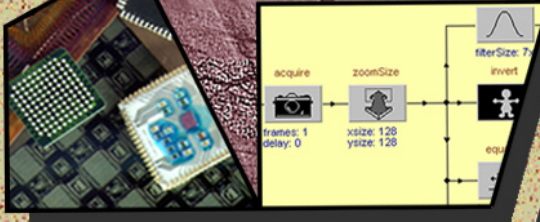
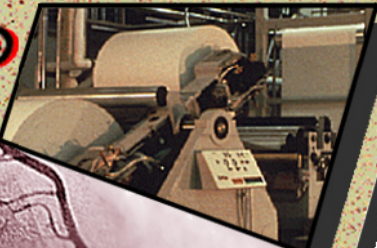


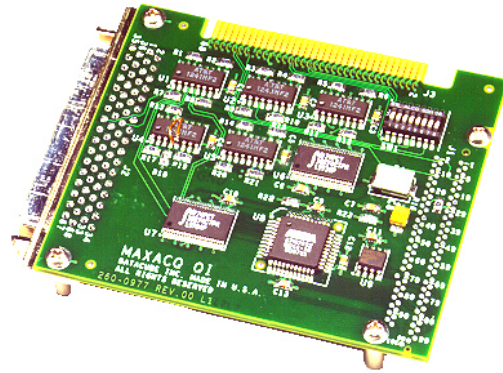


**Vision By
MaxPCI®**



QI MaxACQ Module

45 MHz Differential Digital Acquisition



High Speed, Flexible Differential Data Acquisition

- Low cost RS-422, PECL, and LVDS (RS-644) differential digital data acquisition
- 16-bit differential digital image acquisition at up to 45 MHz
- 68-pin SCSI style input connector is compatible with AIA digital sensor specification
- Highly efficient and noise isolated MaxACQ architecture
- Supports long cable lengths from sensors

QI MaxACQ Module

The QI MaxACQ module provides differential digital image acquisition for MaxPCI and other boards that use the MaxACQ architecture. It is the highest performance and lowest cost differential digital choice in the MaxACQ family of acquisition modules.

The QI module supports a wide variety of one- and two-dimensional digital cameras and sensors. It accepts 16-bit differential digital data inputs at data rates up to 45 MHz. The QI module specializes in the acquisition of a variety of differential signal types including RS-422, LVDS (RS-644), and PECL logic.

Many popular sensors which support the AIA digital input standard can be connected directly to the QI using off-the-shelf cables. This standard, which uses 68-pin fine-pitch SCSI-style connectors, allows readily available industry-standard cables to be used. This minimizes integration cost and effort by eliminating the need to build custom cables.

Easy to Use

Datacube's Camera Interface File (CIF) technology allows you to use QI with virtually no programming effort. CIFs for popular sensors are available. A point and click tool to build your own CIFs is also available. Simply reference the CIF file for your sensor in your PC ImageFlow, DatacubeWiT, or MaxLab environment and begin acquiring differential digital data right away.

MaxACQ Architecture

The MaxACQ family of acquisition modules supports a broad range of analog and digital cameras and sensors including area, line-scan, and TDI. The family includes easy-to-integrate solutions for applications requiring a wide range of acquisition throughputs and resolutions.

