

7 SAVING MEASUREMENT RESULTS - FILE

The registration of the measurement results is an essential task for the efficient use of the instrument. All available measurement results can be stored in the FLASH type memory of the instrument.

There are two main ways for storing the measurement data in the instrument:

1. Saving files in the FLASH DISC using the FILE list.
2. Logging data in the files of the logger.



Notice: *The instrument's logger memory is independent from the FLASH DISC memory. The capacity of available memory is equal to 32 MB.*

Saving files

In the case of the **SVAN 958** instrument there are few different types of files containing data:

- from **Sound Level Meter** mode;
- from **Vibration Level Meter** mode;
- from **1/1 OCTAVE** analysis;
- from **1/3 OCTAVE** analysis;
- from **FFT** analysis;
- from **RT60** measurements;
- stored in the instrument's logger.



Notice: *The logger files are created automatically (the usage of the SAVE position is not required).*

Each file consists of some elements, which are the same for all kind of files:

- a file header;
- the unit and software specification;
- the user's text stored together with the measurement data;
- the parameters and global settings;
- the special settings for channels;
- the marker of the end of the file.

The other elements of the file structure depend on the type of the file (**SLM**, **VLM**, **1/1 OCTAVE** or **1/3 OCTAVE** analysis, logger) and on the setting of **SAVE STATISTIC** (path: **MENU / FILE / SAVE OPTIONS / SAVE STATISTIC**). These elements are as follows:

- the main results;
- the results coming from **1/1 OCTAVE** analysis;
- the results coming from **1/3 OCTAVE** analysis;
- the results from **FFT** analysis;
- the results from **RT60** mode;
- the statistics header;
- the results of statistical analysis;
- the header of the statistical analysis performed in **1/1 OCTAVE** or **1/3 OCTAVE** analysis;
- the results of the statistical analysis performed in **1/1 OCTAVE** or **1/3 OCTAVE** analysis;
- the header of the logger's file;

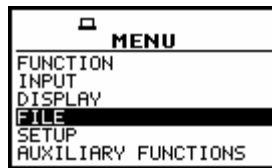
- the data stored during the measurements in the files of the logger.



Notice: The detailed description of all types of file structures is given in the Appendix B.

Storing the measurement results as files in the instrument's FLASH DISC can be done by means of the **FILE** list. In order to open this list the user has to:

- press the **<Menu>** push-button,
- select from the main list, using the **<▲>**, **<▼>** (or **<<>**, **<>>**) push-buttons, the **FILE** text (highlight it inversely),
- press the **<ENTER>** push-button.



Main list with **FILE** text highlighted (displayed inversely)

The **FILE** list contains the following items:

- | | |
|------------------------|---|
| SAVE | enables one to save the measurement results as a file in the instrument memory; |
| SAVE OPTIONS | enables one to set the options of the measurement result savings; |
| LOAD FILE | enables one to load to the working space of the instrument's memory the measurement results saved in a file; |
| LOGGER VIEW | enables one to select and present the results stored in the logger's files; |
| DELETE | enables one to delete a selected file from the instrument's memory; |
| DELETE ALL | enables one to delete all files from the instrument's memory; |
| DEFRAGMENTATION | enables one to recover the memory, which was used by the deleting files; |
| CATALOGUE | enables one to overview the catalogue of the files saved in the instrument's memory; |
| FREE SPACE | informs the user about the capacity of the instrument's memory still available for storing the measurement results; |
| SAVE SETUP | enables one to set the configuration of the meter; |
| SETUP OPTIONS | enables one to switch on the saving of user filters coefficients; |
| LOAD SETUP | enables one to load to the configuration saved in a file. |

Pressing the **<Shift>** and **<▲>** (or **<Shift>** and **<<>**) results in a movement to the first position of the opened list and pressing the **<Shift>** and **<▼>** (or **<Shift>** and **<>>**) results in a movement to the last position of the opened list.



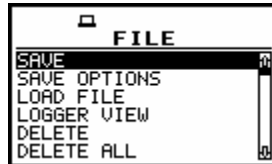
FILE list

In each available position any change is performed by means of the **<<>**, **<>>** push-buttons. In order to confirm the selection the **<ENTER>** push-button has to be pressed. After this confirmation, the opened window or list is closed. In order to ignore any changes made in the opened window or list the user has to press the **<ESC>** push-button.

7.1 Saving files in the instrument's memory - SAVE and AUTO NAME

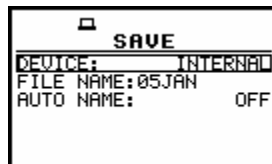
The **SAVE** (path: MENU / FILE / SAVE) is used for storing data in the internal non-volatile (FLASH DISC) memory as a file (see Appendix B for the file formats).

In order to enter the position the user has to select the **SAVE** text in the **FILE** list, using the <▲> (or <◀>) push-button (the window is opened also by pressing <Alt> together with <ENTER> after the measurement). After the selection the <ENTER> push-button must be pressed.



FILE list with SAVE text highlighted (displayed inversely)

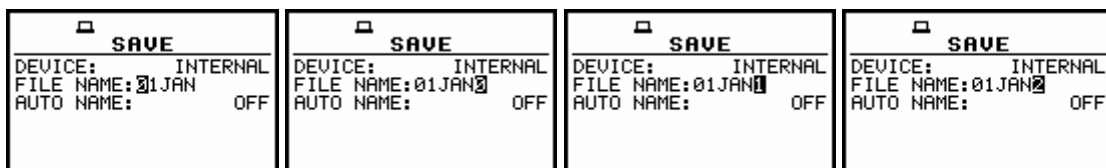
The additional function for results saving - **AUTO NAME** (save a file with the name increased by one) is available after selecting the **AUTO NAME** text (with <▲>, <▼> push-buttons) and switching it on (using <▶> push-button). The return to the **FILE** list is possible after pressing the <ESC> push-button.



SAVE window opened

The name of the file, in which the measurements or the analysis results are to be saved, is displayed in the second line (**FILE NAME**). The default name for a file is displayed in the case of the first entering to this position (after power on) and the last saved file's name – in the case of the next entering. It is possible to edit this name in two ways: full and with **AUTO NAME** option.

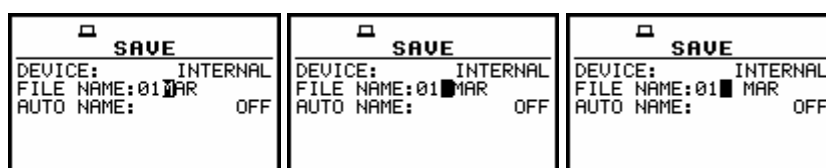
The **SAVE** window with **FILE NAME** edition is presented on the Figure below. The displayed inversely character is currently edited. The <▲>, <▼>, <◀>, <▶> and <Shift> push-buttons are used for editing the name which cannot exceed 8 characters.



