

BIGGEST TOUCH. BEST VALUE.



WaveSurfer 3000z

100 MHz – 1 GHz Oscilloscopes



10.1" Capacitive Touch Screen

20 Mpts Memory

Powerful, Deep Toolbox

The WaveSurfer 3000z has
a 10.1" capacitive touch display,
the longest memory, and the
deepest toolbox – all at an affordable price.



BIGGEST TOUCH. BEST VALUE.

WaveSurfer 3000z

Biggest Touch



Best Value 30% Larger



Digital Voltmeter Logic Analysis with 16 Mixed Signal Capabilities

20 Mpts Powerful Triggering Superior Measurement Tools

History Mode Anomaly Detection

WaveScan LabNotebook Waveform Generator

Multi-Instrument Capabilities (AFG)

Protocol Analysis with Serial Trigger and Decode

Pass/Fail Deep Toolbox

Testing Advanced Math Fast Waveform Update



- 10.1" Capacitive Touch Screen
- 20 Mpts Memory
- 3 Powerful, Deep Toolbox



Faster Time to Insight

Insight alone is not enough.

Markets and technologies change too rapidly.

The **timing** of **critical design** decisions is significant.

Faster Time to Insight is what matters.



THE WAVESURFER 3000Z ATTRIBUTES

The WaveSurfer 3000z provides the Most Advanced User Interface (MAUI) through a 10.1" capacitive touch screen. It promotes true versatility with 20 Mpts of memory, multi-instrument capabilities, a powerful, deep toolbox, and 100 MHz - 1 GHz of bandwidth.

Key Attributes

- 1. 10.1" widescreen capacitive touch screen display
- 2. MAUI Most Advanced User Interface
- **3.** Waveform Control Knobs for channel, zoom, math and memory traces
- **4.** "Push" Knobs push functionality provides shortcuts to common actions
- **5.** Dedicated buttons to quickly access popular debug tools.
- **6.** Mixed Signal Capability 16 channel mixed signal capability
- **7.** Easy connectivity with an ethernet and four USB 2.0 Ports
- **8.** Rotating and tilting feet for four different viewing positions







- WaveSource Ouput for Built-in Function Generator
- **10.** Micro SD Port 16 GB (or larger) micro SD card installed standard
- **11.** External Monitor DB-15 connector (Support resolution of 1024 x 600)
- **12.** USBTMC (Test and Measurement Class) over USB 2.0 for remote connectivity
- 13. Small Footprint



WAVESURFER 3000z AT A GLANCE

Key Features

100 MHz, 200 MHz, 350 MHz, 500 MHz and 1 GHz bandwidths

Up to 4 GS/s sample rate

Long Memory - up to 20 Mpts

10.1" capacitive touch screen display

16 Digital Channel MSO option

MAUI - Most Advanced User Interface

- Designed for Touch
- Built for Simplicity
- Made to Solve

Advanced Anomaly Detection

- Fast Waveform Update
- History Mode Waveform Playback
- WaveScan Search and Find

Multi-Instrument Capabilities

- Protocol Analysis Serial Trigger and Decode
- Waveform Generation Built-in Function Generator
- Digital Voltmeter and Frequency Counter

Future Proof

- Upgradeable Bandwidth
- Field Upgradable Software and Hardware Options



Superior User Experience

MAUI is the most advanced oscilloscope user interface. It is designed for touch, built for simplicity, and made to solve.

Advanced Anomaly Detection

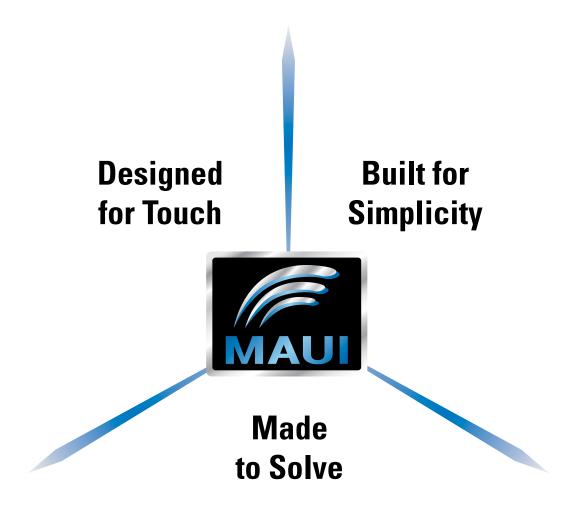
A fast waveform update rate, used in conjunction with history mode, WaveScan, sequence mode, and mask testing facilitates outstanding waveform anomaly detection.

Biggest Touch Display

A large capacitive touch screen enables accessible and responsive touch operation. The 10.1" display is 30% larger than competitive offerings, providing more waveform viewing area.

