

Rhinspirometer NV1

Users Software Guide
V9



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INSTALLATION

COMPUTERS SUPPORTED

NV1 will work on any PC which can run Windows 2000, XP or Vista and which has a free USB socket. NB units, which comply with EN60950, should be used.

PRINTERS SUPPORTED

As these instruments operate in a Windows environment, print capability depends on you having installed a printer under Windows. Virtually any printer, which works under the version of Windows you have, will be suitable.

INSTALLATION SEQUENCE

The software comes on 2 CD's and should be installed **before connecting the NV1 Rhinspirometer to your PC**. It is also advisable to close any other programs you may be running while performing the installation as you may need to close down the PC during this operation.

GMI SOFTWARE

Put the CD in your drive, navigate to it using My Computer/Windows Explorer, and double click on the file SETUP.EXE. Accept the defaults offered at each stage.

INTERFACE BOARD SOFTWARE (Measurement Computing)

Ensure the USB cable is not connected to the NV1 unit.

Put the CD in your drive. If your PC is set to autorun CD's then allow this to happen while accepting the defaults offered. The program Instacal and other driver software will be loaded to a folder called Measurement Computing.

If your PC does not automatically run the CD's installation program, click on My Computer, select and open your CD drive, and then double click on mccsetup.exe to install the programs and files.

The installation program will offer defaults all of which should be accepted.

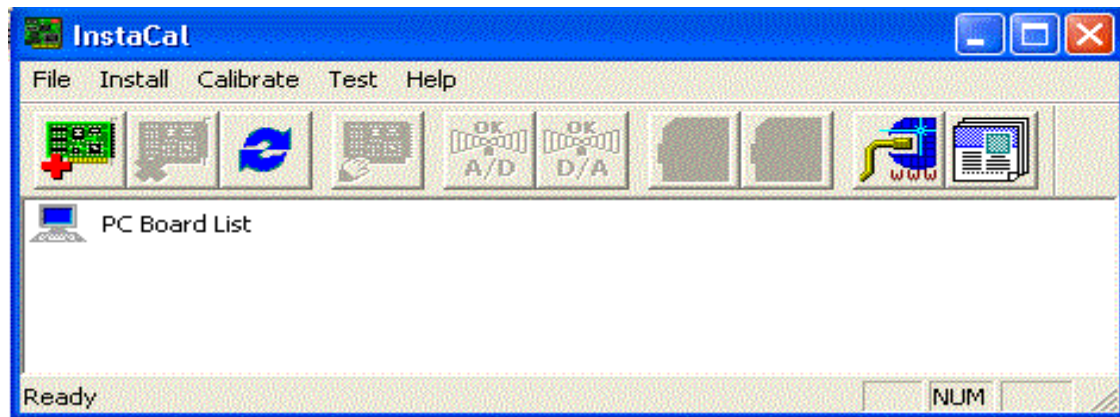
INTERFACE BOARD HARDWARE

The last installation operation is to have your PC identify the USB A/D convertor.

