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## General information

Chose the protocol number that you wish to use

Select the protocol flag for the protocol and retain it to use to count the protocol. As a general rule you must always use the Enter key in order to proceed in the software. Using the arrow keys will not enter a new value and the old value will be saved even if you have typed in a new value. As a rule of thumb it is better to always proceed through the software with the Enter key rather than the arrow keys

On any page you are viewing there are instructions for what you may enter in a line just above the function keys.

Training in liquid scintillation and gamma counting

Preparing a protocol on the 2100TR liquid scintillation counter

Status Page

Go to the Status page (Fig 01)

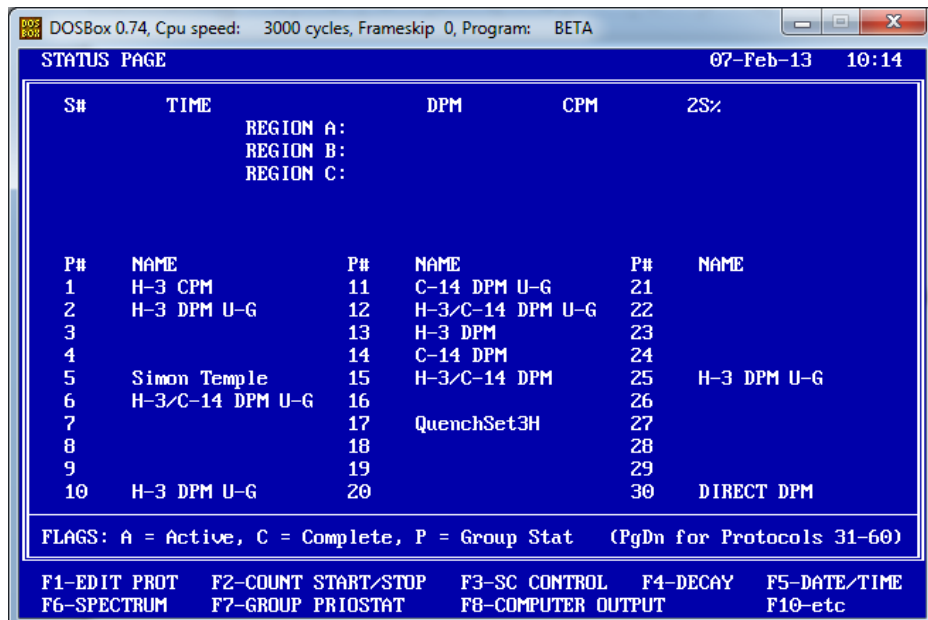


Fig 01

Press *F1* to go to the edit protocol page

Enter the number of the protocol that you wish to use – in this case we have chosen protocol 1. You must use the *Enter* key to proceed.(Fig 02)

