

VR-6100 Vibration Level Meter

Real time octave measurement procedure

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The following is the explanation of setting methods of 1/1 real time octave function (VR-0653) and 1/3 real time octave function (VR-0654). First, display the instantaneous values of vibration level and vibration acceleration level, and start the real time octave function.

■ Measurement of vibration level and vibration acceleration level

1. Turning the power ON

Provide the power source by attaching dry cells or an AC adapter to the VR-6100 Vibration Level Meter. Then, turn the power switch to ON.

2. Switching the measurement item to L (instantaneous value)

Press the panel switch [L Leq LE] to switch the measurement item to L (instantaneous value). The characters of Lv, Lva or LvF are displayed on the screen, and the current vibration level is displayed continuously.

3. Executing the calibration

Press the panel switch [CAL] to confirm that the calibration level of the VR-6100 Vibration Level Meter is displayed in an appropriate value.

4. Vibration sensitivity compensation

Press the panel switch [Lv/Lva/LvF] to switch the vibration sensitivity compensation. Select [Lv] for vibration level measurement and [Lva] for vibration acceleration level measurement respectively.

5. Executing the instantaneous value mode with INST

Press the panel switch [INST/T.MAX] to switch to instantaneous value display mode INST.

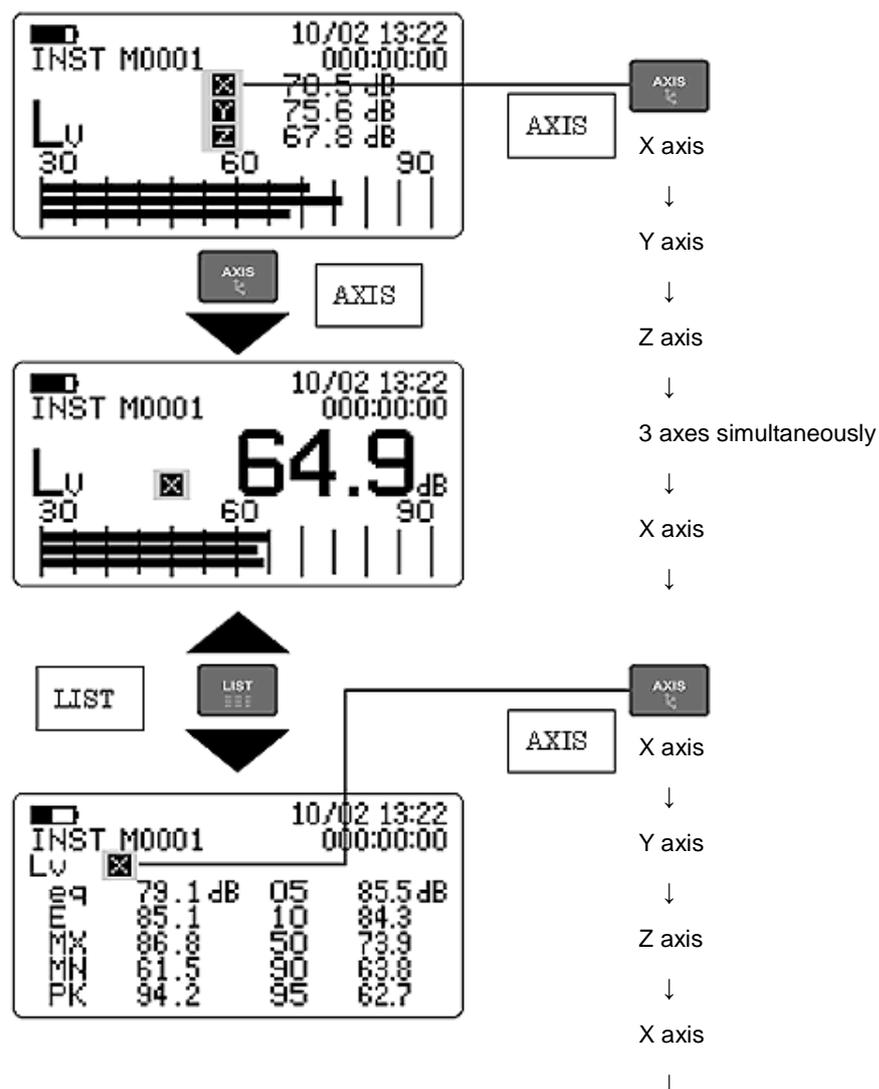
6. Setting the level range

Switch the level range value to an appropriate value by observing the bar graph of liquid crystal display, to prevent the input range from being too large or too small. Each time the panel switch [Λ] or [V] (LEVEL) is pressed, the level range is switched to another. In addition, the rough guide of standard vibration levels are as following table. Please refer to it when you switch the range.

