

Here is where to get Dos Box:

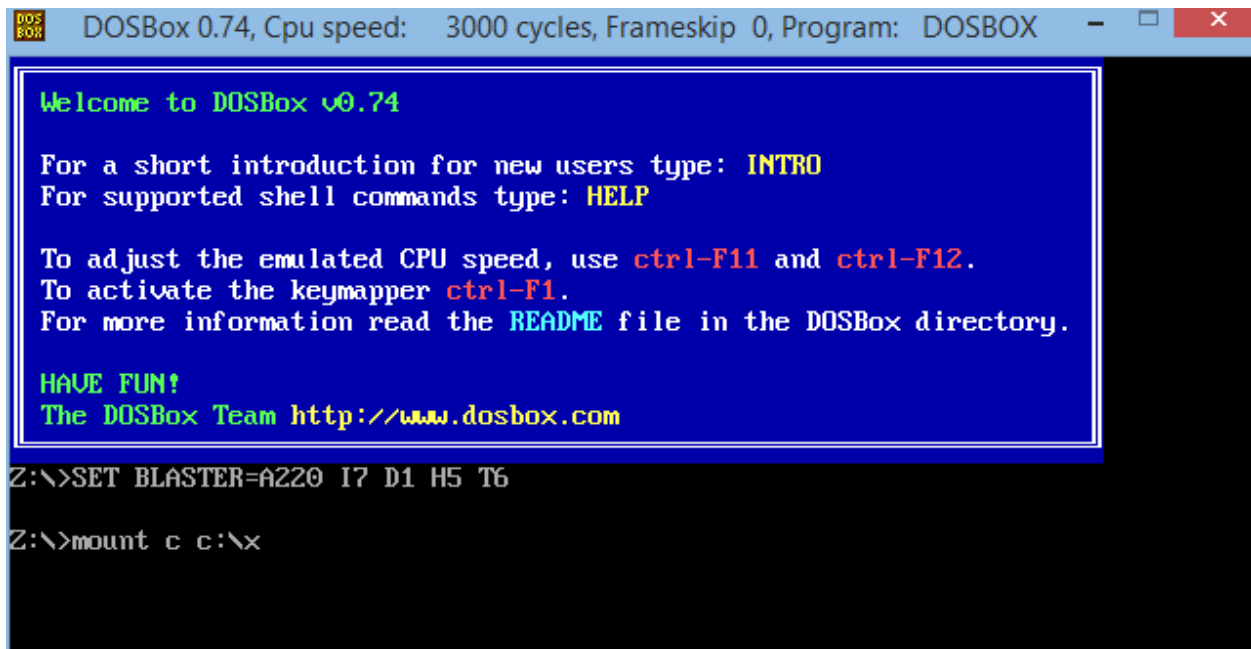
<http://www.dosbox.com/download.php?main=1>

Here is how to get to DOS from DOS Box:

Running DOS with 64 bit Windows 7 or 8 system

Click on “open dos box”

Type: mount c c:\x (enter).

A screenshot of a DOSBox 0.74 window. The title bar reads "DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX". The main window has a blue background with white text. It displays a welcome message: "Welcome to DOSBox v0.74", followed by instructions for new users (type: INTRO), supported shell commands (type: HELP), and how to adjust CPU speed (ctrl-F11 and ctrl-F12) and activate the keymapper (ctrl-F1). It also mentions reading the README file. At the bottom, it says "HAVE FUN!" and "The DOSBox Team http://www.dosbox.com". Below the welcome message, the command prompt shows "Z:\>SET BLASTER=A220 I7 D1 H5 T6" and "Z:\>mount c c:\x".

