

LA-3260, LA-3560 and LA-3570 Sound Level Meter

Measure L_{Aeq} and L_{AMAX} (maximum value) and stores in MANUAL mode

LA-3260, LA-3560, LA-3570 Sound Level Meter

Measure L_{Aeq} and L_{AMAX} (maximum value) and stores in **MANUAL** mode

This manual describes the operation procedures to manually measure L_{Aeq} and L_{AMAX} for the interval of 10 minutes and store the resulting data on the display to the MANUAL memory, for the case of measuring the noise level at several locations sequentially one by one in a factory, as an example.

When L_{Aeq} is measured, L_{AMAX} , L_x (percentile noise level), and other measurements are made at the same time.

* L_{AMAX} is the maximum value of the instantaneous noise level L_A .

■ Basic concept of operation

As it is typically the case, the LA-3000 series Sound Level Meter displays not only instantaneous values such as L_A on the screen, but also other calculated values including L_{Aeq} , L_{AMAX} , L_{MIN} , and L_N . The display of instantaneous measurement values will be updated every 1 second.

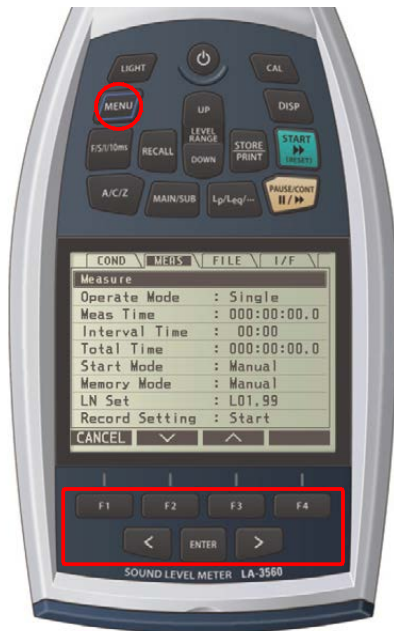
On the other hand, calculated values are displayed only after the {START} button is pressed, when it starts calculation using the “Measure Time” to be specified from a menu. In this document, these are distinguished by using the terms of “instantaneous measurement” and “calculated measurement”.

In the following operation procedures, {} indicates a button on the panel, e.g., {MENU}, <> indicates each menu item, e.g., <MEAS>, and [] indicates the selected menu item, e.g., [Meas Time].

■ Measurement condition

Measurement start time	At the time of pressing the {START} button
Total measurement time	10 minutes
Measurement time	10 minutes
Time weighting characteristics	FAST (factory default setting)
Frequency characteristics	A (factory default setting)

■ Buttons to be used in menu operation




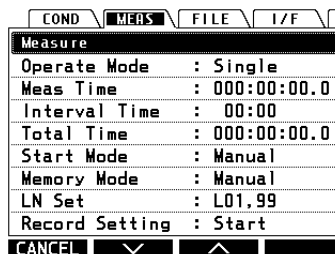
1. Pressing the {MENU} button on the measurement screen to open the menu screen. Press the {MENU} button again while the measurement screen is displayed, the screen is return to the measurement screen.
2. Use the four arrow buttons, i.e., {F2} for down, {F3} for up, { < } for left, and { > } for right, to move the cursor to the item to be selected.
3. When entering a value, use the {F2} (down) and {F3} (up) buttons to select a numerical value and { < } and { > } buttons to select the digit.
4. Press the {ENTER} button to confirm the selected item and the setting value.

■ Operation Procedures

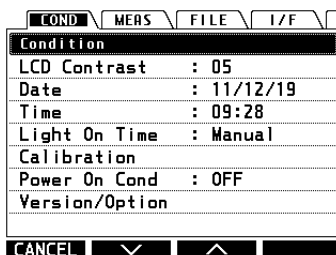
-1 Starting up in the factory default condition

This procedure starts up the device in the factory default setting. The setting is initialized to the frequency characteristic “A”, time weighting characteristics “FAST”, “instantaneous measurement”, and “manual memory” configuration.

