Automating any of Copper Mountain Technology's VNAs in Octave follows a similar structure to the automation procedure for other environments; the key step lies in setting up the COM server connection. The following example is based on Octave 4.0.0, though later versions will involve a similar procedure.

Before starting, install the VNA software application and ensure that the COM server for the VNA you are using is registered during installation. The latest version of the VNA software is always available for download at www.coppermountaintech.com.

To register the COM server if the VNA software installation has already completed, open up a command prompt and execute the following commands:
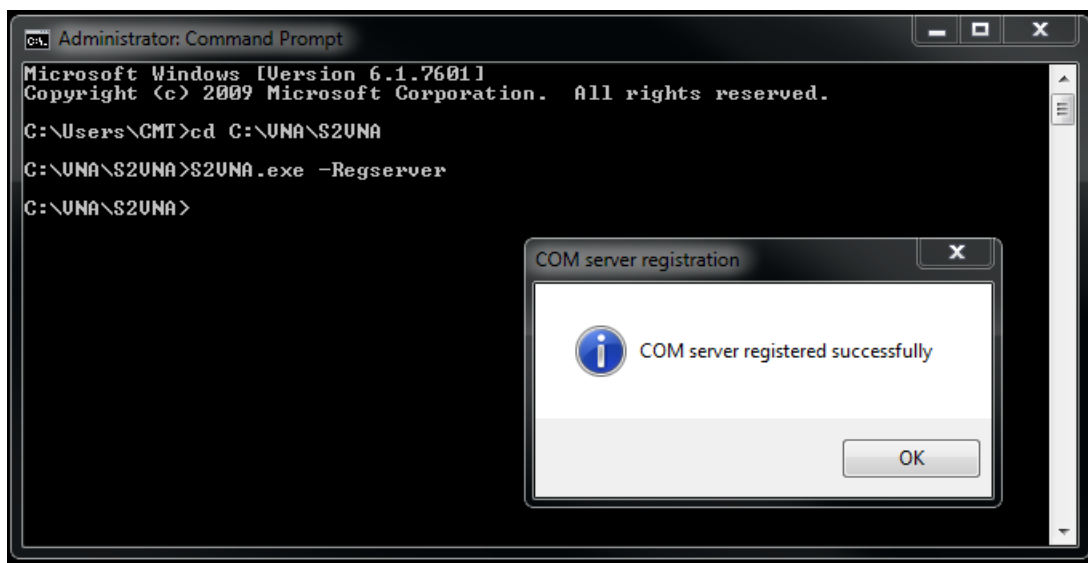
(Note: this path is for the S2VNA. Check the programming manual for specific file paths of other instruments.)

This command will register or re-register the COM server and the confirmation dialogue box will appear. If an error occurs, be sure you have administrator privileges. For assistance, please contact support@coppermountaintech.com.

In order to use COM/ActiveX in Octave, the Windows package need to be installed using the command **pkg install -forge -auto windows**. If an error is produced such as **pkg: error running `make' for the windows package**, you can also try to find the package in the src folder (e.g. C:\Octave\Octave-4.0.0\src\ windows-1.2.1.tar.gz). Then, use the command sequence of **cd C:\Octave\Octave-4.0.0\src** followed by **pkg install -auto windows-1.2.1.tar.gz**.

Once the COM server is registered and the Windows package is installed, the following command is needed to to establish the COM server/client connection:

```
app = actxserver ('S2VNA.Application'); %Example using S2VNA:
                                        %Similar command can be used for others
```

The following is an example showing how to automate the S2VNA in Octave. Note that due to a limitation of the COM client interface in Octave 4.0.0., a workaround to retrieve S-parameter results is needed. Here we save the results to a .csv file and then load that file into Octave.

```
app = actxserver ('S2VNA.Application'); %Example using S2VNA:
                                        %Similar command can be used for others

invoke(app.SCPI.SYSTem,'PRESet');       %Reset device

set(app.SCPI.SENSe(1).FREQuency,'STOP',4e9);   %Set start frequency as 4GHz

set(app.SCPI.CALCulate(1).SELected,'FORMat',"MLOGarithmic");   %Set the Display format as Log magnitude

fstart=app.SCPI.SENSe(1).FREQuency.START; %Reading start frequency

set(app.SCPI.MMEMory.STORe,'FDATa','c:\temp1.csv'); %Save Fdata to c:\temp1.csv

tt1=csvread('c:\temp1.csv');   %Read data from c:\temp1.csv

set(app.SCPI.MMEMory.STORe,'IMAGe','c:\temp1.png');%Save Image to c:\temp1.png
```

For additional assistance, please contact support@coppermountaintech.com and we will be glad to help!