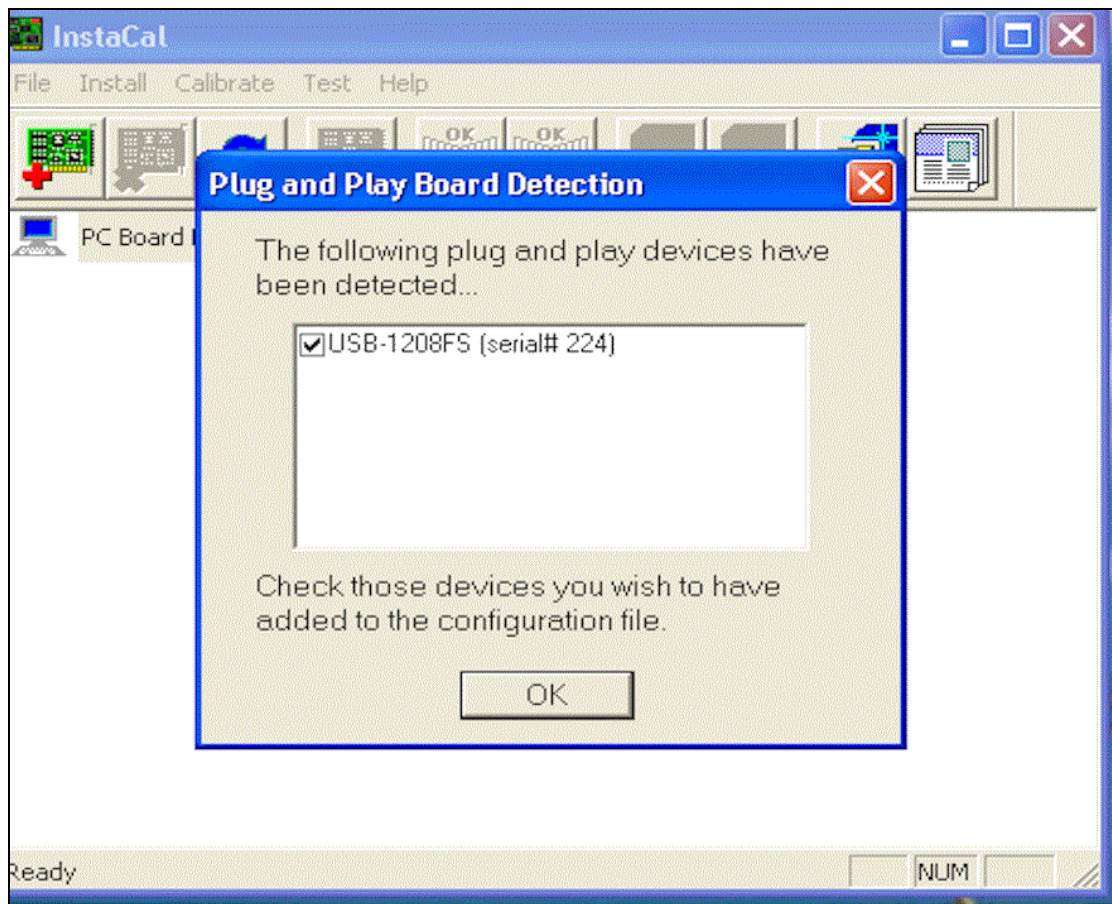
Click on

START/ALL PROGRAMS/MEASUREMENT COMPUTING/INSCAL32.EXE

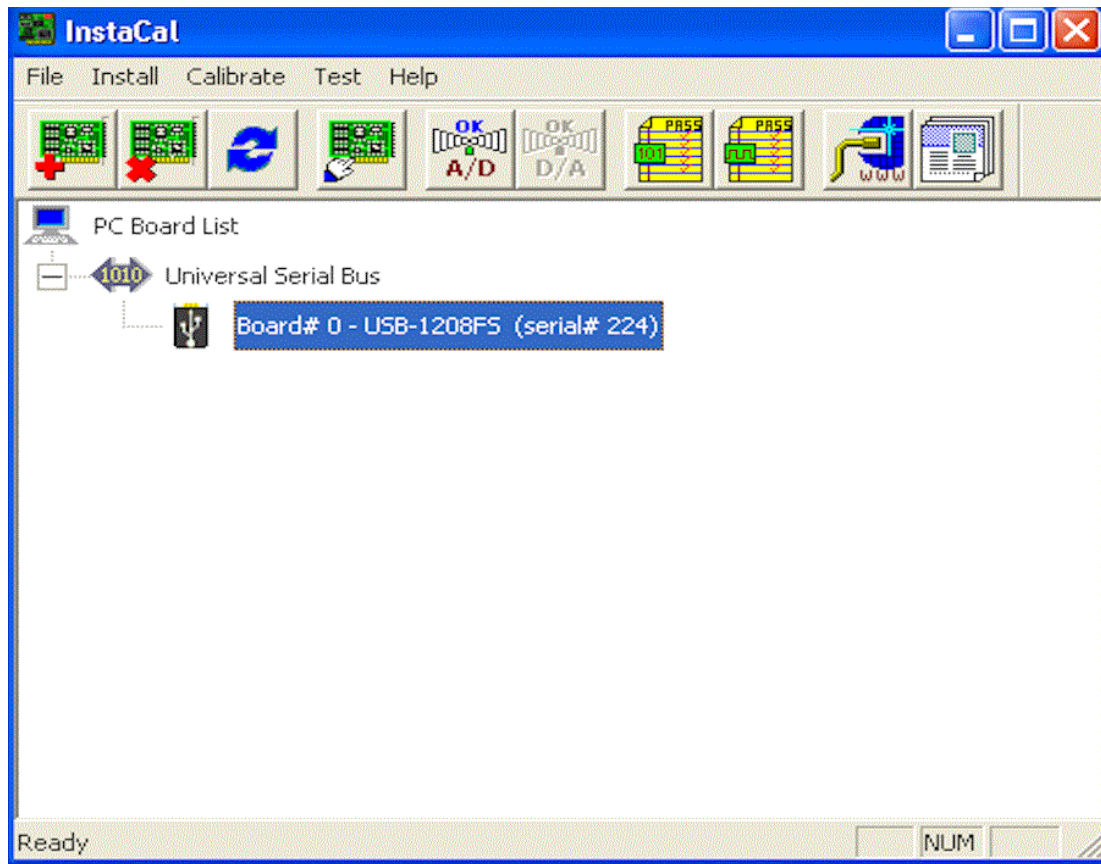
and Instacal will show no boards installed as shown overleaf.



Connect the USB cable between the USB box and the PC and the plug from the USB box to the back of your NV1. Wait for a few seconds as the USB interface is recognised and the drivers loaded. Once completed the Instacal screen will offer the opportunity to install your USB board.



Click on OK.



When the Instacal program shows the screen above, installation is complete and Instacal can be closed down.

Once installed the program can be started by clicking on

START, PROGRAMS, GMI NASAL MEASUREMENTS /
RHINOSPIROMETER

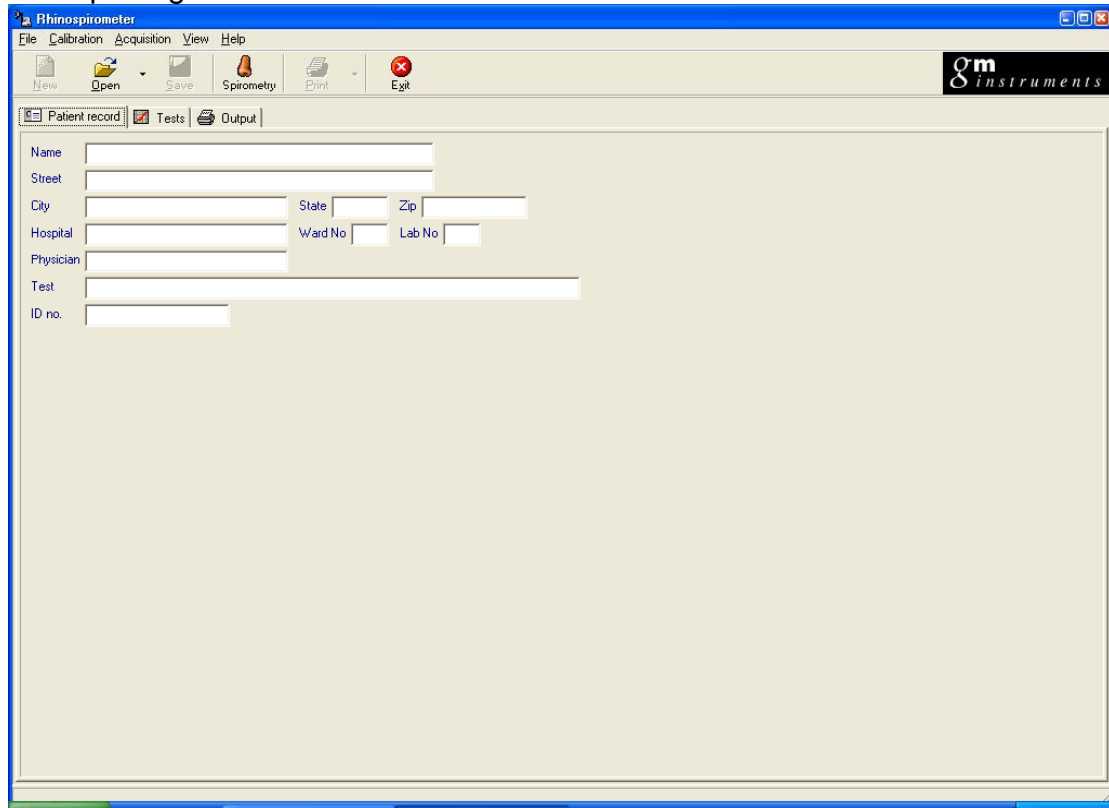
or by clicking on the desktop shortcut.

The opening window is as shown below.

Opening the Software

Start the program by clicking on its desktop icon or by clicking on START/PROGRAMS/GMI NASAL MEASUREMENTS/RHINOSPIROMETER

The opening window is as shown below.



A number of elements within the program can be configured to suit your application, and although you may wish to change them again later, it should be noted that fields within the Patient Record screen should not be changed after storing results for a particular subject, as the stored information may become inaccessible after that time.

Full information on the alterations possible, and how to make them, are shown on the following pages.

How to Configure the Software

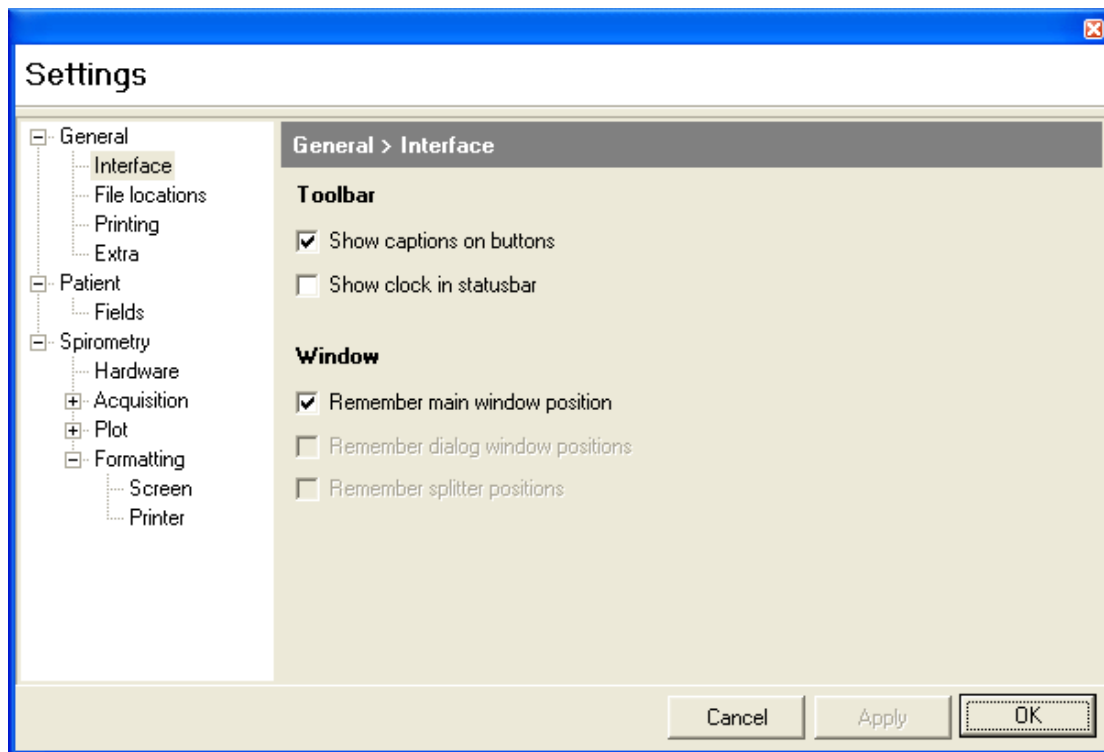
All changes are made by clicking on FILE and SETTINGS. A new window named SETTINGS is then displayed which shows 3 main tabs, each of which contain user configurable items. The three tabs are labelled:-

General in which you can set some interface parameters, the paths to setup files and the printer output headers.

