

Documentation

on Live

Demonstration

**Topic: MODELING AND PROTOTYPING
WITH SIMULINK AND CODE
COMPOSER STUDIO WITH DSK**

Prepared by

Mr.P.Selvan

Associate Professor-ECE

Department of Electronics and Communication Engineering



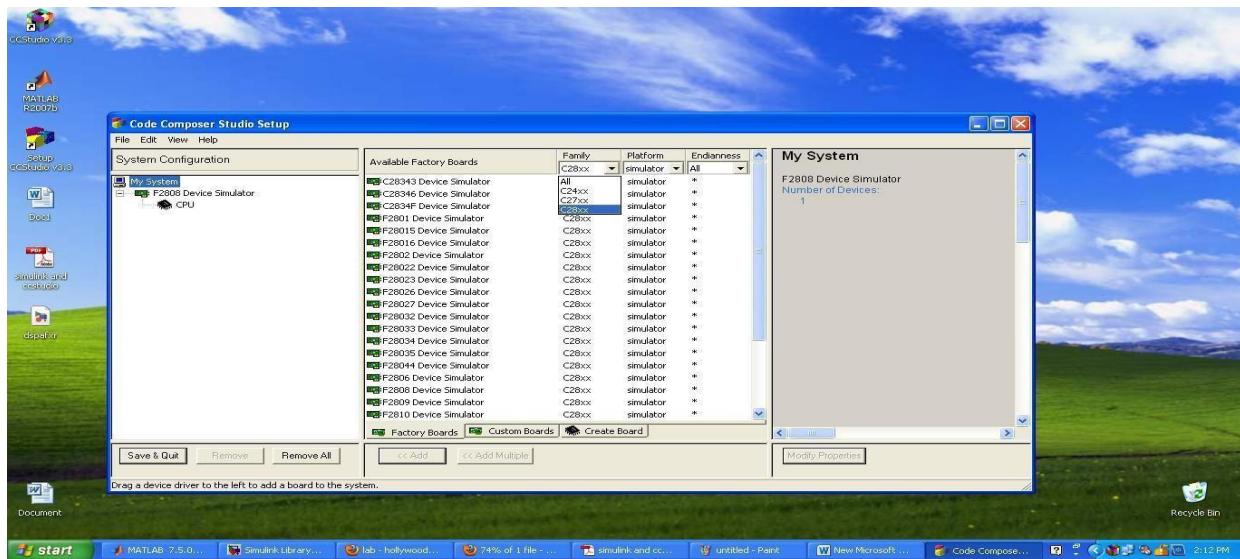
MODELING AND PROTOTYPING WITH SIMULINK AND CODE COMPOSER STUDIO WITH DSK

Step1:



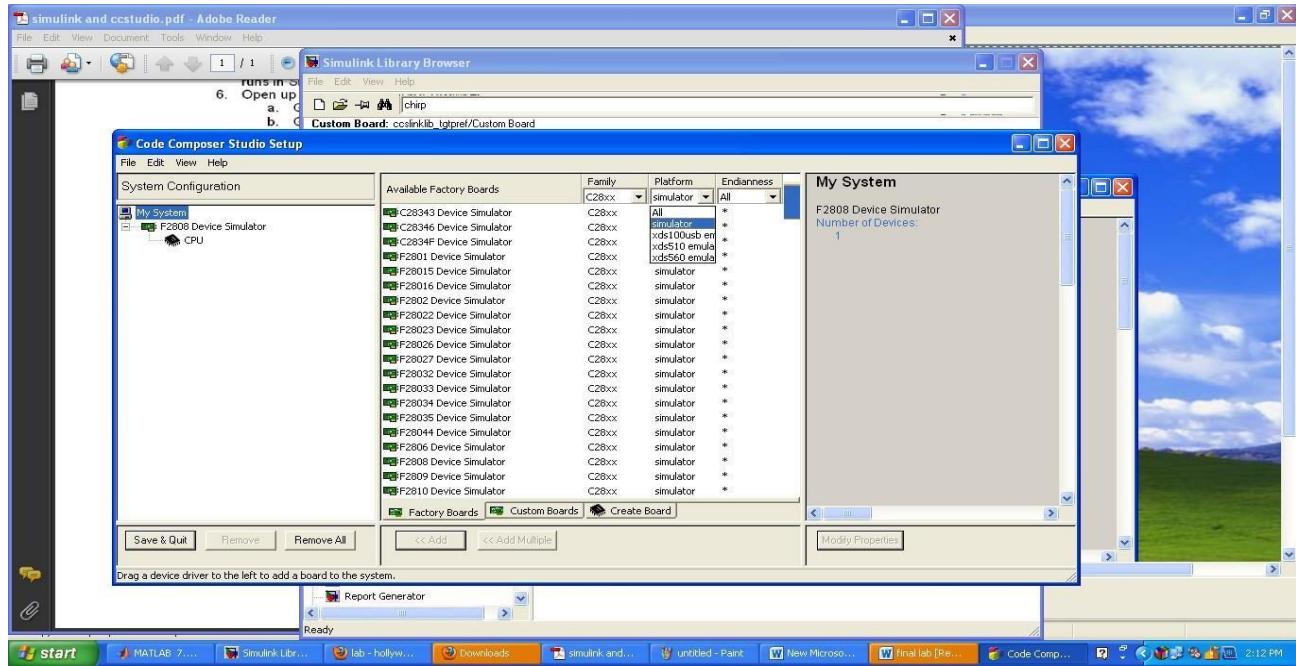
(open setup ccstudio v3.3)

Step2:



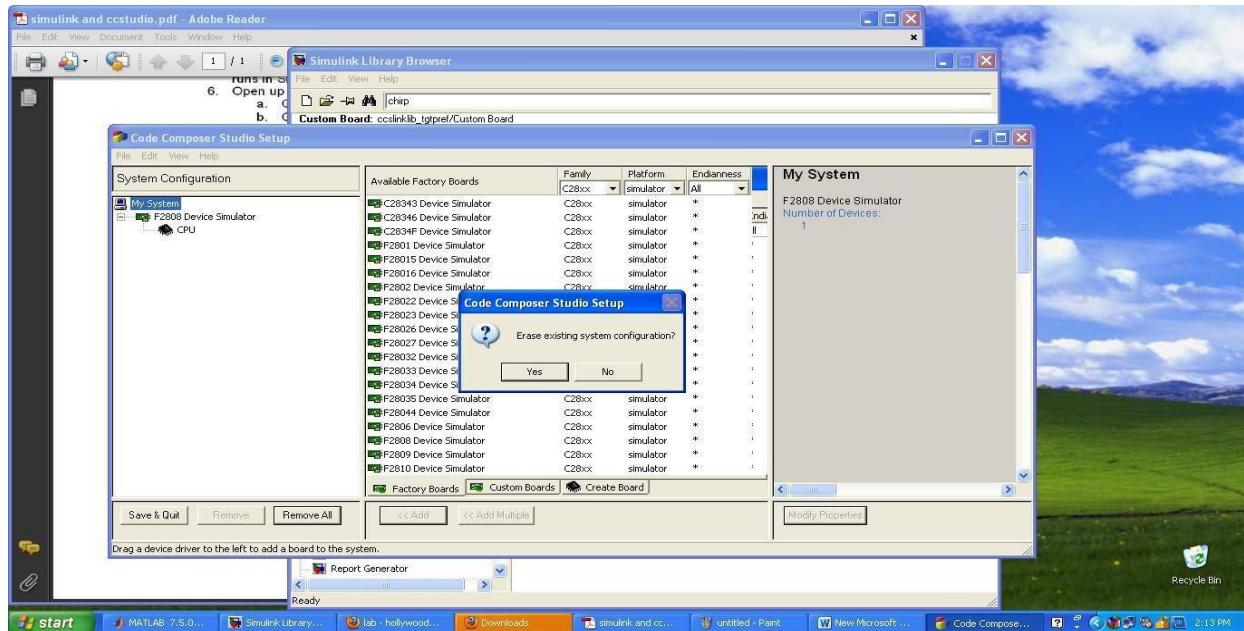
(in family choose c28XX)

