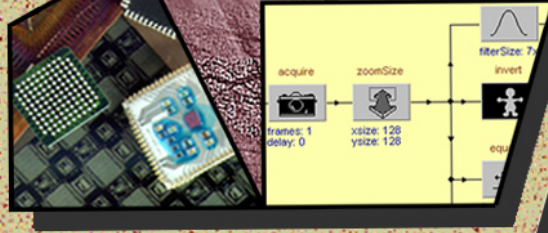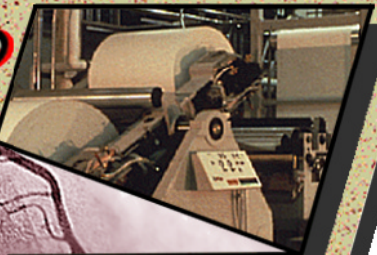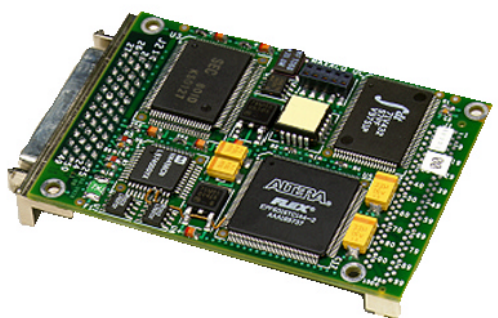**Vision By MaxPCI®**

QC MaxACQ Module
Analog Color Video Acquisition

Multi-Standard Acquisition and Color Space Conversion Capabilities

- Supports all the popular international color video standards (NTSC, PAL, and SECAM)

- Digitizes composite, S-Video, and component format video signals

- Samples at either CCIR 601 or square pixel rates

- Internal color space conversion provides digital data in HSI, RGB, or component format

- Uses 50-pin SCSI standard cable

QC MaxACQ Module

The QC MaxACQ module provides color image acquisition for MaxPCI and other boards that use the MaxACQ architecture.

The QC module is compatible with all the popular video standards and formats around the world. It digitizes NTSC, PAL, and SECAM analog video in Composite (VHS), S-Video (YC), and Component (YCrCb) formats.

Analog video signals can be sampled at either CCIR 601 or square pixel rates. QC converts all analog video signals, regardless of their format, to a component (YCrCb) digital format.

Color space conversion hardware converts the digitized signal to HSI or RGB formats allowing the QC to output digital video to the MaxPCI image processor or other MaxACQ equipped motherboard in component (YCrCB), hue saturation intensity (HSI), or red green blue (RGB) format.

QC uses a standard 50-pin, fine pitch, SCSI style connector for use with readily available off-the-shelf cables. Eliminating custom built cables makes integration easy and keeps costs low.

Easy to Use

Datacube's Camera Interface File (CIF) technology allows you to use QC 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 color video 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 throughputs and resolutions.
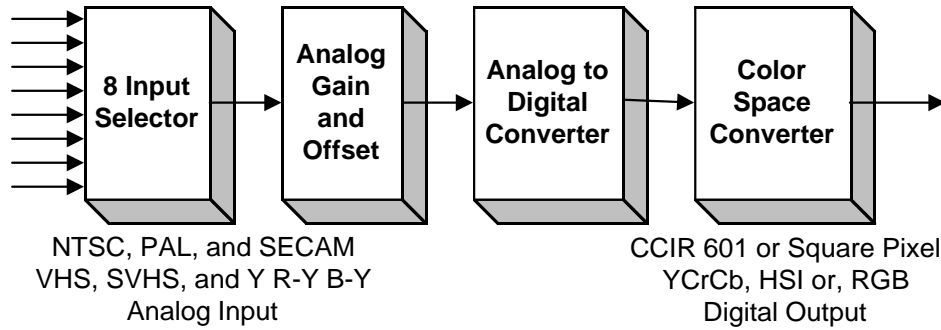
This architecture provides for more reliable operation, because noise sensitive components on the acquisition modules are isolated from noise generating circuitry (e.g., clock generation and phase-lock loop) implemented on the motherboard.

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

Features and Specifications

Analog Video Inputs
- Accepts the most popular international color video standards including:
  - NTSC
  - PAL
  - SECAM

QC MaxACQ Module Block Diagram

NTSC, PAL, and SECAM
VHS, SVHS, and Y R-Y B-Y
Analog Input

CCIR 601 or Square Pixel
YCrCb, HSI or, RGB
Digital Output

- Accepts video from consumer, pro-sumer, and professional devices which output video in the following formats:
  - Composite (VHS)
  - S-Video (YC, S-VHS, Hi-8)
  - Component (YCrCb, Y R-Y B-Y)
- Select 1 of 8 color video sources for digitization

Video Standard	Active Pixels per Line	Active Lines per Frame	Pixel Rate (MHz)	Sampling Rate (MHz)
NTSC CCIR 601	720	480	13.5	27
NTSC Square Pixels	640	480	12.27	24.54
PAL CCIR 601	720	580	13.5	27
PAL Square Pixels	768	580	14.75	29.5
SECAM CCIR 601	720	580	13.5	27
SECAM Square Pixels	768	580	14.75	29.5

Analog to Digital Conversion
- Converts all analog video input signals to a YCrCb component digital signal
- Digitizes CCIR 601 and square pixel formats (see table)
- 2 times the pixel rate oversampling
- Decoding performed by 2 line luma and chroma filters

Digital Video Output
- Digital video is output to QZ device on MaxPCI image processor or other MaxACQ capable device
- Digital data can be output in any of the following formats:
  - YCrCb (sometimes called YUV)
  - HSI (hue saturation intensity)
  - RGB (red green blue)

Physical Specifications
Height: 0.56 inches (14 mm)
Length: 3.3 inches (84 mm)
Width: 2.1 inches (53 mm)
Weight: 1.4 ounces (39.7 grams)

Power Requirements (all voltages are ±5%)
+3.3 Volts   300 mA (typical)
+5.0 Volts   200 mA (typical)
+12.0 Volts   200 mA (typical)
-12.0 Volts   80 mA (typical)
5.35 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
        (minimum)

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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