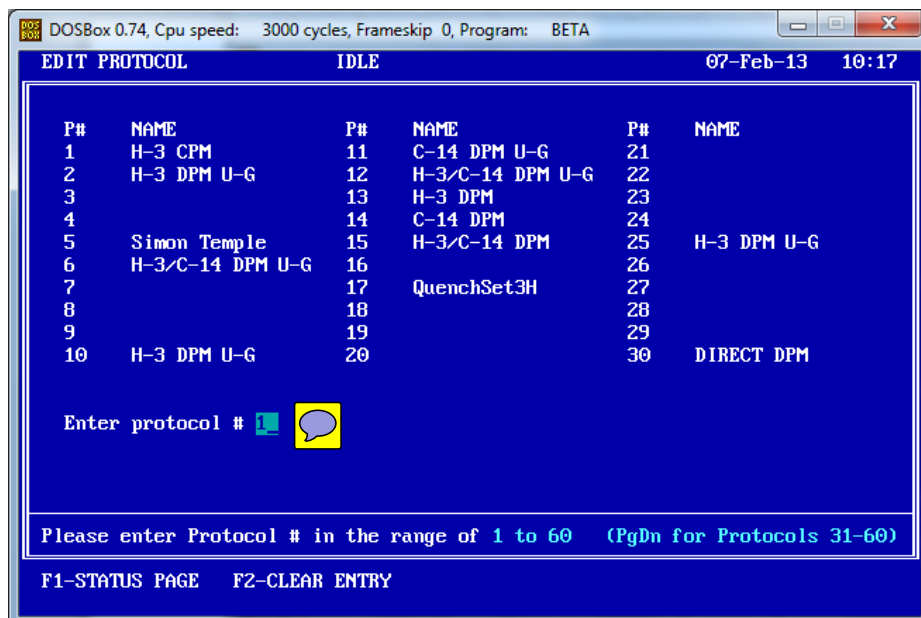


Fig 02

Page 1 - CPM page showing count conditions

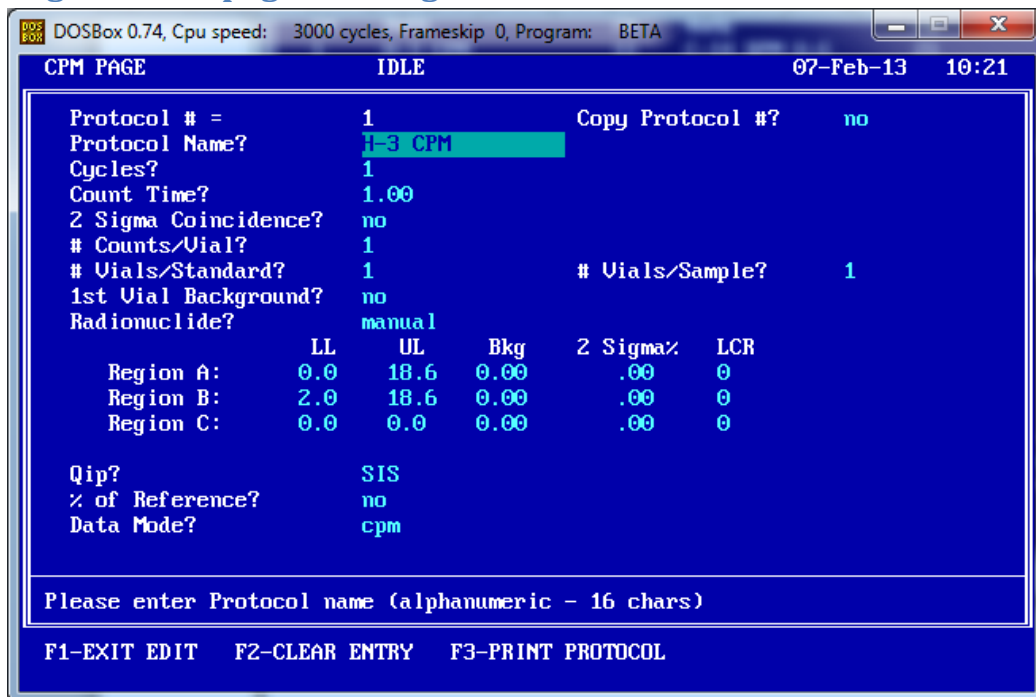


Fig 03

Using the ↑ up arrow key move to Copy Protocol (Fig 04)

