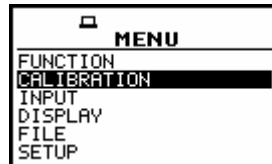


## 5 INSTRUMENT'S CALIBRATION - CALIBRATION

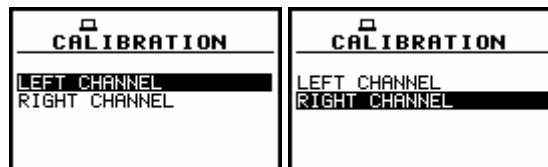
The instrument is factory calibrated with the supplied microphone for the standard environmental conditions. The calibration of the measurement channel has to be done when the absolute value of sound pressure level is important. The microphone sensitivity is a function of the temperature, ambient pressure and humidity.

In order to select a calibration function the user has to select in the main list the **CALIBRATION** text using the <<>, <>> push-buttons and press the <ENTER> one.

In the **CALIBRATION** window, the user has to choose the channel for calibration: **LEFT CHANNEL** or **RIGHT CHANNEL**.



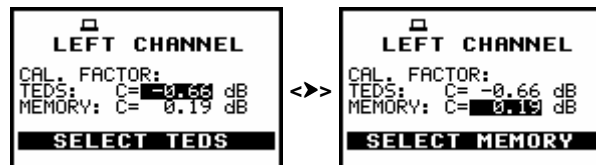
Main list with CALIBRATION text selected



CALIBRATION window, channel selection



**Notice:** After switching the instrument on, the following view may appear on the display



This message appears when the calibrator factor stored in **TEDS** memory of microphone does not match calibrator factor in the instrument's **MEMORY**. It means that the microphone has not been calibrated in the channel it is connected to or it has not been used with this instrument. The typical situation when it happens is the exchanging of the connections of the left and right microphone.

If the **TEDS** or **MEMORY** factor is correct, the user has to select it and press <ENTER>.

If none of the value is correct, the user should select any of them and next calibrate the microphone, using **CALIBRATION** window to obtain correct factor before starting real measurements.

### 5.1 Calibration procedure of the instrument - BY MEASUREMENT

In order to enter the **BY MEASUREMENT** window, the user has to select the proper channel in the **CALIBRATION** window using the <<>, <>> push-buttons and pressing the <ENTER> one.



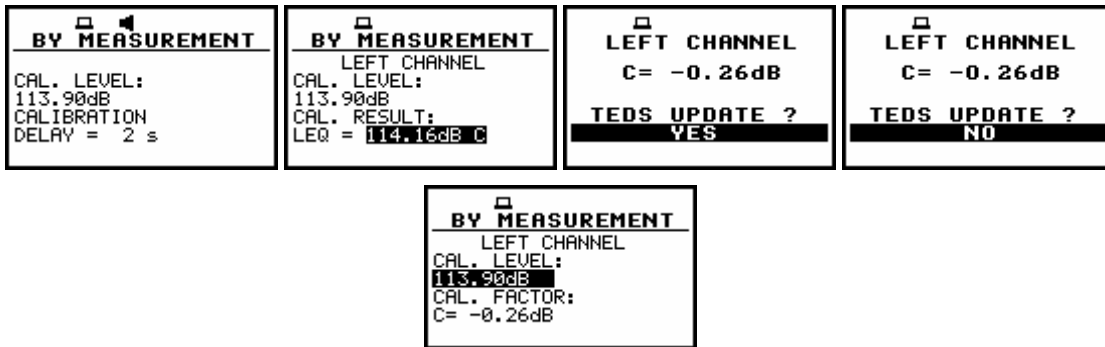
**CALIBRATION window with LEFT CHANNEL text selected; BY MEASUREMENT text selected and BY MEASUREMENT window opened**

The calibration can be done in the following way:

1. Attach the acoustic calibrator SV 30A (or equivalent 114.0 / 1000 Hz) to the microphone of the instrument.
2. Switch on the calibrator and wait ca 30 seconds before starting the calibration measurement.
3. Start the calibration measurement by pressing the Start / Stop.

The measurement period is set to 5 seconds with 5-seconds delay. During the calibration measurement the <ESC> push-button does not operate but it is possible to stop the measurement using the **Start / Stop**.