Powerful, Deep Toolbox

The standard collection of math, measurement, debug, and documentation tools provides unsurpassed analysis capabilities.



Designed for Touch

MAUI is designed for touch. Operate the oscilloscope just like a phone or tablet with the most unique touch screen features on any oscilloscope. All important controls are always one touch away. Touch the waveform to position or zoom in for more details using intuitive actions.

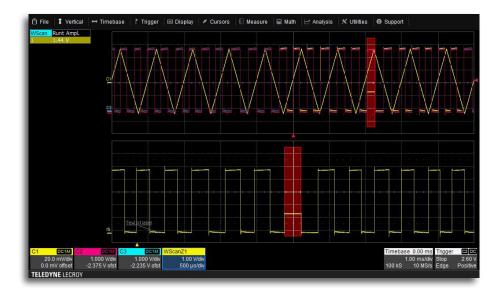
Built for Simplicity

MAUI is built for simplicity. Basic waveform viewing and measurement tools as well as advanced math and analysis capabilities are seamlessly integrated in a single user interface. Time saving shortcuts and intuitive dialogs simplify setup and shorten debug time.

Made to Solve

MAUI is made to solve. A deep set of integrated debug and analysis tools help identify problems and find solutions quickly. Unsurpassed integration provides critical flexibility when debugging. Solve problems fast with powerful analysis tools.

ADVANCED ANOMALY DETECTION



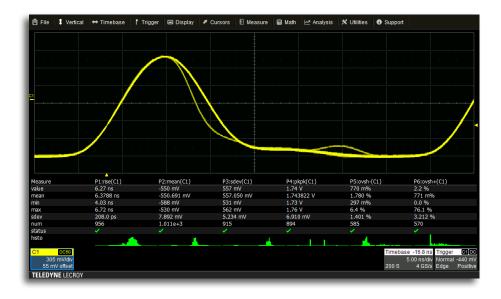
WaveScan Advanced Search

- Locate unusual events in a single capture or scan for an anomalies across many acquisitions
- More than 20 modes can be applied to analog or digital channels



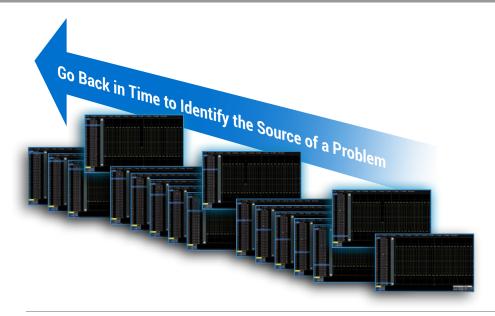
Pass/Fail Mask Testing

- Mask testing to quickly identify anomalies and mark their location.
- A history of these pass/fail results can be displayed



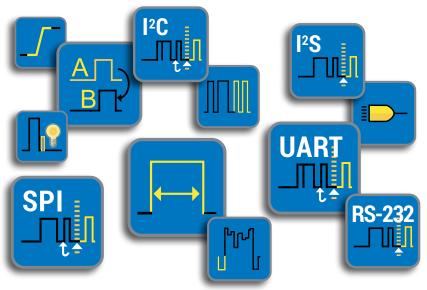
Fast Waveform Update

- An update rate of over 130,000 waveforms per second will easily display random or infrequent events
- Changes over time can be seen with the intensity graded persistence display



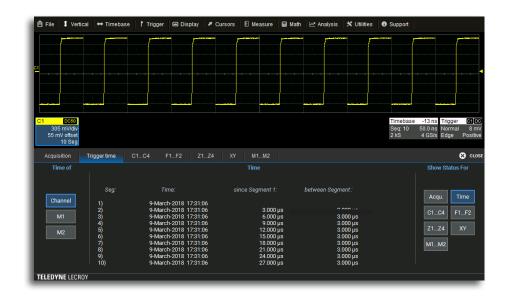
History Mode Waveform Playback

- View previous waveforms to discover past anomalies
- Use cursors and measurement parameters to quickly identify the source of problems
- History mode is always enabled and accessible through the click of a button



