MBG-MSTP swTOOL-lite .. *software tool designed for MBG-MSTP Gateway configuration*

M A N U A L

LEGEND – abbreviations used in the swTOOL texts and visualisation:

swTOOL : MBG-MSTP swTOOL

MBG : MBG-MSTP Gateway

SW : software

HW : hardware

PC : Personal computer

Mem : Memory

Appl. : Application

MDF: MBus Definition File

CFG , **Config** : Configuration

HEX Display :   Active configuration display window in hexadecimal format

1. REQUIREMENTS ON PC AND SLAVE DEVICES

PC – personal computer:
HW: RAM 256MB +
SW: Windows 2000/ XP/ Vista/ 7 support

Slave communication device
MBG-MSTP Gateway to PC USB port converter /

Serial converter USB/RS485 :   - FTDI product, type: USB-RS485-WE-1800-BT (- recommended
/ or other equivalents)
- or Klimasoft SBM Integral product: My768

2. DESIGNATION AND FEATURES

MBG-MSTP swTOOL-lite (hereinafter referred to as "swTOOL") is a special "One to One" software product developed and designed to perform configuration changes and set MBus/BACnet converter parameters: MBG-MSTP Gateway.

This software allows you to change configuration and set significant parameters for each connected MBG-MSTP Gateway within the following scope:

- Installation of new/upgrade of application software

- BACnet MSTP mode: Slave/Master   */ MSTP_Master_Mode /*

- MSTP address   */ MSTP_This_Station /*

- BACnet ID address   */ DEVICE.Object_ID /*

- Name of MBG-MSTP object   */ DEVICE.Object_Name /*

- Options of data decoding from MBus device   */ MBus_MaxMinErrValues,
MBus_TariffUnitValues, MBus_StorageValues /*

- Number of connected MBus devices   */ MBus_ScanAddrCount (1-3) /*

- Interval of MBus data loading */ MBus_TurnoverTime /*

- Communication speed of MBus link scanning

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3. DESCRIPTION AND FUNCTIONALITY
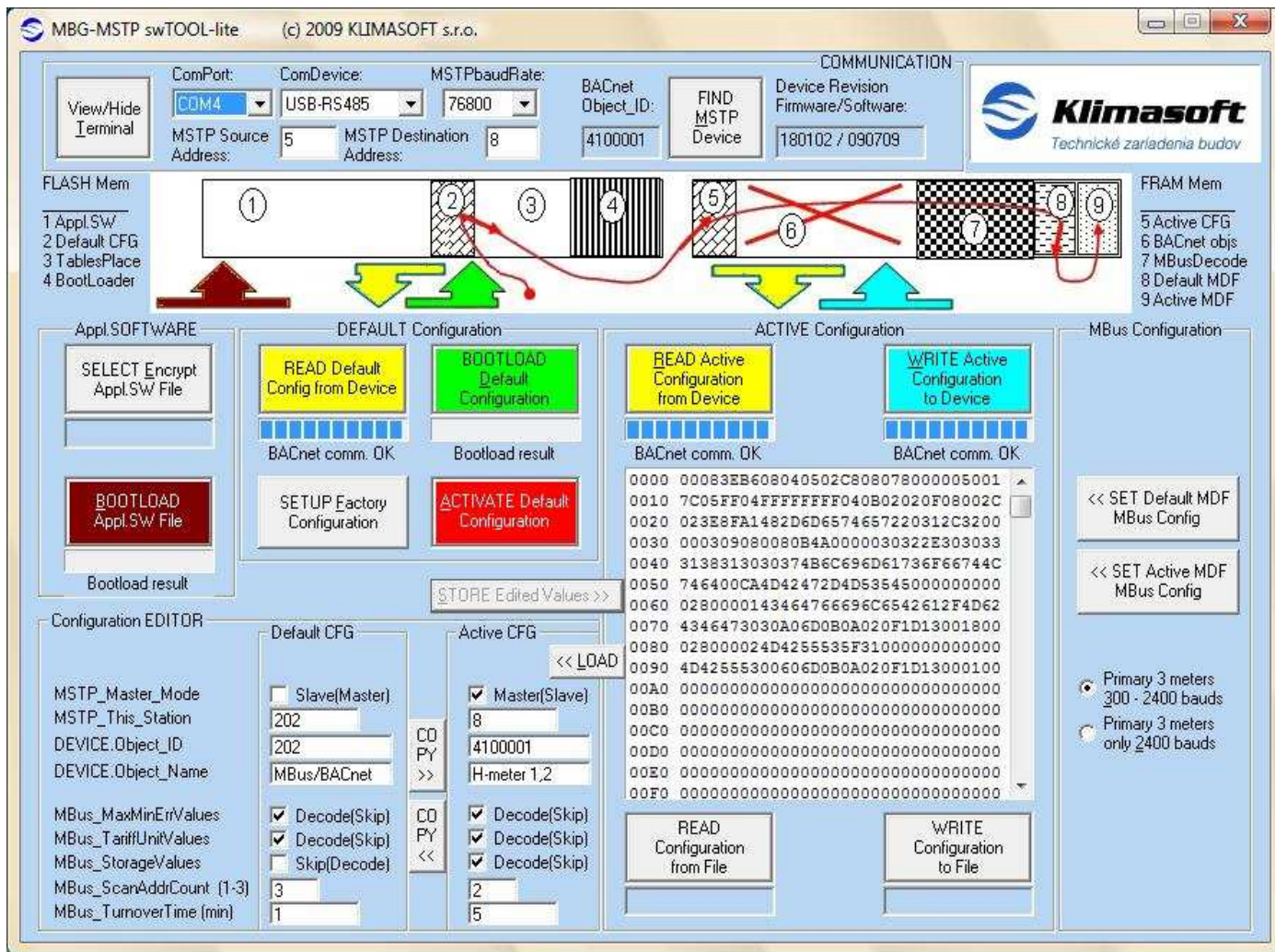
Figure No.1: Visualisation of the MBG-MSTP swTOOL-lite main window

3.1 Sector "COMMUNICATION":

- **Button "View/Hide Terminal":** displays terminal window in which you can monitor communication between MBG-MSTP Gateway (hereinafter referred to as "MBG") and swTOOL in hexadecimal format.

