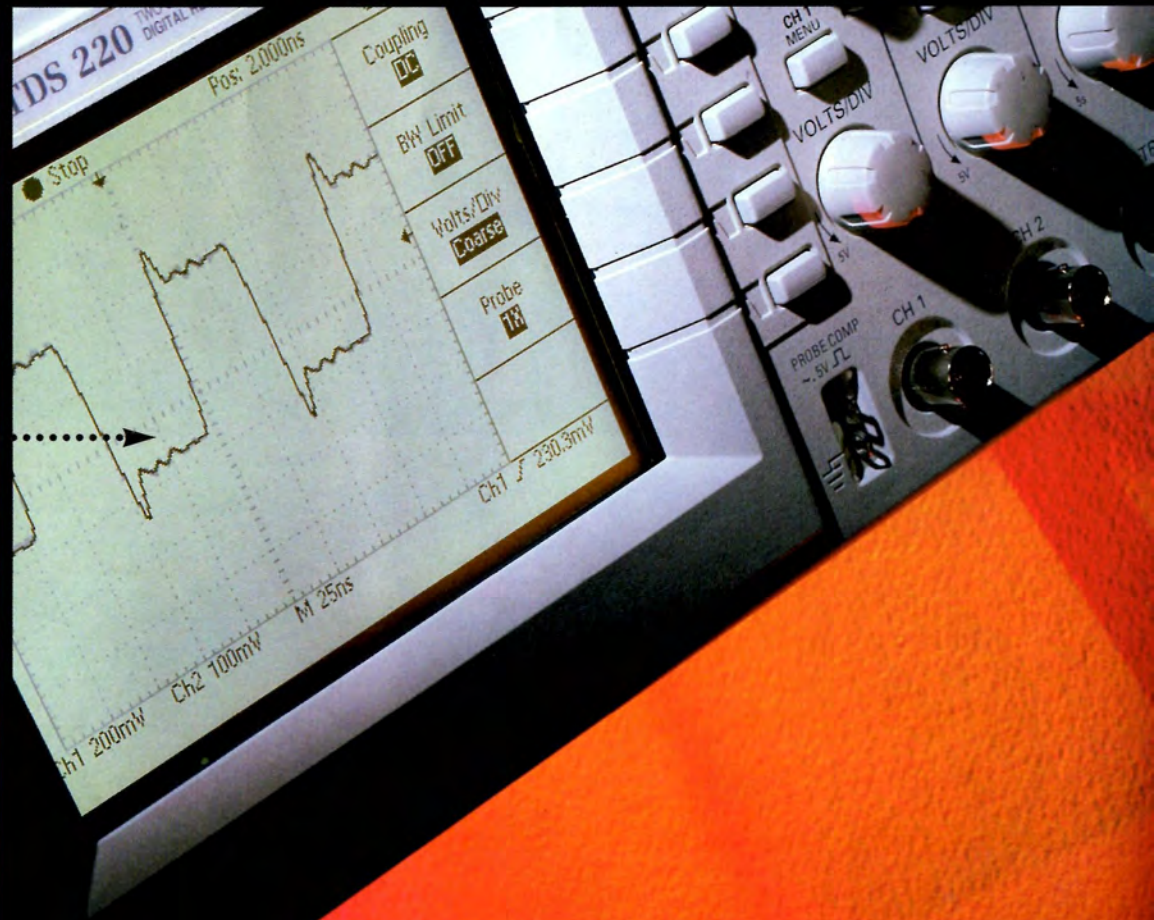


Basic Instruments Selection Guide



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Probes, Accessories



TDS 210 TDS 220

For engineers and technicians who need an easy to use, low cost oscilloscope that will improve productivity and measurement quality, Tektronix introduces the TDS 200 Series Digital Real-Time Oscilloscopes. There is no better combination of performance, reliability, and affordability.

The controls will be familiar to analog oscilloscope users, both in function and format. Automated digital functions are controlled by on-screen menus in any of ten user-selectable languages.

- 60 MHz and 100 MHz
- 1 GS/s Sample Rate
- Bright, Backlit Liquid Crystal Display
- Compact and Lightweight
- Low Cost
- Easy to Use
- Tektronix Quality and Reliability
- Three Year Warranty



Plug-in Extension Modules

Two Extension Modules are available: the Hardcopy Extension Module allows printing of screen information via a printer port; the Communications Extension Module has the printer port plus GPIB and RS-232 programmability (includes basic waveform capture software).