Step3:



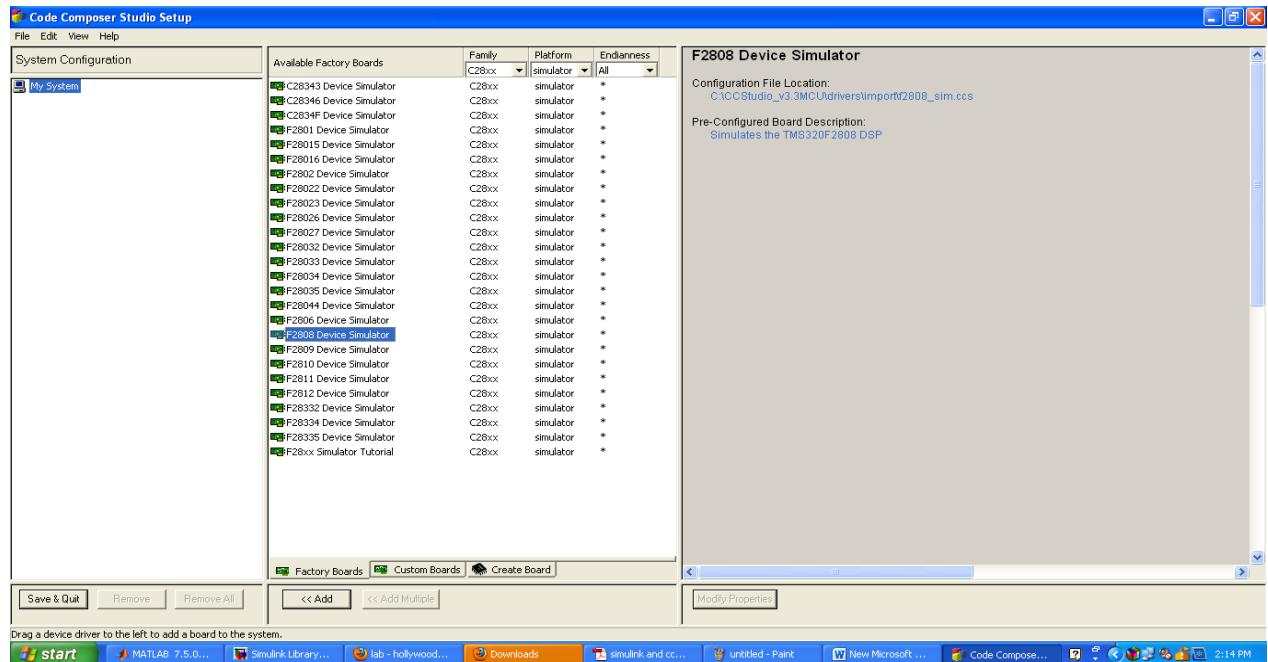
(platform choose simulator)

Step4:



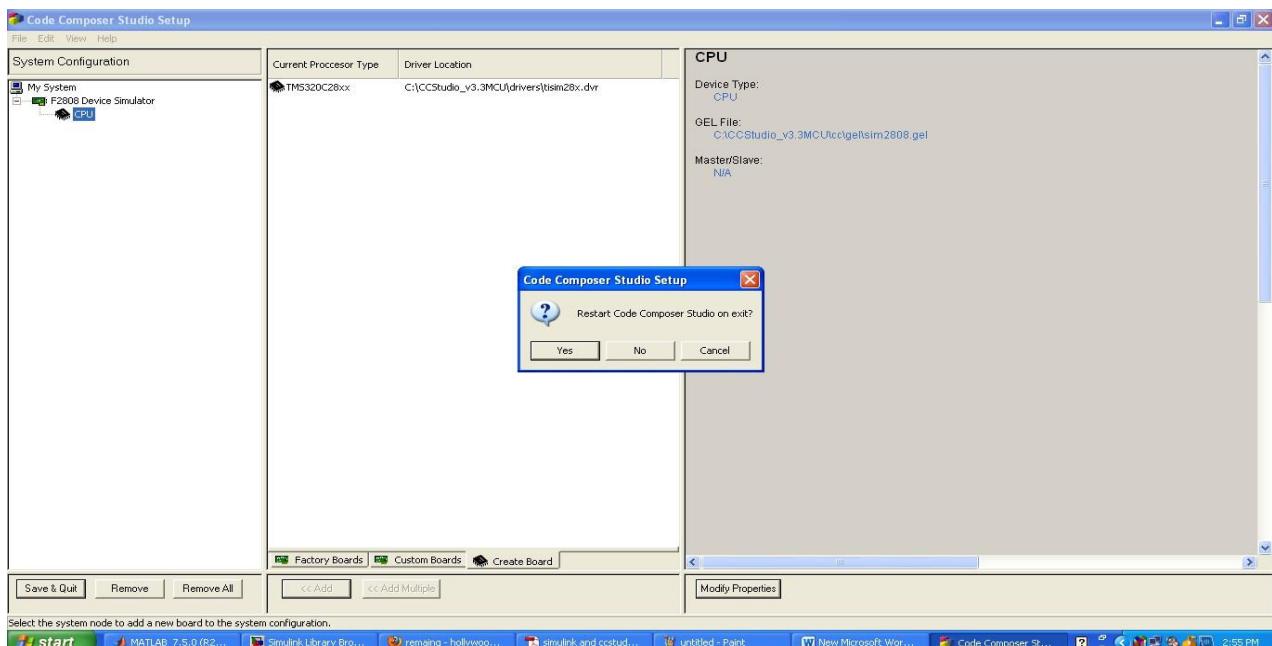
(in the system configuration click remove all and click yes)

Step5:



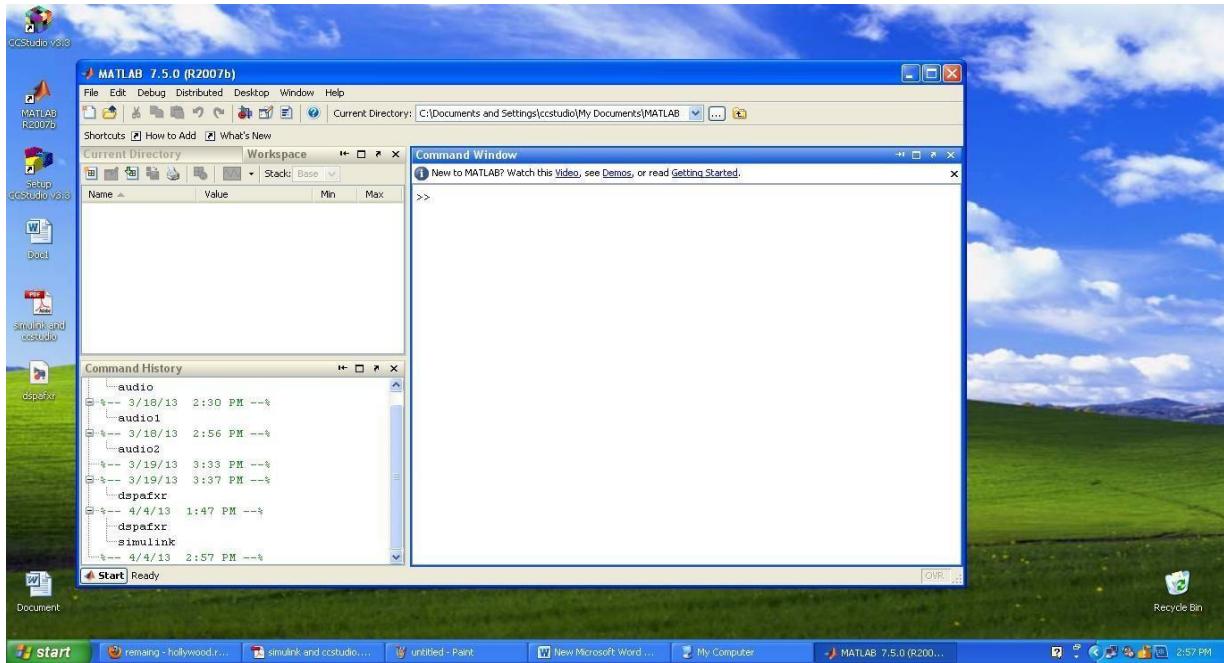
(in the availability factory board /f2808 device simulator and drag to system config)

Step6:



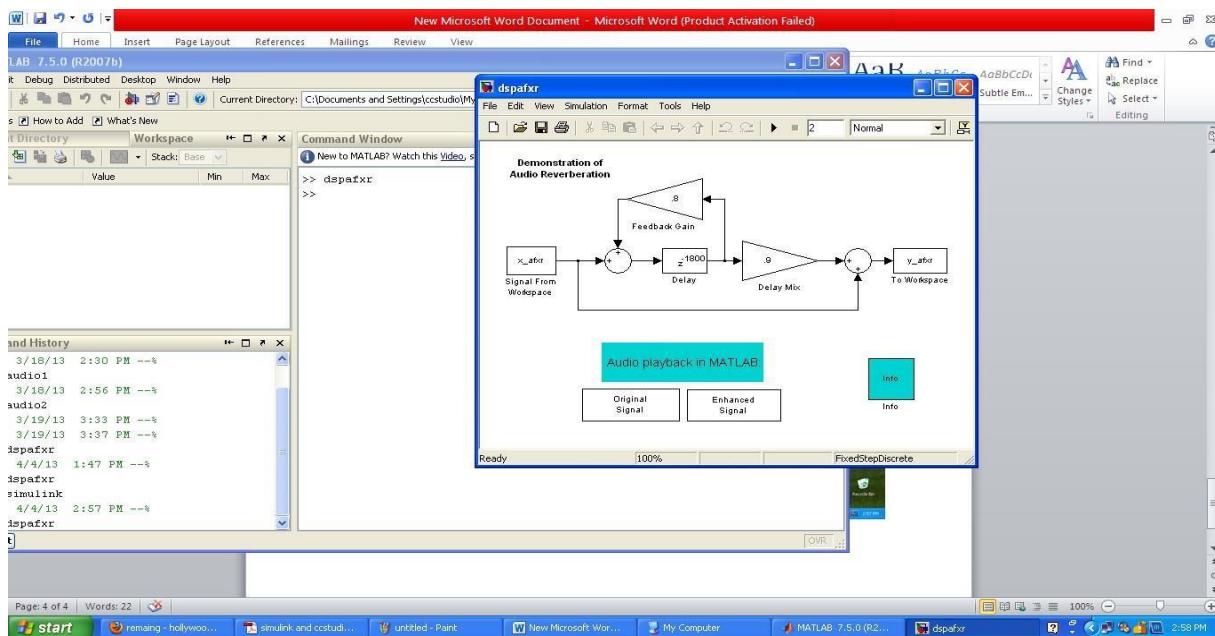
(click save and quit)

Step7:



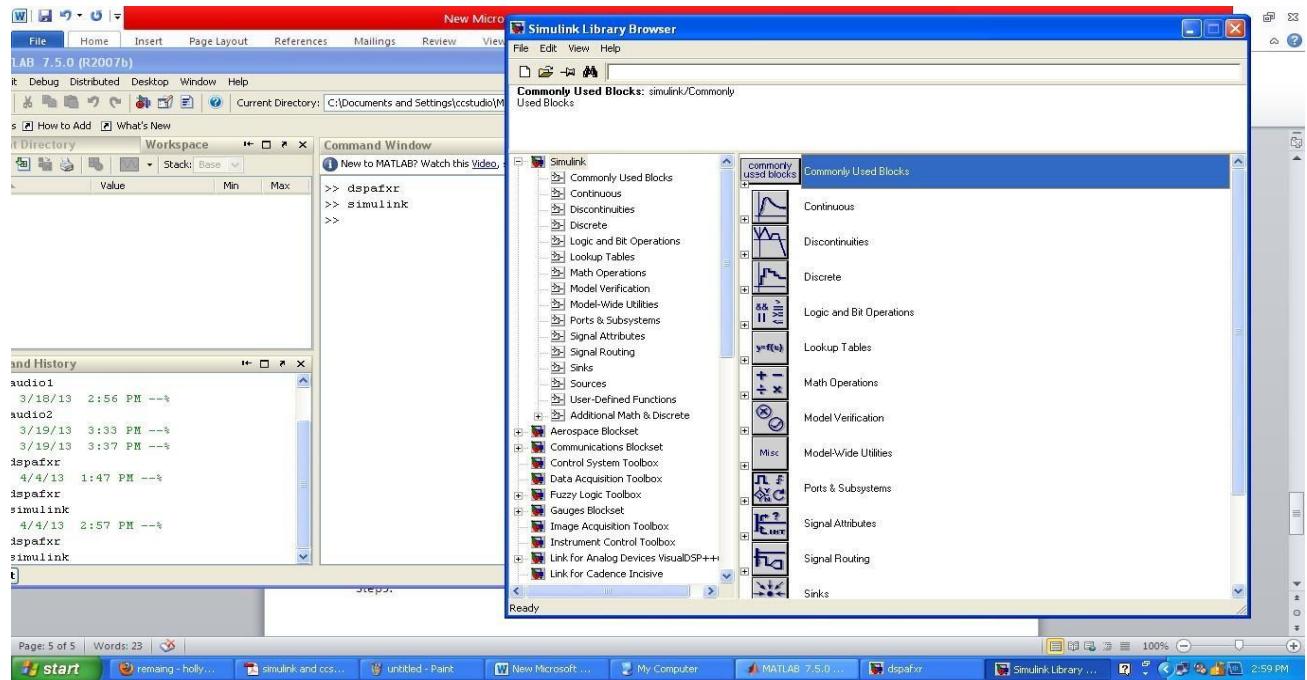
(openmatlab 2007 software)

Step8:



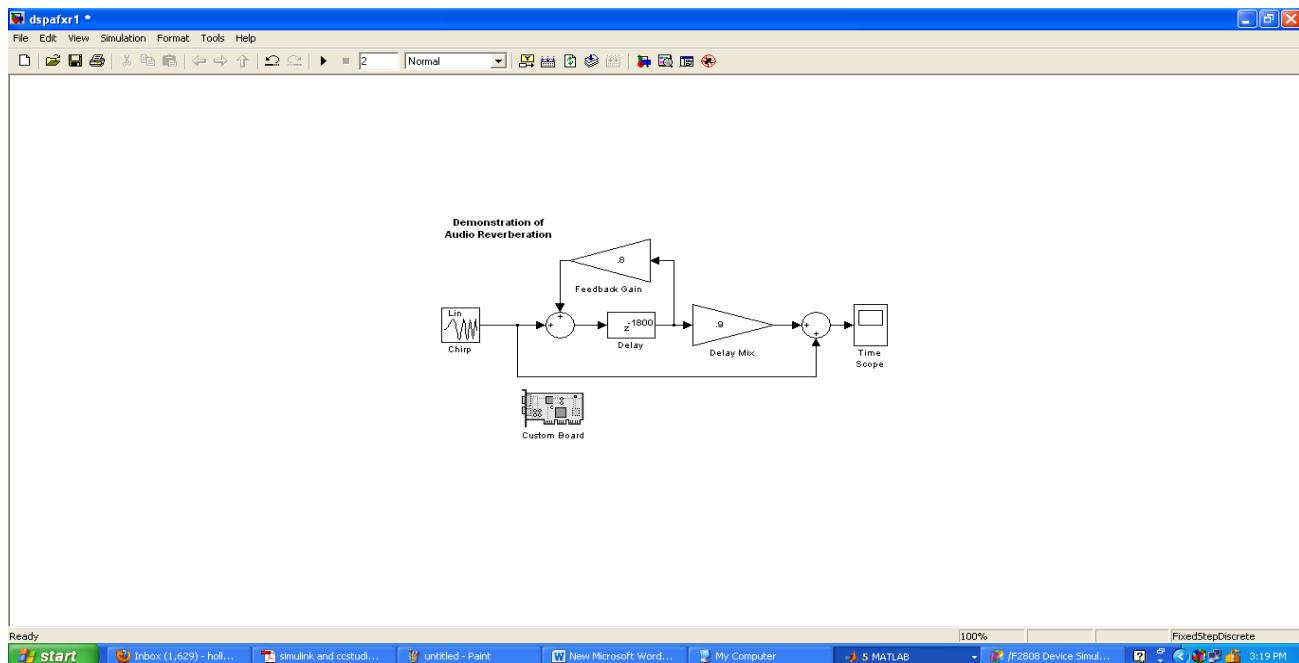
(in the command window click dspafxr)

Step9:



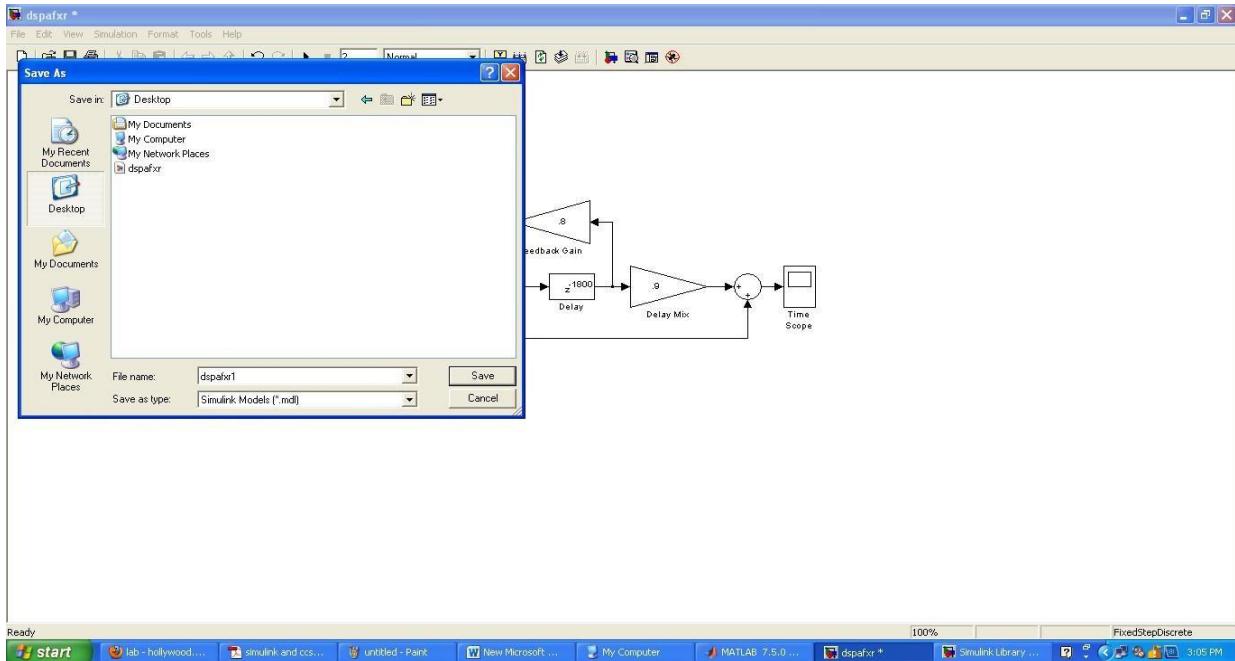
(in the command window type Simulink)

Step10:



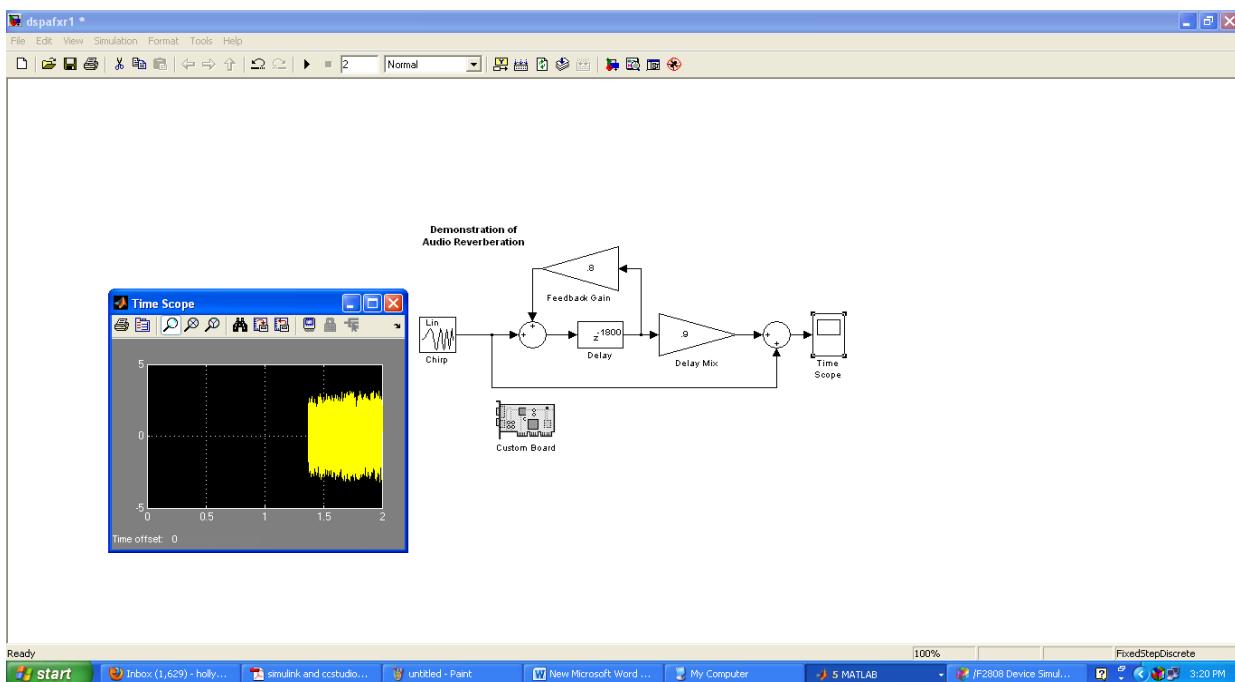
(here changes of the blocks are made as per the blocks given using Simulink browser)

