



The 2560B Digital Storage (DSO) and Mixed Signal Oscilloscope (MSO) series expands debugging capabilities with new and improved features not found in previous models. Each model provides 4 channels with 200 Mpts memory depth and a maximum sample rate of 2 GSa/s.

Equipped with a 10.1" (1024 x 600) capacitive touchscreen and high waveform update rate of 120,000 waveforms per second, these oscilloscopes can capture infrequent glitches with excellent signal fidelity.

The logic analyzer and decode software provide 16 additional digital channels and serial bus decoding support for I²C, SPI, UART, CAN and LIN protocols. Maximize productivity with an extensive list of features including trigger zones, waveform recording, pass/fail limit testing and automatic measurements. Display frequency response characteristics using the Bode plot feature or evaluate switching power supplies using the power analysis tool. Standard in all models, the integrated 50 MHz DDS waveform generator provides stimulus output of sine, square, ramp, pulse, noise, DC and arbitrary waveforms to the device under test.

The 2560B series offers a comprehensive set of tools to capture signal anomalies, decode serial bus protocols and ease debug and analysis. Additional options are available for decoding I²S, FlexRay, CAN FD, MIL-STD-I553B, SENT and Manchester protocols.

DSO Model	2565B	2567B	2569B
MSO Model	2565B-MSO	2567B-MSO	2569B-MSO
Bandwidth	I00 MHz	200 MHz	350 MHz
Channels		4 Analog	



Features and benefits

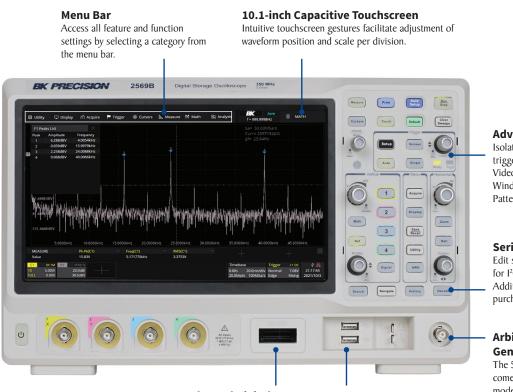
- Bandwidth up to 350 MHz
- 4 analog channels
- Maximum sampling rate of 2 GSa/s
- 200 Mpts memory depth
- Maximum waveform update rates of 120,000 (normal mode) and 500,000 (sequence mode) waveforms per second
- History and sequence mode store a maximum of 90,000 frames
- I0.1" capacitive touchscreen supports touchscreen gestures
- I0-bit mode improves vertical resolution
- Advance triggers with trigger zone support
- Built-in 50 MHz arbitrary waveform generator
- Power analysis tool evaluates II different parameters
- Automatic measurements with statistics and histogram
- Math function supports 2 traces and a formula editor
- 2 Mpts FFT provides high resolution when viewing signals in the frequency domain
- Additional I6 digital channels standard in MSO models (option available for DSO)
- Serial bus decoder supports I²C, SPI, UART, CAN and LIN protocols
- High speed Pass/Fail testing and custom masking editor tool
- Control the oscilloscope from a standard web browser via the built-in web server
- USBTMC-compliant device port and LAN interfaces standard

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Front panel



16-Channel Digital Port

Connect a logic analyzer probe to access 16 digital channels. Standard in MSO models and available as an upgrade for DSO models.

Two USB Host Ports Connect USB flash drive to conveniently store and recall

conveniently store and recall waveform data, setups and screenshots. Mouse and keyboard peripherals are supported as well.

Advanced Triggering

Isolate the signal with advanced triggers including Edge, Slope, Pulse, Video (HDTV supported), Window, Interval, Dropout, Runt, Pattern and Serial.

