/serial connection cable (see chapter settings of interfaces). select data the @module should to the tension supply attached and by means of one interconnecting cable network/serial be connected to the PC (see chapter attitude of the interfaces). Choose under the menu 'online' => 'upload' (see illustration 7).

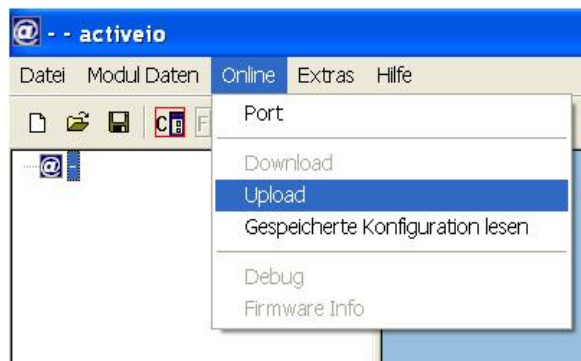


Illustration 7 Selecting data

After sending the commands 'upload', the software automatically tries with different baud rates (2400 - 115200) to communicate with the controller (at serial communication). If no communication with the controller could be built, an error message is shown at the display (see chapter 11 faults). If a connection could be made, the @ctiveIO toolkit opens a new window (see illustration 8).

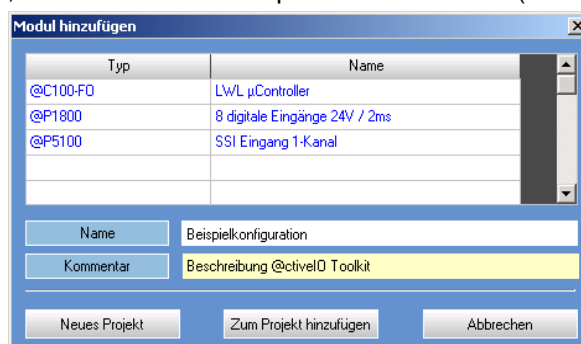


Illustration 8 Adding a module

In the window above, the type and name of the attached setup will be shown. Now, you have the possibility to name and commentate the project.

You can choose if with this configuration a 'new project' project is set up or if you attach it to an already existing project. This you will find in the project administration window of the toolkit software. Each project will be marked with an @-icon. After confirming the 'new project' or the 'project added' a closed configuration will be show at the display (illustration 9).

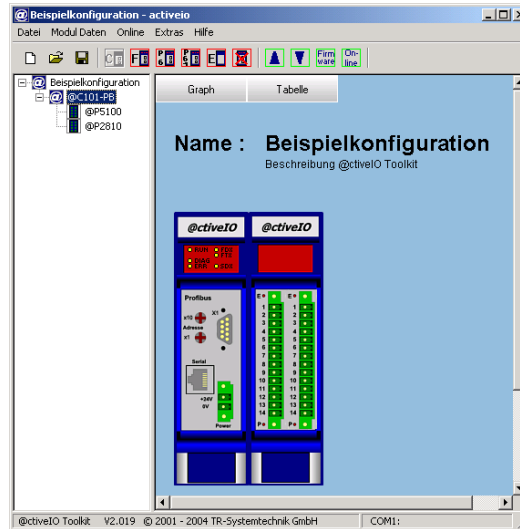


Illustration 9 Toolkit main windows with configuration

Within the current window of the toolkit software, the read-in configuration with the according classification of the module will be displayed.
 Should the project be used later or should it be saved for security reasons, you can do so at the toolbar menu at 'save' or 'save under' in a preferred file. The name of the project will be shown in the object of the project administration window as main element, as soon as the project has been saved.

5.Manual configuration

This function helps you to configure without attaching any hardware. You can use this function to preconfigure and save it as a new project or add it to an already existing project.
 To make a configuration to an existing project mark the object project administration in main menu and choose within 'module data' – 'insert Control module'. Now the available @controller modules are shown.

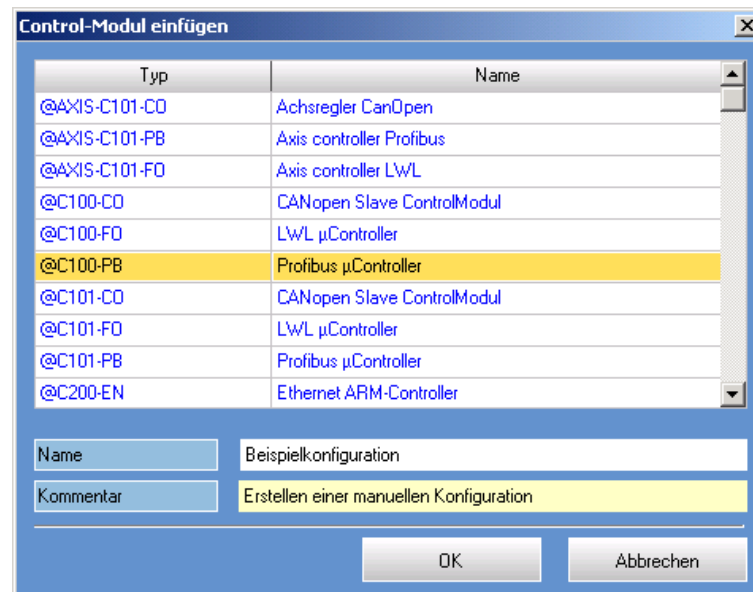


Illustration 10 Insert controller module

Choose the according @controller and mark it. As additional data, you can add a name and comment. As soon as you have pushed the 'OK' button, the controller will be shown in your work window. Now, you can attach to the controller the functional modules @prints. Choose at the 'module data' under the menu bar 'insert function modules'. A window with 'insert module' opens which gives you the according choice of @prints. The type and name of the function modules are additionally shown.

