Cathode-Ray Oscilloscopes

TEKTRONIX INC

Short Form Catalog

JULY, 1959

NEW HIGH-PERFORMANCE OSCILLOSCOPES

3.5-mμsec Risetime

In addition to a fast-rise vertical-deflection system and high-speed sweeps, these two new Tektronix Oscilloscopes have the dc-coupling, high sensitivity, slow sweeps, and versatile triggering needed for most general-purpose laboratory work.

The vertical amplifier used in the Type 581 and Type 585 requires a new kind of plug-in unit. Tektronix Type A to Z Units cannot be used in these instruments. Although only one of the new plug-in units (Type 80) is available as this catalog goes to press, other plug-in units are in development.

New TYPE 585 OSCILLOSCOPE

3.5-mμsec Risetime, Sweep Delay

Fast-Rise Vertical Amplifier

Passband—DC to approximately 100 MC.

Sensitivity—Basic deflection factor 0.1 v/cm with Type 80 Plug-In Preamplifier and P80 Probe.

Versatility—Designed for plug-in preamplifiers.

Sweep Delay

Triggered (jitter free)—delayed sweep is started after the delay period by the signal under observation.

Conventional—delayed sweep is started at the end of the delay period by the delayed trigger.

Range—1 μsec to 10 sec, continuously adjustable (2 μsec/cm to 1 sec/cm).

Two Time-Base Generators

TIME BASE A—0.05 μsec/cm to 2 sec/cm in 24 calibrated steps, continuously variable from 0.05 μsec/cm to 5 sec/cm. 5-x magnifier increases calibrated range to 0.01 μsec/cm. Single-sweep provision for one-shot applications.

TIME BASE B—Also functions as delay generator. 18 calibrated steps from 2 μsec/cm to 1 sec/cm.

Versatile Triggering

Amplitude-level selection with either preset or manual stability control.

10-KV Accelerating Potential

Lumped-constant traveling-wave crt provides 4-cm by 10-cm display area.

Amplitude Calibrator

Square wave, 18 steps from 0.2 mv to 100 v, frequency about 1 kc.

Regulated Power Supplies

Price, without plug-in units ..... **$1675.**

New TYPE 581 OSCILLOSCOPE

Same as Type 585, except that it does not have TIME BASE B or provision for sweep delay.

Price, without plug-in units ..... **$1375.**

Type 80 Plug-In Preamplifier ..... **$50.**

Type P80 Probe with 2-x, 5-x, 10-x, 20-x, and 50-x attenuator heads ..... **$100.**

Note: Both Preamplifier and Probe are necessary to operate the Type 585 and Type 581 Oscilloscopes.

Prices f.o.b. factory.

OSCILLOSCOPES WITH PLUG-IN PREAMPLIFIERS

Inherent characteristics of these Tektronix Oscilloscopes permit their conversion to many specialized applications through the use of interchangeable plug-in preamplifiers. Initial selection can include the Plug-In Preamplifier Units best suited to current requirements. When greater versatility becomes desirable, other available Type A to Z Plug-In Units can be added at moderate cost to expand the application area.

TYPE 533 OSCILLOSCOPE

High Performance

DC to 15 MC, 0.023-μsec Risetime with Fast-Rise Plug-In Preamplifier Units.

0.2 μsec Signal Delay.

0.02 μsec/cm to 15 sec/cm Sweep Range.

Easy Operation

24 Calibrated direct-reading sweep rates, 0.1 μsec/cm to 5 sec/cm.

Sweep Magnification—2, 5, 10, 20, 50, and 100 times.

Preset Triggering—Eliminates triggering adjustments in most applications.

Single-Sweep Operation—Lockout-reset circuitry for one-shot recording.

High Writing Rate

250 cm/μsec—10 kv accelerating potential assures bright trace for single sweeps and low repetition rates. 6-cm by 10-cm viewing area.

Electronically-Regulated Power Supplies.

Price, without plug-in units .... **$1100.**

TYPE 543 OSCILLOSCOPE

DC to 30 MC, 0.012-μsec Risetime with Fast-Rise Plug-In Preamplifier Units.

4-cm by 10-cm Viewing Area.

All other characteristics same as Type 533.

Price, without plug-in units **$1275.**

TYPE 536 "X-Y" OSCILLOSCOPE

Identical Horizontal and Vertical Main Amplifiers

DC to 10 MC, both amplifiers, with Type G Differential Plug-In Preamplifiers.

Less than 1° relative phase difference from dc to 15 mc. Phase balance can be obtained at any one frequency to over 25 mc.

Converts to general-purpose oscilloscope with Type T Time-Base Unit plugged into horizontal amplifier.

4-KV Accelerating Potential

10 by 10 division viewing area.

Amplitude Calibrator

0.2 mv to 100 v in 18 steps. Square wave, frequency about 1 kc.

Electronically-Regulated Power Supplies.

Price, without plug-in units ....**$1050.**

TYPE 532 OSCILLOSCOPE

DC to 5 MC Main Vertical Amplifier

0.07-μsec Risetime with Wide-Band Plug-In Preamplifier Units.

Sweep Range

21 calibrated sweep rates from 1 μsec/cm to 5 sec/cm. 5-x magnifier extends calibrated range to 0.2 μsec/cm. Continuously variable from 0.2 μsec/cm to 12 sec/cm.

Triggering

Amplitude-level selection with preset or manual stability control, and fully-automatic triggering.

4-KV Accelerating Potential

8 by 10 cm linear display.