Powerful Triggering

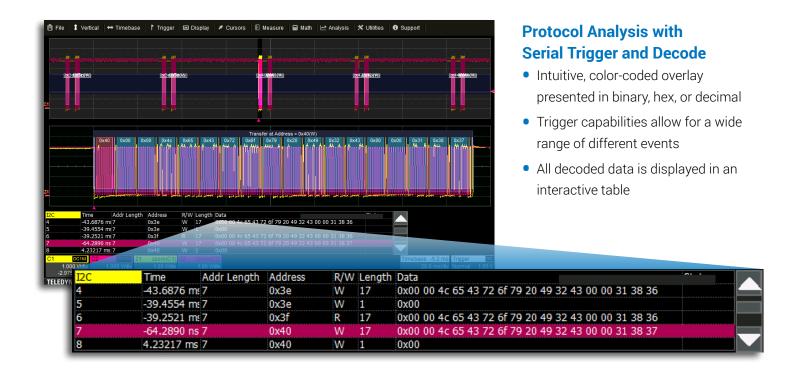
- Basic triggering such as edge or width can be used for everyday solutions
- Qualified triggering enables the ability to trigger across multiple channels
- Powerful logic triggering can be setup to catch a parallel pattern
- Smart triggers such as runt, dropout, or interval help isolate anomalies quickly
- Serial data triggering adds protocol specific triggers



Advanced Waveform Capture with Segmented Memory

- Save waveforms into segmented memory
- Capture fast pulses in quick succession or events separated by long time intervals
- Combine Sequence mode with advanced triggers to isolate rare events

MULTI-INSTRUMENT CAPABILITIES





The DVM license key can be downloaded at no charge from *teledynelecroy.com/redeem/dvm*.

Precise Measurements with Digital Voltmeter

- 4-digit digital voltmeter
- 5-digit frequency counter
- Any channel can be selected as a source
- Voltage readings can be set to DC, DC RMS, or AC RMS
- Measurements will continue to be updated even when triggering is stopped

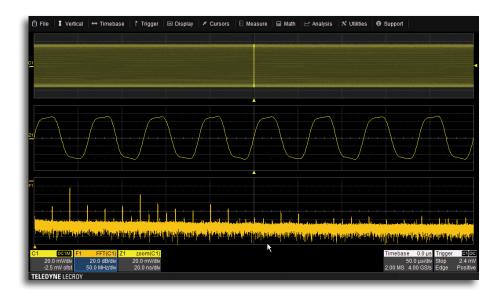




Waveform Generation with Built-in Function Generator

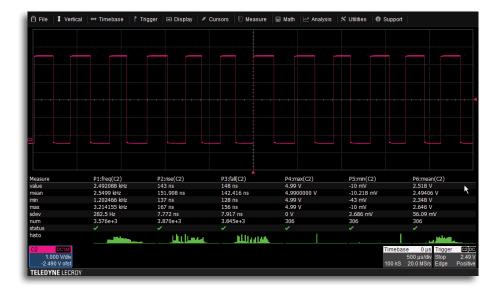
- Frequencies of up to 25 MHz
- Waveform Options: sine, square, pulse, ramp, triangle, noise and DC waveforms
- Rear panel BNC output
- Saved waveforms can be uploaded into the WaveSource to generate arbitrary waveforms

POWERFUL, DEEP TOOLBOX



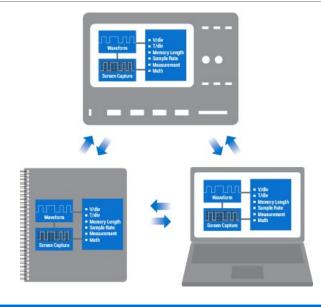
Advanced Math Capabilities

- A deep set of 20 math functions provide quick insight into waveforms
- Dedicated Grid for Math Traces
- Any Channel, Measurement, or Analysis Package can have a math function applied



Superior Measurement Tools

- 24 measurement parameters
- Additional statistics and histicons can be applied to each parameter
- Trends can be displayed for any measurement



LabNotebook Documentation Tool

- Save all displayed waveforms, oscilloscope setup file, and a screen image with a single button press
- Recall LabNotebook files onto the oscilloscope
- View the LabNotebook files on a PC using WaveStudio

Teledyne LeCroy offers an extensive range of probes to meet virtually every probing need.

ZS Series High Impedance Active Probes (1 GHz - 1.5 GHz)



The active voltage probe can become the everyday probe for all different types of signals and connection points.

Differential Probes (200 MHz - 1.5 GHz)



These active differential probes are ideal for applications such as automotive electronics and data communications.

Active Voltage/Power Rail Probe (4 GHz)



The Active Rail Probe is specifically designed to probe a low impedance power/voltage rail.

High Voltage Fiber Optically-isolated Probes



The HVFO108 is ideal for measurement of small signals floating on an HV bus in power electronics designs or for EMC, EFT, ESD, and RF immunity testing sensor monitoring.

High Voltage Differential Probes (120 MHz)



HVDs are rated for wide differential voltage swings - ideal for power electronics circuits.

High Voltage Passive Probes



High Voltage Single-ended passive probes that are ideal for lightning/surge or EFT testing, or for probing in-circuit beyond the range of a LV-rate passive probe.