Patient, in which you can alter the number of fields available for information input, their size, their names and the type of characters which are acceptable. You can also tell the system to use a particular field entry as the patient file name.

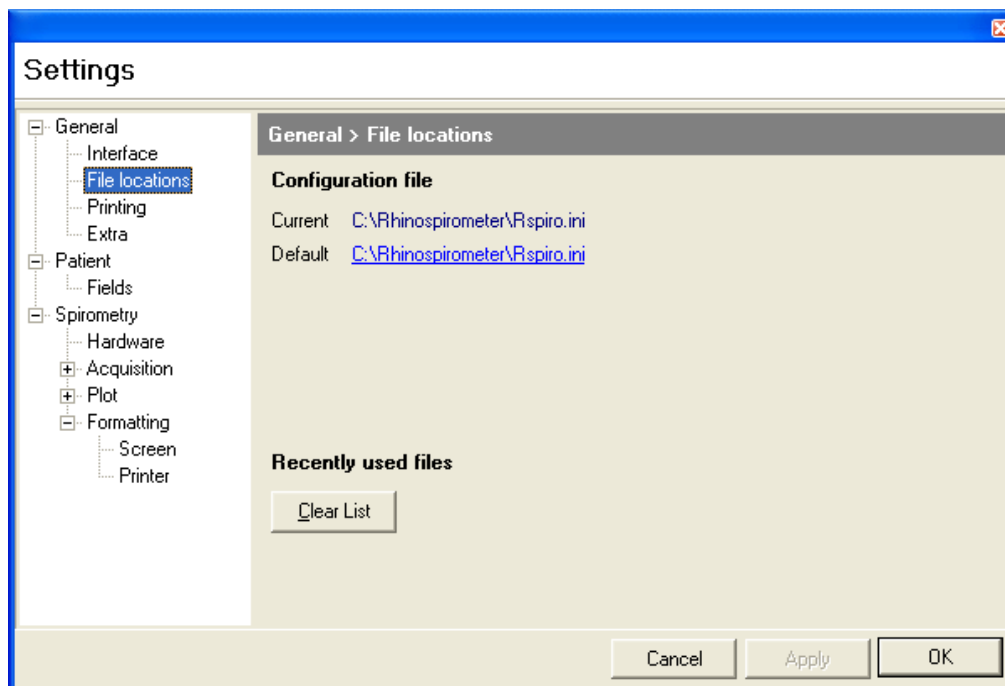
Spirometry deals with making the measurements & sets up the colours displays and printouts

General/Interface Tab



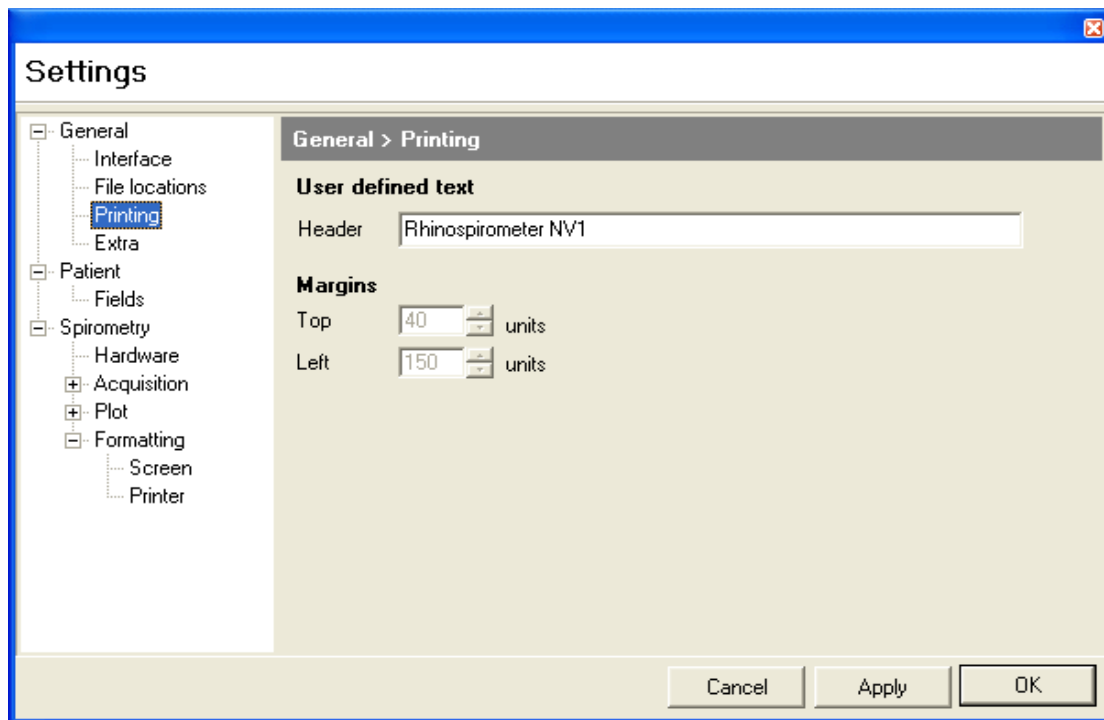
In the interface tab you can alter the way your program buttons are displayed, whether or not the system clock is displayed and control window position.

General/File Locations Tab



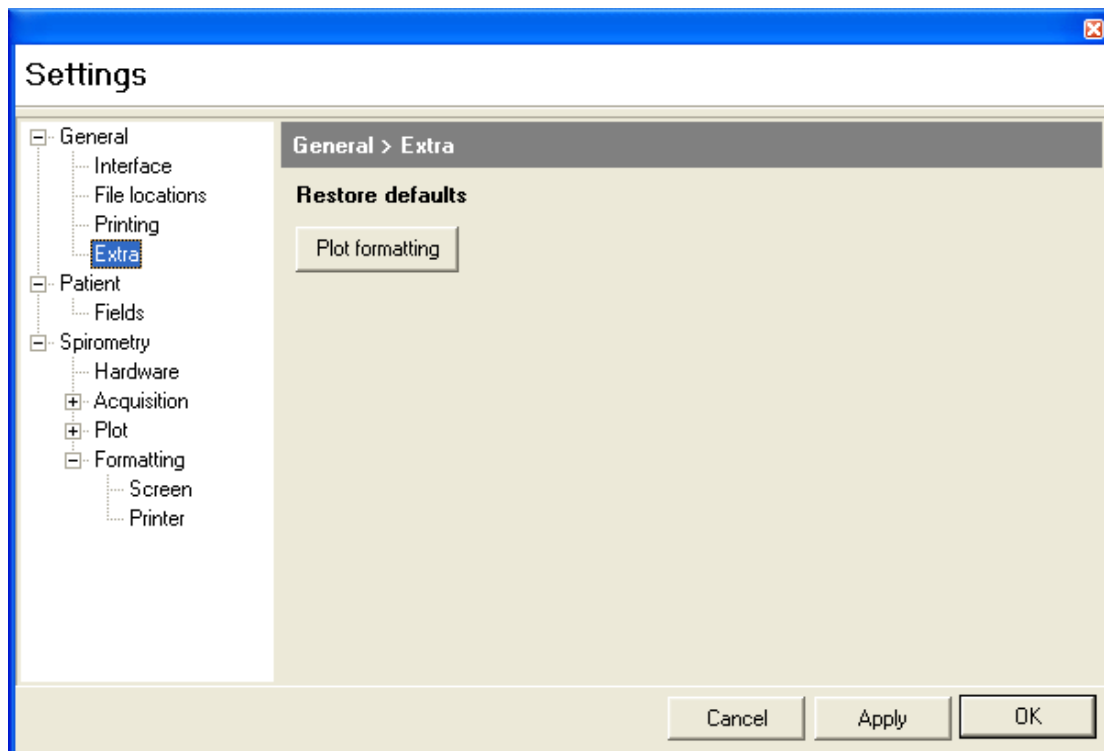
In the File Locations tab you can alter where the Rhinspirometer setup files are saved and view recently used files.

