

Taking Cursor Measurements

Use the cursors to measure the difference (either in time or voltage) between two locations in a waveform record. This section describes cursors — how to select their type and mode, how to display them, and how to use them to take measurements.

Description

Cursors are two markers that you position with the general purpose knob. As you position the cursors, readouts on the display report and update measurement information.

Cursor Types

There are three cursor types: *horizontal bar*, *vertical bar*, and *paired* (see Figure 3–62).

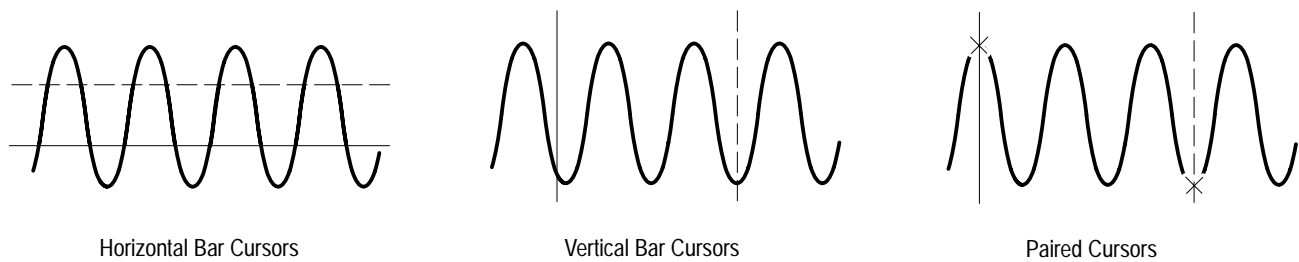


Figure 3–62: Cursor Types

Horizontal bar cursors measure vertical parameters (typically volts).

Vertical bar cursors measure horizontal parameters (typically time or frequency).

Paired cursors measure both vertical and horizontal parameters simultaneously.

Look at Figure 3–62. Note that each of the two paired cursors has a long vertical bar paired with an X. The Xs measure vertical parameters; the long vertical bars measure horizontal parameters.

NOTE. When cursors measure certain math waveforms, the measurement may not be of time, frequency, or voltage. Cursor measurement of those math waveforms are described in *Waveform Math*, which begins on page 3–139.

Cursor Modes There are two cursor modes: *independent* and *tracking* (see Figure 3–63).

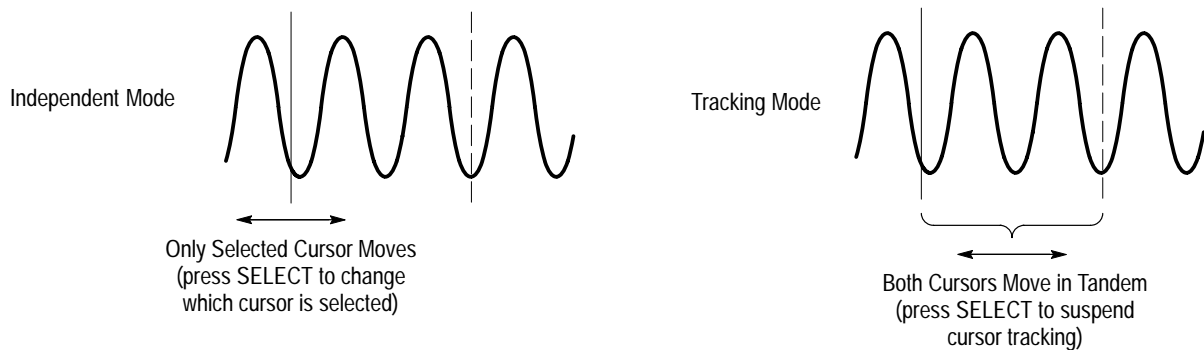


Figure 3–63: Cursor Modes

Cursor Readouts The cursor readouts differ depending on whether you are using H Bars, V Bars, or Paired.

H Bars. The value after Δ shows the voltage difference between the cursors. The value after @ shows the voltage of the selected cursor relative to ground (see Figure 3–64). With video triggers, you can display the voltage in IRE units.

