

DYNAMIC SIGNALS

A New direction in Data Acquisition



DYNAMIC SIGNALS

New Architecture and Applications

New Architecture:

- The emergence of 6U modules significantly expands the density, versatility and cost-effectiveness of a single slot.
 - As many as 256 channels per slot (A/D, D/A, DIO, Freq. Counter)
 - On-board signal conditioning (Bridge, Prog. Filter & Gain)
 - As low as \$20/per channel

New Applications:

- Engine Testing
- Destructive Testing
- Structural Testing
- Wind Tunnel Testing



PXISA Jet Engine DAS Simulation/Demo

Measured Engine Parameters:

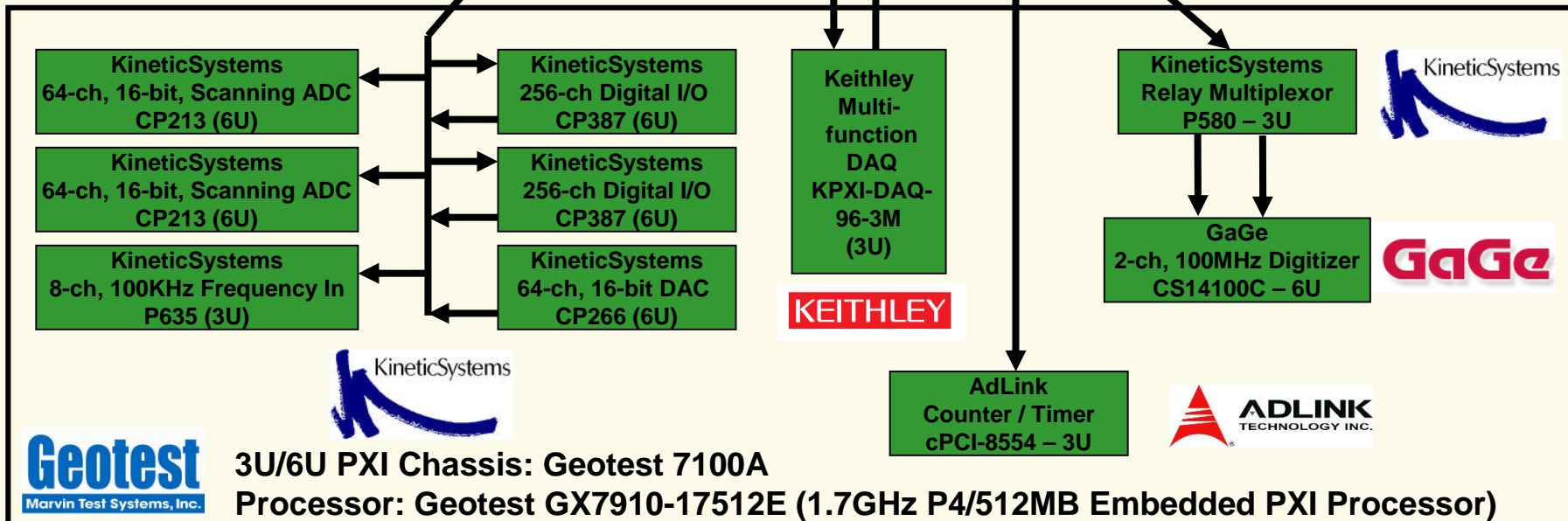
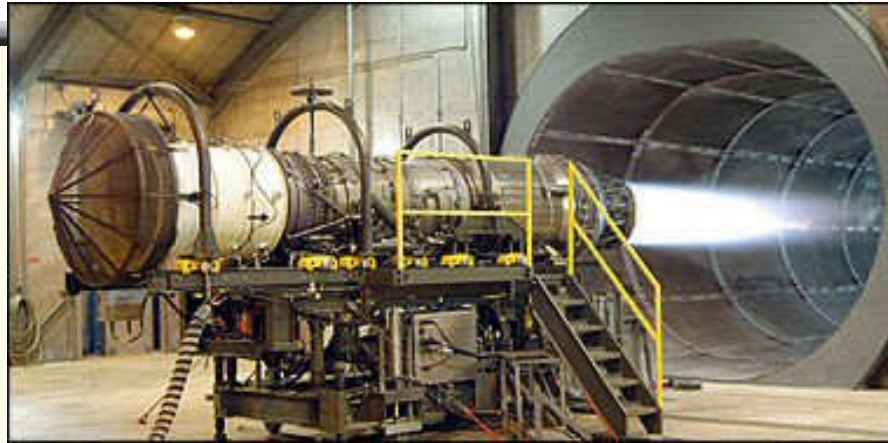
- **864** total channels
- Compact PXI platform – 3U & 6U
- Temperatures, Pressures, Flow, RPM, ARINC-429

Six PXI Vendors: Booth #330

- KineticSystems
- GaGe
- Keithley
- Geotest
- ADLINK
- National Instruments



PXISA Jet Engine DAS Simulation/Demo



PXISA Jet Engine DAS Simulation/Demo

Equipment Shown in Demo:



- **KineticSystems**
 - 2x – CP387: High-density Digital I/O (6U)
 - 2x – CP213: 64-ch, 16-bit Scanning ADC with Signal Conditioning (6U)
 - 1x – CP266: 64-ch, 16-bit DAC (6U)
 - 1x – P580: 32 x 2 Scanning Relay Multiplexer (3U)
 - 1x – P635: 8-ch Frequency Counter (3U)
 - 1x – V765: Termination Panel
 - 1x – V792: Isothermal Termination Panel
- **GaGe**
 - 1x – CS14100C: 2-ch, 14-bit, 100MHz Digitizer (6U)
- **Keithley**
 - 1x – KPXI-DAQ-96-3M: Multifunction DAQ (3U)
- **Geotest**
 - 1x – GX7100A: 3U/6U Combo Chassis
 - 1x – GX7910-17512E: Embedded 1.7GHz P4 / 512MB PXI Processor (6U)
- **ADLINK**
 - 1x – cPCI-8554: Counter/Timer (3U)
- **National Instruments – LabWindows CVI**



DynamicSignals

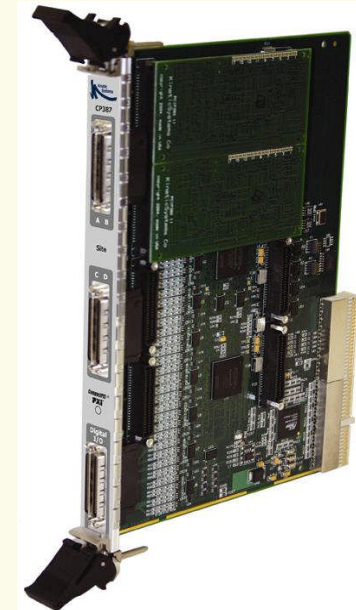
PXISA Jet Engine DAS Simulation/Demo

Channel Matrix:

Mfg. / Model	ADC (Diff.)	DAC	Digital I/O	Freq.	Timer	Counter	Relay	Digitizer	Signal Condition'g
KS CP387			256						
KS CP387			256						
KS CP266		64							
KS CP213	64		16	2	2	2			Gain/Filter
KS CP213	64		16	2	2	2			Gain/Filter
KS P580							34		
KS P635				8					Gain/Filter
GaGe CS14100C								2	Gain
Keithley KPXI-DAQ-96-3M	48		24		2	2			Gain
AdLink cPCI-8554					12	12			

CP387 – High-Density Digital I/O Module

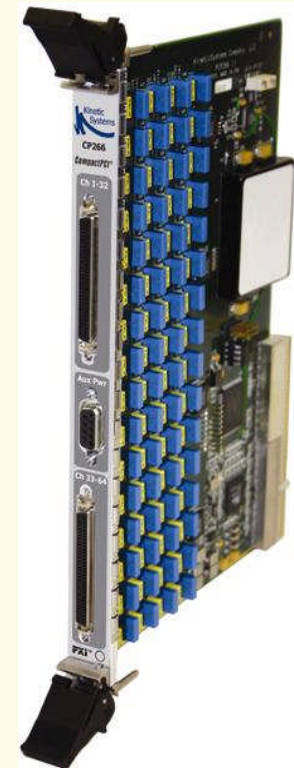
- The **CP387** is a single-width, 6U, CompactPCI/PXI module with up to **256** digital input/output channels
- **Key Features:**
 - 256 channel digital I/O channels
 - 128 channels of TTL I/O available on base board
 - 4 mezzanine card sites (Industry Pack) for added I/O capability including:
 - TTL I/O
 - Differential I/O
 - Isolated I/O
 - Form "A" Relay Output
 - Form "C" Relay Output
 - AC switch Output
 - Change Of State and pattern recognition
 - Input and output strobes
 - Programmable contact-bounce suppression on inputs
- **Differentiators:** Mix & Match I/O, I/O strobes, pattern recognition, change-of-state, high-density, platform for custom IP solutions.



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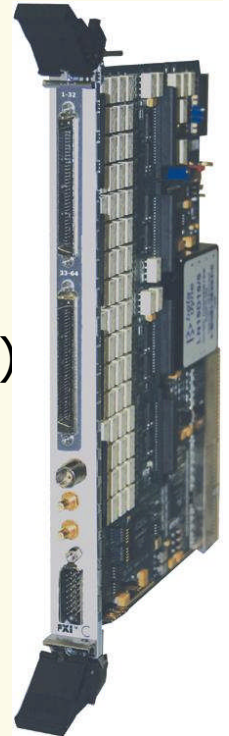
CP266 – Digital-to-Analog Converter Module

- The **CP266** is a single-width, 6U, cPCI/PXI module with **32** or **64**, 16-bit digital output channels.
- **Key Features:**
 - 32 or 64 independent digital output channels
 - 16-bit resolution
 - ± 10 V full-scale output
 - Low drift
 - Single gain and offset adjustments
 - 2-pole, Bessel output filter on each channel
 - Power-on reset to zero volts
- **Differentiators:** 16-Bit, high-density, **cost effective \$/ch**



CP213 – Analog-to-Digital Converter Module

- The **CP213** is a single-width, 6U, CompactPCI/PXI module with either 32 or 64 differential analog input channels
 - Alternately configured under software control as **64** or **128** single-ended analog input channels
- **Key Features:**
 - High density
 - On-board signal conditioning (Programmable gain per channel, fixed filter per channel)
 - Economical (Competitive \$/channel when signal conditioning is included)
 - On-board calibration
 - Isothermal reference channels for thermocouple measurements
 - 16 General purpose digital I/O lines
- **Differentiators:**
 - **On-board** signal conditioning
 - CP213 is able to bring the signal conditioning and ADC into a one slot solution which makes it the **lowest price per channel solution available!!!**



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