Current Probes (100 MHz)



Current probes with peak currents of 700 A and sensitivities to 1 mA/div. Ideal for component or power conversion system input/output measurements.

Probe and Current Sensor Adapters



TPA10 adapts supported Tektronix TekProbe-compatible probes to Teledyne LeCroy ProBus interface.

SPECIFICATIONS

	WaveSurfer 30147	WaveSurfer 30247	WaveSurfer 3034z	WaveSurfer 30547	WaveSurfer 3104z
Analog - Vertical	Traveourier 50142	TraveSurier 30242	Tuveouner Just2	Traveourier 30342	Traveourier 5104
Analog Bandwidth @ 50Ω (-3dB)	100 MHz	200 MHz	350 MHz	500 MHz	1 GHz
Rise time	3.5 ns (typical)	1.75 ns (typical)	1 ns (typical)	800 ps (typical)	430 ps (typical)
Input Channels	4	(-)	2 (3) /	(-)	1 2 (2)
Vertical Resolution	8-bits; up to 11-bits with	h enhanced resolution (I	ERES)		
Sensitivity		r; 1 MΩ: 1 mV/div - 10 V/			
DC Gain Accuracy	±(1.5%) Full Scale, Offset at 0V, > 5mV/div; ±(2.5%) < 5 mV/div				
BW Limit		MHz		20 MHz, 200 MHz	
Maximum Input Voltage	50 Ω: 5 Vrms, ±10 V Peak; 1 MΩ: 400 V max (DC + Peak AC ≤ 10 kHz)				
Input Coupling	50 Ω : DC, GND; 1 M Ω : AC, DC, GND				
Input Impedance	50 Ω ±2.0%, 1 MΩ ±2.0% 16 pF				
Offset Range	50 Ω: 1 mV - 19.8 mV: ±2 V, 20 mV - 100 mV: ±5 V, 102 mV - 198 mV: ±20 V, 200 mV - 1 V: ±50 V 1 MΩ: 1 mV - 19.8 mV: ±2 V, 20 mV - 100 mV: ±5 V, 102 mV - 198 mV: ±20 V, 200 mV - 1 V: ±50 V, 1.02 V - 1.98 V: ±200 V, 2 V - 10 V: ±400 V				
Offset Accuracy	±(1.0% of offset value +				
Analog - Acquisition					
Sample Rate (Single-shot)	1 GS/s		2 G	iS/s	
cample hate (chighe chet)	(2 GS/s interleaved)			iterleaved)	
Sample Rate (Repetitive)	50 GS/s			,	
Standard Memory (4 Ch / 2 Ch)	10 Mpts / 20 Mpts				
Acquisition Modes		indom Interleaved Samp	olina)	,	
, toquiottion modes			gments with 1µs minim	um interseament time)	
Real Time Timebase Range	5 ns/div - 100 s/div		100 s/div	1 ns/div - 100 s/div	500 ps/div - 100 s/di
RIS Mode Timebase Range	5 ns/div - 10 ns/div		10 ns/div	1 ns/div - 10 ns/div	500 ps/div - 10 ns/di
Roll Mode Timebase Range	Up to 100 s/div (roll mo	de is user selectable at	≥ 50 ms/div)		•
Timebase Accuracy	±10 ppm measured ove	er > 1ms interval			
Digital - Vertical and Acquisit	ion (WS3K-MSO Ontio	n Only)			
Input Channels	16 Digital Channels	iii Oiliy)			
Threshold Groupings	Pod 2: D15 - D8, Pod 1: D	7 - DO			
Threshold Selections	TTL(+1.4V), 5V CMOS (+2.5V), ECL (-1.3V) or User Defined				
Maximum Input Voltage	±30V Peak				
Threshold Accuracy	±(3% of threshold setting	a + 100mV)			
Input Dynamic Range	±20V	, , , , , , , , , , , , , , , , , , , ,			
Minimum Input Voltage Swing	500mVpp				
Input Impedance (Flying Leads)	100 kΩ 5 pF				
Maximum Input Frequency	125 MHz				
Sample Rate	500 MS/s				
Record Length	10MS - 16 Channels			,	
Minimum Detectable Pulse Width	4 ns				
Channel-to-Channel Skew	± (1 digital sample inter	rval)			
User defined threshold range	±10V in 20mV steps				
Trigger System					
Modes	Auto, Normal, Single, St	COD			
Sources			and level unique to eac	h source (except for line	trigger)
Coupling	DC, AC, HFREJ, LFREJ		•		
Pre-trigger Delay	0-100% of full scale				
Post-trigger Delay	0-10,000 Divisions				
Hold-off	10ns up to 20s or 1 to 1	100,000,000 events			
Internal Trigger Level Range	±4.1 Divisions				
External Trigger Level Range	Ext: ±610mV, Ext/5: ±3.0				
Trigger Types			ECAM, HDTV - 720p, 108		
	Interval (Signal or Patte	ern), Dropout, Qualified (S	State or Edge); External :	and Ext/5 support edge	trigger only.
Measure, Zoom and Math To	ols				
Measurement Parameters		parameters can be calc	culated at one time on a	nv waveform: Amplitude	e. Area. Base. Delay.
	Up to 6 of the following parameters can be calculated at one time on any waveform: Amplitude, Area, Base, Delay, Duty Cycle, Fall Time (90%–10%), Fall Time (80%–20%), Frequency, Maximum, Mean, Minimum, Overshoot+, Overshoot-, Peak-Peak, Period, Phase, Rise Time (10%–90%), Rise Time (20%–80%), RMS, Skew, Standard Deviation, Top, Width+, Width Statistics and histicons can be added to measurements. Measurements can be gated.				
Zooming	Use front panel QuickZo	oom button, or use touc	h screen or mouse to dr	aw a box around the zo	om area.
Math Functions	Up to 2 of the following Average, Derivative, Enh	functions can be calcul nanced Resolution, Enve	lated at one time: Sum, I elope, Floor, Integral, Inve sts with power spectrum	Difference, Product, Rat ert, Reciprocal, Rescale,	o, Absolute Value, Roof, SinX/x, Square,
Probes					
Standard Prohes	One PP010 (5m	m) per channel	One	PP020 (5mm) per cha	nnel