Automatic Measurements

Automatic measurements provide quick execution of advanced oscilloscope operations, resulting in fast, error-free measurements.

Waveform Memories

Waveform storage allows you to save waveforms for later analysis, comparison, or printing, including comparing a stored waveform with a live signal.

Autoset

Press one button and your TDS 200 oscilloscope automatically selects the correct settings to display a particular waveform on-screen.

Peak Detect

This acquisition mode captures the extremes of a signal, helping locate random glitches that often pass undetected.

Setup Memories

Frequently used front panel settings can be stored for instant recall, speeding up your routine tests.

Cursors and Measurements

Readouts of time, voltage, and frequency are displayed on the screen for fast, error-free measurements.



	TDS 210	TDS 220
Bandwidth	60 MHz	100 MHz
Channels	2	2
Max Sample Rate	1 GS/s on each channel	1 GS/s on each channel
Sweep Speeds	5 ns/div - 5 s/div	5 ns/div - 5 s/div
Vertical Sensitivity	10 mV/div - 5 V/div at full bandwidth, 2 mV/div - 5 mV/div at 20 MHz	
Vertical Accuracy	3%	3%
Vertical Resolution	8 bits	8 bits
Record Length	2.5k points/channel	2.5k points/channel
Features:	5 Automatic Measurements, 2 Reference Waveforms, Peak Detect, Autoset, Multi-language User Interface, 5 Setup Memories	
Includes:	Two P6112 passive probes, user manual, power cord, NIST-traceable certificate of calibration	
Accessories:	Hardcopy Extension Module (Centronics-type printer port); Communications Extension Module (GPIB, RS-232, printer port); WaveStar™ Waveform Capture Software, Soft Carrying Case	

Advanced Digitizing Oscilloscopes

	TDS 340A	TDS 360	TDS 380
Bandwidth	100 MHz	200 MHz	400 MHz
Channels	2	2	2
Max Sample Rate	500 MS/s on each channel	1 GS/s on each channel	2 GS/s on each channel
Sweep Speeds	5 ns/div – 5 s/div	2.5 ns/div – 5 s/div	1 ns/div – 5 s/div
Vertical Sensitivity	2 mV – 10 V	2 mV – 10 V	2 mV – 10V
Vertical Resolution	8 bits	8 bits	8 bits
Record Length	1k points/channel	1k points/channel	1k points/channel
Vertical Accuracy	2%	2%	2%
Floppy Disk Drive	Yes	Yes	Yes
Standard Advanced Features:	TV Line & Field Trigger, Roll Mode, Autoset, 21 Automatic Measurements, Peak Detect, FFT, Disk Drive		
Includes:	Two 10X passive probes [P6109B (TDS 340), P6111B (TDS 360), P6114B (TDS 380)], reference card, MIL-STD-45662A certificate of calibration, power cord, and user manual		
Option 14:	RS-232, GPIB, VGA Monitor Output, Centronics-type Parallel Printer Port		



High sample rates allow the TDS 340A, TDS 360, and TDS 380 Digital Real-Time Oscilloscopes to flawlessly capture higher speed signals up to the fastest sweep speeds — even for single-shot events. A floppy disk drive and FFT are standard on all three scopes.

TDS 640A	
Bandwidth	500 MHz
Channels	4
Max Sample Rate	2 GS/s on each channel
Sweep Speeds	500 ps/div – 5 s/div
Vertical Sensitivity	1 mV – 10 V
Vertical Resolution	8 bits
Record Length	500 – 2000 points/channel
Vertical Accuracy	1.5%
Standard Advanced Features:	Full GPIB Programmability, Infinite and Variable Persistence, 25 Automatic Measurements, VGA Monitor Output
Includes:	Four P6139A 10X passive probes, reference card, programmer's manual, front cover, power cord, and user manual
Optional Features:	3.5" DOS Floppy Disk Drive (Opt. 1F), Video Trigger (Opt. 05), RS-232 and Centronics-type Port (Opt. 13), Extended Waveform Math with FFT/Differentiation/Integration (Opt. 2F)



