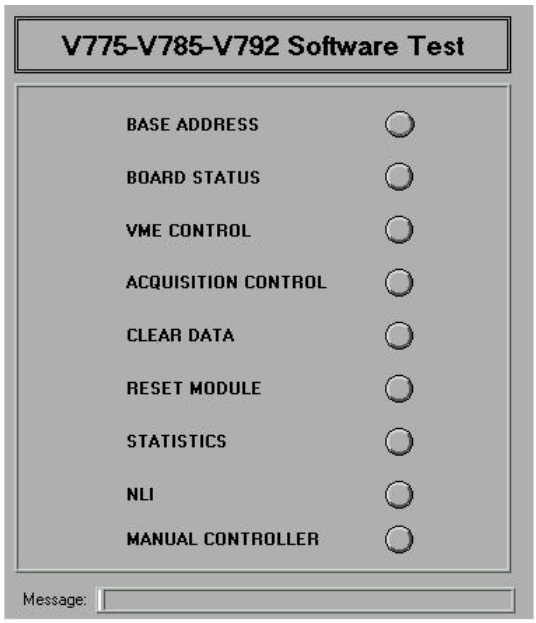
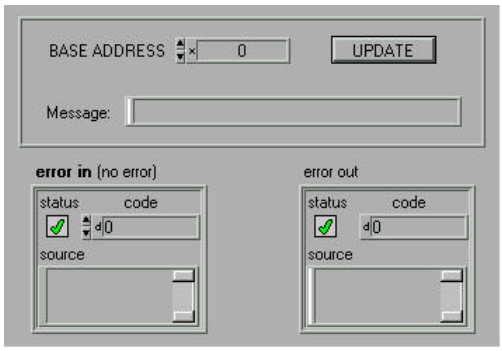
V775-785-792 LabView Test Software Description

The LabViewX (where X is the LabView release) directory contains all the test software for the Models V775, V785 and V792; available for both a National Instruments VME-MXI interface and a CAEN V718 VME Controller. The software is contained in the following sub-directories:

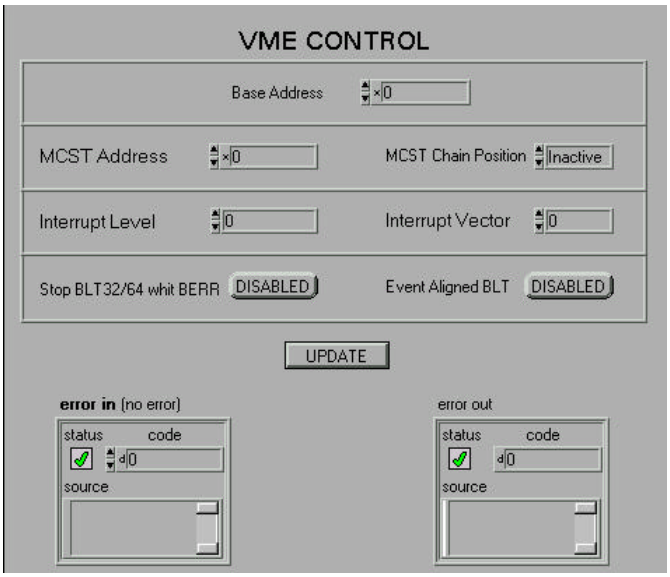
- **V775Test**: it contains all the Test VI, in particular **V775SoftwareTest.vi**, the shell which allows to call the other VI's; in order to perform this operation is necessary to insert in Configuration\lib_CONF.vi the working path (it is better to save this path as a default setting). Each VI can be used, if not otherwise specified, for the three V775, V785 e V792.



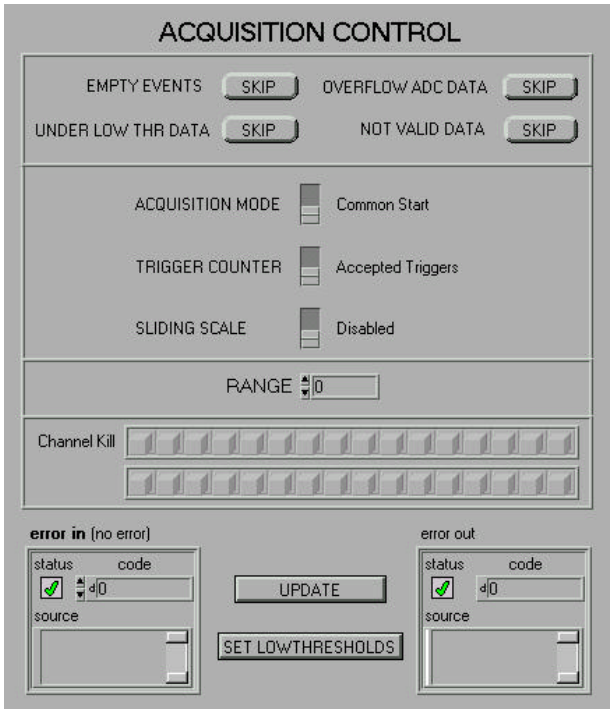
- **BASE ADDRESS**: it opens **V775ChangeBaseAddr.vi**, the VI which allows to set the base address (A32) for VME accesses (default setting: EE000000); this can be done even by writing the desired base address in Configuration\v775_CONF.vi and saving the updated value as the default setting.