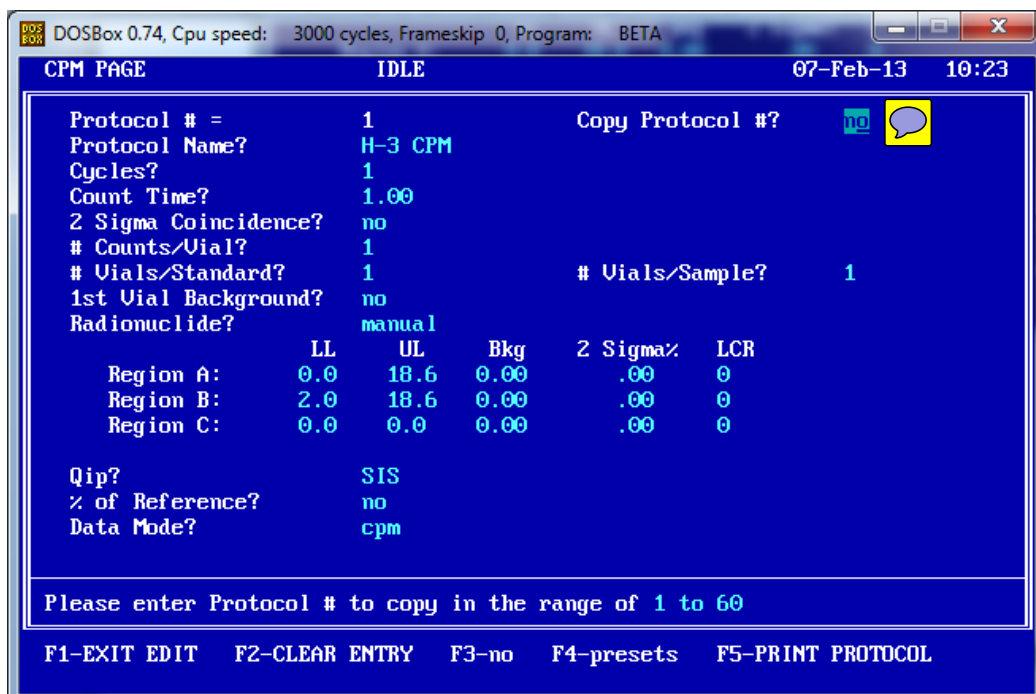


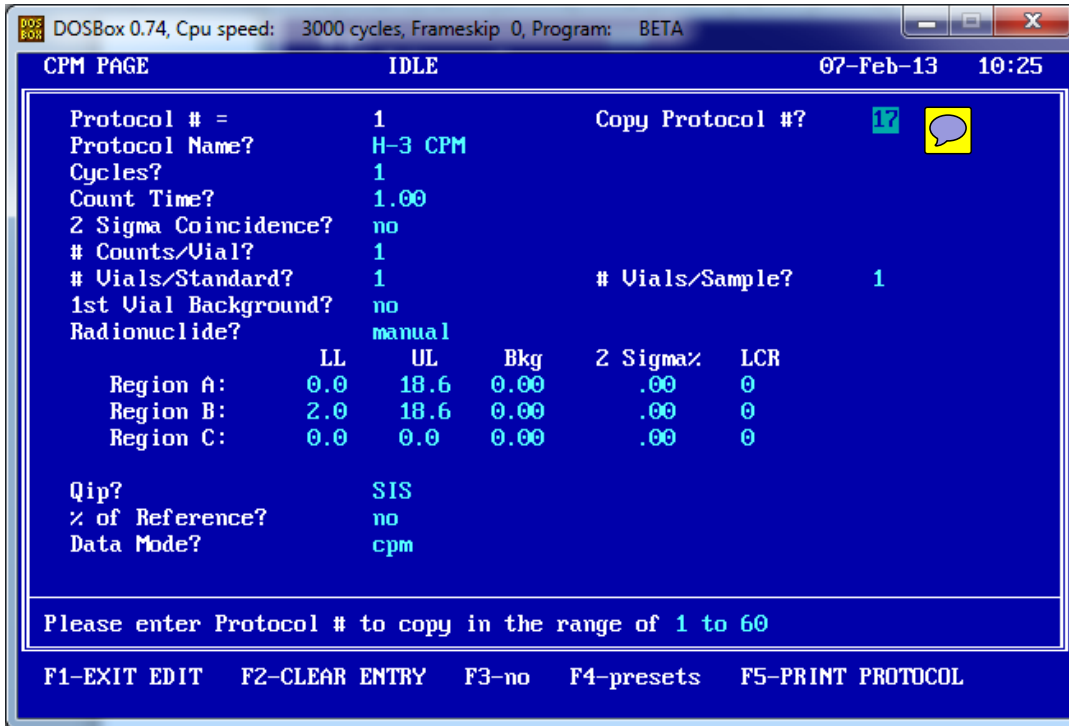
Fig 04

Here you can see Copy Protocol highlighted (Fig 04)

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Enter the number of the protocol that you wish to copy. In this case the protocol number is 17 which is where the quench curve is located that we wish to use.(Fig 05)



(Fig 05)

When you press the Enter key the protocol will load with the quench curve and all the other information from number 17 (Fig 06)