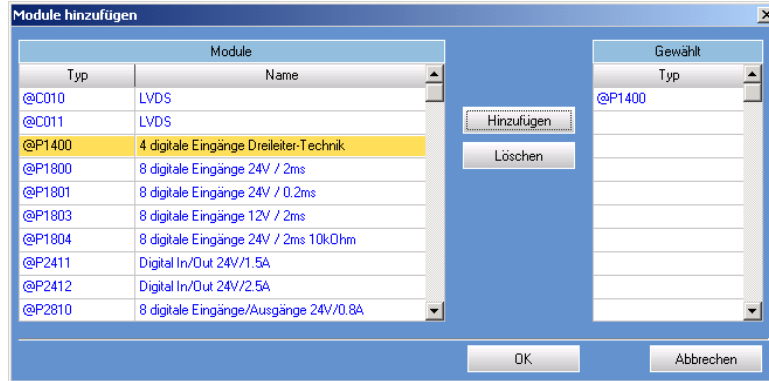


Illustration 11 Adding modules

Mark the according print and add it to the window 'chosen'. Do you wish to delete a print out of the configuration, you can do so by marking the print and pressing delete. When all prints are chosen, press 'ok' and they will be attached to the controller. Now the prints are shown in the toolkit work window with their classification.

6.Data transmission

If a hardware configuration was made manually (see chapter 5), the configuration of the project has changed (see chapter 8) according to number or order of the modules or parameter of a module. Everything can be saved on the @controller via the order 'download'. With this command the shown configurations are saved with the respective parameter data of the @prints. An error message occurs, when while downloading the actual configuration does not match with the shown one.

Note

With this command you will overwrite the already existing configuration within the @controller.

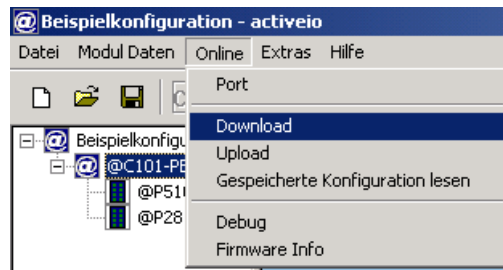


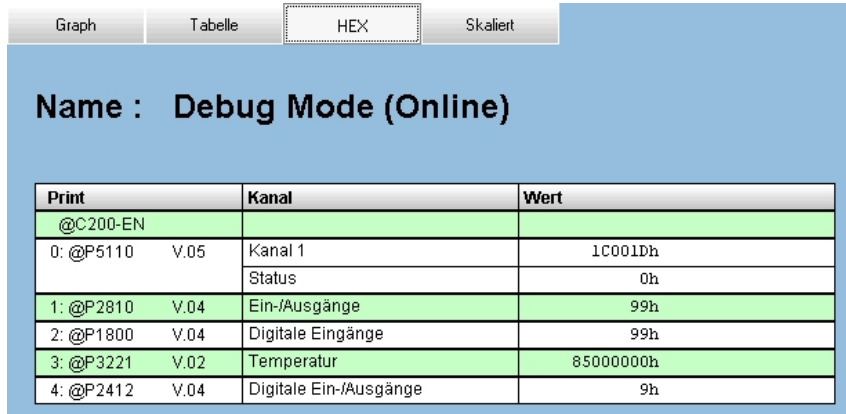
Illustration 12 Transferring data

7.Debug / online

With the Debug/online mode you can have a look at the process data of your configuration and set digital outputs.

To start this mode you use the command ' *online* ' on your menu bar and choose ' *Debug* '. You have the option to view the project graphically or tabularly. In table form, you additionally have the choice between scalable (bits) or hexadecimal (hex code).

The following illustration (13) shows an example in form of a table.



Print	Kanal	Wert
@C200-EN		
0: @P5110 V.05	Kanal 1	1C001Dh
	Status	0h
1: @P2810 V.04	Ein-/Ausgänge	99h
2: @P1800 V.04	Digitale Eingänge	99h
3: @P3221 V.02	Temperatur	85000000h
4: @P2412 V.04	Digitale Ein-/Ausgänge	9h

Illustration 13 online windows as a table

1.7. Setting digital outputs

This function only supports the digital outputs @P2xxx. Furthermore, to use this function, the field bus of the @controller has to be deactivated (see chapter 10.2.3).

Application

Note



Using this function be alert! Setting the outputs can directly influence the possibly attached hardware.

By double clicking on the according module the online window opens. With your mouse you can set the respective output (e.g.: @P2810 output 0 -7) on "high" (green) or "low" (brown).



Illustration 14 online windows @P2810

To the following digital output prints the respective channels can be switched:

@P2411 / @P2412 / @P2430 / @P2810 / @P2813.

With the digital input (@P1xxx) the online window does open up as well, but there are no alternations possible. It is just usable for display purposes.

1.8. Masking of SSI data

Besides debugging and displaying SSI data, the @ctiveIO-Toolkit offers “masking”. A certain area is faded out that only the positioning data will be shown. Depending on the parameterization there is additional information within the SSI data. This information falsifies the positioning data and can be filtered out. To have a better control of the positioning data they will be masked.

To be able to use this function you must be in online/debug mode. You open the online window by double-clicking the SSI module @P5100 or @P5200. By pushing the ‘mask’ button another online window opens up (illustration 15). In this window you can use the masking by predefining the data size. The made changes within the new mask become active when using the ‘update’ icon. The masking is only shown in the online window. After deactivating the online mode, the masking is reset and has to be renewed.

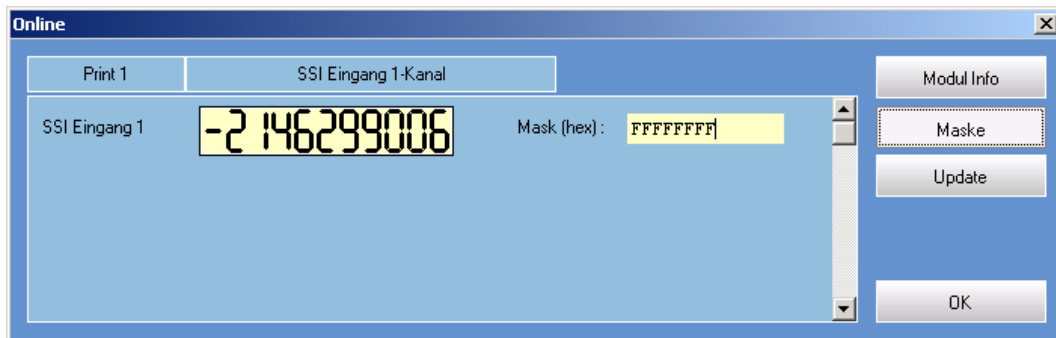


Illustration 15 online windows SSI module

Example: (illustration 16)

- SSI encoder with 12 bits resolution (equals 4.096 steps/turn)
- Setting mask = > **FFF (hex)**
(Conversion: 12 bits = FFFhex/2 ^ 12 = 4.095 dec)

Using a SSI encoder with 12 bit resolution (4.096 steps/turn) the masking be set on ‘FFF (hex)’. Therefore, only the plain positioning data of the encoder from 0 to 4.095 will be shown, everything else will be hidden.