- **VME CONTROL**: it opens **V775VmeControl.vi**, the VI which allows to display and then set some parameters for VME accesses.



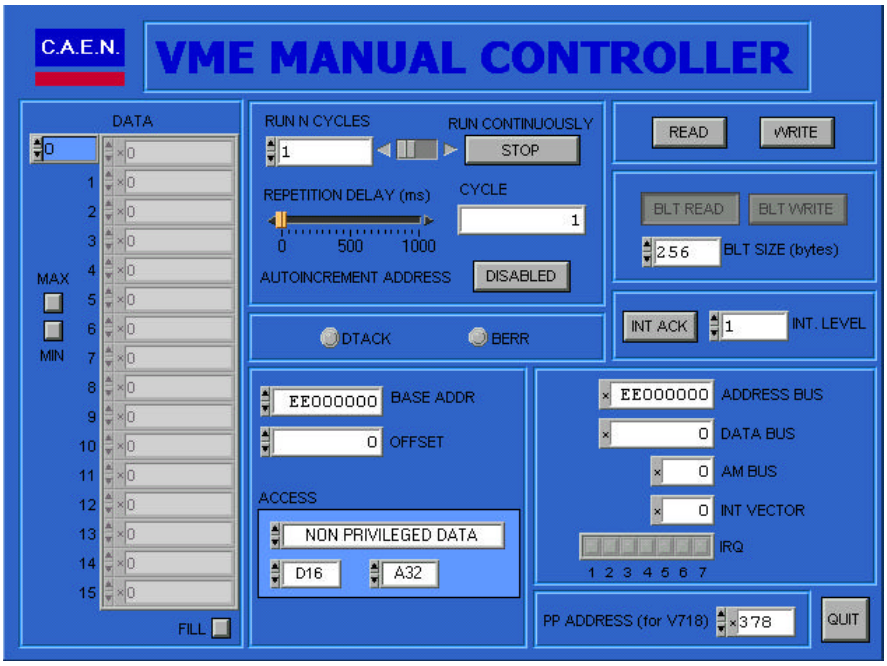
- **ACQUISITION CONTROL**: it opens **V775AcquisitionControl.vi**, the VI which allows to display and then set some acquisition parameters.



- **STATISTICS**: it opens **V775Statisctics.vi**, the VI which allows to acquire data from all the module's channels; this VI also calculates and displays the average value and the standard deviation of each channel's acquired data.

- **NLI**: it opens one of the VI's for the integral non-linearity of a module's channel (**VxxxNLI_OneCh.vi** for the Mod. Vxxx); this test requires the use of a CAEN DAC (V551B) for both the V785 and the V792 and the use of a CAEN Time Calibrator (V678) for the V775.

- **MANUAL CONTROLLER**: it opens **Manual.vi** the VI which allows to perform individual VME accesses.



V775Test features even VI which cannot be run from the shell; some of these include particular properties because they have been produced in order to perform non-standard tests. They are listed as examples:

- **V775ReadEvent.vi**: it controls that at least one event were present in the module, then it displays the event as a 32 channel array. This VI is used for all the acquisition operations from the models V775,V785 and V792.
- **V775_V678NLI.vi**: it calculates and displays the NLI of all the V775 channels, by using the V678 (CAEN Time Calibrator).
- **V775Hist.vi**: it draws the histogram related to the data of one channel; it has been used for a test with the Time Calibrator as a source: it allows to detect the histogram's peaks and to calculate the NLI.
- **V792Hist_1pk.vi**: it acquires a programmable number of events; it has been used for a test of standard deviation: it collects and displays an interval of data around the first peak related to one channel.
- **V792Hist.vi**: it acquires a programmable number of events and it saves on a file the read out data histogram, channel by channel.

- **V775Library**: it contains all the modules' utility VI's and all the data processing VI's.
- **V678Library**: it contains all the Mod. V768 (used for testing the V775) utility VI's.
- **ManLibrary**: it contains all the Manual Controller utility VI's.
- **CONFIGURATION**: it contains the VI's which allow to define parameters such as the tested board's, the auxiliary boards' (used for the integral non-linearity test) base address and the limits which have to be met in order to pass the tests.