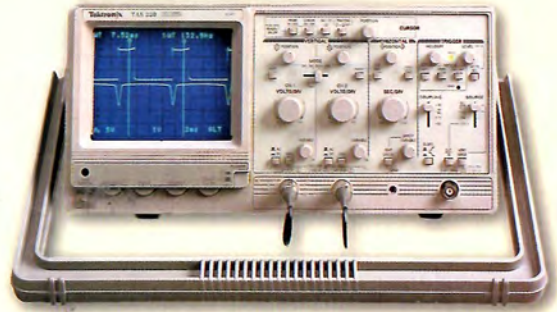
The TDS 640A Digital Real-Time Oscilloscope delivers 500 MHz bandwidth and 2 GS/s sample rate on all four channels simultaneously. The high performance TDS 640A also has extensive triggering capabilities: edge trigger, logic triggers (pattern and state), pulse triggers (width, runt, glitch), and an optional video trigger.

	TDS 410A	TDS 420A	TDS 460A
Bandwidth	200 MHz	200 MHz	400 MHz
Channels	2	4	4
Max Sample Rate	100 MS/s on each channel	100 MS/s on each channel	100 MS/s on each channel
Sweep Speeds	1 ns/div – 20 s/div	1 ns/div – 20 s/div	1 ns/div – 20 s/div
Vertical Sensitivity	1 mV – 10 V	1 mV – 10 V	1 mV – 10V
Vertical Accuracy	1.5%	1.5%	1.5%
Vertical Resolution (with Hi-Res)	8 bits 12 bits	8 bits 12 bits	8 bits 12 bits
Record Length (with Opt. 1M)	30k points/channel (120k points/channel)	30k points/channel (120k points/channel)	30k points/channel (120k points/channel)
Standard Advanced Features:	14 Hardcopy Formats, 25 Automatic Measurements, Peak Detect, Roll Mode (Triggered and Untriggered), Pass/Fail Limit Testing, Advanced Signal Processing, GPIB, TekProbe™ Interface		
Includes:	Two P6138 10X passive probes, reference guide, programmer's manual, power cord, performance verification document, and user manual		
Optional Features:	3.5" DOS Floppy Disk Drive (Opt. 1F), Video Trigger (Opt. 05), RS-232 and Centronics-type Port (Opt. 13), 120k Record Length (Opt. 1M), Extended Waveform Math w/FFT/Diff./Intg. (Opt. 2F), Thermal Printer Pack (Opt. 3P)		



TDS 400A Series precision digitizing scopes bring you superb sensitivity, integrated digital signal processing, and an extended feature set. The TDS 460A scope has a 400 MHz bandwidth and 100 MS/s sample rate. Options include record lengths to 120k, floppy disk drive, I/O capabilities, video trigger, and extended waveform math.

	TAS 220	TAS 250
Bandwidth	20 MHz	50 MHz
Channels	2	2
Time Base	Single	Single
Sweep Speeds	0.5 s/div to 10 ns/div (10X)	0.5 s/div to 10 ns/div (10X)
Vertical Sensitivity	5 mV – 5 V/div	5 mV – 5 V/div
TV Line & Field Trigger	Yes	Yes
Cursors/Readouts	Yes	Yes
Channel 1 Out	Yes	Yes
Automatic Triggers	Yes	Yes
Safety	ETL/CSA	ETL/CSA
Includes:	Two YT5060 1X/10X probes, power cord, and user manual	



With its clean design, convenient user interface, and Tektronix quality, the TAS 200 Series will change the way you think about affordable analog scopes. Clear cursors with readout, plus automatic TV trigger and chop/alt mode settings take the guesswork out of measurements.

	PS2520G	PS2521G
Output Type	Triple	Triple
Voltage Range	0 – 6 V (one) 0 – 36 V (two)	0 – 6 V (one) 0 – 20 V (two)
Maximum Current	3 A, 6 V/1.5 A, 36 V	5 A, 6 V/2.5 A, 20 V
GPIB	Yes	Yes
Front Panel Programmable	Yes	Yes

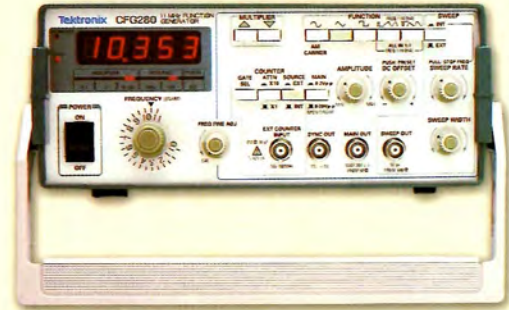


Expect safe, predictable performance every time you turn on a Tektronix power supply. Conservative design and top quality components set these instruments apart from the competition. Choose from manual or programmable models.