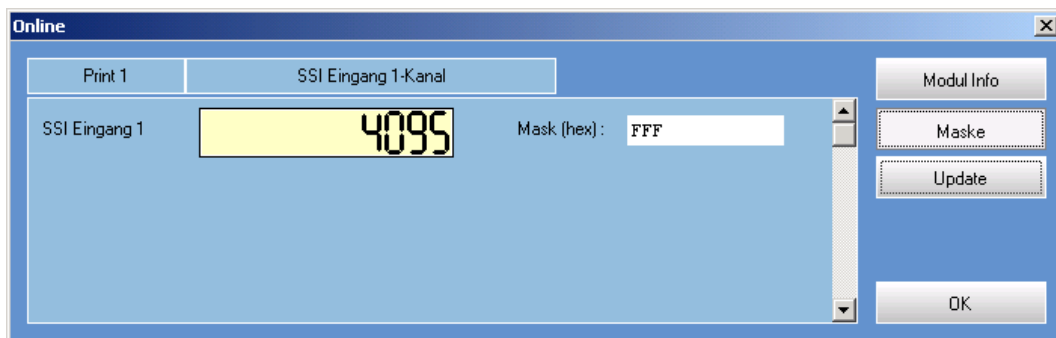


Illustration 16 masking

8. Configurable @prints

1.9. Edit parameters

Note

The parameters of the @prints are stored in the @controller. This means, when changing an @Print, the parameters that are stored in the @controller are written and used with the @print. It is different when you change the @controller. The necessary module parameters of the @prints have to be newly configured and stored within the flash of the @controller. The changes of the parameters made has to happen in the offline mode.

To be able to parameterize, you have to open the module parameterizing window while being in offline mode. You can do so by double clicking on the respective module. In this window the according parameters of the module are shown. To be able to edit a parameter, you mark the appropriate field and choose then the command 'change value' or double-click on the field. After you have edited the parameters of the @Prints, they still have to be stored in the @controller (see 9th data sets of the @Print storing).

1.10. @Prints to parameterize

Over the toolkit software you can configure module parameters of the followings @Prints:

Temperature modules:

- @P3220/3221/3222 Temperature module 2 channel (1 conductor /2 conductor /3 conductor-technology)
- @P3420/3421 Temperature module 4 channel (2 conductor /3 conductor-technology)

Digital interfaces:

- @P5100 SSI input (1 channel)
- @P5200 SSI input (2 -channel)
- @P5220 SSI output (2 -channel)
- @P5110 incremental input 5 V (1 channel)
- @P5111 incremental input 24 V (1 channel)
- @P5112 incremental output (ISI) 5 V (1 channel)

1.11. @ 32 xx/34 xx temperature

These prints are input modules for temperature sensors (PT, PTC, NTC). They only differ in their plug-in technology (1, 2 or 3 conductor technology) and in the number of input channels (2 or 4 channels). Details and information you will find in the respective data sheets of the @prints @P322x- or @P342x-TRS-V-PB-GB-0000. The following parameters can be edited over the @ctiveIO Toolkit:

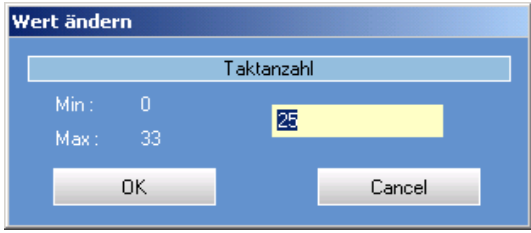
Illustration 17 parameter TEMP

@P322x/342 x temperature		
Parameter	Value	Description
Channel 1 active	One	Activation channel 1
Channel 2 active	One	Activation channel 2
Only for 4 channel temperature modules (@P34xx)		
Channel 3 active	One	Activation channel 3
Channel 4 active	One	Activation channel 4
Sensor type channel 1	0..-. .15	Choice sensor type for channel 1.
Sensor type channel 2	0.._..15	Choice sensor type for channel 2.
Only for 4 channel temperature modules (@P34xx)		
Sensor type channel 3	0.._..15	Choice sensor type for channel 3.
Sensor type channel 4	0.._..15	Choice sensor type for channel 4.
The right sensor type must be selected. Behind every sensor type specific data has to be stored to the respective sensor. If a wrong sensor is selected, the temperature data is falsified. The assignment for the choice of the sensors is in the data sheet and the operating manual of the temperature modules.		
Parameter activation	0.._..15	Over this parameter the DPC bit (direct parameter take-over) will be activated. To directly activate the parameter take-over, the value must be adjusted to 0 xA (10 dec) .

1.12. @P5100/5200 SSI

These @prints are 32 bit SSI interfaces with 1 (@P5100) or 2 (@P5200) input channel each. More details and information you will find in the respective data sheet of the @Prints: @P5100- or @P5200-TRS-V-PB-GB-0000. The following parameters can be edited over the @ctiveIO Toolkit:

Illustration 18 parameters SSI

@P5100/5200 SSI		
Parameter	Value	Description
Number of cycles	min 5 max 33	Number of SSI cycles +1 It is mandatory to exactly adjust the number of cycles depending on the resolution of the SSI data, otherwise the positioning value is falsified. The resolution of the SSI data, you can find on the according data sheet of the SSI encoder.
		
<p>Illustration 17 number of cycle of the SSI module</p> <p>Example: SSI encoder with 24 bit of data => adjustment = 24 + 1 = > 25.</p>		
Clock frequency	156.25 kHz 312.5 kHz 625 kHz 1.25 MHz	4 different frequencies are available. These should be chosen in a way that the SSI-Encoder supports those (see data sheet encoder).
Mono break	activate	SSI cycle starts after Mono break
	deactivate	SSI cycle starts after Mono break and data "High".
Code	- binary or - gray	This adjustment depends on the application and the encoder.
CRC check	activate	SSI data with a 15 bit checksum. Only if the checksum is correct, the data will be accepted. The checksum is generated automatically with the SSI data.
Cable break	activate	A cable break between SSI master and SSI-Slave is recognized. The SSI master doesn't provide any SSI data.
Synchronous reading	activate	SSI cycle is generated synchronously to the @ctiveIO system bus cycle .
Only for channel 2 (@P5200)		
Single slave	activate	This function parameter is only available for @P5200. Through activation the @print becomes a so-called Clock slave (see data sheet @P5200 TRS-V-PB-GB-0000). The @print isn't an active pulse generator. Cycle and data are polished by the @print.

