



## SMW M&C Evaluation Tool

This user interface is a simple and easy-to-use tool to read/write Monitoring and Control parameters and an easy way to setup and getting started with M&C functions. This Tool is provided for the purpose of testing and evaluating M&C enabled SMW products.

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## Option to verify the download

If you want to verify the integrity of the installer-file, a MD5 checksum has been precalculated by SMW available on the download page. When the installer has been downloaded, we recommend to calculate the MD5 checksum of that file. Then compare the MD5 checksum of the downloaded file with the one generated by SMW. If they are equal the downloaded file is OK.

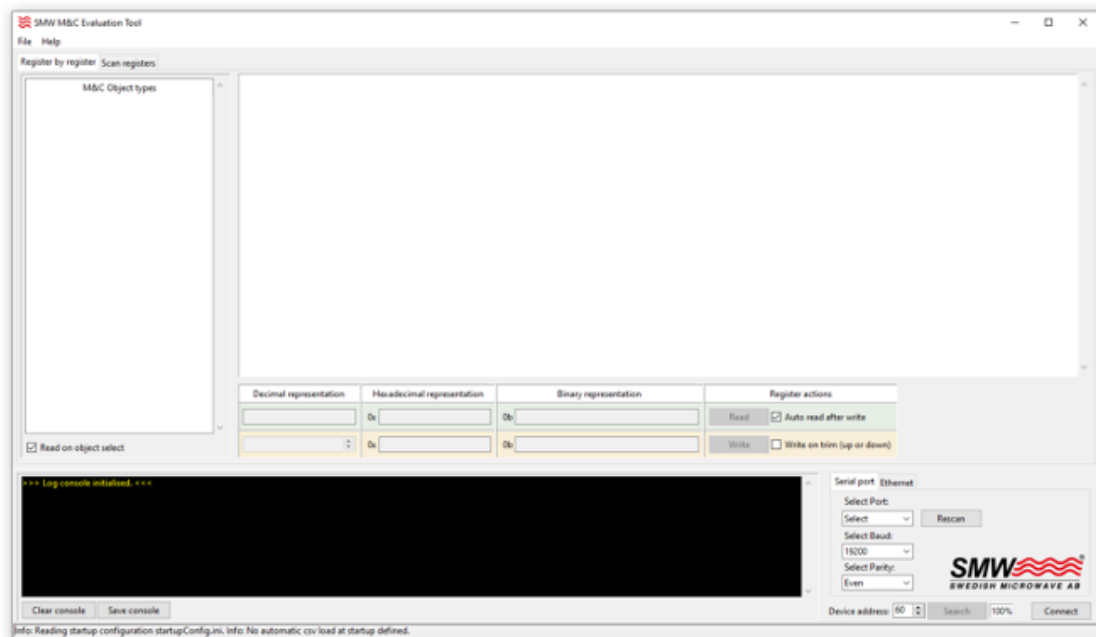
How to read the MD5 Checksum:

- Open Windows command line (Windows + R, type cmd and press Enter)
- Type: certutil -hashfile <path>\* MD5 \*Tip: Drag and drop the file into cmd window to get the full path.
- Compare the result from certutil with the one on the download page.

## First Startup

The program is divided into two panels:

- The top panel manage the M&C register readout and manipulation (if applicable).
- The bottom panel manage the hardware interface and device connection.

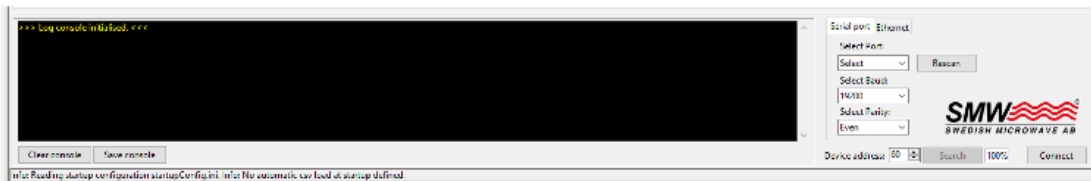


## Manage serial port connection

*Note: SMW offers a hardware start kit for the serial port option, which is a convenient way to get started.*

To connect:

- Select appropriate serial port (COM port) from the drop-down box. Rescan can be used to scan the computer for COM-ports if, for example, the USB-cable is connected after the program has been started.
- Default setting: Baud rate: 19200 and even parity. SMW-product device address is 60 by default.
- Press "Connect" button, if the button displays "Connected" the connection process has been successful.



