

Data Sheet

Digital Storage Oscilloscopes
2550 Series



The 2550 series digital storage oscilloscopes provide high performance and value in 2-channel and 4-channel configurations. With bandwidth from 70 MHz to 300 MHz and 2 GSa/s sample rates, these oscilloscopes offer 24 kpts/Ch waveform memory, 32 automatic measurements, and advanced triggering capabilities including math functions. Engineered to allow you to see more of your signal under test, the 2550 series' widescreen 7" TFT display offers a significantly larger viewing area than typical economy oscilloscopes (5.7").

Maximize productivity with PC connectivity via LAN and USB. The downloadable PC software lets you easily capture, save, and analyze measurement results. All oscilloscope parameters can be controlled via a PC without the need for programming.

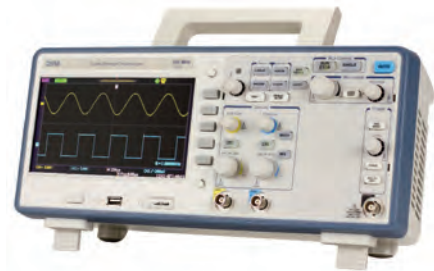
Additionally, these oscilloscopes can be integrated with AWGs using B&K Precision's waveform editing software, WaveXpress. WaveXpress allows users to easily modify waveforms downloaded from the scope and can also be used for analysis of deep memory acquisitions.

Educators who want to teach waveform measurement fundamentals can benefit from the ability to disable the Auto set button, a function that automatically sets up the scope to display a signal.

The 2550 series oscilloscopes are ideal for applications in design and debug, service and repair, and education.

Features & Benefits

- Bandwidth up to 300 MHz
- 2 GSa/s sample rate
- 4-channel acquisition (on select models)
- Large 7" widescreen color display
- FFT including four additional math functions - Add, Subtract, Multiply, and Divide
- 32 automatic measurements
- 50 Ω input coupling (200 MHz and 300 MHz models)
- Standard LAN (supports SCPI) and USB device port (USBTMC compliant)
- Front and rear panel USB host port for saving and recalling waveform setups, data, and screenshots on a USB flash drive
- Software provided for remote PC control
- Advanced tools include digital filters with adjustable limits, pass/fail testing and waveform recorder mode
- Multi-language user interface and context sensitive help



| Model | 2552 | 2553 | 2554 | 2555 | 2556 | 2557 | 2558 | 2559 |
|-----------|--------|------|---------|------|---------|------|---------|------|
| Bandwidth | 70 MHz | | 100 MHz | | 200 MHz | | 300 MHz | |
| Channels | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 |



For more information, visit www.bkprecision.com/WaveXpress

Technical data subject to change
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www.bkprecision.com



1.888.610.7664

 www.calcert.com

sales@calcert.com

Front panel

Widescreen display
The 7" widescreen color display lets you see more of your signal.

Menu On/Off button
Configure the menu parameters and hide the menu with the push of a button to view your signal in full screen.

Context sensitive help
A pop up window will display the functionality of a control while help mode is active.

Auto setup
Vertical, horizontal, and trigger controls are automatically adjusted for fast signal display.

Advanced triggering
Isolate the signal with advanced triggering including pulse width and selectable video trigger.

Intuitive channel operation
All channels in the 2550 series are clearly indicated by their own color, labeled on the input, knobs, and display.

USB host port
Connect your USB flash drive to conveniently store and recall waveform data, setups, and screenshots.

Print button
Simply press the Print button to save a screenshot in bitmap format to a USB flash drive.

Waveform analysis with math and FFT
Analyze your signals with add, subtract, multiply, and divide functions. View the signal's frequency spectrum and perform harmonic distortion analysis.

Rear panel

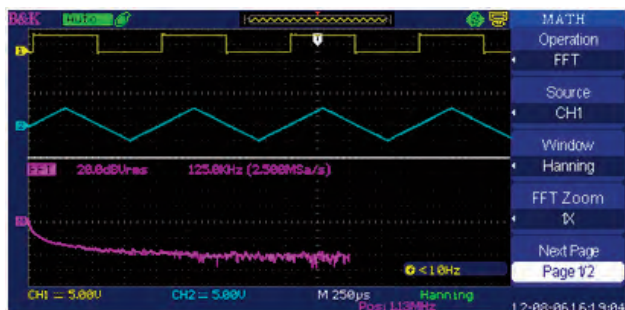
USB host port
Additional USB port on rear for data storage to a USB flash drive.

Kensington security slot
Helps to secure your oscilloscope and prevent theft.

Communication
LAN and USB ports enable remote control from a PC.