1.13. @P5110/5111 INC

The @prints 5110 (5 V input signal) and 5111 (24 V input signal) are incremental interfaces with each having one input channel. More information you can find in the respective data sheet of the @prints: @P5110- or @P5111-TRS-V-PB-GB-0000. The following parameters can be edited over the @ctiveIO Toolkit:

Illustration 19 parameters INC

@P5110/5111 INC		
Parameter	Value	Description
Mode	Incremental	32 bit incremental counter with 4-fold evaluation of incremental signals.
	16 bit up/down counter	2 independent 16 bit up/down pulse counter. - Low Word (32 bit counter) => counter 1 - High Word (32 bit counter) => counter 2
	Pulse counter	32 bit up/down pulse counter with separate inputs for "up" and "down".

The description for wiring of the inputs to the according mode you will find in the operating manual of the INC modules (@P511x-TRS-V-BA-D-0000).

1.14. @P5112 ISI

The @print 5112 ISI is an incremental interface with **one** output channel. More information you can find in the data sheet of the @print: @P5112-TRS-V-PB-GB-0000. The following parameters can be edited over the @ctiveIO Toolkit:

Illustration 20 parameters ISI

@P5112 ISI		
Parameter	Value	Description
Status bit	activate	The status bit must be activated so that the initialization data is taken over.
FMAX coefficient	min: 0 max: 65535	Adjustment of the maximum permitted output frequency (entry as a coefficient).
Resolution (bit)	min: 0 max: 31	Adjustment of the ISI resolution. Note: this must be adjusted depend on the encoder resolution. resolution (bit) = number of data bits -1.
DEC permitted	on	At activation decrementing is permitted.
INC permitted	on	At activation incrementing is permitted.
Note: are both options deactivated, there will be no data transmission.		
INIT level		The INIT level offers the possibility of pre-defining the exits when initializing the @module.
	on	outputs after switching on " High ".
	off	outputs after switching on " Low ".
Timer coefficient	Min: 0 Max: 65535	Adjustment of the output trigger (time between 2 data take-overs). This one is dependent on the system bus time of the respective controller. Recommended adjustment = > 1500 .

9. Storing data sets of the @print

1.15. Store in @controller

If parameters of the @prints are changed, they have to be stored in the @controller for the activation. Ways to process the storage:

- in **offline** mode under the menu bar 'online' choosing the order 'download' or
- in **online** mode, through double clicking the @controller and by choosing the 'store configuration' button.

You have saved everything correctly if the following window is shown:

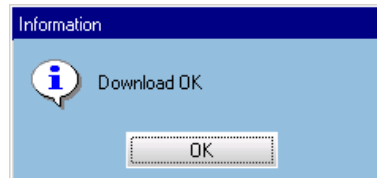


Illustration 20 download OK window

1.16. Storing into an external file

If parameters of the @prints are changed, you can store them as pdt-file within a chosen directory. With the order 'store in file' in the 'parameterize module' window you can name the file. After doing so you can store it in your own predefined directory. When storing this way, you have the possibility to use this configuration for a parameter like module.

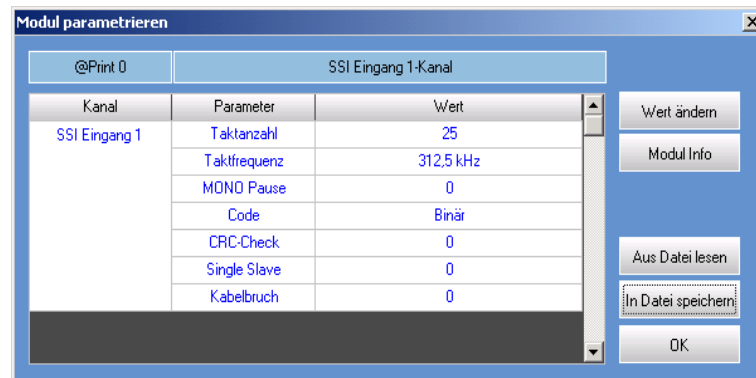


Illustration 21 module parameterize SSI

10. @ctiveIO controller

1.17. General

The @controllers have LEDs at the front for showing different status displays. Those are described more precisely in the data sheets. At this point of the manual of the @ctiveIO Toolkit, you'll find a description with a note for the LED display "ERR" and "DIAG".

If you add an @ctiveIO module with a configuration that is not stored in the controller, the ERR-LED is **blinking** and the DIAG-LED is illuminated.



Illustration 22 LED display @controller

This condition can be corrected by read in and storing the new configuration. The connected configuration can be read by choosing in the menu bar under 'online' the order 'upload' and can be stored under the they 'online' are the attached configuration reading and storing with the order 'download' under. As soon as the new configuration was stored, the ERR and DIAG LED goes out.

1.18. @C1xx

The @C1xx has a C165 μ controller (16 bits) at its disposal. More information you can find in the respective datasheet of the @controller: @C1xx-TRS-V-PB-GB-0000.