Amplitude Calibrator

0.2 mv to 100 v in 18 steps. Square wave, frequency about 1 kc.

Electronically-Regulated Power Supplies.

Price, without plug-in units .....**$875.**

Prices f.o.b. factory.

OSCILLOSCOPES WITH

REDESIGNED FOR . . . . . .

HIGHER PERFORMANCE

New DC-to-15 MC Vertical Amplifiers in Types 531A and 535A

New Wider Sweep-Delay Range in Types 535A and 545A

GREATER RELIABILITY

New Frame-Grid Twin Triodes Replace Older Types

Silicon-Diode Rectifiers Replace Seleniums in Power Supplies

EASIER OPERATION

Simplified Panel Layout

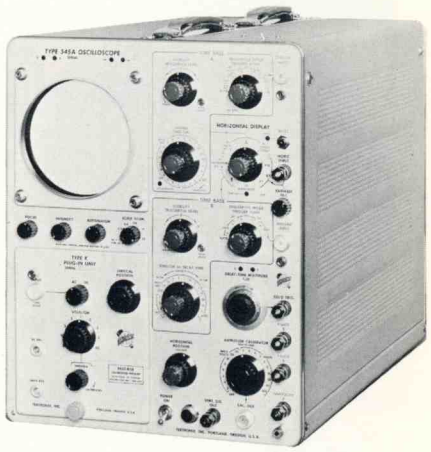
Color-Correlated Controls

Single-Knob Sweep Control

Simplified Display Control

Internal Triggering for Sweep Delay

TYPE 545A FAST-RISE OSCILLOSCOPE
with Sweep Delay



VERTICAL SPECIFICATIONS

DC-to-30 mc passband, 12-mμsec risetime, 50-mv/cm deflection factor with Type K Plug-In Preamplifier.

Nine other plug-in units available for specialized applications.

Signal delay permits observation of leading edge of waveform that triggers the sweep.

HORIZONTAL SPECIFICATIONS

Two Time-Base Generators—

Time Base A—0.1 μsec/cm to 5 sec/cm in 24 calibrated steps. Continuously adjustable from 0.1 μsec/cm to 12 sec/cm. 5-x magnifier increases calibrated range to 0.02 μsec/cm. Single sweep provision for one-shot applications.

Time Base B—Also functions as delay generator. 2 μsec/cm to 1 sec/cm in 18 calibrated steps.

Sweep Delay—Two modes of operation

Triggered—Delayed sweep started after the delay period by the signal under observation. Steady display, even of signals with inherent jitter.

Conventional—Delayed sweep started at the end of the delay period by the delayed trigger. Time jitter less than one part in 20,000.

Delay range—1 μsec to 10 sec in 18 calibrated ranges, each range divisible into 1000 parts by 10-turn control with incremental accuracy within 0.2%.

OTHER CHARACTERISTICS

10-KV Accelerating Potential—4-cm by 10-cm display.

Dual-Trace Blanking—Eliminates switching transients from display when dual-trace unit is operated in its chopped mode.

Amplitude Calibrator—0.2 mv to 100 v.

Electronically-Regulated Power Supplies.

Price—Type 545A, without plug-in units ..... **$1550.**

TYPE 541A FAST-RISE OSCILLOSCOPE

Same as Type 545A, except that it does not have Time Base B or provisions for sweep delay or single sweeps.

Price—Type 541A, without plug-in units ..... **$1200.**

TYPE 535A WIDE-BAND OSCILLOSCOPE
with Sweep Delay

Same specifications as Type 545A, except for main vertical amplifier.

DC-to-15 MC passband, 23-mμsec risetime, 50-mv/cm deflection factor with Type K Plug-In Preamplifier, 6-cm by 10-cm display.

Price—Type 535A, without plug-in units ..... **$1400.**

TYPE 531A WIDE-BAND OSCILLOSCOPE

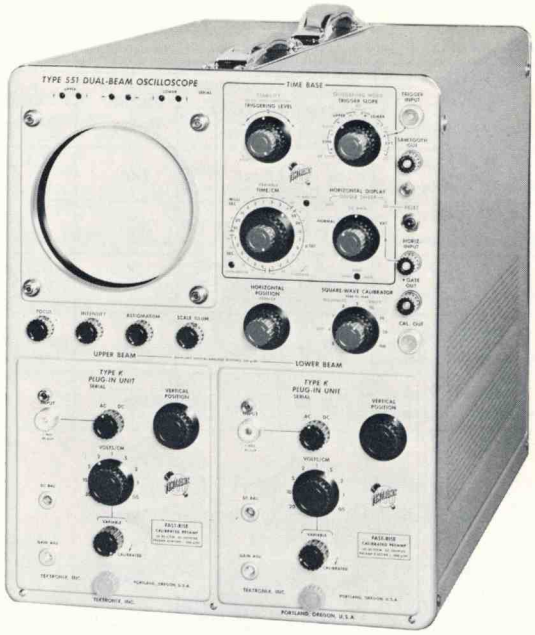
Same as Type 535A except that it does not have Time Base B or provisions for sweep delay or single sweeps.

Price—Type 531A, without plug-in units ..... **$995.**

Prices f.o.b. factory.

PLUG-IN PREAMPLIFIERS

TYPE 551 DUAL-BEAM OSCILLOSCOPE
with Common X and Independent Y Deflection



Wide-Band Main Vertical Amplifiers

Passbands—dc to 25 mc with Type K Units.
Risetimes—0.014 μsec with Type K Units.
0.2-μsec Signal Delay
All Tektronix Type A to Z Plug-In Preamplifiers can be used in both channels for signal-handling versatility.