Step11:



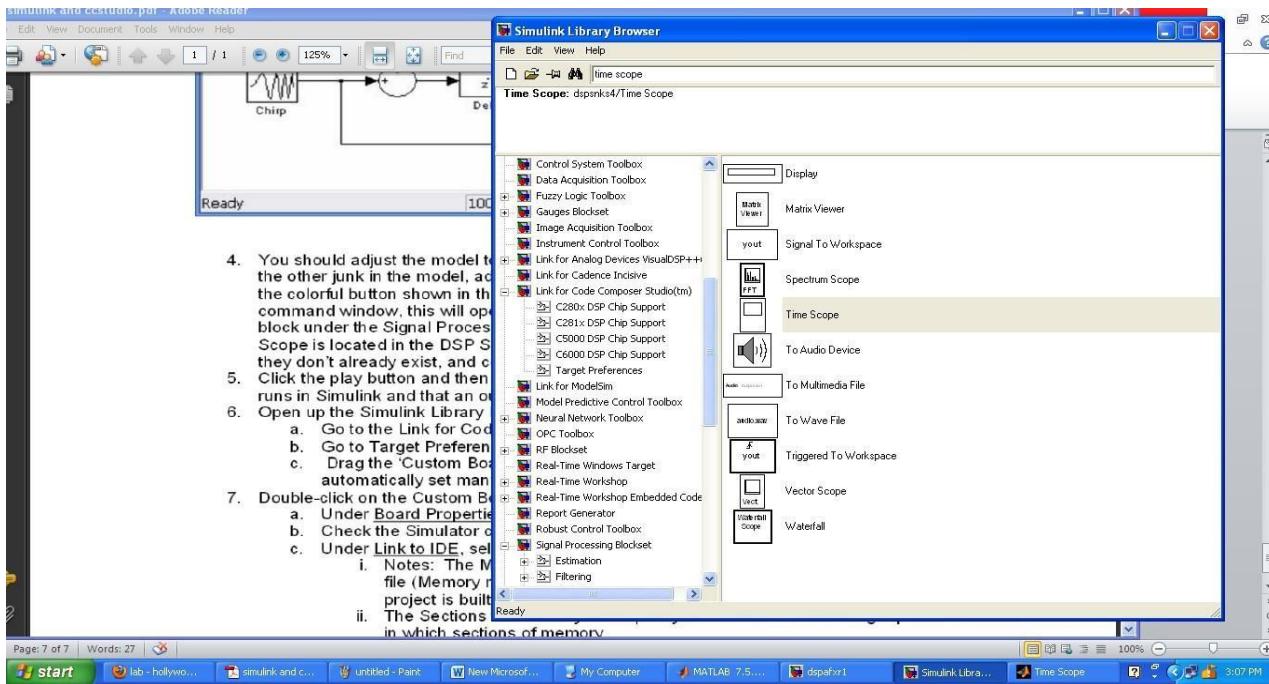
(file /save it)

Step12:



(Run it for the required waveform)

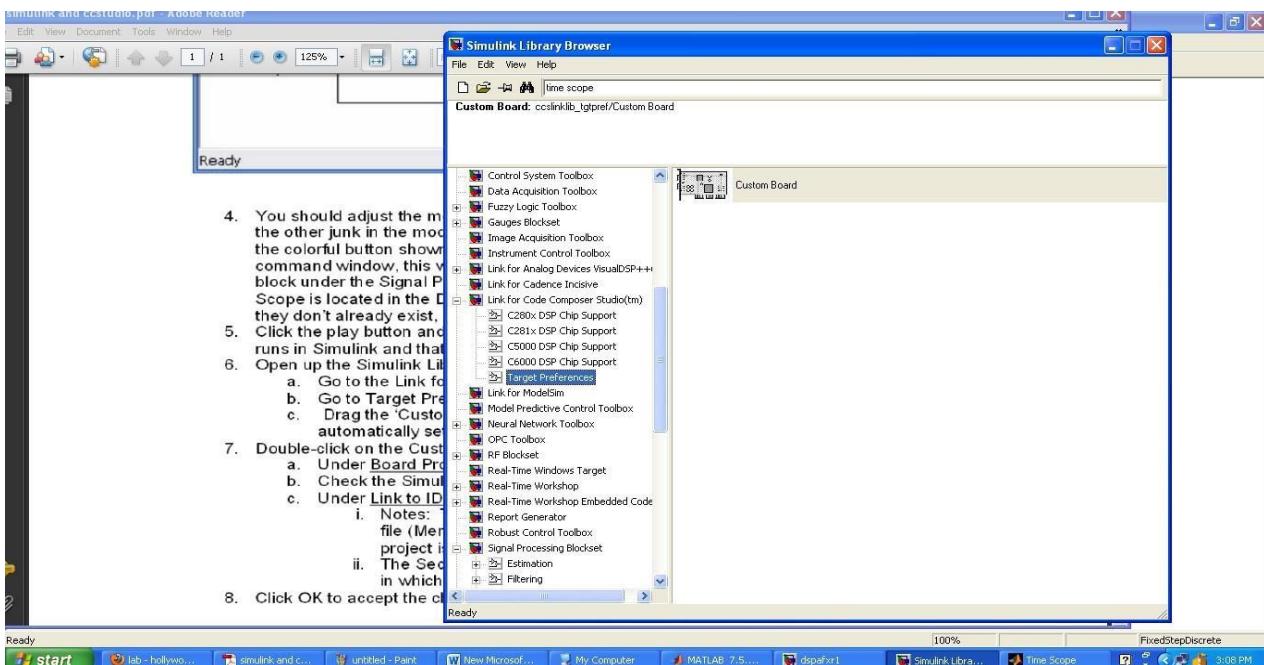
Step13:



- You should adjust the model to the other junk in the model, and the colorful button shown in the command window, this will open block under the Signal Process Scope is located in the DSP S they don't already exist, and c
- Click the play button and then runs in Simulink and that an or
- Open up the Simulink Library
 - Go to the Link for Co
 - Go to Target Preferen
 - Drag the 'Custom Bo
- Under Board Properties
- Check the Simulator c
- Under Link to IDE, sel
 - Notes: The M file (Memory t
 - The Sections in which sections of memory

(in Simulink browser click link for cc block)