Being in online mode the @C1xx controller can read the following module and system information. Here for you have to choose, within the open project, under the menu 'online' – 'debug'. Now you can open this window by **double clicking** the controller. This display shows the following information data:

1.18.1 Module information

Online display @C1xx controller (example professional bus μ controller @C101 PB)

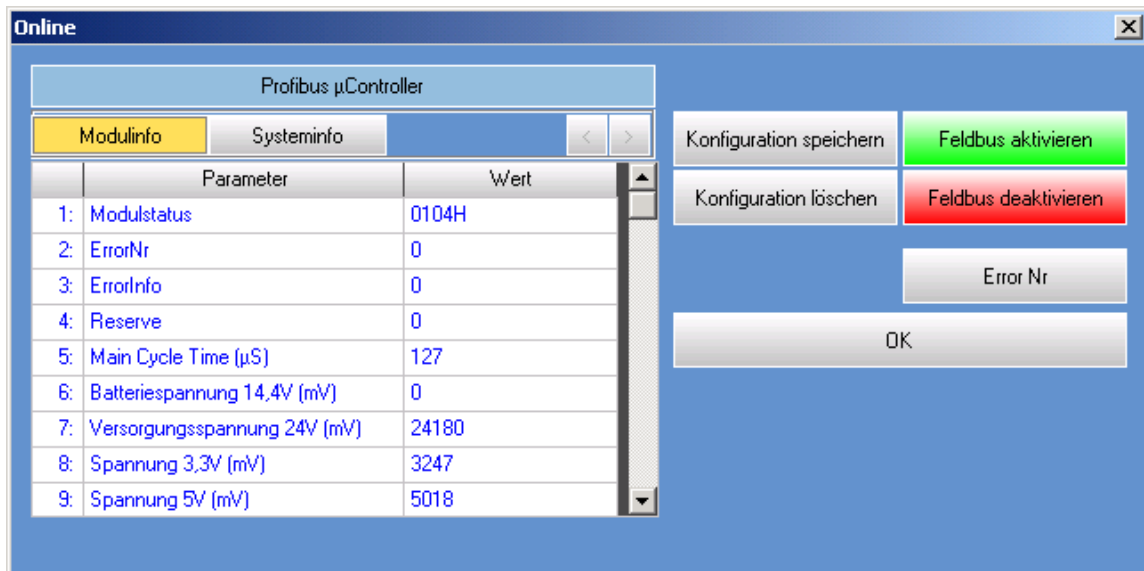
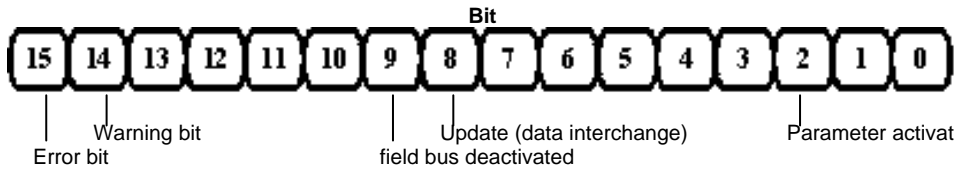


Illustration 23 online windows @C10x

Illustration 24 functions @C10x

Parameter	Description
Module information	
1. Module status	Indication of the module status conjure code up into.
	
2. ErrorNr	Displaying of error numbers
Description of the shown error number, you'll receive via the online window:	
<input type="text" value="Error Nr"/>	
3. ErrolInfo	Showing additional information about the error number
4. Reserve or LWL error counter	Depending on the field bus , this function will be supported only modules with fiber optic as error counter.
5. Main Cycle Time(µs)	Showing the actual cycle times of the controller.
The following functions are only shown when using a Profibus module:	
6. Battery voltage	displaying the battery voltage with external connected UPS
7. Supply voltage 24V(mV)	external measured control supply 24V
8. Voltage 3,3V(mV)	internal measured control supply 3,3V
9. Voltage 5V(mV)	internal measured control supply 5V
10. Voltage 12V(mV)	internal measured control supply 12V
11. Voltage -12V(mV)	internal measured control supply -12V
12. Temperature (°C)	Control temperature within the module
System information	
1. Rotary switch	Displaying the adjusted Profibus address of the slave
2. System bus bytes	Number of the @prints used bytes at the system bus (max. 256Bytes)
3. Print number	Displaying the connected @prints
4. RAM (kB)	Displaying the RAM storage space in kByte
5. NV RAM (kB)	Displaying the NV RAM storage space in kByte
6. Flash Manufacture Code	Displaying the manufacturer code (Flash component)
7. Flash Device Code	Displaying the device code (Flash component)

1.18.2 Saving / deleting configuration

Save configuration

Another way of saving the configuration data of the @prints is to use the order “save configuration” within the online window of the @controller. (see chapter 9.1).

Delete configuration

Note

By using the order “delete configuration”, the saved configuration in the @controller is deleted. After re-starting the @controller the @prints are reset to the **standard** data.

1.18.3 Activating / deactivating field bus

With this command you can activate or deactivate the field bus communication with the @system bus. This function is useful when starting or debugging of process data. (see chapter 7).

Note



When using this function, safety technical aspects should be taken into consideration!

Activate field bus

Is the field bus activated, data and configurations can be written over the field bus. Over the @ctiveIO toolkit there is only a reading permission.

Deactivate field bus

Is the fieldbus bus deactivated you only can configure it over the @ctiveIO toolkit and work in debug mode. Both reading and writing access are possible.

Here the safety technical aspects should be considered as well. Are the outputs of the @prints wired, the user should exactly know which outputs are set.

1.19. @C2xx

The @C2xx has an ARM7 controller (32 bits) at its disposal. More information you will find the respective data sheet: @C1xx-TRS-V-PB-GB-0000.

With the @C2xx controller you can read the following module and system information when being online mode. Here for choose the command “debug” under the menu “online”. Now you can open the online window by **double clicking** the controller. In this displayed window you find the following info data:

1.19.1 Module information

Online display @C1xx controller (example Profibus µ controller @C101 PB)