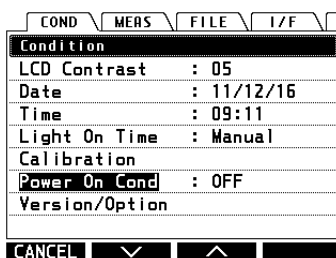
- (1) Press the {Power On} button () to turn on the device.
- (2) Press the {MENU} button to open the menu screen. The <MEAS> screen will open.



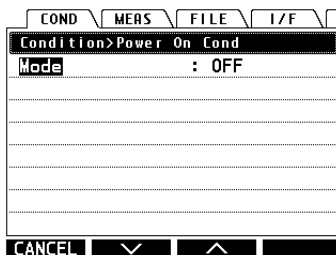
(3) Press the {<} button to move to the <COND> menu to open the Condition screen.



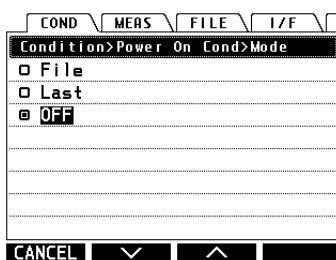
(4) Press the {F2} (down) button to move to the [Power On Cond] menu.



(5) Press the {ENTER} button.



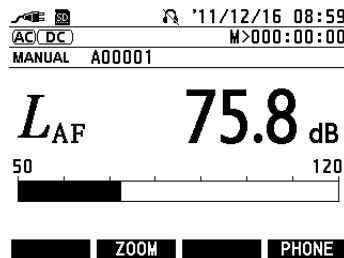
(6) Select [Mode] and press the {ENTER} button.



(7) Press the {F2} (down) button to select [OFF] and press the {ENTER} button.

(8) Press the {MENU} button again to return to the measurement screen.

- (9) Press the {Power On} button () to turn off the device. Then, after a while, turn the power on again. The device will be started up in the factory default setup.



As the basic rule in the following procedures, use the arrow buttons, i.e., {<}, {>}, {F2} (down), and {F3} (up), to move to the desired item or change the value and then press the {ENTER} button to confirm the setting.

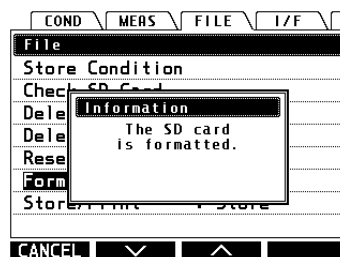
-2 Clearing all data in the SD card

This procedure clears all the record files. This operation is not required when files are to be additionally saved in the SD card. Be careful as this operation will clear all data in the SD card.

- (1) Press the {MENU} button to open the menu screen, select <FILE> and then [Format], and press the {ENTER} button.



When “ENTER or CANCEL” pop up window is displayed, press the {ENTER} button. The “The SD card is formatted” message will be displayed. This message means that all the files recorded in the SD card have been cleared.