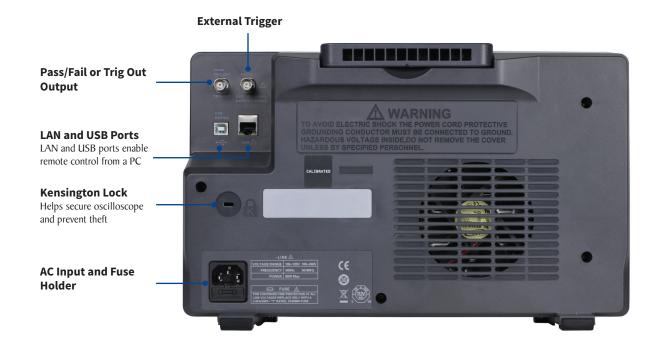
Serial Bus Decoding

Edit serial bus decoding settings for I²C, SPI, UART, CAN and LIN. Additional protocols available with purchase of license key.

Arbitrary Waveform Generator Output

The 50 MHz waveform generator comes standard in all 2560B models. Output signal supports Bode plot function.

Rear panel



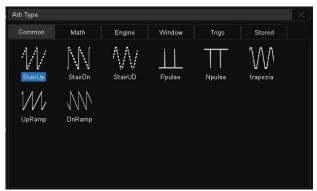
Operation highlights

Best-in-class memory depth of 200 Mpts



The oscilloscope's exceptionally deep memory allows you to capture waveform details over extended time intervals and at high sampling rates, then zoom into the signal for further analysis.

50 MHz waveform generator



The built-in DDS waveform generator outputs waveforms with maximum frequencies of 50 MHz and \pm 3 V amplitude. Sine, square, ramp, pulse, noise, DC and arbitrary waveforms are available.

Power analysis



The power analysis tool can evaluate II different power supply or power device parameters such as power quality, inrush current and switching loss.

Waveform update rate of 120,000 wfms/s



High speed waveform update rate displays infrequent glitches with excellent signal fidelity. Update rate can reach up to 500,000 wfms/s in sequence mode.

Bode plot



The Bode plot feature evaluates the amplitude and phase of a system with respect to frequency. Samples acquired are displayed in a graphical and tabular form.

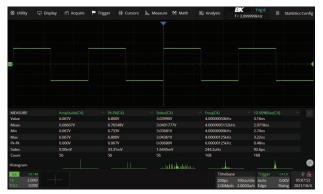
Waveform math



The math function provides a formula editor and various operations including an FFT with maximum memory depth of 2 Mpts. Two operations can be displayed simultaneously.

Operation highlights

Measurements with statistics and histograms



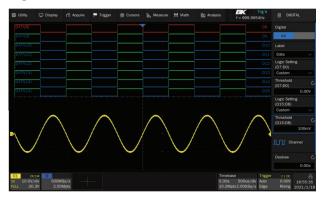
50+ different parameters are readily available with statistics displayed nominally and as a histogram. Measurements can be acquired from function, reference and history waveforms.

Trigger functions and zone



Isolate desired waveforms using up to two zone triggers. Touchscreen gestures allow users to generate zones by dragging a finger diagonally anywhere on the grid.

Digital Channels / MSO



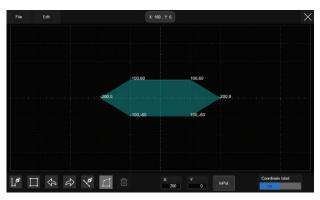
The MSO feature adds 16 digital channels allowing the acquisition and triggering of mixed signal waveforms.

Waveform history and recording



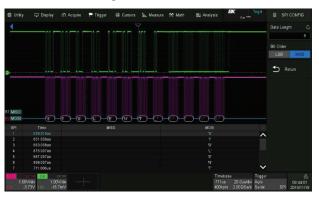
Segmented memory captures important segments of signals without wasting memory on the dead time. The history function can store up to 90,000 triggered waveforms.

Mask test function and editor



Use the built-in mask editor to create a mask and perform up to 80,000 pass / fail decisions per second. Failed frames can be stored as history frames for evaluation.