V Bars. The value after Δ shows the time (or frequency) difference between the cursors. The value after @ shows the time (frequency) of the selected cursor relative to the trigger point. With video triggers, you can display the line number.

Paired. The value after one Δ shows the voltage difference between the two Xs; the other Δ shows the time (or frequency) difference between the two long vertical bars. The value after the @ shows the voltage at the X of the selected cursor relative to ground (see Figure 3–65).

If the paired cursors are moved off screen horizontally, Edge replaces the voltage values in the cursor readout.

Select the Cursor Function Do this procedure and those that follow to take a cursor measurement. To select the type of cursors you want, do the following steps:

1. To display the cursor menu, press **CURSOR** (see Figure 3–64).
2. Press **CURSOR** → **Function** (main) → **H Bars, V Bars, Paired,** or **Off** (side).

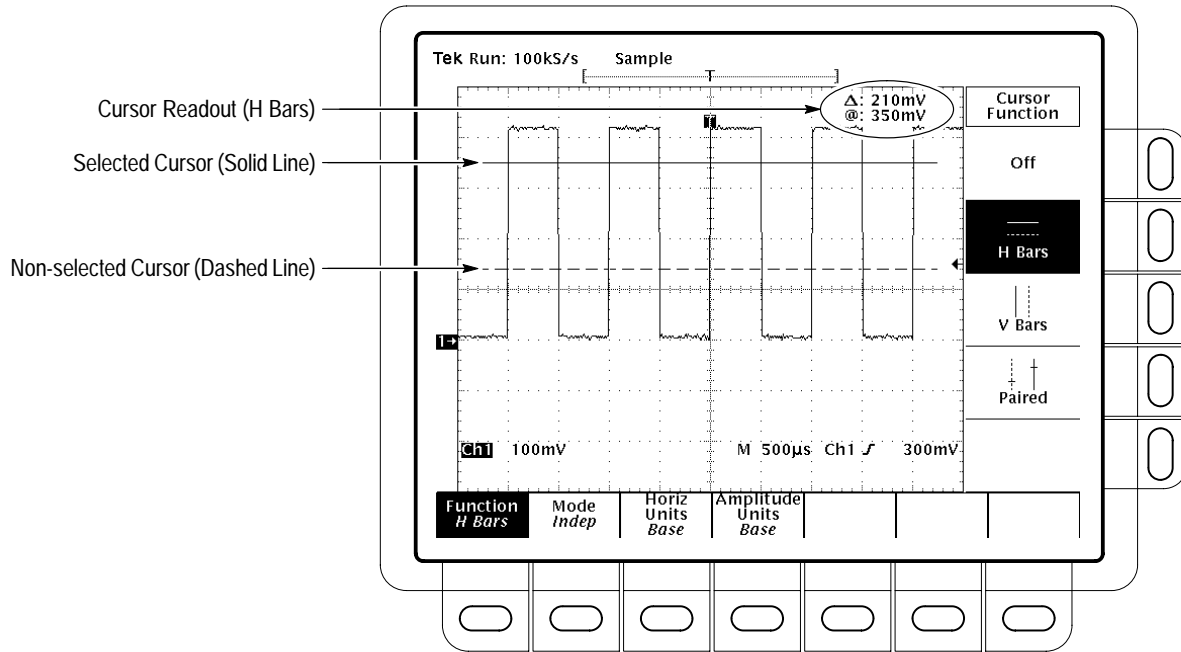


Figure 3-64: H Bars Cursor Menu and Readouts

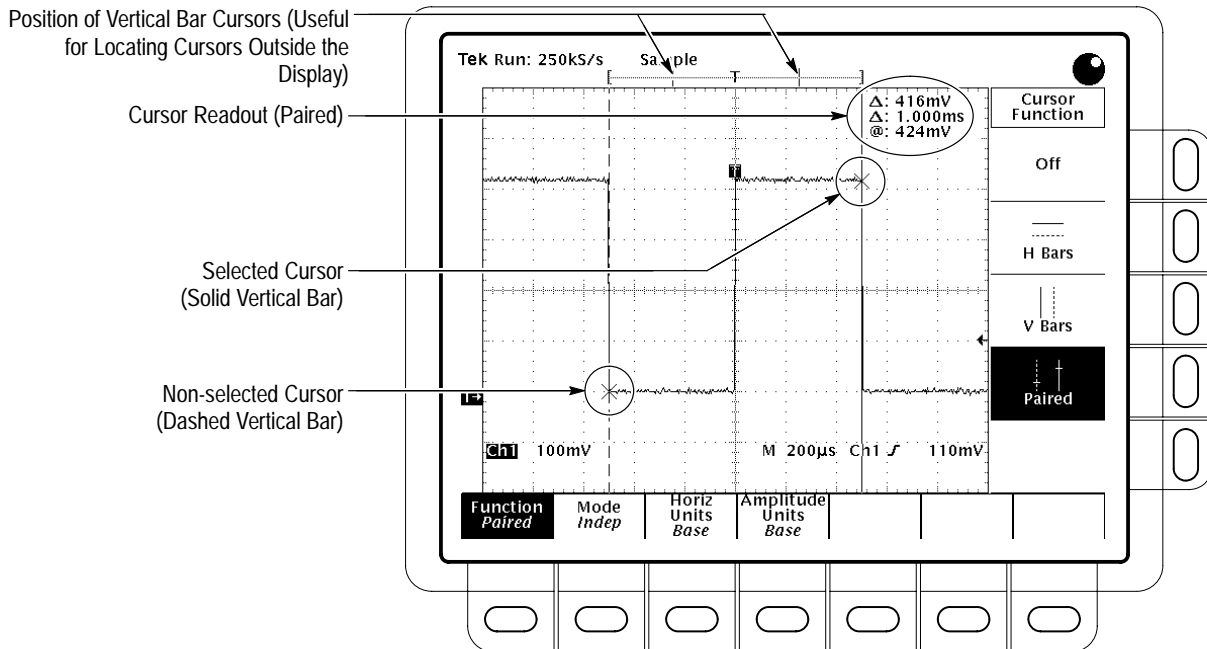


Figure 3-65: Paired Cursor Menu and Readouts

Set Mode and Adjust the Cursors

To select the cursor mode and adjust the cursors in either mode, do the following steps:

1. Press **CURS**OR → **Mode** (main) → **Independent** or **Tracking** (side):

Independent makes each cursor positionable without regard to the position of the other cursor.

Tracking makes both cursors positionable in tandem; that is, both cursors move in unison and maintain a fixed horizontal or vertical distance between each other.

