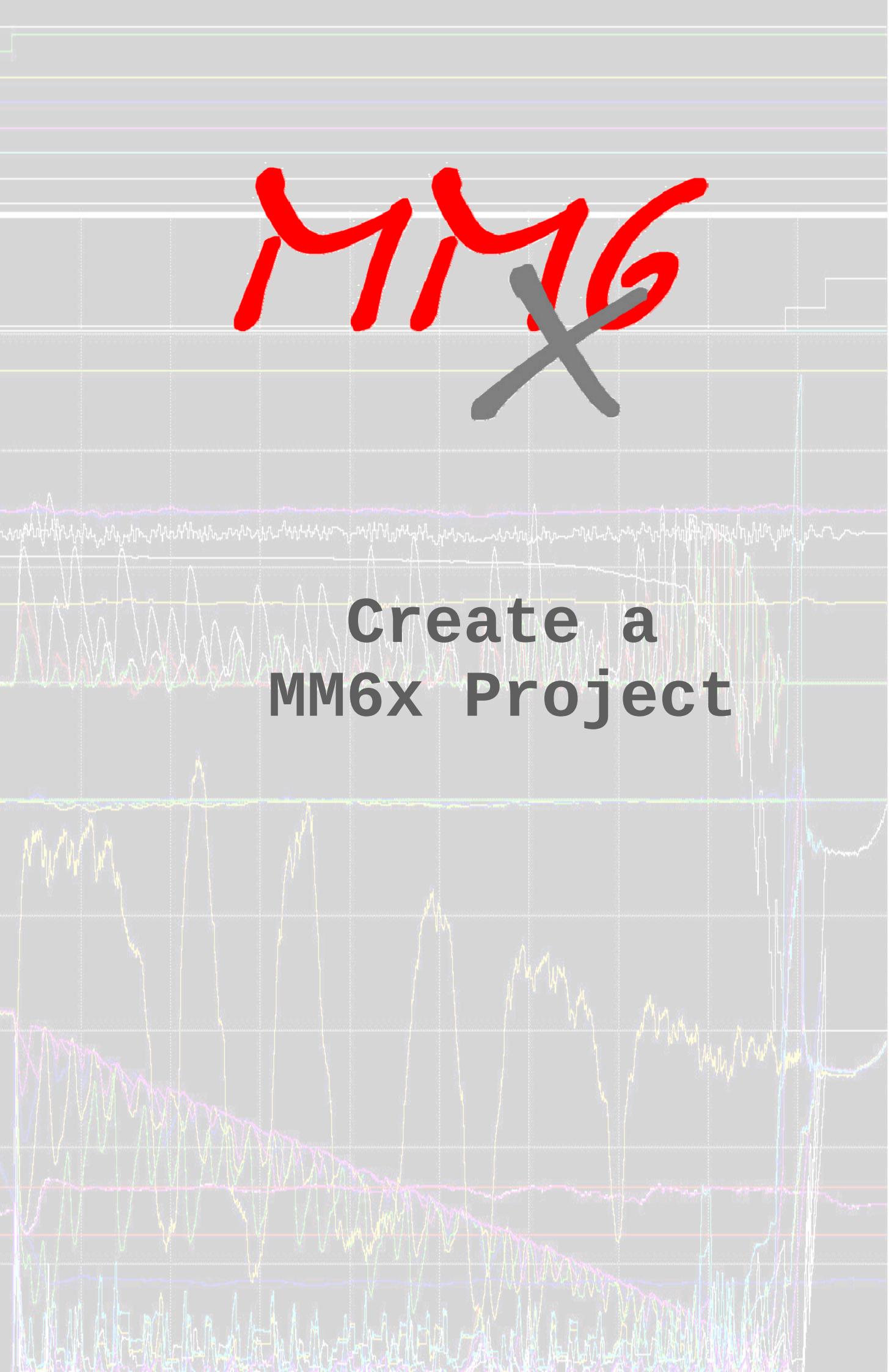
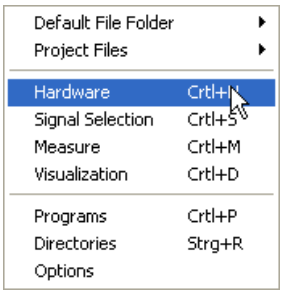


Create a MM6x Project

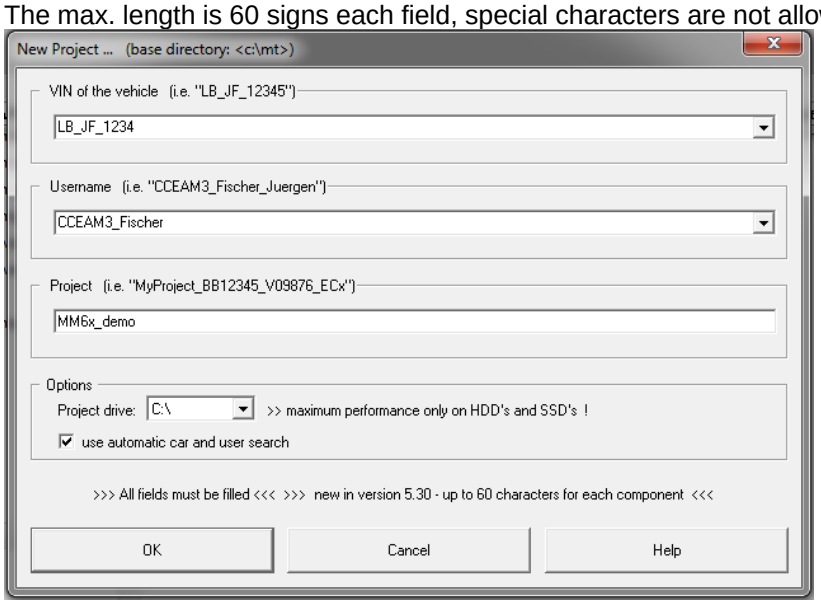
To create a new project, press the menu item ***„Project -> New“***

or

Using this feature, starts a “project creating wizard”. All dialogs (without the first one !) are available after the “configuration procedure” in the “configuration” menu:



First step is to create the base project directory.
Therefore MM6x needs information about the car (i.e. Vehicle ID number), the username and information about the project (i.e. BB and version number).
The max. length is 60 signs each field, special characters are not allowed (based on ISO 9660):

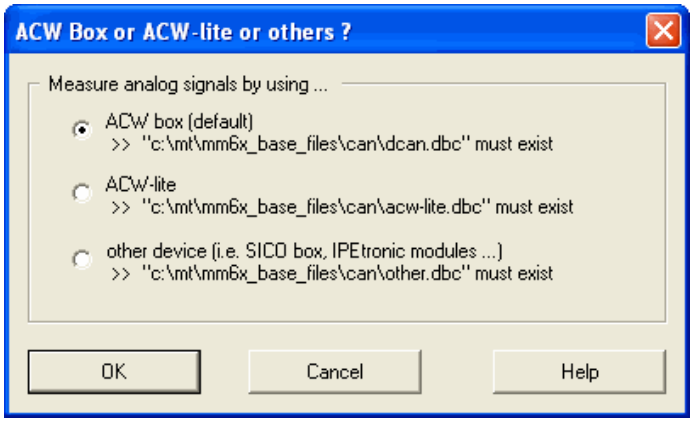


After filling the edit fields and pressing OK you get this directory structure:
C: \ MT \ <car> \ <user> \ <project> \ (***i.e.: c: \ mt \ lb_jf_1234 \ CCEAM3_fischer \ MM6x_demo \ )***

This directory includes, after configuration is done, all your project specific files.
All the settings will be stored in the <project>.MM6 file (i.e. „ ***MM6x_demo.mm6“***)

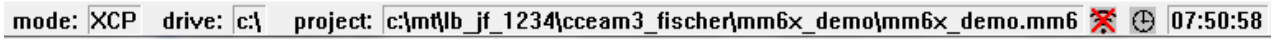
It’s also possible to create projects for existing cars or users. Drop down the listfields therefore and select an existing entry.

If you create the first project for a car, MM6x asks you, which kind of analog measurement hardware is used.
This information is taken to create the base configuration file for the car in the directory
C: \ MT \ <car> \ dcan \ <car>.add ***i.e.: c: \ mt \ lb_jf_1234 \ dcan \ lb_jf_1234.dbc***

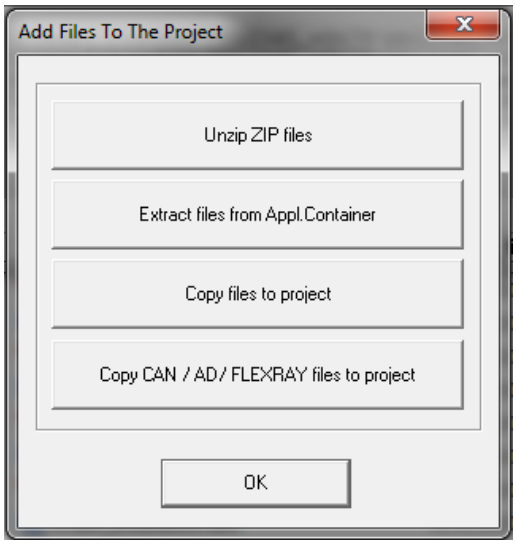


The sensor specific attributes in this file are to calibrate before start working on this project. If you (or another user) creates a new project, based on the same car, the same calibrated file is used for measuring analog sensor, so only the user in a new car, has to calibrate the measurement sensors.

After pressing „OK“ you will see the actual project information in the status bar:



In the next step, MM6x asks you to add files to the project or to the CAN directory. There are different ways to bring in project specific files (ApplicationContainer, A2L, HEX, etc.):



→ zip file content will be extracted 1:1 to the project directory

→ *.appl.zip file will be copied to the project directory, additional the A2L and HEX files are extracted tor the project directory.