Serial bus decoding



Serial bus decode supports I²C, SPI, UART, CAN, and LIN protocols. Information is displayed in tabular form.

The tools you need

High bandwidth passive oscilloscope probe

Avoid limiting the bandwidth of your measurement system. All 2560B series models come standard with high bandwidth, slimline passive probes (one per channel), to help you get the most out of your scope.

Model	2565B	2565B-MSO	2567B	2567B-MSO	2569B	2569B-MSO
Probe		PR150B		PR250B	P	R500B
Bandwidth		illoscope probes 50 MHz		illoscope probes 250 MHz		lloscope probes 00 MHz
Attenuation Value		XI, XI0		X10		X10



16 channel logic probe

The I6-channel color-coded logic probe consists of two eight-channel pods. To make contact with the DUT, the probe connects directly to square pins or clips to test points using the included grabbers. With an input capacitance of only 18 pF and 100 k Ω input impedance, the probe protects the integrity of your signal. The probe is included with MSO models.



Remote Connectivity

Operate the oscilloscope from a remote PC using the built-in web server which provides full access to all the oscilloscope's functions and allows users to install new firmware updates and save screenshots, waveform setup and data. Access the web server through any device on the same network using the oscilloscope's IP address. For safety and security, control of the instrument through the web server can be password protected.



Web server

Specifications

Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of 23 °C ± 5 °C. Specifications are valid for single unit operation only.

Model	2565B	2567B	2569B
Performance Chara	acteristics		
Bandwidth	I00 MHz	200 MHz	350 MHz
Rise Time	3.5 ns	1.7 ns	l ns
Input Channels	4 analog channels + EX	XT; 16 digital channe	els for MSO
Sample Rate		nterleaving mode) ¹ n-interleaving mode)	2
Memory Depth	•	(interleaving mode)	
Waveform	Normal mode: 120	,000 waveforms per	second
Update Rate	Sequence mode: 50	0,000 waveforms pe	r second
Vertical System			
Input Coupling	DC	C, AC, GND	
Input Sensitivity		μV/div to I0 V/div; 0 μV/div to I V/div	
Input Impedance	I M Ω ± 2% or I7 p	oF ± 2pF; 50 Ω: 50 9	$\Omega \pm 1\%$
Max Input Voltage		(DC + AC), DC to 5 Vrms, ± 10 Vpk	10 kHz
DC Gain Accuracy		≤ 3.0%	
DC Offset Accuracy	(1.5% of offset +	1.5% of full scale +	I mV)
Ch to Ch Isolation (50 Ω)		00 MHz: > 40 dB o Max BW: ≥ 34 dB	
Offset Range	I02 mV/div	to 100 mV/div: ± 2 V v to 1 V/div: ± 20 V o 10 V/div: ± 200 V	
Bandwidth Limit	Selectable: 20) MHz, 200 MHz, F	ull
SFDR		≥ 40 dB	
Bandwidth Flatness (50 Ω)	BW/10 to BW/3 to BW	o BW/10: ±0.5 dB o BW/3: ±0.8 dB /2/3: +1.0 dB, -1.2 dI W: +2.0 dB, -2.5 dB	
Probe Attenuation	IX, 10X	, IOOX, Custom	
Horizontal System			
Time Base Range	I ns/di	iv to 1000 s/div	
Time Base Accuracy		I ppm after first year om after 10 years	* *
Ch to Ch Deskew		< 100 ps	

I: Interleaved: only one of CHI or CH2 and/or only one of CH3 or CH4 is active 2: Non-interleaved: both CHI and CH2 and/or both CH3 and CH4 are active