Displays during the file's name edition

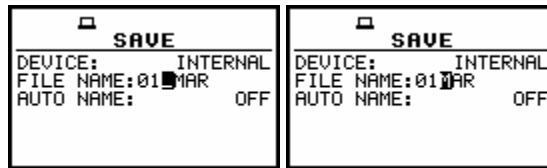
The user can select the proper position of the character in the edited text using the <◀>, <▶> push-buttons. The available ASCII characters can be changed using the <▲>, <▼> push-buttons. The subsequent big letters, digits, space and underline appear on the display in the inversely displayed position after each pressing of the mentioned above push-buttons.

The empty space is created for the introduction of a new character in the edited name (the **Insert** operation is executed) when the <Shift> push-button is pressed together with the <▶>.



Displays in FILE NAME edition after pressing <Shift> and <▶> push-buttons

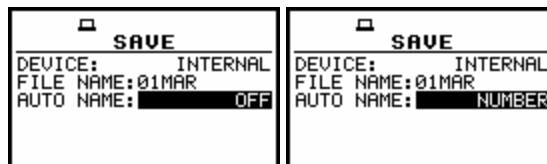
The character, which is highlighted (displayed inversely), is deleted from the edited name (the **Delete** operation is executed) when the **<Shift>** and **<←>** push-buttons are pressed.



Displays in FILE NAME edition after pressing **<Shift>** and **<←>** push-buttons

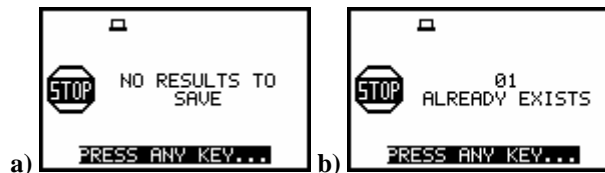
The edited name is accepted and the file is saved after pressing the **<ENTER>** push-button (cf. the description of the **AUTO NAME** function). The instrument waits then for a reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**). All changes introduced to the file name during the edition are ignored after pressing the **<ESC>** push-button. This pressing causes the return to the list from which the **SAVE** option was entered.

The simplified edition consists in the addition at the end of the file name the natural number, increased by one after each saving. This option is available after selecting the **AUTO NAME** text (with **<▲>**, **<▼>** push-buttons) and switching it on (using **<→>** one).



SAVE window with **AUTO NAME** function selection

The presented below message (Fig. a) is displayed after pressing the **<ENTER>** push-button in the case when no measurements were performed and there are no results to be saved. The operation cannot be done also in a case when the file of the selected name already exists in the instrument's memory (Fig. b). The instrument then waits for the reaction of the user (any push-button should be pressed except the **<Shift>** one) and after pressing a push-button it returns to the **SAVE** position.



Displays after **SAVE** operation when there is no results to save (a) and the file with the selected name already exists in the instrument's memory (b)

The data are saved in the file with the name increased by one in relation to the name displayed after switching on of the **AUTO NAME** option and after pressing the **<ENTER>** push-button (if the instrument is not measuring and there are the results to be stored).

The following message containing the name of the file and the operation performed is displayed after the saving of the file:



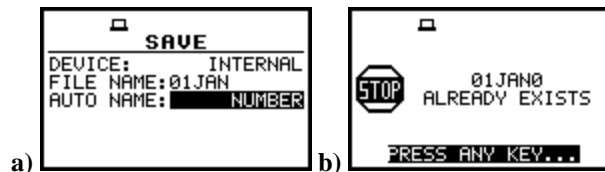
Display after the execution of **SAVE** operation

Another message is displayed after successful saving of the file in the memory and then the instrument waits for the reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**) and after pressing a push-button it returns to the **FILE** list. The assumptive file's name is displayed after repeated enter to the **SAVE** position of the **FILE** list (after pressing the **<ENTER>** push-button).



SAVE window AUTO NAME option selected (a), after saving the file with the increased name (b) and after repeated enter to SAVE window (c)

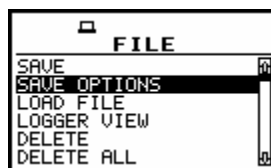
It is not possible to store the data in the file, which already exists, when the **REPLACE** position is not active ([]). The presented below message is displayed after pressing the **<ENTER>** push-button in the case when during the name edition process the user selected the name which was used before. The instrument then waits for the reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**) and after pressing a push-button it returns to the **FILE** list.



Displays after the file's name selection (a) and with the message if REPLACE option is not active (b)

7.2 Controlling the data storing in the instrument's memory - SAVE OPTIONS

The **SAVE OPTIONS** (*path: MENU / FILE / SAVE OPTIONS*) is used for the selection of the options of data storing in the **FLASH DISC** memory of the instrument. The window is opened after pressing the **<ENTER>** push-button when the **SAVE OPTIONS** text in the **FILE** list is displayed inversely (selected using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons). The return to the **FILE** list is possible after pressing the **<ESC>** push-button.



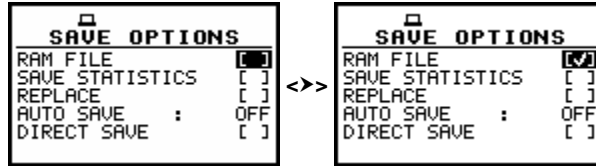
FILE list with SAVE OPTIONS text highlighted (displayed inversely)

It is possible to replace the existing in the memory file by the new one with the same name (the **REPLACE** position), to add to the results the statistics of the measurements (the **SAVE STATISTICS** position, valid only for sound measurements) and to save automatically the results of the measurements (the **AUTO SAVE** position). The position of the sub-list is changed after pressing the **<▲>**, **<▼>** push-buttons.

In order to confirm the selection the **<ENTER>** push-button has to be pressed. Such pressing closes also the opened window.

7.2.1 Saving files in RAM memory - RAM FILE

The **RAM FILE** enables the user to save the results of the measurement in the special file in RAM memory (the name of the file is defined as a "RAMfile"). The activation or deactivation of the **RAM FILE** is done by pressing the <<>, <>> push-buttons. This option is useful when remote reading is necessary; available values: [✓] or [].