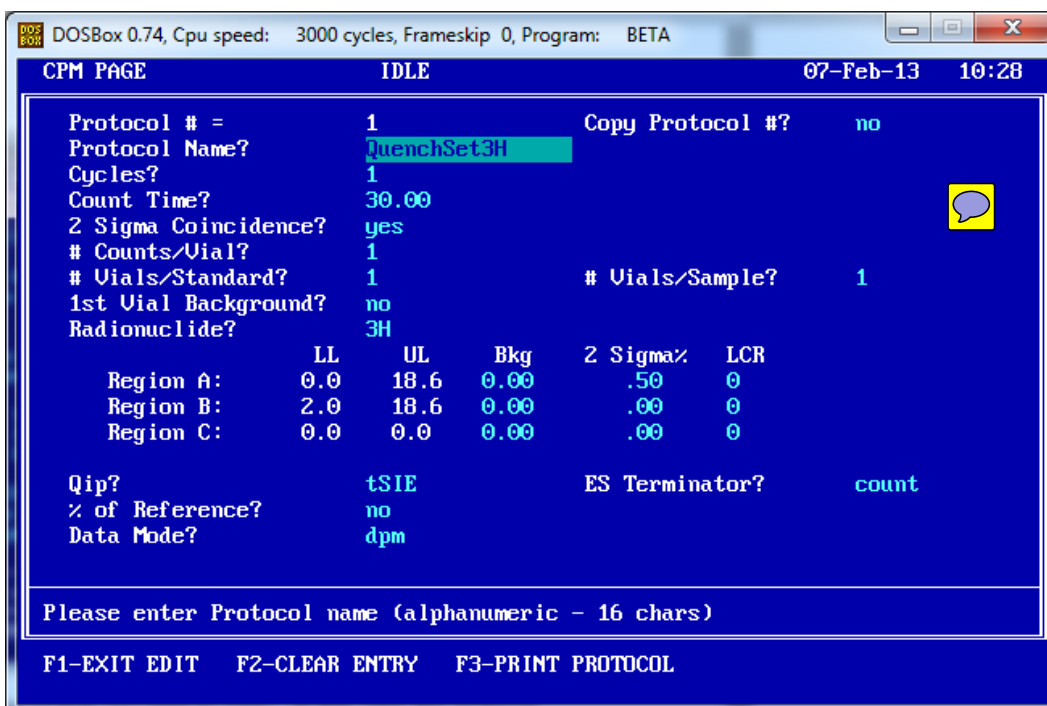


Fig 06

**Training in liquid scintillation and gamma counting**

Preparing a protocol on the 2100TR liquid scintillation counter

Now you will need to rename the protocol to a name that is more relevant say “3H urine test”. You are limited to 16 characters in total including spaces. Do not use DOS commands such as commas, full stops, forward or back slashes, colons, semi colons, plus or minus signs.