Peak Detect	l ns
Interpolation	Sin(x)/x
Resolution	8-bit and 10-bit ³
Sequence	90,000 frames max; re-arm time = 2 μ s
Display Characte	· · · · ·
Display	IO.I" TFT-LCD Capacitive touch screen
Resolution	1024 x 600
Display Modes	Normal, X-Y, Roll (≥ 50 ms/div)
Display Type	Vector. Dot
Persistence	Off, 1 s, 5 s, 10 s, 30 s, infinite
Intensity Grading	256 intensity levels
Color	Normal, Temp. grade; Custom trace colors
Language	English, Spanish, Traditional and Simplified Chinese, French, Japanese, German, Russian, Italian, Portuguese
I/O	
Front Panel	USB 2.0 host x2, Probe compensation
Rear Panel	USB 2.0 device, LAN: 100 Mbps EXT trigger: EXT ≤ 1.5 Vrms, EXT/5 ≤ 7.5 Vrms Aux Out: TRIG OUT 3.3 V LVCMOS; PASS/FAIL OUT 3.3 V TTI
Environmental a	nd Safety
Temperature	Operating: 0 °C to 40 °C Storage : -20 °C to 60 °C
Humidity	Operating: 85% RH, 40 °C, 24 hrs. Storage : 85% RH, 65 °C, 24 hrs
Altitude	Operating: ≤ 3000 m, Storage: ≤ 15,000 m
Power Consumption	80 W max., 50 W typical, 4 W typical in standby
Input Voltage	100 to 240 Vrms, 50/60 Hz
Electromagnetic Compatibility	EMC directive (2014/30/EU), IEC 61326-1:2012/EN61326-1:2013 (Basic)
Safety	UL 61010-1:2012/R: 2018-11; CAN/CSA-C22.2 No. 61010-1:2012/ A1:2018-11. UL 61010-2-030:2018; CAN/CSA-C22.2 No. 61010-2-030:2018.
General	
Dimensions (W x H x D)	13.9" x 8.8" x 4.4" (352 x 224 x 111 mm)
Weight	8.6 lbs (3.9 kg)
Warranty	3 Years
Included Accessories	Four passive probes, power cord, USB Cable, Certificate of Calibration
Optional Accessories	Rack mount kit (RK2560B)

3: IO-bit mode limits bandwidth to IOO MHz (typical) and reduces max memory depth by half

Specifications (cont.)

		Trigger System
Modes		Auto, Normal, Single
Trigger Level	Inte	rnal: ± 4.1 div from the center of the screen EXT: ± 0.61 V EXT/5: ± 3.05 V
Hold Off Range		By time: 8 ns to 30 s (8 ns step) By event: 1 to 10,000,000
	DC	Passes all components of the signal
CHI to CH4	AC	Blocks DC components and attenuates signals < 20 Hz
Coupling	LFRJ	Attenuates frequency components < 1.2 MHz
	HFRJ	Attenuates frequency components > 600 kHz
	Noise RJ	Increases the trigger hysteresis
	AC	Blocks DC components and attenuates signals < 8 Hz
EXT Coupling	LFRJ	Attenuates frequency components < 33 kHz
	HRFJ	Attenuates frequency components > 967 kHz
CHI to CH4 Sensitivity	Noise RJ OFF	± 0.13 div ± 0.26 div ± 0.5 div
 > 10 mV/div: 5 to 10 mV/div: ≤ 2 mV/div: 	Noise RJ ON	± 0.33 div ± 0.33 div ± 0.15 div
EXT Sensitivity		200 mVpp, DC to I0 MHz 300 mVpp, I0 MHz to 300 MHz
EXT/5 Sensitivity		I Vpp, DC to 10 MHz I.5 Vpp, 10 MHz to 300 MHz
Accuracy	CHI to CH4	± 0.2 div
Accuracy	EXT	± 0.3 div
littor	CHI to CH4	< 10 ps rms, 6 divisions pk-pk, 2 ns edge
Jitter	EXT	< 200 ps rms
Displacement		Pre-Trigger: 0 to 100% memory Delay-Trigger: 0 to 5,000 div
Zone		Up to 2 zones, Source: CHI to CH4; Property: intersect, not intersect
Serial Protocol	System	
Protocols	Options	Standard: I ² C, SPI, UART, CAN, LIN : CAN FD, FlexRay, I ² S, MIL-STD-I553B, SENT, Manchester
Decoders		2
Туре		Full duplex
Source		CHI to CH4 / D0 to DI5
Threshold		-4.1 to 4.1 div
List		I to 7 lines
Data Format		Binary, Decimal, Hex, ASCII

