Controlling the IM6/6e through TCP/IP

Normally, the IM6/6e 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, proceed as follows:

1. Make sure that the TCP/IP protocol is installed and active on Windows
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.
4. Open this .ini file which is located in the c:\flink folder of your PC hard drive. Set the parameter “DEVICESUP=on” (section “Device support via TCP/IP”). Save and close the editor window.
5. Start the Thales software and load and run the SCRIPT named “remotexx” (xx = version number).
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 and run the VI.
7. Start the VI procedure by clicking on the “RUN” button.

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'