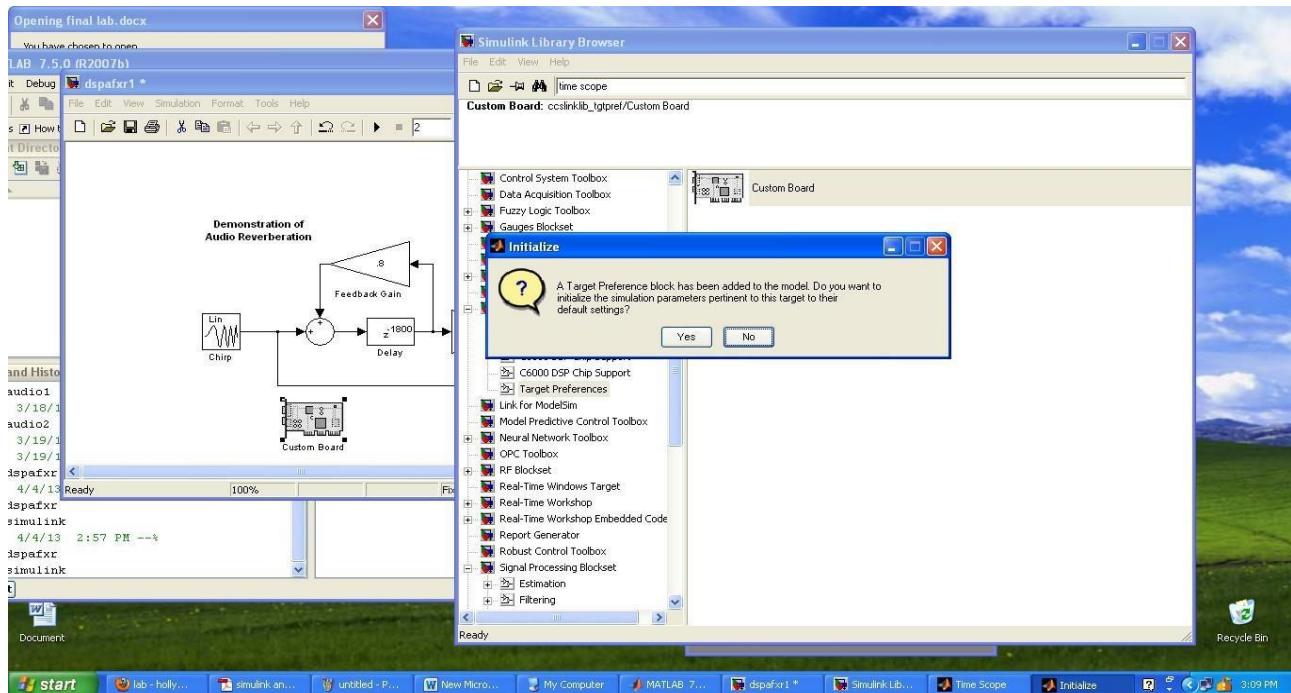
Step14:



- You should adjust the model to the other junk in the model, and the colorful button shown in the command window, this will open block under the Signal Process Scope is located in the DSP S they don't already exist, and c
- Click the play button and then runs in Simulink and that an or
- Open up the Simulink Library
 - Go to the Link for Co
 - Go to Target Preferen
 - Drag the 'Custom Bo
- Under Board Properties
- Check the Simulator c
- Under Link to IDE, sel
 - Notes: The M file (Memory t
 - The Sections in which sections of memory
- Click OK to accept the ch

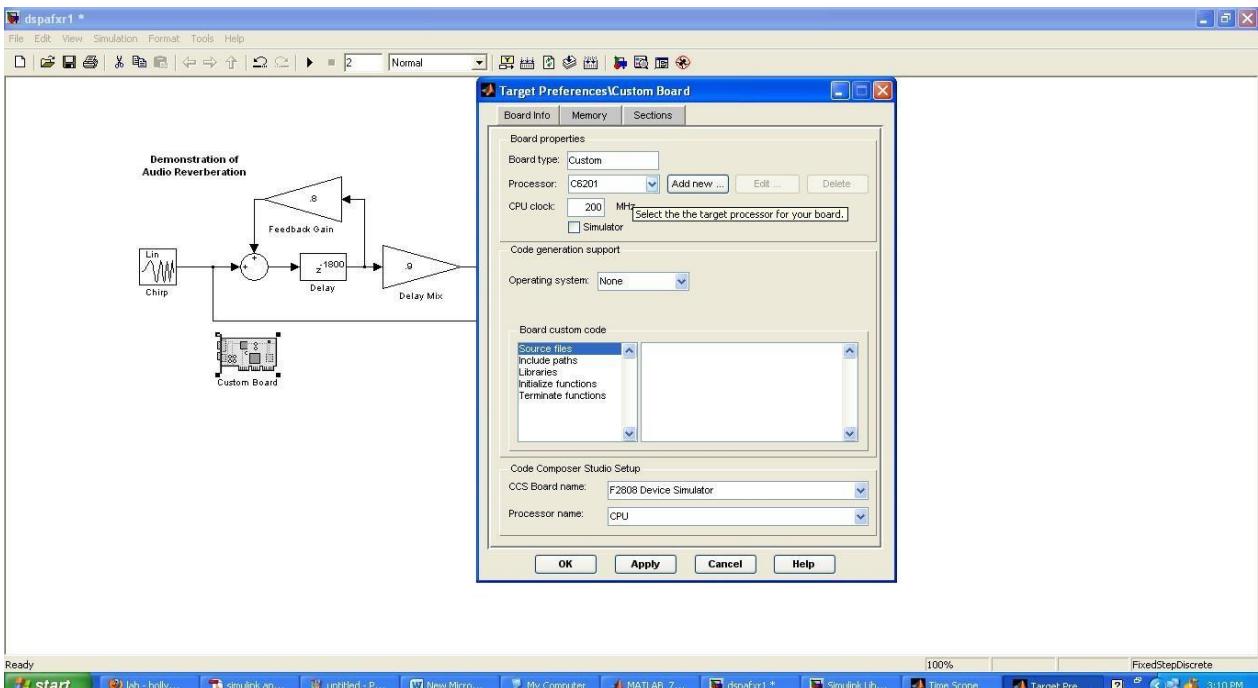
(in that click target preferences and drag the block to the model)

Step15:



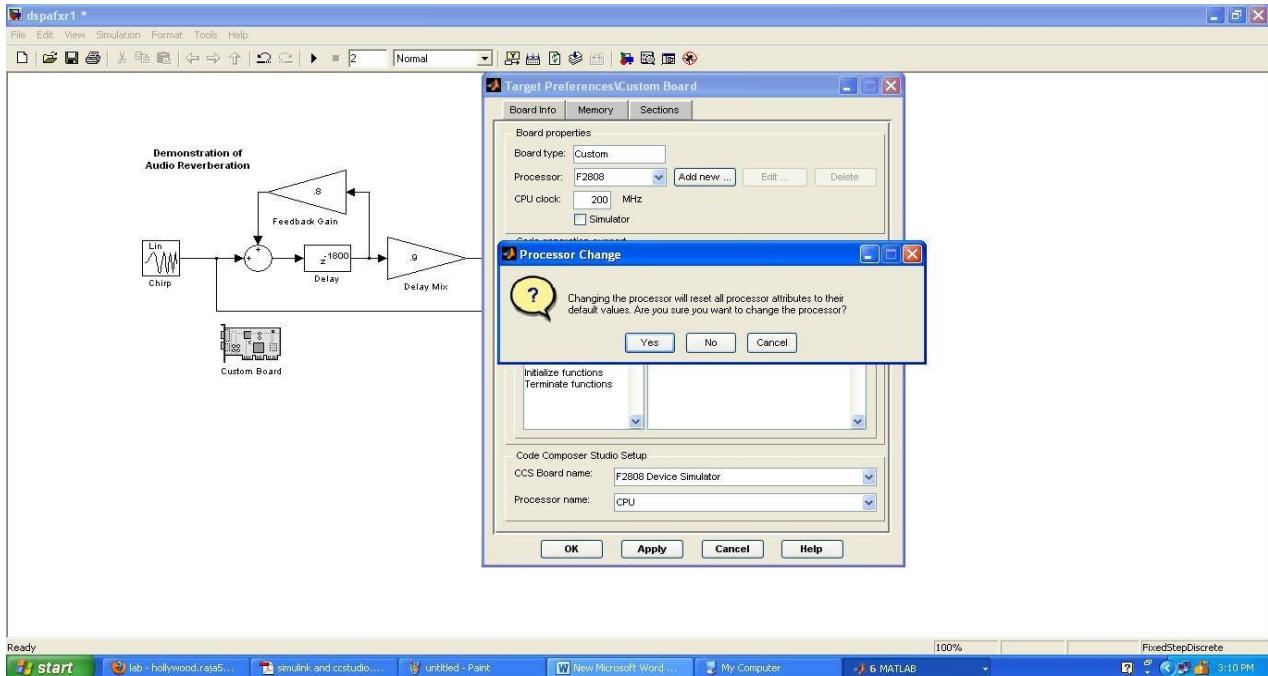
(double click the custom board and click yes)

Step16:



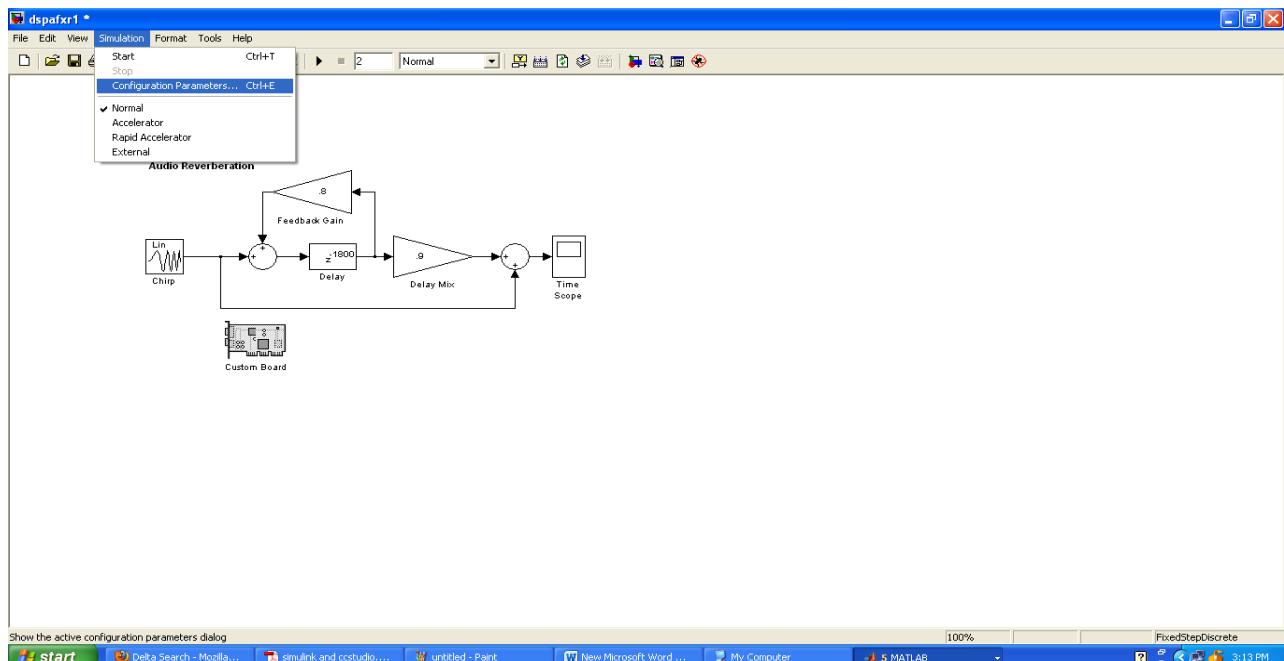
(a dialog box target preference is open it)

Step17:



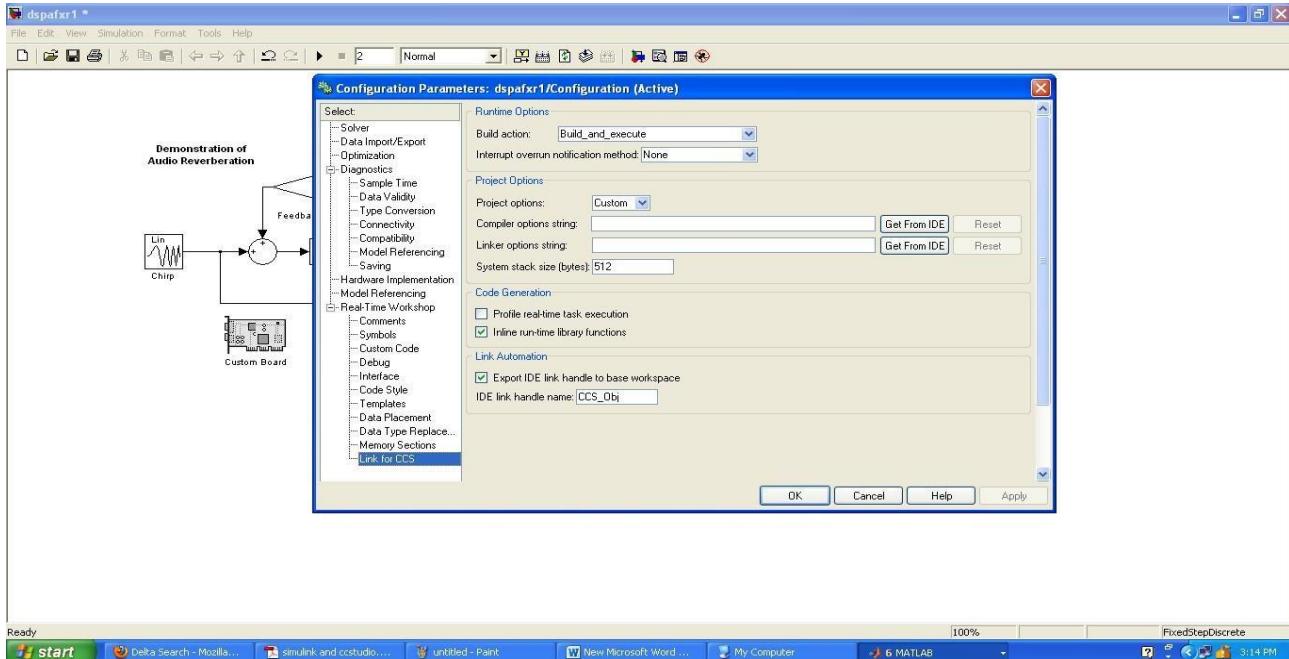
(in the build type click build and apply it ok and click yes)

