

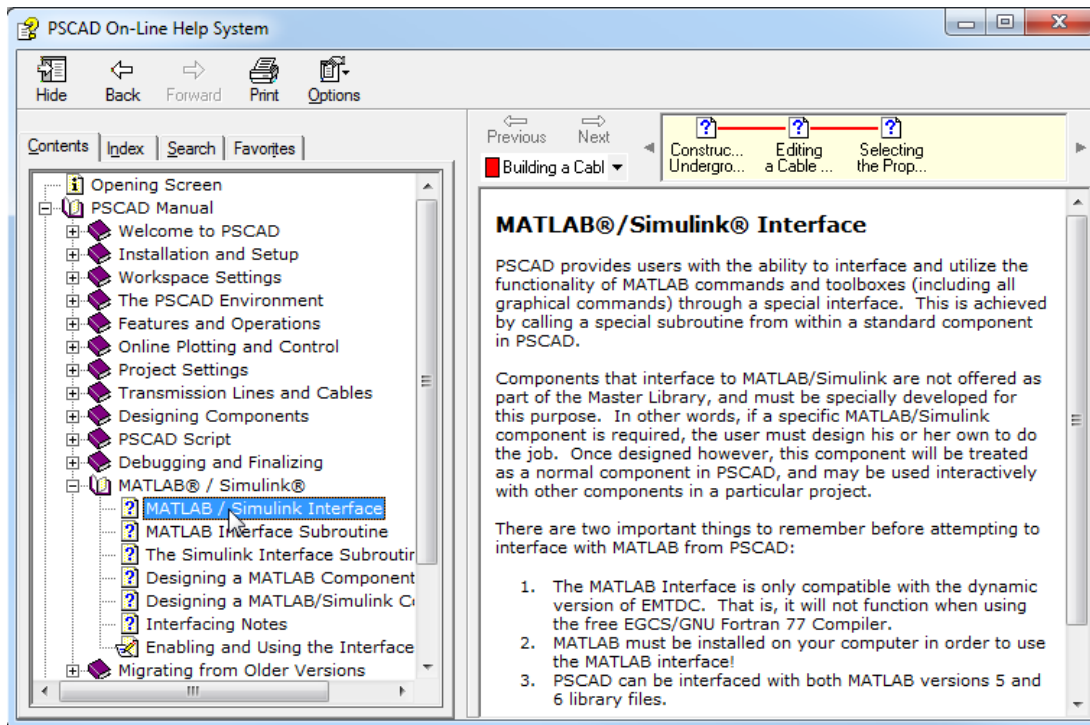


## Basic Instructions for PSCAD-MATLAB Interfacing

### 1. PSCAD Help

Detailed Matlab procedures may be found in the PSCAD User's Guide or PSCAD On-line help, which may be accessed by pressing F1 in the PSCAD workspace.

Under the Contents tab, goPSCAD Manual | "MATLAB® / Simulink®"





## 2. Setup

Before beginning, please verify that the following requirements are met on your computer:

1. PSCAD-MATLAB interface is supported with the PSCAD Professional Edition and with the PSCAD Educational Edition.

**Note**

This interface is not supported with the PSCAD Free Edition.

2. The task of creating new components is supported with the PSCAD Professional Edition and the PSCAD Educational Edition.

**Note**

Creating new components is not supported with the PSCAD Free Edition.

3. MATLAB must be installed prior to PSCAD. If PSCAD was installed prior to MATLAB, PSCAD will likely need to be reinstalled so that it recognizes the links and dependencies to MATLAB, its libraries and paths.
4. A commercial compiler, such as the **Intel Fortran Compiler** (preferred) is required. The Intel Fortran Compiler also requires a suitable version of Microsoft Visual Studio.

**Compaq Visual Fortran 6.0** or higher may be considered, however, this software has not been developed for years, so there might be some software compatibility and installation issues.

