
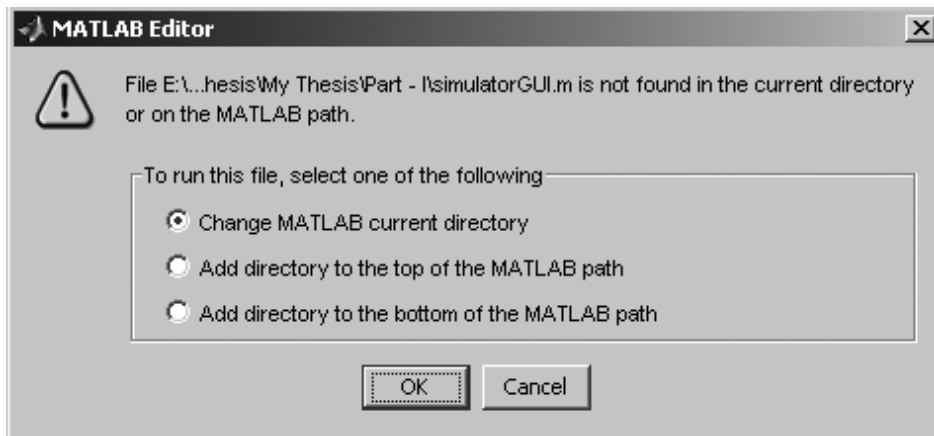


# Appendix C

**C.1 Operating the Simulator:** This thesis report is associated with a compact disk that contains the total source code of the simulators. The source code is divided in two parts. Part – I contains the simulator that simulates on coaxial cable and its effects.

To run an .m file, it is to be opened from the menu **File > Open** in MATLAB 7.1 and then the Run () button from editor window is to be pressed. There may appear a dialog box as follows if the file is not placed in the 'work' folder. In such cases, OK is to be pressed.



*Figure C.1: Dialog box for changing file path*

Here, the operation of both the parts of the simulator is described.

## Part – I

### Viewing the waveforms:

To view the waveforms *simulatorGUI.m* file is to be executed. When executed, a Graphical User Interface (GUI) as shown in **Figure C.2** appears. In this GUI, there is provision for changing various parameters and observing the waveforms as well as the frequency spectra of indicated signals.

