KEYSIGHT TECHNOLOGIES

Keysight Infiniium EXR 8-channel 2.5 GHz Mixed Signal Oscilloscope

1. **What is Keysight Announcing?**

   Keysight is introducing the Infiniium EXR-Series mixed signal oscilloscope, with up to 8 analog channels at 2.5 GHz, and simultaneous 16 digital channels. Its state-of-the-art ASIC-driven processing enables 7 powerful instruments in one, including oscilloscope, digital voltmeter, waveform generator, Bode plotter, counter, protocol analyzer and logic analyzer.

   Infiniium EXR-Series is complemented by an extensive suite of software solutions focused on power supply test and measurement, as well as low-speed digital test and verification. The software is backwards compatible enabling designers to reuse prior Infiniium code. Built-in software includes an innovative Fault Hunter function that speeds root cause identification and resolution of challenging and hard-to-find errors (i.e. rare or randomly occurring signal faults).

   Infiniium EXR-Series joins Keysight's Infiniium family of products, including the S-Series, V-Series, Z-Series, MXR-Series, and the UXR-Series. EXR expands this portfolio with greater multi-channel capabilities to support demanding new industry applications. The entire Infiniium product line also includes unmatched remote collaboration capabilities that enable a vastly improved test workflow (PathWave Infiniium Offline).

2. **What are the applications for this product?**

   The EXR-Series oscilloscopes are ideal for low-speed serial digital designs, power supply characterization and measurement, power integrity verification, and signal integrity verification.

   Testing new products requires time domain and frequency domain equipment capable of simultaneous analog and digital channels, further enhanced by software enabled protocols, standards, built-in test assistance, and remote collaboration for test teams.

   Keysight's EXR-Series oscilloscope makes testing compliance for low speed serial protocols an intuitive exercise (e.g., I2C, SPI and USB). The Infiniium EXR-Series oscilloscopes protocol trigger and decode packages make it easy to debug and test digital designs.

   Compliance test applications on the Infiniium EXR-Series oscilloscopes provide a fast and effortless way to validate that designs meet industry standards. They save time and money by automating the task of preforming compliance measurements based on the latest requirements. These test applications offer a user-friendly setup wizard and a comprehensive report that includes margin analysis.

   Infiniium EXR-Series oscilloscopes perform many tests and measurements related to several aspects of power, including switch mode, power integrity, power management integrated circuit (PMIC) and power consumption.

   The increased functionality, higher density and higher frequency operation of many modern electronic products has driven the need for lower supply voltages. It is common in many designs today to have 3.3, 1.8, 1.5 and even 1.1 V DC supplies—each having tighter tolerances than in previous product

generations. Power supply induced jitter (PSIJ) can be one of the largest sources of clock and data jitter in digital systems. Similarly, noise on DC supplies is often caused by the switching currents related to the transitions of clocks and data communication streams in these systems.

Infiniium EXR-Series oscilloscopes offer an easy method of determining how much of a systems' data jitter is PSIJ and how much of the noise on the DC supplies is generated by specific clocks, data lines or other toggling sources.

Infiniium EXR-Series oscilloscopes also offer tools that assist in verifying Signal Integrity (e.g., jitter analysis and crosstalk).

3. What are the key benefits of the EXR-Series to customers?

Infiniium EXR-Series oscilloscopes help customers reduce test bench and workflow complexity and achieve higher performance with accurate and repeatable multi-channel measurements in a single instrument. Key customer benefits include:

- **Seven powerful instruments in one** reduces bench clutter, setup and test time while minimizing crosstalk issues. Standard in the Infiniium EXR-Series is a Fault Hunter function that learns "normal" signal and compares it over time to find "abnormal" signals, capturing everything else that occurs when the abnormal signal happens. Fault Hunter enables customers to achieve faster problem resolution for the most challenging category of troubleshooting – irregular, random or spurious signals.
- **Simultaneous 8 analog channels and 16 digital channels** allows customers to perform no-compromise monitoring and analysis of complex signal interactions. Coupled with a higher bandwidth and an 8-channel oscilloscope, test engineers can open a wider and insightful window into their designs.
- **Powerful remote collaboration** with PathWave Infiniium Offline Analysis software enables design teams to do extensive analysis and data manipulation after the bench measurements are complete, enhancing the efficiency and effectiveness of a test bench. The software interface mirrors the oscilloscope itself, enabling customers to move from live test to thoughtful collaborative reflection with zero training required.

4. What problems does this product solve?

The Infiniium EXR-Series helps designers work with higher bandwidth signals simultaneously across analog and digital channels, providing:

- Reduced troubleshooting time for random errors.
- Dramatically improved test workflow enhanced by remote team collaboration which complement the higher performance enabling engineers to get from symptom to root cause to solution faster.
- Fault Hunter which provides the benefits of advanced triggering skills with an automatic, one-button launch to find signal anomalies that speeds design and troubleshooting efforts, adding efficiency and expertise for everyone.

5. Is the Infiniium EXR-Series backwards compatible?

Yes, the Infiniium EXR-Series is backwards compatible to existing Keysight Infiniium oscilloscopes. The Infiniium EXR-Series offers support for multiple programming interfaces including SCPI (Standard-Commands-for-Programmable-Instruments) and IVI.NET (Interchangeable Virtual Instruments). Multi-language support makes it easy to migrate from legacy platforms to new platforms, and from R&D design verification to volume production for teams that collaborate around the world.