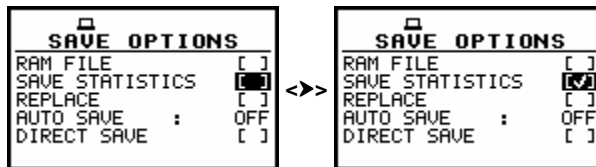
SAVE OPTIONS windows with the selection of RAM FILE parameters

7.2.2 Controlling of the measurement statistics savings - SAVE STATISTICS

The **SAVE STATISTICS** is used to set self-saving, together with the sound measurement results, the statistics of the measurements ([✓]) or to switch off ([]) this possibility. Together with the sound measurements, 100-class statistics is performed (the values named from **L01** to **L99**). The statistics are not calculated for the vibration measurements. The activation or deactivation of the **SAVE STATISTICS** is done by pressing the <<>, <>> push-buttons.



Notice: This position was created to save the memory of the instrument in the case when the knowledge of the statistics is not necessary. **Each registration of the statistics requires 600 bytes of the memory!**



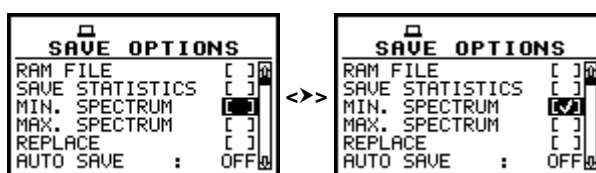
SAVE OPTIONS windows with the selection of SAVE STATISTICS

After pressing the <ENTER> push-button the selections made in any position of the list (in particular also in the **SAVE STATISTIC**) are confirmed and the window is closed.

7.2.3 Saving minimum values in the spectrum - MIN SPECTRUM

The **MIN SPECTRUM** appears on the display in the case of **1/1 OCTAVE** and **1/3 OCTAVE** mode and it enables the user to save the lowest values of the instantaneous spectrum (calculated with 100-milliseconds time step), which occurred during the **INT. PERIOD** set in the **INPUT** list (path: **MENU / INPUT / MEASUREMENT SETUP / INT. PERIOD**).

The activation or deactivation of the **MIN SPECTRUM** is done by pressing the <<>, <>> push-buttons. After pressing the <ENTER> push-button the activation is confirmed. The **SAVE OPTION** window is closed ignoring all settings made in it after pressing the <ESC> push-button.



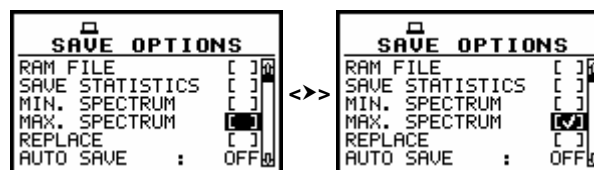
SAVE OPTIONS windows with the selection of MIN. SPECTRUM saving

To see the **MINIMUM** values on the display during the real time **1/1 OCTAVE** or **1/3 OCTAVE** analysis the user has to activate the option in the **DISPLAY** list (path: **MENU / DISPLAY / DISPLAY SETUP / CHANNEL x / SPECTRUM VIEW / MINIMUM**).

7.2.4 Saving maximum values in the spectrum - MAX SPECTRUM

The **MAX SPECTRUM** appears on the display in the case of **1/1 OCTAVE** and **1/3 OCTAVE** mode and it enables the user to save the highest values of the instantaneous spectrum (calculated with 100-milliseconds time step), which occurred during the **INT. PERIOD** set in the **INPUT** list (path: **MENU / INPUT / MEASUREMENT SETUP / INT. PERIOD**).

The activation or deactivation of the **MAX SPECTRUM** is done by pressing the **<<>**, **<>>** push-buttons. After pressing the **<ENTER>** push-button the activation is confirmed. The **SAVE OPTION** window is closed ignoring all settings made in it after pressing the **<ESC>** push-button.

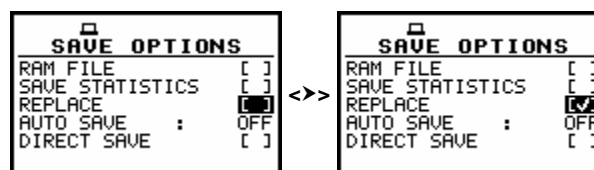


SAVE OPTIONS windows with the selection of MAX. SPECTRUM saving

To see the **MAXIMUM** values on the display during the real time **1/1 OCTAVE** or **1/3 OCTAVE** analysis the user has to activate the option in the **DISPLAY** list (path: **MENU / DISPLAY / DISPLAY SETUP / CHANNEL x / SPECTRUM VIEW / MAXIMUM**).

7.2.5 Replacement of the existing files by the new ones - REPLACE

The result of the attempt to save the file with the name, which already exists in the memory, depends on the setting of the **REPLACE**. It is possible to erase the old file and to save the new one with the same name if the position is active ([✓]). The message is displayed that such operation is not available in the case when this position is not active ([]) – cf. the description of the **SAVE**. The activation or deactivation of the **REPLACE** is done by pressing the **<<>**, **<>>** push-buttons.



SAVE OPTIONS windows with the selection of REPLACE

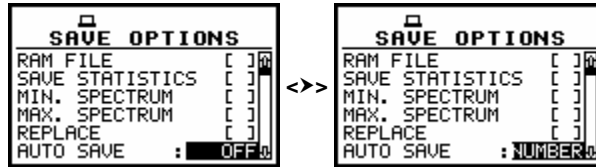
After pressing the **<ENTER>** push-button the selections made in any position of the window (in particular also in the **REPLACE** position) are confirmed and the sub-list is closed. In the case when the **AUTO SAVE** option was active ([✓]), after pressing the **<ENTER>** push-button the **FILE NAME** window is opened for editing the names for **AUTO SAVE** files.

The **SAVE OPTION** window is closed ignoring all settings made in it after pressing the **<ESC>** push-button.

The next position from the **SAVE OPTIONS** window becomes available after pressing the **<▼>** push-button.

7.2.6 Controlling of the measurement results savings - AUTO SAVE

Using the **AUTO SAVE** one can set the self-saving of the measurement results () or to switch off () this possibility. The activation or deactivation of the **AUTO SAVE** position is done by pressing the **<<>**, **<>>** push-buttons. This position was also established in order not to waste too much memory of the instruments when the self-saving is not necessary.



SAVE OPTIONS windows with the selection of AUTO SAVE parameters

The window for the edition of the base name for the self-saved files is opened (the **AUTO FILE NAME**) after pressing the **<ENTER>** push-button in the case when the **AUTO SAVE** position is activated. The name of the **AUTO SAVE** files is up to eight characters long starting with the special character @.