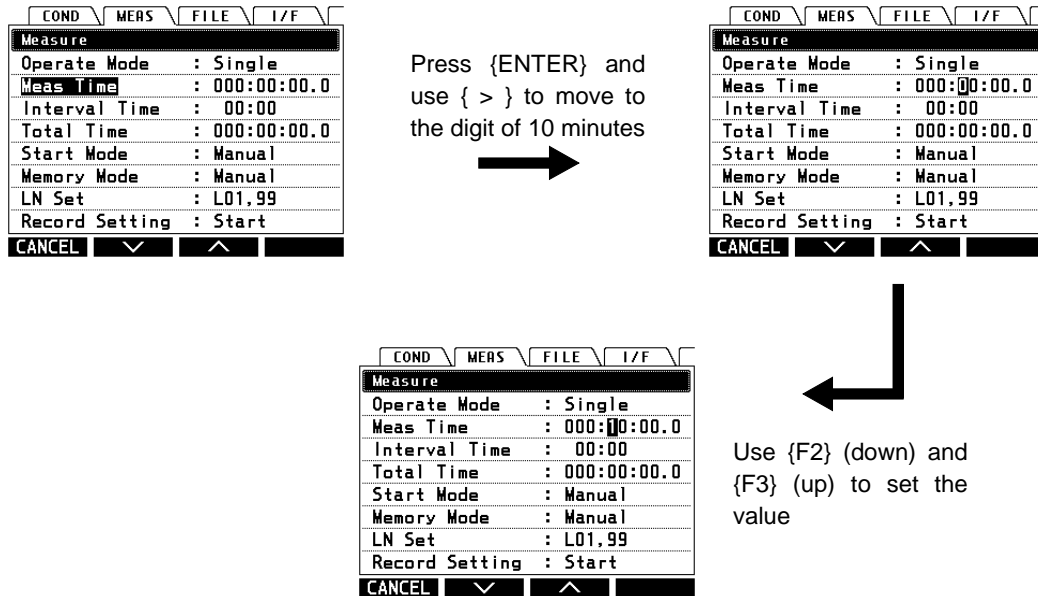


If the {F1} (cancel) button is pressed, the card will not be formatted.

- (2) Press the {MENU} button to return to the measurement screen.

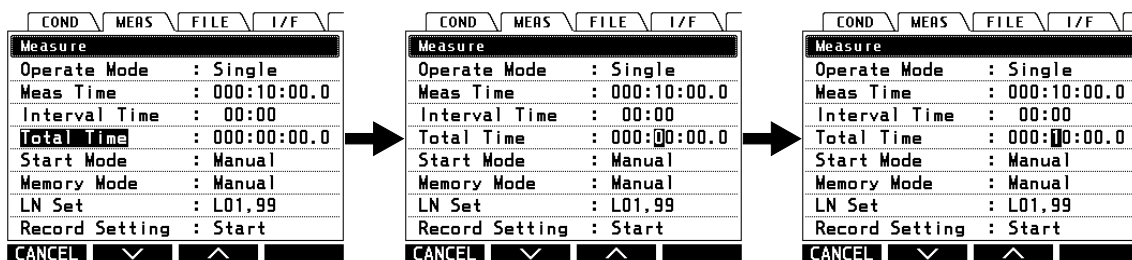
-3 Setting the measuring time to 10 minutes (10:00) and total time to 10 minutes (00:10:00)

- (1) Press the {MENU} button to open the menu screen, select <MEAS>, [Meas Time], and set [000:10:00.0]. This operation will set the measurement time to 10 minutes.



Press the {ENTER} button to complete the setting.

- (2) In the menu screen, set [Total Time] to [000:10:00.0]. This operation will set the total time to 10 minutes. When this setting is used, the measurement will be automatically terminated after 10 minutes have passed.



Press the {ENTER} button to complete the setting.

Note:

The “Interval Time” is not used here, and it remains “00:00”.

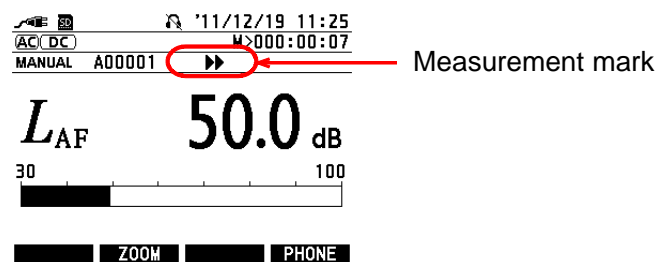
-4 Starting measurement

- (1) Adjust the level range of the Sound Level Meter using the {LEVEL RANGE UP} and {LEVEL RANGE DOWN} buttons according to the actual noise level to be measured at the site. Select a level range where neither “UNDER” nor “OVER” is indicated.



If any “UNDER” or “OVER” condition has been present during measurement, it will be indicated when the device is operated to display calculated values.