General/Printing Tab



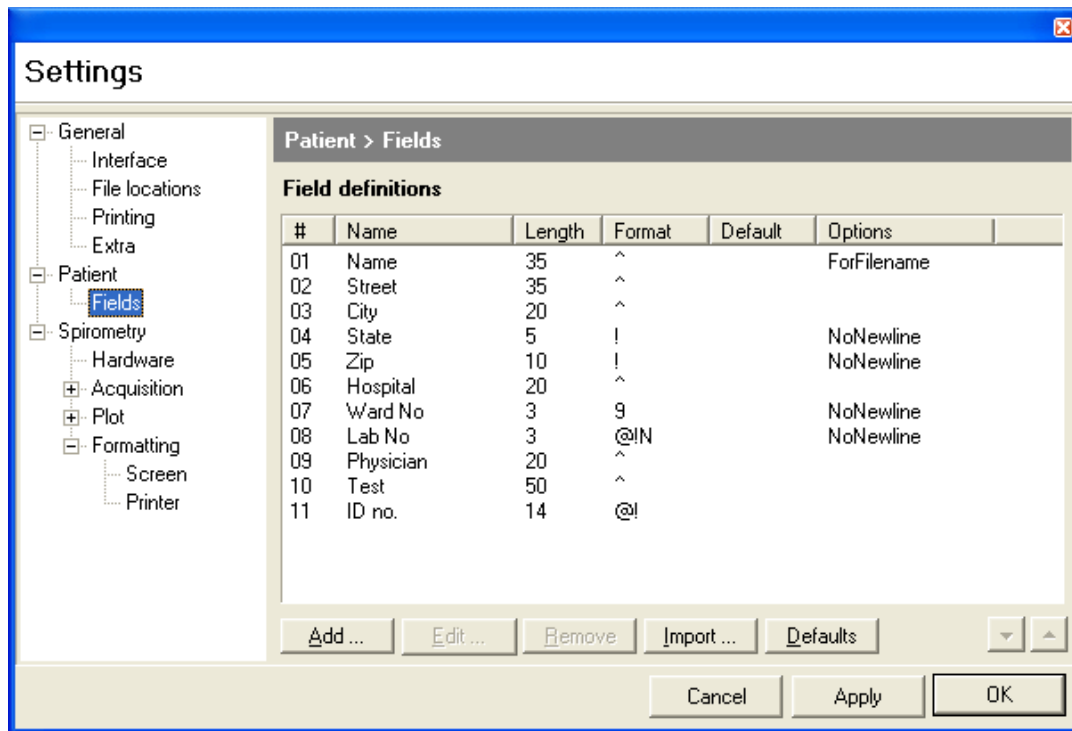
In this tab you can alter the default printout headers and position.

General/Extra Tab



In this tab you can set the plot format.

Patient/Fields



The default setting for **Patient/Fields** contains a large number of fields, many of which may not be appropriate for the work you want to do. You can however select as many or as few of these as you want, put them in any order, define what kind of data is acceptable for entry in any field and specify the size of field.

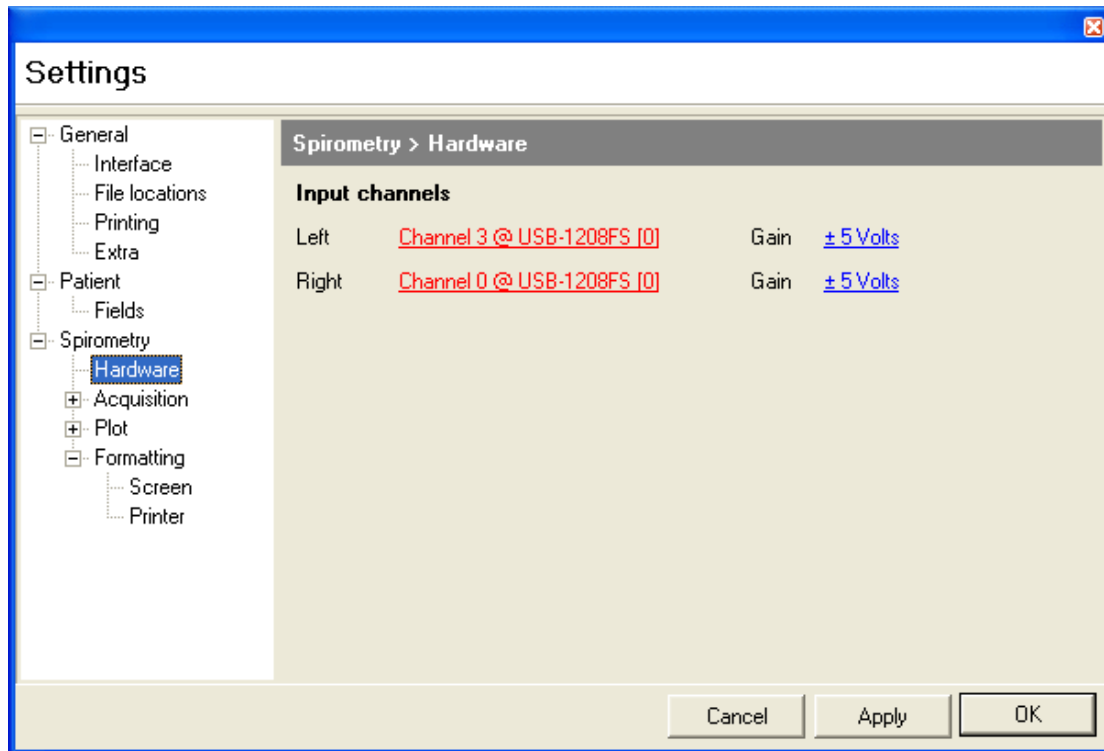
The Patient/Field tab contains the following elements:-

Name is a column which shows the current “labels” already selected for inclusion. If you click on one of these it can be edited or deleted or its position moved within the group. When highlighted the information relating to its structure is shown on the right hand side of the window under the headings of:-

Length the number of character spaces allocated against that name.

Format the conditions applied to character entry in the associated **Name** field.

