

## 10 MHz, 2-Channel Oscilloscope CS-1575D

### OUTLINE

The CS-1575D is a 10 MHz, 2-channel oscilloscope capable of displaying waveform and phases simultaneously. The frequency response is DC to 10 MHz ( $-3$  dB), the maximum sensitivity is  $5\text{ mV} \pm 3\%$  and the sweep rate is  $0.5\text{ s/div}$  to  $0.5\text{ }\mu\text{s/div} \pm 3\%$ . During observation of 2 phenomena, the left/right display and the simultaneous Lissajous waveform display are possible in addition to the conventional up/down display. Other versatile waveform display features include the simultaneous display of the Lissajous waveform and  $0$ (degree) phase waveform, the dual triggering function and the auto-freerun function.

### FEATURES

#### Up/down and left/right waveform display

In the 2-channel mode, waveforms can be displayed and observed in a left/right display as well as in the conventional up/down display.

#### Simultaneous dual-trace and Lissajous waveform display

In the 2-channel mode, the Lissajous waveform which is convenient for measuring the phase difference between two signals can be displayed together with the two signals.

#### $0^\circ$ phase and Lissajous pattern

When only a Lissajous waveform is displayed, it is possible to display the waveform of the  $0^\circ$  phase (a trace, the value of which increases from the left to right) together.

#### Convenient dual triggering

In the single-phenomenon and 2-channel modes, the trigger sources are selected automatically according to the waveforms. CH1 and CH2 use independent auto-freerun circuits so that a stable waveform can be displayed even when no signal is applied to the other input channel.



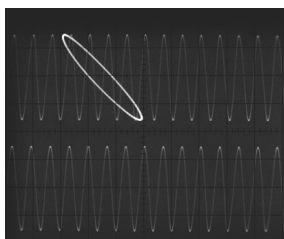
Automatic CHOP/ALT switching in interlocking with the sweep rate

LINE sync

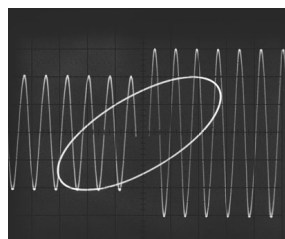
High-sensitivity X-Y mode using CH1 as the Y axis and CH2 as the X axis

Auto-free-run for displaying a trace even without signal input

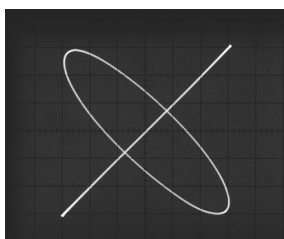
Close-up bezel for facilitating waveform photography



Dual-trace (up, down) plus Lissajous waveform (The Lissajous waveform can be erased.)



Dual-trace (left, right) plus Lissajous waveform (The Lissajous waveform can be erased.)



Lissajous waveform plus 0° phase waveform (The Lissajous waveform can be erased.)

**SPECIFICATIONS**

**CRT**

- Type ..... 150mm rectangular, with internal graticule
- Accelerating voltage ..... 2kV
- Effective area ..... 8div×10div (1div=10mm)
- Vertical amplifier (Common for CH1 and CH2)**
- Operating modes ..... Dual-H :left/right dual-trace  
Dual-V :up/down dual-trace  
CH1 :CH1 trace only  
CH2 :CH2 trace only  
X-Y :CH1=Y axis, CH2=X axis
- Dual-trace switching ..... CHOP operation with the SWEEP TIME/DIV. 1ms or less.  
ALT operation with the SWEEP TIME/DIV. 0.5ms or more.
- Phase display ..... Phase display is possible simultaneous with the lissajous pattern.  
For the X-Y display mode, the 0° phase waveform may also be simultaneously displayed.
- Sensitivity ..... 5mV to 5V/div ±3%
- Attenuator ..... 1-2-5 steps, 10 ranges and fine adjustment.

- Input impedance ..... 1MΩ±2%, Approx 38pF
- Frequency response ..... DC :DC to 10MHz (-3dB)  
AC :5Hz to 10MHz (-3dB)
- Rise time ..... Approx. 35ns
- Crosstalk ..... -40dB max.
- Chopping frequency ..... Approx. 250kHz
- Maximum input withstand voltage ..... 800Vp-p or 400V (DC+ACpeak)

**Horizontal amplifier**

- Operating modes ..... X-Y mode is selectable using the mode switch.  
CH1 :Y axis  
CH2 :X axis
- Sensitivity ..... Same as CH2 vertical axis.
- Input impedance ..... Same as CH2 vertical axis.
- Frequency response ..... DC :DC to 1MHz (-3dB)  
AC :5Hz to 1MHz (-3dB)
- X-Y phase difference ..... 3° max. (at 50kHz)
- Maximum input withstand voltage ..... Same as CH2 vertical axis.

**Sweep**

- Sweep mode ..... Auto free-run sweep
- Sweep time ..... 0.5μs/div to 0.5s/div ±3% in 1-2-5 steps, 19 ranges and fine adjustment.

- Linearity ..... 3%

**Triggering**

- Source ..... DUAL :Automatic selection of CH1 and CH2 as the sync input.  
CH1 :CH1 signal  
CH2 :CH2 signal  
LINE :Line power frequency  
EXT :EXT.TRIG signal

**External triggering**

- Input impedance ..... Approx. 1MΩ, 35pF
- Maximum input withstand voltage ..... 100Vp-p or 50V (DC+ACpeak)
- Coupling ..... AC coupling
- Sensitivity ..... DUAL, CH1, CH2 :0.5div (50Hz to 3MHz)  
1div (20Hz to 10MHz)  
EXT :0.2Vp-p (50Hz to 3MHz)  
0.5Vp-p (20Hz to 10MHz)

**Calibration signal**

- Waveform ..... Square wave, positive polarity
- Voltage ..... 1Vp-p, ±3%
- Frequency ..... 100Hz or 120Hz (double line frequency)

**Trace rotation**

- Adjustment system ..... Semi-fixed controller on the front panel.

**Power requirement**

- Power voltage ..... AC 100V/120V/220V/230V ±10%
- Line power frequency ..... 50Hz or 60Hz
- Power consumption ..... Max. 35W

**Dimensions and weight**

- Dimensions ..... 290 (W)×150 (H)×380 (D)
- Maximum dimensions ..... 290 (W)×170 (H)×440 (D)
- Weight ..... Approx. 7kg
- Operating temperature and humidity
- Temperature and humidity guaranteed by the specifications ..... 10°C to 35°C, 85% or less (no condensation)
- Operating temperature ..... 0°C to 40°C
- Operating humidity ..... 85% or less (no condensation)

**Accessories**

- Accessory cables model CA-41 (2),  
Instruction manual (1),  
Power cable (1)