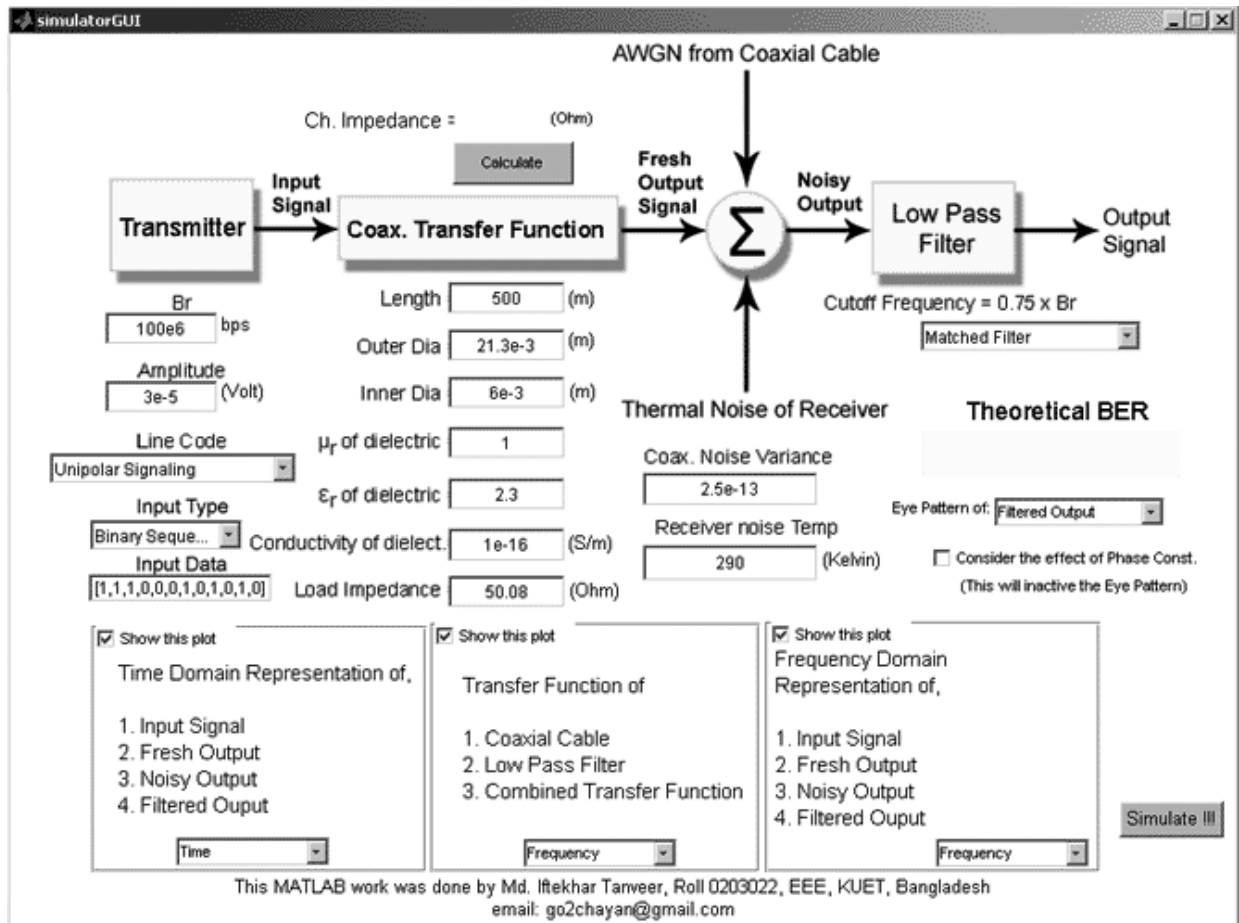


Figure C.2: The graphical user interface of the simulator

### Viewing the plots:

The graphs provided in this thesis report were generated by some .m files. Unfortunately, there was not enough time to make a GUI for these programs. These user executable files are as follows:

- *BERonBr.m*: This program plots BER vs. Bit rate graph
- *BERPerformance.m*: This program plots BER vs. Input power plot
- *coaxTF\_viewer.m*: It plots the transfer function of coaxial cable in various forms.
- *PerformTuner.m*: This program calculates and plots Attenuation vs. Bit rate graph with changing parameters.
- *PerformTuner\_L.m*: It plots the effects of various cable parameters upon attenuation of the signal.

All these files are well commented. To reproduce the graphs the parameters described in these files are to be changed and the file is to be executed by pressing the run button. All the other files are to support these files and *simulatorGUI.m*. These files cannot be executed directly.

When describing some parameters, ‘:’ operator is used. The colon, ‘:’, is one of the most important MATLAB operators. It occurs in several different forms. The expression 1:10 is a row vector containing the integers from 1 to 10:

```
[1 2 3 4 5 6 7 8 9 10]
```

And 1:2:10 is

```
[1 3 5 7 9]
```

Somewhere, ‘,’ is used to concatenate more than one matrices or vectors. For example, [1:10, 1:2:10] is,

```
[1 2 3 4 5 6 7 8 9 10 1 3 5 7 9]
```

## **Part – II**

To view the waveforms of a coaxial cable CDMA system, *CDMA\_GUI.m* file is to be executed. In that case, the following GUI will appear.