One PP019 (5mm) per channel

BNC and Teledyne LeCroy ProBus for Active voltage, current and differential probes

One PP020 (5mm) per channel

Standard Probes

Probing System

SPECIFICATIONS

		Waveourier oor 12 Waveourie	Joz iz Waresarie. Jo	34z WaveSurfer 3054z WaveSurfer 3104z		
Display System		10.1"ida a arraga a arragitiva tavvala ar				
Display Size		10.1" widescreen capacitive touch so	ereen			
Display Resolution		1024 x 600				
Connectivity						
Ethernet Port		10/100Base-T Ethernet interface (RJ-45 connector)				
Removable Storage		(1) MicroSD Port - 16 GB micro SD card installed standard				
USB Host Ports		(4) USB 2.0 Ports Total – (2) Front USB 2.0 Ports				
USB Device Port		(1) USBTMC				
GPIB Port (Optional)		Supports IEEE - 488.2				
External Monitor Port		Standard DB-15 connector (support	resolution of 1024x600)			
Remote Control		Via Windows Automation, or via Teledyne LeCroy Remote Command Set				
Network Communicat	ion	VICP and LXI compatible				
Standard						
Power Requiremen	te					
Voltage		100 - 240 VΔC + 10% at 50-60 Hz +/-	5%: 100 - 120 VΔC + 10% at 4	00 Hz +/- 5%: Automatic ΔC Voltage Selection		
Power Consumption (Nominal)	100 - 240 VAC ± 10% at 50-60 Hz +/-5%; 100 - 120 VAC ± 10% at 400 Hz +/- 5%; Automatic AC Volt 80 W / 80 VA				
Power Consumption (150 W / 150 VA (with all PC periphera	als digital leadset and active	prohes connected to 4 channels)		
Tower consumption (iviaxy	100 W / 100 W (With all 1 0 peripher	alo, digital leadoet and delive	probes connected to 4 charmers)		
Environmental						
Temperature		Operating: 0 °C to 50 °C; Non-Operation				
Humidity Operating: (non-conde		Operating: 5% to 90% relative humidi	rating: 5% to 90% relative humidity (non-condensing) up to ≤ 30 °C, Upper limit derates to 50% relative humidity			
		(non-condensing) at +50 °C				
		Non-Operating: 5% to 95% relative hu				
Altitude		Operating: 3,048 m (10,000 ft) max a	$t \le 25C$; Non-Operating: Up to	12,192 meters (40,000 ft)		
Physical						
Dimensions (HWD)		10.63"H x 14.96"W x 4.92"D (270 mm x 380 mm x 125 mm)				
Weight		4.81 kg (10.6 lbs)	12 300 11111 2 123 11111)			
•		4.01 kg (10.0 lb3)				
Regulatory						
CE Certification		Low Voltage Directive 2014/35/EU; EN 61010-1:2010, EN 61010-2-030:2010				
		EMC Directive 2014/30/EU; EN 6132				
UL and cUL Listing		UL 61010-1, UL 61010-2-030:2010, 3	rd Edition; CAN/CSA C22.2 N	o. 61010-1-12		
Digital Voltmeter (o	ntional)					
Functions	ptional	ACrms, DC, DCrms, Frequency				
Posolution						
Resolution Measurement Rate		ACV/DCV: 4 digits, Frequency: 5 digit		papand		
Measurement Rate	range	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u	pdate on the display 5 times/			
	range	ACV/DCV: 4 digits, Frequency: 5 digit	pdate on the display 5 times/			
Measurement Rate Vertical Settings Autor		ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/			
Measurement Rate Vertical Settings Autor WaveSource Functi		ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/: tings to maximize the dynam			
Measurement Rate Vertical Settings Autor WaveSource Funct General	ion Generat	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/s tings to maximize the dynam DC Offset	ic range of measurements		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency	ion General	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/stings to maximize the dynam DC Offset Range (DC)	ic range of measurements ±3V (HiZ); ±1.5V (50 Ω)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels	ion General	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/s tings to maximize the dynam DC Offset	ic range of measurements		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate	ion General	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/stings to maximize the dynamics of the dynamics o	ic range of measurements ±3V (HiZ); ±1.5V (50 Ω)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform	ion General	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/stings to maximize the dynamic of the	to range of measurements ±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length	25 MHz 1 125 MS/s 16 kpts	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/stings to maximize the dynamical of the dynam	to range of measurements $ \pm 3 \text{V (HiZ); } \pm 1.5 \text{V (50 } \Omega \text{)} $ $ \pm (1\% \text{ of offset value} + 3 \text{ mV} \text{)} $ $ 50 \ \Omega \pm 2\% $		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution	25 MHz 1 125 MS/s 16 kpts 1 µHz	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set	pdate on the display 5 times/stings to maximize the dynamic black by times for the dynamic bl	to range of measurements ±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set cor (optional)	pdate on the display 5 times/stings to maximize the dynamical of the dynam	tic range of measurements		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ);	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set tor (optional)	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection	tic range of measurements $\frac{\pm 3 \text{V (HiZ)}; \pm 1.5 \text{V (50 }\Omega)}{\pm (1\% \text{ of offset value} + 3 \text{ mV)}}$ $\frac{50 \ \Omega \pm 2\%}{\text{Short-circuit protection}}$		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ);	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set cor (optional)	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity	ic range of measurements $\frac{\pm 3 \text{V (HiZ); } \pm 1.5 \text{V (50 }\Omega)}{\pm (1\% \text{ of offset value} + 3 \text{ mV)}}$ $\frac{50 \ \Omega \pm 2\%}{\text{Short-circuit protection}}$		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic	ic range of measurements		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range Waveform Types	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range Waveform Types Frequency Specificati	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) $\pm 1.5V~(50~\Omega)$ are, Pulse, Ramp, Noise, DC	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (c) @1.265Vpp -60dBc -55dBc -50dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range Waveform Types Frequency Specification Sine	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz MHz	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz 5 MHz	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (c) @1.265Vpp -60dBc -55dBc -50dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range Waveform Types Frequency Specification Sine Square/Pulse Ramp/Triangular	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squalion 1 µHz - 25 1 µHz - 10	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz MHz 