



RION NA-27: SHORT-FORM INSTRUCTIONS

- 1. Quick-Start Guide**
- 2. Guide to Downloading Stored Data**

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QUICK START GUIDE FOR THE RION NA-27 PRECISION INTEGRATING 1/3 OCTAVE REAL-TIME SOUND LEVEL ANALYSER

1. When the instrument is first switched on, the display will go through a self-test routine, the red '**INDICATOR**' will flash once a second and then the instrument display will present the '**SLM**' (L_p or L_a) mode of operation.
2. The display is now indicating instantaneous sound pressure level ' L_p ' and the bar graph display should be changing accordingly.
3. A calibration check can now be performed by using the supplied Rion NC-74 class 1 calibrator (**94.0dB**).
4. Check that the level range is sufficient for the measurement application. To change level ranges press the '**UP**' or '**DOWN**' keys to change level in 10dB increments. (NA-27 has a 70dB dynamic range (1/1 or 1/3 mode) and a measurement range of 10dB - 140dB).
5. Frequency weightings can be selected from a choice of LIN, A, & C, by pressing the '**FREQ WEIGHT**' key.
6. Time weightings can be selected from a choice of FAST, SLOW, 35mS or 10mS by pressing the '**TIME CONST**' key.
7. To obtain a Real-time 1/1 octave or 1/3 octave display, press the '**SLM 1/1 1/3**' key to step through the Sound Level Meter mode, the real-time 1/1 octave display and the real-time 1/3 octave display, respectively.
8. The '**CAL**' key generates an internal calibration signal of 94.0dB @ 1kHz.
9. The '**OPE MODE**' key steps through the available measurement parameters such as:- L_p , L_{eq} , L_{max} , L_{min} , L_{10} , & L_{90} .
10. The '**GRP/NUM**' key will display the numerical data from either of the 1/1 octave or 1/3 octave display.
11. To start a measurement press the '**START/STOP**' key and a flashing icon '▶' will appear at the top of the display, (replacing the '■') and is located in between '**MEAS**' and the elapsed time clock. In addition, the elapsed time clock will start to count up and the red LED '**INDICATOR**' lamp will flash once a second.
12. The '**PAUSE/CONT**' key has a 5-second back erase facility and can be used to erase unwanted events. An '||' icon will appear in place of the '▶' flashing icon.
13. In the 1/1 or 1/3 octave display modes, and in order to highlight a particular frequency of interest there is a vertical 'Marker line' which can be moved by pressing the right '▶' or left '◀' arrow keys to step through the centre frequencies and read off the frequency & level. This information is located under the '**MARK**' logo, situated to the centre & right of the display.

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14. Whilst the instrument is in measurement mode, each of the measurement parameters can be observed without affecting the current measurements by pressing the '**OPE/MODE**' key repeatedly and stepping through:- **L_p**, **L_{eq}**, **L_E**, **L_{max}**, **L_{min}**, & **L₉₀**.
15. To stop a measurement, press the '**START/STOP**' key. The measurement time is displayed at the top of the display.
16. Press the '**STORE**' key to store data in the instruments internal memory ('**MANU**' manual store). The memory location number [**00001**] is located at the bottom right hand corner of the display.
17. To observe stored data press the '**RECALL**' key and '**RECL**' appears at the bottom left hand corner of the display, denoting that the information being observed is from memory.
18. To look at the contents of other memory locations, press the increment '**INC**' key or the decrement '**DEC**' key to step through the memory locations (maximum of 200 memory locations).
19. To return to real time measurement mode, press the '**RECALL**' key.

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GUIDE FOR DOWNLOADING STORED DATA FROM THE RION NA-27 TO A PERSONAL COMPUTER OR LAPTOP PC

1. Switch instrument off using the **'POWER'** switch.
2. Connect one end of the RS-232-C interface lead to the 9-pin connector on the NA-27 and the other end to a vacant comms port on the PC.
3. Switch instrument on using the **'POWER'** switch.
4. Run the NA-27 software.
5. Set the comms baud rate to 38400 by selecting **'Instrument'** in the toolbar, clicking on **'Communication'** and selecting '38400' baudrate from the choices available. Ensure that the comms port number matches the one on the PC being used to download data. Click 'OK' to accept.



6. Click on the sound level meter icon in the toolbar:-
7. A 'pop-up' box appears where a filename, details of the measurement procedure, weather conditions, instruments used, etc., etc., can be added if required. (See Fig. 1) Click **'OK'** to accept.