Wide Sweep Range

24 calibrated steps from 0.1 μsec/cm to 5 sec/cm. 5-x magnifier increases calibrated range to 0.05 μsec/cm.
Lockout-reset circuitry for one-shot sweep applications.

Complete Triggering

Fully automatic, or amplitude-level selection with preset or manual stability control.

10-KV Accelerating Potential

Bright display for fast sweeps and low repetition rates. 4-cm by 10-cm display for each beam, with 2-cm overlap.

Separate Power Supply

Electronically regulated.

Price, without plug-in preamplifiers ..... **$1800.**

Includes Indicator Unit, Power Supply Unit, 4 Probes.

Fast-Rise Main Vertical Amplifiers

Passbands—dc to 30 mc with Type K Units.
Risetimes—12 mμsec with Type K Units.
0.2-μsec Signal Delay
All Tektronix Type A to Z Plug-In Preamplifiers can be used in both vertical channels for signal-handling versatility.

Wide-Range Time-Base Generators

Either time-base generator can be used to deflect either or both beams.
Sweep ranges—0.1 μsec/cm to 12 sec/cm. 5-x magnifiers increase calibrated sweep rates to 0.02 μsec/cm.

Sweep Delay—Two modes of operation

Triggered—Delayed sweep started after the delay period by the signal under observation.
Conventional—Delayed sweep started at the end of the delay period by the delayed trigger.
Delay range—0.5 μsec to 50 sec in 24 calibrated steps, with continuous calibrated adjustment between steps.

High Writing Rate

10-KV Accelerating potential provides bright traces at low repetition rates and in one-shot application. 4-cm by 10-cm display for each beam, with 2-cm overlap.

Separate Power Supply

Electronically regulated dc and heater supplies.

Price, without plug-in preamplifiers ..... **$2600.**

Includes Indicator Unit, Power Supply Unit, 2 Time-Base Units, 4 Probes, Time-Base Extension.

New TYPE 555 DUAL-BEAM OSCILLOSCOPE
with Independent X and Y Deflection

Independent Electron Beams

Separate vertical and horizontal deflection of both beams.

Prices f.o.b. factory.

OSCILLOSCOPES WITH

MAIN SPECIFICATIONS of TEKTRONIX TYPE 530 SERIES,

	Vertical Frequency Response (with Type K Unit)	Signal Delay	Calibrated Sweep Range	Sweep Magnifier	Sweep Delay	Accelerating Potential	Price (without plug-in units)
TYPE 531A General Purpose	dc to 15 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	None	10 kv	$995
TYPE 532 General Purpose	dc to 5 mc	No	1 μsec/cm to 5 sec/cm	5x	None	4 kv	$875
TYPE 533 General Purpose	dc to 15 mc	Yes	0.1 μsec/cm to 5 sec/cm	2, 5, 10, 20, 50, 100x	None	10 kv	$1100
TYPE 535A General Purpose	dc to 15 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	1 μsec to 10 sec	10 kv	$1400
Type 536 X-Y Curve Tracer	dc to 11 mc	No	See Type T Time-Base Gen.		None	4 kv	$1050

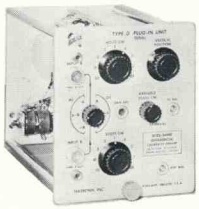
Type A to Z Plug-In Units

TYPE B

TYPE C-A

TYPE D

TYPE E



TYPE G

TYPE H

CHARACTERISTICS OF PLUG-IN PREAMPLIFIERS

	Risetime and Passband of Combination — Plugged into Type				
	531A-533-535A	**541A-543-545A-555**	**551**	**536**	**532**
TYPE A Wide-Band DC	0.025 μsec dc to 14 mc	0.018 μsec dc to 20 mc	0.02 μsec dc to 18 mc	0.035 μsec dc to 10 mc	0.07 μsec dc to 5 mc
TYPE B Wide-Band High-Gain	0.035 μsec 2 c to 10 mc	0.03 μsec 2 c to 12 mc	0.03 μsec 2 c to 12 mc	0.04 μsec 2 c to 9 mc	0.07 μsec 2 c to 5 mc
	0.025 μsec dc to 14 mc	0.018 μsec dc to 20 mc	0.02 μsec dc to 18 mc	0.035 μsec dc to 10 mc	0.07 μsec dc to 5 mc
TYPE C-A Dual-Trace DC	0.023 μsec dc to 15 mc	0.015 μsec dc to 24 mc	0.016 μsec dc to 22 mc	0.035 μsec dc to 10 mc	0.07 μsec dc to 5 mc
TYPE D High-Gain DC Differential	0.18 μsec dc to 2 mc	0.18 μsec dc to 2 mc	0.18 μsec dc to 2 mc	0.18 μsec dc to 2 mc	0.18 μsec dc to 2 mc
TYPE E Low-Level AC Differential	6 μsec 0.06 cycles to 60 kc	6 μsec 0.06 cycles to 60 kc	6 μsec 0.06 cycles to 60 kc	6 μsec 0.06 cycles to 60 kc	6 μsec 0.06 cycles to 60 kc
TYPE G Wide-Band DC Differential	0.025 μsec dc to 14 mc	0.018 μsec dc to 20 mc	0.02 μsec dc to 18 mc	0.035 μsec dc to 10 mc	0.07 μsec dc to 5 mc
TYPE H DC Coupled High-Gain Wide-Band	0.031 μsec dc to 11 mc	0.023 μsec dc to 15 mc	0.025 μsec dc to 14 mc	0.037 μsec dc to 9.5 mc	0.07 μsec dc to 5 mc
TYPE K Fast-Rise DC	0.023 μsec dc to 15 mc	0.012 μsec dc to 30 mc	0.014 μsec dc to 25 mc	0.031 μsec dc to 11 mc	0.07 μsec dc to 5 mc
TYPE L Fast-Rise High-Gain	0.023 μsec 3 c to 15 mc	0.015 μsec 3 c to 24 mc	0.017 μsec 3 c to 22 mc	0.035 μsec 3 c to 10 mc	0.07 μsec 3 c to 5 mc
	0.023 μsec dc to 15 mc	0.012 μsec dc to 30 mc	0.014 μsec dc to 25 mc	0.031 μsec dc to 11 mc	0.07 μsec dc to 5 mc