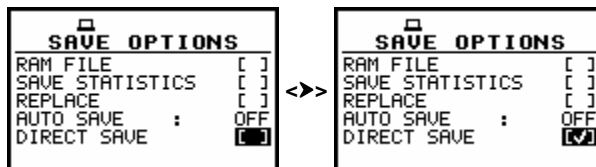


Displays after entering FILE NAME edition mode for the files saved with AUTO SAVE option active (after pressing **<ENTER>** push-button in SAVE OPTIONS window, AUTO SAVE switched on)

When the **AUTO SAVE** option is not active (**OFF**), after pressing the **<ENTER>** push-button the instrument returns to the **FILE** list.

7.2.7 Direct access to SAVE / AUTO NAME function - DIRECT SAVE

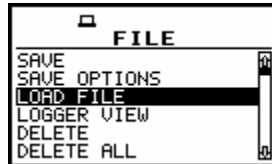
The **DIRECT SAVE** enables one to save measurement results by the simultaneous pressing of the **<ENTER>** and **<Alt>** push-buttons after measurement. If this option is not active () , after pressing these push-buttons the **SAVE** window is accessed (if the measurements are not performed). If the option is active () , after pressing the **<ENTER>** and **<Alt>** push-buttons the results are saved in the file with the automatically incremented name and the proper message is displayed for a few seconds. The proper setting of the **DIRECT SAVE** is done by pressing the **<<>**, **<>>** push-buttons.



SAVE OPTIONS windows with the selection of DIRECT SAVE

7.3 Loading the files with the measurement results - LOAD FILE

The **LOAD** (*path: MENU / FILE / LOAD*) is used for loading data file from the FLASH DISC (e.g. for the verification or comparison). The position is opened after pressing the **<ENTER>** push-button when the **LOAD** text in the **FILE** list is displayed inversely (selected using the **<▲>**, **<▼>** (or **<<>**, **<>>**) push-buttons). The return to the **FILE** list is possible after pressing the **<ESC>** push-button.

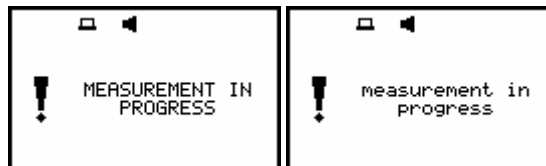


FILE list with LOAD FILE text highlighted (displayed inversely)



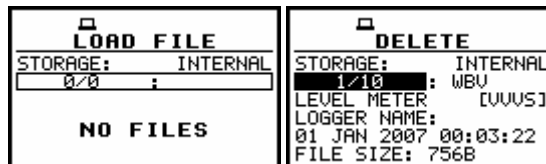
Notice: It is not possible to load the file during the execution of the measurements. On such attempt the message: „measurement in progress / MEASUREMENT IN PROGRESS” is displayed for about 2 seconds.

After pressing the <ENTER> push-button the instrument checks its current state. In the case when the measurements are performed, the file loading is impossible. In such case, the message with the changing letters is displayed (see below) and the instrument returns after few seconds to the list from which the **LOAD** was called.



Displays with the message stating the reason for unfeasibility of the required operation

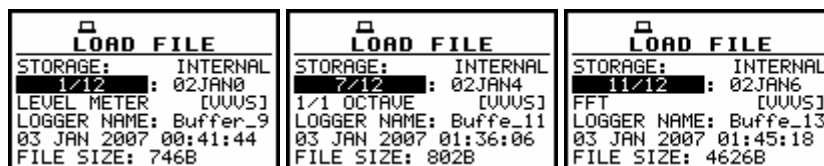
In the case when the instrument memory is empty (no file is stored), the **NO FILES** text is displayed after entering **LOAD** and the instrument waits for the reaction of the user. The user should press then the <ESC>, <ENTER> or <Start / Stop> push-button.



Displays during the execution of LOAD FILE operation

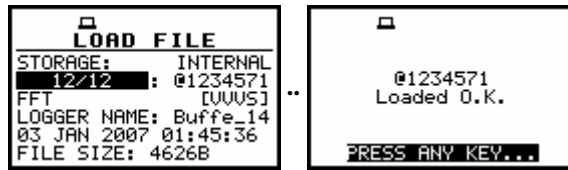
The text informing the user that file was loaded from the internal memory of the instrument is given in the first line. The current number of the file and the total number of the saved files is displayed inversely in the second line together with the name of the file. The type of the current file (**LEVEL METER**, **1/1 OCTAVE**, **1/3 OCTAVE** etc.) and measure mode in each of four channels (**Sound** or **Vibration**) are given in the third line. If the file contains the results from the logger, the name of the logger file is displayed at the right end of the fourth line. Date and time of the **SAVE** operation is displayed in the fifth line. The size of the loaded file is given in the sixth line.

The change of the current file with the unit step can be done after pressing the <<>, <>> push-buttons. After pressing the <<> with <Shift> push-button the first file is available and after pressing the <>> with <Shift> push-button - the last one is displayed.



Displays during the overview of the file list

The name of the file is accepted and the file is loaded after pressing the <ENTER> push-button. After successful end of loading operation instrument waits for the reaction of the user (any push-button should be pressed except the <Shift> and <Alt>) and after pressing a push-button it returns to the **FILE** list.



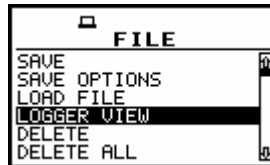
Execution of the **LOAD FILE** operation

The next message is displayed after successful end of loading operation. The instrument waits for the reaction of the user (any push-button should be pressed except the <Shift> one) and after pressing a push-button it returns to the **FILE** list.

7.4 Checking the contents of the loaded file - **LOGGER VIEW**

The **LOGGER** enables the user to examine the contents of the logger files saved in the internal memory of the instrument.

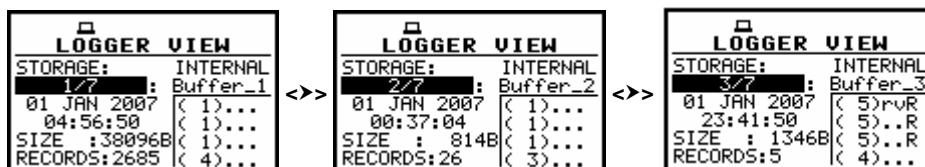
In order to open the window the user has to press the <ENTER> push-button when the **LOGGER VIEW** text is displayed inversely.