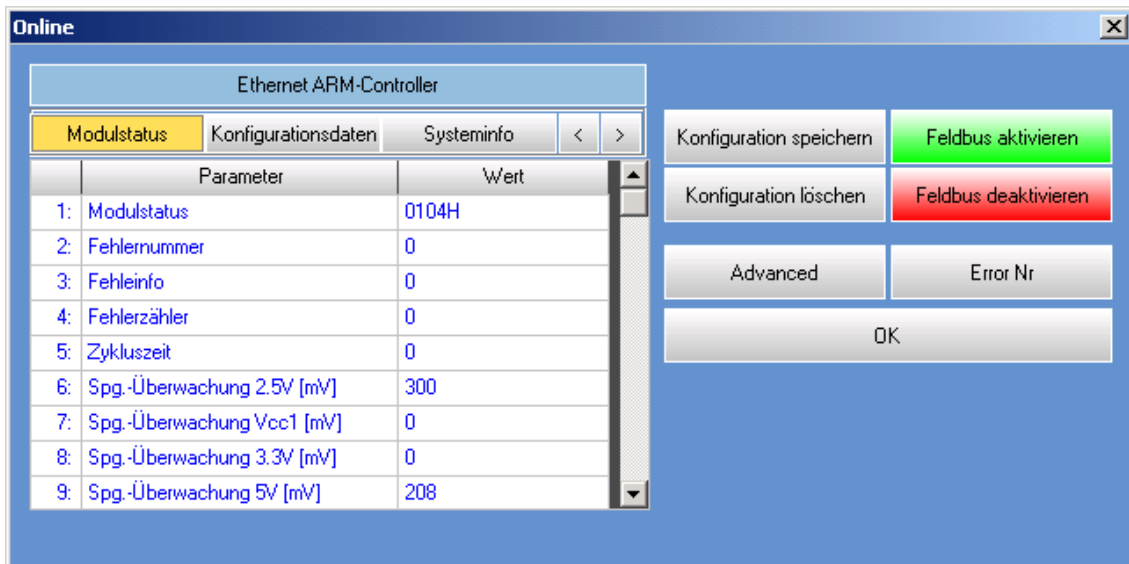


Illustration 25 online windows @C20x

Illustration 26 functions @C20x

Parameter		Description
Module status		
1.	Module status	Display of the module status is in HEX Code.
2.	Error number	Display of the error numbers
A description of the shown error numbers you will find with in the online window under:		
Error Nr		
3.	Error information	Displaying additional information of the error numbers.
4.	Error counter	Number of the errors ocured. This function is only supported by modules with fiber optic as a field bus.
5.	Cycle time *)	Display of the actual cycle time of the controller
6.	Spg. Control 2,5V	Internal measured control voltage 2.5V
7.	Spg. Control Vcc1(mV)	Internal measured control voltage Vcc1
8.	Spg. Control 3,3V(mV)	Internal measured control voltage 3.3V
9.	Spg. Control 5V(mV)	Internal measured control voltage 5V
10.	Spg. Control 12V(mV)	Internal measured control voltage 12V
11.	Spg. Control Vcc2(mV)	Internal measured control voltage Vcc2
12.	Temperature (°C)	Control temperature within the module
Configuration data		
1.	Serial number	Serial number of the @Controller
2.	IP: Address	Set IP address of the @Controller
3.	IP: Subnet Mask	Set subnet maske of the @Controller
4.	IP: Gateway	Set gateway address of the @Controllers
5.	IP: Use DHCP	Activation of the dynamic configuration of the IP address. (Dynamic Host Configuration Protocol)
Systeminfo		
1.	Rotary switch	Display of the adjusted rotary switch position
2.	System bus bytes	Number of the @prints used bytes of the system bus (max. 256Bytes)
3.	Print number	Display of the connected @prints
4.	RAM (kB)	Display of the RAM storage space in kByte
5.	NV-RAM (kB)	Display of the NVRAM storage space in kByte
6.	Flash Manufacture Code	Display of the manufacture codes (Flash component)
7.	Flash Device Code	Display of the device codes (Flash component)
Module IDs		
1. 20.	ID	Shows the module identification (in Hex) of the connected @prints. (see datasheet of the module).
Timer status		
General status information for the internal timer of the controller (interrupt).		

The functions described in the table refer to the Profibus (PB) and Ethernet (EN) module. The fieldbus options CANopen and fiber optic are momentarily not supported by the @C20x controller.

*) firmware dependent

1.19.2 Saving / deleting configuration

Save configuration

Another way of saving the configuration data of the @prints is to use the order “save configuration” within the online window of the @controller. (see chapter 9.1).

Delete configuration

The function “delete configuration” using the @C20x controller does only work starting version **V3.0**.

1.19.3 Advanced mode

Advanced

The @C2xx controller has an additional mode with configuration and application functions - the **Advanced** mode. It offers different reading, writing and also application functions, such as: system information or the module configuration. This mode is with in the **online** window of the @C2xx modules (see chapter 10.3.1).

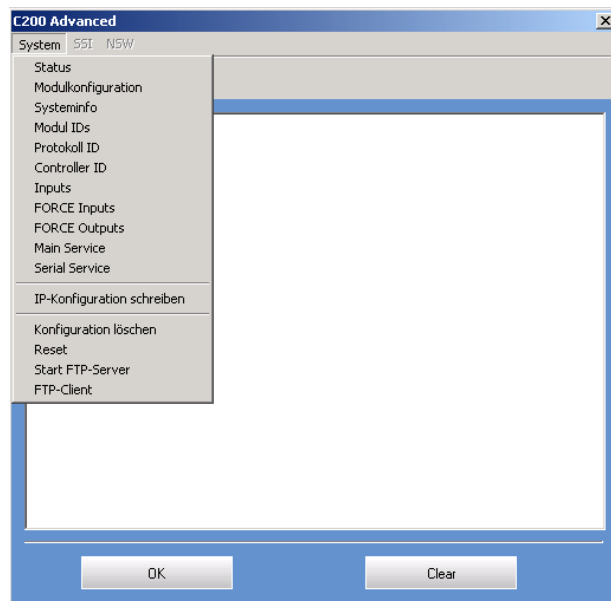


Illustration 27 windows Advanced fashion @C20x

This window has a main window, a function bar and a menu bar. Within the main window the workflow of the functions are shown. The menu bar shows the following functions:

- **System** (functions for the @controller)

Illustration 28 functions Advanced mode @C20x

System	
Status	Display of the module status
Module configuration	Display of the controller configuration (serial number, IP address, subnetmask, gateway und DHCP)
System information	Display of the system information (see module information chapter 10.3.1)
Module IDs	Characteristic of the connected @prints
Protocol ID	Characteristic of toolkit protocol
Controller ID	Characteristics of the controllers
Inputs	Process image of the inputs (Hex format)
Main Service	Display of the settings of the toolkit communication (TCP/IP)
Serial Service	Display of the settings of the toolkit communication (RS232)
Write IP-configuration	Settings of the network configuration
Delete configuration	Delete the saved configuration of the controller.
Reset	Start new module (warm start)
Start FTP server	Starts the module new within the FTP mode
FTP client	Starts the FTP Client mode

The following functions are additional available in the menu bar when the @CAM controller is connected:

- **SSI** (functions for the preparation for the angle of the CAM) and
- **CAM** (functions for the CAM)

Illustration 29 functions SSI and CAM

SSI	
Download configuration from the module	Generating the INI file from the module parameter
Write configuration into the module	Transfer the INI file into the module
Read initial operation	Display the module parameter
Read encoder offset	Display the zero shift of the encoder
CAM	
Download configuration from the module	Generating the INI file from the module parameter
Write configuration into the module	Transfer the INI file into the module
Read initial operation BlockConfig.	Pieces of the module configuration
Read initial operation bit assignment	Pieces of the module configuration
Read initial operation SSI	Pieces of the module configuration
Read programming	Pieces of the module configuration

FTP client

The FTP client offers the possibility to read and write data that is stored in the controller. This function should only be executed by a trained employee because if used wrong a malfunction can occur.