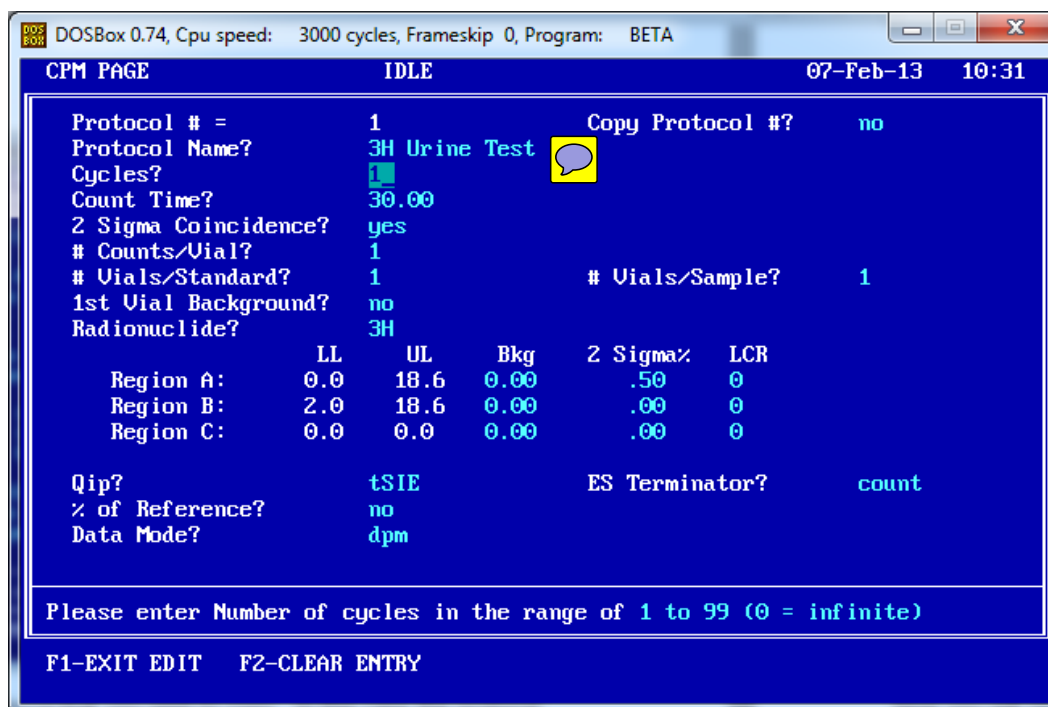


Fig 07

**Review and recommendations on page 1**

Refer to Fig 7

Change the protocol to the method you wish to use. Listed below are the terms in use and a recommendation as to the entire you need to make.

Cycles – this is how many time you want the entire set of samples you have to be counted. Usually this is set to 1

Count time – the length of time you wish each sample to be counted

2 Sigma Coincidence – this is used to stop a count using a statistical terminator. If the counts are high there is no reason to count to a long count time. The terminator will stop the count when it reaches a statistical value. Usually this is switched on. A value is then put in the 2 Sigma% value later in the page. The value is usually 0.5

Counts/Vial – this is how many times you would want the vial to be counted if you wanted repeat counts. Usually this is set to 1

### Training in liquid scintillation and gamma counting

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Vials/Standard – the software allows you to put a Standard vial and if the % reference is selected later in the page then the samples are counted as a % of the standard. It also allows more than one background to be used and the backgrounds are then averaged. The usual setting is 1

Vials/Sample – if you are counting replicates then this will average the counts as well as printing out the value of each vial. The usual setting is 1

1<sup>st</sup> Vial Background – if you wish to have a blank/background vial then you must put it in the first vial position in the cassette and select this option. Use the function keys to enter yes or no.

Radionuclide – this should be set to the quench curve that you have in the software already and should not be changed

Region A, Region B and Region C

If you have selected NO for first vial background you may enter a value for background manually in the Bkg column.

If you have selected Yes for the 2Sigma% then you may enter a value

LCR stands for Low Count Rate and is used if you want to exclude samples that are background if you are running fractions from an HPLC for example – just set to 0

QIP – stands for quench indicating parameter and this should be left on tSIE

ES Terminator is how long the external standard counts before establishing the tSIE value and should be left at *count*

% of reference should be left at no

Data Mode – this should be left at dpm

Example of finished page 1

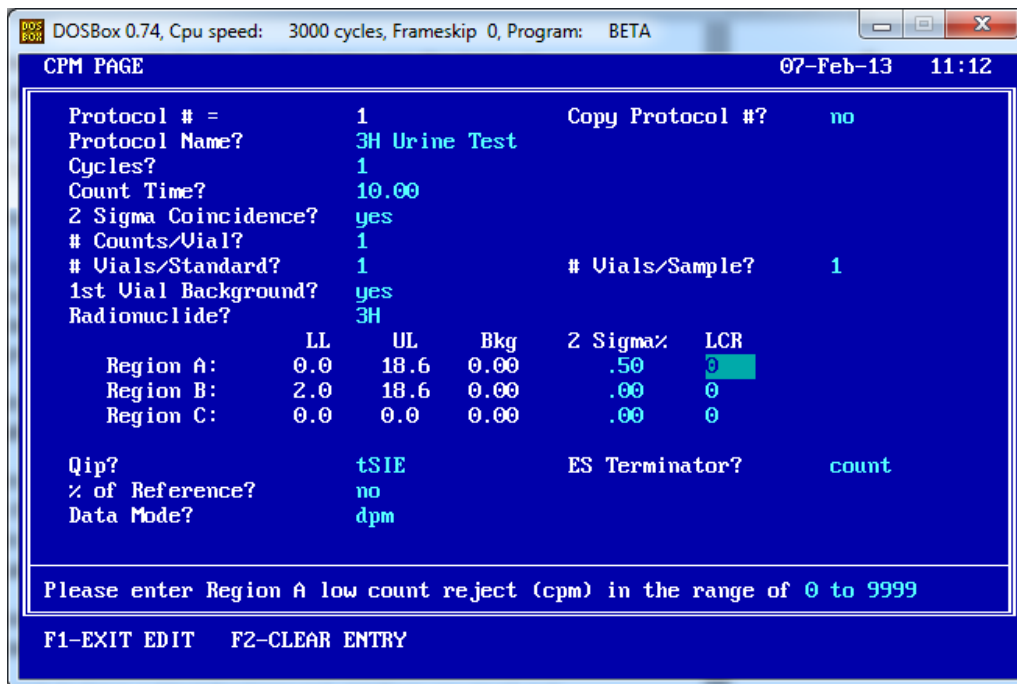


Fig 08

So in the example above (Fig 08) I have changed the count time to 10 minutes, switched on 2Sigma Coincidence, switched on 1<sup>st</sup> vial background, set the 2 Sigma% value at 0.5 and left the rest as default.

