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Data Sheet

August 15, 2026

ABACO SYSTEMS

Abaco Systems ICS-1650/001 PCI Express X4 High-Speed 4-Channel ADC with User-Programmable Virtex-5 FPGA

PCIe x4 high-speed 4-channel ADC with user-programmable Virtex-5 FPGA for signal processing and data acquisition applications.



MODEL

**Abaco Systems
ICS-1650/001**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

ICS-1650/001

LISTING

<https://aumictechlabs.com/products/ics-1650-001-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Abaco Systems ICS-1650/001 is a PCI Express x4 high-speed analog-to-digital converter card engineered for advanced signal processing and data acquisition. It delivers four simultaneous 12-bit analog input channels at up to 250 MHz per channel, supporting continuous data acquisition exceeding 200 MHz across all channels. The PCIe x4 interface provides net payload throughput of 1.25 GBytes/sec, matched to modern multi-core CPU architectures. On-board processing is delivered by a user-programmable Xilinx Virtex-5 SX95T FPGA dedicated to signal processing, complemented by a Xilinx Virtex-5 LX50T control FPGA. This dual-FPGA architecture allows the primary processor to focus almost entirely on customer application code. The card includes 16 MBytes of QDR II SRAM for buffering and workspace. Up to four ICS-1650 cards can be synchronized for applications requiring higher channel density. Technical

Specifications Analog Input Channels: 4 Resolution: 12-bit Maximum Sampling Rate: 250 MHz per channel (simultaneous) Input Configuration: Transformer-coupled, 50 Ω impedance SINAD: 62 dB SFDR: 76 dB Signal Processing FPGA: Xilinx Virtex-5 SX95T (user-programmable) Control FPGA: Xilinx Virtex-5 LX50T On-Board Memory: 16 MBytes QDR II SRAM Bus Interface: PCI Express x4 Data Rate: 1.25 GBytes/sec net payloadKey Features Transformer-coupled 50 Ω analog inputs with 12-bit resolution Simultaneous 250 MHz sampling across all four channels Dual Virtex-5 FPGA architecture optimized for DSP workloads QDR II SRAM for real-time buffering and intermediate processing Multi-card synchronization (up to four units) Micro ATX form factor compatibilityTypical Applications Software Defined Radio (SDR) Diagnostic and medical imaging Radar signal processing Signal intelligence and monitoringCompatibility & Integration Hardware Development Kit (HDK) based on Xilinx ISE toolset supports FPGA design and DSP development. Software Development Kits (SDKs) are provided for Windows and Linux environments. The compact form factor integrates into small form factor motherboards including Micro ATX systems.

ICS1650001 Characteristics / Specifications

PARAMETER	VALUE
Model	ICS-1650
Instrument Type	high speed PCIe ADC module
Channel Count	4
Adc Resolution	12 bits
Sample Rate Maximum	250 MHz per channel
Input Coupling	transformer coupled
Input Impedance	50 Ohm
Sinad	62 dB
Sfdr	76 dB
User Fpga	Xilinx Virtex-5 SX95T
Control Fpga	second Virtex-5 for control
Qdr li Sram	16 MBytes
Host Interface	PCI Express x4
Net Payload Data Rate	up to 1.25 GBytes/s
Continuous Capture Class	greater than 200 MHz on all four channels
Card Sync Maximum	up to 4 cards
Hardware Development Kit	included HDK
Software Support	Windows and Linux SDKs
Form Factor	PCI Express module
Primary Markets	SDR radar SIGINT imaging
Part Example	ICS-1650/001
Manufacturer Line	ICS Limited / GE Fanuc / Abaco
Data Rate	up to 1.25 GBytes/s

ICS1650001 Specifications

PARAMETER	VALUE
Key Features	Four simultaneous 12 bit ADCs to 250 MHz
PCIe x4 up to 1.25 GB/s payload	16 MB QDR II SRAM scratchpad
Technical Specifications	Model: ICS-1650
Notes	Numeric rows from Abaco ICS-1650 product page and GE Fanuc ICS-1650 announcements for the 4-channel 250 MHz 12-bit PCIe ADC.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.