Figure No. 2:
Visualisation of communication window "Terminal"

Legend:

>> .. Request sent

<< .. Reply received

Clear .. to delete terminal

Close .. to close terminal

Write to Log .. to write in file

- **ComPort:** selection field to select PC communication port with connected slave communication serial converter USB/RS485. *(Pre-setting: COM2)*

- **ComDevice:** selection field to select slave communication converter: USB-RS485 or My768. *(Pre-resetting : USB-RS485)*

- **MSTPbaudRate:** selection field to select communication speed on MSTP link. *(Pre-setting-highest speed :76800 baud; other options: 38400, 19200, 9600 baud)*

- **MSTP Source Address:** editing field to enter MSTP address on which swTOOL communicates over MSTP link. Setting interval: 0 to 255. *(Pre-setting: 5)*

- **MSTP Destination Address:** editing field to enter/display MSTP address of MBG connected by slave converter. Setting interval: 0 to 255.

- **BACnet Object_ ID:** display field of BACnet ID address of connected MBG.

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The last two stated fields are set by default during the software activation to values of addresses: 202/202. These addresses do not have to be changed manually as swTOOL, after connection and detection of connected MBG, sets them automatically to relevant up-to-date value.

- **Button "FIND MSTP Device"** – is used for detection of connected MBG. Having pressed the button you start scanning the addresses on MSTP link until the connected MBG is detected, or the addressing reached the end. No MBG detection is announced in a displayed message window.

    *You can **stop scanning** the addresses by repeated clicking or double-clicking on the button !*

- **Device Revision Firmware/Software:** display field shows the current Firmware /Software version of detected MBG.

3.2   Figure –graphical display of MBG FLASH and FRAM memories arrangement
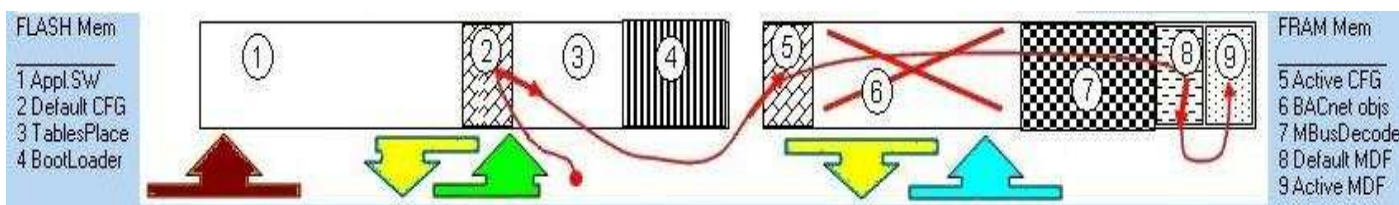
Figure No.3: – FLASH and FRAM memory arrangement in MBG-MSTP Gateway

The above figure shows graphical display of MBG-MSTP Gateway FLASH and FRAM memory arrangement and use.

Rectangular on the left: shows division of **FLASH memory** with description text on the left hand side of the rectangular:

Field No.1: **Application SW** of MBG,

Field No.2: **Default configuration** (usual-standard configuration),

Field No.3: Space designed for **tables,**

Field No.4: Space designed for **Firmware –Bootloader**.

Rectangular on the right: shows division of **FLASH memory** with description text on the right hand side of the rectangular:

Field No.5: **Active configuration**,

Field No.6: Space designed for **BACnet objects**,

Field No.7: **MBus decoder**,

Field No.8: **Default MBus configuration** (usual) for scanner of MBus devices,

Field No.9: **Active MBus configuration** for scanner; there are recorded identifications of detected MBus devices after the scanning process ended.

Arrows in the figure:

- _Claret_ **:** shows **recording of application SW** into MBG FLASH memory; it belongs to the "BOOTLOAD Appl.SW File" button in the "Appl.SOFTWARE" sector.

- _Yellow on the left_ **:** shows **loading of** MBG **Default configuration** into the Default CFG window; it belongs to the "READ Default Config from Device" button in the "DEFAULT Configuration" sector.

- _Green_ **:** shows **saving of Default configuration** from the "Default CFG" window to MBG FLASH memory; it belongs to the BOOTLOAD Default Configuration button in the "Default Configuration" sector.

- _Red thin line /arrow_ **:** **Activation of Default configuration**. The line in the direction of red target shows the sequence of process performance, the arrows show duplication or copying of data and the crossed red lines in field 6 show data deletion.

    These arrows and lines belong to the red "ACTIVATE Default Configuration" button in the "Default Configuration" sector.

- _Yellow on the right_ **:** **loading the Current configuration** from MBG to swTool together with display of the Active CFG and HEX Display windows; it belongs to the "READ Active Configuration from Device" button in the "ACTIVE Configuration" sector.

- _Turquoise_ **:** **recording the Active configuration** (displayed in HEX Display) into MBG FRAM memory; it belongs to the "WRITE Active Configuration to Device" button in the "ACTIVE Configuration" sector.

3.3 Sector "Appl. SOFTWARE":

- **Button " SELECT Encrypt Appl.SW File " (grey) –** is used for selection of requested file from application SW in its encoded form. After the file is selected it is recorded in the window located under the button and kept in memory until another SW is selected.

- **Button " BOOTLOAD Appl.SW File " (claret)** – is used for recording of application SW from selected file to MBG FLASH memory.
  There is an indicator located under the button showing the course of recording process together with text below, which also describes the course of the process in text format.

    Based on the type of slave converter connected to PC, the procedure is as follows:

    – **USB/RS485** converter: after pressing the **"BOOTLOAD Appl.SW File"** button you will see a displayed request for RESET of MBG. Then it is necessary to short circuit two relevant pins of SERVICE connector (RST, GND), only for a short while, which is also graphically displayed. You complete the software Bootload by Reset.

    – **MY768** converter: The software Bootload is automatic and no intervention of user is necessary.

3.4 Sector "DEFAULT Configuration":

- **Button "READ Default Config from Device"** *(yellow)* – by pressing this button you **load** MBG **Default configuration** into the "Default CFG" window in the sector "Configuration EDITOR"

- **Button "BOOTLOAD Default Configuration"** *(green/grey)* – is used to **save changes in usual setting** into MBG FLASH memory. It lights green and it is functional, if it refers to changes in setting. If the button lights grey it is non-functional. This does not refer to changes in setting as the new setting is identical to the setting saved in memory and therefore it is unnecessary.