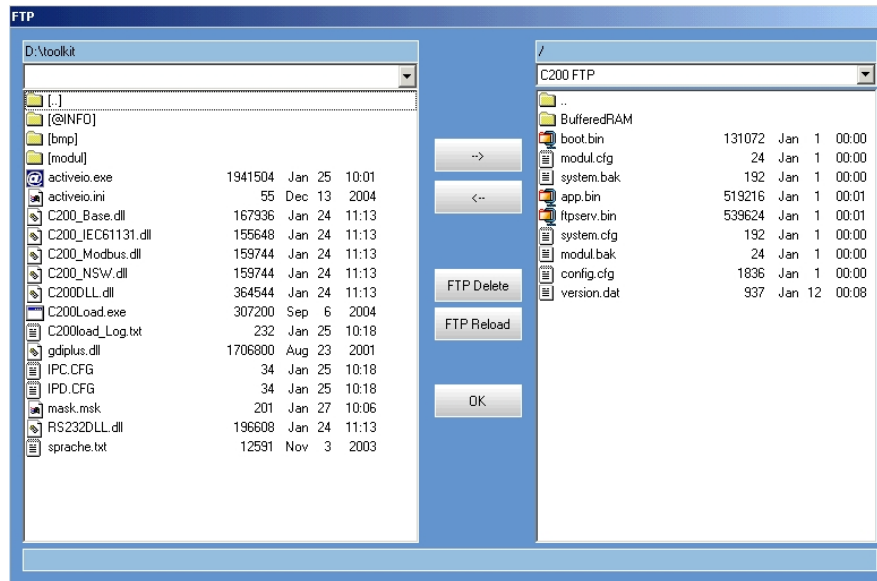


Illustration 30 FTP client

1.19.4 Activating / deactivating field bus

With these two commands you can **activate** or **deactivate** the **field bus** or **application communication** of the @bus. This function is useful for the initial operation or the debugging of process data (see chapter 7).

Note

i *The safety technical aspects should be taken into consideration when using the application of those functions!*

Aktiviere field bus

Is the field bus or application communication activated, data and configurations can be written via the field bus. Via the @ctiveIO toolkit only the reading access can be used.

Deaktiviere field bus

Is the field bus or application communication deactivated, you can only use the @ctiveIO toolkit to configure or work in the debug mode. You have both writing and reading access.

The safety technical aspects should be exactly adhered. If the outputs of the @Prints are wired, the user should be aware which outputs are set!

11.Trouble shooting

Illustration 31 debug

Bug	Description	Solution
Com-Port cannot be open	COM-Port is occupied	Close each program accessing the COM port.
@ctiveIO user does not report	No communication with the @ctiveIO module via the serial interface	Checking of the connection of the serial interface
Network error	No communication with the @ctiveIO over the network	Check: - Network connection - Network settings
Error during data transfer: Handle Error	Communication error during data transfer	Checking of the network connection
Error during data transfer: Data size error	Communication error during data transfer	Checking of the network connection
Error during data transfer: Code 0	Communication error during data transfer	Checking power supply
Project and @ctiveIO module do not concur	Will be shown when hardware and generated configuration do not concur.	Correct configuration that it concurs with the connected hardware.

12.Extras

1.20. Language

In the menu bar you'll find the option of choosing your language under 'Extras' => "language" (see illustration 25). The following languages are available:

- German
- English
- Italian
- French
- Spanish

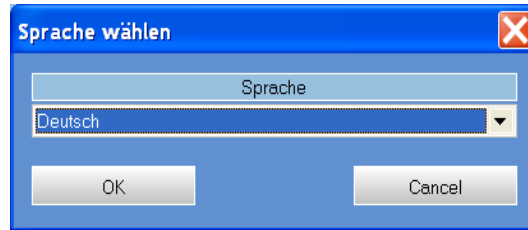


Illustration 32 language choice

After changing the language, you have to restart the program to incorporate the new settings.

1.21. Firmware

Controller

If you use the command "**Firmware information**" you can see the type, issue date and version @controller firmware (see illustration 26). This command you'll find in the menu bar under

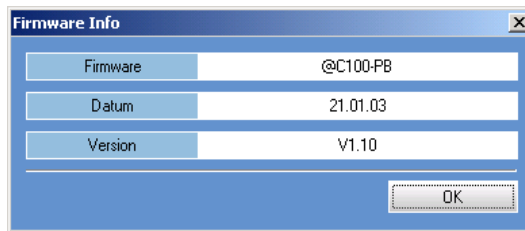


Illustration 33 Firmware @controller

Note

This function is only available when uploading a configuration that just has been read in (see chapter 4).

@Prints

You have to read in the current connected configuration to see the Firmware version of the @print (chapter 4). Than choose the **form of the table**. Now you can see according to the modules the fitting Firmware in the window (see illustration 27).



Illustration 34 Firmware @Print

1.22. Information to the module

Note

To be able to use this function, the Adobe Acrobat Reader or a compatible program should be installed to display PDFs.

When installing the toolkit, the PDF files of the available modules will be installed on the computer. If you would like to see more information about the modules, there are two possibilities:

1. This is for @controller and @prints in offline mode (Chapter 7).
When double clicking the respective module in the illustration an additional toolkit window pops up. In this window you see the respective data sheet by choosing “Info” or “module info”.