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

Welcome to DOSBox v0.74

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

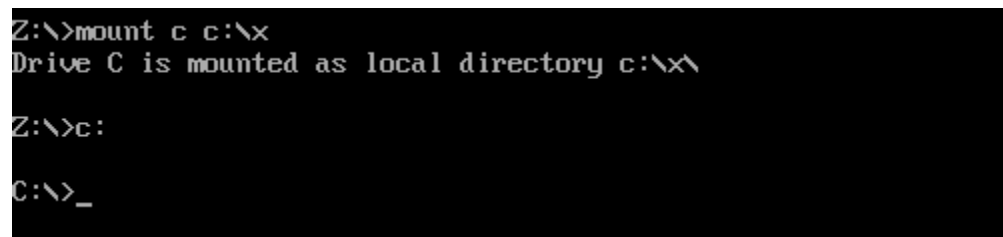
HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount c c:\x
```

IT will go back to z:

Type c: (enter) This will take you to the c drive.... At this point you are in DOS in the sub-folder x, even if it doesn't show it as being in "x".

A screenshot of the DOSBox command prompt. It shows the command "Z:\>mount c c:\x" being entered, followed by the response "Drive C is mounted as local directory c:\x\". Then, the command "Z:\>c:" is entered, and the prompt changes to "C:\>_".

```
Z:\>mount c c:\x
Drive C is mounted as local directory c:\x\

Z:\>c:
C:\>_
```

To check this type “dir” to make sure that your x folder is loaded and ready to go, by seeing your .cmd and .exe files in it. If not then type cd x: enter. And do another dir enter and make sure.

Then you can run the dos .exe files, but NOT edit. You must edit files in Notepad or something like that.

But before you start editing files, see below to make sure your files are in the correct format:

1. Also before you begin take all your files and make sure they are converted to the SIR-10 format. This can be done in GPR Process in the initial step of the program that converts SIR-2000 data to SIR-10 data. Or if you have Mala, S&S or SIR-4000 data you must do this in a batch using GPR Viewer (see instructions for that program) and then make sure they are all re-named correctly. There is a batch re-name program that is free on-line for this at:

<http://www.bulkrenameutility.co.uk>

2. Then I have a folder on my c drive that I put all the .exe files and my data files after they have been renamed. I call it "x", but you can call it anything you want. That is where the x came from in the mount c c:\x command above. If you have not created it already before that command above, your computer will be very confused.
3. There is one program that you will use all the time. It is called GPR_proc.exe. It takes .cmd files (command files) to run. I have included two .cmd files, one called freq.cmd. Open it up in Notepad and it will look like this:



File Edit Format View Help

```
batch = "true"
```

```
***** INPUT AND OUTPUT DATA *****
```

```
num_input_files = 26
```

```
input_filelist[] = file101.dzt  
                  file102.dzt  
                  file103.dzt  
                  file104.dzt  
                  file105.dzt  
                  file106.dzt  
                  file107.dzt  
                  file108.dzt  
                  file109.dzt  
                  file110.dzt  
                  file111.dzt  
                  file112.dzt  
                  file113.dzt  
                  file114.dzt  
                  file115.dzt  
                  file116.dzt  
                  file117.dzt  
                  file118.dzt  
                  file119.dzt  
                  file120.dzt  
                  file121.dzt  
                  file122.dzt  
                  file123.dzt  
                  file124.dzt  
                  file125.dzt  
                  file126.dzt
```

```
output_filelist[] = file201.dzt  
                  file202.dzt  
                  file203.dzt  
                  file204.dzt  
                  file205.dzt  
                  file206.dzt  
                  file207.dzt  
                  file208.dzt  
                  file209.dzt  
                  file210.dzt  
                  file211.dzt  
                  file212.dzt  
                  file213.dzt  
                  file214.dzt
```

```

        file212.dzt
        file213.dzt
        file214.dzt
        file215.dzt
        file216.dzt
        file217.dzt
        file218.dzt
        file219.dzt
        file220.dzt
        file221.dzt
        file222.dzt
        file223.dzt
        file224.dzt
        file225.dzt
        file226.dzt
channel = 1          ; OPTIONAL - For use ONLY with multi-channel DZT files