PLUG-IN PREAMPLIFIERS

TYPE 540 SERIES, and TYPE 550 SERIES OSCILLOSCOPES

	Vertical Frequency Response (with Type K Unit)	Signal Delay	Calibrated Sweep Range	Sweep Magnifier	Sweep Delay	Accelerating Potential	Price (without plug-in units)
TYPE 541A Fast-Rise	dc to 30 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	None	10 kv	$1200
TYPE 543 Fast-Rise	dc to 30 mc	Yes	0.1 μsec/cm to 5 sec/cm	2, 5, 10, 20, 50, 100x	None	10 kv	$1275
TYPE 545A Fast-Rise	dc to 30 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	1 μsec to 10 sec	10 kv	$1550
TYPE 551 Dual-Beam	dc to 25 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	None	10 kv	$1800
TYPE 555 Dual-Beam	dc to 30 mc	Yes	0.1 μsec/cm to 5 sec/cm	5x	0.5 μsec to 50 sec	10 kv	$2600

TYPE K

TYPE L

Type T Time-Base Generator—Provides the sweep voltages necessary for operating the Type 536 in the usual oscilloscope applications. Generates 22 calibrated sweep rates from 0.2 μsec/div to 2 sec/div. 5-x magnifier is accurate at all sweep rates. Triggering is fully automatic, or manual with amplitude-level selection and preset or manual stability control. **Price $235.**

Calibrated Deflection Factor	Input Capacitance	Price
0.05 v/cm to 20 v/cm	47 μμf	$90
5 mv/cm to 0.05 v/cm	47 μμf	$135
0.05 v/cm to 20 v/cm		
0.05 v/cm to 20 v/cm	20 μμf	$250
1 mv/cm to 50 v/cm	47 μμf	$155
50 μv/cm to 10 mv/cm	50 μμf	$175
0.05 v/cm to 20 v/cm	47 μμf	$185
5 mv/cm to 20 v/cm	47 μμf	$185
0.05 v/cm to 20 v/cm	20 μμf	$135
5 mv/cm to 2 v/cm	20 μμf	$200
0.05 v/cm to 20 v/cm		

Type R Plug-In Unit—a transistor testing unit for Tektronix Oscilloscopes with the Plug-In Feature. Supplies a fast-rising pulse and the required supply and bias voltages for measurement of transistor rise, fall, delay, and storage times. 400-ma collector supply, 100-ma bias supply, 5 mμsec-risetime pulse. **Price $300.**

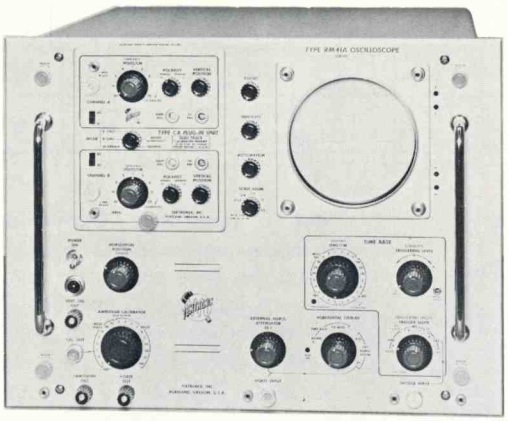
Type 127 Preamplifier Power Supply—a rack-mounting unit that supplies proper operating power to one or a combination of two Type A to Z Plug-In Preamplifiers. Contains a differential dc-coupled amplifier stage with push-pull output. Risetime is 0.018 μsec. Square-wave amplitude calibrator has 18 steps from 0.2 mv to 100 v. Dimensions — 8¾" high, 19" wide, 20" rack depth. **Price $525.**

Prices f.o.b. factory.

RACK-MOUNTING OSCILLOSCOPES

with the Tektronix Plug-In Preamplifier Features

Types RM31A, RM32, RM33, RM35A, RM41A, RM43, RM45A Oscilloscopes are mechanically rearranged Types 531A, 532, 533, 535A, 541A, 543, 545A Oscilloscopes for mounting in a standard 19-inch rack. The chassis is attached to the cabinet on slide-out tracks. It can be pulled forward, tilted and locked in any of seven positions for servicing convenience.
Dimensions—14" high, 19" wide, 22½" rack depth.