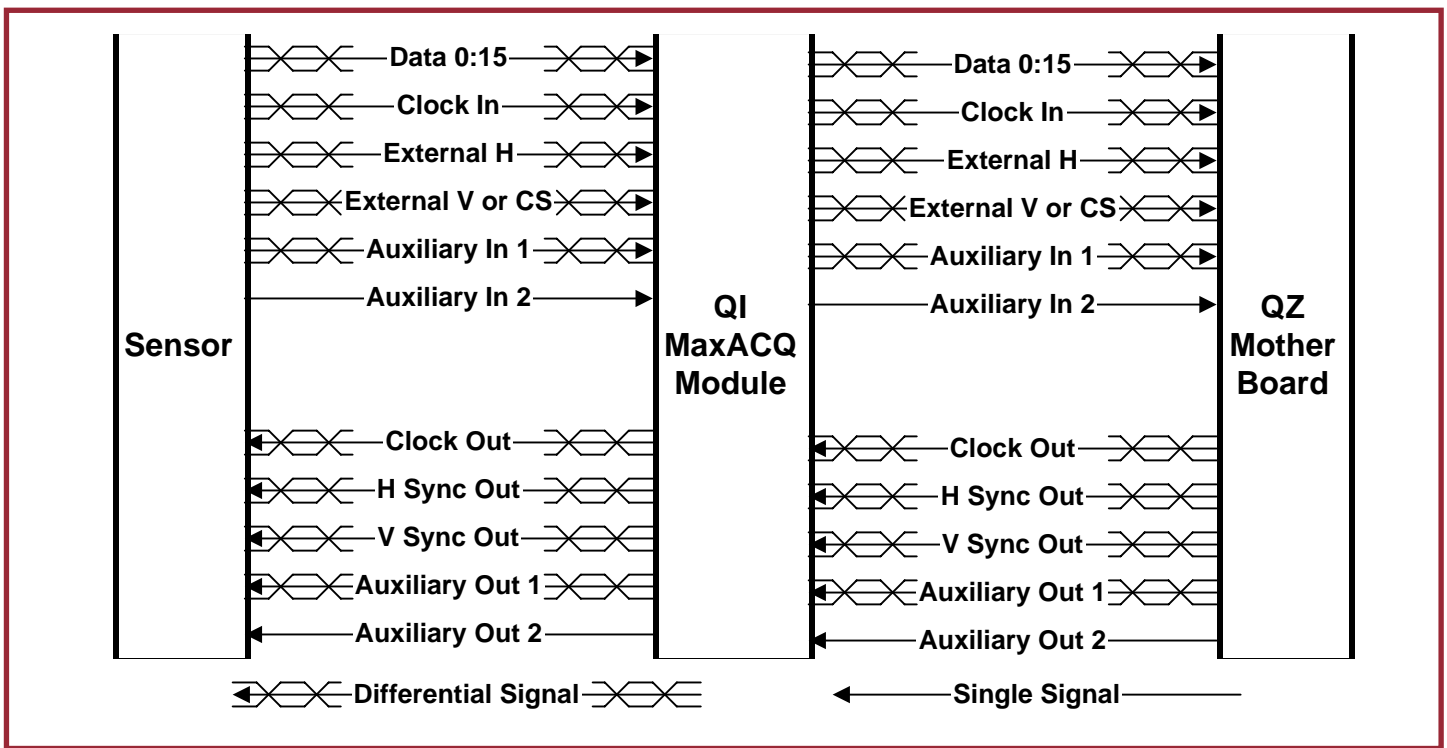
This architecture provides for more reliable operation, because noise sensitive components on the acquisition modules are isolated from noise generating circuitry (e.g., clock generation and phase-lock loop) implemented on the motherboard.

The MaxACQ architecture also allows the individual acquisition modules to be smaller, and less costly.

Features and Specifications

Cameras and Sensors

- Supports sensors with differential RS-422, LVDS (RS-644), and PECL outputs
- Interfaces to a wide variety of one- and two-dimensional differential cameras and sensors



Block Diagram of the QI MaxACQ Module Data and Timing Signals

- Utilizes the AIA digital input 68-pin, fine-pitch, SCSI-style connector standard for quick and easy sensor integration

Digital Data Inputs

- 16-bit acquisition at up to 45 MHz rates
- Differential termination
 - 110 Ohm termination across each differential signal pair
 - All terminations are always enabled
- Input Line Receivers
 - Accepts RS-422, LVDS (RS-644), and PECL level signals
 - Schmidt trigger receivers with hysteresis improve noise immunity
 - Functions well in long cable applications (up to 20 meters)
- Programmable Input Data Shifter
 - Shifts 10- and 12-bit MSB justified data to be LSB justified in 16-bit data path

Timing Interface

- Supports the use of the following MaxACQ signals for flexible sync selection:
 - Clock In/Out (differential)

- External H, V/CS In (differential)
- Auxiliary 1 In/Out (differential)
- Auxiliary 2 In/Out
- H and V Out (differential)
- Clock Out signals can be disabled (via onboard switches) when they are not used, to reduce the generation of noise
- Sample clock can be provided externally or internally:
 - External clock coming from scanner or cameras from DC to 45 MHz
 - Arbitrary (internal) clock can be synthesized from 160 KHz to 42 MHz

Physical Specifications

Height: 0.56 inches (14 mm)
 Length: 3.3 inches (84 mm)
 Width: 2.1 inches (53 mm)
 Weight: 1.1 ounces (31.2 grams)

Power Requirements (all voltages are ±5%)

+5.0 Volts 500 mA (typical)
 2.50 Watts Total (typical)

Environmental Specifications

Operating Temperature: 0° to 55° C
 (32° to 131° F)
 Maximum Chip Case Temp: 85° C
 (185° F)
 Storage Temperature: -40° to 100° C
 (-40° to 212° F)
 Relative Humidity: 10% to 90%
 (non-condensing)
 Air Flow Requirement: 50 LFPM

Module

- EEPROM contains device ID and manufacturing revision data which can be read using supplied utility

Additional Information

For related product information, refer to the following Datacube literature:

[MaxPCI Data Sheet](#)
[MaxACQ Architecture Data Sheet](#)
[DatacubeWiT Data Sheet](#)
[PC ImageFlow Data Sheet](#)

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