Generation factor	Range of vibration level
People walking, minor excitation	Up to 60 dB
Traffic vibration	60 dB to 70 dB
Construction work vibration	60 dB to 80 dB
Factory vibration	Up to 70 dB
Earthquakes (intensity III)	75 dB to 85 dB
Earthquakes (intensity IV)	85 dB to 95 dB
Earthquakes (intensity lower V and upper V)	95 dB to 105 dB

7. Selecting the display axis

Press the panel switch [AXIS], and select the axis (X axis/Y axis/Z axis/3 axes) which displays the vibration level and vibration acceleration level.



■ Measurement of the real time octave

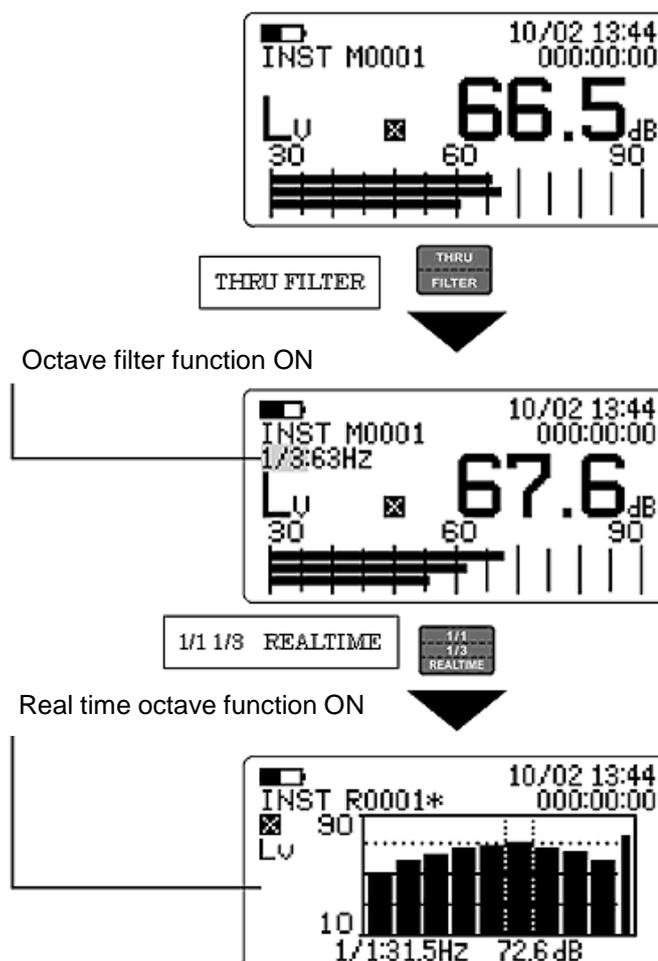
After the instantaneous measurement procedure, please operate following procedure.

8. Switching the function to real time octave

When the panel switch [THRU/FILTER] is pressed, options of octave filter function (VR-0651/0652) or real time octave function (VR-0653/0654) is started.

9. Displaying the 1/1 and 1/3 octave

Press the panel switch [1/1 1/3 REALTIME] is pressed for several times to select real time octave filter 1/1 or 1/3. Immediately after the selection, the instantaneous sound is measured and displayed.