TYPE RM31A OSCILLOSCOPE

Electrically identical to the Tektronix Type 531A
Price, without plug-in units . . . . . **$1095.**

TYPE RM32 OSCILLOSCOPE

Electrically identical to the Tektronix Type 532
Price, without plug-in units . . . . . **$975.**

TYPE RM33 OSCILLOSCOPE

Electrically identical to the Tektronix Type 533
Price, without plug-in units . . . . . **$1200.**

TYPE RM35A OSCILLOSCOPE

Electrically identical to the Tektronix Type 535A
Price, without plug-in units . . . . . **$1500.**

TYPE RM41A OSCILLOSCOPE

Electrically identical to the Tektronix Type 541A
Price, without plug-in units . . . . . **$1300.**

TYPE RM43 OSCILLOSCOPE

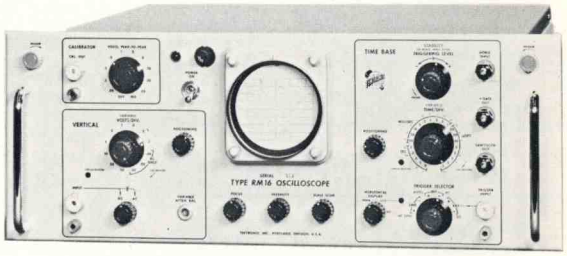
Electrically indentical to the Tektronix Type 543
Price, without plug-in units . . . . . **$1375.**

TYPE RM45A OSCILLOSCOPE

Electrically identical to the Tektronix Type 545A
Price, without plug-in units . . . . . **$1650.**

TYPE RM15 RACK-MOUNTING OSCILLOSCOPE

A mechanical rearrangement of the Type 515A for rack-mounting. The electrical characteristics of the Type RM15 are the same as the Type 515A.
Slide-out Mounting.
Dimensions—8¾" high, 19" wide, 22½" rack depth.
Price $875.



TYPE RM16 and TYPE RM17 OSCILLOSCOPES

Mechanical rearrangements of Type 316 and Type 317 Oscilloscopes. Same electrical characteristics. Slide-out mountings. Dimensions: 7" h, 19" w, 17⅝" d.
Prices: Type RM16 — $825. Type RM17 — $875.
Type RS16—a two-unit model of the Type RM16 for racks of limited depth. Dimensions, Indicator—7" h, 19" w, 11 3/8" d; Power supply—7" h, 19"w, 5½" d. 60" power cable. Fixed mounting. Price $875.

Prices f.o.b. factory.

CATHODE-RAY OSCILLOSCOPES

New TYPE 507 OSCILLOSCOPE
for High-Voltage Surge Testing

Vertical Deflection Factor
Approximately 50 v/cm to 500 v/cm in ten equal steps.

Risetime
Adjusted to 5 mμsec for optimum transient response.

Calibrated Vertical Positioning
Seven 50-v steps—also continuously adjustable.

Calibrated Sweeps
Eleven fixed sweeps from 20 mμsec/cm to 50 μsec/cm.

High Accelerating Potential
24-KV provides bright trace for photographic recordings.

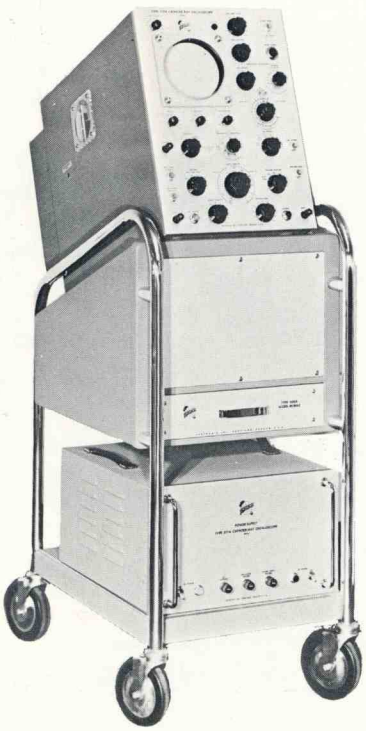
6-cm by 10-cm Linear Deflection

Electronically-Regulated Power Supply

Price ..... **$3000.**

Includes Indicator Unit, Power Supply Unit, Type 500A Scope-Mobile, Common-bus Ground Connector.

TYPE 517A OSCILLOSCOPE



Excellent Transient Response
Vertical-amplifier risetime—7 millimicroseconds.
Deflection factor—0.05 v/cm.
Signal-displacement error—less than 2% of 2 cm.

Fast Triggered Sweeps
Eleven calibrated rates from 0.01 μsec/cm to 20 μsec/cm.
Sweep-displacement error—less than 2% of 8 cm.

High Writing Rate
1100 cm/μsec. 24-kv accelerating potential on Tektronix metallized crt.

Pulse-Type Amplitude Calibrator

Trigger-Rate Generator

Automatic Duty-cycle Limiter

Cathode-Follower Input Probe

Electronically-Regulated Power Supplies

Highly Mobile—Indicator unit and power supply mounted on Scope-Mobile.

Price ..... **$3500.**

Includes Indicator Unit, Power Supply Unit, Type 500A Scope-Mobile, CF Probe, Step Attenuator, Cable, Bezel, Viewing Hood.

Prices f.o.b. factory.

CATHODE-RAY OSCILLOSCOPES

TYPE 502 DUAL-BEAM OSCILLOSCOPE

High Sensitivity
200 μv/cm, dc coupled, both beams.
Differential Input
Both amplifiers, at all sensitivities.
Curve Tracing With Two Beams
(Horizontal sensitivity to 0.1 v/cm.)
Single-Beam Curve Tracing—200 μv/cm, both axes.
Frequency Response
Both amplifiers—dc to 100 kc at 200 μv/cm, increasing to 200 kc at 1 mv/cm, to 400 kc at 50 mv/cm, and to 1 mc at 0.2 v/cm.
Wide Sweep Range
21 direct-reading calibrated sweep rates from 1 μsec/cm to 5 sec/cm.
Accurate Sweep Magnifier—2, 5, 10, and 20 times.
Automatic Triggering
Amplitude Calibrator—6 steps, 1 mv to 100 v.