**Note**

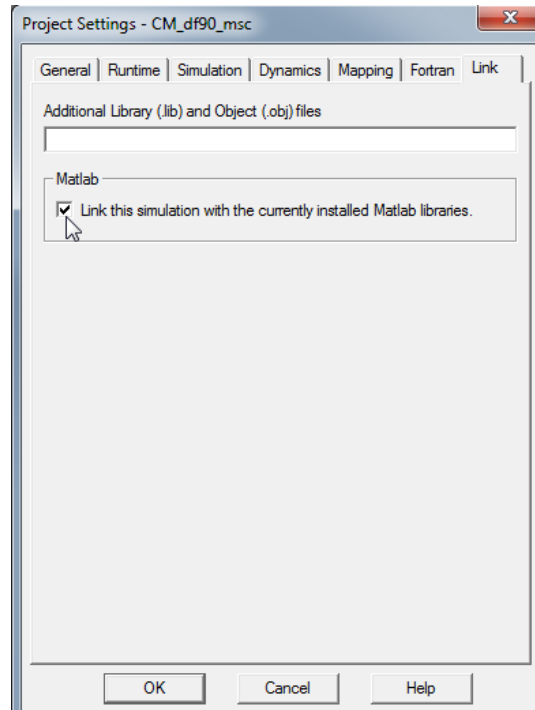
The MATLAB interface feature is not supported by the **GNU Fortran compiler**, which is provided with your PSCAD package.

5. A user-defined component must be created by the user, to use the MATLAB interface feature; a "MATLAB Interface" component is not available in the PSCAD Master Library.
6. Before starting to run a PSCAD-MATLAB interface simulation, PSCAD should be directed to the MATLAB shared library folder. The shared libraries of MATLAB R200X are located at:

`%MatlabRoot%\extern\lib\win32\microsoft`

In order to specify the above path for PSCAD, select Version 5 under Workspace Settings | MATLAB | Installed Version. Then enter the **complete** path of the shared libraries. (e.g. C:\Program files\Matlab\R2008a\extern\lib\win32\microsoft) under 'Library Path'.

7. If you are creating a new model which uses the MATLAB interface function, your model must be linked to the installed MATLAB libraries by activating the corresponding checkbox on Project Settings | Link:



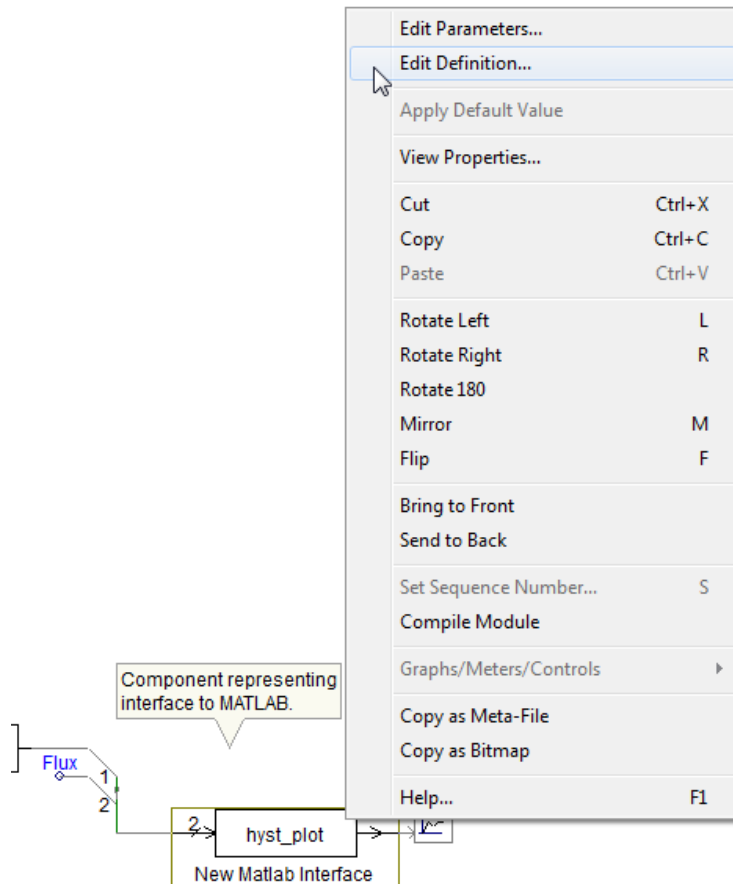
**Note**

This has already been activated in the examples in %PSCADfolder%\examples\matlab.

