

NEC Debugger for 78K0 and V850

Abstract

This document describes the usage of the NEC debugger as target system. It covers the 78K0 as well as the V850 debugger.

Please note: The NEC debugger cannot handle names of executables longer than a certain size (e.g. path and file name longer than 120 characters). The actual name of the executable depends on the root directory of the PDB file, the project, module and test object name. In case of problems, choose a shorter root directory or shorter project/module names.

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Introduction

The communication between TESSY and the NEC debugger is based on the tcl interface of the debugger. The kind of invocation of the script has changed with TESSY version 2.6.21. The newer TESSY versions start the debugger automatically and they pass the script to be executed on the command line to the NEC debugger.

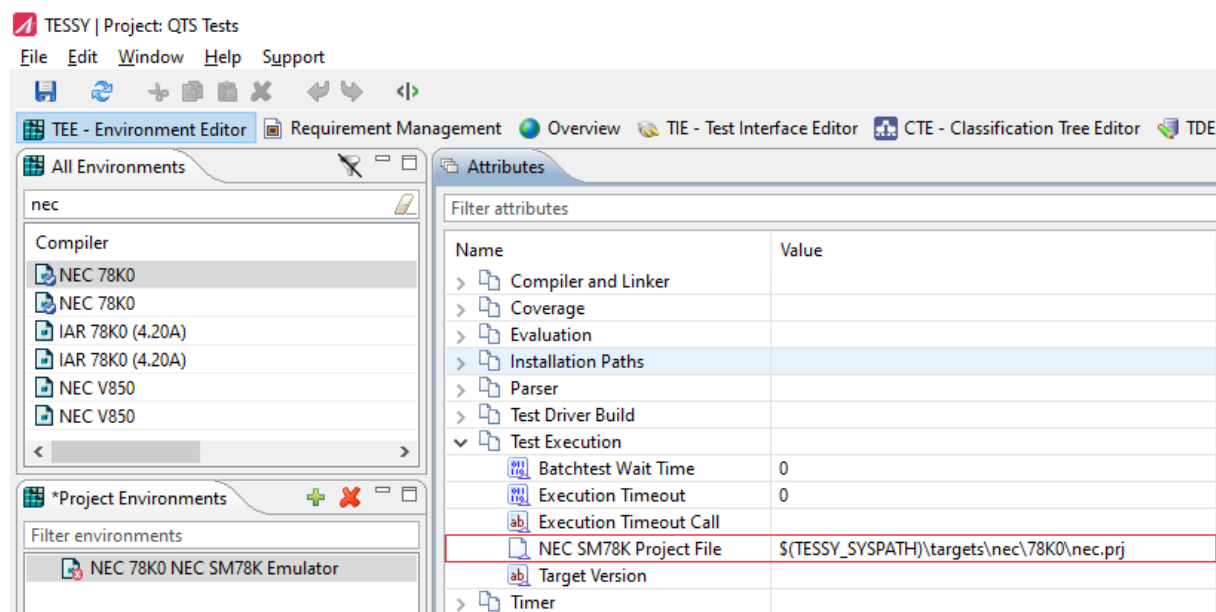
The older TESSY versions (before 2.6.21) required some setup of the tcl script into the installation folder of the NEC debugger: This is not necessary any more.

Running the Test

The NEC debugger will be started automatically from TESSY.

NEC Project File used for Debugging

TESSY passes a project file to the NEC debugger when started from the command line. This project file is specified within the **NEC SM78K Project File** attribute of the TESSY environment.



There are two different files available, one for the simulator and the other one for the emulator:

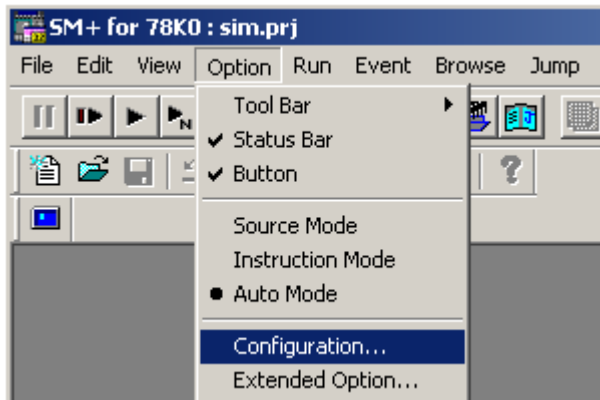
- sim.prj
- nec.prj

These files (and related files within this directory) contain settings for the CPU and may be adapted to your specific CPU setting:

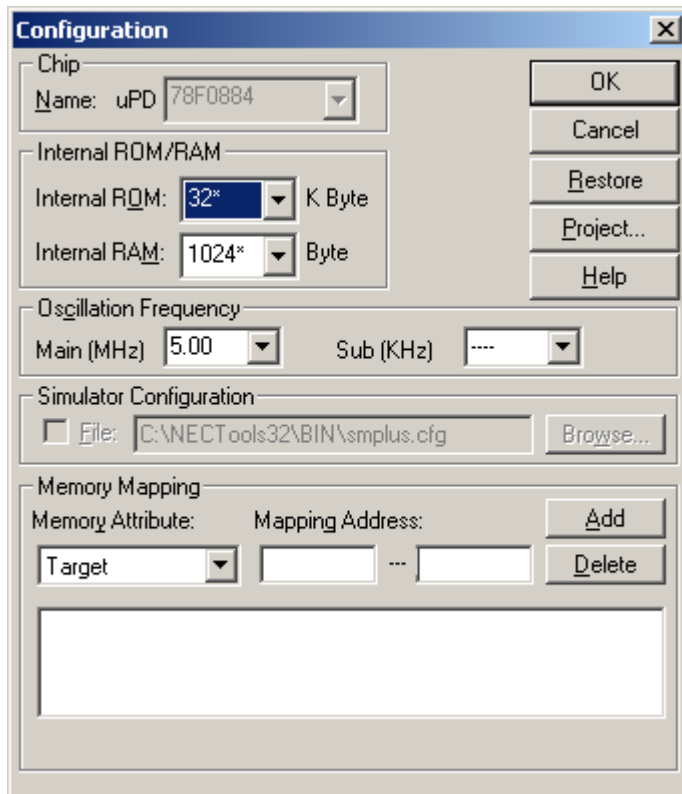
Content of sim.pri:

```
1 [Project.ID]
2 Ver=200
3 Target=SMKOH32
4 [Configuration]
5 Chip=uPD78F0881
6 Internal Rom=32KB
7 Internal Ram=1024B
8 Clock=Internal Fixed
9 SimCfgUseFile=OFF
10 SimCfgFile=\NECTools32\BIN\smpplus.cfg
```

You may change the settings of these files within the SM78K debugger directly. Select **Configuration** from the **Option** menu to get a file dialog where you can select the NEC project file.