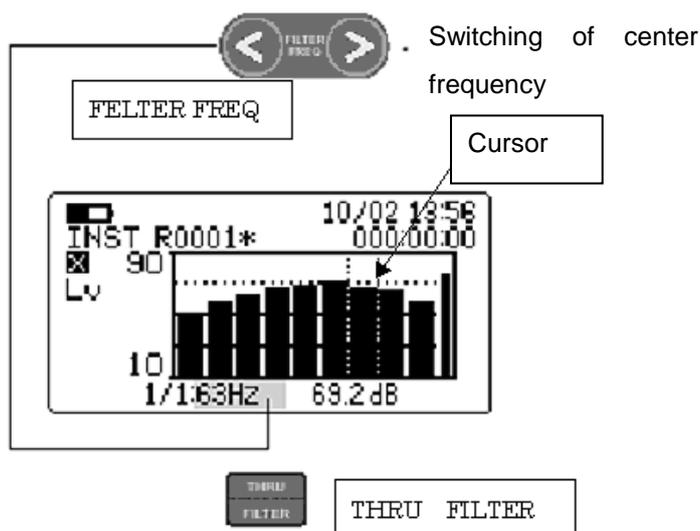
<Caution>

- Octave filter function (VR-0651/0652) and real time octave function (VR-0653/0654) are available as an option. The function which is not equipped as an option is not displayed on the screen. For example, if all option functions (VR-0651/0652/0653/0654) are equipped, setting item is switched in each time as followings when the panel switch [1/1 1/3 REAL TIME] is pressed.

1/1 octave filter → 1/3 octave filter → 1/1 real time octave → 1/3 real time octave → 1/1 octave filter →...

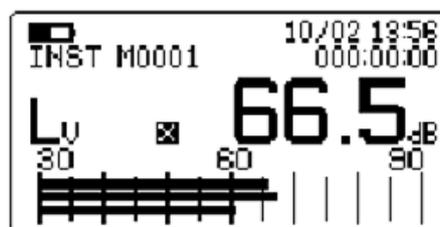
10. Reading the band level

When 1/1 or 1/3 real time octave function is selected, the screen is switched to the display of bar graph which is octave frequency on horizontal axis and each band level on vertical axis. In the bottom of the switched screen, frequency cursor (the part specified in the 2-dashed line) and the band level are displayed as numerical values.



11. Switching the center frequency (band)

When the panel switch [<] or [>] (FILTER FREQ) is pressed, the center frequency (see the figure above) is indicated by the dotted line switches in the following order, and displays the data values of the band is displayed at the bottom of the screen.



12. Finishing the real time octave function

When the panel switch [THRU/FILTER] is pressed once again, the real time octave function is terminated, and return to the initial measurement screen.

• 1/1 real time octave filter (VR-0653)

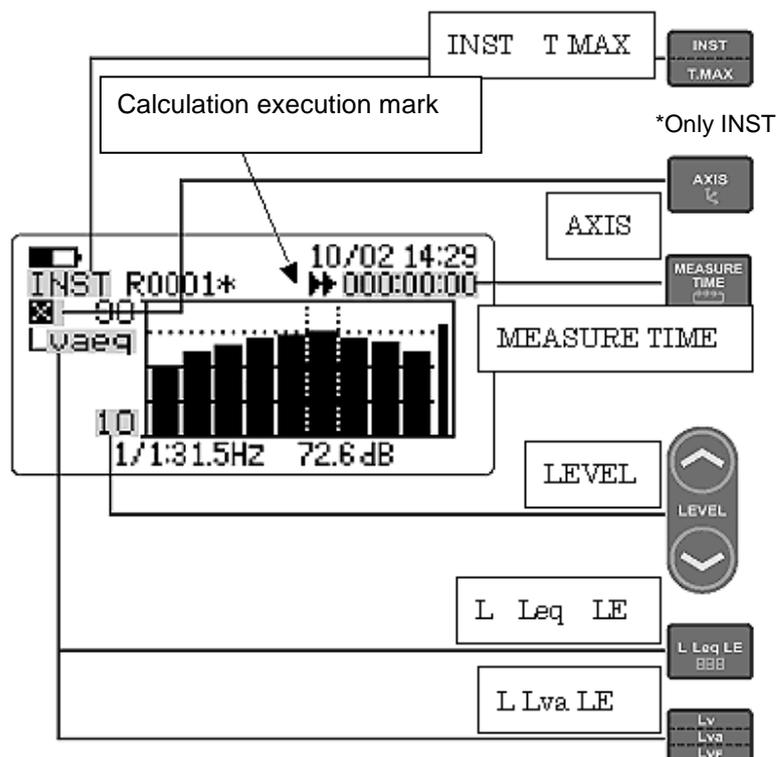
1Hz → 2Hz → 4Hz → 8Hz → 16Hz → 31.5Hz → 63Hz → 125Hz → 250Hz → ALLPASS → 1Hz →...