## Manage Ethernet connection

*Note: The Ethernet option requires additional hardware (Modbus gateway) which is not supplied by SMW. As this is a third-party product, there may be compatibility issues with this software.*

To connect:

- Type in appropriate IP-address and port number that has been set up for the Gateway. Refer to the Gateway product manual how to properly setup that device.
- Press "Connect" button, if the button displays "Connected" the connection process has been successful.



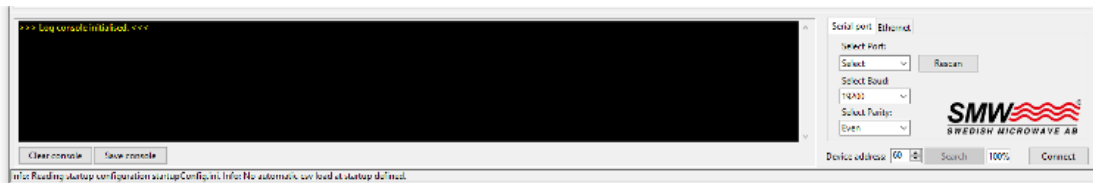
## Console and additional connection functions

The “Search” function can be used to find a SMW-device with unknown settings. For example, if the device address has been lost for some reason, then this function may be useful.

- For serial port connection it will iterate through the allowed device address range (1-247) for all baud rate- and parity options. The search process will start with current baudrate and parity setting.
- For Ethernet connection, it will scan the allowed device address range (1-247).
- A progress indicator will count from 0%-100%. The “Search” button will display “Stop” during search process. The process may be stopped at any time.

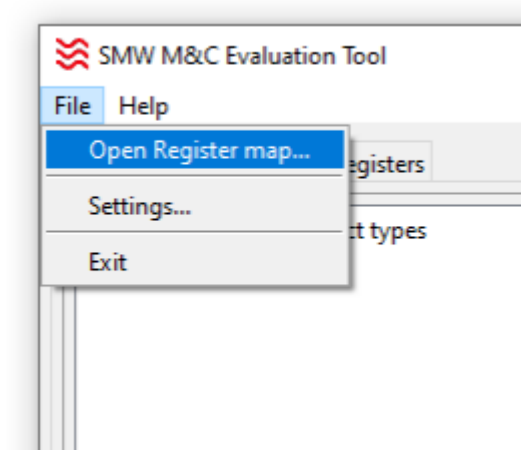
The read only “console output” displays the raw byte transaction between the M&C Evaluation Tool and the SMW product. TX refers to data bytes sent from the software and RX refers to received bytes from the connected SMW device.

- Press “Clear console” button to remove all console text.
- Press “Save console” to save content to a text file for reference or troubleshooting.