- (2) Press the {START} button to start measurement. The following “measurement ongoing” mark (▶▶) will be displayed.



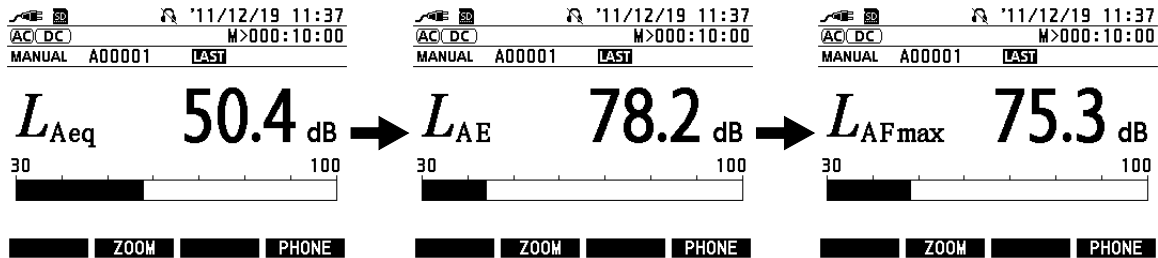
- (3) The measurement will be automatically terminated in 10 minutes, and the measurement mark will be cleared. Pressing the {PAUSE} button can stop the measurement at any time.

The {PAUSE} button has the function to temporarily suspend the measurement; pressing the {PAUSE} button again will resume and continue the measurement until the total time of 10 minutes has passed.

- (4) To start a new measurement, press the {START} button. Any previous calculated measurements will be cleared.

-5 Displaying calculation measurement values

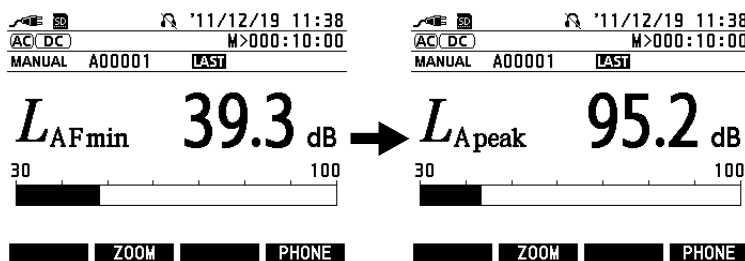
(1) Each time the {Lp/Leq/...} button are pressed, the calculated measurement value is switched to L_{Aeq} , L_{AMAX} , and displayed.



Eq: Equivalent noise level

E: Single event sound exposure level

max: Maximum noise level

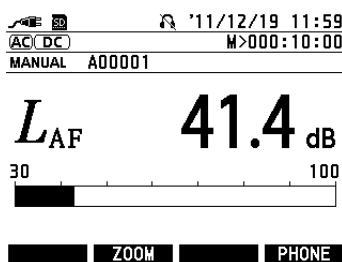


min: Minimum noise level

peak: Peak noise level

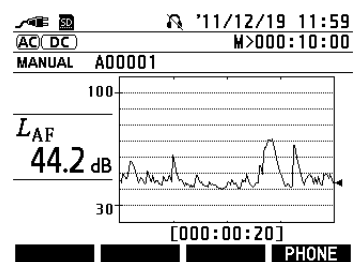
-6 List display

(1) Each time the {DISP} button is pressed, the display changes as shown below:



Instantaneous level

Press {DISP}



Trend level

Press {DISP}



		[dB]
LAF05	54.8	LAF01 60.2
LAF10	52.4	LAF99 41.0
LAF50	46.8	LAFH1 74.8
LAF90	42.8	LAFLo 39.4
LAF95	42.0	LAFave 50.5

Calculated value (L_x)