	Trigger Types
Edge Trigger	
Source	CHI to CH4 / EXT / (EXT/5) / AC Line / D0 to D15
Slope	Rising, Falling, Alternating
Slope Trigger	1001137, 1 001137, 1 0001130
Slope	Rising, Falling
Time Range	2 ns to 20 s, 1 ns resolution
Pulse Width Trigger	≤, ≥, in range, out of range
	+widwid
Polarity	
Time Range	2 ns to 20 s, I ns resolution
Limit Range	≤, ≥, in range, out of range
Video Trigger	NITEC BAL 720 //0 1000 //0 1000 //0
Standard	NTSC, PAL, 720p/50, 720p/60, 1080p/50, 1080p/60, 1080i/50, 1080i/60, Custom
Synchronization	Any, Select
Trigger Condition	Line, Field
Window Trigger	
Туре	Absolute, Relative
Interval Trigger	
Slope	Rising, Falling
Time Range	2 ns to 20 s, 1 ns resolution
Limit Range	\leq , \geq , in range, out of range
Dropout Trigger	
Slope	Rising, Falling
Timeout Type	Edge, state
Runt Trigger	
Polarity	Positive, Negative
Time Range	2 ns to 20 s, 1 ns resolution
Limit Range	≤, ≥, in range, out of range
Pattern Trigger	
Setting	Don't care, Low, High
Logic	AND, OR, NAND, NOR
Serial Triggers	
I ² C	Start, Stop, Restart, No Ack, EEPROM, Address & Data, Data Length
SPI	Data
UART	Start, Stop, Data, Parity Error
CAN	All, Remote, ID, ID+Data, Error
LIN	Break, Frame ID, ID+Data, Error
CAN FD	Start, Remote, ID, ID+Data, Error
FlexRay	TSS, Frame, Symbol, Errors
I ² S	Data, Mute, Clip, Glitch, Rising Edge, Falling Edge
MIL-STD-1553B	Transfer, Word, Error, Timing

Specifications (cont.)

	Serial Decoder
I ² C	
Signal	SCL, SDA
Address	7-bit, I0-bit
Decoded Frames (Max.)	2,000
SPI	
Signal	CLK, MISO, MOSI, CS
Edge Select	Rising, Falling
Chip Select	Active high, active low, clock timeout
Bit Order	LSB, MSB
Decoded Frames (Max.)	15,000
UART	
Signal	RX, TX
Data Width	5-bit, 6-bit, 7-bit, 8-bit
Parity Check	None, Odd, Even, Mark, Space
Stop Bit	I-bit, I.5-bit, 2-bit
Idle Level	High, Low
Bit Order	LSB, MSB
Decoded Frames (Max.)	15,000
CAN	
Decoded Frames (Max.)	2,000
LIN	
Package Revision	VerI.3, Ver2.0
Baud Rate	Selectable: 600/1200/2400/4800/9600/19200 bps Custom: 300 bps to 20 Mbps
Decoded Frames (Max.)	3,000
CAN FD	
Baud Rate (Nominal)	10 / 25 / 50 / 100 / 250 kbps, 1 Mbps, custom
Baud Rate (Data)	500 kbps, 1 / 2 / 5 / 8 / 10 Mbps, custom
Decoded Frames (Max.)	10,000
FlexRay	
Baud Rate (Data)	2.5 Mbps, 5 Mbps, 10 Mbps, custom
Decoded Frames (Max.)	1,000
l²S	
Signal	BCLK, WS, DATA
Audio Variant	Audio-12S, Audio-LJ, Audio-RJ
Offset Range	0 to 31
Start Bits	I to 32
Decoded Frames (Max.)	10,000
MIL-STD-1553B	
Decoded Frames (Max.)	10,000
SENT	
No. of Nibbles	3 to 8
Manchester	
Baud Rate	500 bps to 5 Mbps

