



**MOS-620CH/640CH**  
**20MHz/40MHz Oscilloscope (Economical Type)**

## Specification

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### VERTICAL AXIS

- Sensitivity: 5mv~5V/DIV, 10 steps in 1-2-5
- sequence Sensitivity accuracy:  $\leq 3\%$  ( $\times 5\text{MAG}$ :  $\leq 5\%$ )
- Vernier vertical sensitivity: To 1/2.5 or less of panel-indicated value
- Frequency bandwidth: DC~20MHz / DC~40MHz (-3dB)
- AC coupling: Low limit frequency 10Hz. (with reference to 100KHz, 8DIV. Frequency response with -3Db)
- Rise time: Approx. 17.5nS ( $\times 5\text{MAG}$ : Approx. 50nS) / 9.5nS ( $\times 5\text{MAG}$ : Approx. 25nS)
- Input impedance: Approx. 1M ohm // Approx. 25pF
- Square wave characteristics: Overshoot:  $\leq 5\%$  (At 10Mv/DIV range) other distortions and other ranges: 5% added to the above value
- DC balance shift: Adjustable on panel
- Linearity:  $< \pm 0.1\text{DIV}$  of amplitude change when waveform of 2 DIV at graticule center is moved vertically.

### VERTICAL MODES

- CH1 single channel.
- CH2 single channel
- DUAL: CH1 and CH2 are displayed ALT or CHOP selectable at any sweep rate.
- ADD: CH1+CH2 algebraic addition.
- Chopping repetition frequency: Approx. 250KHz
- Input coupling: AC, GND, DC.
- Maximum input voltage: 300V peak (AC: frequency 1KHz or lower) When set probe switch at 1:1, the maximum effective readout is 40Vpp (14Vrms at sine wave), or set probe switch at 10:1, the maximum effective readout is 400Vpp (140Vrms at sine wave).
- Common mode rejection ratio: 50:1 or better at 50KHz sinusoidal wave. (when sensitivities of CH1 and CH2 are set equally)
- Isolation between channels:  $> 1000:1$  at 50 MHz (at 5mV/DIV range);  $> 30:1$  at 20MHz;  $> 30:1$  at 40MHz
- CH1 signal output: at least 20mV/DIV into a 50 ohm termination. Bandwidth is 50Hz to at least 5MHz.
- CH2 INV BAL: Balanced point variation:  $\leq 1\text{DIV}$  (Reference at center graticule)

## TRIGGERING

- Triggering source: CH1,CH2,LINE,EXT(CH1 and CH2 can be selected only when the vertical mode is DUAL or ADD. in ALT mode, if the TRIG.ALT switch is pushed in, it can be use for alternate triggering of two different source.
- Coupling: AC:20Hz to full bandwidth
- Slope: +/-
- Sensitivity: 20Hz-2MHz:1.0DIV,TRIG-ALT:2DIV,EXT:200Mv 2MHz-20MHz:1.5DIV
- 20MHz-or higher: 2.0DIV TRIG-ALT:3DIV, EXT:800mv TV: Sync pulse more than 1 DIV (EXT:1V)
- Triggering modes: AUTO: NORM.: TV-V: TV-H: T
- (Both TV-V and TV-H synchronize only when the synchronizing signal is negative)
- EXT triggering signal input:
- Input impedance: 1M ohm//approx.25pF
- Max input voltage: Approx: 300V(DC+AC peak), AC: frequency not higher than 1KHz.
- **HORIZONTAL AXIS**
- Sweep time:0.2 $\mu$ Sec-0.5Sec/DIV, 20Steps in 1-2-5 sequence.
- Sweep time accuracy:  $\pm 3\%$
- Vernier sweep time control:  $\leq 1/2.5$  of panel-indicated value.
- Sweep magnification: 10 times
- $\times 10$ MAG sweep time accuracy:
- $\pm 5\%$  (20nsec-50nsec are uncalibrated)
- Linearity:  $\pm 3\%$ , $\times 10$ MAG:  $\pm 5\%$ (20ns and 50ns are uncalibrated)
- Position shift caused by $\times 10$ MAG: Within 2 DIV, at CRT screen center.

## X-Y MODE

- Sensitivity: Same as vertical axis (X-axis:CH1 input signal,Y-axis:CH2 input signal)
- Frequency bandwidth: DC to at least 500KHz
- X-Y phase difference:  $\leq 3^\circ$  at DC-50KHz

## Z AXIS

- Sensitivity: 5Vp-p(positive-going signal decreases intensity)
- Frequency bandwidth: DC-2MHz
- Input resistance: Approx. 47k ohm
- Maximum input voltage: 30V (DC+AC peak, AC frequency  $\leq 1$ KHz)

## CALIBRATION VOLTAGE

- Waveform: positive-going square wave
- Frequency: Approx. 1KHz
- Output voltage: 2Vp-p  $\pm 2\%$
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- **CRT**
- Type: 6-inch rectangular type, internal graticule
- Phosphor: P31
- Acceleration voltage:
- Approx 2KV (20MHz) / 12KV (40MHz)
- Effective screen size: 8x10 DIV (1 DIV= 10mm ( 0.39in ))
- Trace rotation: provided