## Page 2 - DPM information

Press the page Down key to get to page 2

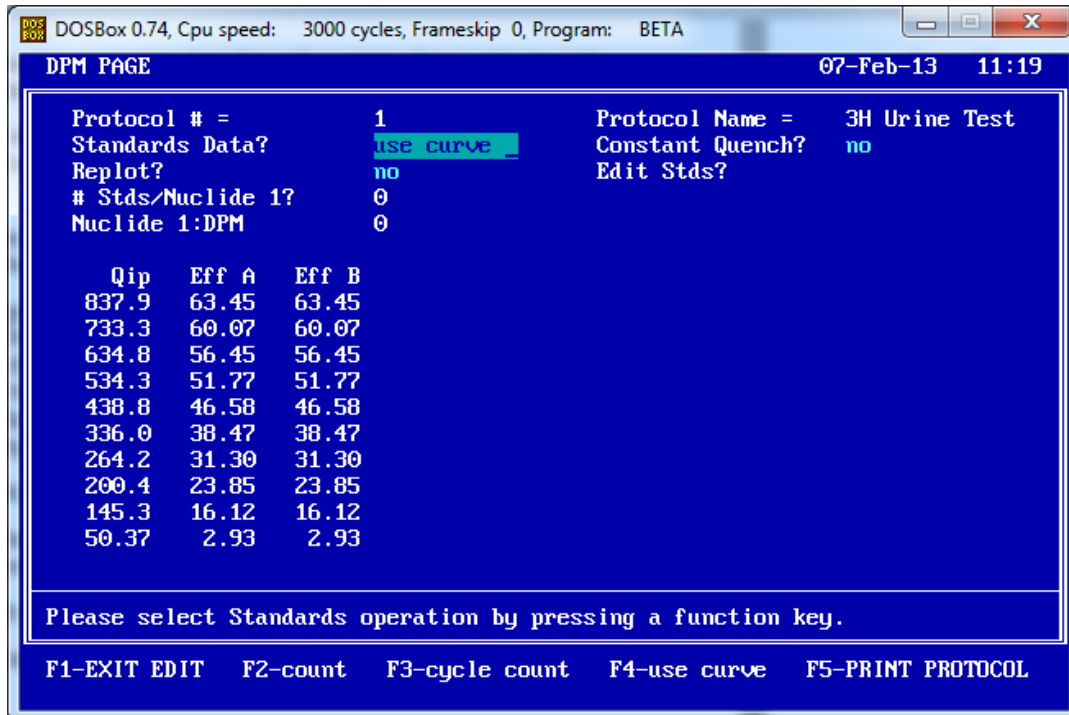


Fig 09

It is vital that you leave this page (Fig 09) as shown as this is the quench data that the counter will use to determine the DPM value of your samples.