FILE list with **LOGGER VIEW** text highlighted

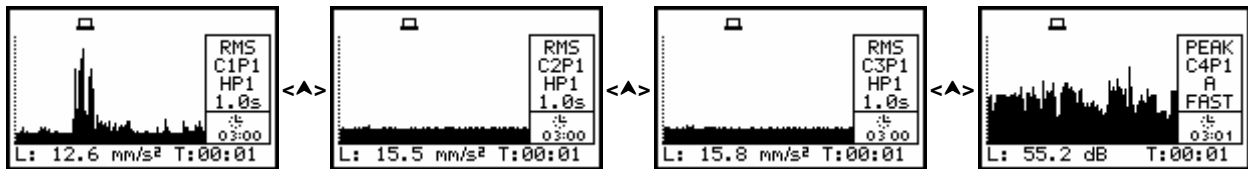
The storage type (**INTERNAL**) is displayed in the first line. The current number of the logger file, the total number of the saved files and the name of the file are displayed in the second line. After pressing the <<> with <Shift> push-button the first file is available and after pressing the >> with <Shift> push-button - the last one is displayed.

Date and time of the **SAVE** operation is displayed in the third and fourth line. The size of the file is displayed in the fifth line. The number of records (one record is saved after each period equal to logger step) is displayed in the last line. The change of the current file with the unit step can be done after pressing the <<>, >> push-buttons. In the right corner, in the brackets, the number of saved logger results in each channel is displayed (e.g.: **(5)rvR** in the first line means that from the first channel all five available logger results are stored in memory and, additionally, rpm, vector and spectrum (**RMS**) are also saved in the selected logger file).



LOGGER VIEW windows with the selection of the logger file to be viewed

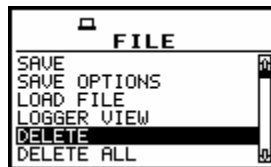
The results from logger's file, coming from different channels, are changed after pressing the <▲> or <▼> push-buttons – after each pressing the result from the next channel is displayed.



Selection of the logger plot from different channels

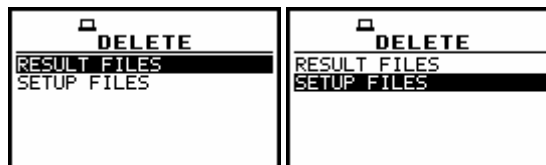
7.5 Removing a file with the measurement results from memory - DELETE

The **DELETE** (*path: MENU / FILE / DELETE*) is used to remove a file from memory. After pressing the **<ENTER>** push-button the instrument checks its current state. In the case when the measurements are performed, the **DELETE** position entering is impossible. In such case, the message with the changing letters is displayed (see below) and the instrument returns after few seconds to the list from which the **DELETE** was called.



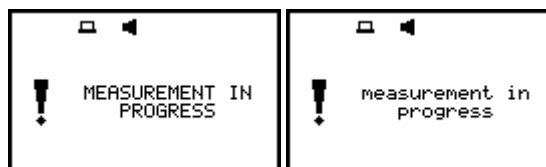
FILE list with DELETE text highlighted (displayed inversely)

In the **DELETE** window, there are two elements: the **RESULT FILES** with the measurement results and the **SETUP FILES** with the saved setups of the instrument. In order to enter the selected sub-list the user has to select the proper text (to display it inversely) using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons and then press the **<ENTER>** one. The **DELETE** window is closed and the instrument returns to the **FILE** list after pressing the **<ESC>** one.



DELETE windows opened with RESULT FILES and SETUP FILES selected

After pressing the **<ENTER>** push-button the instrument checks its current state. In the case when the measurements are performed, the **RESULT FILES** or **SETUP FILES** entering is impossible. In such case, the message is displayed and the instrument returns after few seconds to the **DELETE** window.



Displays with the message stating the reason for unfeasibility of the required operation

In the case when the instrument memory is empty (no file is stored), the **NO FILES** text is displayed after entering **DELETE** and the instrument waits for the reaction of the user. The user should press then the **<ESC>**, **<ENTER>** or **<Start / Stop>** push-button.

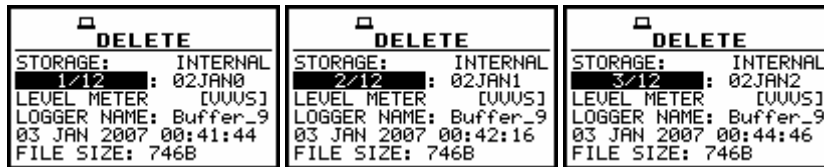


DELETE window when the memory of the instrument is empty

The same data about the existing in the instrument files as in the **LOAD** window are displayed on the display after successful opening the **DELETE** window (pressing the **<ENTER>** push-button). In the consecutive lines of the display the memory in which the results are saved in (**INTERNAL**), the current file number, the total number of the files, the file name, the file type, date and period of registration and the file size are presented.

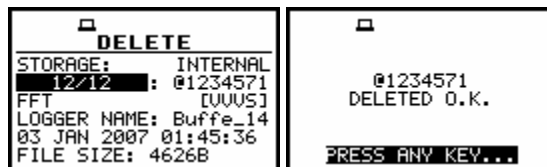
The change of the current file with the unit step can be done pressing the **<<>**, **<>>** push-buttons. After pressing the **<<>** with **<Shift>** push-button the first file is available and after pressing the **<>>** with **<Shift>** push-button - the last one is displayed.

The return to the **FILE** list is possible after pressing the **<ESC>** push-button.



DELETE windows with the selection of the file to be deleted

The name of the file is accepted and the file is deleted after pressing the **<ENTER>** push-button. The message is displayed after the successful end of the operation. The instrument waits for the reaction of the user (any push-button should be pressed except the **<Shift>** one) and after pressing a push-button it returns to the **FILE** list.



Execution of DELETE operation

After the execution of the result files removing from the memory usually the **FILES FREE** memory (*path: MENU / FILE / FREE SPACE*) rests the same as before the deletion but **TOTAL AVAILABLE** memory is increased. It is because erased file was located somewhere inside the file's space. The file is no longer accessible but the recuperated memory is still unused for the next saving. All new files are stored starting at the end of the last saved file.

The memory becomes available after the defragmentation process (*path: MENU / FILE / DEFRAGMENTATION*) in which all files are moved to the continuous space. In order to illustrate it let us consider the result file named 02JAN5 file, which is 746 bytes long. The **TOTAL AVAILABLE** is increased after the **DELETE** operation but the **LOGGER FREE** rests unchanged.



