

Hitachi Analog Oscilloscopes, 100/60 MHz

V-695, V1560, and V-1565

- Two-Channels
- Features CRT Readout, Sweep-Time Autoranging, Trigger Lock, and TV Trigger

The V-695 dual-channel, 60 MHz service oscilloscope packs the performance of a heavyweight but weighs much less.

For higher-speed analog and digital applications, the V1560 and V-1565 provide two channels of industry-standard, 100 MHz performance. These scopes are ideal for field service, troubleshooting, and testing.

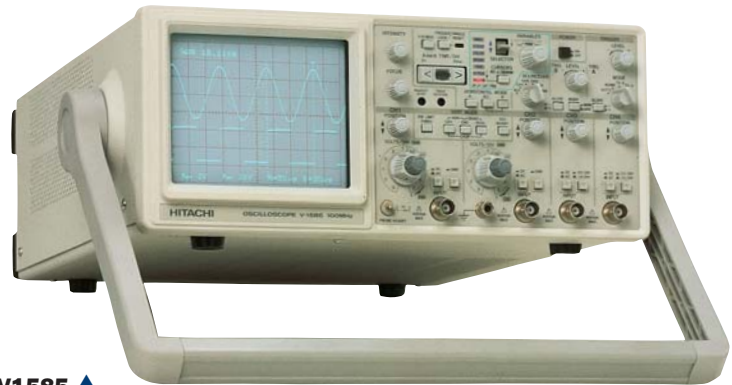
Observe waveforms and measure values on a single display—efficiently and easily. These scopes have earned a high reputation among engineers and technicians. Making full use of surface-mount technology, microprocessor control, and digital sweep circuit design, they pack the maximum performance punch into a small 13.2 pound package. The 6-inch (8 x 10 cm) CRT and superior front-panel ergonomics demonstrate the results of dedication to compact, user-friendly design principles.

V1585

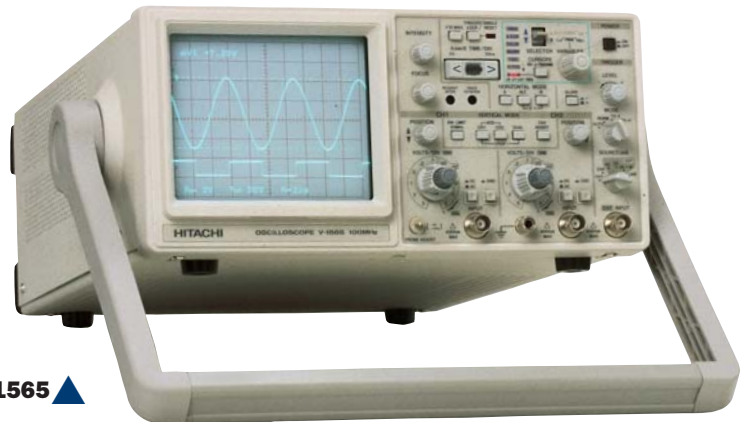
- Four Channels with Built-In Counter
- Features CRT Readout, Sweep-Time Autoranging, Trigger Lock, TV Trigger, and Cursors

When you need the additional capabilities of four independent 100 MHz channels, greater triggering flexibility, and multichannel timing measurements, the V1585 is the tool for you. The built-in 100 MHz counter can operate from the trigger signal of any channel or external source. There is also a triggerable-delayed sweep for sophisticated transient analysis.

Each Unit Includes: Two AT-10AY 10X/1X switchable probes, AC power cord, and operating instructions.



V1585 ▲



V-1565 ▲

Specifications and Ordering Information

Mfg#	V-695	V1560	V-1565	V1585
Bandwidth:	60 MHz		100 MHz	
Channels:		2		4
Max. Sweep Speed:			5 ns/div	
Timebase:			2	
Sensitivity:			2 mV/div	
Trigger Modes:			PP-auto, norm, TV line, TV field, single	
S.T. Autoranging:			Yes	
Delayed Sweep:			Yes	
CRT Readout:			Yes	
Cursors:	Yes	—		Yes
Trigger Lock:		Yes		
Counter:	Yes	—		Yes
Weight:			13.2 lbs	
Warranty:			3 years, parts and labor	
Order #	MPV-695	MPV1560	MPV-1565	MPV1585
Price				

Transcat Accredited Calibration with Data	CALL
Transcat Accredited Calibration without Data	CALL

Hitachi Analog Oscilloscopes, 50/20 MHz

V252

The V252 is Hitachi's lowest cost oscilloscope and features a 6-inch rectangular CRT with an internal graticule and 0, 10, 90, and 100% amplitude lines for convenient rise-time measurements. With dual channels, it is well suited for most lab and field service uses.