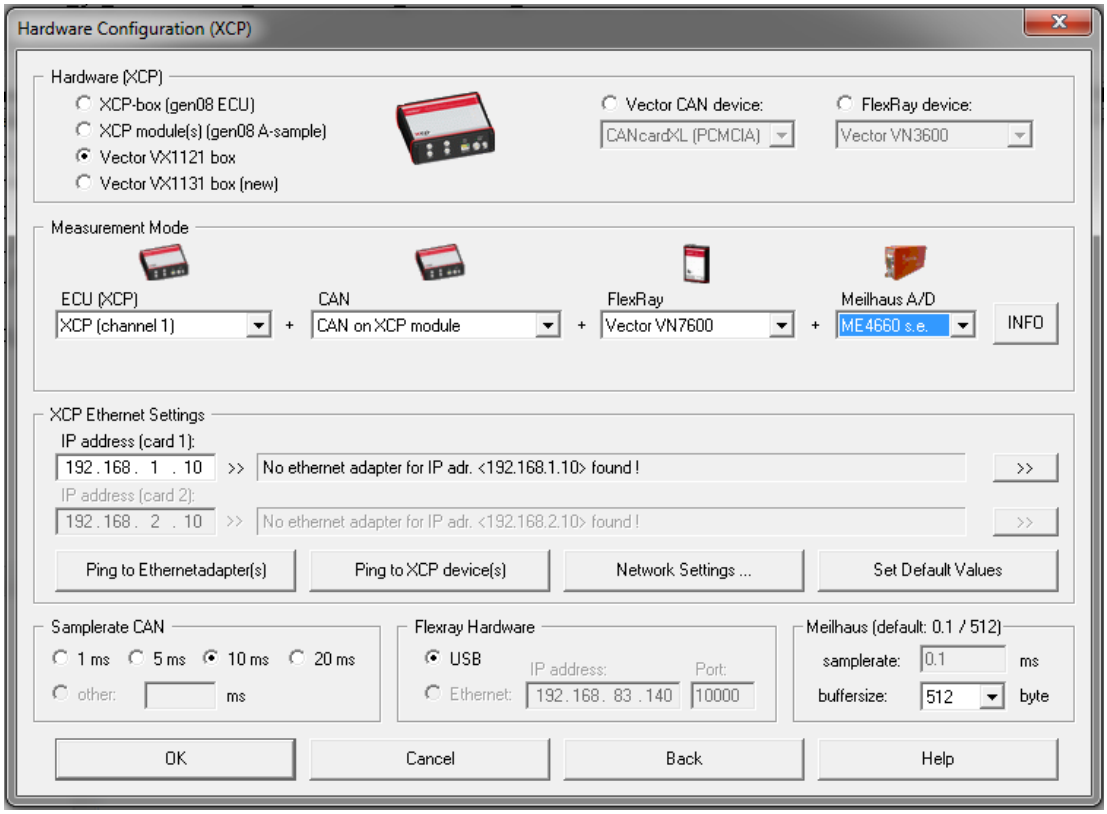
→ selected files will be copied 1:1 to the project directory

→ selected files will be copied 1:1 to the car specific directory

Normally Bosch provides a project specific application container to use in MM6x (i.e. “ApplContainer_BB12345_V123..appl.zip”)
The project specific files, necessary for MM6x, are defined in the ApplContainer’s “container.ini” file.
Necessary files are:

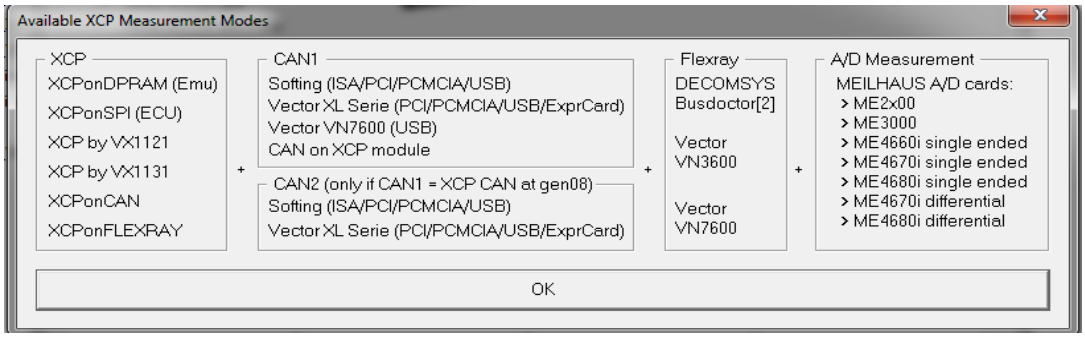
→ A2L … includes all measurable signals and parameters
→ HEX … includes ECU code, to flash to the ECU
→ ODX … includes communication parameters for flash and diagnostics
→ DCM … includes parameter values for parameter modification tools

After copying files to your new project, the ***„Hardware Configuration“*** dialog asks you for the hardware settings of the project:



Hardware (XCP):
All hardware devices for XCPonEthernet / XCPonCAN / XCPonFLEXRAY are listed.

Measurement Mode:
Press the ***„Info“*** Button to see the available measurement modes:



It's possible to measure 4 different signal sources (standalone or in combination):

→ XCP (max. 2 XCP channels - XCP on gen08 and gen09 / XCPonCAN / XCPonFLEXRAY)

→ CAN (max. 8 CAN channels – using Softing, Vector or XCP based CAN hardware)

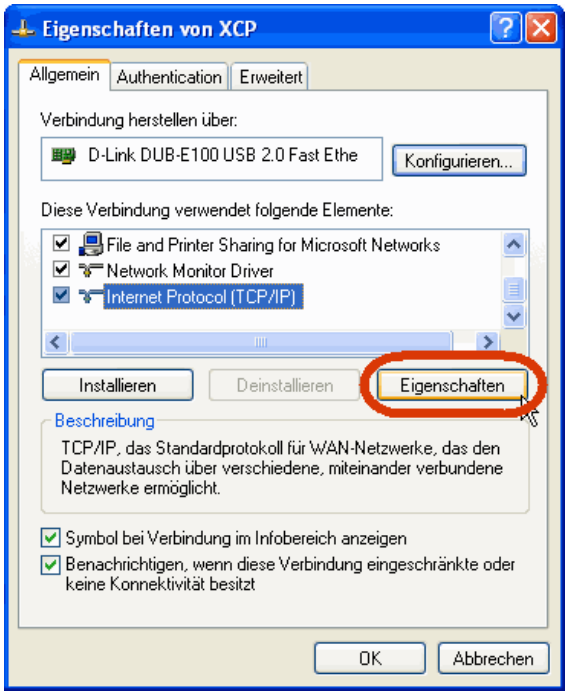
→ FLEXRAY (max. 1 Flexray channel – using Decomsys (Elektrobit) or Vector hardware)