- **Button "SETUP Factory Configuration"** *(grey)* – shows **Default factory settings** in the "Default CFG" windows in the "Configuration EDITOR" sector. By pressing the "BOOTLOAD Default Configuration" button you might subsequently save the setting in MBG.

- **Button "ACTIVATE Default Configuration"** *(red)* **– is used for Activation of Default configuration** in MBG.

  Activation is completed by saving the Default configuration from MBG FLASH memory (Field 2: Default CFG) to FRAM memory – of Field 5 (Active CFG); then the data is deleted - created BACnet objects and variables in Field 6, and finally, the Default MBus setting saved in Field 8 (Default MDF) is copied to FRAM memory Field 9 (Active MDF). Only then the Default configuration is active.

  By the above mentioned procedure you also delete all identifications of MBus devices saved during the MBus link scanning from MBG FRAM memory (Field 9). This means that MBG subsequently starts the MBus Autoscan process and detects MBus devices connected to the MBus link.

3.5 Sector "Configuration EDITOR":

- *Window "Default CFG" – Usual (standard) MBG configuration*
- *Window "Active CFG" – Active MBG configuration*
- **Button "COPY>>"** – **copies** contents of the "Default CFG" window to the "Active CFG" window.
- **Button "COPY<<"** - **copies** contents of the "Active CFG" window in the "Default CFG" window.
- **Button "<<LOAD"** – **saves and displays** configuration displayed in the HEX Display window to the "Active CFG" window (Use: to change some settings from Active configuration loaded in HEX Display).
- **Button "STORE Edited Values >>"** – saves configuration settings from the "Active CFG" window to HEX Display window in the "ACTIVE Configuration" sector.

Settings in "**Default CFG**" and "**Active CFG**" windows:

- **MSTP_Master_Mode:** selection field (check button) - MBG **BACnet MSTP mode** setting: **Master** (selection by clicking) / Slave (unclicked)

- **MSTP_This_Station:** editing field – **MBG MSTP address** entering.
  The numerical value of MSTP address is dedicated: **0-127** .. to mode: **Master**,
  0-254 ..to mode: **Slave**. (Recommendation: 128-254)
  In the Master mode editing field, the entered number is checked for its correct affiliation to relevant interval. For selected mode "MSTP_Master_Mode:" the incorrectly entered number automatically adjusts to correct interval: 0-127.
  Address 255 is dedicated to Broadcast communication of all MSTP link users – do not use it.

- **DEVICE.Object_ID:** editing field – **MBG BACnet address** entering
  (*setting interval: 0 to 4 194 303*)

- **DEVICE.Object_Name:** editing field - entering **the name of connected MBG** which is displayed in the BACnet network. It might be freely modified *(to max 12 characters).*

- **MBus_MaxMinErrValues:** selection field (check button), **decodes** (by clicking)/ skips **basic data** from MBus device: the minimum and maximum values, errors.

- **MBus_TariffUnitValues:** selection field (check button), **decodes**/skips MBus **rate tariff data** (By clicking on this field MBG displays rate tariff data, providing MBus device is equipped with display feature).

- **MBus_StorageValues:** selection (check button), decodes/skips **archive data** (By clicking on this field, MBG decodes and displays data providing MBus device is equipped with data archive storing feature).

- **MBus_ScanAddrCount (1-3):** editing field – entering the **number of connected MBus devices**. If selected value is 3, MBG scans the MBus links and detects three MBus devices *(Presetting: 3).*

- **MBus_TurnoverTime [min]:** editing field - **MBus data loading interval**. The selected integral value, in minutes, determines the time interval of data loading from MBus devices. Adjustability: 1 to 255 minutes *(Presetting: 1 minute).*

3.6 Sector "ACTIVE Configuration":

- **Button " READ Active Configuration from Device"** *(yellow)*: loads active configuration from connected MBG into the HEX Display window with displayed configuration in hexadecimal format. Indicator and text under the button show the course of configuration loading.

- **Button "Write Active Configuration to Device"** *(turquoise)*: records requested Active configuration displayed in the HEX Display window in hexa format into MBG FRAM memory.

- **HEX Display** – **Active configuration** in HEX format (big text window): displays the current set or loaded active configuration in hexadecimal format.

- **Button "READ configuration from File"** *(grey)***:** loads requested MBG configuration from file to the window with active configuration (HEX Display). If you might use your configuration more than once, just keep it stored in file and load it in MBG as it is stated above.

- **"WRITE Configuration to File":** records active configuration from the HEX Display window to file in hexa format.

3.7 Sector "MBus Configuration":

- **Button "<<SET Default MDF MBus Config":** sets Default MBus configuration according to communication speed selected by the below stated selector.

- **Buttons "<<SET Active MDF MBus Config":** sets Active MBus configuration according to communication speed selected by the below stated selector.

- **Selector of MBus communication speed** (radio button) – by clicking on the button you can select one of two scanning and communication options on the MBus link:

  1) *„Primary 3 meters 300-2400 baud":* MBus scanner will detect 3 MBus devices (meters), the maximum, at communication speed of 300 to 2400 baud *(Preset)*

  2) *„Primary 3 meters only 2400 bauds":* MBus scanner will detect 3 MBus devices (meters), the maximum, at communication speed of only 2400 baud.

4. PRODUCT INSTALLATION AND MBG-MSTP CONNECTION TO PC

4.1 swTOOL installation to PC

1) Install swTOOL to your PC that you simply save the product file in selected folder on your computer hard disk.

2) swTool becomes activated when you open the relevant actuating "exe" file: "**MBGswTool**"