	CPS250	PS280
Output Type	Triple	Triple
One Fixed Output/Maximum Current	5 V 2 A	5 V 3 A
Two Variable Output/Maximum Current	0 – 20 V 0.5 A	0 – 30 V 2 A



	CFG253	CFG280
Frequency Range	0.03 Hz – 3 MHz	0.01 Hz – 11 MHz
Output	Sine, Square, Triangle, TTL Pulse	Sine, Square, Triangle, TTL Pulse
Internal or External Sweep	Yes	Yes
Built-In Counter	—	Yes
VFC (FM) Input	—	Yes
AM Input	—	Yes, Ext. sinewave



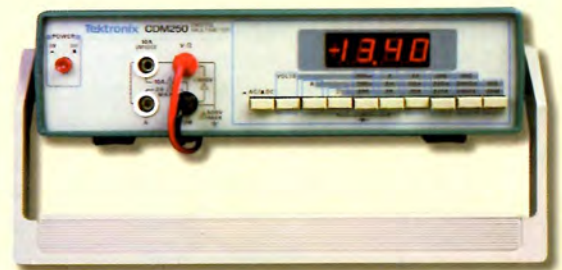
Tektronix function generators give you control of your test environment by producing exactly the right waveform or TTL signal. The CFG280 11 MHz function generator has an integrated 100 MHz counter which lets you conserve both budget and bench space.

	CMC251
Frequency Range Ch A	1 Hz – 100 MHz
Frequency Range Ch B	80 MHz – 1.3 GHz
Stability (+ or -)	1 ppm
Sensitivity (RMS)	5 – 35 mV
Period	Yes
Pulse Width	Yes



The CMC251 high-stability, temperature-compensated, ±1 ppm, multifunction counter delivers safety, accuracy, and reliability with a frequency range from 1 Hz to 1.3 GHz.

	CDM250
DC Volts Ranges	200 mV – 500 V
DC Volts Accuracy	0.5%
AC Volts Ranges	200 mV – 500 V
AC/DC Current Ranges	200 μA – 10 A
Resistance Ranges	200 Ω – 20 MΩ
Digital Count	3-1/2
Overrange Indication	Yes
Overload Protection	Yes



The CDM250 Digital Multimeter displays measurements of voltage, current, and resistance using a 3-1/2 digit LED display. Sine wave alternating voltages and currents are displayed in rms values.



The 1103 and 1101A probe power supplies provide external power to probes when the oscilloscope does not have the capability to supply probe power.

PROBE POWER SUPPLIES

	1103	1101A
Probes	ADA400A, P6203, P6204, P6205, P6217, P6231, P6243, P6245	P6201, P6202A, P6230
Probe Inputs	2	2
BNC Outputs	2	—
TEKPROBE™ Interface	Yes	—
Voltage Offset Switches	2	—
Potentiometers	2	—
Overload Protection	Yes	Yes
Scope Compatibility	TDS 200, TDS 300, 2205, TAS 200	

PASSIVE HIGH VOLTAGE PROBES

	P5100	P6015A
Attenuation	100X	1000X
Bandwidth	250 MHz	75 MHz
Loading	10 M Ω /2.75 pF	100 M Ω /3 pF
DC Maximum	2.5 kV	20 kV
Length	10 ft (= 3 m)	10 ft (= 3 m)
Scope Input C	7 – 30 pF	7 – 49 pF
Readout	Yes	Opt 1R

ACTIVE DIFFERENTIAL PROBES

	P5200	ADA400A
Attenuation	50X/500X	N/A
Gain	N/A	0.1X, 1X, 10X, 100X
Bandwidth	25 MHz	1 MHz
Bandwidth Filters	N/A	100 Hz, 3 kHz, 100 kHz
Maximum Input Differential Voltage (VDM)	1300 V (DC + peak AC)	± 80 V @ 0.1X, ± 10 V @ 1X, ± 1 V @ 10X, ± 100 mV @ 100X
Maximum Input Voltage to Ground (VCM)	1000 V (DC + peak AC)	± 40 V @ 0.1X, ± 40 V @ 1X, ± 10 V @ 10X, ± 10 V @ 100X
Input R	4 M Ω (each input)	1 M Ω (each input), selectable ∞ Ω mode
Input C	7 pF (each input)	55 pF (each input)
CMRR (Common Mode Rejection Ratio)	80 dB (-10,000:1) @ 60 Hz; 50 dB (1,000:1) @ 100 kHz	> 100 dB (100,000:1) @ 10 kHz > 90 dB (30,000:1) @ 100 kHz
Cable Length	1.8 m (6 ft)	2 m (6.6 ft)
Operating Power	AC power adapter included	TEKPROBE™ power interface (needs 1103 for non-TEKPROBE interface oscilloscopes such as TDS 300, 2205, or TAS 200 Series)