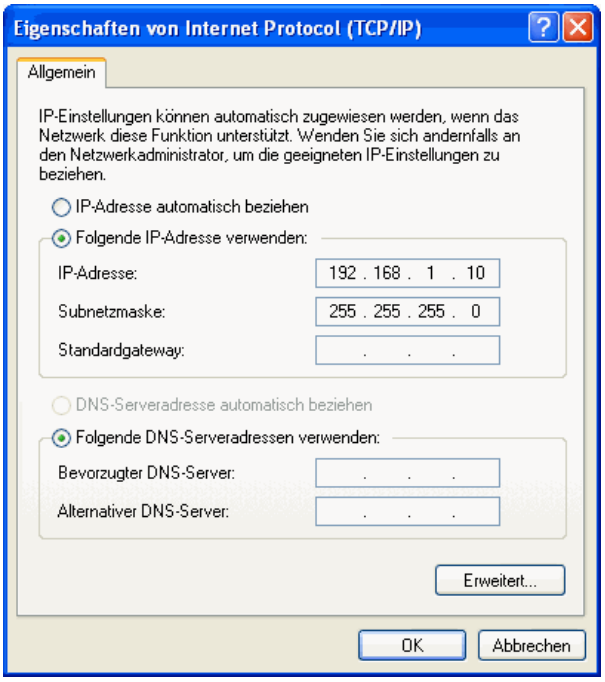
→ Meilhaus A/D (max. 16/32 analog channels – using Meilhaus ME2xxx or ME46x0 hardware)

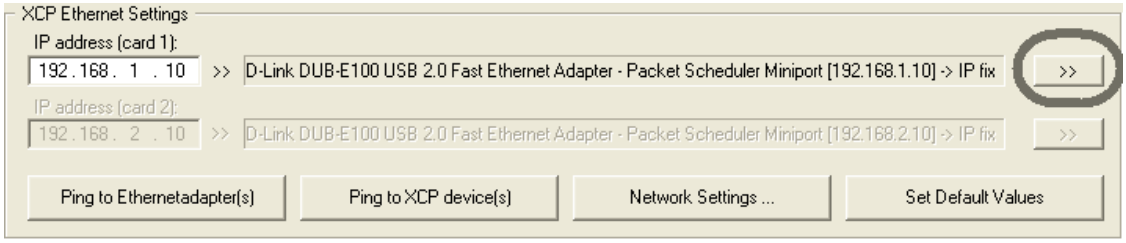
Ethernet Settings:
For XCP data acquisition standard fast ethernet adapters are used.
After installation of a new ethernet adapter for XCP, you have to configure a fix IP address therefore.

Press

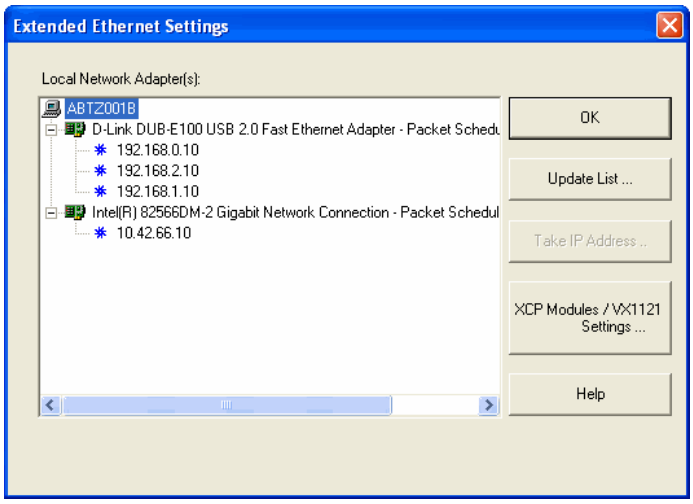
to configure the network adapter for measurement usage (WinXP):







Press this button to select the adapter from a list of ethernet adapters of your system:



Do not use the DHCP configured adapters (they are used for networking). XCP measuring needs a fix IP address (default: 192.168.1.10).
By double-click or right mouse button on the IP address you can select the IP address and its adapter
If „0.0.0.0“ is shown, you have to connect the XCP source and press the „Update List“ Button.

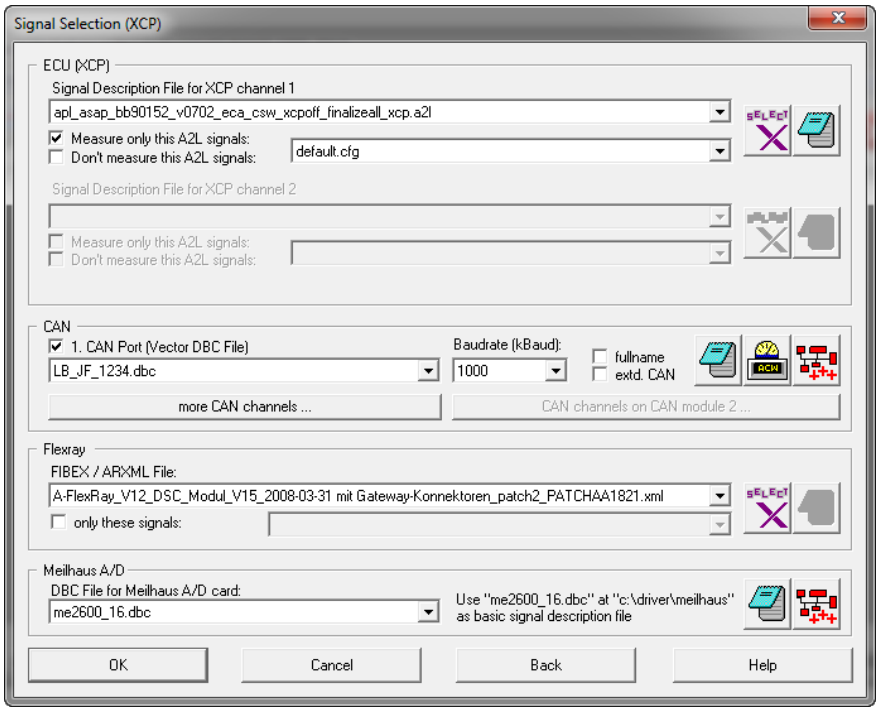
Sample Rate for CAN:
Select the resolution of the CAN signal measuring. Max. resolution is 1 msec.