Press {DISP}

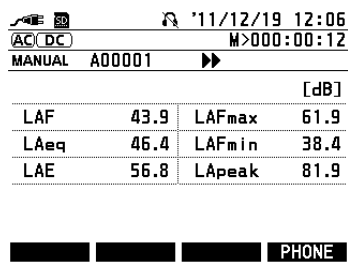


		[dB]
LAF	50.3	LAFmax 75.3
L_{Aeq}	50.4	LAFmin 39.3
LAE	78.2	LAPeak 95.2

Calculated values

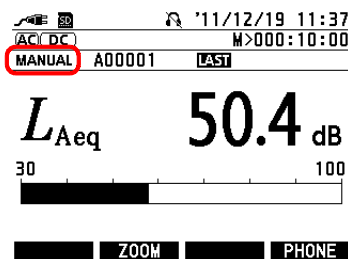
(L_{Aeq} , L_{AE} , L_{Amax} , L_{Amin} , L_{Apeak})

- (2) When the display is showing a list, calculated measurement can be made by pressing the {START} button. In the case of “List 1” display, the L_A , L_{Aeq} , L_{AE} , L_{AFmax} , L_{Amin} , and L_{Apeak} values up to the current measurement time will be displayed.



-7 Manual operation to store calculation measurement values

- (1) Make sure that “MANUAL” is indicated (i.e., manual save mode) on the display as in the following figure:



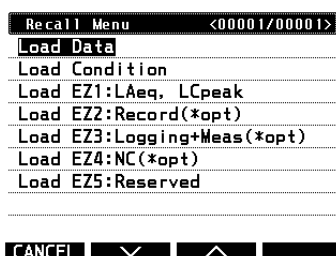
- (2) Press the {STORE} button. The “data saving” mark will temporarily appear on the top of the screen and the data will be saved.

-8 Repeating measurement

- Press the {START} button to start the next measurement.
- Press the {STORE} button to save the data.

-9 Reproducing (display) of data manually stored

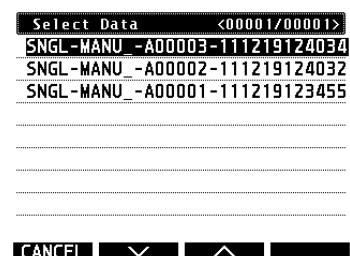
- (1) Press the {RECALL} button to open the menu screen, select [Load Data], and press the {ENTER} button. Select the data to be displayed using the {F2} / {F3} (down/up) buttons and press the {Enter} button.



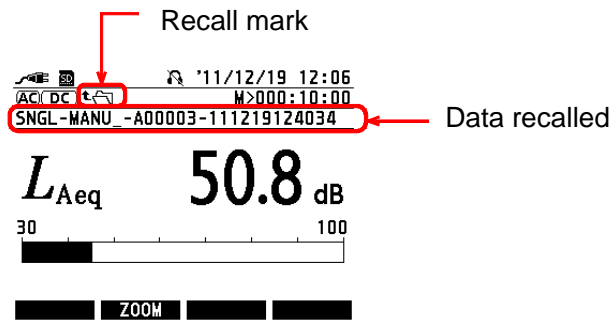
Press {ENTER}, and



select data item by {F2} (down) and {F3} (up)



- (2) Upon returning to the measurement screen, recall mark and the file name will be displayed. It indicates that the display is showing the recalled data.

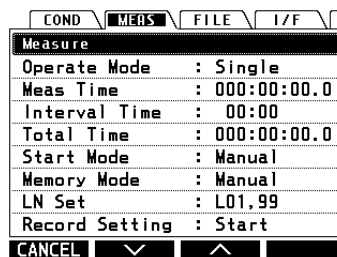


- (3) You can switch to the list display by pressing the {DISP} button.
- (4) Pressing the {RECALL} button will clear the file name and it returns to the measurement screen.

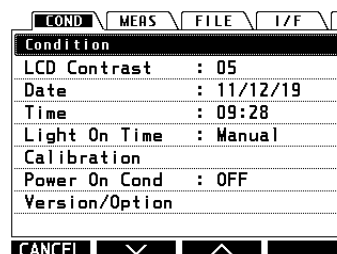
-10 Starting up the system with the saved setting condition at the last power off

The following steps are used to automatically recall and set the current measurement condition when power is turned on the next time.

