Controlling the IM6/6eX by LabView

Normally, the *IM6/6eX* systems will be controlled by the Thales software package which is optimised for measuring and analysing electrochemical data. In addition, the IM-systems are prepared to be controlled by an external software using the TCP/IP protocol.

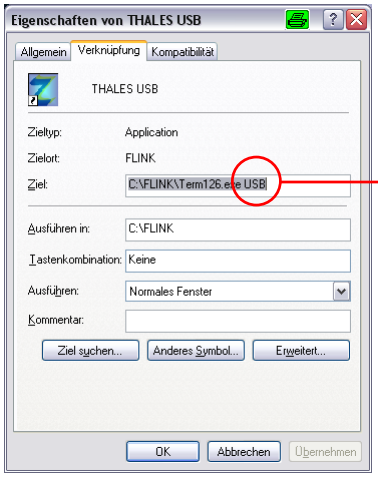
For that purpose, a TCP/IP network card has to be installed on the IM-PC. A dll-file is used to interface between an external software (e.g. *LabView*) and the IM interface. A SCRIPT procedure running on the IM will call the specific procedures for each of the commands and parameters.

In order to set up a remote system with *LabView* under *WindowsXP*, proceed as follows:

1. Make sure that the TCP/IP protocol is installed and active on your PC.

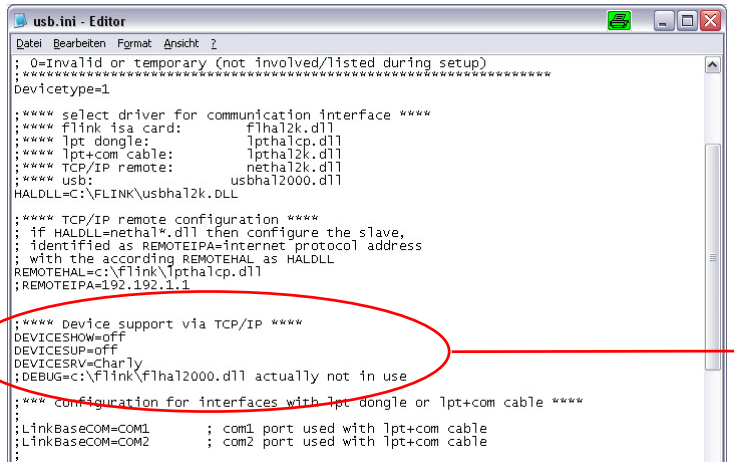
2. Make sure that *LabView* is installed properly on your PC.

3. Right-click on the *Thales* icon on your desktop and select *Properties*. Check which .ini file is in use. This entry you will find in the *Target* line after the entry “c:\flink\term124.exe” (Example: “c:flink\term124.exe USB” means that the “usb.ini” file is in use.



This is the name of the .ini file used by the Thales driver (in this example usb.ini)

4. Open this .ini file which is located in the c:\flink folder of your computer hard drive. Set the parameter “DEVICESUP=on” (section “Device support via TCP/IP”). Save and close the editor window.

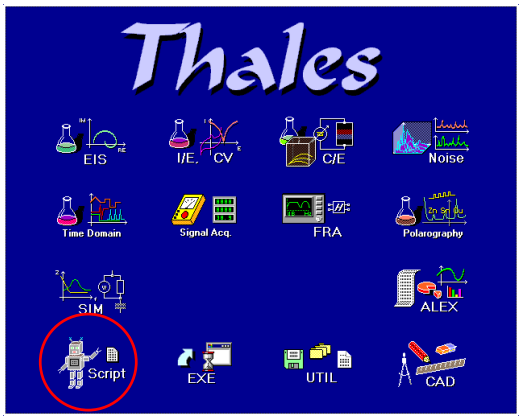


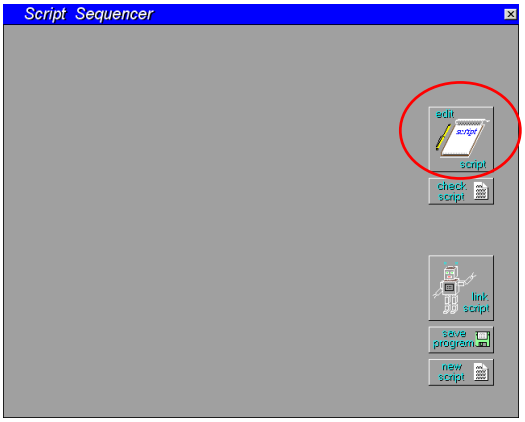
TCP/IP settings in the usb.ini file. Set the parameters as follows:

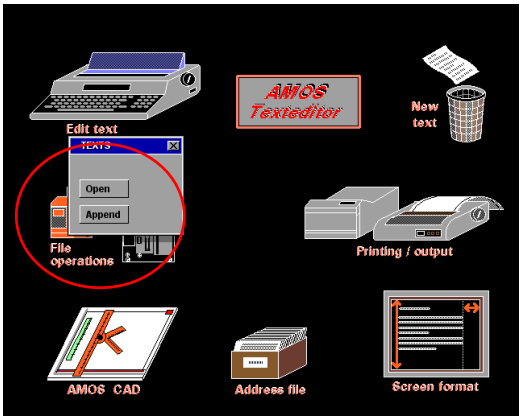
DEVICESUP=on
DEVICESRV=Charly
(Instead of Charly put in the server name here)