Spirometry/Hardware



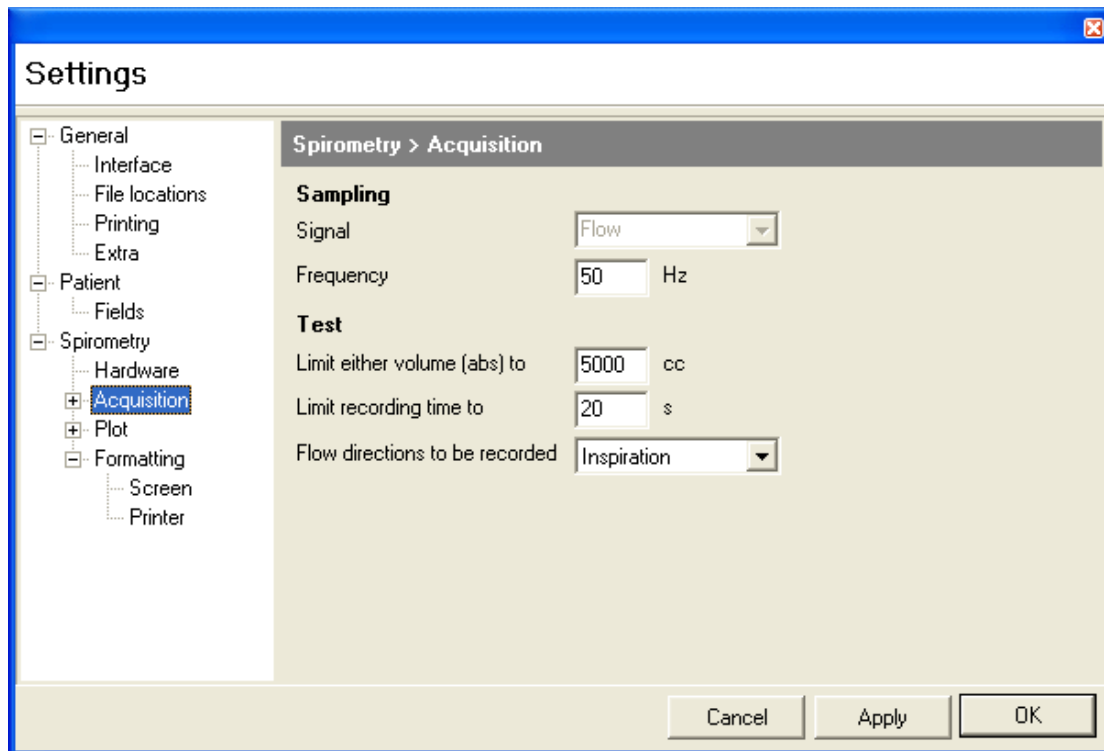
The Spirometry/Hardware tab allows you to select which Analogue to Digital interface card you want to use with NV1, which channels are used and what setting of gain should be used. This is normally preset for you on the installation disk. **The USB interface uses Channel 3 for Left and Channel 0 for Right.**

The A/D board number is board [0] by default but if another A/D Board is installed on the PC – perhaps because you already have an NR6 Rhinomanometer or an Acoustic Rhinomanometer present, then the NV1 board should be installed as Board [1]. To make this change click on the first line & set it to

Channel 3 @ USB-1208FS [1] - Increase of 1

Repeat with the second line to make it *Channel 0 @USB1208FS [1]*

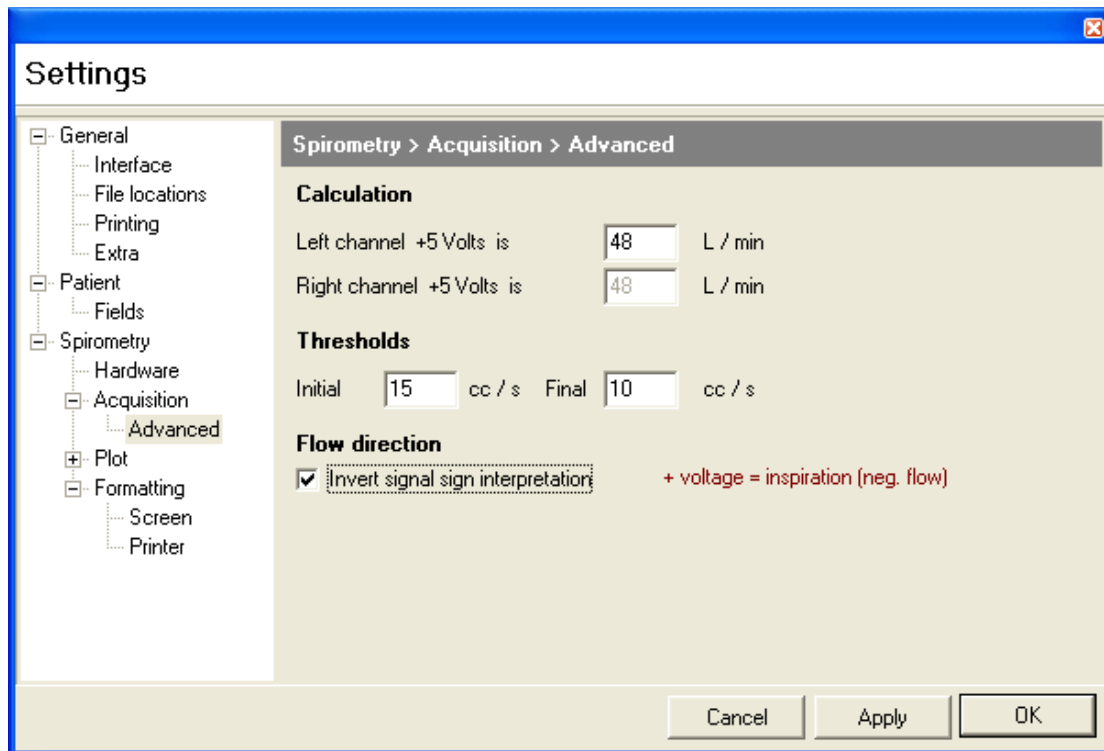
Spirometry/Acquisition



In this tab you can alter the sampling frequency and the point at which a measurement terminates. This can be either when a certain volume is reached (normally 5000cc (5Litres)) or when a certain time has passed (normally 20 seconds).

You can also set the measurement to be made on inspiration or expiration.

Spirometry/Acquisition/Advanced

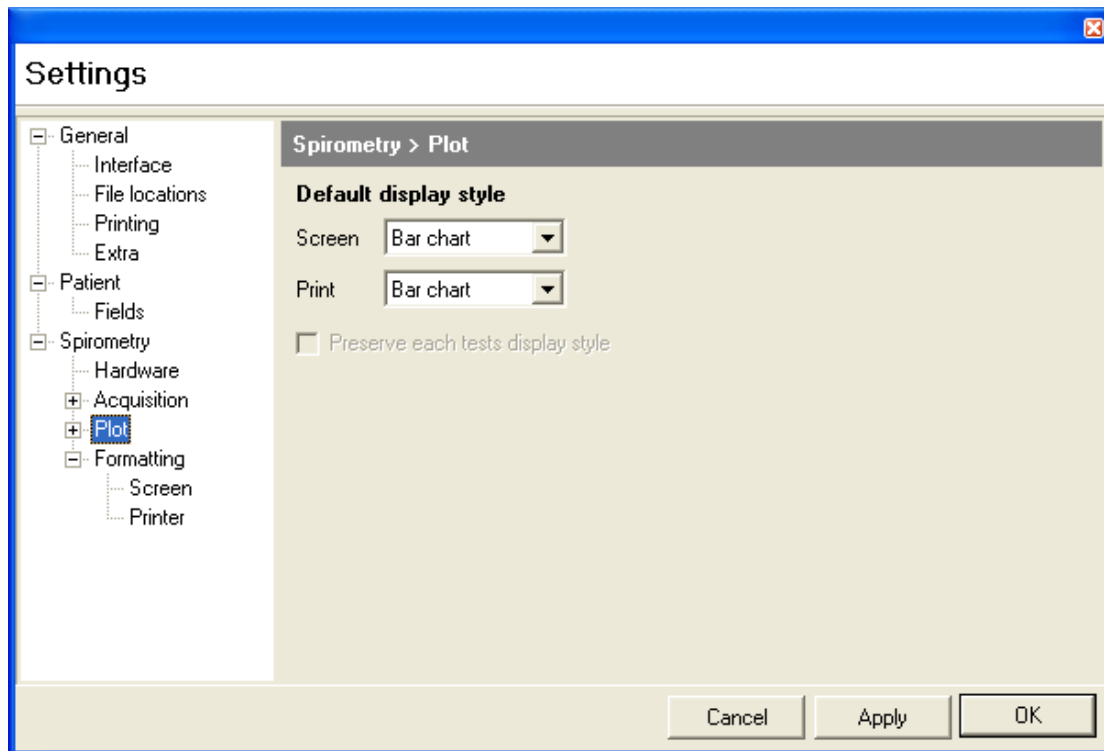


Entries in this tab affect the calibration of the result screens and should be set for you on the installation disk.