The tools you need

Powerful measurement functions



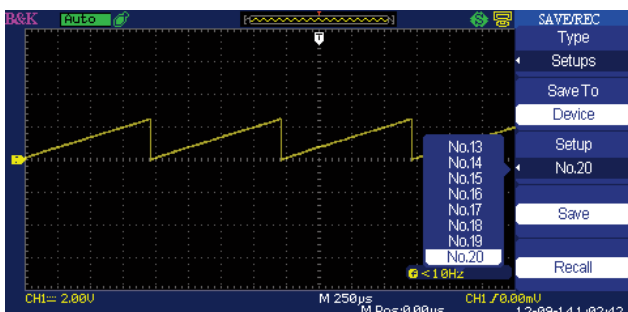
Display and measure the input signal's frequency spectrum. Select one of the 4 FFT windows: Rectangular, Hanning, Hamming, and Blackman. Use cursors to measure the spectral component's magnitude and frequency.

Waveform recorder



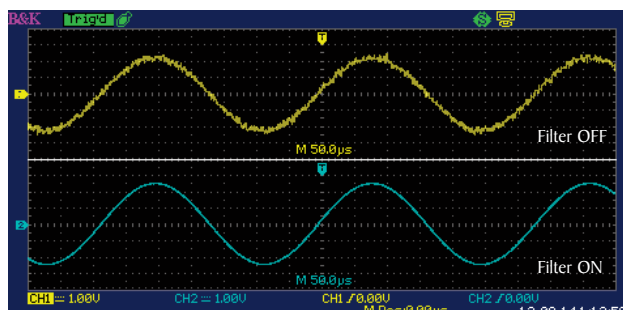
Monitor and analyze long-term signal behavior by recording data continuously over an extensive period of time and playing it back for post acquisition analysis. Data is recorded in a sequence of up to 2500 frames.

Large internal storage



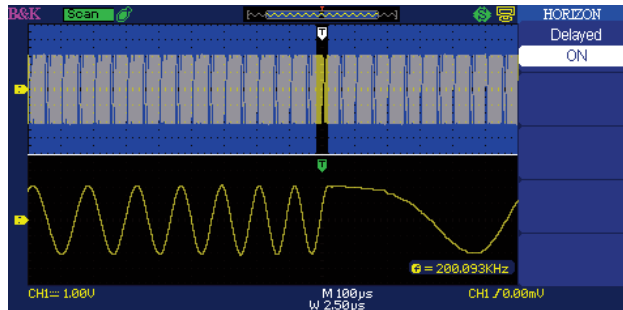
Minimize debug time by saving and recalling setups and waveforms from internal memory. Save and recall up to 20 different oscilloscope setups and 20 different waveforms.

Digital filtering



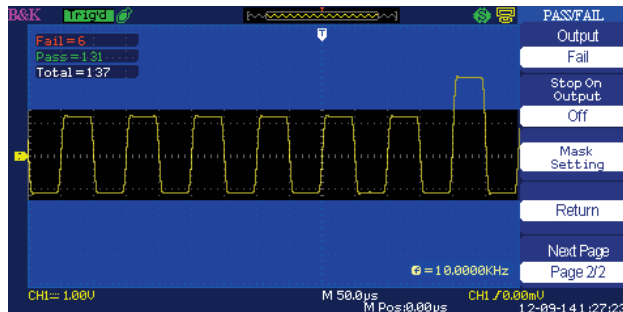
Filter out unwanted signal components such as various types of noise with built-in digital filters. Choose from Low-Pass, High-Pass, Band-Pass, and Band-Stop filters.

Delayed sweep/zoom



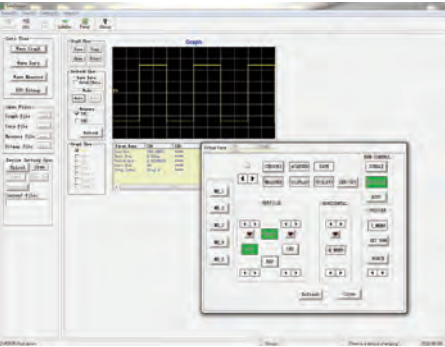
Use the oscilloscope's delayed sweep feature to zoom in a particular area of a signal in real time while viewing the entire captured waveform simultaneously.

Pass/Fail testing



Generate user-defined pass/fail limits to quickly identify go/no go test results.

PC connectivity



PC software is provided (free download at B&K Precision's website at www.bkprecision.com) for seamless integration between the oscilloscope and PC. Capture and transfer waveforms, screen images, setups and measurement results to a Windows PC via the USB device port on the back of the instrument. A USB host port on the front and rear allows for quick and easy screen saving.