   Once you have opened the file you will see the software main visualisation window displayed – see figure No. 4.
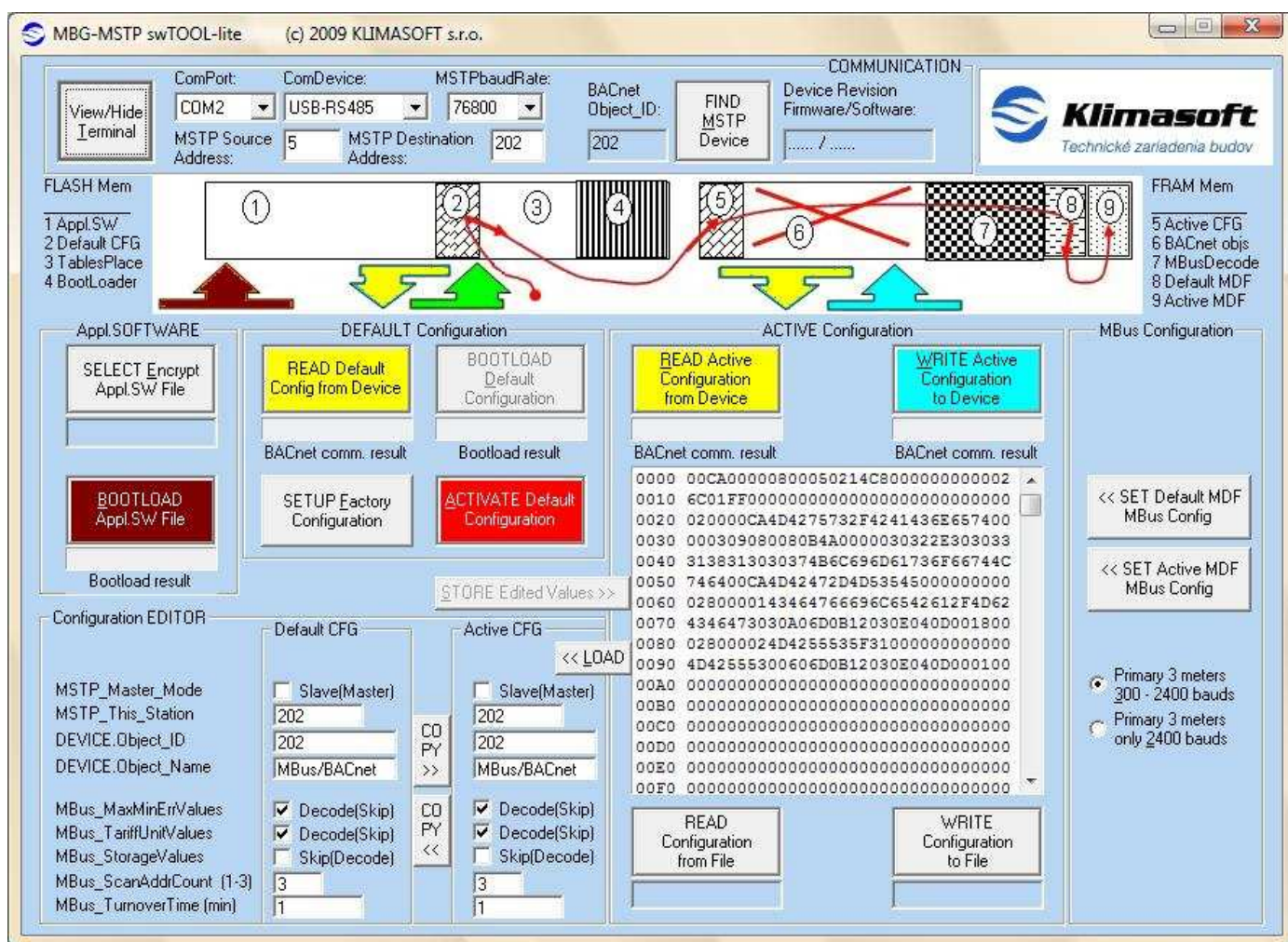

Figure No.4: Visualisation of the MBG-MSTP swTOOL-lite main window after its activation

4.2 MBG-MSTP connection to PC

1) Before you make your own MBG to PC connection, install a suitable driver of slave converter USB/RS485 to your PC. We recommend that you use converter from the producer FTDI, type: USB-RS485-WE-1800-BT. The appropriate driver is available on the producer's web sites:
http://www.ftdichip.com/Drivers/CDM/CDM%202.04.16%20WHQL%20Certified.zip

2) Connect the MBG-MSTP Gateway to your PC by slave communication converter USB/RS485 (see Chapter 1 for specification), as follows:
connect data cables RS485(+), RS485(-) by slave converter USB/RS485 to MBG-MSTP connector BACnet MSTP/connectors 5, 6/.
Note: The connected MBG-MSTP Gateway must be power supplied externally with 24Vac voltage as the slave converter USB/RS485 is power supplied through USB connector from PC.

3) Activate swTOOL (Point 4.1.2) and after you have set communication (Point 5.1) check for correct functionality of the communication between swTOOL and connected MBG.

5. CHANGE OF MBG-MSTP CONFIGURATION PROCEDURE

5.1 Setting of communication with connected MBG /Sector *"COMMUNICATION"*:

1) In the field **"ComPort:"** select PC communication port to which USB/RS485 slave converter is connected.

2) In the field **"ComDevice:"** select a type of the used USB/RS485 slave converter – for standard commercial products, select default setting: *USB-RS485*

3) In the field **"MSTPbaudRate:"** set the requested communication speed over MSTP link. The default setting is the highest speed of 76800 baud. You can also select a lower speed, mostly when you know the highest speed will not be supported.

4) In the field **"MSTP Source Address:"** set the address on which swTOOL communicates over MSTP link. Setting interval: 0 to 255. Default setting: 5.

5) MBG addresses in the fields **"MSTP Destination Address:"** and "**BACnet Object_ ID:"** are set by default to value: 202. The addresses are appropriately upgraded in the next step after detection of connected MBG.

6) Activate the **"FIND MSTP Device"** button to detect connected MBG. This starts scanning the addresses on MSTP link until the appropriate MBG is detected or the addressing has reached the end. If no MBG is detected you will see a displayed message window. If you know MSTP address of the searched MBG, write it in the **"MSTP Destination Address:"** window before you activate searching. Thus you will speed up the whole searching process.

7) Having detected connected MBG you will see displayed its up-to-date details in the **"MSTP destination address:"**, "**BACnet Device ID:**" and "**Device Revision Firmware/Software:**" fields.

At the same time the **up-to-date setting "Default" / "Active"** of MBG configuration is automatically loaded and displayed in the sector "Configuration EDITOR", **in relevant windows "Default CFG" / "Active CFG"** and in the **HEX Display** window (Sector *"Active Configuration"*) in hexadecimal format.

5.2 Installation of new/upgrade of application SW /Sector "Appl. SOFTWARE":

1) In the sector "Appl. SOFTWARE", click on the **"SELECT Encrypt Appl.SW File "** button and activate it, then open the appropriate file of application SW you wish to upload into MBG in the displayed window. You will see the selected file displayed under the button.

2) Upload the application SW into MBG FLASH memory by activation of the **"BOOTLOAD Appl.SW File "** button.