Functi	on/Arbitrary Waveform Generator
Channels	I
Max. Output Frequency	50 MHz
Sampling Rate	125 Msa/s
Frequency Resolution	I μHz
Frequency Accuracy	±50 ppm
Vertical Resolution	I4-bit
Amplitude Range	-1.5 V to +1.5 V (into 50 $\Omega)$, -3 V to +3 V (into High-Z)
Waveforms	Sine, Square, Ramp, Pulse, DC, Noise, 45 Arbitrary
Output Impedance	$50 \ \Omega \pm 2\%$
Protection	Over voltage protection, Current limit
Sine	
Frequency	I µHz to 50 MHz
Offset Accuracy (I0 kHz)	\pm (1% of loffset valuel + 3 mV)
Amplitude Flatness	Compare to 10 kHz, 5 Vpp: ± 0.3 dB, ≤ 25 MHz ± 0.5 dB, > 25 MHz
SFDR	DC to I MHz: -60 dBc I MHz to 5 MHz: -55 dBc 5 MHz to 5 MHz: -50 dBc 25 MHz to 50 MHz: -40 dBc
Harmonic Distortion	DC to 5 MHz: -50 dBc 5 MHz to 25MHz: -45 dBc 25 MHz to 50 MHz: -40 dBc
Square / Pulse	
Frequency	I μHz to I0 MHz
Duty Cycle	1% to 99%
Edge	< 24 ns (10% to 90%)
Overshoot	< 3% (typical, 1 kHz, 1 Vpp)
Pulse Width	> 50 ns
Jitter (cycle to cycle)	< 500 ps + 10 ppm
Ramp	
Frequency	I μHz to 300 kHz
Linearity	< 0.1% of pk-pk (typical, 1 kHz, 1 Vpp, 50% symmetry)
DC	
Offset Range	\pm 1.5 V (into 50 Ω), \pm 3 V (into Hi-Z)
Accuracy	\pm (1% of loffset valuel + 3 mV)
Noise	
Bandwidth (-3 dB)	> 25 MHz
Arbitrary	
Frequency	I μHz to 5 MHz
Waveform Memory	l6 kpts DDs memory
Sample Rate	125 MSa/s
Wave Import	From U-disk or directly from waveform data of analog channels

Specifications (cont.)

	Waveform Analysis
Cursors	
Source	CHI to CH4, D0 to DI5, Math, Ref
Туре	Manual: Time XI, X2, (XI – X2), (Ι/ΔΤ) Voltage/Current: YI, Y2, (YI – Y2) Track: Time XI, X2, (XI – X2)
Waveform Me	asurements
Source	CHI to CH4, D0 to DI5, FI to F2, Ref, History, ZI to Z4
Mode	Simple, Advanced
Range	Screen, Gate
Vertical	Max, Min, Pk-Pk, Top, Base, Amplitude, Mean, Cycle Mean, Stdev, Cycle Stdev, RMS, Cycle RMS, Median, Cycle Median, FOV, FPRE, ROV, RPRE, Level@Trigger
Horizontal	Period, Frequency, Time@max, Time@min, +Width, -Width, 10-90% Rise time, 90-10% Fall time, Rise time, Fall time, +Burst Width, -Burst Width, +Duty Cycle, -Duty Cycle, Delay, Time@ Middle, Cycle-Cycle jitter
Miscellaneous	+Area@DC, -Area@DC, Area@DC, Absolute Area@DC, +Area@ AC, -Area@AC, Area@AC, Absolute Area@AC, Cycles, Rising Edges, Falling Edges, Edges, Positive pulses, Negative pulses
Delay	Phase, FRFR, FRFF, FFFR, FFFF, FRLR, FRLF, FFLR, FFLF, Skew
Statistics	Current, Mean, Min, Max, Stdev, Count, Histogram, Trend
Waveform Ma	th
Trace	FI, F2
Source	CHI to CH4, ZI to Z4, FI to F2
Operation	+, -, *, ÷, FFT, d/dt, $\int dt$, $$, Identity, Negation, IxI, Sign, e ^x , I0 ^x , In, Ig, Interpolation, Average, ERES, Formula Editor
FFT	Length: Selectable from 2 kpts to 2 Mpts Window: Rectangular, Blackman, Hanning, Hamming, Flattop Display: Full Screen, Split, Exclusive Mode: Normal, Max hold, Average Tools: Peaks, Markers
Search	
Source	CHI to CH4, History
Mode	Edge, Slope, Pulse, Interval, Runt
Copy Setting	Copy from trigger, Copy to trigger
Mask Test	
Source	CHI to CH4, ZI to Z4
Mask Generator	Auto: Creates mask based off reference signal Custom: Create masks using coordinate system
Test Speed	80,000 frames/s (typical)