Press the page Down key to get to page 3



Page 3 – Count corrections

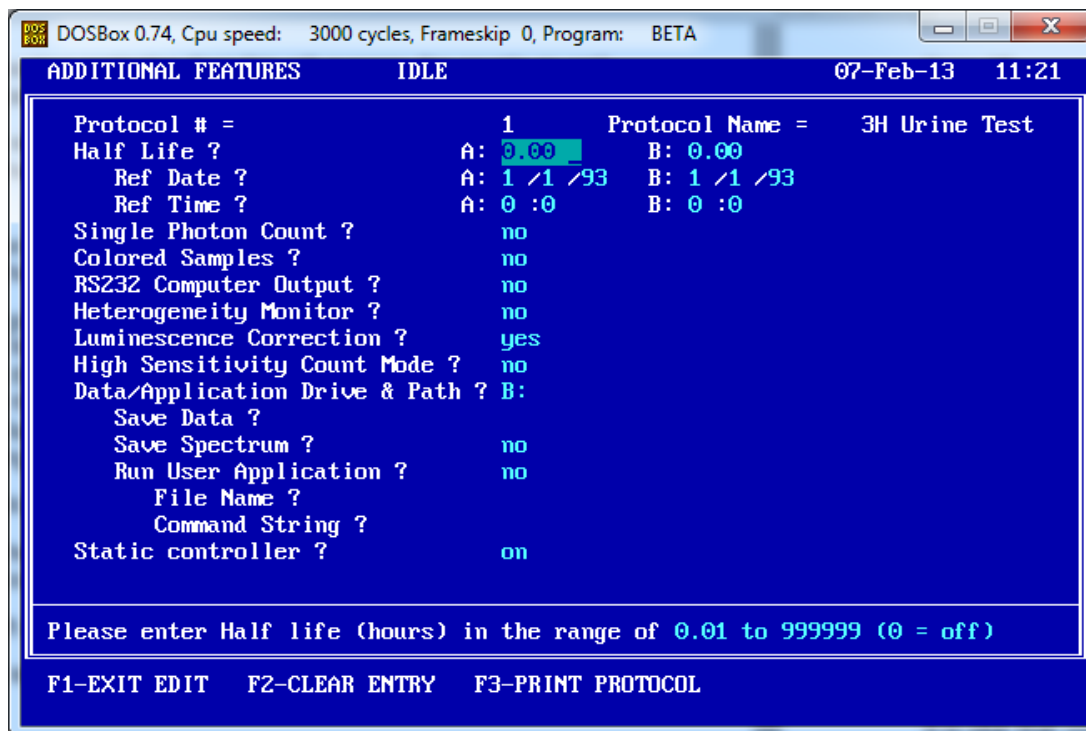


Fig 10

This page (Fig 10) determines the corrections that may be made. Usually in the case of coloured samples you would switch on Colored Samples and if there was the possibility of any luminescence in the samples then Luminescence Correction would be switched on.

Please note that the Static Controller should always be switched on

There is also the possibility of saving the data to either the C drive or the A drive. There is a separate set of instructions for how to do this.