• 1/3 real time octave (VR-0654)

0.8Hz → 1Hz → 1.25Hz → 1.6Hz → 2Hz → 2.5Hz → 3.15Hz → 4Hz → 5Hz → 6.3Hz → 8Hz → 10Hz → 12.5Hz → 16Hz → 20Hz → 25Hz → 31.5Hz → 40Hz → 50Hz → 63Hz → 80Hz → 100Hz → 125Hz → 160Hz → 200Hz → 250Hz → 315Hz → ALLPASS → 0.8Hz →...

13. Switching of measuring axis (X axis/Y axis/Z axis)

Press the panel switch [AXIS], and select the axis to display the measurement value from X axis, Y axis or Z axis. Enables to switch and display after measurement.



■ Measurement of each band calculation value

To measure the calculation value of each band by using the real time function, please operate the following procedure. Please refer to the above figure.

14. Setting the measurement time

Press the panel switch [MEASUR TIME] to switch the time of measurement. Every time the switch is pressed, the measurement time is changed in the following order.

0 sec → 1 sec → 3 sec →...→ 30 min →...→ 168 hour → 0 sec →...

<Caution>

- When the measurement time is set as 0 second, measurement time setting is manual operations. The measurement starts when the panel switch [START] is pressed, and the measurement is continued to process the calculation until the panel switch [PAUSE] is pressed.

15. Measuring the calculation value

When the panel switch [START] is pressed, measurement of calculation value is started. The calculation execution mark and the measurement passing time are displayed on the screen respectively during the calculation.

16. Completing the calculation value measurement

When setting measurement time is passed, measurement of calculation value is finished automatically. The measurement data are retained until new measurement starts by pressing the panel switch [START]. The data are retained even if the power is switched OFF.

17. Switching the measurement item

Every time the panel switch [L Leq LE] is pressed, the measurement item is switched in following order.

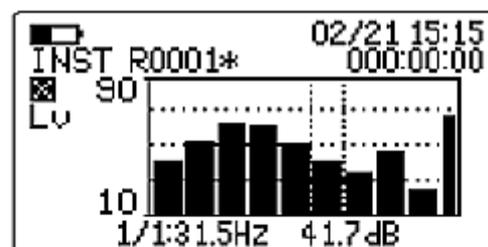
L → Leq → LE → LMX → LMN → L → ...

<Caution>

- The real time octave option is measured Leq, LE, LMX or LMN. As for this reason, please be careful that the display is not switched in the display except for Leq, LE, LMX or LMN.
- Calculation is processed in all axes at the same time, regardless of displaying axis. For this reason, calculation results are retained until the new calculation is processed even if the display measurement item is switched to another.
- The panel switch [L Leq LE] of the VR-6100 Vibration Level Meter is not available when the screen is switched to the list display.

18. Displaying the real time octave list

Every time the panel switch [LIST] is pressed under the condition of displaying the real time octave data, the display screen is switched to the bar graph data and the list data.



Frequency	Value	Frequency	Value
1Hz	40.4 dB	31.5Hz	41.7 dB
2	51.3	63	34.5
4	62.4	125	48.5
8	58.2	250	27.9
16	49.5	AP	66.6

- **Switching the 1/1 real time octave (VR-0653)**

The display of 1/1 real time octave (VR-0653) is switched in the following order.

Bar graph → List (1 Hz to ALLPASS) → Bar graph →...

- **Displaying the 1/3 real time octave list**

Every time the panel switch [LIST] is pressed, the display is switched as follows.

Bar graph → List (0.8 Hz to 6.3 Hz) → List (8 Hz to 63 Hz) → List (80 Hz to ALLPASS) → Bar graph →...

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