High bandwidth passive oscilloscope probes



PR150B



PR250B & PR500B

Avoid limiting the bandwidth of your measurement system. All 2550 series models come standard with high bandwidth, slimline passive probes (one per channel) to help you get the most out of your scope.

Features

- Slim, stylish body
- Snap-locking sprung hook
- Easily replaceable tip
- Large accessory set
- Meets IEC 61010-031 CATII
- RoHS compliant

| Model | Included Probes |
|-------|--|
| 2552 | two 150 MHz bandwidth, x1/x10 probes (model PR150B) |
| 2553 | four 150 MHz bandwidth, x1/x10 probes (model PR150B) |
| 2554 | two 150 MHz bandwidth, x1/x10 probes (model PR150B) |
| 2555 | four 150 MHz bandwidth, x1/x10 probes (model PR150B) |
| 2556 | two 250 MHz bandwidth, x10 probes (model PR250B) |
| 2557 | four 250 MHz bandwidth, x10 probes (model PR250B) |
| 2558 | two 500 MHz bandwidth, x10 probes (model PR500B) |
| 2559 | four 500 MHz bandwidth, x10 probes (model PR500B) |

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| Specifications | 2552 | 2553 | 2554 | 2555 | 2556 | 2557 | 2558 | 2559 |
|---|--|------|-----------------------|------|---|------|---------------------|------|
| Performance Characteristics | | | | | | | | |
| Bandwidth | 70 MHz | | 100 MHz | | 200 MHz | | 300 MHz | |
| Real Time Sampling Rate | 2 GSa/s (half-channel interleaved) ⁽¹⁾ , 1 GSa/s (per channel) | | | | | | | |
| Channels | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 |
| Rise Time | < 5 ns | | < 3.5 ns | | < 1.8 ns | | < 1.2 ns | |
| Ch to Ch Isolation (Both channels in same V/div setting) | > 100:1 at 35 MHz | | > 100:1 at 50 MHz | | > 100:1 at 100 MHz | | > 100:1 at 150 MHz | |
| Max Memory Depth | 24 kpts (half-channel interleaved) ⁽¹⁾⁽²⁾ , 12 kpts (per channel) | | | | | | | |
| Vertical Resolution | 8 bit | | | | | | | |
| Vertical Sensitivity | 2 mV/div -10 V/div (1-2-5 order) | | | | | | | |
| DC Gain Accuracy | < ±3.0%: 5 mV/div to 5 V/div in fixed gain ranges < ±4.0%: 2 mV/div in variable gain ranges | | | | | | | |
| Maximum Input Voltage | 400 V (DC+AC pk-pk, 1 MΩ input impedance, X10), CAT I, 5 Vrms (50 Ω input impedance) | | | | | | | |
| Position Range | 2 mV–100 mV: ±800 mV 102 mV – 5 V: ±40 V | | | | | | | |
| Bandwidth Limit | 20 MHz ±40% (Note: BW limited below 20 MHz when using probe in X1) | | | | | | | |
| Horizontal Scan Range | 5 ns/div – 50 s/div | | 2.5 ns/div – 50 s/div | | | | 1 ns/div – 50 s/div | |
| Timebase Accuracy | ±100 ppm measured over 1 ms interval | | | | | | | |
| Input Coupling | AC, DC, GND | | | | | | | |
| Input Impedance | 1 MΩ ± 2% 13 pF ± 3 pF | | | | 1 MΩ ± 2% 13 pF ± 3 pF, 50 Ω ± 2% | | | |
| Vertical and Horizontal Zoom | Vertically or horizontally expand or compress a live or stopped waveform | | | | | | | |
| I/O Interface | | | | | | | | |
| USB | Front and rear USB host ports support USB flash drives, USBTMC compliant USB device port for connecting to PC | | | | | | | |
| LAN | Supports SCPI commands for remote control | | | | | | | |
| Pass/Fail | Pass/Fail output | | | | | | | |
| Acquisition Modes | | | | | | | | |
| Sampling | Display sample data only | | | | | | | |
| Peak Detect | Capture the maximum and minimum values of a signal | | | | | | | |
| Average | Waveform averaged, selectable from 4, 16, 32, 64, 128, 256 | | | | | | | |
| Trigger System | | | | | | | | |
| Trigger Types | Edge, Pulse Width, Video*, Slope, Alternative *Support signal Formats: PAL/SECAM, NTSC Trigger condition: odd field, even field, all lines, or line number | | | | | | | |
| Trigger Modes | Auto, Normal, Single | | | | | | | |
| Trigger Coupling | AC, DC, LF reject, HF reject | | | | | | | |
| Trigger Source | CH1, CH2, CH3, CH4, EXT, EXT/5, AC Line | | | | | | | |
| Pulse Width Trigger | Trigger Modes: Positive Pulse (> , < , =), Negative Pulse (> , < , =) | | | | | | | |
| Slope Trigger | Positive slope (> , < , =), Negative slope (> , < , =) Time: 20 ns-10 s | | | | | | | |
| Alternate Trigger | CH1 trigger type: Edge, Pulse, Video, Slope CH2 trigger type: Edge, Pulse, Video, Slope CH3 trigger type: Edge, Pulse, Video, Slope CH4 trigger type: Edge, Pulse, Video, Slope | | | | | | | |