The threshold figures refer to flow levels and set the point at which integration begins and halts.

The flow direction tick box gives another way of switching between inspiratory and expiratory volume measurements, but we recommend that you don't change this. (default is ticked)

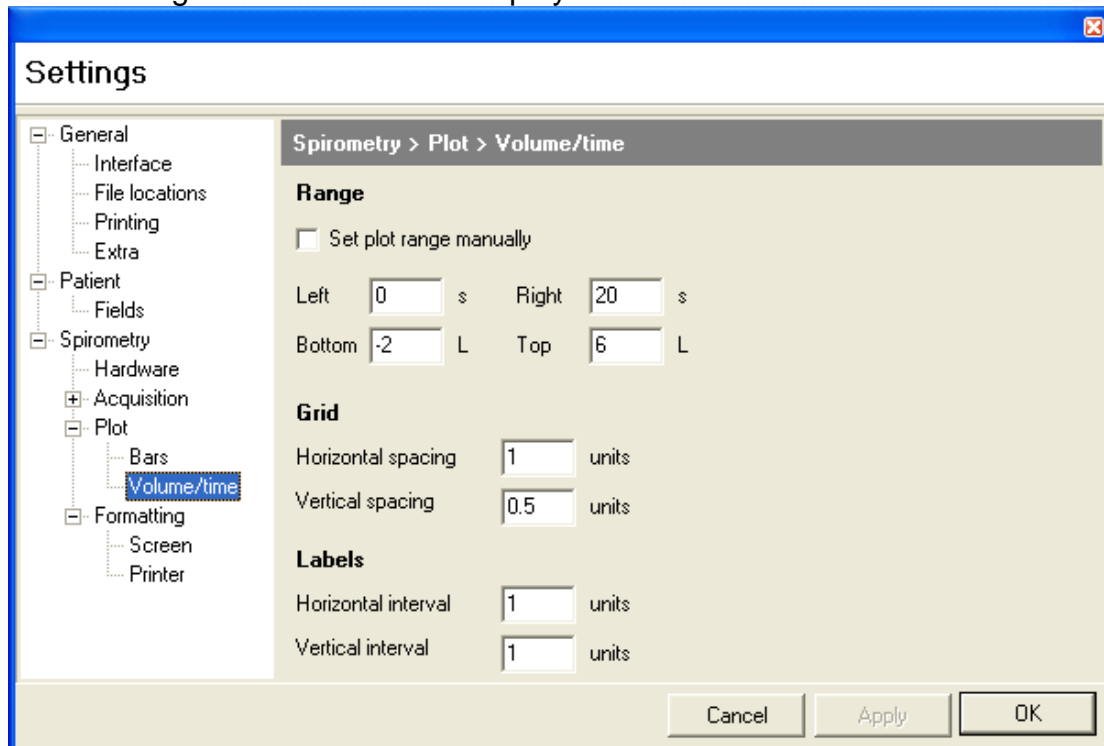
Spirometry/Plot



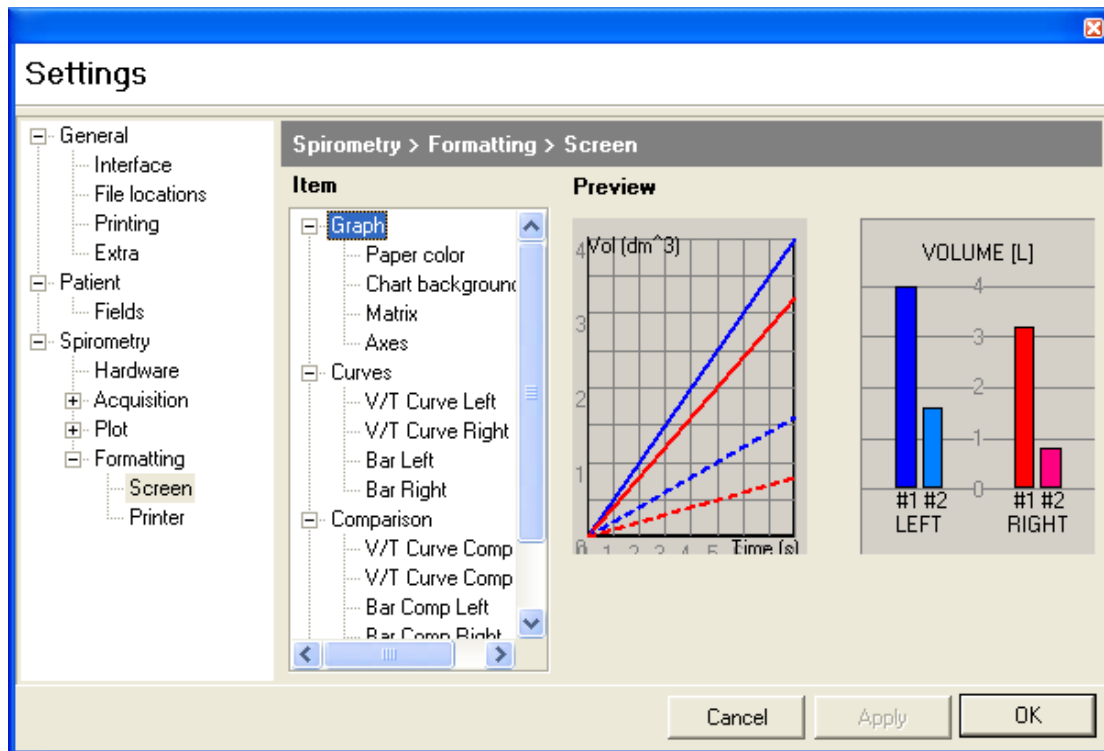
The default display can be set to either bar chart or time/volume plot for the screen or the printout, by setting these items appropriately.

Spirometry/Plot/Volume/time

The labelling of the volume/time display can be altered here.

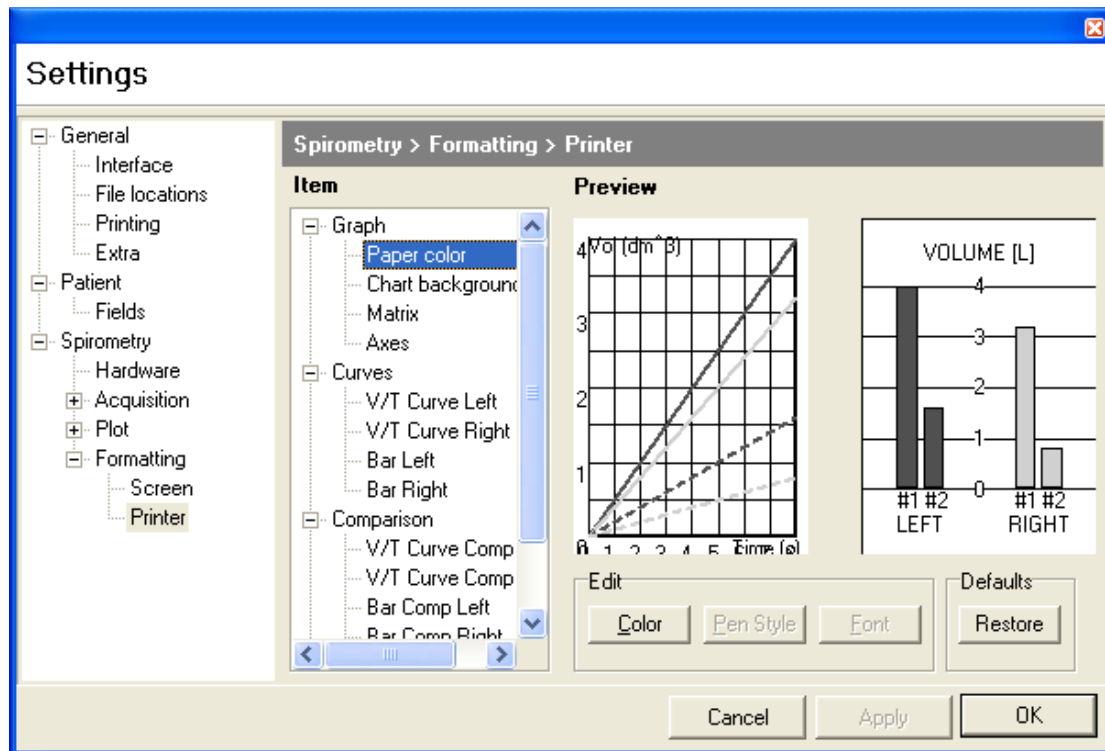


Spirometry/Formatting/Screen



The colour and/or font used for any element shown on the screen can be altered by selecting the item, clicking on the PEN or FONT button and selecting the options desired. Having made the changes you want, clicking on apply sets them as your default settings.