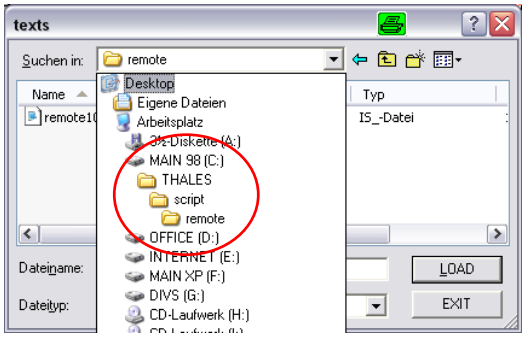
Leave all other settings as they are !
Save the edited .ini file and close the *Notepad*.

5. Start the Thales application and load, link & run the SCRIPT named *remotexx.is_* (xx = version number) in the folder c:\THALES\script\remote:

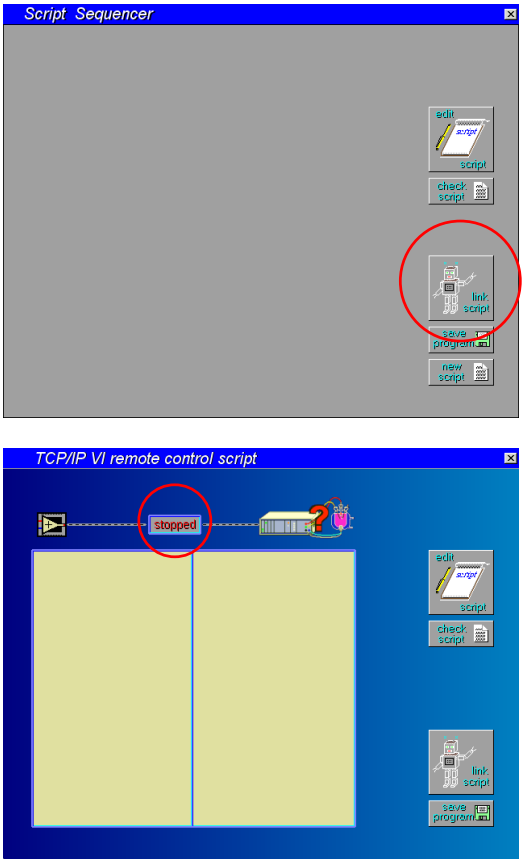






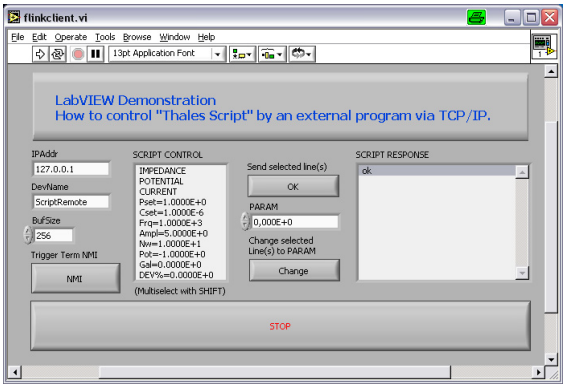


Select the file *remotexx.is_* (xx = version number, example *remote10.is_*) and load it. Click the middle mouse button to return to the SCRIPT main page.



At this stage, the communication indicator reads stopped because the communication is not set up so far. It will start as soon as the other end of the "communication line", the *LabView* VI or another controller software is started.

6. Create a short-cut of the file "c:\thales\vi\im\flinkclient.vi" on your desktop and start it. *LabView* will open and load the VI. Set the IP address according to the TCP/IP settings of your computer.



7. Run the VI procedure by clicking on the "RUN" button. In the Thales script procedure the communication indicator with change from *stopped* to *run*. Now you are able to remote control the IM system from *LabView*.

The following commands/variables are available in the demo

Assignment	Description	Range
Pset	Set potential [V]	-4 to +4
Cset	Set current [A]	IM6 : -3 to +3 IM6e: -1 to +1
Frq	Set frequency [Hz]	10^{-5} to $8*10^{6}$
Ampl	Set AC amplitude [mV]	0 to 1000
Nw	Set number of AC periods	1 to 99
Pot	ECW on/off state	0 = off -1 = on
Gal	ECW galvanostatic/potentiostatic mode	0 = potentiostatic -1 = galvanostatic
DEV%	logical potentiostat number	0 = main pot 1 – 16 = external pots (only if available)

Function	Description
POTENTIAL	Requests potential [V]
CURRENT	Requests current [A]
IMPEDANCE	Requests impedance (real,imaginary)

Examples

```
Pset=1.5          'sets potential to 1.5 V'
Frq=1000          'sets frequency to 1 kHz'
Pot=-1            'switches potentiostat on'
DEV%=5            'selects external channel #5'
IMPEDANCE         'returns e.g.: 10.001e2,4.54'
```