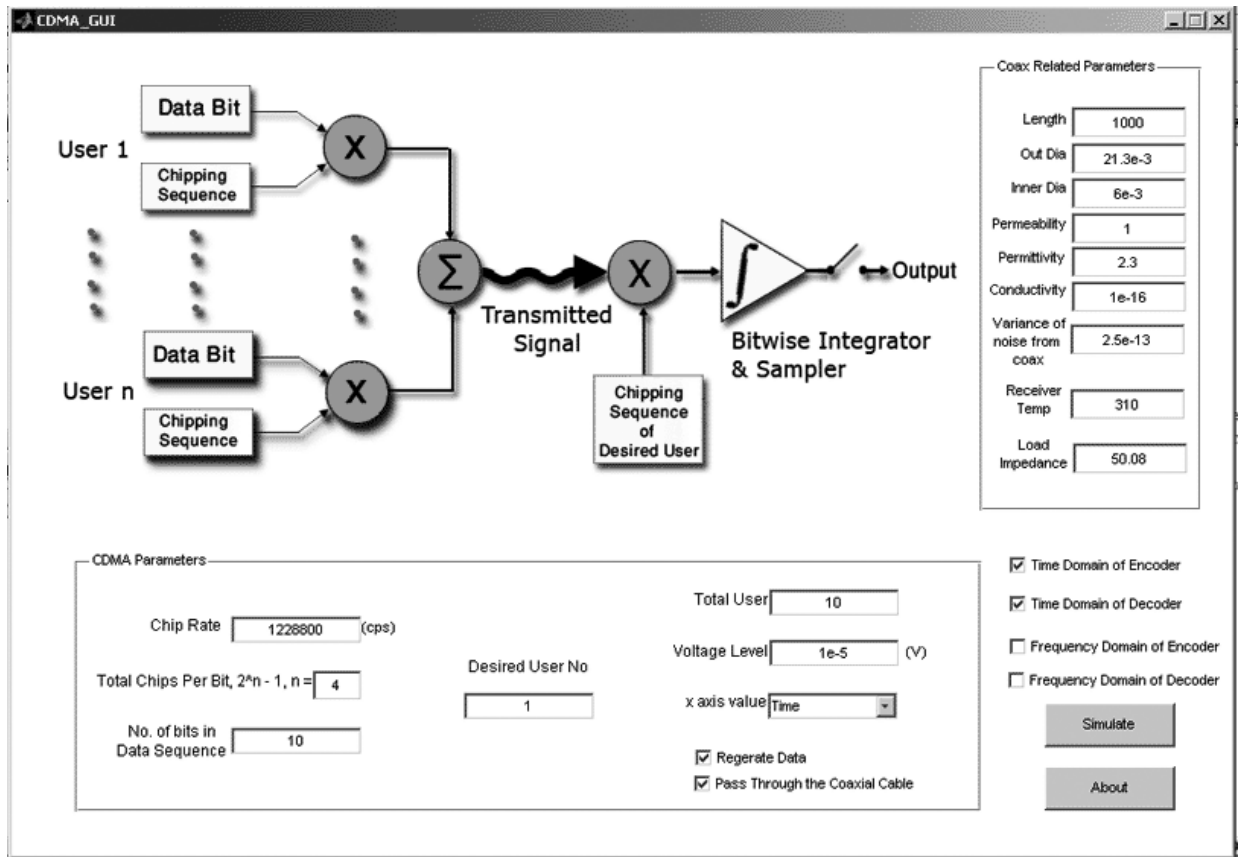


Figure C.3: The graphical user interface of the CDMA system simulator

### Viewing the plots:

The graphs provided in this thesis report were generated by the file *CDMA\_BER\_Performance.m*. This file is specially designed to operate in Cell mode in MATLAB 7.1. To enable cell mode, the menu Cell > Enable Cell Mode is to be selected while the 'Editor' is selected.