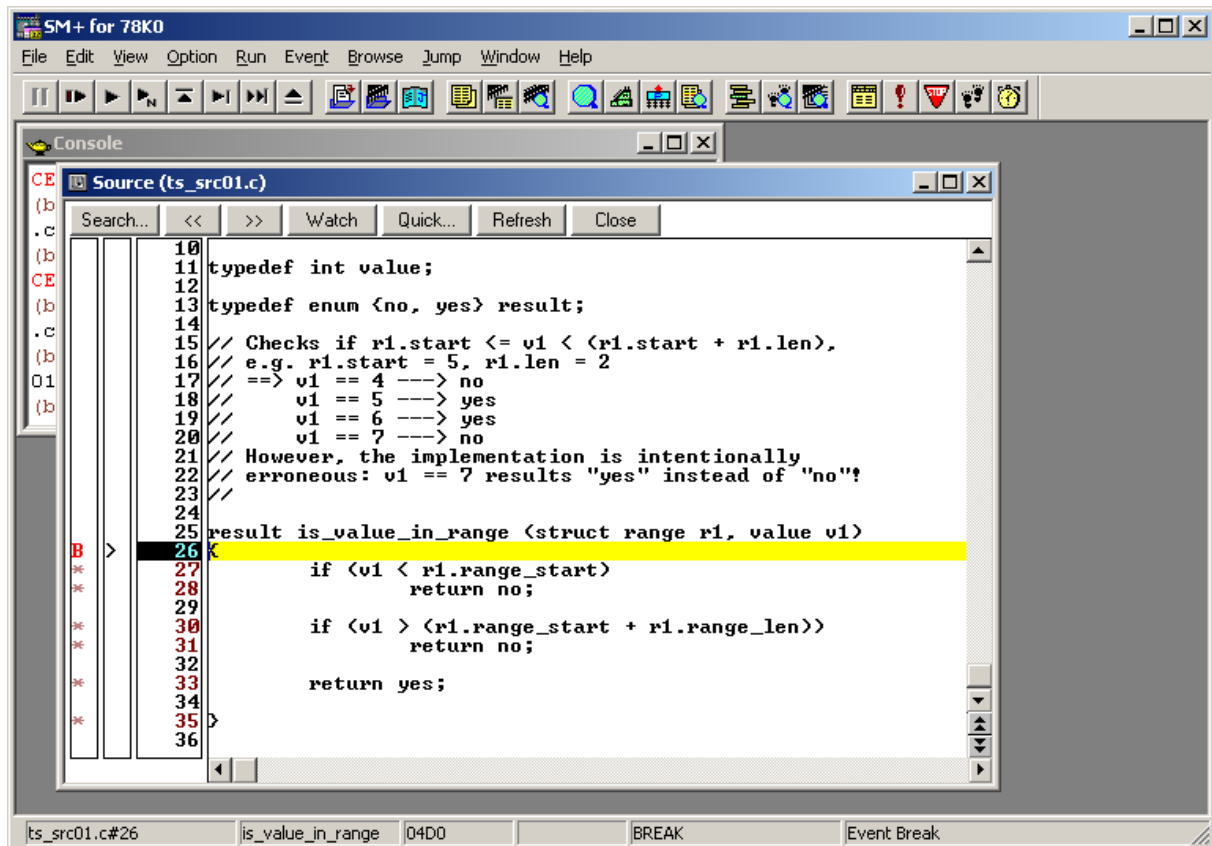
The settings of this file will be loaded into the **Configuration** dialog and you may change any of the settings:



Save the project file and exit the SM78K debugger. The settings within the **Configuration** dialog will be used for all further test executions, if you select the respective file within the **NEC SM78K Project File** attribute as described above.

