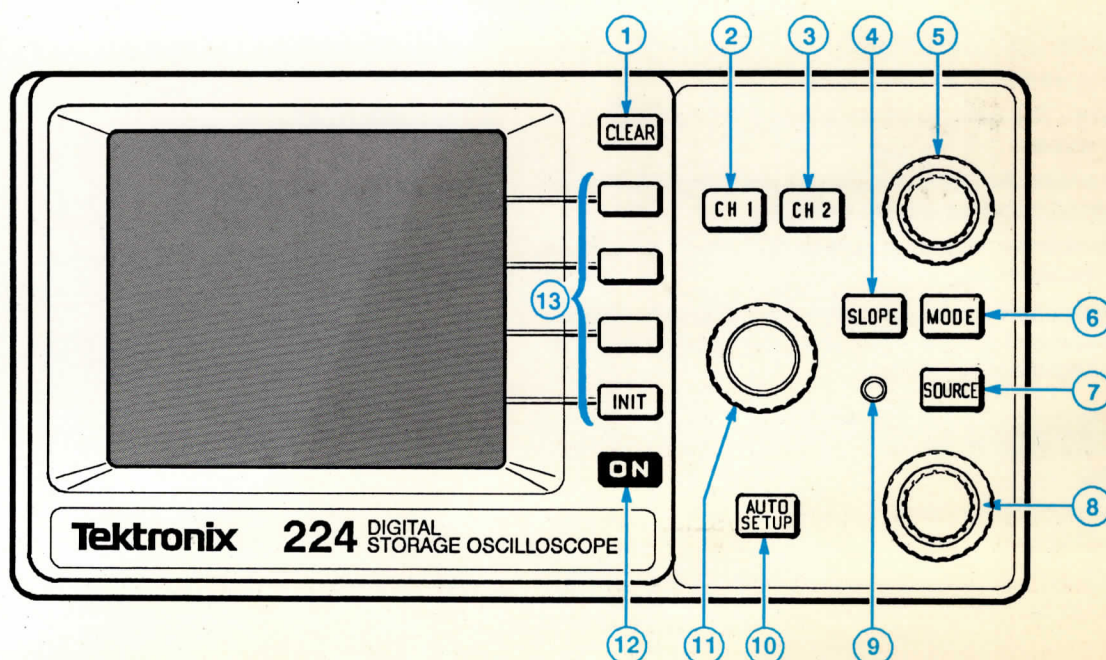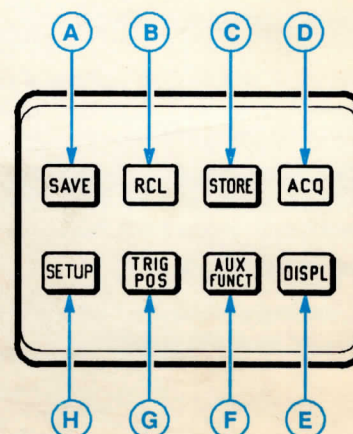# TEK 224 Digital Storage Oscilloscope

(A) Halts the acquisition and calls up the SAVE menu to save waveforms in nonvolatile memory.

(B) Calls up the RECALL WVFRM menu to recall saved waveforms from nonvolatile memory for display.

(C) Switches between STORE (display freezes between triggers) and NONSTORE (display blanks between triggers).

(D) Calls up the ACQ menu (NORM, ENV, AVG, and CONT ENV).

(E) Calls up the DISPLAY menu (INV1, INV2, XY, and RO OFF).

(F) Calls up the AUX menu (ALIGN, SELF CAL, CONFIG, and EXT TV TRIG).

(G) Calls up the TRIG POS menu (POST, MID, and PRE) for STORE MODE trigger position.

(H) Calls up the SETUP menu (SAVE, RECALL, ERASE, and ERASE ALL). Memory holds up to four front-panel setups for later recall. ERASE ALL erases all setups in memory.

(1) Clears menus and stored waveform displays.

(2) Selects CH 1 to respond to control changes. Calls up the CH 1 CPLG menu (DC, AC, GND, CH 1 OFF) on the second press.

(3) Same as the CH 1 button but for CH 2.