2. Adjust the cursors according to the mode you have selected:

- To adjust either cursor in independent mode, use the general purpose knob to move the selected (active) cursor. A solid line indicates the adjustable cursor, and a dashed line indicates the fixed cursor. Press **SELECT** to toggle between cursors.
- To adjust both cursors in tracking mode, use the general purpose knob.
- To adjust the distance between cursors in tracking mode, press **SELECT** to temporarily suspend cursor tracking. Then use the general purpose knob to adjust the distance of the solid cursor relative to the dashed cursor. Press **SELECT** again to resume tracking.

Select Horizontal Units

You can choose to display vertical bar cursor results in the base horizontal units of the waveform or in 1/base horizontal units of the waveform. For internally clocked waveforms the units are time or frequency; for externally clocked waveforms (TDS 400A only) the units are clocks or 1/clocks. If you have Option 05 Video, you can also display the results in terms of video line number (see Figure 3–66). To choose vertical bar cursor units, do the following step:

NOTE. *If Custom video mode is selected, you also need to set the Scan Period in the Custom Video menu.*

On a TDS 400A press **CURS**OR → **Horiz Units** (main) → **Base** or **1/Base**, or with Option 5, **video line number** (side).

On a TDS 510A press **CURS**OR → **Time Units** (main) → **seconds** or **1/seconds**, or with Option 5, **video line number** (side).