Execution of the 02JAN5 file deletion and the influence of this process on the memory space

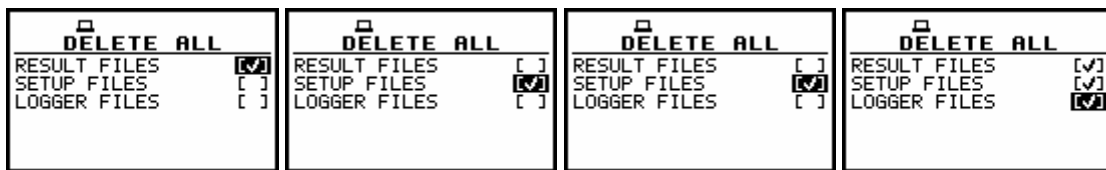
7.6 Removing all files with measurement results from memory - DELETE ALL

The **DELETE ALL** (path: MENU / FILE / DELETE ALL) is used to remove all files from memory. In order to enter the position the user has to select the **DELETE ALL** text in the **FILE** list, using the <▲>, <▼> (or <◀>, <▶>) push-buttons and press the <ENTER>.



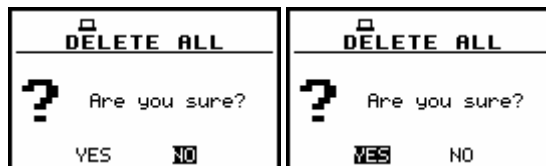
FILE list with DELETE ALL text highlighted (displayed inversely)

It is possible to select **RESULT**, **SETUP** and **LOGGER** files to be deleted. The selection is made with <◀>, <▶> push-buttons. The confirmation is made with pressing <ENTER>.



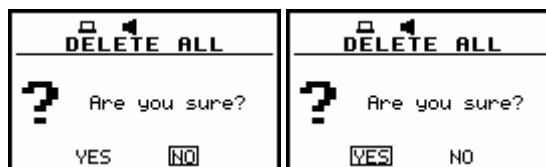
DELETE ALL windows and the selection of the files to be deleted

The instrument requests the confirmation of the operation after entering this position (after pressing the <ENTER> push-button). The next pressing of the <ENTER> push-button, when the **NO** option is selected, causes the closing of the position and the return to the **FILE** list. The selection of the **NO** or **YES** option is possible using the <◀>, <▶> push-buttons. The return to the **FILE** list is possible after pressing the <ESC> push-button.



Displays during the execution of DELETE ALL operation

After pressing the <ENTER> push-button the instrument checks its current state. In the case when the measurements are performed, the execution of the **DELETE ALL** operation is not possible. In such case, the message with the changing letters is displayed (see below) and the instrument returns after few seconds to the list from which the **DELETE ALL** was called.



Displays with the not possible confirmation of DELETE ALL order during the measurement

The <ENTER> push-button pressing, when the **YES** option is selected and the instrument is not performing the measurements, deletes all existing files. In this case, the text displayed below is presented. In this time, the instrument recovers and clears the memory, which was used by saved files.

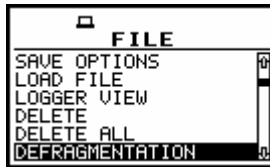


Displays during the execution of DELETED ALL operation and after this execution

The message is displayed after the successful execution of the operation. The instrument waits for the reaction of the user (any push-button should be pressed except the <Shift> and <Alt>) and after pressing a push-button it returns to the FILE list.

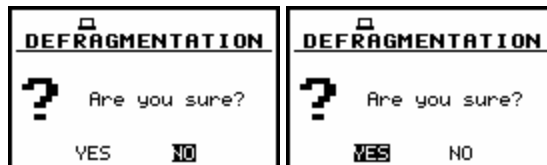
7.7 Memory merging - DEFRAGMENTATION

The DEFRAGMENTATION (path: MENU / FILE / DEFRAGMENTATION) is used to merge the blocks of the memory which were released after the delete operation. In order to enter the position the user has to select the DEFRAGMENTATION text in the FILE list, using the <▲>, <▼> (or <◀>, <▶>) push-buttons and press the <ENTER>.



FILE list with DEFRAGMENTATION text highlighted

The instrument requests the confirmation of the operation after entering this position (after pressing the <ENTER> push-button). The next pressing of the <ENTER> push-button, when the NO option is selected, causes the closing of the window and the return to the FILE list. The selection of the NO or YES option is possible using the <◀>, <▶> push-buttons. The return to the FILE list is possible after pressing the <ESC> push-button.



Displays before the execution of DEFRAGMENTATION operation

The <ENTER> push-button pressing, when the YES option is selected and the instrument is not performing the measurements, merges the memory. The presented below message is displayed in the case when the operation is not required. The instrument waits for the reaction of the user (any push-button should be pressed except the <Shift> and <Alt>) and after pressing a push-button it returns to the FILE list. The operation is not executed in a case when FREE SPACE is equal to TOTAL AVAILABLE.



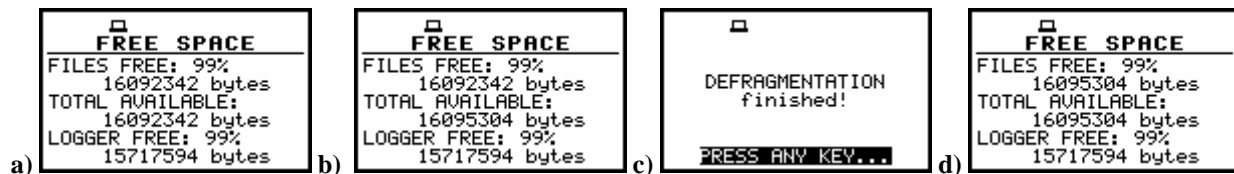
Display in the case when DEFRAGMENTATION operation is not required

In the case when the **DEFRAGMENTATION** operation is performed, the following texts are displayed (see below).



Displays during the execution of **DEFRAGMENTATION** operation

In this time, the instrument recovers, clears and merges in one block the memory, which was used by the deleted files. The presented below message is displayed after successful memory merging (see Fig. c). The instrument waits for the reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**) and after pressing a push-button it returns to the **FILE** list. The result of the **DEFRAGMENTATION** operation is visible below in Fig. d (**FILES FREE** space is increased), while the state of the memory before the execution of this operation is given in Fig. b and before **DELETE** operation - in Fig. a.



Displays with the state of the file's memory before **DELETE** operation (a), after **DELETE** operation (b) after the execution of **DEFRAGMENTATION** operation (c) and the state of the memory after the execution of the operation (d)

7.8 Checking the contents of the memory - CATALOGUE

The **CATALOGUE** is used for checking the contents of the memory (the list of the files). In order to enter the window the user has to select the **CATALOGUE** text in the **FILE** list, using the **<▲>**, **<▼>** (or **<<<>**, **<>>>**) push-buttons and press the **<ENTER>**.