(4) Selects Trigger SLOPE (+ or -).

(5) Outer knob sets VOLTS/DIV on selected channel. Inner knob positions active channel vertically and is the VAR knob when held in and rotated.

(6) Calls up the TRIG MODE menu (NORM, AUTOLVL, AUTOBL, SSEQ).

(7) Calls up the trigger SOURCE menu (VERT, CH1, CH2, EXT).

(8) Outer knob sets SEC/DIV (20 s to 50 ns). Inner knob positions waveforms horizontally and toggles X10 MAG when pressed.

(9) TRIG'D indicator; when lit, waveform is triggered.

(10) Autoranges on the active channel signal(s) when pressed. Sets VOLTS/DIV, SEC/DIV, vertical position, and trigger slope, mode, and source.

(11) Outer knob sets Trigger LEVEL. Inner button autolevels on the trigger signal when pressed.

(12) Toggles oscilloscope power. When using battery power, the 224 shuts down automatically after two minutes of idle time.

(13) Select from displayed menus. The fourth button is also the INIT button for SSEQ trigger mode.

NOTE: Menu call-up buttons also scroll through the menu selections when pressed repeatedly.

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SELECTING THE ACTIVE CHANNEL

- Press **CH 1** or **CH 2** to activate a channel. The VOLTS/DIV readout of the active channel is boxed. A second press selects the input coupling menu for that channel.

SELECTING TRIGGER POSITION

1. In store mode, press **TRIG POS**.
2. Select POST, MID, or PRE.

- The instrument displays a " + " on the trigger channel to indicate the trigger level and position.

SELECTING ACQUISITION MODE

1. Press **ACQ**.
2. Select NORM, ENV, AVG, or CONT ENV acquisition mode.

- ENV acquisition mode displays signal peaks between samples and is functional at SEC/DIV settings from 20 s to 20 ms. CONT ENV performs the ENV function over successive acquisitions until you press **INIT**. AVG mode gives a moving average of the last four acquisitions.

SELECTING TV TRIGGER MODE

1. Press **AUX FUNCT**; select EXT TV TRIG.
2. Press **SOURCE**; select EXT.

- For a stable display, apply an NTSC or PAL standard video signal to both the external trigger and probe tip inputs.

SAVING A WAVEFORM TO MEMORY

1. Acquire the waveform you want to save.
2. Press **SAVE**. The most recent waveform(s) will be temporarily frozen on screen.
3. If both channels are displayed, choose one using the channel select buttons before saving the waveform.
4. Select the memory location (1, 2, 3, or 4) to which you wish to save the waveform.

- If both channels are displayed and you wish to save them both, select the remaining channel and save its waveform into one of the remaining memory locations.

RECALLING A WAVEFORM FROM MEMORY

1. Press **RCL**.
2. Select the memory location (1, 2, 3, or 4) from which you wish to recall a waveform.

- A beep sounds if you select an empty memory. A box around a menu choice indicates that the waveform is displayed.

SAVING FRONT–PANEL SETUPS

1. Set the controls to make your measurement.
2. Press **SETUP**.
3. Select SAVE.
4. Select the memory location (1, 2, 3, or 4) to which you wish to save the setup.

- A boxed memory location already contains stored data. Storing new data in that location will overwrite the old data.

RECALLING AND ERASING FRONT–PANEL SETUPS

1. Press **SETUP**.
2. Select RECALL.
3. Select the memory location (1, 2, 3, or 4) from which you wish to recall a setup.

- To clear a memory location, select ERASE when in the SETUP menu. Press **CLEAR** to remove the menu display.

- To erase all four memory locations and exit the menu, select ERASE ALL when in the SETUP menu.

Labels (left): CH 1 Coupling Symbol, CH 1 VAR Symbol, CH 1 INVERT Symbol, Trigger Position Indicator on the Waveform, Recalled Waveform Number, Trig SLOPE (+ or -), Trigger Level Setting, STORE/NONSTORE Indicator

Labels (right): CH 2 Information, External Charge and Battery Indicator, Shows Low Battery, Recalled Waveform Information, X10 MAG Indicator, SEC/DIV of Acquisition