Spirometry/Formatting/Printer

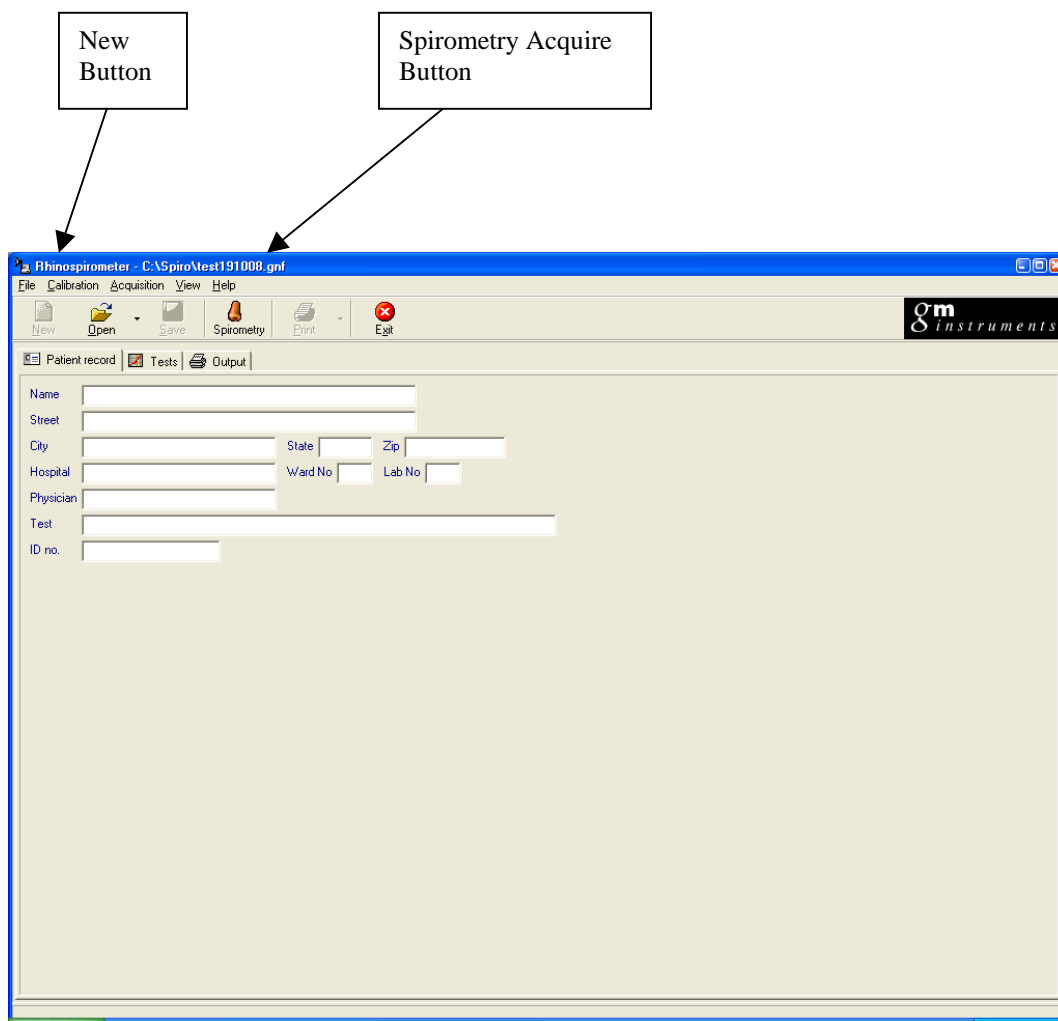


The colour and/or font used for any element shown on the printed document can be altered by selecting the item, clicking on the PEN or FONT button and selecting the options desired. Having made the changes you want, clicking on apply sets them as your default settings.

Starting a Test

To prepare for measurements on a new subject

1. All current patient information and test results are cleared when the program is started or if having performed other measurements, you click on the NEW button.
2. In either event the cursor is set to the first field in the patient information window.
3. You can then enter all patient details. Pressing TAB after entering information in each field will take the cursor to the next one.
4. To start the Acquire procedure you click on the Spirometry icon.



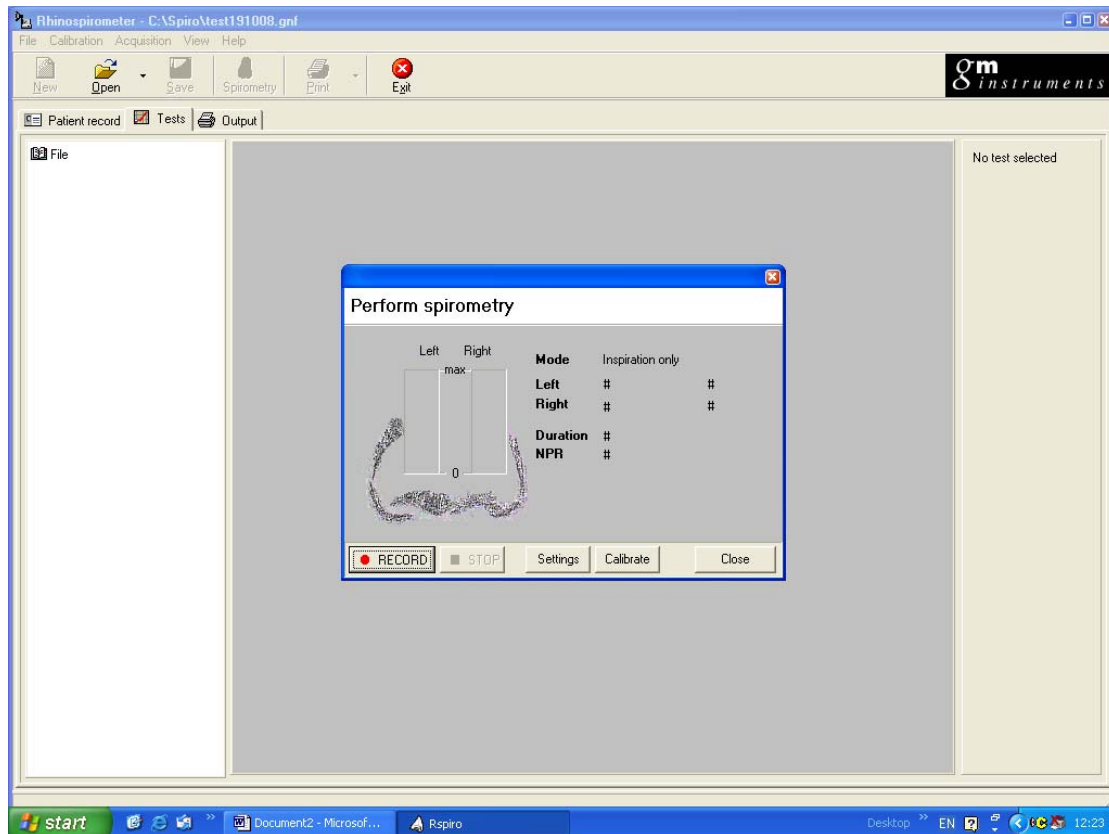
To prepare for measurements on a subject who has already been tested

Click on the button marked OPEN and then using the dialog box offered, go to the folder you store your results in and click on the subject's file you want to open.

