MPDigital Controller

The Gateway to Enhanced Technology for Failure Analysis

The MPDigital Controller, MultiProbe's new AFP control box, is designed on top of a nanoprobing-specific, custom digital communication interface for the ultimate in flexibility, reliability, and performance. It's equipped with the industry standard high-speed USB 2.0 communication link, providing up to a 480Mbits/sec sustained data transfer rate, while reducing excessive cabling. Multiple DSP processors perform computationally intensive tasks in parallel, offloading numerous calculations from the host and improving overall system performance. The large onboard memory buffers provide for a robust data acquisition approach, resulting in faster, more accurate real-time information. Finally, with field-upgradeable firmware and a modular Compact PCI architecture, it's now easier than ever to benefit from the latest in MultiProbe's ongoing, cutting-edge product development.

The MPDigital Controller is easily upgradable and configurable, supporting MultiProbe's complete line of Failure Analysis hardware, including Scanning Capacitance, PicoCurrent, Non Contact Imaging, CAD Navigation and up to six MPII probe heads. The MPDigital Controller is also a platform for current and future product development, such as digital feedback control, SNAP scanning, Thermal Chuck and more.

FEATURE	DESCRIPTION
MPII AFP Heads	1-6 units Controls up to 6 MPII Atomic Force Probers with nanometer resolution.
PicoCurrent Channels 1-8 units	Provides voltage ramping and Current sensing for all AFP Heads, Chuck and any other auxiliary probes or test points.
SNAP Stage	Completely eliminates the need for cell counting or fib marking. The SNAP Stage integrates with CADNav and allows users to accurately navigate to a desired site within a range of 500x500µm.
Scanning Capacitance Imaging *	Measures implant variations, trapped charge, memory cell capacitance and a host of difficult to measure failure types.
Non Contact Imaging	Designed for soft metal probing and high topography features.
Thermal Chuck *	Heats to 120°C +/-.01°
Guarded Chuck	Provides greater flexibility in obtaining sample measurements. Allows users to either electrically isolate the sample or bias the substrate.
22nm Probing†	The **MP**Digital Controller is required to provide the Feedback performance necessary for this technology node and below.
SNAP Scanning†	Allows for 50 x 50µm precision scanning anywhere within a 500µm area, while maintaing a probe separation of <500 nm.
Digital Feedback Control†	Replaces Analog Circuitry with high performance quick response control on tip location and pressure.

*These products are only offered with the MPDigital Control Box.
†These products are currently **under development** and will only be offered with the MPDigital Control Box.

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