



## ***DPO70000SX Family***

***Lowest Noise. Highest Fidelity. Maximum Performance***

***Now with Additional Models at 50GHz, 59GHz, 23GHz***



DPO70000SX series oscilloscopes provide the most accurate real time performance for ultra-bandwidth applications.

- 70GHz model delivers best-in-class signal capture using low-noise ATI architecture
- 50GHz ATI model meets needs of Datacom applications, especially PAM4, and closely matches performance of the 45GHz OM4245 receiver for coherent optical modulation customers
- 59GHz ATI model addresses export-restricted ultra-bandwidth applications
- 33GHz TekConnect model delivers compact 2-channel 100GS/s 33GHz or 4-channel 50GS/s 23GHz performance
- 23GHz TekConnect model offers 4 channels, 50GS/s performance in the 70KSX compact package
- Compact 5 1/4" (3U) instrument package enables the most versatile multi-channel systems
- UltraSync precision time synchronization bus enables reconfigurable multi-unit scaling
- New trigger ASIC with >25 GHz Edge trigger bandwidth, unique new Envelope trigger type

Low-noise, high fidelity signal acquisition is critical in ultra-bandwidth applications such as long-haul coherent optical, 400G Datacom and wideband microwave and RF applications up to the V band. The flagship DPO77002SX model uses ATI (Asynchronous Time Interleaving) architecture to achieve 70 GHz and 200 GS/s (5ps/Sample) real time acquisition performance. This patented, symmetric architecture elegantly creates an inherent noise advantage over legacy frequency interleaving methods. The DPO70000SX timebase system achieves 65 fs (typical) sample clock jitter to enable precise analysis of complex optical modulation schemes and jitter analysis of high speed serial signaling.

## Compact ultra-performance oscilloscope

A unique new compact Oscilloscope package establishes unprecedented workspace efficiency and mounting versatility. The SX series provides a differentiated approach to ultra-bandwidth real time acquisition that aligns with user trends toward large external monitors and increased separation of data collection and data analysis workspaces.

DPO70000SX series includes a new trigger ASIC that provides >25 GHz edge trigger performance and <30ps glitch trigger performance. An innovative new Window trigger type enables triggering on the envelope of RF signal bursts with time-qualification to discriminate envelope width. The new trigger system reasserts Tektronix' leadership in signal discrimination to bring new levels of performance, functionality and insight, especially in high performance debug and research applications.

Stand-alone DPO70000SX compact models provide functionality equivalent to their bench counterparts (DPO) at half the height through addition of external display, keyboard and mouse. SX series models can host Advanced Analysis software and be automated using internal or external control just as their bench counterparts.



## Scalable performance and investment with precisely synchronized multi-unit configurations

DPO70000SX multi-instrument modes enable a variety of extended performance and increased channel-count configurations. Master-Extension configurations provide additional input channels synchronized to the same degree of precision as internal channels and controlled from a single user interface as interactive instruments.

Precise multi-instrument timing synchronization enables channel scaling to meet acquisition requirements, especially in coherent optical and 100G data communications applications. With **<250fs<sub>RMS</sub> channel-to-channel skew stability**, DPO70000SX delivers the precise multi-channel acquisition needed for differentiated performance in ultra-bandwidth applications.

Users can aggregate multiple units for higher channel count applications or distribute instruments to multiple users as application needs vary.