Electronically-Regulated Power Supplies
Input stages of both amplifiers have transistor-regulated parallel heater supplies.
Price ..... **$825.**

TYPE 310A PORTABLE OSCILLOSCOPE

Vertical Response—DC to 4 mc, 0.1 v/div to 50 v/div in 9 calibrated steps. 3 additional steps from 0.01 v/div to 0.1 v/div, at 2 cycles to 3.5 mc. Continuously variable from 0.01 v/div to 150 v/div.
Risetime—0.09 μsec.
Sweep Range—0.1 μsec/div to 0.6 sec/div, with 5-x magnifier.
Versatile Triggering—Internal, external, line.....ac-coupled or dc-coupled and automatic triggering.
Price $595.

New TYPE 317 PORTABLE OSCILLOSCOPE

9-KV Accelerating Potential—Bright trace at low sweep repetition rates.
Vertical Response—DC to 10 mc, 0.1 v/div to 50 v/div in 9 calibrated steps. 3 additional steps from 0.01 v/div to 0.1 v/div, at 2 cycles to 10 mc. Continuously variable from 0.01 v/div to 125 v/div.
Risetime—0.035 μsec.
Sweep Range—0.2 μsec/div to 6 sec/div, with 22 calibrated steps. Accurate 5-x magnifier.
Triggering—Amplitude-level selection with preset or manual stability control, and automatic triggering.
Price $800.

Type 316 Portable Oscilloscope

1.85-KV Accelerating Potential. Identical to Type 317 in all other specifications.

Price $750.

TYPE 515A PORTABLE OSCILLOSCOPE

Passband—DC to 15 mc.
Sensitivity—0.05 v/cm to 20 v/cm in 9 calibrated steps—continuously variable from 0.05 v/cm to 50 v/cm.
Risetime—0.023 μsec.
Sweep Range—0.2 μsec/cm to 6 sec/cm with 22 calibrated steps. Accurate 5-x magnifier.
Balanced 0.25 μsec Delay Network.
Triggering—Amplitude-level selection with preset or manual stability control, and automatic triggering.
Price $800.

Prices f.o.b. factory.

CHARACTERISTIC-CURVE TRACERS

TYPE 575 TRANSISTOR CHARACTERISTIC-CURVE TRACER

20 ampere collector displays. (10 ampere average supply current).

2.4 Ampere base supply.

Positive or negative collector sweep—

Collector supply—0 to 20 v, 10 amperes.
0 to 200 v, 1 ampere.

Positive or negative base stepping

4 to 12 steps/family, repetitive or single family display.

17 current/step positions, 0.001 ma/step to 200 ma/step.

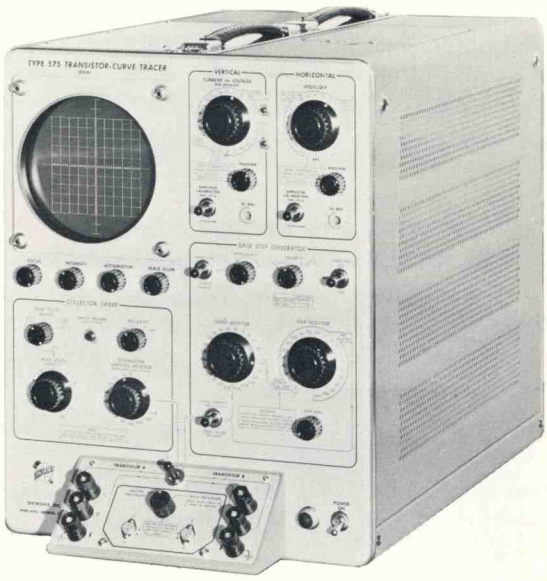
5 voltage/step positions, with 24 different driving resistances.

Calibrated display

Vertical Axis—	**Horizontal Axis—**
Collector current	Collector voltage
Base voltage	Base voltage
Base current	Base current
Base source voltage	Base source voltage

Collector current range is in 16 steps from 0.01 to 1000 ma/div.

Pushbuttons are provided for multiplying each current step by 2 and dividing by 10, increasing the current range to 0.001 to 2000 ma/div.

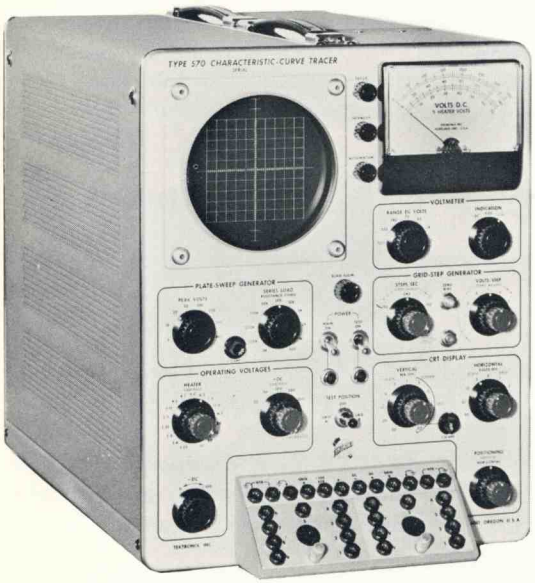


Base voltage range is from 0.01 v/div to 0.5 v/div in 6 steps.