V552

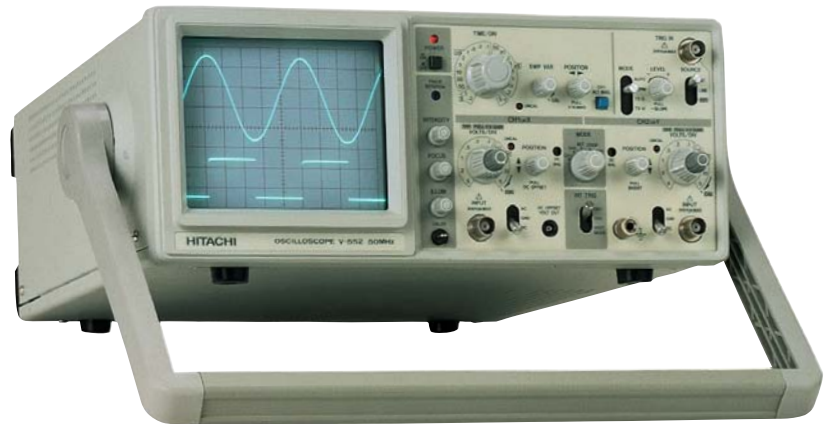
Designed for today's toughest waveform observation problems, yet truly portable, the V552 scope is ideal for a variety of troubleshooting applications from automotive to video.

Building on the quality of the V252, the V552, is next in the line. A DC offset function lets you measure low-level signals while eliminating circuit bias. Scale illumination provides graticule lighting for taking photographs.

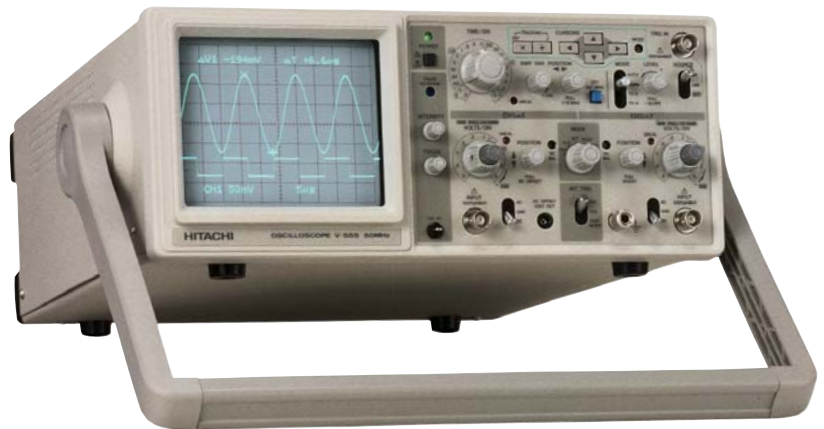
V555

This dual-channel 50 MHz oscilloscope maintains the features of the V552, but takes them one step further. Using the scope's single time-base, delayed sweep technique that sweeps both the main and delayed trace with the same circuit, you can partially expand a waveform. The V555 also adds cursors for waveform measurements of voltage difference (ΔV) and time difference (Δt), so you can calculate a variety of waveform parameters such as rise time, pulse width, delay time, frequency, period, and peak-to-peak amplitude.

Each Unit Includes: Two AT-10AY 1.5, 10X/1X switchable probes, AC power cord, and operating manual.



▲ V552



▲ V555

Specifications and Ordering Information

Mfg#	V252	V552	V555
Bandwidth:	20 MHz		50 MHz
Channels:		2	
Max. Sweep Speed:	100 ns/div		20 ns/div
Timebase:		1	
Sensitivity:		1 mV/div	
Trigger Modes:		Auto, norm, TV line, TV field, VERT	
DC Offset:	—		Yes
Alternate Mag.:	—		Yes
Delay Line:	—		Yes
Delayed Sweep:		—	
CRT Readout:	—		Yes
Cursor Measure:	—		Yes
Weight:	13.2 lbs	14.3 lbs	15.4 lbs
Warranty:		3 years parts and labor	
Order #	MPV252	MPV552	MPV555
Price			

Transcat Accredited Calibration with Data	CALL
Transcat Accredited Calibration without Data	CALL



Need oscilloscope accessories

See pages C18-C25

C

Electronic Test Instruments

Instek Analog Oscilloscopes

OS-6200

The microprocessor-controlled oscilloscope has been designed for a wide multitude of applications in service and industry. For ease of operation the "AUTOSET" function allows for signal related automatic setup of measuring parameters. On screen alphanumeric readout and cursor functions for Frequency, Period, Rise Time, Voltage, Voltage %, dB, and Duty provide extraordinary operational convenience. Ten different user defined instrument settings can be saved and recalled without restriction.