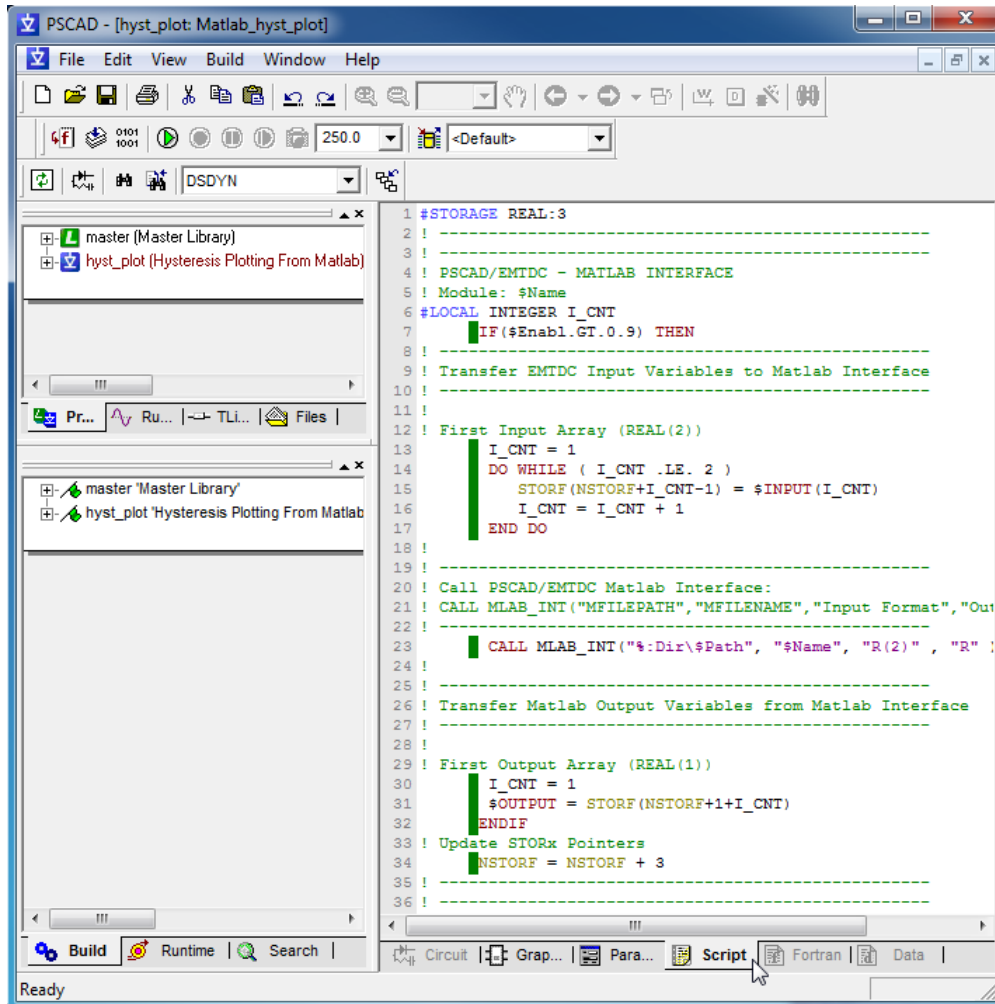
### 3. Simple PSCAD-MATLAB Interfacing Examples

A few PSCAD-MATLAB interfacing examples are provided in “%PSCAD FOLDER%\examples\matlab”. In each of those cases, locate a block specified as “New Matlab Interface”.

By right clicking on the component and selecting the “Edit Definition ...” option (as shown below), you will be able to explore the way the interface has been designed in each particular example.



You will see the PSCAD Script code of each block on the “Script” pane of the component definition window:



The key subroutine for using the MATLAB interface feature is ‘MLAB\_INT’ (see PSCAD/EMTDC User’s Guide). Also, proper use of ‘STORF’ and ‘STORI’ is required for exchanging variables between EMTDC and the MATLAB workspace.

I personally found the user’s guide and the provided examples very helpful when I was trying to create my first *PSCAD-MATLAB Interface* case. So, please first try the instructions and examples. I recommend that you explore the corresponding script code blocks in the given examples. If you still encounter ambiguities, our Support Desk will be glad to assist you (support@pscad.com).