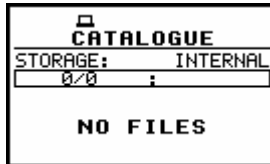


FILE list with **CATALOGUE** text highlighted

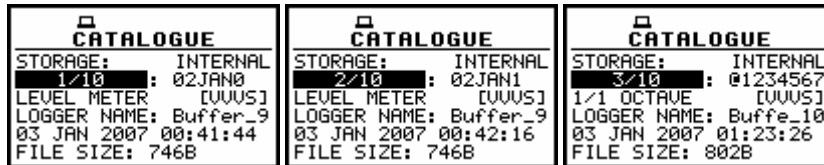
In the case when the instrument memory is empty (no file is stored or after **DELETE ALL** operation), the **NO FILES** text is displayed after entering the **CATALOGUE** window and the instrument waits for the reaction of the user. The user should press then the **<ESC>**, **<ENTER>** or **<Start / Stop>** push-button.

The same data about the existing in the instrument files as in the **LOAD FILE** window are displayed on the display after opening **CATALOGUE**. In the consecutive lines of the display, the memory in which the results are saved, the current file number, the total number of the files, the file name, the file type, date and time of registration are presented. The change of the current file with the unit step can be done pressing the **<<<>**, **<>>>** push-buttons.

After pressing the **<<<>** with **<Shift>** push-button the first file is available and after pressing the **<>>>** with **<Shift>** push-button - the last one is displayed. The return to the **FILE** list is possible after pressing the **<ESC>** or **<ENTER>** push-button.



Displays with the content of CATALOGUE operation when the memory is empty



Exemplary contents of CATALOGUE window

7.9 Checking the free space in the memory - FREE SPACE

The **FREE SPACE** (*path: MENU / FILE / FREE SPACE*) is used to read out the free space in the FLASH DISC memory of the instrument. In order to enter the position the user has to select the **FREE SPACE** text in the **FILE** list, using the <▲>, <▼> (or <<<>, <>>>) push-buttons and press the <ENTER>. The return to the **FILE** list is possible after pressing the <ESC> or <ENTER> push-button.



FILE list with FREE SPACE text highlighted (displayed inversely)

The memory of the instrument is divided into two separate parts.

One part is dedicated for saving the result and setup files and its size is equal to 16121360 bytes. The second part is used for saving the logger files and its size is equal to 15728156 bytes.

The **FREE SPACE** window in the instrument after the execution of the **DELETE ALL** operation is presented below.



FREE SPACE window after the execution of the DELETE ALL operation

The **FREE SPACE** window contains three numbers. First two, named **FILES FREE** and **TOTAL AVAILABLE**, characterise the result and setup files memory.

The files are always saved starting from the beginning of the continuous memory space. The size in bytes of this space is given in the **FILES FREE** window.

If the result and setup files were not deleted from the memory the number of bytes displayed in the **TOTAL AVAILABLE** window is the same as in the **FILES FREE SPACE**. However, if some of them were deleted, assuming that they were not the last saved, the memory used by them is empty but it does not increase the continuous space.

In such case, the number given in the **TOTAL AVAILABLE** window is greater than that in the **FILES FREE**. The **DEFRAGMENTATION** operation, which merges files, should be used to increase the **FILES FREE** space.

```

  □
  FREE SPACE
  -----
  FILES FREE: 99%
  16110320 bytes
  TOTAL AVAILABLE:
  16110320 bytes
  LOGGER FREE: 99%
  15643304 bytes
  
```

FREE SPACE window with the number depending on the measurements and operations performed

7.10 Saving setup in the instrument's memory - SAVE SETUP

The **SAVE SETUP** (*path: MENU / FILE / SAVE SETUP*) is used for storing data in the FLASH DISC memory of the instrument as a file (see Appendix B for the file formats).

In order to enter the position the user has to select the **SAVE SETUP** text in the **FILE** list, using the **<▲>** (or **<◀>**) push-button. After the selection the **<ENTER>** push-button must be pressed.

The additional function for results saving (the **AUTO NAME** – save a file with the name automatically increased by one) is available after selection of the **NUMBER** text in **AUTO NAME** line.

The return to the **FILE** sub-list is possible after pressing the **<ESC>** push-button.

```

  □
  FILE
  -----
  DELETE
  DELETE ALL
  DEFRAGMENTATION
  CATALOGUE
  FREE SPACE
  SAVE SETUP
  
```

FILE list with **SAVE SETUP** text highlighted (displayed inversely)

<pre> □ SAVE SETUP ----- DEVICE: INTERNAL FILE NAME: S_01JAN AUTO NAME: OFF </pre>	<pre> □ S_01JAN0 Saved O.K. ----- PRESS ANY KEY... </pre>
--	---

SAVE SETUP window

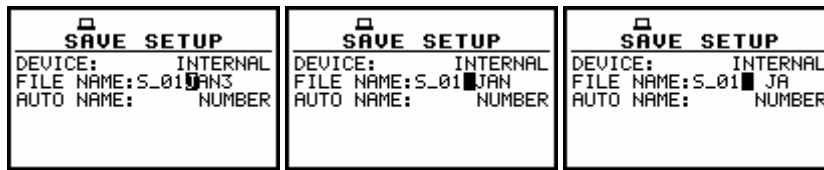
The name of the file, in which the configuration of meter is saved, is displayed in the second line. The default name for a file is displayed in the case of the first entering to this position (after power on) and the last saved file's name – in the case of the next entering. It is possible to edit this name or to save a file using **AUTO NAME** option (save a file with the name automatically increased by one).

The edition of the **FILE NAME** is made using the **<▲>**, **<▼>** push-buttons pressed together with **<Shift>**. One can select the character to be edited using the **<◀>**, **<▶>** push-buttons.

<pre> □ SAVE SETUP ----- DEVICE: INTERNAL FILE NAME: S_01JAN3 AUTO NAME: NUMBER </pre>	<pre> □ SAVE SETUP ----- DEVICE: INTERNAL FILE NAME: S_01JAN3 AUTO NAME: NUMBER </pre>
--	--

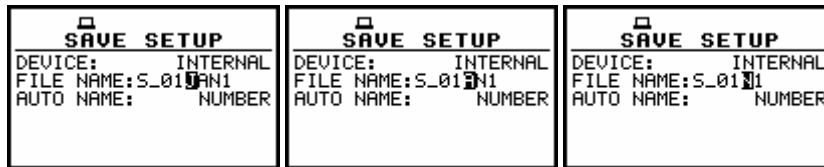
Displays during the process of setting the character in the edited name

The empty space is created for the introduction of a new character in the edited name (the **Insert** operation is executed) when the **<Shift>** push-button is pressed together with the **<>>**.