Bode Plot	
Source	CHI to CH4
Supported Sources	Built-in waveform generator 4050B and 4060B series waveform generators
Sweep Туре	Simple, Vari-level
Frequency	Mode: Linear, Logarithmic Range: 10 Hz to 120 MHz
Measure	Upper cutoff frequency, Lower cutoff frequency, Bandwidth, Gain margin, Phase margin
Power Analysis	
Measurements	Power quality, Current harmonics, Inrush current, Switching loss, Slew rate, Modulation, Output ripple, Turn on/turn off, Transient response, PSSR, Efficiency
Counter	
Source	CHI to CH4
Frequency Resolution	7 digits
Totalizer	Counter on edges, support Gate and Trigger
Navigate	
Туре	Search event, Time, History frame

MSO (Digital Channels)	
Model Number	LA2560B
Upgradeable from DSO	Yes
MSO Channels	16 Ch: D0 to D7, D8 to D15
Sample Rate	500 MSa/s (Maximum)
Memory Depth	50 Mpts/ch
Pulse Detect	3.3 ns
Level Range	-10 V to +10 V
Logic Type	TTL, CMOS, LVCMOS3.3, LVCMOS2.5, Custom
Skew	D0 to D15: \pm I sampling interval Digital to Analog: \pm (I sampling interval + I ns)

Specifications (cont.)

Ordering information

Install the MSO and decode licenses at any time or try before you buy with the 30 day trial license on each model. Any DSO model in the 2560B Series can be upgraded to an MSO. Installation is quick and easily done within the oscilloscope menu. To purchase a license key, please fill out the <u>license request form</u> or visit the 2560B Series accessories page.

Optional software upgrades

Model Number	Description	DSO Model	MSO Model
LP2560	16 channel digital logic probe	Optional	Standard
LA2560B	Logic analyzer license	Optional	Standard
CFD2560B	CAN FD license	Optional	Optional
FR2560B	FlexRay license	Optional	Optional
I2S2560B	I ² S license	Optional	Optional
MS12560B	MIL-STD-1553B license	Optional	Optional
SM2560B	SENT and Manchester license	Optional	Optional



About B&K Precision

For more than 70 years, B&K Precision has provided reliable and value-priced test and measurement instruments worldwide.

Our headquarters in Yorba Linda, California houses our administrative and executive functions as well as sales and marketing, design, service, and repair. Our European customers are most familiar with B&K through our French subsidiary, Sefram. Engineers in Asia know us through our B+K Precision Taiwan operation. The independent service center in Singapore services customers in Singapore, Malaysia, Vietnam, and Indonesia.



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B&K Precision Corporation is an ISO9001 registered company employing traceable quality management practices for all processes including product development, service, and calibration.

ISO9001:2015

Certification body NSF-ISR Certificate number 6Z241-IS8



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