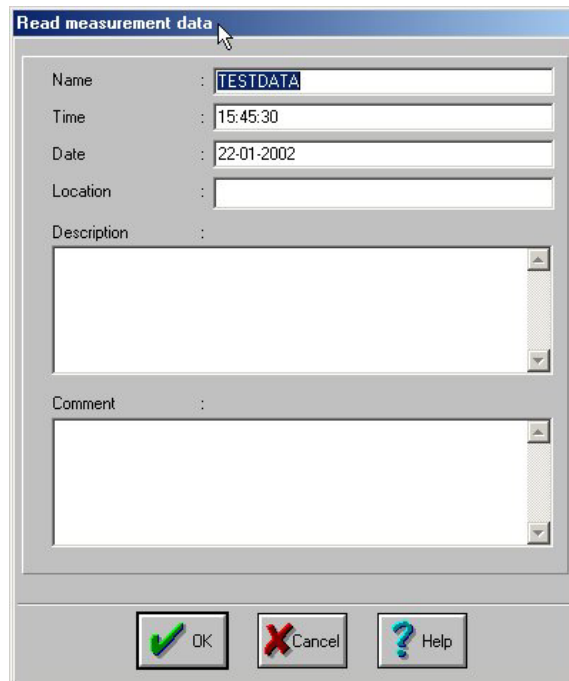


Fig. 1: Comments & Description

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8. A second 'pop-up' box appears titled 'Select store mode'. The default is 'Manual' store mode, therefore, (See Fig. 2) Click 'OK' to accept.

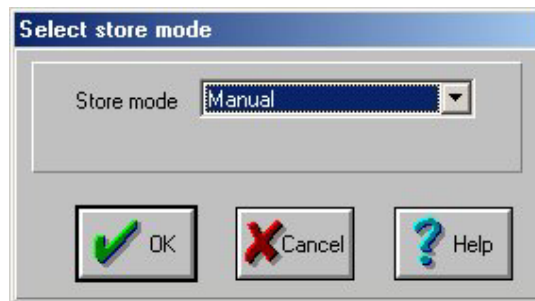


Fig. 2: Store Mode Selection Box

9. A third pop-up box appears titled 'Reading data', click 'OK' to continue.
10. A fourth pop-up box appears in which the number of memory locations required to be downloaded is selected. Select the start memory location and the end memory location. (See Fig. 3) Click 'OK' to accept.

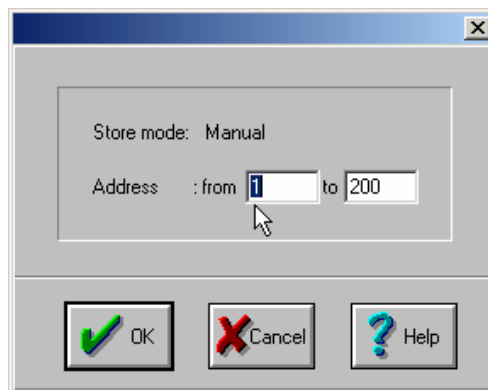


Fig. 3: Memory location selection box

11. A progress bar titled 'Reading data' appears next (See Fig. 4) and will disappear once all of the selected data has been downloaded to the PC.

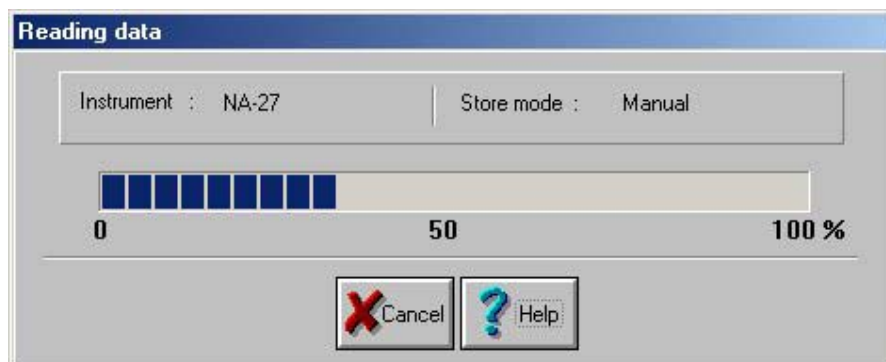


Fig. 4: Data Download Progress Bar

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12. To see the downloaded data in numerical format, click on **'View'** in the toolbar and click on **'View data'**. A pop-up box appears showing data from the first memory location (**Address 1**). To see subsequent data, click on **'Next'**.
13. To see downloaded data in graphical format, click on **'View'** in the toolbar and click on **'Bar graph view'**. A colour barchart representation of the data is shown and by use of the left **'◀'** or right **'▶'** cursor keys on the keyboard, an individual centre frequency can be identified. (See Fig. 5)