## Feature Highlights

Feature	Benefit
70 GHz ATI architecture	Lowest instrument noise, highest measurement SNR for most precise measurements
200 GS/s (5ps/Sample) real time sample rate	Most precise modulation and jitter analysis results
Vertical noise (rms) <0.75% of full scale (300mV)	Increased measurement accuracy and margin

Feature	Benefit
<100 fs rms jitter measurement floor	Accurate and precise characterization and decomposition of jitter components
UltraSync precision multi-unit synchronization bus	Precise multi-channel signal analysis and reconfigurable performance scaling
<250 fs <sub>RMS</sub> channel-channel skew stability	Precise analysis of differential and complex-modulated signals
Compact 5 ¼" (3U) instrument package	Versatile bench layout configurations and most compact footprint in rack systems
Master-Extension scalability through cabling	Easily reconfigured standalone or multi-unit operation by simple UltraSync cable changes

## DPO7AFP Auxiliary Front Panel

### Familiar scope controls with versatile location

The optional Auxiliary Front Panel is a valuable usability accessory that compliments the compact instrument package and reinforces a disaggregated approach to laboratory instrumentation. The DPO7AFP Auxiliary Front Panel provides the same control set embedded in DPO/MSO7k/70k bench instruments as a separately packaged control panel connected to a DPO70000SX via USB. This accessory provides direct control of SX series instruments regardless of their mounting situation.



## UltraSync cables

### Precision sample clock, trigger and control for multi-unit systems

UltraSync precision synchronization bus relies on custom UltraSync cables to connect Master and Extension units into a system. These custom cables ensure precise timing and control of up to a four-unit system. UltraSync cables are available in 1-meter and 2-meter lengths to meet the physical requirements of customer configurations.



- 12.5 GHz Sample Clock Reference
- Coordinated Trigger
- High speed data path




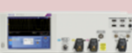

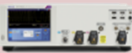









**DPO7USYNC1M** DPO70000SX multi-unit synchronization cable; 1 meter length

**DPO7USYNC2M** DPO70000SX multi-unit synchronization cable; 2 meter length

## Nomenclature and Specifications

DPO70000SX models follow common nomenclature scheme with the MSO/DPO70000 scopes. “SX” indicates the model is in the compact “scalable” package. Base models are “**DPO**” nomenclature. “**DPS**” nomenclature – meaning “**DPO System**” – provides a system of (2) DPO70000SX base models plus (1) UltraSync 1 meter cable for single line item pricing and ordering convenience.

DPO70000SX ATI Models			Acquisition Performance		
			Channels		
			Bandwidth		
			Sample Rate		
			(1 Ch)	(2 Ch)	(4 Ch)
70GHz (ATI)	DPO77002SX		1 Ch 70 GHz 200 GS/s	2 Ch 33 GHz 100 GS/s	
	DPS77004SX (2-unit system w/UltraSync)			2 Ch 70 GHz 200 GS/s	4 Ch 33 GHz 100 GS/s
59GHz (ATI)	DPO75902SX		1 Ch 59GHz 200 GS/s	2 Ch 33 GHz 100 GS/s	
	DPS75904SX (2-unit system w/UltraSync)			2 Ch 59GHz 200 GS/s	4 Ch 33 GHz 100 GS/s
50GHz (ATI)	DPO75002SX		1 Ch 50GHz 200 GS/s	2 Ch 33 GHz 100 GS/s	
	DPS75004SX (2-unit system w/UltraSync)			2 Ch 50GHz 200 GS/s	4 Ch 33 GHz 100 GS/s
DPO7AFP	Auxiliary Front Panel				

DPO70000SX TekConnect Models			Acquisition Performance	
			Channels	
			Bandwidth	
			Sample Rate	
			(2 Ch)	(4 Ch)
33GHz	DPO73304SX		2 Ch 33 GHz 100 GS/s	4 Ch 23 GHz 50 GS/s
	DPS73308SX (2-unit system w/UltraSync)			4 Ch* 33 GHz 100 GS/s
23GHz	DPO72304SX		2 Ch 23 GHz 100 GS/s	4 Ch 23 GHz 50 GS/s
DPO7AFP	Auxiliary Front Panel			

\*Maximum of 4 channels displayed on-screen. Additional channels data available through program interface.

## **Investment Protection**

### **Trade-ins**

Customers with existing Tektronix scopes have an upgrade path to DPO70000SX series performance and compact, scalable form-factor using the Investment Protection Trade-in Program.