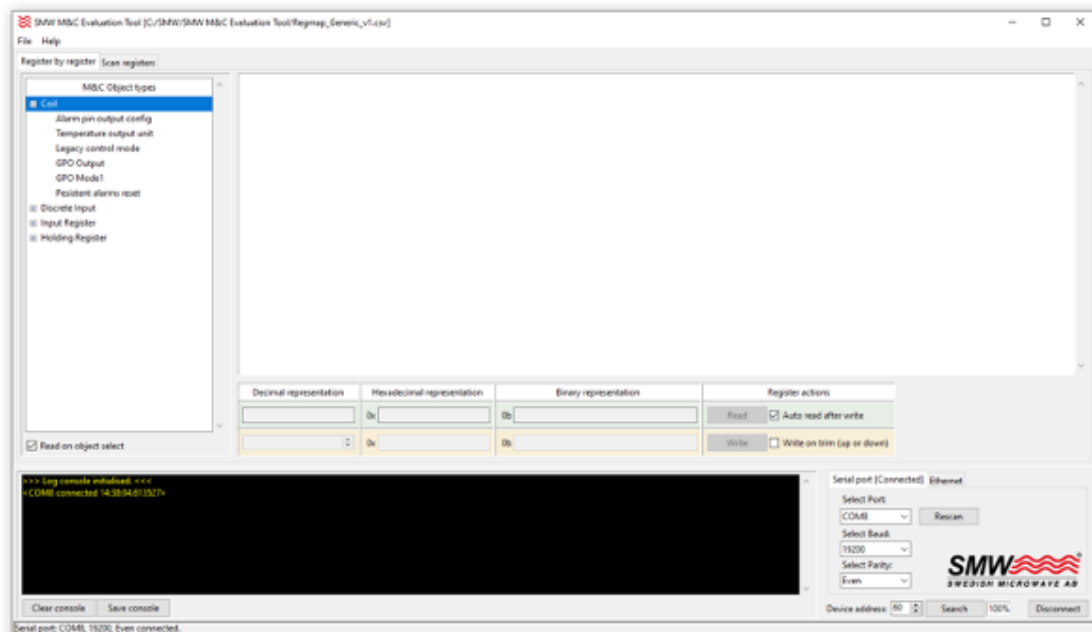
## Open a register map

- The register map defines what M&C registers are available for a specific SMW device configuration. Register maps are available for download.
- The software uses the register map to create a user-friendly interface and overview.
- Choose File -> Open Register map to select the register map file.
- Loading a register map can be done in either unconnected or connected state.



## The register-by-register view

- Under “M&C Object types” a tree view is created based on the register map content. It creates categories based on register type and registers are accessed by selecting the category. For convenience, keyboard arrow keys can also be used to navigate the tree. (Up/down navigates the tree, right opens a category and left closes a category.)
- All registers can be read, but not all can be written – depending on register type (category).
- The register value is displayed in three different representations. Decimal, hexadecimal and binary. This makes it easier to interpret the register content.
- To write a value, any of the three representations may be used. If the input fields contains unallowed letters or values outside the allowed range the input text becomes red.
- Clicking the decimal write field with “write on trim” checked, the register is written if the up or down button is clicked. Keyboard keys up and down may also be used.



## The Scan registers view

- This view displays the registers for the device in a list.
- The refined value column displays values in a user-friendly way.
- Clicking “Single” button starts a readout of all register values.
- “Continuous” starts a periodic readout of all registers – based on the time interval defined by “Scan period” in milliseconds.
- Log to file can be used to save the continuous readout to a file that can be opened in, for example, MS Excel for further analysis.

Register by register: Scan registers

Address	Object type	Name	Refined value	Decimal raw value	Hexadecimal raw value	Binary raw value
1u0001	Coil	Alarm pin output config	NO	0	0u0000	0u0000000000000000
1u0002	Coil	Temperature output unit	Fahrenheit	0	0u0000	0u0000000000000000
1u0003	Coil	Lagacy control mode	MODEBUS	0	0u0000	0u0000000000000000
1u0004	Coil	GPO Output	Low	0	0u0000	0u0000000000000000
1u0005	Coil	GPO Mode!	SumAlarm	0	0u0000	0u0000000000000000
1u0006	Coil	Persistent alarm reset	0	0	0u0000	0u0000000000000000
2u0001	Discrete Input	Sum alarm	Sum alarm inactive	0	0u0000	0u0000000000000000
2u0002	Discrete Input	Active Reference	Internal	0	0u0000	0u0000000000000000
2u0003	Discrete Input	External reference detected	No external reference detected	0	0u0000	0u0000000000000000
2u0004	Discrete Input	External reference lock detected	No lock	0	0u0000	0u0000000000000000
2u0005	Discrete Input	TTL input value	TTL Low	0	0u0000	0u0000000000000000
2u0006	Discrete Input	LO lock detected	No lock	0	0u0000	0u0000000000000000
2u0007	Discrete Input	22 kHz detect	None	0	0u0000	0u0000000000000000
3u0001	Input Register	Alarm register	0	0	0u0000	0u0000000000000000
3u0002	Input Register	Persistent alarm register	0	0	0u0000	0u0000000000000000
3u0003	Input Register	Total Days of operation	0	0	0u0000	0u0000000000000000
3u0004	Input Register	# output power	0.0 dBm	0	0u0000	0u0000000000000000
3u0005	Input Register	Temperature	0.0 C or F	0	0u0000	0u0000000000000000
3u0006	Input Register	Current monitor	0.0 mA	0	0u0000	0u0000000000000000
3u0007	Input Register	Input voltage	0.0 V	0	0u0000	0u0000000000000000