***** PROCESSING OPTIONS *****
; NOTE that options are performed in the order they are listed by you. One
; suggested sequence is given below.
glob_bckgrnd_rem = "FALSE"
glob_forgrnd_rem = "false"
num_gain_off  0
gain_off[]
amp_adjust      "INVALID_VALUE"
low_freq_cutoff = 600 ; NOTE: both low and high cutoffs must be given if
high_freq_cutoff = 800 ;      either or both are requested
preprocFFT      = "false"
samp_slide      0
wind_bckgrnd_rem 0
wind_forgrnd_rem 0
stack           0
amp_scale       1.0
hsmooth         0
vsmooth         0
spatial_median  0
temporal_median 0
inst_amp        "FALSE"
inst_pow        "FALSE"
num_gain_on     0
gain_on[]
trace_equalize  -1
***** END OF FILE GPR_PROC.CMD *****

```

See here that I am going to process 26 files together in batch. I have the originals as file101.dzt etc, and then am creating new files (also that will go in "x" folder, called file201.dzt etc. You can edit this file to create more or less files as you wish.

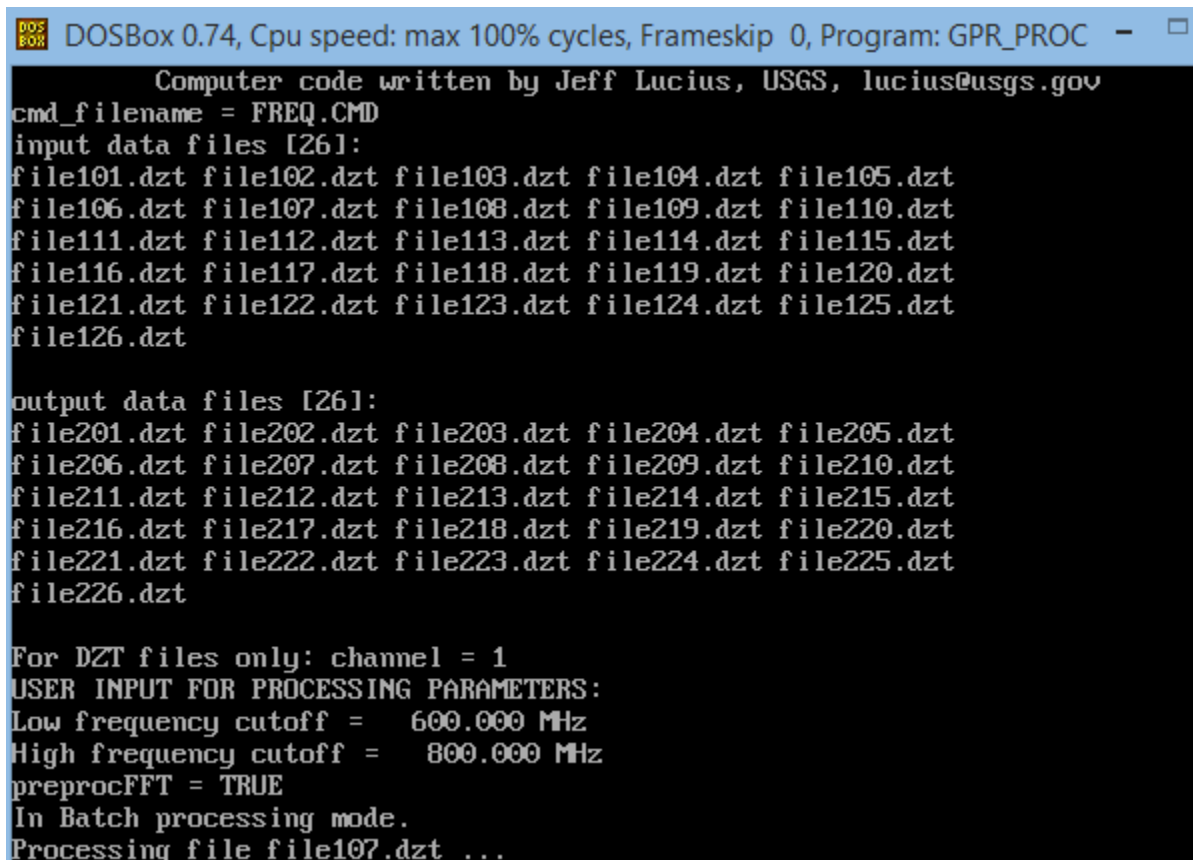
The other part of this, which we are using here is the frequency filtering. There is a low and high frequency cut-off (in this case for 400 MHz data. This program can also do much more such as smoothing, changing the gains, stacking, background removal and more. We no longer use most of these, as they have been incorporated into GPR Viewer.

So once you have edited this .cmd file save it back to “x” folder and you are ready to process.

You then make sure you are in “x” in the DOS box and type this: GPR_proc.exe freq.cmd (enter)