0 KHz	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz Harmonic Distortion of	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (S) @1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Resolution Vertical Range Waveform Types Frequency Specificati Sine Square/Pulse Ramp/Triangular	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squalion 1 µHz - 25 1 µHz - 10 1 µHz - 30	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz MHz 0 KHz	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz Harmonic Distortion of DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specificati Sine Square/Pulse Ramp/Triangular Noise	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squation 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz MHz 0 KHz	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz Harmonic Distortion of DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz Square/Pulse	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (c) @1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc @1.265Vpp -50dBc -45dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specificati Sine Square/Pulse Ramp/Triangular Noise Resolution Accuracy	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squation 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3) 1 µHz	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) Irre, Pulse, Ramp, Noise, DC MHz MHz MHz 0 KHz 3dB)	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz Harmonic Distortion of DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz 4 MHz - 25 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz 8 MHz - 25 MHz 9 MHz - 25 MHz 1 MHz - 25 MHz 8 MHz - 25 MHz 9 MHz - 25 MHz 1 MHz - 25 MHz 9 MHz - 25 MHz 1 MHz - 25 MHz 2 MHz - 25 MHz 3 MHz - 25 MHz 8 Rise/fall time	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc -45dBc -45dBc -45dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Sine Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squation 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3) 1 µHz	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set sor (optional) ±1.5V (50 Ω) Ire, Pulse, Ramp, Noise, DC MHz MHz MHz 0 KHz 3dB) over temperature	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz Harmonic Distortion of DC - 5 MHz 6 MHz 7 MHz 7 MHz 8 MHz 8 MHz 9 MHz 9 MHz 9 MHz 9 MHz 1 MHz 9 MHz 8 Square/Pulse 8 Rise/fall time 9 Overshoot	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc @1.265Vpp -50dBc -45dBc -45dBc		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Sine Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging Output Specification	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa ion 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3) 1 µHz - 30 25 mHz (-3) 25 mm/ye	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set (or (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz 0 KHz 3dB) over temperature ear, first year	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz - 25 MHz Harmonic Distortion of DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz Square/Pulse Rise/fall time Overshoot Pulse Width	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc 24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min.		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging Output Specification	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa ion 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3 1 µHz - 30 25 mHz (-3 1 µHz - 30 4 mVpp - 6	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set (or (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz O KHz 3dB) over temperature ear, first year	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz Harmonic Distortion of DC - 5 MHz 6 MHz 7 MHz 7 MHz 8 MHz 8 MHz 9 MHz 9 MHz 9 MHz 9 MHz 1 MHz 9 MHz 8 Square/Pulse 8 Rise/fall time 9 Overshoot	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) @1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc @1.265Vpp -50dBc 24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging Output Specification Amplitude Vertical Accuracy	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa ion 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3) 1 µHz - 30 25 mHz (-3) 1 µHz - 30 4 mVpp - 6 ±(0.3dB +	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set (or (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz O KHz 3dB) over temperature ear, first year	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz - 25 MHz Harmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz Farmonic DIstortion (DC	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc 24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min.		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging Output Specification	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa ion 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3 1 µHz - 30 25 mHz (-3 1 µHz - 30 4 mVpp - 6	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set (or (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz O KHz 3dB) over temperature ear, first year	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz - 25 MHz Harmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz The Covershoot Pulse Width Jitter Ramp/Triangle	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (S) @1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc -45dBc -45dBc 24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min. 500ps + 10ppm of period (RMS cycle to cycle)		
Measurement Rate Vertical Settings Autor WaveSource Funct General Max Frequency Channels Sample Rate Arbitrary Waveform Length Frequency Resolution Vertical Range Waveform Types Frequency Specification Square/Pulse Ramp/Triangular Noise Resolution Accuracy Aging Output Specification Amplitude Vertical Accuracy	25 MHz 1 125 MS/s 16 kpts 1 µHz 14-bit ±3V (HiZ); Sine, Squa ion 1 µHz - 25 1 µHz - 10 1 µHz - 30 25 MHz (-3) 1 µHz - 30 25 mHz (-3) 1 µHz - 30 4 mVpp - 6 ±(0.3dB +	ACV/DCV: 4 digits, Frequency: 5 digit 100 times/second, measurements u Automatic adjustment of vertical set (or (optional) ±1.5V (50 Ω) are, Pulse, Ramp, Noise, DC MHz MHz O KHz 3dB) over temperature ear, first year	DC Offset Range (DC) Offset Accuracy Waveform Output Impedance Protection Sine Spectrum Purity SFDR (Non Harmonic DC-1 MHz 1 MHz - 5 MHz 5 MHz - 25 MHz Harmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz 5 MHz - 25 MHz Farmonic Distortion (DC - 5 MHz Farmonic DIstortion (DC	±3V (HiZ); ±1.5V (50 Ω) ±(1% of offset value + 3 mV) 50 Ω ± 2% Short-circuit protection (a) (b) (@1.265Vpp -60dBc -55dBc -50dBc @1.265Vpp -50dBc 24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min.		