**Notice:** It is not recommended to stop the calibration measurement before programmed 5-seconds period!



**Displays during the calibration measurement**

Waiting for the start of the measurements, the **DELAY** is counted down on the display. During the measurements, each one-second result is presented on the display. After the end of the measurement, its result is displayed on the display in the bottom line.

**It is recommended to repeat the calibration measurement few times.** The obtained results should be almost the same (with  $\pm 0.1$  dB difference). The reasons for the unstable results are as follows:

- the calibrator is not properly attached to the instrument,
- there are external disturbances,
- the calibrator or the measurement channel (the microphone, the preamplifier or the instrument itself) are damaged.



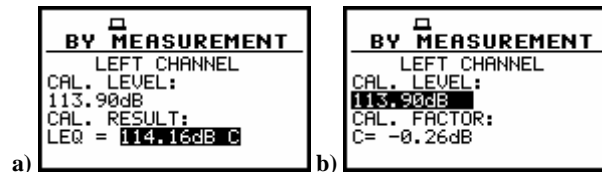
**Notice:** During the calibration measurement, the external disturbances (acoustic noise or vibrations) should not exceed the value of 100 dB.

**4. Press the <ENTER> push-button in order to accept the measurement result.**

After pressing the <ENTER> push-button the calibration factor is calculated, stored and displayed (cf. next Figure).



**Notice:** The user has to press the <ESC> push-button in order to quit the calibration procedure without saving the calibration factor.



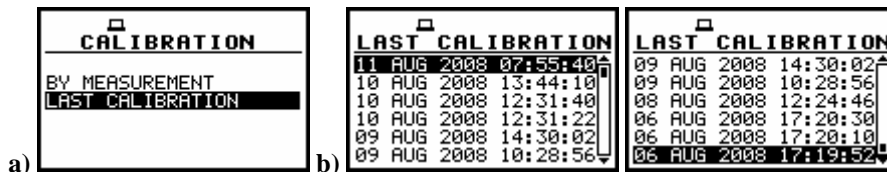
Displays after the measurements (a) and after the acceptance of the value of the calibration factor (b)



**Notice:** The calibration factor is always added to the results of sound level measurements, dosimeter measurements and sound analysis.

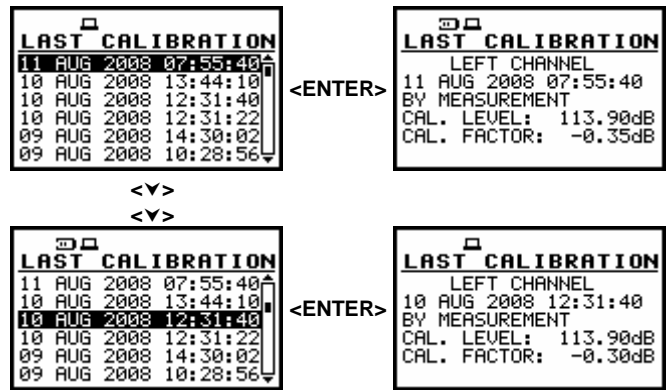
**5.2 History of the calibration - LAST CALIBRATION**

In order to enter the **LAST CALIBRATION** window in which up to last ten calibration records are remembered, the user has to select the proper text in the **CALIBRATION** window using the <<>, <>> push-buttons and press the <ENTER> one.



CALIBRATION list with LAST CALIBRATION text selected (a) LAST CALIBRATION window opened with ten calibration records (b)

In order to review the calibration record, the user has to select the required line in the **LAST CALIBRATION** window using the <<>, <>> push-buttons and press the <ENTER> one. The opened window contains the date and time of the performed calibration measurement, the way the calibration was done (**BY MEASUREMENT**), the desired calibration level (**CAL. LEVEL**) and the obtained calibration factor (**CAL. FACTOR**).



Displays with LAST CALIBRATION records

In the case when the calibration measurements were not performed, the **LAST CALIBRATION** window does not contain any records. The contents of this window is cleared after the **CLEAR SETUP** operation (path: **SETUP / CLEAR SETUP**).



Empty LAST CALIBRATION window