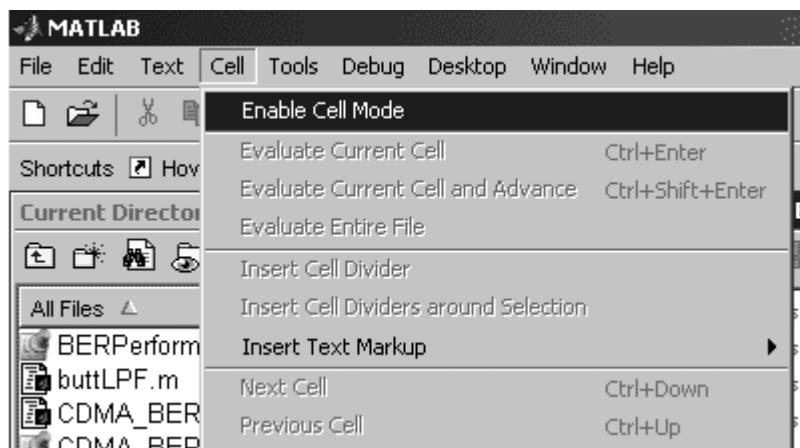
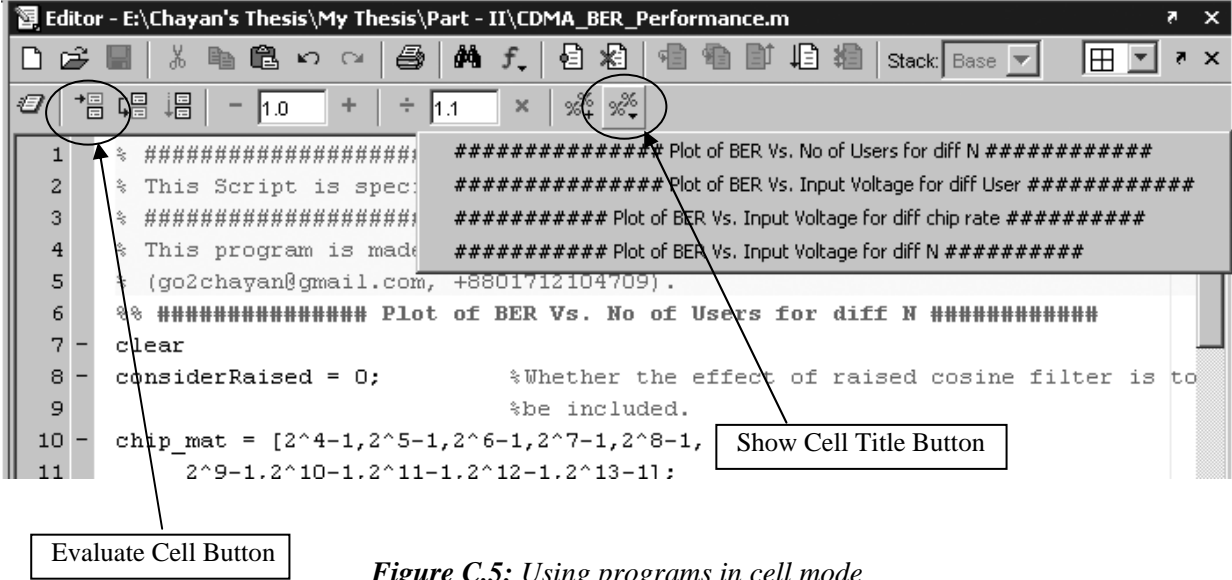


Figure C.4: Process of enabling cell mode

In Cell mode the program can be executed part by part. The currently selected cell will be displayed in yellow background. The selection of cells can be changed by clicking the 'Show Cell Titles' button.



**Figure C.5:** Using programs in cell mode

The currently selected cell can be executed by clicking the 'Evaluate Cell' button. To evaluate a cell it must be sure that the current directory is actually set to the folder where the *CDMA\_BER\_Performance.m* and other files reside. Otherwise, an error message of 'Undefined command/function' will be displayed. The cells are well commented to proceed further.