Notes:

(1) On 4-Ch models, Ch1 and Ch2 are interleaved, and Ch3 and Ch4 are interleaved. Half channel operation means that only Ch1 or Ch2 and/or only Ch3 or Ch4 is active.

(2) When timebase is 25 ns or faster and maximum data depth mode is enabled.

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|------------------------------------|---|------|------|------|------|------|------|------|
| Hardware Frequency Counter | | | | | | | | |
| Reading Resolution | 6 digits | | | | | | | |
| Accuracy | ± 0.01% | | | | | | | |
| Range | DC couple, 10 Hz to MAX bandwidth | | | | | | | |
| Signal Types | Satisfying all trigger signals (except pulse width trigger and video trigger) | | | | | | | |
| Waveform Math and Measure | | | | | | | | |
| Math Operation | Add, Subtract, Multiply, Divide, FFT | | | | | | | |
| FFT | Window mode: Hanning, Hamming, Blackman, Rectangular Sampling points: 1024 | | | | | | | |
| Measure | Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROV, FOV, RPRE, FPRE, FREQ, Period, Rise Time, Fall Time, BWid, + Wid, - Wid, + Duty, - Duty, Phase, FRR, FRF, FFR, FFE, LRR, LRF, LFR, LFF | | | | | | | |
| Cursors | | | | | | | | |
| Types | Voltage, Time | | | | | | | |
| Measurements | ΔV, ΔT, 1/ΔT (frequency) | | | | | | | |
| Display System | | | | | | | | |
| Display | 7 in. Color TFT, 480 x 234 resolution, 64K color | | | | | | | |
| Display Contrast (Typical state) | 150:1 | | | | | | | |
| BacklightIntensity (Typical state) | 300 nit | | | | | | | |
| Wave Display Range | 8 x 18 div | | | | | | | |
| Wave Display Mode | Dots, Vector | | | | | | | |
| Persistence | Off, 1 sec, 2 sec, 5 sec, Infinite | | | | | | | |
| Menu Display | 2 sec, 5 sec, 10 sec, 20 sec, Infinite | | | | | | | |
| Screen-Saver | Off, 1 min, 2 min, 5 min, 10 min, 15 min, 30 min, 1 hr, 2 hr, 5 hr | | | | | | | |
| Waveform Interpolation | Sin(x)/x, Linear | | | | | | | |
| Color Mode | Normal, Invert | | | | | | | |
| Environmental and Safety | | | | | | | | |
| Temperature | Operating: 50° F to 104 °F (10 °C to +40 °C) Not operating: -4 °F to 140 °F (-20 °C to +60 °C) | | | | | | | |
| Humidity | Operating: 85%RH, 104 °F (40 °C), 24 hours Not operating: 85%RH, 149 °F (65 °C), 24 hours | | | | | | | |
| Altitude | Operating: 9,842.5 ft (3,000 m) Not operating: 50,085.3 ft (15,266 m) | | | | | | | |
| Electromagnetic Compatibility | EMC Directive 2004/108/EC, EN61326:2006 | | | | | | | |
| Safety | Low voltage directive 2006/95/EC, EN61010-1:2001 | | | | | | | |
| General | | | | | | | | |
| Power Requirements | 100-240 VAC, CAT II, 50 VA max, 45 Hz to 440 Hz | | | | | | | |
| Dimensions (W x H x D) | 14.1" x 6.14" x 4.65" (358 x 156 x 118 mm) | | | | | | | |
| Weight | 2-channel models: Approx. 9.5 lbs (4.3 kg) 4-channel models: Approx. 9.9 lbs (4.5 kg) | | | | | | | |
| Three-Year Warranty | | | | | | | | |
| Supplied Accessories | User manual, passive probes (one per channel), power cord, certificate of calibration, USB (Type A to B) communication cable | | | | | | | |