Collector voltage range is from 0.1 v/div to 20 v/div in 11 steps.

Price $975.

TYPE 570 ELECTRON-TUBE CHARACTERISTIC-CURVE TRACER



Displays 4 to 12 characteristic curves per family.

Plots all important characteristics—

Plate current against plate or grid voltage.
Screen current against plate or grid voltage.
Grid current against plate or grid voltage.

Plots up to 8 positive-bias curves per family.

Calibrated Controls—

Accurate current and voltage readings directly from the crt screen.

Wide Display Range—

11 current ranges from 0.02 ma/div to 50 ma/div.
9 voltage ranges from 0.1 v/div to 50 v/div.
11 series-load resistors from 300 ohms to 1 megohm.
7 grid-step values from 0.1 v/step to 10 v/step.

Heater voltages available in 17 steps, variable to 20%.

Price $995.

Prices f.o.b. factory.

TELEVISION OSCILLOSCOPES

New TYPE 526 VECTORSCOPE

for the N.T.S.C. Color-Television Signal

Both Vector and Line-Sweep Displays

Phase Accuracy—±1.5° by vector presentation, ±1° by null technique.

Phase Resolution—Better than 0.1° at 3.58 mc.

Saturation Measurements—±2% on graticule, closer when comparing two signals.

Dual Displays—Electronically-switched dual input channels permit direct comparisons between two signals.

Interfield Signal Key—Permits easy display of test signals during vertical blanking time.

Linear Time Base—Operates at line rate, synchronized by horizontal sync pulse.

Burst Brightening—Positive identification of burst packet.

Push-Pull Synchronous Demodulators—DC-Coupled to crt to prevent changes in chroma signal composition from affecting the positioning of the display.

Self-Checking Circuitry

Subcarrier Regenerator

Price ..... **$1800.**

TYPE 524AD TELEVISION OSCILLOSCOPE

Passband

Normal—dc to 10 mc from 0.15 v/cm to 50 v/cm, 2 cycles to 10 mc from 15 mv/cm to 50 v/cm.

Flat—Within 1% from 60 cycles to 5 mc.

IRE—Meets IRE standards for level measurements.

Risetime—0.035 μsec.

Sweep Range—Continuously variable, 0.1 μsec/cm to 0.01 sec/cm.

Time Markers—0.05 μsec, 0.1 μsec, 1.0 μsec, 200, and 40 pips per television line.

Sweep Delay—0 to 25 milliseconds, continuously variable.

DC-Coupled Unblanking.

3-x and 10-x Magnifier.

Variable-Duty-Cycle Amplitude Calibrator.

Price $1250.

TYPE 525 TELEVISION WAVEFORM MONITOR

Frequency Response

Flat—within 1% between 60 cycles and 5 mc.

Low Pass—passes stair steps, eliminates high frequencies.

High Pass—passes high frequencies, eliminates stair steps.

IRE—meets IRE standards for level measurements.

Sensitivity—Deflection factor of the vertical amplifier is 0.015 v/cm.

Vertical Attenuator—1-x, 2-x, and 5-x.

Keyed Clamp-Type DC Restorer.

Gain Stability within 1%.

Rack-Mounting—8¾" high, 19" wide, 20¾" rack depth.

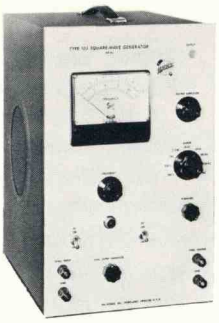
Price $1100.

TYPE 525MOD111—Equipped with intensifier for observation of vertical-blanking-interval test signal.

Price $1145.

Prices f.o.b. factory.

AUXILIARY INSTRUMENTS



TYPE 105 SQUARE-WAVE GENERATOR

Risetime—13 millimicroseconds, with 52-ohm termination.
Frequency Range—25 cycles to 1 mc, continuously variable.
Frequency Meter—Direct reading, accurate within 3% of full scale.
Output Amplitude—0 to 100 v maximum, 0 to 15 v across 93 ohm load.
Price $395.

TYPE 107 SQUARE-WAVE GENERATOR

Risetime—3 millimicroseconds, with 52-ohm termination.
Frequency Range—400 kc to 1 mc, uncalibrated.
Output Amplitude—0.1 v to 0.5 v, with 52-ohm termination.
Price $175.

TYPE 108 FAST-RISE MERCURY PULSER

Risetime—1 millimicrosecond into a terminated 52-ohm line.
Repetition Rate—240 pps.
Output Voltage—10 volts, approximately, when cable is terminated in 52 ohms.
Price ..... **$125.**
Includes: 1—Cable (012-033)
1—Cable (012-001)
1—T-Pad (10:1, 52 to 170 Ω)

TYPE 130 L,C METER

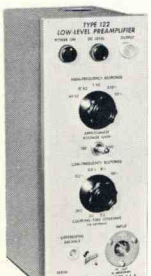
Guard Voltage—Permits measuring an unknown capacitance while eliminating the effects of other capacitances from the measurements.
Five Ranges—
Microhenries—0 to 3, 10, 30, 100, 300.
Micromicrofarads—0 to 3, 10, 30, 100, 300.
Accuracy—Within 3% of full scale.
Price $200.

TYPE 121 WIDE-BAND PREAMPLIFIER

Voltage Gain—0.01 to 100, continuously variable.
Frequency Response—5 cycles to 12 mc.
Risetime—less than 0.03 μsec.
Maximum Output Voltage—1 v peak-to-peak in terminated 93-ohm cable.
Price $280.