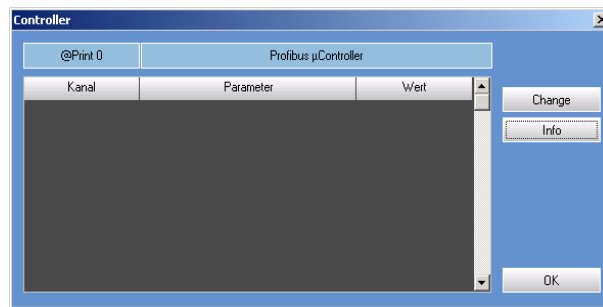


Illustration 35 information @module

2. Does only apply to the @controller in the **offline** mode (chapter 7).
Select under the menu bar “Module data” the command “display module”. In a new toolkit window you will find the defined modules. Mark the according module and press the button “module information” and the PDF of the module opens up.

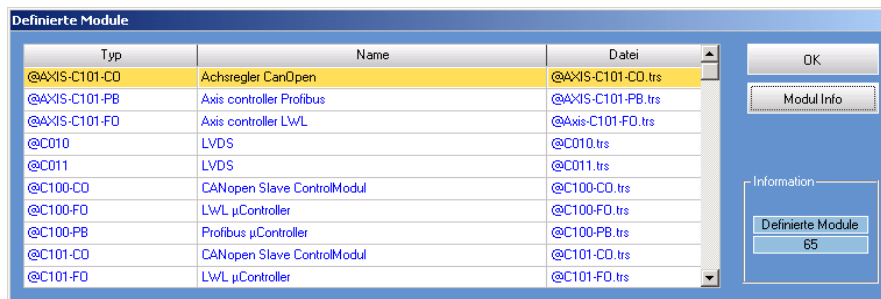


Illustration 36 information @controller

1.23. Print

The command print, you can find under the “file” => “print”. In this window (illustration 30) you can choose the following parameters: print, page number, number of copies and paper format. One special function takes the selection **page view**. Activate the check box, if you want to see the print view.

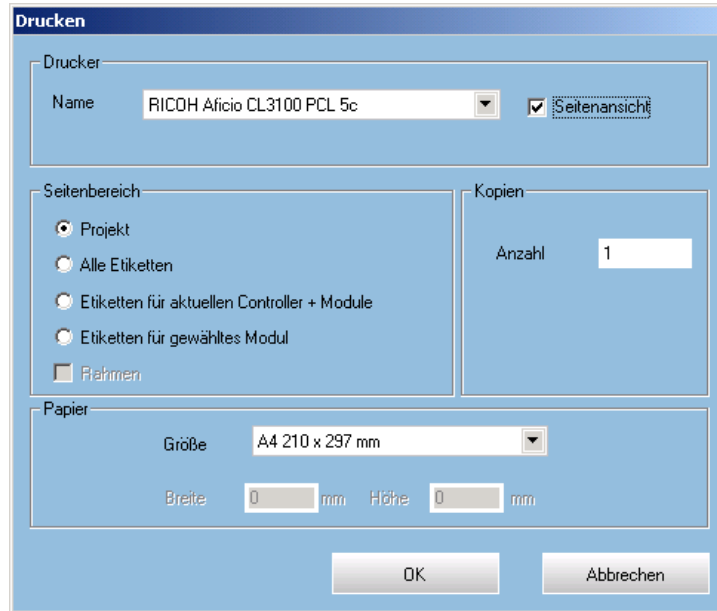


Illustration 37 print

With the function **page view** you have the following choices:

- **Project:** With this selection you can print all the data with the according characteristics of the whole project.

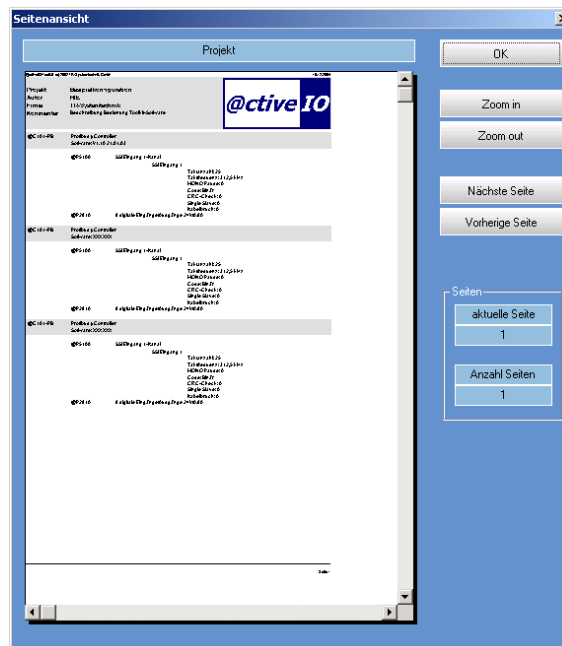


Illustration 38 project information

- **All labels:** This selection makes it possible to print suitable labels for all @ctiveIO modules. The content of the labels refers to useful features of the module like type, Firmware status (@controller) and pin assignment (@print) of the modules.

- **Labels for a current controller + modules:**

With this selection, only labels that have been marked in the configuration in the object of the project management are printed.

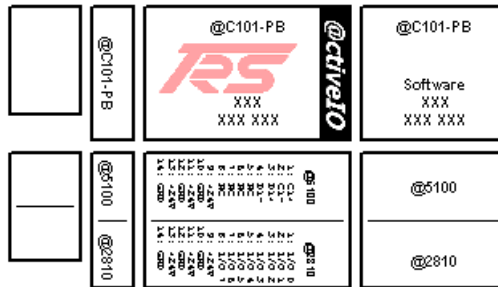


Illustration 39 labels

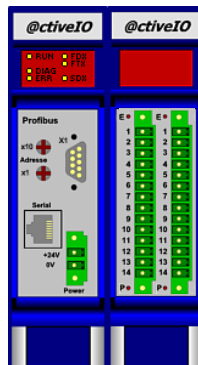
- **Labels for selected module:**

With this selection, only labels that have been marked in the modules in the object of the project management are printed.

1.24. Generating pictures

The toolkit software makes enables you to save the picture of a configuration. It will be saved in an EMF format (Enhanced Meta File).

To save it, you have to select "export as EMF" at the menu point "file". With this classification only the picture of the configuration is saved (see illustration 33).



@ C101-PB
@ P5100
@ P2810

Illustration 33 project illustration