Debugging the Test object

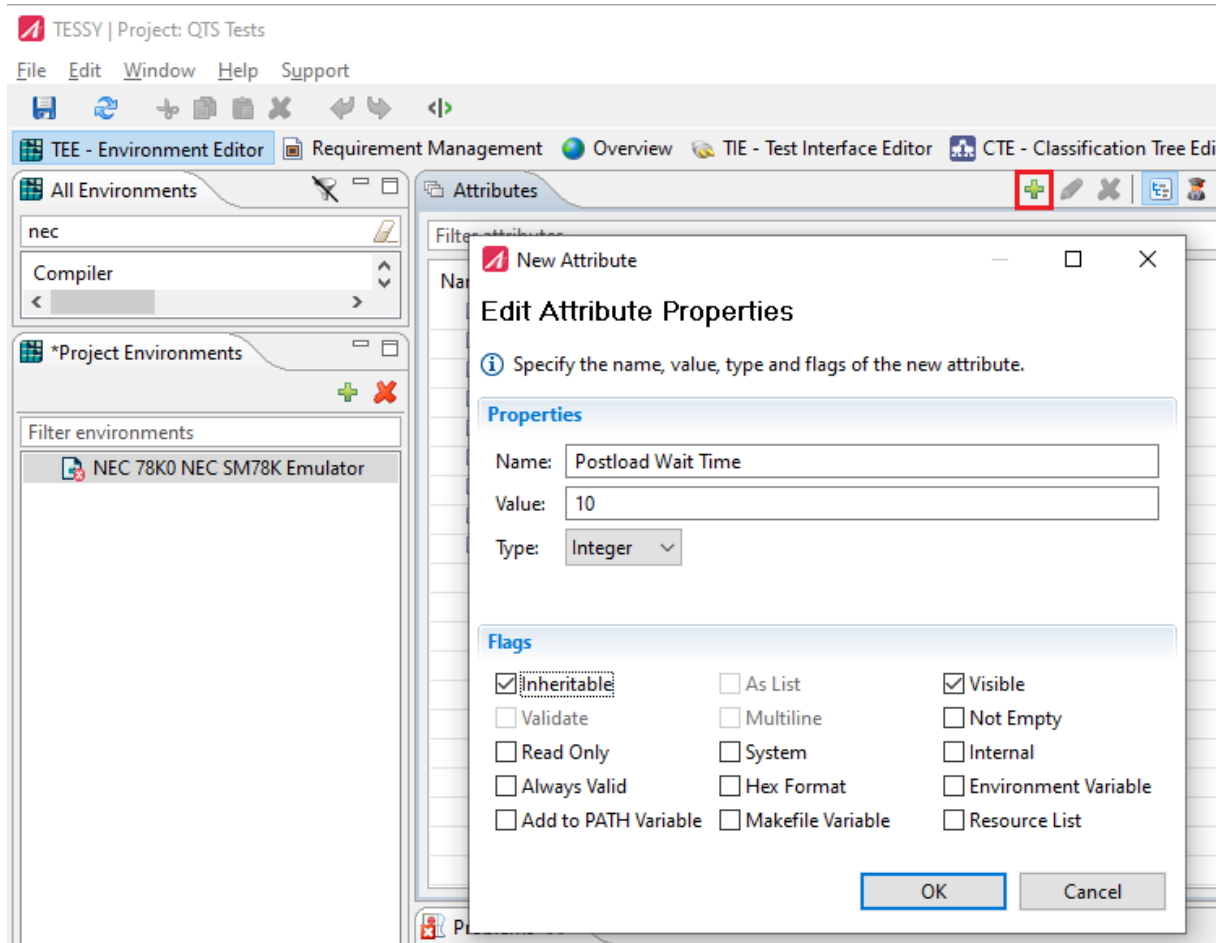
Use the **Source** entry of the **Browse** menu to open the source window of the NEC debugger (if it is not already open). You may now step through the test object or continue test execution using the **Go** command.



Troubleshooting

Wait Time after Download

In case of problems when loading the binary file during test execution, you may change the waiting time after download via the attribute **Postload Wait Time** within the module properties or within the **Environment Editor** like shown below:



The value is given in seconds, the default value is one second. There may be more time required, if the binary file gets bigger or if the download and symbol analysis take longer. In this case add a **new** attribute "Postload Wait Time" of type "Integer" within the Environment Editor.

Connection Problems

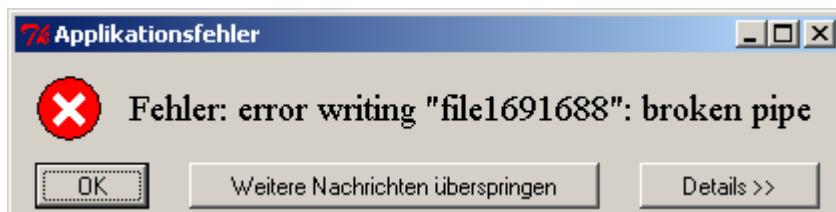
If you closed and restarted the NEC debugger window and TESSY fails to connect subsequently when running the test, you may need to stop the "ts_netrelayd.exe" process. This process provides socket communication mechanisms between TESSY and the NEC debugger and may block further connections, if the NEC debugger was closed before.

Start the Microsoft Windows task manager, select the "ts_netrelayd.exe" process and press the kill process button.

Normally, this process will be stopped when the NEC debugger is closed. But in case there was no test run and though no connection between the debugger and TESSY, this process will continue running after closing down the NEC debugger. There may even survive some NEC debugger subprocesses causing errors on restart of the debugger. Simply kill the related processes in this case.

Start TESSY Server Error

If you get errors within the NEC debugger like shown below, this may indicate, that the "ts_netrelayd.exe" process is still running like described above.



Such error messages may also appear, if there are configuration problems with the debugger. Contact TESSY support in this case.