3) If communication with MBG over the RS485 bus works properly you will see a displayed request to RESET MBG by short circuiting of two relevant pins on SERVICE connector (RST, GND) for a short while.

4) If communication with MBG over the RS485 bus failed (or MBG is not connected), you will see a report "*BootLoad ERROR !*" displayed under the **"BOOTLOAD Appl.SW File "** button.

5) Once you have completed upload of new application SW in MBG FLASH memory you will see a displayed report informing of its successful saving.

5.3 Slave/Master MSTP mode setting /Sector *"Configuration EDITOR", window" DefaultCFG"*:

You can select BACnet **MSTP mode: Master** setting, if you click on the selection button (check button) "**MSTP_Master_Mode**". If "MSTP_master_mode" has not been activated MBG remains default set in: **Slave** mode.

5.4 MSTP address setting /Sector *"Configuration EDITOR", window "Default CFG"*:

In the window "Default CFG", enter the numerical value of requested MSTP (within interval: 0 to 254) in the editing "**MSTP_This_Station**" window.
Numerical value of MSTP address is dedicated as follows:

0 -127 ...to mode: **Master**,
0 -254 ...to mode: **Slave** (*Recommended: 128-254*)

5.5 BACnet ID address setting /Sector *"Configuration EDITOR", window "Default CFG"*:

In the editing "**Device.Object_ID**" window, enter the requested numerical value of MBG address (*setting interval: 0 to 4 194 303*).

5.6 Naming of MBG object /Sector *"Configuration EDITOR", window Default CFG"*:

In the editing "**DEVICE.Object_Name:**" window, enter the requested name of up-to-date MBG which is displayed in the BACnet network *(12 characters, the maximum).*

5.7 Selection of data decoding from MBus device /Sector *"Configuration EDITOR", window Default CFG"*:

By clicking on the relevant selection windows (check button), select the pattern of MBus device data which are to be decoded and displayed.

1) *Selection window "MBus_MaxMinErrValue":* basic data – the minimum, maximum values of parameters and errors *(Preset: to be decoded)*
2) *Selection window " MBus_TariffUnitValues":* rate tariff data *(Preset: to be decoded)*
3) *Selection window " MBus_StorageValues":* archive data *(Preset: to be skipped)*

5.8 Setting the number of connected MBus devices /Sector *"Configuration EDITOR", window "Default CFG"*:

In the editing **"MBus_ScanAddrCount (1-3)"** field, set the number of expected connected MBus devices to finish the MBus link scanning process (if the selected value is 3, three MBus devices are to be searched).
(If one of the three connected real MBus devices communicates as two MBus objects, in the window you can set value: 4).

5.9 MBus data loading interval /Sector *"Configuration EDITOR", window "Default CFG"*:

In the editing **"MBus_TurnoverTime [min]"** field, set the numerical value of time interval for downloading data from MBus device in whole minutes. Adjustability: 1 to 255 minutes. *(Presetting: 1 minute).*

5.10 MBus configuration-communication speed setting /Sector *"MBus Configuration"*

1) By clicking on the **Selector of MBus communication speed** (radio button), select one of two options for scanning of MBus link by MBG:

- *„Primary 3 meters 300-2400 baud":* MBus scanner will detect 3 MBus devices (meters) at communication speed of 300 to 2400 baud *(Preset)*

- *„Primary 3 meters only 2400 bauds":* MBus scanner will detect 3 MBus devices (meters) at communication speed of only 2400 baud.

2) **Activate the "<<SET Default MDF MBus Config" button** to set Default MBus configuration with the communication speed selected in Point 5.10.1.

6. NEW DEFAULT CONFIGURATION SAVING AND ACTIVATION IN MBG

6.1 Saving the changes in Default configuration /Sector *"*DEFAULT Configuration*"*:

1) Activate the green "BOOTLOAD Default Configuration" button by clicking on it to save the changes in default setting into MBG FLASH memory. (If the button is in grey - it is non-functional which means the new setting is identical with the setting saved in memory and therefore no additional savings are necessary).

2) Afterwards you will see a displayed message requesting for RESET of MBG. Short-circuit two relevant pins of SERVICE connector (RST, GND) for a short while and then press the OK button displayed in the request message.

3) Having saved the new Default setting, MBG displays a message of successful memory store.

6.2 Activation of Default configuration in MBG /Sector *"*DEFAULT Configuration*"*:

EXAMPLE: *New MBG setting*

1) Press the red **"ACTIVATE Default Configuration"** button to activate the up-to-date Default configuration saved in MBG. Activation is completed by saving the Default configuration stored in FLASH memory into FRAM memory. Field 9 (Active MDF) of FRAM memory is also rewritten by the Default MBus configuration saved in Field 8 and thus it becomes active.

Attention!

By the above stated procedure you also delete all BACnet objects and identifications of MBus devices saved during the MBus link scanning **from MBG FRAM memories**. This means that MBG subsequently changes to MBus Autoscan mode and starts detecting connected MBus devices on the MBus link.

If you do not wish to delete the saved MBus devices (MBus devices have not changed), you can change MBG configuration by the procedure stated in paragraph 6.3.

2) Activation of new Default configuration in MBG is signalled by LED diode – yellow: *BACnet Ready,* as follows: *4 x flashing, lighting for about 15 seconds and then flashing in regular intervals to signal that Autoscan of MBus link is activated.*

6.3 Activation of Default configuration in MBG without deletion of MBus devices from memory /Sector *"Configuration EDITOR" and ACTIVE Configuration"*:

EXAMPLE: *Modification of default MBG setting (addresses MSTP and ID, object name...)*

1) Copy the modified Default configuration, saved according to the procedure stated in paragraph 6.1 and displayed in the "Configuration EDITOR" sector, the "Default CFG" window, into the "Active CFG" window by activation of the **"COPY>>"** button.

2) Activate the **"STORE Edited Values"** button to save the set configurations from the "Active CFG" window to the display hexa-file (HEX Display) window in the "ACTIVE Configuration" sector.

3) Activate the **"Write Active Configuration to Device"** button in the "ACTIVE Configuration" sector to write the requested setting displayed in the HEX Display (hexadecimal record) window into MBG FRAM memory.