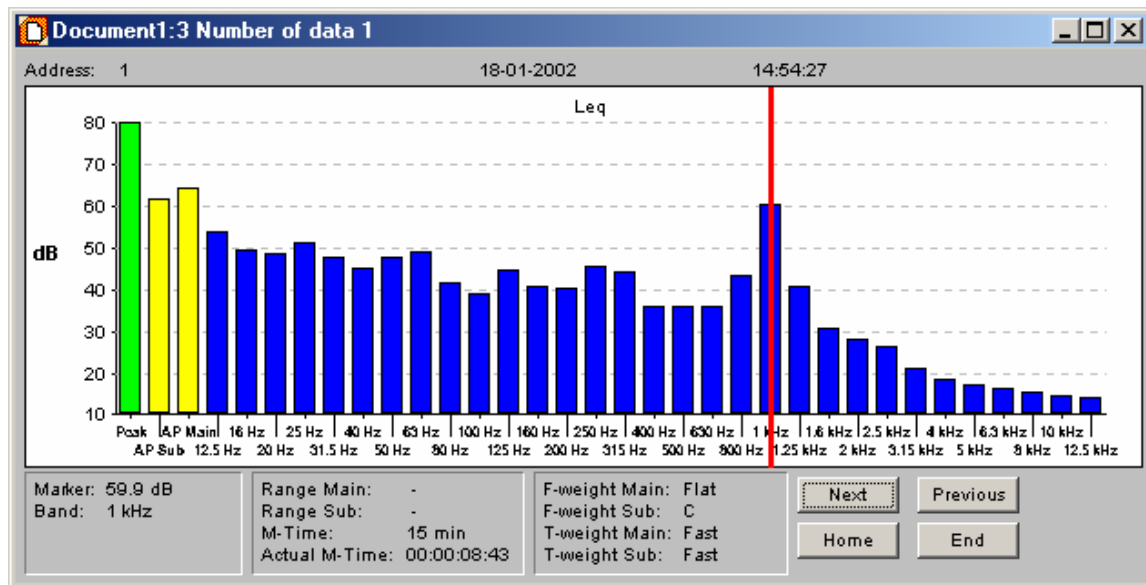


Fig. 5: Bar Chart Display of 1/3 Octave Data

14. To save data as a Rion file **'*.NA'** click on **'File'** in the toolbar and select **'Save as...'** option. Choose filename and file location as appropriate.

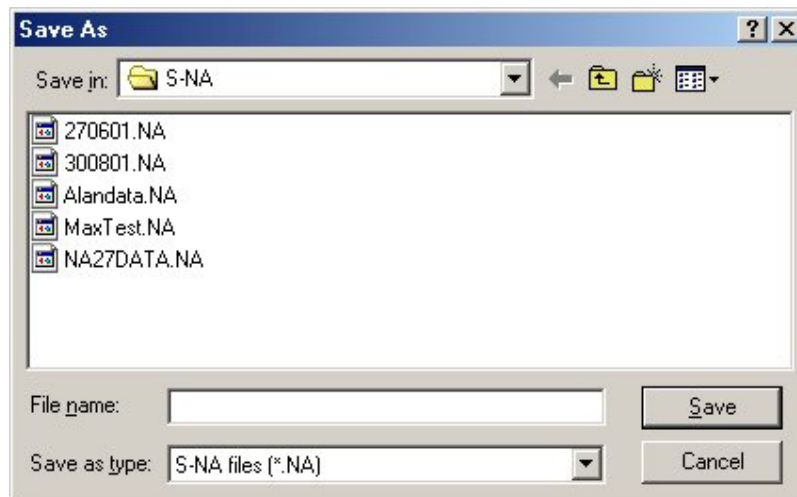


Fig. 6: Save File Option Box

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15. To save data as an ASCII text file '*.TXT' click on 'Data' in the toolbar, then click on 'Export' and a pop-up box appears. Select an appropriate filename and file location and before saving data, click in the 'Data separation' box, delete the semi-colon (;) and insert a comma (,) in place of the default semi-colon. (See Fig. 3) Click on 'OK' to save file to disk.

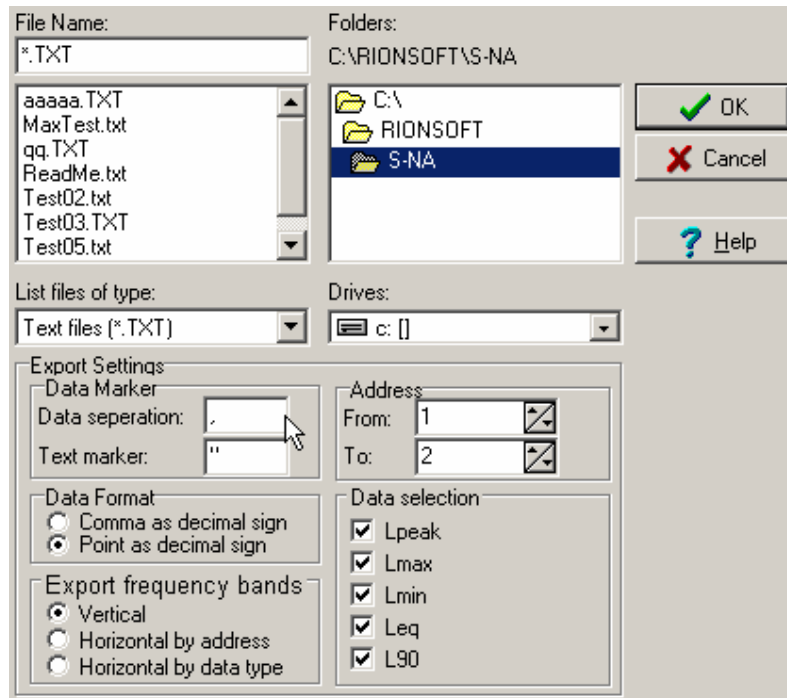


Fig. 3: Data Export Settings Page

ALWAYS CHECK THAT THE FILE HAS BEEN SAVED TO DISK

16. To close the NA-27 program click on 'File' in toolbar and click on 'Exit' to close the program.

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