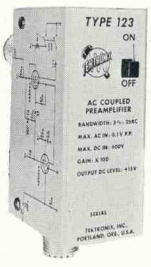
TYPE 122 LOW-LEVEL PREAMPLIFER

Voltage Gain—1000.
Frequency Response—0.16 cycles to 40 kc maximum.
Rejection Ratio—80 to 100 db for in-phase signals.
Noise Level—4 μv rms maximum.
Output Voltage—20 v maximum (peak-to-peak).
Input Impedance—10 megohms paralleled by approximately 50 μμf.
Battery operated for minimum noise level.
Price, without batteries, **$125.**



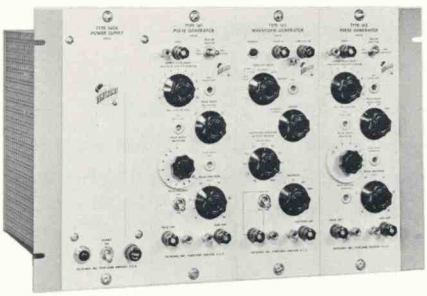
TYPE 123 PREAMPLIFIER

Frequency Response—
Within 2% from 15 cycles to 6 kc.
Within 3 db from 3 cycles to 25 kc.
Voltage Gain—100 times.
Hum-Free—Powered by miniature batteries.
Compact—3⅝" high, 1½" wide, 2¼"deep.
Weight—10 ounces
Price $50.



Prices f.o.b. factory.

AUXILIARY INSTRUMENTS



TYPE 160A POWER SUPPLY

Large load capacity—Provides operating power for four to six 161, 162, 163 Units plus a 360 Indicator Unit.
Electronic voltage regulation.
Price $175.

TYPE 163 FAST-RISE PULSE GENERATOR

Variable-amplitude positive pulse, 0 to 25 v.
Fixed-amplitude positive gate, 25 v.
Output Characteristics—
Risetime—less than 0.2 μsec.
Duration—Calibrated, continuously variable, 1 μsec to 10,000 μsec.
Delay—Continuously variable to 100% of triggering sawtooth duration.
Price $125.

TYPE 161 PULSE GENERATOR

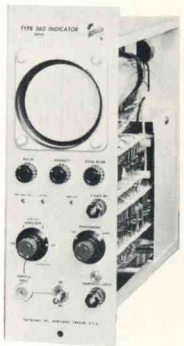
Variable-amplitude positive or negative pulse from 0 to 50 v.
Positive Gate—50 v amplitude.
Output Characteristics
Duration—calibrated, continuously variable, 10 μsec to 0.1 sec.
Delay—continuously variable, 0 to 100% of triggering sawtooth waveform.
Risetime—less than 0.5 μsec.
Price $125.

TYPE 162 WAVEFORM GENERATOR

Output Waveforms — positive pulse, positive gate, and negative-going sawtooth.
Output Characteristics—
Repetition Rate—0.1 c to 10 kc for recurrent operation.
Duration — pulse 10 μsec to 0.05 sec; gate and sawtooth, 100 μsec to 10 sec.
Amplitude — pulse and gate, 50 v; sawtooth, +150 v to +20 v. . . . . **Price $125.**

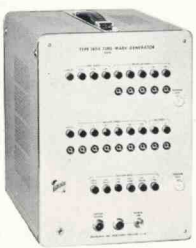
TYPE 360 INDICATOR

Vertical Passband—DC to 500 kc.
Calibrated vertical attenuator
Deflection factor—0.05 v/div.
Waveform Requirements—for Horizontal Deflection—50 v positive unblanking pulse, and a sawtooth of either polarity with amplitude from 110 to 150 v and extreme voltage limits at −90 v and +170 v.
Powered by a Type 160A, or Type 126 Power Supply.
Price $250.



TYPE 126 POWER SUPPLY

Provides operating power for one Type 161, 162, 163, or 360.
Electronic voltage regulation.
Price $100.



TYPE 181 TIME-MARK GENERATOR

Time-marks—1, 10, 100, 1000, and 10,000 microseconds, plus 10-mc sine wave.
1-mc crystal controlled oscillator is accurate within 0.03%. . . . . **Price $240.**

TYPE 180A TIME-MARK GENERATOR

Time-Marks—1, 5, 10, 50, 100, 500 μsec; 1, 5, 10, 50, 100, 500 msec; 1, 5 seconds.
Three Sine-Wave Frequencies—5 mc, 10 mc, and 50 mc.
Six Trigger-Rate Frequencies—1, 10, 100 cycles and 1, 10, 100 kc.
Temperature-stabilized crystal provides stability of 2 ppm.
Price $575.

TYPE 190A CONSTANT-AMPLITUDE SIGNAL GENERATOR

Output Frequency—350 kc to 50 mc, continuously variable, 50 kc reference signal.
Output Amplitude—40 mv to 10 v peak-to-peak, continuously adjustable.
Amplitude Variation—less than ±2% from 50 kc to 30 mc; less than ±5 % from 30 mc to 50 mc.
Harmonic Content—typically less than 5%.
Price $300.

Prices f.o.b. factory.

TEKTRONIX, INC., VICTORIA AVENUE, ST. SAMPSON'S, GUERNSEY, CHANNEL ISLES

Telephone: CENTRAL 3767 CABLE: TEK GUERNSEY TELEX 41-93

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