Sample Rate for Meilhaus A/D:
Meilhaus sample rate is fix 0,1 msec (10 KHz sample rate)

To test the correct function of you ethernet adapter press: Ping to Ethernetadapter(s)

To test the communication to you XCP device press: Ping to XCP device(s)

After the Hardware Configuration you get the ***„Signal Selection“*** dialog:



The activated elements depend on the selected channels in the ***„Hardware Configuration“*** dialog.

ECU (XCP):
Measuring XCP signal source requires an A2L file.
There are different A2L files for:

→ XCP (on Ethernet) … i.e. “apl_asap_bb12345_v1234_..._xcp.a2l”
→ XCPonCAN … i.e. “apl_asap_bb12345_v1234_..._xcponcan.a2l”
→ XCPonFLEXRAY … i.e. “apl_asap_bb12345_v1234_..._xcponflexray.a2l”

It’s possible to measure all signals, described in the A2L file, or only a subset, defined in a CFG file.

To create a CFG file, the tool **“SelectX”** is used. Press therefore the button:

For each XCP channel (max. 2 channels possible !) a separate A2L file is required.

CAN:

The maximum amount of selectable CAN ports depends on the selected CAN hardware:

→ Softing CAN-AC2 (ISA/PCI): *max. 2 CAN channels*
→ Softing CANusb: *max. 1 CAN channels*
→ Softing CANcard (PCMCIA): *max. 2 CAN channels*
→ CAN on XCP module: *max. 4 CAN channels (max. 8 on EKtronic devices – 2x4)*
→ Vector CANcardX/XL (PCMCIA): *max. 2 CAN channels (max 4 devices – 8 CAN channels)*
→ Vector CANcardXLe (Express Card): *max. 4 CAN channels (max 2 devices – 8 CAN channels)*
→ Vector CANcaseXL (USB): *max. 2 CAN channels (max 4 devices – 8 CAN channels)*
→ Vector CANboardXL (PCI): *max. 2 CAN channels (max 4 devices – 8 CAN channels)*
→ Vector VN7600 (USB): *max. 3 CAN channels (max 2 devices – 6 CAN channels)*

For each CAN channel a DBC file is required and the baudrate is to select.
If the CAN bus contains extended CAN messages (29 Bit ID's), the checkbox therefore is to activate.
If "fullname" is activated, the CAN signal name includes CAN ID, message name and signal name, i.e. "12.ECU_ESP1.WheelSpeedRR"

Pressing the button starts the graphic user interface software for the ACW / ACW-lite boxes, where you can edit or create DBC files especially for ACW / ACW-lite boxes.

The button starts the ***„DBCEDT32"*** tool, which is used to edit the selected DBC file.

Flexray:

If you measure on the FLEXRAY bus, a FIBEX XML (<= V 3.0) or an Autosar System Template (*.arxml) file is necessary.
It's possible to measure all signals, described in the A2L file, or only a subset, defined in a CFG file.

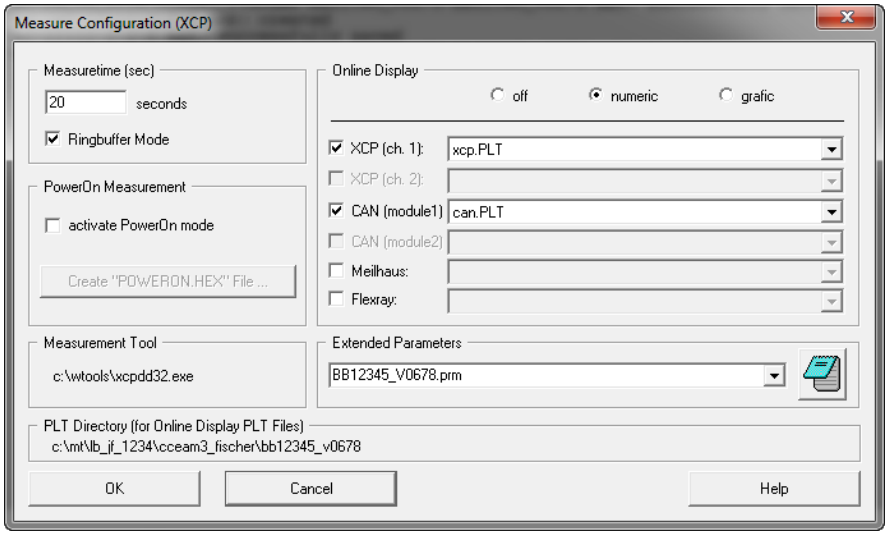
To create a CFG file, the tool **"SelectX"** is used. Press therefore the button:

Meilhaus A/D:

Measuring high resolution analog channels, requires a "special" formatted DBC file.
Please use "me2600_16.dbc" (available at "c:\driver\meilhaus") as basic file.

The button starts the ***„DBCEDT32"*** tool, which is used to edit the selected DBC file.