ORDERING INFORMATION

Product Description	Product Code
WaveSurfer 3000z Oscilloscopes	
100 MHz, 2 GS/s, 4 Ch, 10 Mpts/Ch with	WaveSurfer 3014z
10.1" Capacitive Touch Screen Display	
20 Mpts /Ch in interleaved mode	
200 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with	WaveSurfer 3024z
10.1" Capacitive Touch Screen Display	
20 Mpts /Ch in interleaved mode	
350 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with	WaveSurfer 3034z
10.1" Capacitive Touch Screen Display	
20 Mpts /Ch in interleaved mode	
500 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with	WaveSurfer 3054z
10.1" Capacitive Touch Screen Display	
20 Mpts /Ch in interleaved mode	
1 GHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with	WaveSurfer 3104z
10.1" Capacitive Touch Screen Display	
20 Mpts /Ch in interleaved mode	
Included with Standard Configurations	

÷10 Passive Probe (Total of 1 Per Channel), 1 Micro SD card (Installed), Micro SD card adapter, Protective Front Cover, Getting Started Guide, Commercial NIST Traceable Calibration with Certificate, Power Cable for the Destination Country, 3-year Warranty

General Accessories

External GPIB Accessory	USB2-GPIB
Soft Carrying Case	WS3K-SOFTCASE
Rack Mount Accessory	WS3K-RACK