Displays in FILE NAME edition after pressing **<Shift>** and **<>>** push-buttons

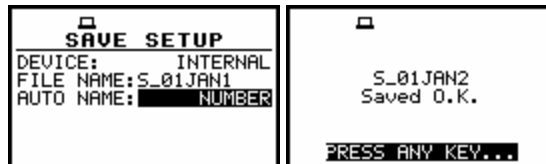
The character, which is displayed inversely, is deleted from the edited name (the **Delete** operation is executed) when the **<Shift>** and **<<** push-buttons are pressed.



Displays in FILE NAME edition after pressing **<Shift>** and **<<** push-buttons

The edited name is accepted and the file is saved after pressing the **<ENTER>** push-button (cf. the description of the **AUTO NAME** function). The instrument waits then for a reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**). All changes introduced to the file name during the edition are ignored after pressing the **<ESC>** push-button. This pressing causes the return to the list from which the **SAVE SETUP** option was entered.

The **AUTO NAME** function consists in saving data in the file with the name increased by one in relation to the name displayed in the **FILE NAME** window. Switching on the function is made by selection of **NUMBER** text in **AUTO NAME** line. The confirmation is made by pressing **<ENTER>**. The number can be changed from 0 to N, when the only limitation of the N value is the length of the file name, which cannot be longer than 8 characters.



Displays with **AUTO NAME** function switched on and after saving the file with the increased name

The presented below message is displayed after pressing the **<ENTER>** push-button in the case when the file with the selected name already exists in the instrument's memory and the **REPLACE** option is not active (*path: MENU / FILE /SAVE OPTIONS / REPLACE*). The instrument then waits for the reaction of the user (any push-button should be pressed except the **<Shift>** and **<Alt>**) and after pressing a push-button it returns to the **FILE** list. In such case the user can edit a new "start number" of a file and then save it using **AUTO NAME** option.



Displays after **SAVE** operation when the file with the selected name already exists in the instrument's memory (with the message if **REPLACE** is not active)

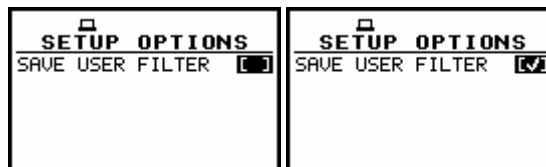
7.11 Enabling of saving user filter option - SETUP OPTIONS

The **SETUP OPTIONS** (path: MENU / FILE / SETUP OPTIONS) is used for disabling or enabling the **SAVE USER FILTER** option. In order to enter the position the user has to select the **SETUP OPTIONS** text in the **FILE** list, using the <▲>, <▼> push-buttons. After the selection the <ENTER> push-button must be pressed. The return to the **FILE** sub-list is possible after pressing the <ESC> push-button.



FILE list with SETUP OPTIONS text highlighted

The activation or deactivation of the option is done by pressing the <<>, <>> push-buttons. The confirmation is made by pressing the <ENTER> one.



SETUP OPTIONS window with SAVE USER FILTER selection

7.12 Loading the files with the configuration - LOAD SETUP

The **LOAD SETUP** (path: MENU / FILE / LOAD SETUP) is used for loading data file from the FLASH DISC. The position is opened after pressing the <ENTER> push-button when the **LOAD SETUP** text in the **FILE** list is displayed inversely (selected using the <▲>, <▼> (or <<>, <>>) push-buttons). The return to the **FILE** list is possible after pressing the <ESC> push-button.

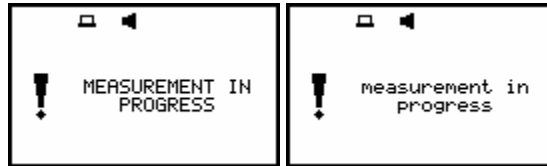


FILE list with LOAD SETUP text highlighted (displayed inversely)



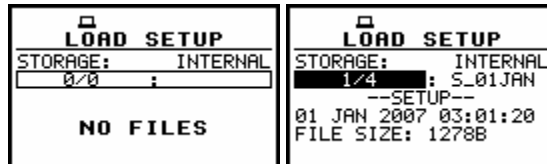
Notice: It is not possible to load the file during the execution of the measurements. On such attempt the message: „**measurement in progress / MEASUREMENT IN PROGRESS**” is displayed for about 2 seconds.

After pressing the <ENTER> push-button the instrument checks its current state. In the case when the measurements are performed, the file loading is impossible. In such case, the message with the changing letters is displayed (see below) and the instrument returns after few seconds to the list from which the **LOAD** was called.



Displays with the message stating the reason for unfeasibility of the required operation

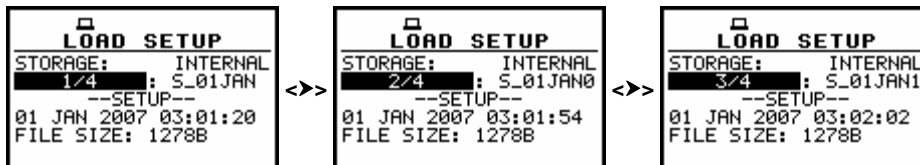
In the case when the instrument memory is empty (no file is stored), the **NO FILES** text is displayed after entering the **LOAD SETUP** window and the instrument waits for the reaction of the user. The user should press then the **<ESC>**, **<ENTER>** or **<Start / Stop>** push-button.



Displays during the execution of **LOAD SETUP** operation

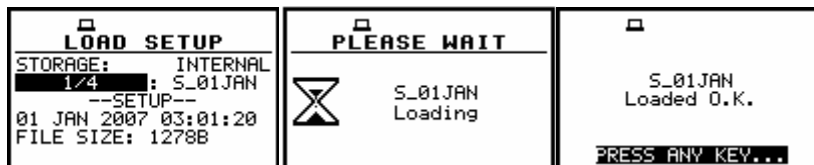
The text informing the user that file was loaded from the internal memory of the instrument is given in the first line. The current number of the file and the total number of the saved files are displayed inversely in the second line together with the name of the file. The **SETUP** type of the current file is given in the third line. Date and time of the **SAVE** operation is displayed in the fourth line. The file size is given in the fifth line.

The change of the current file with the unit step can be done after pressing the **<<>**, **<>>** push-buttons. After pressing the **<<>** with **<Shift>** push-button the first file is available and after pressing the **<>>** with **<Shift>** push-button - the last one is displayed.



Displays during the overview of the file list

The name of the file is accepted and the file is loaded after pressing the **<ENTER>** push-button. The special message is displayed with the name of the selected file during the execution of the operation (see below).



Display during and after the execution of **LOAD SETUP** operation

The next message is displayed after successful end of loading operation. The instrument waits for the reaction of the user (any push-button should be pressed except the **<Shift>** one) and after pressing a push-button it returns to the **FILE** list.