▲ OS-6200

OS-6103C

This particular unit has features found on more expensive instruments. 2 channel, four trace, 10 user defined instrument settings can be saved and recalled without restriction as well as delayed sweep. Time Base auto setup with on screen alphanumeric readout and cursor functions for Frequency, Period, Rise Time, Voltage, Voltage %, dB, and Duty provide extraordinary operational convenience.



▲ OS-620

OS-653G

General-purpose oscilloscope with a frequency of DC-50 MHz. This unit incorporates dual channel with delayed sweep, and, built-in delay line, as well as Alternate Triggering and hold off function. All Instek oscilloscopes have X-Y capabilities as well as TV Synchronization. This is an ideal instrument for high-resolution analysis of expanded, asynchronous signals.



▲ OS-6103C

OS-622G

The OS-622G is Instek's best selling oscilloscope because it responds thoroughly to the customer demands for reliability, superior performance, and ease of operation. The integrity of the signals reproduced by this oscilloscope reflects a dedication to engineering quality normally found in expensive lab instruments. This instrument was designed for use in production lines, general service applications, and for technical training facilities as well as educational purposes.

OS-620

Derived from the popular OS-622G, the OS-620 was specifically designed to meet the increased demand for low cost and higher quality oscilloscopes for the educational marketplace. The multiplicity of display modes, the easy to understand front panel, and the operational simplicity of the OS-620 make it an ideal training scope for educational purposes.



▲ OS-653G

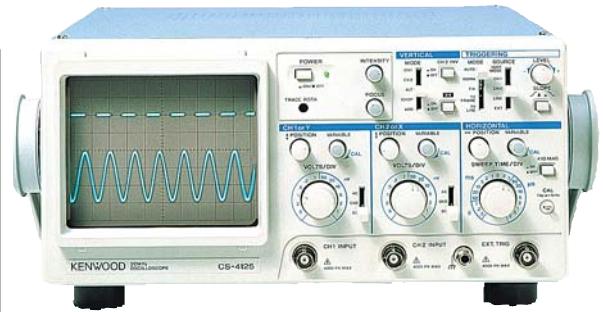
Specifications and Ordering Information

Mfg#	GOS-6200	GOS-6103C	GOS-653G	GOS-622G	GOS-620
Bandwidth (MHz):	200	100	50	20	
No. of Channels:			2		
Cursor Readout:		Yes		—	
Delayed (B) Sweep:		Yes		—	
Max. Sweep S/DIV:	2 nS	5 nS	10 nS	Yes	20 nS
Counter Function:	Yes		Auto Set	Yes	
Timebase Auto Range:	Yes			—	
ALT Trigger:	—			Yes	—
Panel Set-up Memory:	Yes			—	
Display:	6-inch CRT				
Power Source:	AC100/120/230 ±10%				
Order #	MPOS-6200	MPOS-6103C	MPOS-653G	MPOS-622G	MPOS-620
Price					

Kenwood Analog Oscilloscopes

Specifications and Ordering Information

Mfg#	CS4135	CS4125	CO1305
Bandwidth	40 MHz	20 MHz	5 MHz
Accelerating Potential	Approx 12 kV	Approx 2 kV	Approx 1.4 kV
Operating Modes	CH1, CH2, ADD ALT, CHOP		
Deflection Factor			
5 mV to 5 v/div	40 MHz	20 MHz	5 MHz
1 mv/div, 2 mv/div	5 MHz	5 MHz	5 MHz
No. of Channels	2 Channel		1 Channel
Input Impedance	1M Ω \pm 2% Approx 23 pF		1M Ω \pm 2% 50 pF of less
Sweep Modes	Norm, Auto, TV-F, TV-L, FIX		
V-mode Alternate Trigger	Yes		
Magnified Sweep	Yes		
Automatic Triggering (Fix)	Yes		
Trigger Source	Vert, CH1, CH2, Line, EXT		
Intensity Modulation	Yes		
Vertical-axis Signal Output	Yes		
Video Sync	Yes		
Line Sync	Yes		
Power Requirements	AC		
Environment for Guaranteed Specification	10°C to 35°C, 85%		
Dimensions (W x H x D) mm	310 x 140 x 415		130 x 190 x 280
Weight	7.0		3.5
Order #	MPCS4135	MPCS4125	MPCO1305
Price			



