



## VIDAS System Solution

The Advanced Research Products Group (ARPG™) of Spectral Dynamics offers VIDAS (VXI Data Acquisition System), high performance VXI hardware & software solutions. VIDAS combines dynamically scalable channel count versatility with features you need and critical performance for your testing demands. Our products offer superior fidelity and excellent channel-to-channel phase match for the most accurate measurements in the industry.

### System Overview

ARPG VIDAS Systems incorporate instrumentation with a fully integrated WinXP native software package called IMPAX-SD™. It uses build-on-demand database technology to automatically manage and configure your testing environment for measurement, control, reporting and correlating data timing for high-speed and transient testing applications. IMPAX-SD eliminates manual setup/calibration operations, gives lightning fast data display, and instant review. Real-time snapshot FIFO's allow DAS channel monitoring for reconfiguring your test on the fly.

We offer turnkey solutions, custom engineering, or system components & drivers for build-your-own system solutions.

## Highlights

- Up to 1024 independent channels
- Modular, scalable design
- High powered VXI instrumentation chassis
- Full bandwidth flat response:
  - 0.1dB DC to 1 MHz
  - 2.3MHz @ 3dB
- Up to 5M samples/sec/ch sample rate
- Bandwidth licensing enables cost savings while providing future growth path
- Automated end-to-end calibration
- Full bridge completion available
- Remote application control capability with pipes/socket server
- Passive Input Panel System (PIPS™) or Smart Interface Panel System (SIPS™) accommodates front-end wiring and special function signal conditioning requirements

## Applications

- Acoustic Shock Measurement
- Aircraft Power System Testing
- Real-time Knock Analysis
- Component Test Stands
- Rocket Testing
- FAA Seat Testing
- Highway Structures Development
- Explosive Shock Studies
- Electromagnetic Propulsion Research
- Calibration Labs
- Hopkinson Bar Testing
- Gas Turbine Testing



## Hardware

Architecturally SD-VXI based DAS systems are the ultimate in end-to-end engineering. Each module provides proper timing and control of the data acquisition process, delivering system-wide, time-synchronous phase-matched data. Reliable data capture is assured because of phase-locked redundant clocking. The amplifier performance in SD-VXI products is unmatched in the industry. Each channel has true (not pseudo) differential input, with flat-response amplifiers (0.1db from DC to 1MHz), and input ranges from  $\pm 10\text{mV}$  to  $\pm 5\text{V}$ . These products are ideal for hard-to-measure, fast-repetitive, and transient signals. The Smart Interface Panel System (SIPS) provides constant voltage and/or constant current excitation, and simplified integration for self-test, setup, and control capabilities. SIPS eliminates the tedious manual process of tracking down discrete subsystem failures, thus providing an invaluable tool for system operators.



## Control Software

IMPAX-SD™ is a fourth-generation, 32-bit native acquisition and control software package with over fifteen years of field proven testing methodology and techniques. With just three basic pieces of information (DAS Channel, Transducer, and expected full scale) IMPAX-SD software automatically calculates required full-scale settings, configures, amplifiers, and verifies a channel for use. Using the named pipes/socket server built into IMPAX-SD, you can even control the basic test opening, data system setup, acquisition run, and store processes from an external application.

# ARPG

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## Buyer Beware

Many companies offer multi-chassis rack-and-stack systems. They specify ADC chip performance, not system (end-to-end) performance, neglecting to mention that post processing must be used to pseudo-time correlate data collected from different channels across multiple boxes. These companies will generally only specify timing jitter on a single card or within a single chassis, not across an entire multi-chassis system. This "aperture jitter" occurs because multi-chassis expansion was an afterthought, not a design criterion.

Systems utilizing external amplifiers and analog anti-alias filters can skew a signal in the time domain depending on selected cutoff frequency. In these systems, time correcting data to account for skewing due to analog group delays is a daunting task. This process is complicated if the same type of filter and frequency for each channel is not used.

SD-VIDAS systems eliminate all of these problems.

## Who We Are

ARPG offers over 30 years of Data Acquisition experience beginning with CAMAC (IEEE-583) and now in VXI system and component-level high-speed transient recording solutions. Our customers include military, aerospace, government labs, educational institutions, and commercial/industrial facilities.

## The Buck Stops Here

ARPG is a single source vendor providing consistency in concept, design, integration, and support. We are an experienced turnkey system supplier that provides application support throughout the entire process.

Call us today at 510 252-0475 or  
visit us at [www.vxiproducts.com](http://www.vxiproducts.com).