Next step is the ***„Measure Configuration“*** :

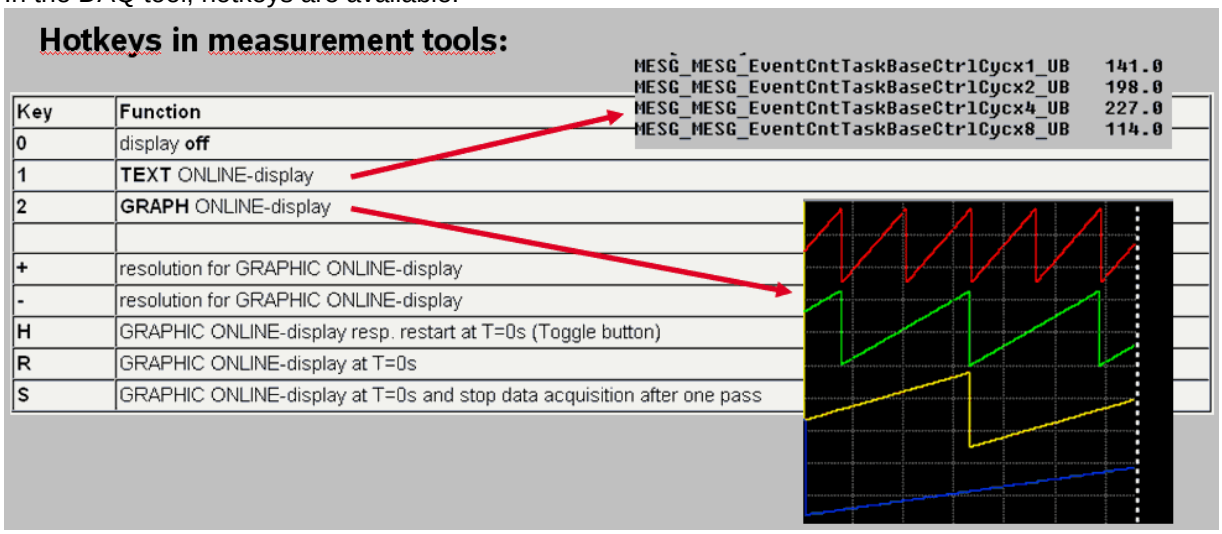


Measuretime:
Here you can select the ***„Measure Time“*** and the ***„Mode“***. Default setting is 20 sec ringbuffer mode. That means the measurement is storing the last measured 20 sec after stop measuring.
If you deactivate the ringbuffer mode, the measurement stops automatically after 20 sec.

PowerOn Measurement:
If you want to measure PowerOn procedures see the documentation in the MM6x online help !

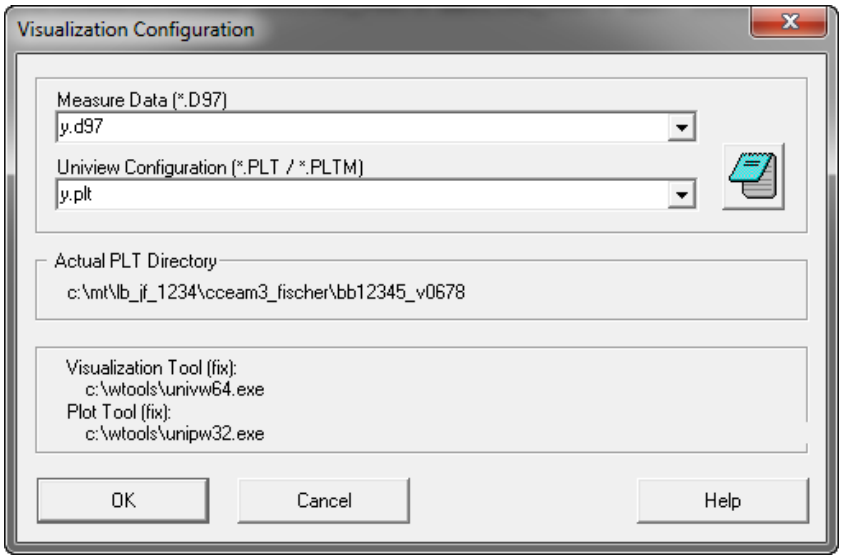
Online Display:
It's possible to activate a numeric or graphic online display. For each channel, you want to use the online display, a separate – Uniview created – PLT script is required.

In the DAQ tool, hotkeys are available:



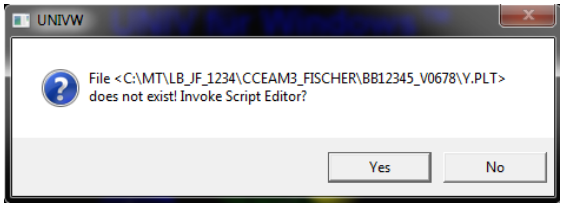
Extended Parameters:
In the extended parameter file, you can add entries like Start-/Stoptrigger, etc.
For details to the measure parameters take a look in the Help File of the XCP DAQ tool ("XCPDD32.CHM").

Next step is the ***„Visualization Configuration“***:



You can select a name for the measurement data file (*.D97) and a configuration file for Uniview (*.PLT). Default names are ***„y.d97“*** and ***„y.plt“***. During the project configuration no file exists.
You can also define another D97 and PLT name.

The „y.plt“ file is necessary for the Uniview configuration. At the first time, starting Uniview, you will get this message:

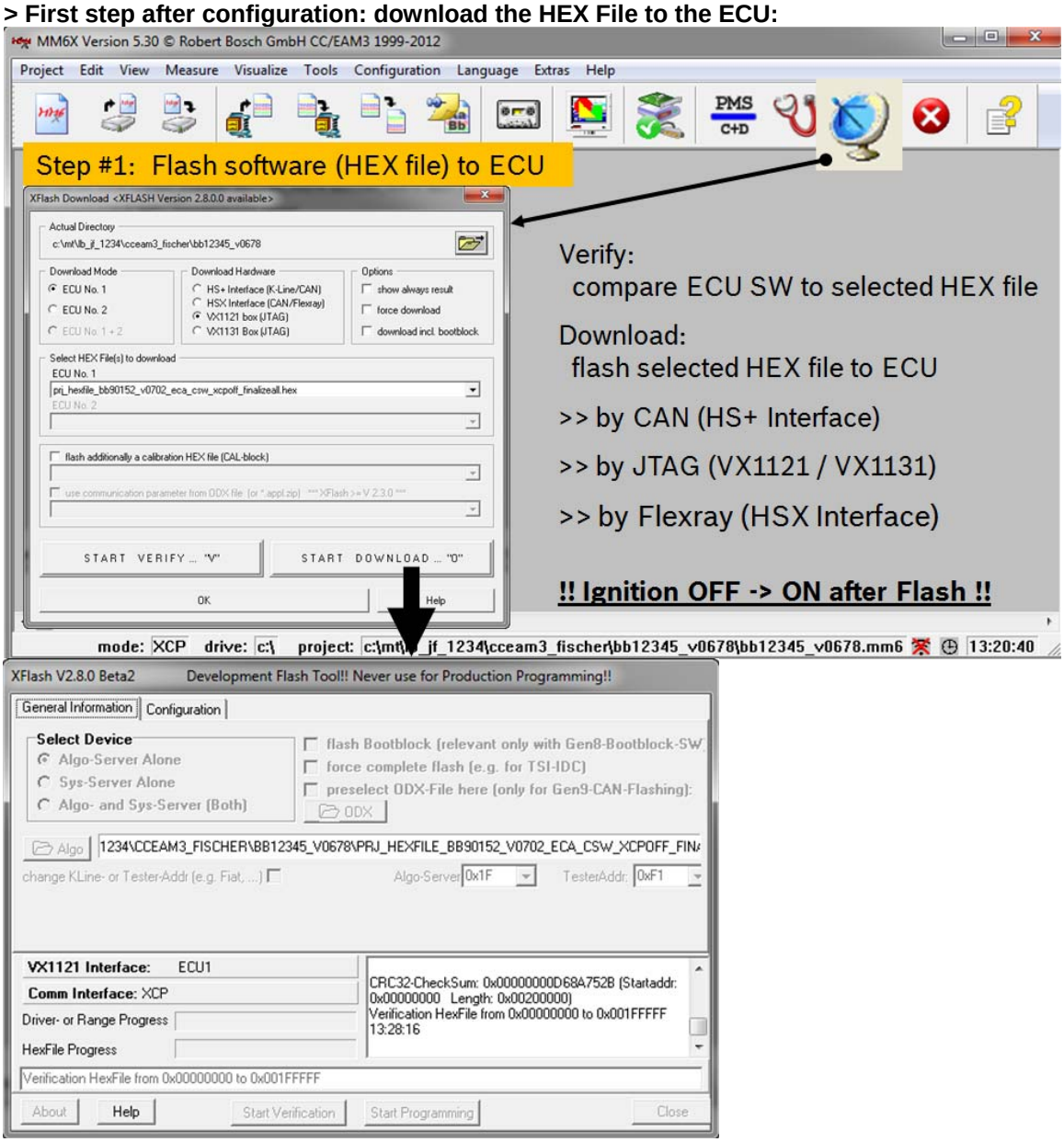


Pressing „YES“ starts the Uniview PLT Script Editor. Using this editor, you can select a subset of signals (and set attributes like colour, min, max, etc.) from the D97 file and store it in a PLT script.
Useful is to take the default name „y.plt“ or build different PLT files for different signal groups.

It’s also possible to have a central directory for PLT files, which is project independent (for each new project the same: “global” or only “external” for the actual project).

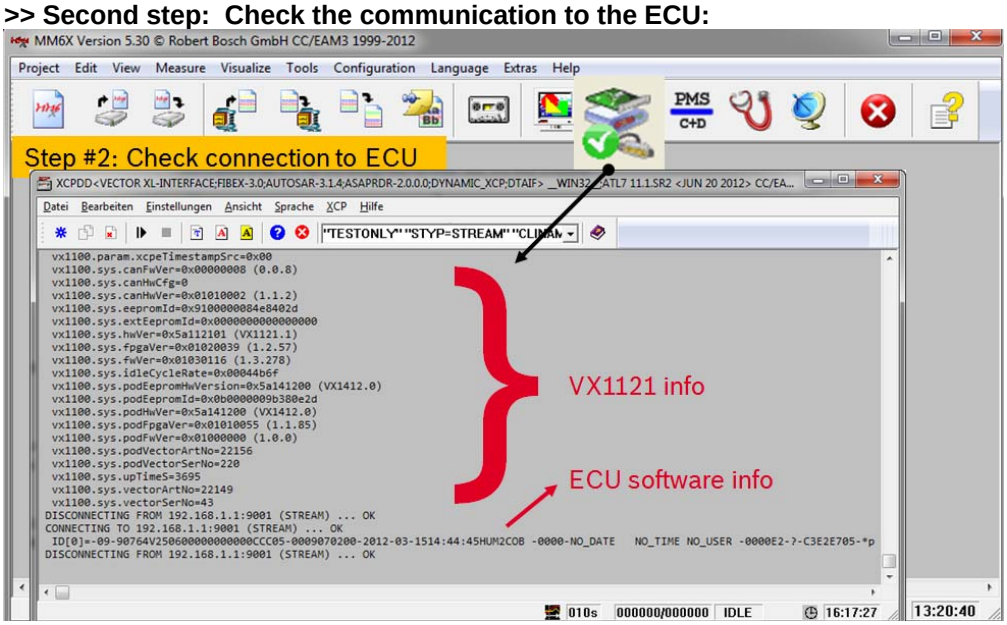
Now the project configuration is completed and you can start working now !!