▲ CS4125

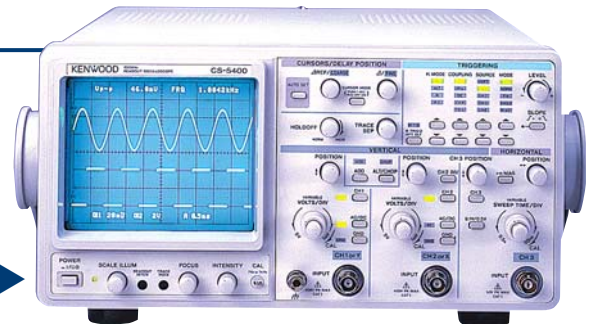
CS4125 & 4135:

- Able to Withstand High Voltage Up to 400V
- Wide Bandwidth and Fast Sweep
- VERT Mode/FIX Triggering
- One Touch X-Y Switching

CO1305:

- High Sensitivity Vertical Axis (10 mV/div)
- Wide Frequency Bandwidth of DC to 5 MHz
- Small Size
- Light Weight

The CS-5400 Series are 3-channel oscilloscopes developed with high level design for high accuracy and easy operation. The CS-5400, 5470 and 5450 models incorporate readout function and offer you parameter measurement and auto-setup functions enabling you to measure AC voltage (Vp-p), DC voltage, frequency (to 5-digits) and period. All models are provided with \pm 2% high accuracy measurement, delay sweep function, automatic triggering and high intensity, high resolution CRT.



▶ CS-5400

5400 Series Analog High Performance

- 3-Channel, 8 Trace Waveform Display
- High-Sensitivity Design With Vertical Axis of 1 mV/Div
- Delay Sweep with Waveform Magnification
- Built-in Video Clamp Circuit
- Maximum Sweep 50 ns/Div (at 10X Mag)
- Single Sweep for Observation of Single-Shot Channel
- Variable Hold-Off for Viewing Complicated Waveforms
- Signal Output Connector (CH1)
- Wide Dynamic Range for Waveform Accuracy

Additional Features 5400/5470/5450

- Parameter Auto-Measurement Function
- Auto Set-up Function
- Cursor Measurements
- Peak to Peak Voltage Measurement
- Variable Lock

Specifications and Ordering Information

Mfg#	CS5400	CS5470	CS5450
Bandwidth (In MHz)	100	70	50
Number of Channels	3-Channel/8 trace (all)		
Max Sweep Speed	50 ns/div (all)		
Operating Modes	CH1, CH2, ADD, ALT, CHOP (all)		
Deflection Factor:			
5 mV/div to 5V/div	DC to 100 MHz (\pm 3db)	DC to 70 MHz (\pm 3db)	DC to 50 MHz (\pm 3db)
1 mV/div, 2 mV/div	5 Hz to 100 MHz (\pm db)	5 Hz to 70 MHz (\pm 3db)	5 Hz to 50 MHz (\pm 3db)
Input Impedance	1M Ohm \pm 1%, approx, 20 pF (all)		
Sweep Modes	A, ALT, B, X-Y (all)		
Trigger Source	VERT, CH1, CH2, CH3, LINE (all)		
Cursor Measurement	Yes		
Auto Set Function	Yes		
Auto Setup	Yes		
Panel Setup Valve	Yes		
Dimensions (In mm)	305 x 150 x 400 (all)		
Weight (Approx)	9.3 kg		
Order #	MPCS5400	MPCS5470	MPCS5450
Price			

Leader Analog Oscilloscopes

100 MHz 3-Channel Oscilloscope with CRT Readout



- 100 MHz Bandwidth
- 2% V Accuracy
- 1 mV/div Sensitivity with 20 MHz Band Limit
- 5 ns/div Sweep Speed with X10 Mag
- Z-Axis (Intensity)
- One-Touch Auto Setup
- On-Screen Readouts
- CRT Readout/Cursor Measurements
- One-Touch X-Y Operation

Top of the line in Leader's instruments, Model LS 8106A offers speed and operating shortcuts found in very few modern scopes. Examples include Auto Setup in which a single touch automatically sets both V sensitivity and timebase for instant, optimum waveform display. Another great convenience is a continuous on-screen readout of the operator's choice of frequency or perior and V p-p or DC level for signals handled in CH1. Two X10 probes (LP-103) are supplied as standard equipment.