Multi-Instrument Options

mait motament options	
MSO software option and 16 Channel Digital probe lea	adset WS3K-MS0
MSO License (MS Probe Not Included)	WS3K-MSO-LICENSE
Function Generator Option	WS3K-FG
Spectrum Analyzer for WaveSurfer 3000z	WS3K-SPECTRUM-1
Audiobus Trigger and Decode Option for I 2 S, LJ, RJ, and TDM	WS3K-Audiobus TD
CAN and LIN Trigger and Decode Option	WS3K-AUTO
CAN FD Trigger and Decode Option	WS3K-CAN FDbus TD
I ² C, SPI, UART and RS-232 Trigger and Decode Option	WS3K-EMB
FlexRay Trigger and Decode Option	WS3K-FlexRaybus TD
Power Analysis Option	WS3K-PWR

Product Description	Product Code
Probes	
250 MHz Passive Probe 10:1, 10 MΩ	PP019
500 MHz Passive Probe 10:1, 10 MΩ	PP020
700 V, 15 MHz High-Voltage Differential Probe	AP031
Power/Voltage Rail Probe. 4 GHz bandwidth,	RP4030
1.2x attenuation, ±30V offset, ±800mV	
	RP4000-BROWSER
1,500 V, 120 MHz High-Voltage Differential Probe	HVD3106A
1kV, 80 MHz High Voltage Differential Probe with 6m cable	HVD3106A-6M
, - 3 3	HVD3106A-NOACC
without tip Accessories	/201004
1,500 V, 25 MHz High-Voltage Differential Probe	HVD3102A
,	HVD3102A-NOACC
tip Accessories 2kV, 120 MHz High Voltage Differential Probe	LIV/D2206 A
2kV, 80 MHz High Voltage Differential Probe with 6m cable	HVD3206A 6M
2kV, 400 MHz High Voltage Differential Probe 6kV, 100 MHz High Voltage Differential Probe	HVD3220 HVD3605A
High Voltage Fiber Optic Probe, 150 MHz	HVF0108
(requires accessory tip)	HVFUTU8
±1V (1x) Tip Accessory for HVF0103	HVF0100-1X-TIP
±5V (5x) Tip Accessory for HVF0103	HVF0100-5X-TIP
	HVF0100-20X-TIP
30 A; 100 MHz Current Probe – AC/DC; 30 A _{rms} ; 50 A _{peak} P	
30 A; 100 MHz High Sensitivity Current Probe – AC/DC;	CP031A
30 A _{rms} ; 50 A _{peak} Pulse	01 001A
30 A; 50 MHz Current Probe – AC/DC; 30 A _{rms} ; 50 A _{peak} Pul	lse CP030
30 A, 10 MHz Current Probe - AC/DC, 30 A rms, 50 A _{Peak} Pu	
3 meter cable	
30 A; 50 MHz High Sensitivity Current Probe – AC/DC; 30 A	A _{rms;} CP030A
50 A _{peak} Pulse	
150 A; 10 MHz Current Probe – AC/DC; 150 A _{rms;} 500 A _{peal}	
150 A, 5 MHz Current Probe - AC/DC, 150 A rms, 500 A _{Peak} Pulse, 6 meter cable	CP150-6M
500 A; 2 MHz Current Probe – AC/DC; 500 A _{rms} ; 700 A _{peak}	Pulse CP500
Deskew Calibration Source for CP031, CP030 and AP015	DCS025
500 MHz Differential Probe	AP033
200 MHz, 3.5 pF, 1 MΩ Active Differential Probe, ±20 V,	ZD200
60V common-mode	20200
1 GHz, 1.0 pF, 1 MΩ Active Differential Probe, ±8 V,	ZD1000
10V common-mode	
$1.5~\text{GHz}$, $1.0~\text{pF}$, $1~\text{M}\Omega$ Active Differential Probe, $\pm 8~\text{V}$,	ZD1500
10V common-mode	
1 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe	ZS1000
1.5 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe	ZS1500
100:1 400 MHz 50 MΩ 1 kV High-voltage Probe	HVP120
2 kV HV Probe, 6 kV overvoltage capability	PPE6KV-A
500 MHz 60 V Common Mode Differential Probe. Includes standard set of leads and tips.	DL05-HCM
1 GHz 60 V Common Mode Differential Probe.	DL10-HCM
Includes standard set of leads and tips.	5210110W
Probe Adapters	
TekProbe to ProBus Probe Adapter	TPA10
. s.a ase to 1 labaa 1 labe / laaptel	117,110

Customer Service

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

• No charge for return shipping • Long-term 7-year support • Upgrade to latest software at no charge



1-800-5-LeCroy teledynelecroy.com

Local sales offices are located throughout the world. Visit our website to find the most convenient location.