6.4 Activation of Default configuration in MBG following MBus device /Sector "DEFAULT Configuration"**:**

EXAMPLE: *Replacement, supplement of new MBus device or modified MBus address /entire procedure/*

1) Detect connected MBG by activation of the **"FIND MSTP Device"** button with automatic loading of **up-to-date "Default and Active"** MBG configurations you will see displayed in the "Configuration EDITOR" sector, **in the "Default CFG" and "Active CFG" windows.**

2) Activate the red **"ACTIVATE Default Configuration"** button to activate Default configuration by MBG FLASH to FRAM memory transcription.

This will also delete all BACnet objects, variables and identified MBus devices from MBG FRAM memory which means MBG subsequently changes to MBus Autoscan mode and by addressing it resumes detection of connected MBus devices on the MBus link (Autoscan of MBus link by MBG gateway might last for about 120 minutes, see the MBG-MSTP Gateway manual for details).

7. CHANGE OF ACTIVE CONFIGURATION AND ITS SAVING

7.1 Change of MBG active configuration by editing and its saving /Sector "Configuration EDITOR" and ACTIVE Configuration"**:**

*1) Follow the procedure described in Points 5.3 to 5.10, **but in the "Active CFG" window** and then by the* **"<<SET Active MDF MBus Config"** *button in the "MBus Configuration" sector.*

2) To save the new Active configuration, follow the procedure described in Points 6.3.2 and 6.3.3.

7.2 Change of MBG active configuration by file loading and its saving /Sector "Configuration EDITOR" , " ACTIVE Configuration" and " MBus Configuration"**:**

1) By the **"READ configuration from File"** button, upload the requested active configuration from the saved file in the HEX Display window.

2) If it is necessary to correct basic settings of the configuration uploaded from file, use the **"<<LOAD"** button and edit the displayed up-to-date settings in the "Active CFG" window.

If correction is not necessary, continue according to Point 7.2.4.

3) By the **"STORE Edited Values"** button, save the corrected configuration from the "Active CFG" window back into hexa format (of HEX Display).

4) Having selected the MBus communication speed /*sector "MBus Configuration"*/, activate the **"<<SET Active MDF MBusConfig"** button to save the Active MBus configuration into hexa format (of HEX Display).

5) Activate the **"Write Active Configuration to Device"** button in the sector "ACTIVE Configuration" to record the requested setting displayed in the HEX Display (hexadecimal format) window to MBG FRAM memory.

7.3 Saving of current active configuration in file /*Sector "ACTIVE Configuration"*

By activation of the **"WRITE Configuration to File"** button, save the active MBG configuration displayed by HEX Display, in hexa format, to file.

8. FUNCTIONALITY FAILURES AND THEIR ELIMINATION

8.1 Non-functional communication between PC (swTOOL) and slave converter USB/RS485

After activation of the **"FIND MSTP Device"** button in the "COMMUNICATION" sector you will see displayed the following warnings:

- "**Cannot open Communication port"**

- "**Communication Device Failure** ! "

Solutions:

1) Check for correctness of communication settings in fields: "ComPort" and ComDevice" in the sector "COMMUNICATION".

2) Check for correct connection of devices with a focus on proper connectivity.

3) Check for correct installation of driver to PC for slave serial converter USB/RS485.

By Tools Administrator in OS Windows ensure that driver for converter USB/RS485 was correctly installed to your PC:

Perform selection: Tools administrator / Display / Devices by type / Ports (COM and LPT) …*here it must be stated:* "**USB Serial Port (COM..)**"…either **without characters: "?" or "!".**

4) In the "COMMUNICATION" sector, "MSTPbaudRate" field, set the lowest communication speed: "**38400**" baud contrary to the preset maximum speed (76800 baud). This step might be necessary when your computer does not support the preset maximum communication speed. If communication at the preset maximum speed (76800 baud, …factor determined by type of PC) is with slave converter USB/RS485 produced by FTDI, USB-RS485-WE-

1800-BT, non-functional in the field "MSTPbaudRate" and you still insist on the highest communication speed (76800 baud), do the following:

Re-install the slave converter USB/RS485 driver to your PC according to special procedure recommended by the converter producer FTDI – for details click on the following link:

http://www.ftdichip.com/Documents/AppNotes/AN232B-05_BaudRates.pdf

8.2 Non-functional communication between slave converter USB/RS485 and connected MBG-MSTP

Having activated the **"FIND MSTP Device"** button *sector "COMMUNICATION"/*, detection addressing in the "MSTP Destination Address" field reaches the end (254) and the following warning is displayed:

- "**No MSTP MBusBACnetGateway has been found !**"

Solutions:

1) Check for correct connection of devices with a focus on proper connectivity.

2) Check for functional power supplying of connected MBG-MSTP: Un=24Vac.

   Check: A. Status of optical signalisation on MBG: LED diode /blue "Power +5V"= lights
   B. Gauge the power supply level on MBG connectors (Un=24Vac).

3) Check for correctness of data connection between MBG and slave converter USB/RS485.
   Check on MBG-MSTP BACnet connector:
   connectivity and polarity of the bus wires RS485 (RS485+, RS485-), i.e. converter USB/RS485.

9. CONTACT AND SUPPORT

If you have any questions please do not hesitate and contact us for our complex support in order to solve your problem related to this software product and its application in MBG-MSTP Gateway configuration.

Support contacts: **klimasoft@klimasoft.com**   *(e-mail preferred)*

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10. MBG-MSTP swTOOL-full / commercial version of software - presentation