Each Unit Includes: (2) X1/X10 probes (LP-103), power cord and operation manual.

100 MHz 3-Channel Dual Time Base Oscilloscope



- 100 MHz Bandwidth
- 2% V Accuracy
- 3-Channel, 8-Trace Operation, CH1, CH2, CH3, CH1 ± CH2 Main and Delayed
- Dedicated TV-V and TV-H Sync Separators
- Single Sweep Operation
- X-Y Operation
- 1 mV/div Sensitivity with 200 MHz Band Limit
- 5 ns/div Sweep Speed with X10 Mag
- Z-Axis (Intensity Modulation)

Features worthy of consideration include X-Y operation, triggered-delayed sweep, SINGLE SWEEP, CH1 output (rear panel), calibrated preamp, Z-AXIS INPUT (rear panel), and an internally-etched illuminated graticule with continuously variable ILLUM control.

50 MHz 2-Channel Delayed Sweep Oscilloscope

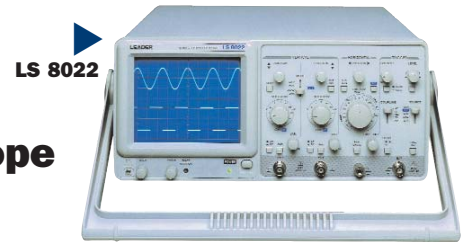


- 50 MHz Bandwidth CH1 & CH2
- High Sensitivity: 1 mV/div
- 15 MHz Bandwidth at 1 & 2 mV/div
- Delayed Sweep Capability
- Video, TV-V and TV-V Trigger
- Trigger Level Lock Function
- Variable Holdoff for Complex Wavetrains
- X-Y Operation
- CH1 Output Puts the CH1 Amplifiers to Work as a Calibrated Preamp

A lab-grade instrument with dual-channel operation. Operating features include high sensitivity with band limiting to 15 MHz on the most sensitive ranges, delayed sweep, trigger lock, and dedicated H and V sync separators. Other refinements include variable holdoff, X-Y operation, internal illuminated scale and CH1 output.

Each Unit Includes: (2) X1/X10 probes (LP-051C), power cord and operation manual.

20 MHz 2-Channel Oscilloscope



- High Sensitivity (1 mV/div)
- Withstands up to 400V DC + AC Peak Inputs
- Level Lock and Alternate Triggering
- Dedicated TV-V and H Sync Separators
- Variable Holdoff
- X-Y Operation
- CH1 Output
- Z-Axis Input
- 10 ns/div Maximum Sweep Speed

The LS-8022 20-MHz 2 Channel Oscilloscope is an economical choice for high stability and reliability. The oscilloscope is equipped with a variety of helpful functions (TV sync separator, variable holdoff, X-Y display mode) which makes this oscilloscope an ideal choice for production field service and educational applications.

Each Unit Includes: (2) X1/X10 probes (LP-051C), power cord and operation manual.

Specifications and Ordering Information

Mfg#	LS 8106A	LS 8105	LS 8050	LS 8022	Mfg#	LS 8106A	LS 8105	LS 8050	LS 8022
Bandwidth (MHz):	100		150	20	Variable Holdoff:	•	•	•	•
No. Channels:		3		2	Delayed and				
Max. Input (DC+AC Peak):		250		400	Alternate Time Base A/B:	•	•	•	
Max. Sweep Speed:		5 ns		10 ns	Dimensions (W x H x D):	12 x 6 x 15½	12¼ x 6 x 18	12¼ x 6 x 14¼	12¼ x 6 x 18
Max Sensitivity (mV/div):			1	0.5	Weight:	19.1 lbs.	18 lbs.	18.7 lbs.	18 lbs.
Add/Subtract/CH-1 Output:	•			•	Power:	120/240 50/60 Hz			
Alternate and		•		•	Order #	MPLS 8106A	MPLS 8105	MPLS 8050	MPLS 8022
External Trigger:	•		•	•	Price:				