Step18:



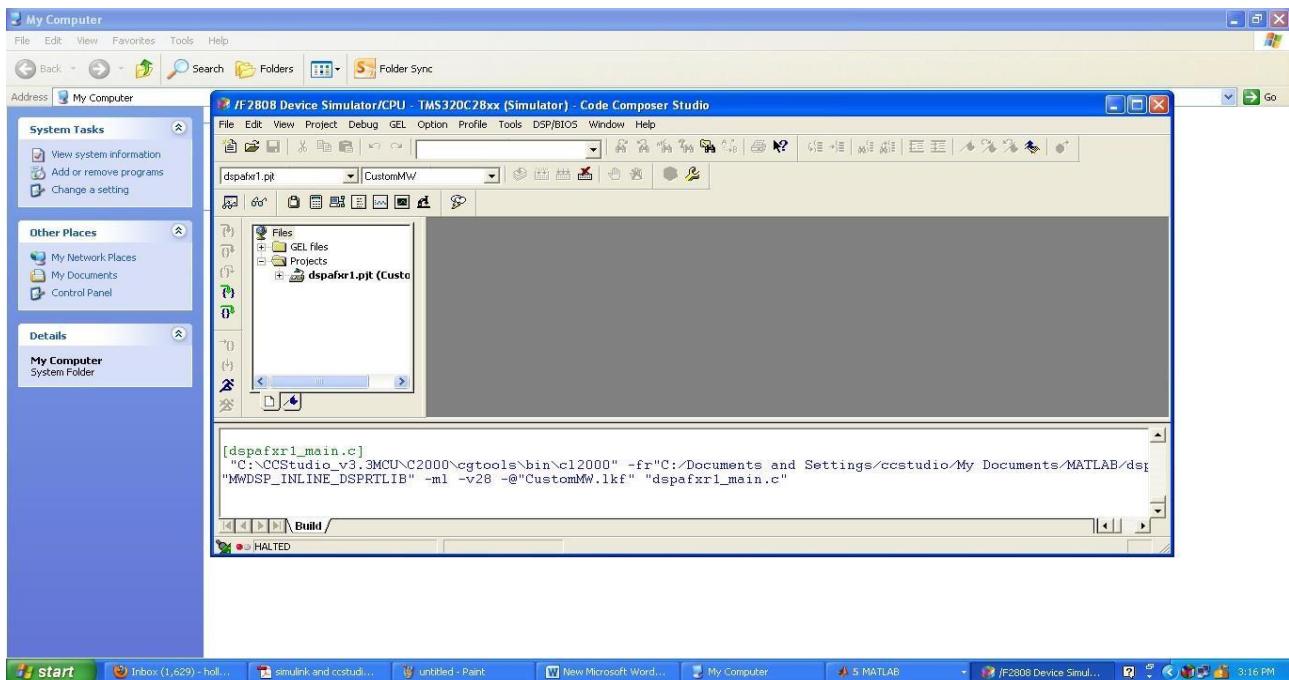
(simulate/configuration parameter

Step19:



(in the config parameter click link to ccs and in the model make ctrl+b)

Step20:



(in the device simulator click dspafxr to get the assembly language of the blocks)

Step21:

```

JF2808 Device Simulator/CPU - TMS320C28xx (Simulator) - Code Composer Studio - [dspafxr1.cmd]
File Edit View Project Debug GEL Option Profile Tools DSP/BIOS Window Help
File: C:\Documents and Settings\ccstudio\My Documents\MATLAB\ dspafxr1_ccslink\dspafxr1.cmd
Build / HALTED
Inbox (1,629) - holly... simulink and costudo... untitled - Paint New Microsoft Word... My Computer 5 MATLAB JF2808 Device Simul... 3:17 PM
[Linking...] "C:\CCStudio_v3.3MCU\C2000\cgtools\bin\c12000" -@"CustomMW.lkf"
[Linking]

Build Complete,
0 Errors, 1 Warnings, 0 Remarks.

Build / Build

```

```

MEMORY
{
    PAGE 0:
        BEGINRAM: origin=0x0, length=0x2
        RAM0: origin=0x2, length=0x3fe
        RAMH0: origin=0xa001, length=0x2000
        OTP: origin=0x3d7800, length=0x800
        FLASH: origin=0x3e0000, length=0xffff6
        BEGINFLASH: origin=0x3f7ff6, length=0x2
        CSM_PWL: origin=0x3f7ff8, length=0x8
        BOOTROM: origin=0x3ff000, length=0xfc0
        RESET: origin=0x3fffc0, length=0x2
        VECTORS: origin=0x3fffc2, length=0x3e
    PAGE 1:
        RAMM1: origin=0x400, length=0x400
        RAML0L1: origin=0x8000, length=0x2000
}
SECTIONS
{
    .vectors: load = 0x000000000000
    .text: > RAMM1, PAGE = 0
    .switch: > RAMH0, PAGE = 0
    .bss: > RAML0L1, PAGE = 1
    .ebss: > RAML0L1, PAGE = 1
    .far: > RAML0L1, PAGE = 1
    .cinit: > RAMH0, PAGE = 0
    .xinit: > RAMM1, PAGE = 0
}

```

(the assembly language of the block is displayed)

Step22:

```

JF2808 Device Simulator/CPU - TMS320C28xx (Simulator) - Code Composer Studio - [dspafxr1.c]
File Edit View Project Debug GEL Option Profile Tools DSP/BIOS Window Help
File: C:\Documents and Settings\ccstudio\My Documents\MATLAB\ dspafxr1_ccslink\dspafxr1.c
Build / HALTED
Inbox (1,629) - holly... simulink and costudo... untitled - Paint New Microsoft Word... My Computer 5 MATLAB JF2808 Device Simul... 3:22 PM
[Linking...] "C:\CCStudio_v3.3MCU\C2000\cgtools\bin\c12000" -@"CustomMW.lkf"
[Linking]

Build Complete,
0 Errors, 1 Warnings, 0 Remarks.

Build / Build

```

```

/*
 * File: dspafxr1.c
 *
 * Real-Time Workshop code generated for Simulink model dspafxr1.
 *
 * Model version : 1.53
 * Real-Time Workshop file version : 7.0 (R2007b) 02-Aug-2007
 * Real-Time Workshop file generated on : Thu Apr 04 15:15:52 2013
 * TLC version : 7.0 (Jul 26 2007)
 * C source code generated on : Thu Apr 04 15:15:53 2013
 */
#include "dspafxr1.h"
#include "dspafxr1_private.h"

/* Block states (auto storage) */
D_Work_dspafxr1 dspafxr1_DWork;

/* Real-time model */
RT_MODEL_dspafxr1 dspafxr1_M;
RT_MODEL_dspafxr1 *dspafxr1_M = &dspafxr1_M;

/* Model step function */
void dspafxr1_step(void)
{
    /* Local block I/O variables */
    local_T with DataModel...
}

```

(the c program for the block is displayed)

**For any queries/feedback kindly
contact**

Mr.P.Selvan
Senior Assistant Professor
Chettinad College of Engineering and
Technology, Karur.
selvanp@chettinadtech.ac.in