```
C:\>gpr_proc.exe freq.cmd
```

It will then start going and the menu will look like this, as it is working.



```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: GPR_PROC - □
Computer code written by Jeff Lucius, USGS, lucius@usgs.gov
cmd_filename = FREQ.CMD
input data files [26]:
file101.dzt file102.dzt file103.dzt file104.dzt file105.dzt
file106.dzt file107.dzt file108.dzt file109.dzt file110.dzt
file111.dzt file112.dzt file113.dzt file114.dzt file115.dzt
file116.dzt file117.dzt file118.dzt file119.dzt file120.dzt
file121.dzt file122.dzt file123.dzt file124.dzt file125.dzt
file126.dzt

output data files [26]:
file201.dzt file202.dzt file203.dzt file204.dzt file205.dzt
file206.dzt file207.dzt file208.dzt file209.dzt file210.dzt
file211.dzt file212.dzt file213.dzt file214.dzt file215.dzt
file216.dzt file217.dzt file218.dzt file219.dzt file220.dzt
file221.dzt file222.dzt file223.dzt file224.dzt file225.dzt
file226.dzt

For DZT files only: channel = 1
USER INPUT FOR PROCESSING PARAMETERS:
Low frequency cutoff = 600.000 MHz
High frequency cutoff = 800.000 MHz
preprocFFT = TRUE
In Batch processing mode.
Processing file file107.dzt ...
```

Then when it is done you will have 26 new files (in the case here) that are frequency filtered and will be used for new data processing.

Note here on how to use this same program to do “migration”. Again in notepad take that command file and take out the equal signs for the frequency filtering lines and make sure that they are placed in on the line that is **wind_forgrnd_rem**. See below:

```
file192.dzt
channel = 1 ; OPTIONAL - For use ONLY with multi-channel DZT files

***** PROCESSING OPTIONS *****
; NOTE that options are performed in the order they are listed by you. One
; suggested sequence is given below.
glob_bckgrnd_rem = "FALSE"
glob_forgrnd_rem = "false"
num_gain_off = 0
gain_off[]
amp_adjust = "INVALID_VALUE"
low_freq_cutoff = -1.0 ; NOTE: both low and high cutoffs must be given if
high_freq_cutoff = -1.0 ; either or both are requested
preprocFFT = "TRUE"
samp_slide = 0
wind_bckgrnd_rem = 0
wind_forgrnd_rem = 7 ; Larry note: here you change this for the number of traces, always an odd number
stack = 0
amp_scale = 1.0
hsmooth = 0
vsmooth = 0
spatial_median = 0
temporal_median = 0
inst_amp = "FALSE"
inst_pow = "FALSE"
num_gain_on = 0
gain_on[]
trace_equalize = -1
***** END OF FILE GPR_PROC.CMD *****
```

Then making sure that the .dzt files that you wish to process are correct just like in frequency filtering, and that they output files are different (so you don't destroy and replace the originals). Save this .cmd file under a new name in the same folder as the raw .dzt files. This one I show above I named forea.cmd.

Then go back to the DOS box window that should still be open and at the c: prompt type

GPR_proc.exe forea.cmd

It will run and do the "migration" for all the files chosen and create new ones. You can open up those new .dzt files in GPR Viewer and see if this migration was done correctly. If not, then change the number in wind_forgrnd_rem. Higher or lower depending on the number of traces that the program will go out and search for hyperbola axes to remove.