> First step after configuration: download the HEX File to the ECU:



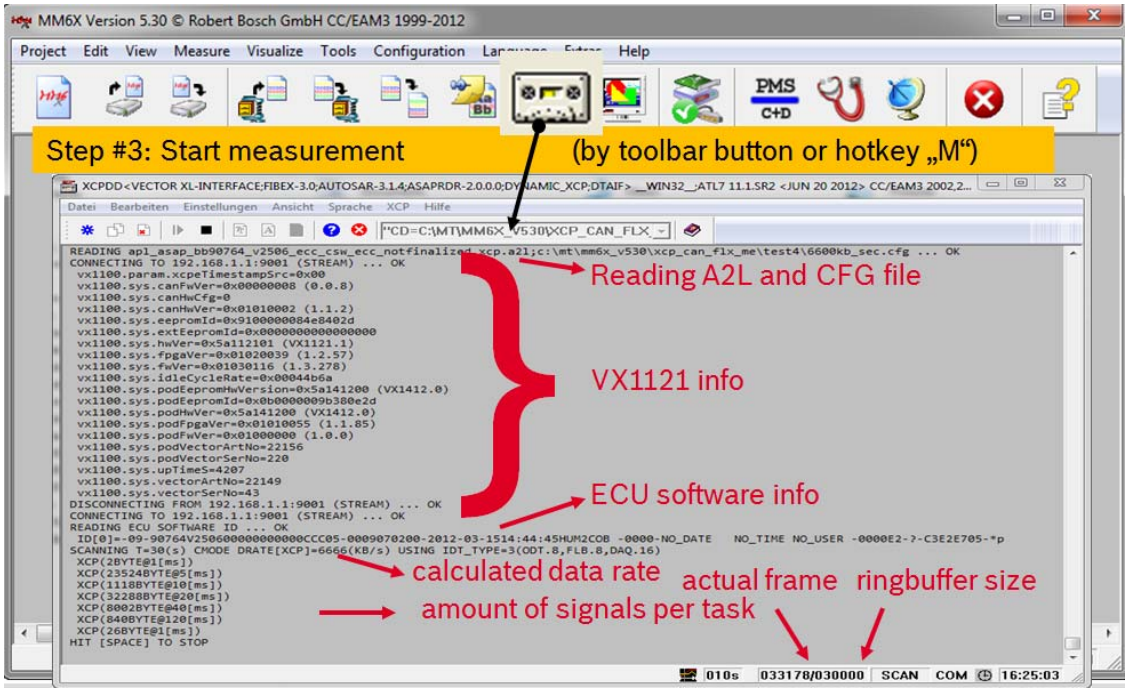
Turn ignition off and on and check, if the software is working (ABS/ESP lamp off !).

>> Second step: Check the communication to the ECU:

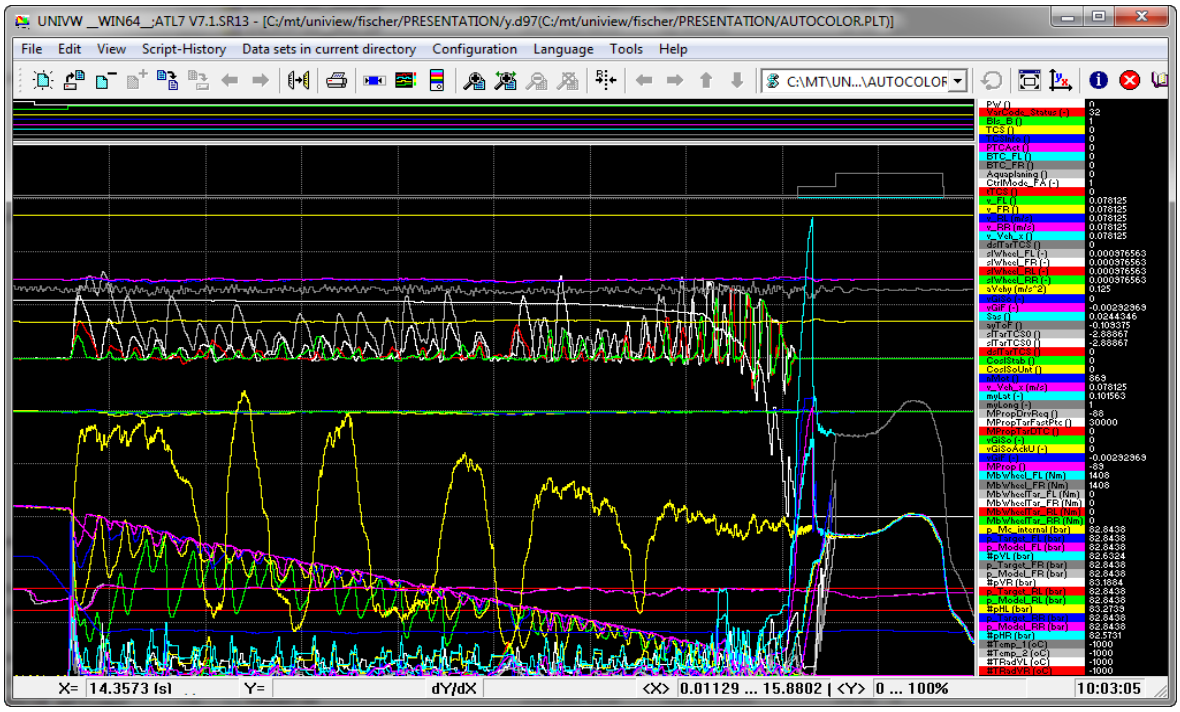


Here you can see an example on a generation09 ESP project using Vector VX1121 as XCP measurement interface. If no error message pops up, everything is ok !

>> Third step: Start measuring:



End measuring by pressing any key, and open Uniview to visualize the measure:



More information about MM6x is available in the document: „**MM6x_Basics.PDF**“

Also MM6x and all its used sub tools contain a very detailed online help.