Page Down for Page 4

Page 4 Print format

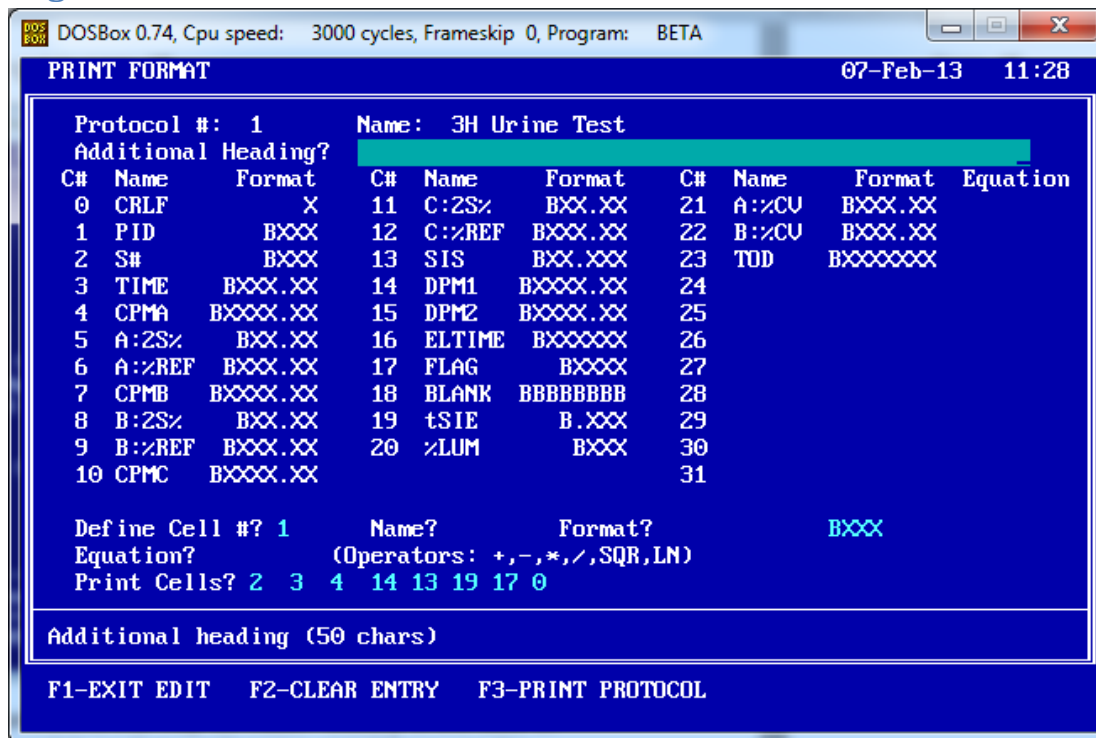
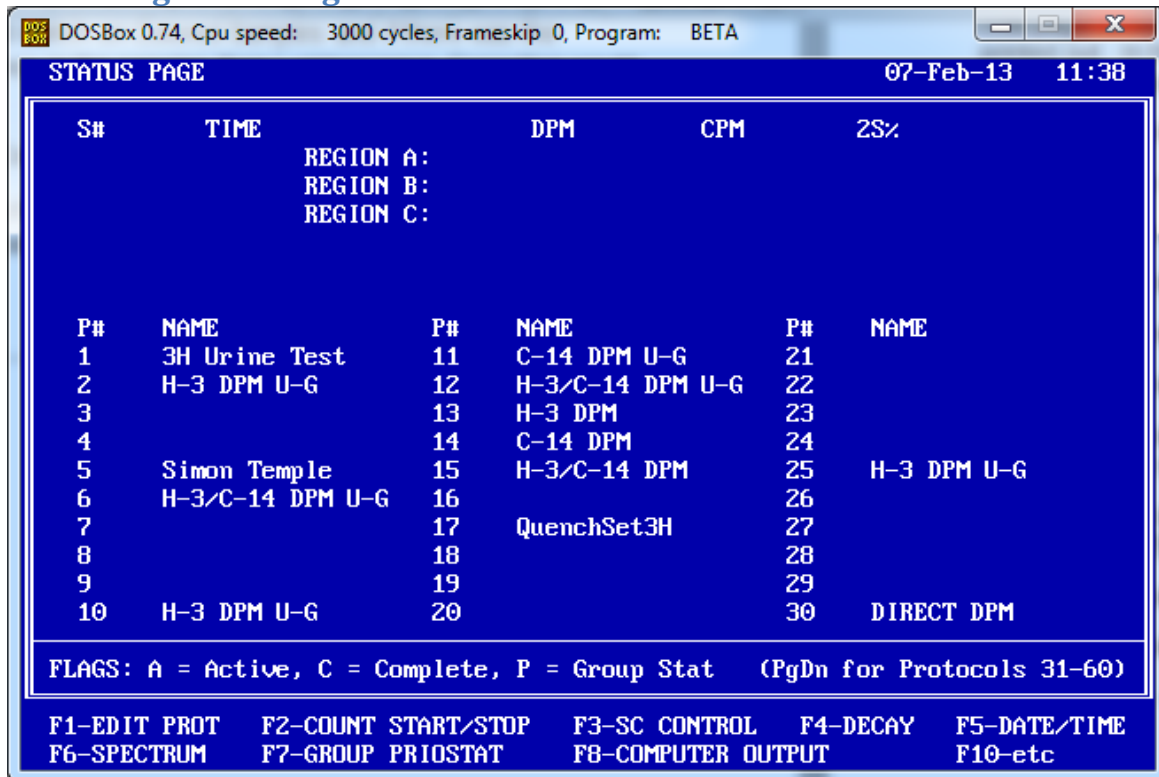


Fig 11

This page looks difficult but isn't. Across the bottom it shows the cells that will be printed out. In this case it is

- S# - Sample Number
  - Time - Count Time
  - CPMA - CPM in region A
  - DPM1 – DPM in region A
  - SIS – Spectral Index of the Sample (another QIP)
  - tSIE – Transformed Spectral Index of the Sample (QIP)
  - Flag – which shows any error or information messages
  - CRLF – which is the most important one and stands for Carriage Return Line Feed. Without this the printer will not print anything you are able to read
- In general you can leave the default settings and in this case they will be good for what you want.
- Press F1 to return to the Edit Protocol Page  
 Press F1 to return to the Status Page

Status Page –starting the run



Load the samples in the cassette, put in the protocol flag and then press F2 to start the count.