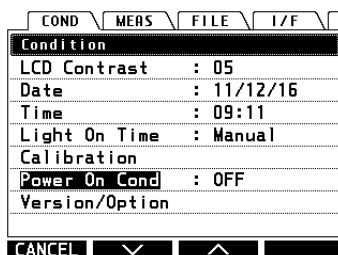
- (1) Press the {MENU} button to open the menu screen. The <MEAS> screen will open.



- (2) Press the {<} button to move to the <COND> menu to open the Condition screen.

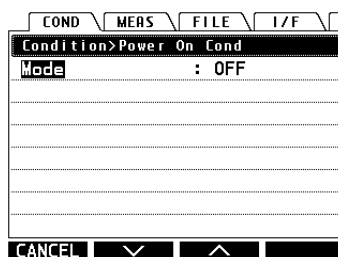


(3) Press the {F2} (down) button to move to the [Power On Cond].

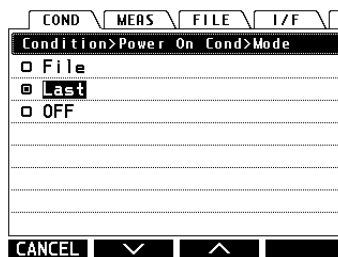


(4) Press the {ENTER} button.

(5) Select [Mode] and press the {ENTER} button.



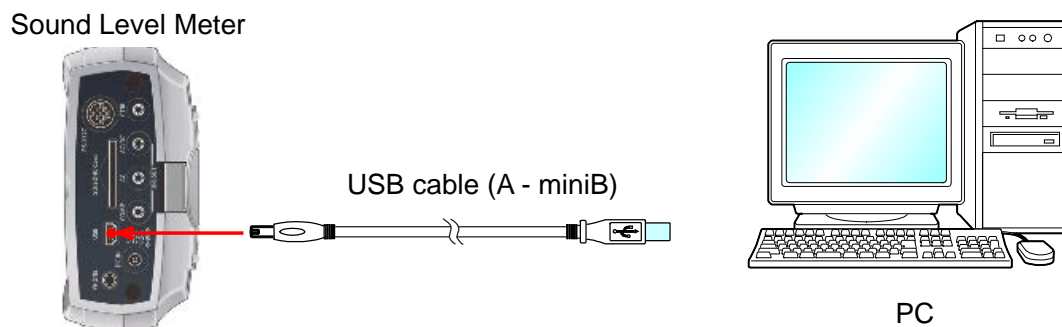
(6) Press the {F2} (down) button to select [Last] and press the {ENTER} button.



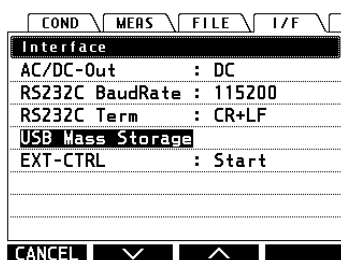
-11 Loading stored data to a personal computer

Two methods are available for connecting to a personal computer, i.e., one is to use a USB cable (A - miniB), as an external storage device (removable disk), and the other is to directly read the content of the SD card.

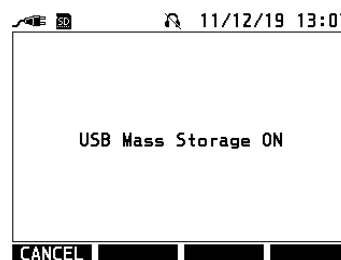
<Loading data from the Sound Level Meter as an external storage device>



- (1) Press the {MENU} button to open the menu screen, select <I/F> and [USB Mass Storage], and press the {ENTER} button. "USB Mass Storage ON" is displayed on a screen.



Select [USB MASS Storage]
and press {Enter}



- (2) Use a USB cable to connect the Sound Level Meter to the PC.

The files are stored in the CSV format.

End