Scan period (ms): 10000    Continuous    Single

Log continuous scan to file: \_\_\_\_\_    Log to File

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*** Log console initialized. ***
<<COM1 connected 14.08.04.01327>
  
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Serial port [Connected] Ethernet

Select Port: COM1    Rescan

Select Baud: 19200

Select Parity: Even

Device address: 90    Search    100%    Disconnect

Clear console    Save console

Serial port: COM1, 19200, Even connected.

## Settings view

File -> Settings are the user-defined startup configuration.

### General:

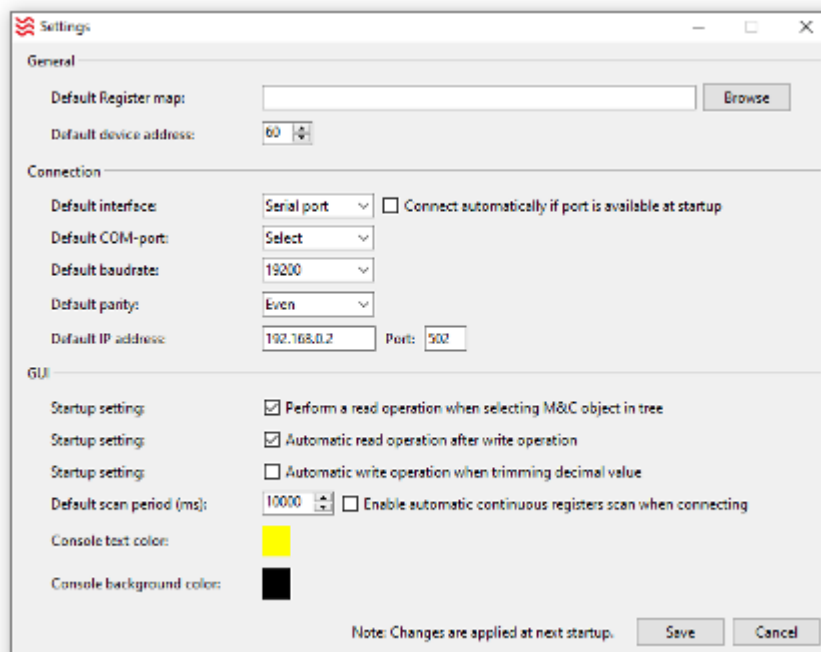
- A register map can be selected and will then be automatically opened every time the SMW M&C Evaluation Tool is started.
- The startup device address can be changed according to user preferences.

### Connection:

- Interface can be altered according to desired settings.
- Automatic connect attempt at startup requires the hardware to be set up before starting the program.

### GUI:

- Startup settings for register read/write behavior.
- Set scan interval and automatic register readout is possible.
- Console colors can be changed.
- Note that after saving changes, the program needs to be restarted.



## Troubleshooting

Problems when Installing – System req. only confirmed for WIN 10 / WIN 11 Professional.

Note: because the installer has an unknown publisher your endpoint detection, or anti-virus, may refuse to run the exe-file. This has to be cleared by your IT-support.

Problems connecting the unit – confirm that the unit is externally powered with correct voltage, the M8 connector or USB transceiver does not power the unit.

No connection on USB COM-port – USB drivers maybe missing for the USB Transceiver, download from [www.ftdichip.com](http://www.ftdichip.com).

No readings of parameters – No parameters will be read if the register map is missing or not the correct register map for the specific unit.