Designation and features

The software product **MBG-MSTPswTOOL-full** (hereinafter referred to as the "sw-full") is a commercial version of *MBG-MSTPswTOOL-lite* application designed to implement full-value and complex modifications of configuration and settings of all parameters of MBus/BACnet converter MBG-MSTP Gateway as well as parameters of MBus device.
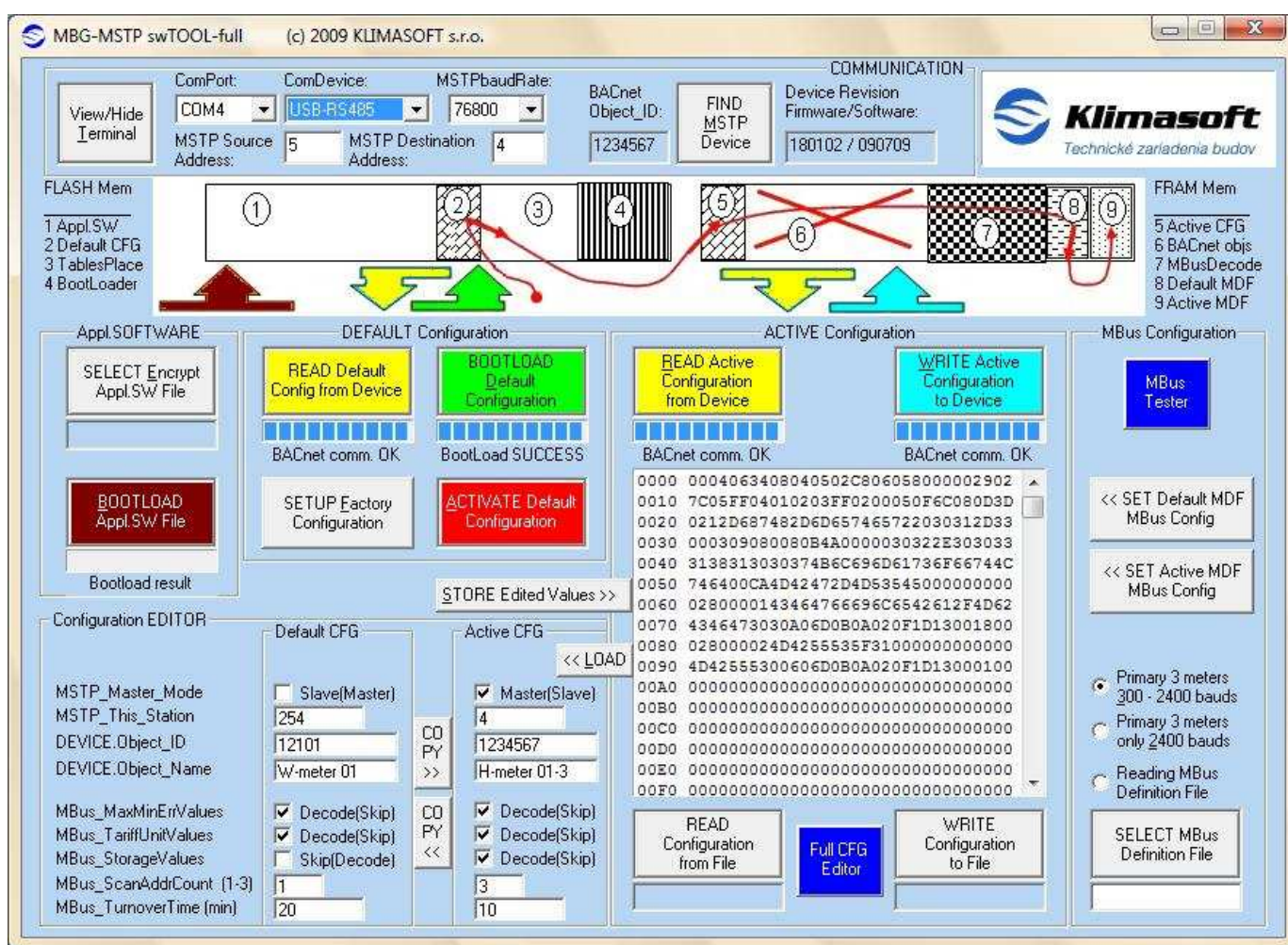

Figure No. 10a: Visualisation of the main window of MBG-MSTP swTOOL-full application

Comparing to lite-version the SW-full version is in the main window additionally equipped with the following control features:

- Button (blue) "**Full CFG Editor**" /sector "ACTIVE Configuration"/
- Button (blue) "**MBus Tester**" /sector "MBus Configuration"/
- Selection field to select the reading options "**Reading MBus Definition File**" /sector "MBus Configuration"/
- Selection button (grey) "**SELECT MBus Definition File**" / sector "MBus Configuration"/

Comparing to the "lite" version this software product is additionally equipped with tools for **modification of configuration and settings within the following scope:**

BACnet_MBus Configuration Editor tool / button "Full CFG Editor"/:

- Complex setting of MBus and BACnet configuration
- Data selection for their display and saving in file
- Setting of MSTP and BACnet communication system variables
- Options for decoding of MBus files from MBG or external files and their archiving
- Editing of all BACnet objects features – analogue variables (name, type, physical unit, number format…)

MBus Testing & Setting Utility tool /button "MBus Tester"/:

- Creation, editing and file saving of MBus Data Requests as well as their sending to MBus link
- Modification of MBus device primary address
- Modification of other MBus settings supported by MBus device
- MBus link communication speed setting
- Initiation of MBus device to its default status

MBus Definition File tool /sector "MBus Configuration"/:

- Selection and loading of saved MBus definition file
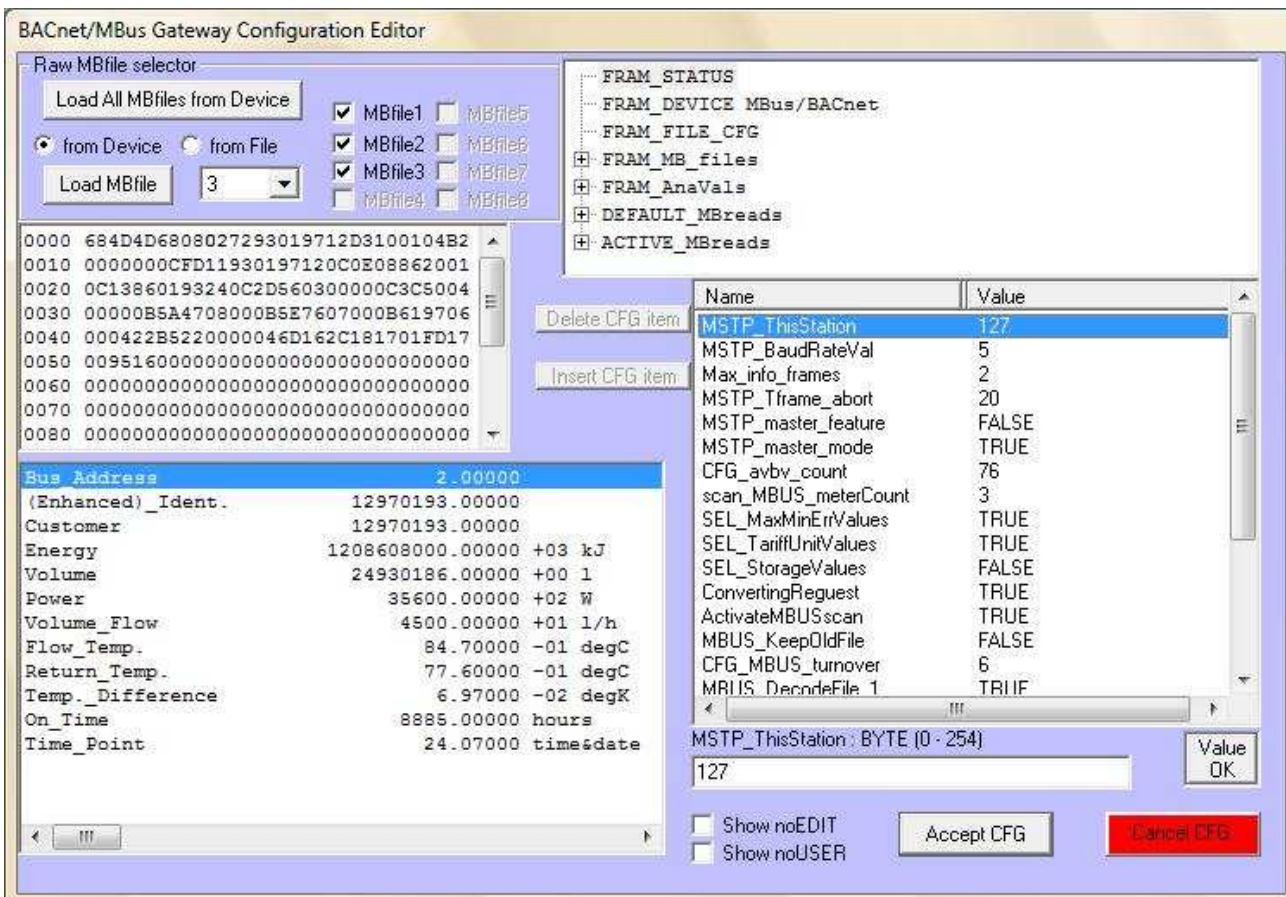- Editing and saving of MBus definition file

*Figure No.10b: Visualisation of the **BACnet_MBus Configuration Editor** window
– activation by (blue) "**Full CFG Editor**" button
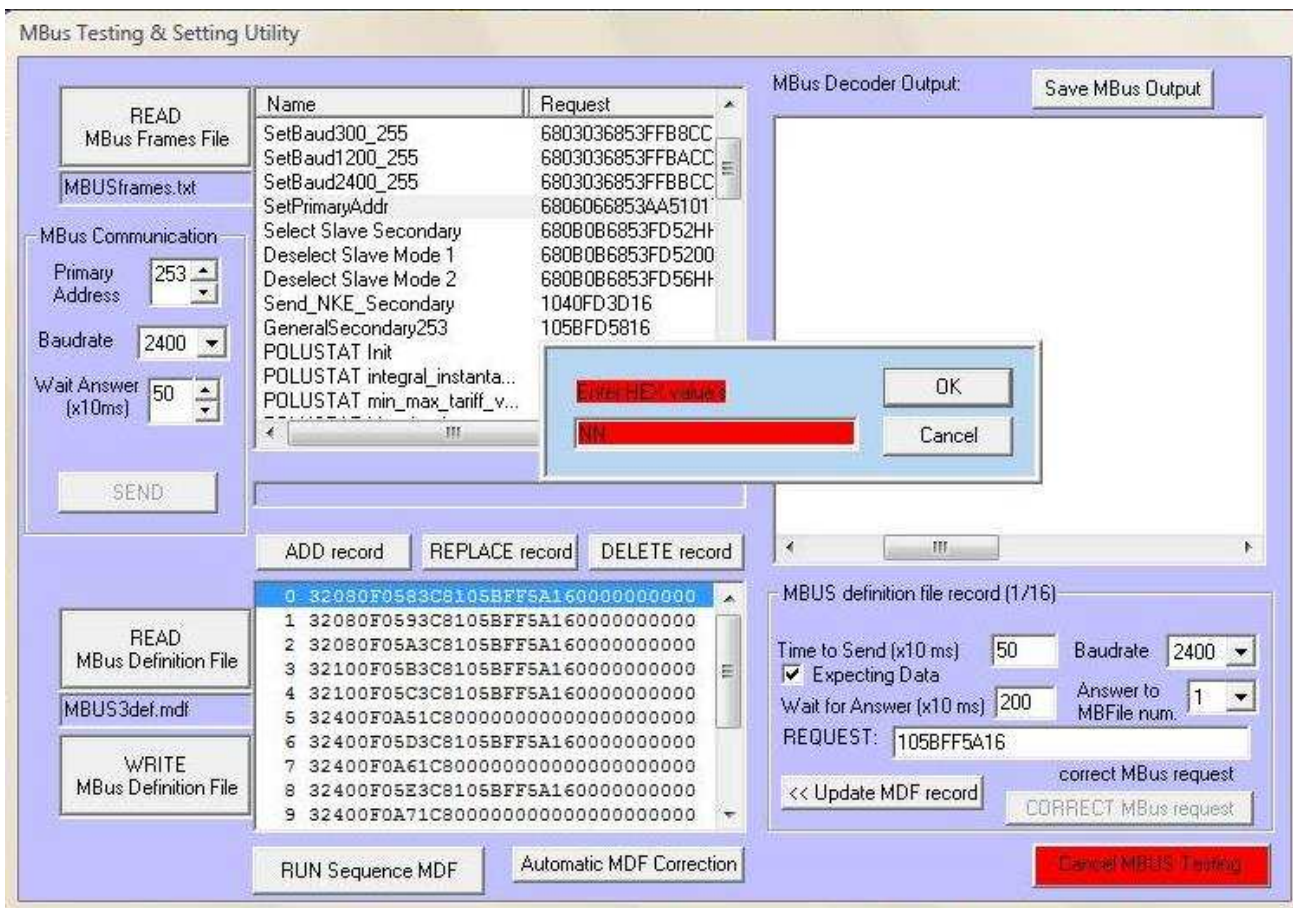/sector "ACTIVE Configuration"/*

*Figure No.10c: Visualisation of the **MBus Testing & Setting Utility** window
– activation by (blue) "**MBus Tester**" button
/sector "MBus Configuration"/*

MBG-MSTP swTOOL-full can be ordered and supplied with a licence for one PC.