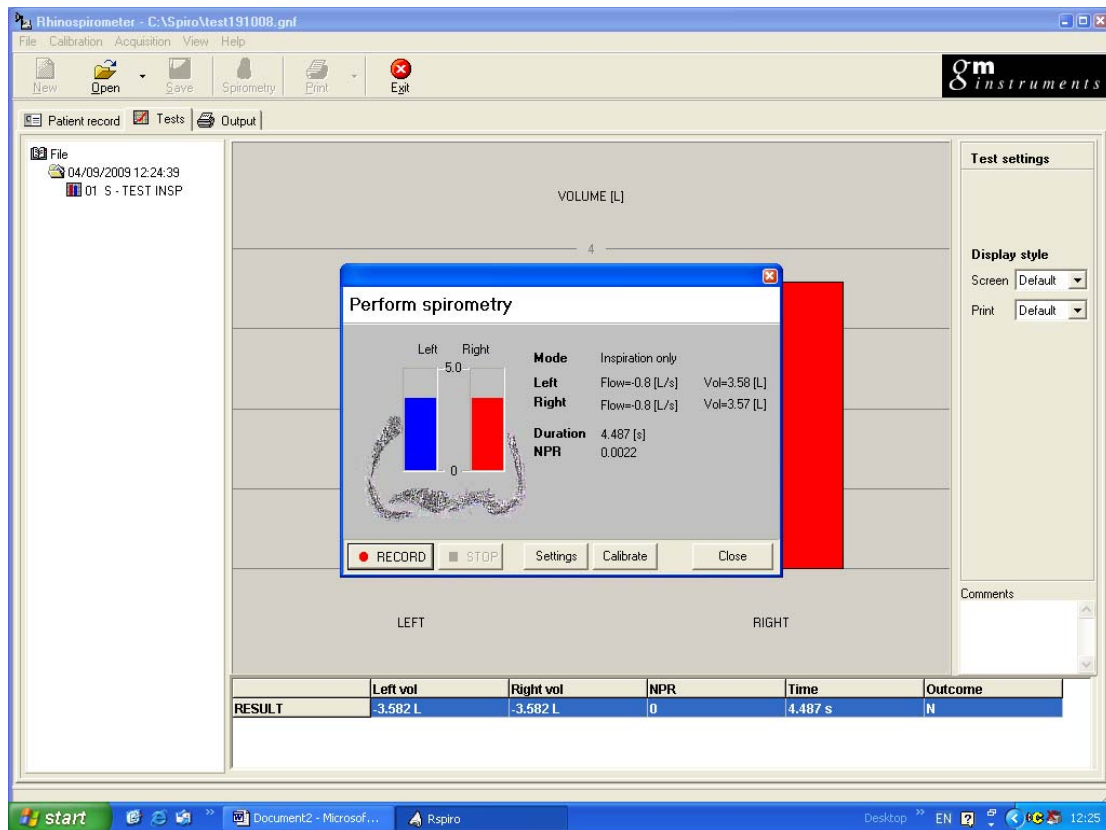
You will then be able to check that you have the correct subject by examining the patient details by clicking on the PATIENT RECORD tab. Clicking on the TESTS tab will show you all previous test dates and results for that patient.

To make a new record

- 1) Click on the Spirometry Icon -- The acquire dialog box will show.
When ready to start the test click on the RECORD button.



Once either 5 litres have been “collected” or 20 seconds have elapsed, the acquisition will terminate and show the following:-

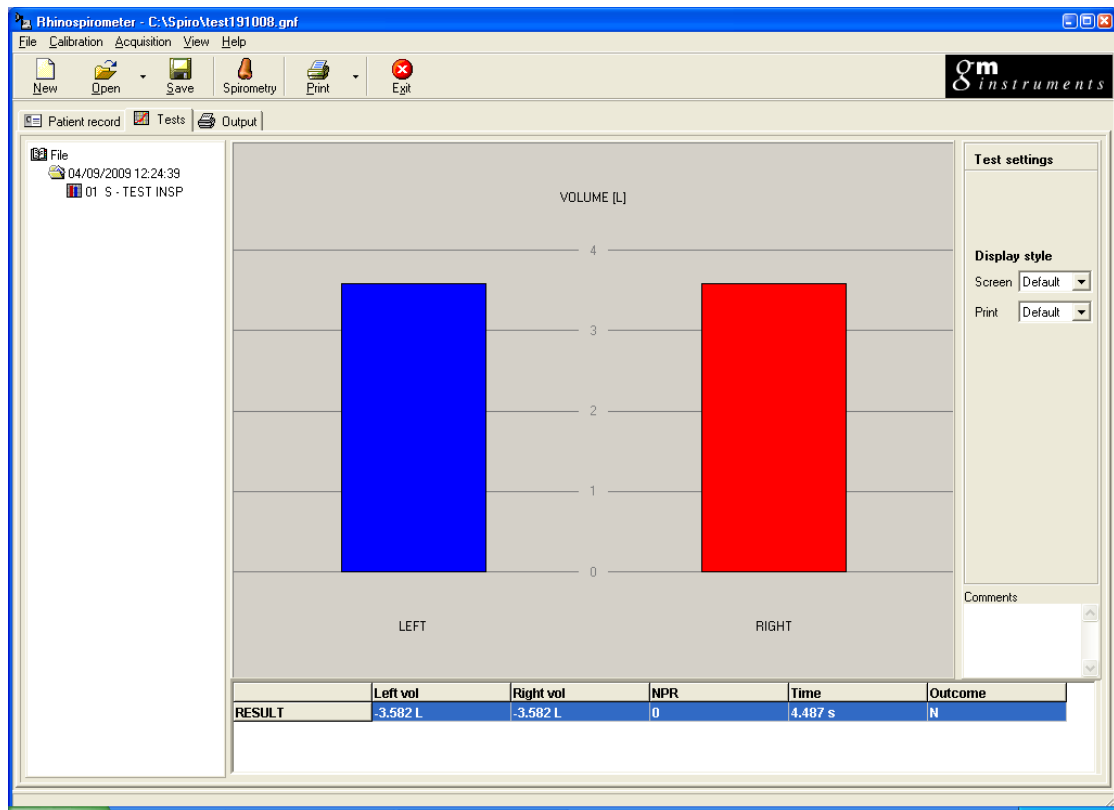


If you are happy with this test, click on close, to display the left and right volumes achieved.

The volume passed through the left nose, the volume passed through the right nose, the calculated NPR (Nasal Partitioning Ratio), the time taken to complete the test and the test outcome are all displayed at the bottom of the screen.

An outcome of N suggests that the subject may not benefit from surgery. (NPR less than + or – 0.3)

An outcome of Y suggests that the subject may benefit from surgery. (NPR equal to or greater than + or – 0.3)



A new test record has now been added to the TESTS tab under today's date. This test result can be printed directly by clicking on the PRINT icon.

If you do a number of tests or want to produce a printout which contains a number of test results, then click on the OUTPUT tab, select by using the tick boxes which test results you want printed and then click on the PRINT icon.

To compare 2 results

Select the Baseline result and left click, hold the Ctrl key and left click on the comparison result, then right click on one of them. On the menu which appears, left click on Compare. A comparison test is then created.

To delete a test result

Select the test result to be deleted from the test list using the left mouse button. Then click on the test result again this time using the right mouse button and from the menu which appears, select delete.