PASSIVE VOLTAGE PROBES

	P6101B	P6103B	P6109B	P6111B	P6112	P6119B	P6129B	P6561A	YT5100	YT5060
Bandwidth (MHz)	15	60	100	200	100	10/100	10/100	200	100	60
Attenuation	1X	10X	10X	10X	10X	1X/10X	1X/10X	10X	1X/10X	1X/10X
Compensation Range	N/A	15 – 35 pF	15 – 35 pF	15 – 35 pF	15 – 35 pF	15 – 35 pF	15 – 35 pF	15 – 35 pF	20 – 45 pF	20 – 45 pF
Readout	—	—	Yes	Yes	—	—	Yes	Yes	—	—
Scope Compatibility	All	2205	TDS 300/TDS 400A	TDS 360	TDS 200	TDS 300/TAS 200	All	TDS 300/TAS 400	All	TAS 200



CURRENT PROBES

	A621	A622
Frequency Range	5 Hz to 50 kHz	DC to 100 kHz
Maximum Input Current	2000 A _{Peak}	100 A _{Peak}
Output	1 mV/A 10 mV/A 100 mV/A	10 mV/A 100 mV/A
Maximum Conductor Diameter	54 mm (2.13 in)	11.8 mm (0.46 in)
Connector Type	BNC	BNC
Instrument Compatibility	THM 400, THM 500, DMM, THS 700	THM 400, THM 500, DMM, THS 700

CURRENT PROBE SYSTEMS

	AM503S with A6302 Probe	AM503S with A6303 Probe	AM503S with A6304XL Probe
Bandwidth	50 MHz*	15 MHz	2 MHz
Maximum Continuous	20 A	100 A	500 A
Peak Pulse	50 A	500 A	700 A
Cable Length	8 m	8 m	8 m

* 160 MHz with optional A6312 Probe

ACTIVE PROBES

	P6201	P6202A	P6205	P6243*
Attenuation	1X/10X/100X	10X/100X	10X	10X
Bandwidth at -3 dB	900 MHz	500 MHz	750 MHz	1 GHz
DC Offset Range	±5.6/56/200 V	±55/200 V	N/A	N/A
System Input Resistance	100 kΩ/1 MΩ/1 MΩ	10 MΩ	1 MΩ	1 MΩ
Typical Input C	3/1.5/1.5 pF	2/2 pF	2 pF	< 1 pF
Maximum Voltage	±100/200 V	±200/200 V	±40 V	±40 V
Probe Power Supply for 2205, TAS, and TDS 300 Scopes	1101A	1101A	1103	1103

* P6243S includes two P6243 probes and one 1103 TEKPROBE™ Power Supply.

SOFTWARE

WSTR31 WaveStar™ Software:
A Windows™-friendly DOS application that makes moving waveform data between scope and PC as easy as clicking a mouse. You can save and load scope setups, print hard copies, convert screen images to common graphic formats, or export waveform data in spreadsheet formats for mathematical analysis. Runs on minimum PC configuration. WSTR31U upgrades DocuWave software to WaveStar software.



ACCESSORIES

C-9 Scope Camera:
Document any waveform, especially single-shot analog events, with this battery-operated camera using standard Polaroid film packs.



HC220 Bubble Jet Printer:
Use plain paper and get 360 dpi clarity through a Centronics-type interface. It can be connected directly to many Tektronix oscilloscopes.



HC411 Portable Printer:
A quiet, portable, 2 pound, thermal printer with 320-640 dpi clarity. Centronics-type and RS-232-C interfaces. NiCd or AC power.



K212, K415, and K420 Scope Carts:
Sturdy scope carts save you bench space and help keep your gear organized. Made from high strength materials for years of reliable service.

To find the authorized Tektronix distributor nearest you, call:

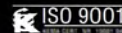
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